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2010-2011 ENERGY TRUST OF OREGON EXISTING HOMES PROGRAM PROCESS EVALUATION

- FINAL REPORT-

Submitted to:
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December, 2012

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1: CHAPTER 1 - SUMMARY AND RECOMMENDATIONS

1.1: Introduction

The goal of this 2010-2011 process evaluation of the Energy Trust of Oregon Existing Homes Program[1] was to obtain feedback on program design and implementation that can be used to enhance the implementation of the current program. Energy Trust was interested in observations and recommendations to help it more effectively and efficiently deliver the Existing Homes Program. The process evaluation included four main efforts: document and database review, and interviews with staff, participant and non-participant households, and trade allies. Key results are summarized below.

1.2: Data and Document Review Findings and Recommendations

A total of 32,433 homes participated in the single family track of the Existing Homes Program, 58% of the participants were in 2010 and 42% were in 2011. The 32,433 homes installed 47,242 individual measures[2]. The Existing Manufactured Homes track had 7,174 recorded participants who installed a total of 51,071 measures. A total of 82,776 Energy Saver Kits were distributed. Figure 1.1 displays the total participants and measures for each of the three tracks that comprise the Existing Homes Program

Figure 1.1: Total and Annual Program Participants and Measures by Track

	Existing Homes (Single Family)		Existing Manufactured Homes		Energy Saver Kits
	Total homes	*Total measures*	*Total homes*	*Total measures*	*Total homes (kits)*
2010	18,865 (58%)	26,548 (56%)	2,411 (34%)	14,443 (38%)	50,038 (60%)
2011	13,568 (42%)	20,694 (46%)	4,763 (66%)	36,628 (72%)	32,738 (40%)
Total	32,433	47,242	7,174	51,071	82,776

An extensive review of Program communications, quarterly reports, and other documentation informed a number of programmatic and operational recommendations. The Existing Homes Program has a solid base and comprehensive set of offerings, and the relatively high degree of ongoing tracking of metrics and regular reporting allows analysis of progress and results. However, this review

[1] The Home Performance track and Clean Energy Works Portland/Oregon projects were not included in the analysis as these are being evaluated separately.

[2] A home energy review (HER) is included as a measure.

indicates the Program may not be reaching its potential. The recommendations below seek to strengthen the Existing Homes Program to increase customer satisfaction and participation.

- ⇨ **Expand Energy Advisor role**: There are several energy advisor-based programs around the country, and while all programs differ, there are useful comparisons that might be made.[3] Top-performing programs (such as Boulder County's EnergySmart Program and Long Island Green Homes / Babylon, NY) with Energy Advisors have been able to achieve implementation rates of 59% and 60%, respectively, while the Home Energy Review (HER) program appears to report conversion rates no greater than 5.5% based on the documents we reviewed for this study. Energy Trust staff report conversion rates of 40% 2 years after the HER.[4] Based on our assessment, the Energy Trust Energy Advisors have little interaction with the consumer after the HER and should be following up to increase participation. Whether the follow-up is in person or over the phone, interaction targeted at helping homeowners understand and move through subsequent steps in the upgrades process is important in achieving a high conversion rate. Some of the strongest programs increase post-visit engagement to nudge through decision-making related to contractors and measures and post-bid assistance to help uncertain customers compare bids in apples-to-apples fashion with a neutral and knowledgeable party. Tracking projects can also allow programs to follow-up over time if only a few of the potential recommended measures have been implemented. This provides an important way to capitalize and turn partially-involved participants into full participants.

- ⇨ **Improve and tailor Customer Engagement**: Develop different "styles" or content, tailored to the demographic and psychographic group of HER customers (based on information collected at the beginning of the project). The literature suggests that different groups are motivated by different messaging reflecting their demographics; this might increase uptake. In addition, the strong performance of trade allies should be noted and leveraged. Not only are they key implementation and lead generation partners, but they are critical to market transformation.

- ⇨ **Provide expanded sales training**: Trade allies appear to be improving in terms of upselling measures (measures per home is increasing); however, to improve conversions after an HER, trade allies *and the Energy Advisor* could be trained to better address the key barriers to would-be-consumers (lack of knowledge of the products and uncertainties of the benefits).

- ⇨ **Improve the customer reports**: Although space is limited, the custom HER reports and recommendations should be framed differently. For example, show all incentives for a particular measure (not just Energy Trust's, but include State tax credits and other incentives), how financing interacts with the package of selected measures in terms of cash flow, and efficiency or capacity ratings they should be asking the contractor to provide. The presentation

[3] Certainly, there are important differences. For example, These programs are local, not statewide; demographic differences could help explain the high levels of uptake. We are, however, discussing follow-through among those signing up for entry-level services, so the conversions figures are calculated from interested participants.

[4] Note that Boulder County, for instance, reports 59% over 2 years, but notes that the vast majority of the upgrades are made within 2-3 months of seeing an Energy Advisor. Assuming Energy Trust of Oregon staff's figure of 40%, the program would need an increase of about 50% in conversions to match these top tier programs.

of information should be tested (focus groups, possibly pilot tests, or review of successful presentations in other programs, etc.) to maximize uptake percentages.

- **Investigate Three-Star trade ally issues**: Three-star trade allies are responsible for 70% of all trade ally jobs (at least in Q3 2011). Nearly 100 three-star trade allies were recently demoted to two-star allies because they did not attend mandatory webinars. This may indicate one of two problems: either the rankings are unimportant to trade allies, or the perceived value of the trainings is low. This should be investigated and addressed through the annual Trade Ally Survey.

- **Technology and data management needs efficiency improvements**: Combining the limited functions of multiple (silo-type) software applications into a single application with multiple functionality capabilities would save considerable staff resources, reduce opportunity for error, and improve Program management and reporting abilities. Centralized storage of Program information is also a needed improvement, supporting tracking of paths consumers take (and don't take) and being able to dispatch resources and respond accordingly, among many other benefits.

- **Data Tracking:** To improve Energy Advisor efficiency on-site, key data should be populated in the documents referenced by the advisor to avoid re-asking questions like why the participants want assistance, age and size of home and other information, and these data should also be pre-populated into the customers' reports. Re-asking questions wastes time and resources. However, to be efficient, the data need to go beyond just helping the Energy Advisor on-site; data should flow from the on-line sign-up and in-home visit uses, to the on-going customer reporting and tracking systems to maximize the potential of all tracking efforts.

- **Customer Applications:** The Program documents indicate that a significant portion of all incentive applications in 2010 and 2011 were missing critical information; applications are mailed, faxed, or emailed into the Program. An online application form would almost certainly reduce staff time spent on corrections, verification, and data entry. W9s are also repeatedly collected and attached to files. Efficiencies and process improvements are clearly indicated.

- **Track- and Program-Specific recommendations**

  - *Solar hot water*: Diminished results under the Solar Hot Water program are associated with uptake in solar PV and the economy; however, procedural factors may also contribute. The program's documentation and manual require attendance at a workshop and multiple bids from contractors, although, in practice, multiple bids are recommended, but not required. Given the difficulty of selling solar thermal (including water storage requirements, etc.), the procedural requirements might be revisited to reduce barriers and increase cross-referrals from other programs. Dropping the *requirement* for multiple bids (or possibly motifying it to a suggestion or recommendation) can decrease barriers and increase uptake.
  - *Existing Manufactured Homes and Savings within Reach*: These tracks, focused on moderate income households, are meeting and exceeding goals. Each has a more direct engagement by contractors prepared to do installation work, and this relationship may be

an important factor in higher uptake rates. The direct trade of information (customers given contractor information; contractors given consumer information as a qualified lead) might be tested in other programs to see if they lead to similarly impressive results outside of the moderate income population tracks. The instant savings measures and the enhanced rebate also play important roles in the current success of these efforts and should be retained.

1.3: Staff Interview Findings and Recommendations

We conducted interviews with 15 staff members involved in the Existing Homes Program including Energy Trust Program staff, contractor implementation staff located in the Metro area ("headquarters"), and implementation contractor staff in the regions.

Interviews indicated that expansion to the regions to improve Program access and uptake across the state is a priority. To further process refinements that improve cost-effectiveness and high quality service, we note the following "actionable" changes coming out of these interviews:

- ⇨ **Address regional issues**: Refine and enhance the regional representative process and resources, including access to performance data, additional networking and outreach resources reflecting regional differences in media access; refine the tiered criteria to reflect slower or less robust markets in some areas (e.g. reflecting that some areas are less "green" than the Metro area). and partnering support and empowerment (potentially with faith-based and other organizations relevant to the region).

- ⇨ **Align incentive paperwork with scale of incentives**: Refine incentives to assure paperwork requirements for incentives are not out of line with the incentive value (simple processes for a $50 rebate; incentives that reflect a reasonably high percent of the incremental price increase).

- ⇨ **Expand offerings to new markets**: Move to expand Program options to renters, and possibly senior citizens. Consider education initiatives to youth to provide a more educated "next generation" on energy efficiency. .

1.4: Participant Survey Findings and Recommendations

More than 750 phone surveys were conducted with households that had received measures (600) and those receiving only a Home Energy Review (HER) and no measures (150), referred to as nonparticipants. We summarize the key findings of the survey and recommendations below:

- ⇨ **Alleviate market confusion about Program offerings**: There is some market confusion about the Program offerings. There are two ways to address this. The Energy Trust could further clarify the difference between different Program initiatives, or could use the customer engagement process to obliterate the different names and initiatives and enroll households in whichever programs or offerings are most advantageous, without focusing on the specific names or programs. Either strategy would probably reduce some of the confusion seen in the

market. Additional monitoring and "nudging" may be needed to maintain progress in the adoption of heating, solar, and water measures following a HER.

- ⇨ **Improve uptake of ESK showerheads through testing**: Showerhead removal is high; however, the Energy Saver Kit (ESK) is a "gateway" measure for 1/3 of the Program participants. Investigation of higher quality showerheads might further increase satisfaction, and possibly uptake. It may be an inexpensive element to test in a sample of the next round of kits.

- ⇨ **Collaborate with stakeholders at key decision points to increase measure adoption**: The drivers for adoption are savings, high bills, comfort, and remodeling. Comfort should be part of the outreach package, but the survey results also indicate that finding additional ways to intervene when decisions are being made (purchase, moving, remodeling, etc.) may be productive in getting more measures installed. Leveraging through collaborations with stakeholders that are active at those decision points (realtors, appraisers, and home inspectors) may be well-spent efforts.

- ⇨ **Investigate drivers of spillover**: High spillover to new measures is a strong finding; one-quarter of participants go on to install additional measures. Additional research on these households to identify "why" and how to carry that over to other households may provide an opportunity to further increase the cost-effectiveness of the Program.

- ⇨ **Consider tiered incentives**: Deadlines seem to be a way to keep progress in installation. If slow installation after the HER is perceived as a loss, the Energy Trust might investigate using tiered incentives – higher if installed within a certain period of time, or other variations in the Program model to see if the strategies are effective.[5]

- ⇨ **Introduce materials aimed at lowering the barriers to participation**: The traditional concerns remain – before participation, households worry about cost, whether they will actually save money, and other issues. These and other concerns might be reduced if the Program expands its outreach – mass media and on-line. The on-line portion might be enhanced by adding more case studies on-line, and perhaps offering a blog or question and answer exchange on the web that lets customers that are "thinking about participating" communicate on-line with those that participated. This (and the mass media outreach) could also answer questions like "will they need to get to the messy parts of my house" and other concerns that hold households back from participating.

- ⇨ **Enhance outreach materials for the "next" round as the Program matures**: Based on feedback from the collateral materials review, and the three sets of Non-Energy Benefits (NEBs) research in the project (participant, staff, and trade ally), we also recommend expanding the list of NEBs that are used to "sell" the Program. The existing materials feature

[5] Energy Trust of Oregon staff note that the ongoing Customer Engagement Experiment may provide information about whether additional money or more engagement (mentioned above) will motivate more people to action. However, the outcomes of leading programs imply that more engagement is successful; the program does not necessarily have to choose between the two options, as using both may be even more successful.

comfort, bill savings, and home aesthetics. The NEB results suggest the programs bring value to households,[6] and additional valuable selling points include measure performance, maintenance, and lifetimes, and "the environment". In addition, with only two or three exceptions, the communication materials did not incorporate social marketing messages or tools. Messaging could be crafted to provide more feedback on energy savings and program progress to participants (and non-participants), increased use of social norms, potential introduction of contests, pledges and commitments, and conduct customer focus groups to better tailor outreach to motivations and barriers of specific sub-segments of the market. Finally, the materials might better clarify the roles of the multiple actors whose names are included on the collateral material to reduce customer confusion about program tracks (to both customers and trade allies).

- ⇨ **Maintain high-quality energy advisors**: Keep a focus on strong, qualified, personable advisors. It is a key element of the Program.

- ⇨ **Investigate participant use of Trade Ally Network**: Participants who installed a measure without a previous HER didn't consult the Trade Ally Network list as much as HER participants. It was suggested this may result from customers that come in through an already-selected contractor. This may bear further exploration..

- ⇨ **Direct customers to web resources**: The survey indicates the web resources (e.g. Online Home Energy Profile, etc.) are utilized by a quarter to half of participants,[7] but are highly appreciated and lead to high satisfaction when they are used. Resources dedicated to directing households to this and other web tools would probably be well-spent.

1.5 Trade Ally Interview Findings and Recommendations

The trade ally interviews gathered feedback on the full trade ally experience, including Program benefits, process, impacts on the market, and suggestions for changes or improvements. More than 100 interviews were completed.

- ⇨ **Implement process improvements**: Streamlining the Program's paperwork, and the associated time commitment and cost, will improve attractiveness to trade allies. Minimizing inconsistencies in customer service communication to Energy Trust (through improved training) or inconsistencies in levels of inspections (possibly affected by variation in the quality of inspectors) would also be appreciated by the trade allies. Electronic paper work and signature systems for participants would help both trade allies and participants.

[6] All groups (households, trade allies, and staff) indicate these non-energy benefits are equal to or more valuable than the energy savings. On a scale of 1.67 to -1.67, where a score of 1 means equal to the value of the energy savings, the household responses scored 0.93 (for ESK respondents) to 1.27 (for full participants receiving heat pumps).

[7] The survey showed 2-5% heard of the program through online searches or websites (Table 5.3).Additionally, between 26-46% of the participants used the website or online tools (Figure 5.20);) and); satisfaction levels for on-line resources were 4.3-4.9 (Figure 5.21).

- ⇨ **Tweak the rating system**: The star rating system and criteria should consider focusing more on the quality of work or on training participation or other criteria that allows substitution for quantity, or make refinements to the system that recognize the lower quantity of work available in outlying areas. Better customer outreach on the meaning of the stars would also enhance the value of the rating system.

- ⇨ **Implement measure-specific training**: Enhance the value of training by adding courses on specific measures.

- ⇨ **Target specific marketing materials to underserved groups**: Review the eligibility of and outreach to perceived underserved sectors, including middle and upper incomes (who may not be driven by the same energy saving messages). Craft other collateral for the elderly and mobile home owners, who are also seen as underserved. Improve marketing and outreach, particularly focusing in non-Portland areas.

- ⇨ **Lower barriers to participate through enhanced marketing materials**: Enhance materials, highlighting bill savings and NEBs (including outreach by trade allies) and perhaps a participant network or website tools (map rollovers, case studies, etc.) to reduce the reticence among some customers to complete projects due to an uncertainty surrounding the savings they will actually see. Material should cover incentives, financing options, and explain how the measures can pay for themselves.

- ⇨ **Increase personal interaction with customers**: Increased personal interaction by Energy Trust with customers to help "sell the program" (at events, face-to-face, etc.), higher incentives, and a return to rebates were suggested as ways to bring customers into the Program. Personal interaction can be more cost-effective than less targeted outreach.

- ⇨ **Provide funding for equipment and trainings**: Grants or financing to help with the purchase of testing or other equipment would help attract small firms (and might help some firms in outlying areas). Better communication about the equipment grants and training that are available would be useful. Funding to help travel to trainings would also be helpful – perhaps as a reward for high performing firms.

- ⇨ **Improve and simplify website**: Website improvements could be useful, including better access to trade ally information, and star rating system information may lead to better use of the Program.

- ⇨ **Communicate changes in star rating status**: Energy Trust should notify trade allies *in advance* by email when there will be changes made to the star system, or when changes will be made to a company's star rating.

MEMO

Date: December 18, 2012
To: Board of Directors
From: Sarah Castor, Evaluation Sr. Project Manager,
Marshall Johnson, Residential Program Manager
Subject: Staff Response to the 2010-2011 Existing Homes Program Process Evaluation

Results from the 2010-2011 Process Evaluation of the Existing Homes Program provide a helpful record of the program just before a major event: the transition to a new Program Management Contractor (PMC) in 2013.

Notable accomplishments of the program from the report include:

- High overall satisfaction among program participants and trade allies
- A significant increase in participation among manufactured homes
- An increase in the number of energy saving measures per participating home
- Development of Customer Engagement protocols with the intention of increasing measure installations after Home Energy Reviews (HERs)
- An increase in outreach to non-Portland Metro regions, using dedicated outreach staff, which will help support increased participation in these region in 2012 and beyond
- Expansion of the Cooperative Marketing Fund into the Trade Ally Development Fund, allowing trade allies to use funds for trainings, memberships and conferences

With the shift from Conservation Services Group (CSG) to Fluid Market Strategies as PMC, the program will be employing many new strategies to increase program savings and enhance the customer experience while at the same time decreasing the cost of program implementation, to increase the overall cost-effectiveness of the Existing Homes Program. Areas of focus for 2013 and beyond are:

- A continued focus on Customer Engagement strategies
- Developing additional communication materials and strategies to target high-potential customers and match customers with the right offerings for them
- Providing information to residential customers on the simple payback for various Existing Homes measures to aid in investment decision making
- Encouraging trade ally direct installs of instant savings measures (ISMs) and HER-like audits completed by trade allies
- Promoting market-based trainings of trade allies
- Increased focus on financing and development of lender allies
- Improving the use of technology in the program by emphasizing webforms and HER data collection via tablet PC

While these differ somewhat from the recommendations of the evaluator, we believe that these strategies have the same potential to increase program activities while at the same time controlling program delivery costs.

2. CHAPTER 2 - STUDY BACKGROUND

2.1: Study Purpose

Energy Trust of Oregon requested a process evaluation of the Existing Homes Program. The process evaluation included data and document review, staff and implementer interviews, large-sample participant and non-participant surveys, and trade ally interviews. Primary areas of interest include:

- Motivations and challenges to improving the energy efficiency (EE) of homes;
- Use of and satisfaction with Energy Trust's website and online resources;
- The process of selecting a contractor, experience with their contractor and with Energy Trust's trade ally (TA) list and star rating system;
- Experience with specific measures (e.g. availability, cost, ease of installation);
- Knowledge and perceptions of Energy Trust;
- Use of Energy Trust consultation services and impressions of their usefulness, or willingness to use in the future;
- For Energy Saver Kit (ESK) recipients, installation of measures provided;
- Trade ally awareness of and experience with the development fund (formerly the cooperative marketing fund);
- How contractors and the Program encourage energy efficient measure installations in existing homes;
- How Energy Trust can enhance its relationship with trade allies to increase energy savings.

2.2: Process Evaluation Methodology

There were four main efforts associated with the process evaluation:

- Document and data review,
- Staff and implementer interviews,
- Participant and non-participant surveys, and
- Trade ally interviews.

The total completions for each survey and interview group are provided below. For the survey and interview work, SERA developed a topic list for review by Energy Trust, developed a draft survey or interview guide, and finalized the documents in conjunction with the Energy Trust Evaluation Project Manager.

Staff and Implementer Interviews:
We conducted interviews with 15 staff members involved in the Existing Homes Program in January 2012. Three were Energy Trust staff; 8 were Conservation Services Group (CSG) headquarters and management staff, and 4 were regional representatives. The interviews averaged an hour and a half.

Table 2.1: Staff and Implementer Interview Completions

Staff Sub-Group / Category	Roles	Number interviewed
Energy Trust staff	Management	3
CSG staff and implementers	Management, strategic planning, marketing, trade ally, training	8
CSG / contractor regional staff	Regional representatives	4
Total		15

The staff interviews addressed a number of topics, from the goals, strengths, and weaknesses of the Program, to the functioning of various sub-programs. We also asked about next steps for the Program and its legacy.

Participant / Non-Participant Surveys:

More than 600 interviews were completed with participants and 150 with "non-participants", or households that completed a Home Energy Review (HER) but did not install any measures.

Figure 2.2: Participant and Non-Participant Survey Goals, Sample Sizes, and Completes[8]

Category	Goal	Sample (From Energy Trust)	Completes
HERs without a measure (NP)	150	8,477	151
Savings Within Reach participants (SWR)	60	452	63
Energy Saver Kits (KIT)	100	43,350	102
HER's who went on to install a measure (HER)	100	1,699	109
Participants who installed a specific measure without a prior HER (FULL)	340	18,489	344
Total Goal	*750*	*Total Complete*	*769*
FULL Participant sub-categories include:			
Insulation (ceiling, floor, wall, duct)	*100*	*7,744*	*177*
Heat pumps (replacement, upgrade and DHPs)	*60*	*2,984*	*74*
Water heaters (tank and tankless)	*60*	*3,539*	*78*
Air sealing	*60*	*2,159*	*75*
Duct sealing	*60*	*2,063*	*91*

[8] Respondents could fall into more than one measure category based upon the scope of their project

Trade Ally Interviews: The trade ally interview guides were designed to gather the data and feedback necessary to evaluate the full trade ally experience. This includes the Program benefits, process, impacts on the market, and suggestions for changes or improvements. A total of 320 trade allies were contacted by phone, often with multiple attempts to each, and 102 completed surveys were attained. Figure 2.3 displays the disposition of calls.

Figure 2.3: Trade Ally Survey Calls and Completes

Ineligible Contacts (No star rating)	195
Trade allies Contacted	320
Unresponsive	180
Refusals	10
Schedule / No Show	15
Surveys Began	105
Ineligible (no applications submitted)	3
Total Completed Surveys	*102*

3 CHAPTER 3 - DOCUMENT AND DATA REVIEW AND ANALYSIS

This chapter contains two main elements:

- Review of the Program documentation (Section 3.1); and
- Review of performance statistics and data (the remainder of the Chapter). The data analysis included in this section is a summary, and the details are incorporated in Appendix A.

3.1: Program Document Review

A number of documents were reviewed as part of this task, primarily Monthly Reports and Quarterly Reports for the Program (a complete list of documents reviewed is provided in Appendix B). The Existing Homes Program documents provide a comprehensive set of offerings; the pilot initiatives reflect a focus on evolving with market conditions, filling gaps, and resolving some identified issues. The immediate efforts to improve processes, direct consumers to the appropriate programs, and to re-direct as new information comes to light is important in terms of generating initial Program leads.

It is clear that numerous relevant data points have been tracked over time and the presentation of data, including through monthly and quarterly reporting, has been refined to address evolving needs and goals. There is, however, significant evidence of conversion rates from contact to assessment and from assessment to implementation in the program that are lower than those realized in some of the top tier programs around the country. Overall, the two important areas where the Program appears to suffer are sales training and technology and data management. Additionally, connections to trade allies could be enhanced.

Customer Engagement and Action:

Initial customer contacts appear to be consistently and directly related to outreach and marketing efforts; when a marketing campaign or push is launched, the Contact Center and web site receive hits directly related to those efforts. However, while not all programs offerings are performing equally, there is evidence of a significant drop off between initial customer contact and assessments which is followed by another significant drop between assessments and implementation. At the same time, trade allies are increasing not only the number of projects completed (relative to non-trade ally contractors), but also the number of measures completed per project (Appendix Figure A.11).

The Contact Center is apparently improving the conversion rate from calls to HER visits, but the follow up in terms of actions taken continues to be extremely low, 5.5% based on the Quarterly reports and other documents reviewed for this project. This number reflects the first 90 days after the review and

is only for Existing Homes measures, not for appliances, solar, etc. This is offset in terms of overall savings by the fact that instant savings measures (direct installs) associated with an HER visit continue to achieve significant savings that represent a sizable portion of overall savings (generally hovering around 40%). The direct install program for HER and other tracks should be retained and evaluated as technologies and adoption rates change over time (this measure tracking is occurring already). However, the steps that follow the visit and the collateral that is left in the home could be improved to increase uptake and, therefore, savings related to HER visits.

The Program is taking steps to improve the information provided to consumers in terms of suggesting trade allies (additional focused information, including a star rating system) and trade allies appear to be improving in terms of upselling measures. However, a known barrier to would-be-consumers in the energy efficiency market is a lack of knowledge of the products and uncertainty in the benefits; the Existing Homes Program efforts operate within this dynamic. Efforts are underway to better explain how a particular home compares to other similar homes, which is helpful in terms of framing the issue. Additionally, the Energy Advisors would benefit from improved reports to present to homeowners that include more specific recommendations in terms of efficiency ratings of equipment and appliances, air exchange rates, insulation levels, etc.

These recommendations should not only suggest a specific level of upgrade or product type, but also include the associated benefits (economic, comfort, and health and safety, for example). Further, where the reports are able to show estimated costs, estimated savings, and related incentives, consumers are better able to make informed decisions. While the reports contain space for this information to a limited extent, they could be framed differently. For example, what are all of the incentives available for a given measure (beyond Energy Trust incentives), how will financing interact with a package of selected measures in terms of monthly cash flow, and what level of efficiency and capacity rating should they be asking a contractor to provide. A recent effort comparing modeling tools focused on the energy analysis in the home energy reports, but a similar effort testing the presentation of information may prove useful as well in terms of the impact on uptake. At the very least, the reports to participants should track with the latest recommendations on consumer messaging, preferably linked to the demographic information obtained early in the customer engagement process. There is increasing evidence that different demographic and psychographic groups are motivated by different messaging when it comes to energy efficiency upgrades.

Also, we suggest additional sales training for the Energy Advisors and trade allies. While a pilot has been initiated to enhance the existing trade ally trainings in technical specifications/standards and Program rules, we did not find evidence of a similar initiative for the Energy Advisors. We recommend a two-pronged approach given that there are multiple paths both within and to the Existing Homes offerings. Some people come in through the Contact Center and HER program and rely on an Energy Advisor to more or less “close the deal”, some are screened and immediately connected to contractors, and some come into the Program at the point of requesting incentives (themselves or through a contractor) and are then upsold and convinced to undertake an additional upgrade or action. For example, if someone calls about an HVAC rebate, they may be upsold to an audit and additional upgrades.

Top performing programs with Energy Advisors (or similar roles) elsewhere in the country have been able to achieve implementation rates of approximately 60% while the HER program is reporting

conversion rates no greater than 5.5%, based on the documents we reviewed for this report (Quarterly reports, etc. as listed in the Appendix). Energy Trust of Oregon staff recently provided information stating their 2-year conversion rate for the HER program is 40%. There are several energy advisor-based programs around the country, and while all programs differ, there are useful comparisons that might be made.[9] Boulder County's Energy Smart Program and Long Island Green Homes, for example, have audit-to-upgrade conversion rates of 59% overall (In Boulder County, the numbers range from 40-72% depending on municipality and rental/non-rental). Although these figures tend to represent 2-year conversion rates, Boulder's program notes that most of their upgrades get made within 2-3 months of seeing an Energy Advisor. A comparison of the 2-year conversion rates shows the Energy Trust of Oregon's program would need about 50% higher conversions to reach the levels of these top tier programs.

In the Energy Trust Program, Energy Advisors appear to have little interaction with the consumer after an HER. Where many consumers get stuck (assuming they even call a contractor after an assessment) is in the decision making phase. There is effort underway to increase post-visit engagement and this will likely have some impact, however, this could go well beyond reminders and nudging. While standardized pricing and bid formats have been implemented by some programs, this is often politically and practically difficult to achieve (the Clean Energy Works Oregon program may provide an opportunity in this regard). An intermediate solution is expanding the role of the Energy Advisor to include post-bid assistance. This allows an opportunity for the uncertain consumer to compare bids in an "apples-to-apples" fashion with a neutral and knowledgeable party. Tracking projects in a centralized database further allows programs to follow up with consumers over time if, for example, one of five recommended measures has been implemented, but others remain. There has been at least one marketing effort to follow up with HER participants; this would take that form of market segmentation one step further in terms of tying marketing to known needs of individual potential consumers and building a more substantial relationship with the consumer.

The trade ally effort has shown growth and results in terms of savings. It is evident that an increasing number of jobs are being completed by a growing pool of trade allies; this appears to be a general trend and includes work through Home Performance with Energy Star, Clean Energy Works Oregon, Existing Manufactured Homes, and Savings Within Reach. This is also reflected in the number of incentives requested exceeding target numbers and budgets. If possible, trade allies should have more consistent access to the homeowner reports in order to maintain a consistent dialogue and reduce redundant work. Trade allies are offered training in terms of technical standards and advances as well as customer service. However, until recently, they were not supported in terms of sales skills.[10] The documents, including the Quarterly Reports, do not reflect the impact of the recent testing of sales training; however, the ability to convert more leads to jobs and to increase the measures installed per project is critical to Program success, the success of trade allies in their work

[9] Certainly, there are important differences. For example, These programs are local, not statewide; demographic differences could help explain the high levels of uptake. We are, however, discussing follow-through among those signing up for entry-level services, so the conversions figures are calculated from interested participants.

[10] While it might be much too ambitious to consider sales training for the over 800 Trade Ally firms and their related employees (especially at a subsidized cost), it may be useful to provide training at no cost or reduced cost as a reward or incentive to higher performing contractors (which won't help the poor performing ones improve, but keeps the bar moving up for leaders). Another option is to include some basic information as an add-on to other required trainings.

in general, and to growing the overall efficiency market. The document review shows decreases in activity (Figure A.5), but increases in measures per household (Figure A.11). And, although the contractors in the Portland Metro area may be savvy and experienced, that same conclusions may not hold for the outlying regions, and sales training in those regions might be beneficial. Sales training for trade allies increases uptake for HER recipients as well as uptake of incentives that are related to projects that have not received an Energy Trust assessment or advisor service.

The three-star trade allies are particularly important to achieving Program goals. For Q3 2011, 70 percent of all trade ally jobs were completed by three-star trade allies. Also in Q3 2011, there was a demotion of nearly 100 trade allies from three-star to two-star status due to a lack of attendance at mandatory webinars. This may be evidence of one or both of the following reasons: a lack of concern over the rankings or a lack of perceived value in the trainings. While sales trainings may not be the only topic of interest and value to the high performing trade allies, it is important and can be supplemented with other skills trainings that support the Program goals directly and indirectly.

Data Tracking and Software:

The capture of data thus far has allowed for a relatively high degree of ongoing tracking of metrics and regular reporting. This positive attribute can be improved, however, in terms of the processes and tools utilized. It is also worth considering additional data points that may be useful to track.

Data Entry in Multiple Systems

Throughout the documents reviewed there are repeated references to duplicate or manual entries of information. The Program tends to be utilizing multiple software applications (including EMHome, CoreApp, Fast Track, and Goldmine). Combining the limited functions of multiple software applications that are now in use for single silo-like purposes into a single software application would save considerable staff resources, reduce the opportunity for error, and improve Program management and reporting abilities. Where the desired functions cannot be adequately performed by a single platform the software should, at the very least, be able to transfer information easily between applications. An Application Program Interface (API) relationship is ideal because of the automation of data transfers and potential to streamline processes, but the ability to download and upload information on a regular, frequent interval would still be an improvement. This will allow for the pre-population of information and the ability to track participants across programs without ongoing investment of staff time and effort.

More centralized storage of Program information provides multiple benefits. Program trends can be easily monitored, reported, and acted on. For example, if you are tracking attrition rates for HERs you can then target participant inquiries and process improvements strategically. It will be easier to track the paths that consumers take and respond accordingly. It appears that the multiple databases are allowing for this to some extent, but are likely not allowing for the custom queries and fine-grain tracking that will assist Program development and management most effectively.

Existing Data

Improved data tracking will facilitate related efforts. For example, the efforts to improve the Energy Advisors' effectiveness in homes is supported by relaying important information like why the participants want assistance, the age and size of the home, and more in a package that is referenced by the advisor while in the home without them needing to ask or re-ask basic questions while on-site; this could also be pre-populated into the homeowners' reports. If the software platform is able to communicate through APIs, there is the added potential to link to other data sources, including utility bills and land use databases. These strategies will allow the Contact Center staff, Energy Advisors, and others to ask important questions early in the process and not have to ask them again later, as well as capture data directly from existing data sources.

Utility usage data, pre and post intervention, is well recognized as a reliable way to track actual program impacts. Additionally, utility usage data is critical to obtaining meaningful audit based upgrade recommendations. Some auditing tools start with utility usage data while others use the data to recalibrate preliminary savings estimates. In either case, having actual utility usage data at the point of the audit and in order to assist in the advising process is important and digital transfer of that information can save time and reduce error in data entry.

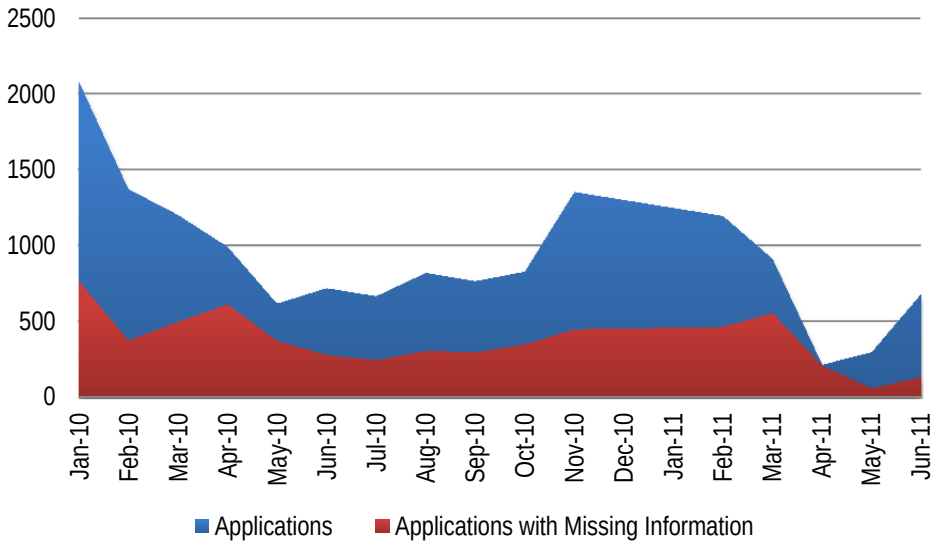
Unfortunately, utility usage data gathering has proven to be difficult for many programs. Some options to work within the system include leveraging partner, vendor, or contractual relationships so that the programs are not considered an outside third-party. For example, if an implementer is under contract with a utility, they often fall into a "vendor" or other classification that allows the utility to share data directly with the implementer. Utility bill releases have proven effective for some, particularly where there is the ability to digitally transfer information. Additionally, new options like Green Button and screen scraping allow programs to directly utilize the homeowner / customer permissions and access data in real-time and often in an ongoing manner. Green Button is a multi-agency federal effort to facilitate the transfer of utility usage data to consumers and programs. Screen scraping allows programs to "scrape" utility billing sites (or other sites) for utility billing information. In either case, the consumer is in control of granting permission to use the data so it does not trigger the privacy concerns frequently raised by utilities.

Tablet based assessment tools are able to directly communicate to the database(s) the information collected in the intake process in the field and the information collected in the field is available "back in the office" more or less immediately. There is a reduction in manual entries and an increase in productivity; this can allow Energy Advisors to provide more accurate assessments with more specific recommendations in less time. Pricing varies for tablet-based tools and the associated back office software (or integration with existing software); however, some are available on a per-use fee basis. Tools that require additional time in the home or to generate a final report may or may not provide more actionable information despite the investment of time—the aspect being emphasized here is the relationship between the auditing tool and the customer relationship management software as well as increased process efficiencies. Trade allies may also be able to have limited access to participant information through web and field based tools, particularly if they are permissions- and role-based. For example, an individual trade ally may have access to certain assessment reports and the ability to refine estimates within the existing report and re-present that information to the participant.

Reduced Paperwork and Re-work

Approximately half of all incentive applications in 2010 and 2011 were missing critical information, resulting in a significant dedication of staff time. According to the document review, almost all applications must be mailed, faxed, or emailed to the Program. An online application form may reduce the need for staff time spent on corrections in that certain information can be verified prior to application and will reduce data entry requirements. Similarly, it appears that the W9s, even of trade allies, are repeatedly collected and attached to files. There is likely an opportunity to achieve significant process improvements in relation to the incentives application process.

Figure 3.1: Incentive Applications and Missing Information (all 3 tracks)



Solar Hot Water:

While diminished uptake for solar water heating measures are associated with increased uptake of solar PV and poor economic conditions in the documents, there may be other procedural factors worth considering. Although the Program Implementation Manual says that attendance at a workshop and multiple bids from contractors are required, in practice it appears multiple bids are recommended but not required. A requirement for multiple bids can be a barrier to conversion, but the program might consider *recommending* multiple bids instead. This may help in areas with few contractors, or with few contractors experienced in certain measures, or for participants brought in by contractors. Solar thermal is often not an easy sell due to a variety of issues, including the water storage requirements among others. It may be worth re-evaluating the procedural requirements of this program to reduce barriers as well as strategies to increase cross-referral from other programs.

Existing Manufactured Homes and Savings Within Reach:

Both of these programs aimed at moderate income populations are currently performing well, meeting or exceeding goals. Both programs have a more direct engagement with contractors prepared to do

installation work and this may well be an important factor in higher uptake rates. In both cases the consumer is given contractor information (perhaps limited to a single contractor) and the contractor(s) are given the consumers' information as a qualified lead. It may be worth drilling down to determine if this closer relationship to contractors will produce similar impressive results outside of the moderate income populations served by these programs (in contrast to the list of contractors HER consumers are given without apparent transfer of leads to contractors). However, the instant savings measures also play a role in the current success of these programs and it is likely that the clearer market segmentation and enhanced incentives (up to no cost to consumer) are also important factors.

3.2: Data Review: Total Program Activity

SERA staff reviewed the documentation related to the Existing Homes Program including the data on activity, the monthly reports, the implementation manual and past evaluations. This section of the evaluation reviews the results and findings.

A total of 32,433 homes participated in the single family track of the Existing Homes Program, 58% of the participants were in 2010 and 42% were in 2011. The 32,433 homes installed 47,242 individual measures[11]. The Existing Manufactured Homes track had 7,174 recorded participants who installed a total of 51,071 measures. A total of 82,776 Energy Saver Kits were distributed. 3.2 displays the total participants and measures for each of the three tracks.

Figure 3.2: Total and Annual Program Participants and Measures by Track

	Existing Homes (Single Family)		Existing Manufactured Homes		Energy Saver Kits
	Total homes	*Total measures*	*Total homes*	*Total measures*	*Total homes*
2010	18,865 (58%)	26,548 (56%)	2,411 (34%)	14,443 (38%)	50,038 (60%)
2011	13,568 (42%)	20,694 (46%)	4,763 (66%)	36,628 (72%)	32,738 (40%)
Total	32,433	47,242	7,174	51,071	82,776

3.3 Review of Program Performance Data for Existing Homes, Manufactured Homes, and Energy Saver Kits

Existing Homes Data Review

The review of tracking data from January 2010 to December 2011 shows that participation (households and total measures) in 2011 was higher than 2010 in the Manufactured Homes track, but lower for Existing Homes (single family) and Energy Saver Kits. On the gas side, projects in NW Naturalterritory achieve the lion's share of the savings. The Portland Metro area also accounts for 60% of the activity statewide, which reflects its approximate share of population in the State.

[11] A home energy review (HER) is included as a measure.

The HER is by far the most popular measure (10,652 households over 2 years). However, that indicates that the Program has not been as successful as it might wish in moving households along toimplementation of energy saving measures. The next most popular measure – ceiling insulation – was installed in 5,500 homes. After the HERs, there were minor variations in leading measures in different regions.

Trade allies (or other actors) appear to be becoming more effective at upselling to participating homes. The average number of measures per household has increased from 1.31 in Quarter 1 of2010 to 1.50 by the last Quarter in2011.

Average project installation cost per household was about $2,793 in 2010 and $3,043 in 2011. The average incentives received per household were $272 and $308, respectively. The incentives leveraged about nine times their value in additional personal investment. These incentive and cost results vary considerably by region. Per household incentive figures range are $225 in Eastern Oregon, $271 in Portland, $352 in Southern Oregon, and $338 in the Willamette Valley / North Coast. In two regions, the 9:1 ratio in personal investment is not achieved. The East shows only $1,901 in total cost to install, and the Willamette Valley spends just $3,044 per household. Southern Oregon spends the most and receives the highest incentives. The average incentives paid per household and the average total cost to install is displayed by year and by region in Figure 3.3.

Figure 3.3: Average Cost to Install and Average Incentive per Household

Year	Avg. Cost to Install / HH	Avg. Incentive / HH
2010	$2,793	$272
2011	$3,043	$308
Region		
East of the Cascades	$1,901	$225
Portland Metro	$2,897	$271
Southern Oregon	$3,542	$352
Willamette Valley/North Coast	$3,044	$338
Total	*$2,898*	*$289*

The demographic and housing characteristics in the “treated” homes were also examined. The average year built was 1964, but the median was 1971. The average square footage was 1,925, and the median was 1,800 square feet. The most common size was 1,500 to 1,999 square feet. Nearly one-quarter of the treated homes were built between 1974 and 1979, and only 4% were built after 1999. Nearly 93% of the treated homes in this track were unattached single family structures; attached townhouses represented 6.7%, and other housing types all represented less than 1% of the total treated homes.

More detailed data, comparisons, and graphs are included in Appendix A.

Manufactured Homes Data Review

Almost 7,200 manufactured or mobile homes participated in the Program, and the track doubled in size between the two years (1/3 in 2010, and 2/3 in 2011). The highest program activity was in Southern Oregon, which represented 37% of this track's activity. Quarters 2, 3 and 4 of 2011 had the highest activity with Quarter 1 and 3 of 2010 being the two slowest periods. The number of measures per home is increasing, from about 5.7 in Quarter 1 of 2010, to more than 8.3 by 4th Quarter of 2011. Almost 60% of the homes were located in Pacific Power territory, and over 90% of the participants reported not receiving gas service. Gas savings were highest in the Willamette Valley / North Coast region.

Lighting is the most common measure, followed by aerators, showerheads, blower door tests, duct testing, duct sealing, and air sealing. These measures were installed in 7,000 to 9,100 units each. Carbon monoxide monitors were installed in 3,400 homes, and the remaining measures (including floor insulation, heat pump replacement and upgrades, windows, and tanked water heaters) were installed in fewer than 20 homes each. Showerheads were relatively more common in the Eastern and Southern regions; and duct sealing was relatively more common in the Portland Metro and Willamette Valley regions.

More than $3.7 million in incentives were delivered by the Program, for an average of $522 per household. The average incentive per household was higher in 2010 than 2011 ($543 vs. $509). The incentives were highest in the Portland Metro area ($623 per household), and lowest East of the Cascades ($443 per household).

The average year built for manufactured home participants was 1985, with a median of 1987. One-third of the participant dwellings were built between 1970 and 1979, and a quarter were built between 1993 and 2000. The median and mean house size was about 1,250 square feet, and half were between 1,000 and 1,499 square feet.

More detailed data, comparisons, and graphs are included in Appendix A.

Energy Saver Kits Data Review

Appendix A provides detail about the distribution of kits. Almost 83,000 Energy Saver Kits were distributed between August 2010 and November 2011. The highest month was September 2010 (23,026), and the lowest was March 2011, with only 673 distributed. The wide range in the number of kits delivered per month was reported to be due to intentional marketing patterns by Energy Trust. The monthly average for distributed kits was 9,783 (median 2,791). There was a significant lull in kit distribution between January 2011 and May 2011, with monthly figures one tenth the volume of high months; once again, this was reported to be due to intentional marketing patterns.

The total cost of the distributed kits was about $1.7 million over the period. The Energy Trust incentive was a stable $20.45 per household. More than 70% of the kit-derived electricity savings (72% of the kits) were in PGE territory (29% of the savings from Pacific Power territory; which represents 27% of

the kits delivered). Virtually all the gas savings occurred in NW Natural's region (98%). A total of 25% of the kits were delivered to homes without gas service.

Eighty-seven percent of the kits were distributed to single family unattached homes. Another five percent were distributed to homes with five or more units.

More detailed data, comparisons, and graphs are included in Appendix A.

3.4: Collateral and Marketing Materials Review

SERA reviewed the collateral and marketing material associated with the program including newsletters, posters, leave behind items, bill inserts, home energy reviews, and trade ally materials. We reviewed marketing collateral (incentive grids, fact sheets, HER leave behind), and all utility-specific marketing materials (list provided in Figure B.2 in Appendix B). In general, the marketing materials are well designed. The materials have a consistent Energy Trust logo, often placed next to or in-line with the Utility logo. Some of the marketing materials use NEBs to help promote the program. The marketing materials contain information on how to participate, the potential incentives and savings, and where to go for more information and the font sizes and types are consistently clear. The materials contain attractive graphics and photos and are easy to understand. The bill inserts have a clean layout and do not contain too many words or too much information, making them easy to quickly read and comprehend. The individual utility company newsletters (NW Natural "Comfort Zone", Pacific Power and CNG's "Voices", and Portland General Electric's "Home Connection") use different formats and layouts to display the marketing information but all appear to successfully demonstrate to customers how to save money and energy.

Recommendations: Overall, the marketing materials are well designed, easy to read, and contain the information necessary to help "sell" energy savings to customers. Potential recommendations for future materials are included below:

1) *Consider increasing the use of non-energy benefits to sell the program:* The existing materials feature comfort, bill savings and home aesthetics prominently in the various bill inserts. Other non-energy benefits (NEBs) that may be worth using to sell the program to a wider range of participants include "doing good" for the environment, quieter equipment and homes, reduced maintenance costs, and health benefits. While some of these additional NEBs are included in a few marketing pieces (the Manufactured Homes brochure includes health and quieter homes) they are not featured.

2) *Increase the use of social marketing tools:* Only a few pieces used tested social marketing tools to help sell the program. These include feedback on energy savings and participants (NW Natural's "Comfort Zone" shares information on the number of customers participating and the emission and electricity savings from the program) and one Pacific Power piece ("Put your home on the map" insert) that uses social norms to sell the program. There is an opportunity to increase the use of certain social marketing tools to increase participation. These include providing more feedback on energy savings and program progress to participants and non-participants, increased use of social norms, the potential to use contests and pledges or commitments. Finally, Energy Trust may wish to consider marketing the

program to certain customer segments based specifically on that segment's motivations to act and barriers to participation.

3) *Clarify Energy Trust's Role and the Program Names or Tracks*: The Energy Trust logo is clear, consistent, and easy to identify on the marketing materials. However, the participant and nonparticipant survey results indicate that there is a significant amount of confusion among customers as to what Energy Trust's role is and there is confusion about the program tracks among both customers and trade allies. Future marketing collateral may be able to help clarify the tracks and roles for customers and remove some of the confusion.

3.5: Summary

In general, the Program documentation, including monthly and quarterly reporting, reflects a high degree of success in meeting goals as well as ongoing efforts to improve Program processes and offerings. There are, however, areas that emerge that could potentially use improvement. There is significant evidence of low conversion rates from contact to assessment and from assessment to implementation in some of the tracks. Overall, there are three important areas that should be considered for focus: sales training and enhancement of the Energy Advisor role, increased connection to trade allies (including giving "warm" leads to trade allies), and technology and data management.

The review of the performance statistics shows significant savings for each track over the period, and achievement of savings goals. The outreach materials and collateral are well-produced and clear, and only a few suggestions are made to improve their effectiveness.

4 CHAPTER 4 - STAFF AND IMPLEMENTER FEEDBACK

The fifteen staff and implementer interviews provided information from staff with decades of experience, and those with a few months on the job, and from the strategic planning realm to field staff. We gathered information on an array of topics, including goals, strengths, and weaknesses of the Program, to the functioning of various sub-programs. The following sections describe the interview results in detail. We present the summary, conclusions and recommendations at the end of the section.

4.1: Methodology and Fielding

SERA conducted interviews with 15 staff members involved in the Existing Homes Program in January 2012. Three were Energy Trust staff, 8 were Conservation Services Group (CSG) headquarters and management staff, and 4 were CSG regional representatives. The interviews averaged an hour and a half.

Figure 4.1: Number and Roles of Interviewees

Staff Sub-Group / Category	Roles	Number interviewed
Energy Trust staff (Energy Trust)	Management	3
CSG staff and implementers (CSG-HQ)	Management, strategic planning, marketing, trade ally, training	8
CSG / contractor regional staff (CSG-Regions)	Regional representatives	4
Total		*15*

The staff interviews addressed a number of topics, from the goals, strengths, and weaknesses of the Program, to the functioning of various sub-programs. We also asked about next steps for the Program and its legacy. The results are summarized below.

4.2: Findings

Goals, Strengths, Weaknesses, and Satisfaction with the Existing Homes Program

Goals were stated in specific terms (43 million kWh, 1.3 million therms on behalf of four utilities), or in broader terms. The broader statements provided insight into the motivations of the Program's team, and focused in four areas:

- Savings and service: Capture energy savings and deliver excellent customer service; help residential customers acquire weatherization and reduce energy usage; get everyone to do a project; go deeper with each project, do more measures and customer engagement

- Infrastructure, Transformation and Relationships: Develop infrastructure to sustain efforts over time if the Energy Trust phases out or if Market Transformation (MT) happens; develop relationships with market actors; cultivate supply chain (equipment and contractors); improve (contractor) work quality
- Energy Trust awareness: Let customers know Energy Trust is there to help; get (Energy Trust and retrofit) relevance beyond Portland area
- Other: Create jobs in the sector

The perceived market barriers includes several elements, but can be summarized as getting homeowners to recognize the value of energy efficiency (education) and to get them to act to make energy efficiency investments in their home. A few also noted concerns about the lack of awareness of Energy Trust, the lack of trust of the utilities, and the lack of code enforcement affecting the housing stock as additional barriers to the Program's success. The Program's strengths and weaknesses were a topic of much discussion and are described below. Virtually all said the Program matched their expectations, although some said especially in the last year. Many noted that the savings goals had been reached or exceeded every year.

Figure 4.2. Strengths and Weaknesses of the Program

Strengths	Weaknesses and Opportunities
• Strong marketing; provide awareness to general public about saving energy; touch all households • Technical delivery / expertise • Energy advisor • Contractor network / infrastructure; training; core group driving savings • Focused, dedicated Program initiatives that respond to specific sectors and changes in market • Plans with heads-up monitoring / analyzing for real-time adjustments; continual adjustment processes (paperless office, combined forms, etc.) • Great people / staff, professionalism • Financial incentives, tax credits • Regional structure • Credibility of Energy Trust of Oregon • Use of pilots; flexibility in the program • Has impacted measures and technologies in the region	• Lacks remodeling assistance • Opportunity to leverage real estate and home inspector market / not happening • Focused on what is in the contract / scope of work (savings goal) • Energy audits focus (audits are not savings in themselves); audits are not technical enough / not enough diagnostic tools • Inspect 10% of homes (some wanted more) • Could engage more stakeholder groups / working groups • Phone systems described as "antiquated" - could use updating • Try to include everyone – which can be less effective / cost-effective • Doesn't use / coordinate with other programs; doesn't learn from programs around the country • Improve internal communication – including CSG with client and client with client; could also benefit from simpler and clearer review process for marketing and other materials • Insufficient offerings in gas • Inefficient / repetitive data entry; data not coordinated • Could use contractors as front line sales force more effectively • Portland Metro focus; weaker in the regions; need more Spanish materials

Staff rated their satisfaction with almost all of the individual components of the program quite highly. We provide the average scores below, separately by type of respondent, and as a total. A value of one is poor, and seven is the highest.

- Highest satisfaction is found with the Manufactured Homes and Savings Within Reach tracks. Respondents noted that Manufactured Homes had far exceeded goals.

- Generally, the regional representatives scored their satisfaction with newer, more specialized Program components lower than staff at headquarters; this correlates with their perception that the regions are at an earlier stage in the Program than "Metro".
- Among the major Program components, the newer ones have room to grow in satisfaction to date (for example, the regional outreach work). We note that in five categories, Energy Trust satisfaction is higher than CSG satisfaction: regional outreach, customer engagement, energy saver kits, and the "main Program" (single family and major measures list).
- The largest disparities between Energy Trust and CSG rankings are in the regional outreach strategy, Trade Ally Network, major measures list, and Energy Saver Kits.

Figure 4.3: Staff Satisfaction with Program *(Satisfaction ranked on a scale of 1 to 7, where 1 was very dissatisfied and 7 was very satisfied)*

Respondent Group	Regional Outreach Strategy	Customer Engagement Initiative	Energy Savvy	Savings Within Reach	Trade Ally Network / Rating	Energy Saver Kits	Major measures list	Single Family Initiative	Manf. Homes Initiative
Energy Trust	5.8	5.5	5.0	5.5	4.8	6.8	6.3	5.5	6.0
CSG-HQ	4.3	5.2	5.1	6.5	5.9	5.4	5.1	5.3	6.8
CSG-Region	5.6	5.0	6.0	5.0	6.3	6.5	7.0	6.0	5.8
Total	4.9	5.2	5.2	6.1	5.9	5.8	5.8	5.4	6.4

The majority thought implementation of the Program is going, and has gone, well. They noted the Program had met timelines, despite the complexity of the Program and the dynamics of head counts. The senior team reportedly works well together, and some of the staff changes were perceived well. Marketing has improved, according to some, although there were bumps associated with software changes. The Program had to respond to shifting priorities at Energy Trust (utility clients, Oregon Public Utility Commission (OPUC) influence), and imperfect communication (within CSG, between CSG and Energy Trust, and within Energy Trust), but the move of Energy Trust offices (closer to CSG) was perceived positively. Some credited the use of and partnering with the "right market actors, industry, and non-profit businesses" with enhancing the Program.

Direct and Indirect Impacts, Attribution, and Cost-Effectiveness

Direct savings are tracked monthly, and annually the Program has met or exceeded goals according to respondents. Many suggested important effects the Program has brought to the market beyond kWh and therms, including:

- Brought Building Performance Institute (BPI) to the region for training, and now others are also offering training
- New equipment piloted, tested, explored, or researched (including heat pump water heaters, ductless heat pumps, etc.); introduction of Home Performance with Energy Star
- Worked to help manufacturers and retailers know demand for more efficient products; led to changes in manufacturer and distributor stocking practices, upstream effects
- Changed practices by trade allies
- Market transformation achieved on gas furnace market

- Influence on existing codes and standards
- Education, awareness (contractors and household), and contractor training
- Awareness of non-energy benefits including improved comfort, health etc.
- Partnerships and alignments (CEE, community programs, and others)
- Jobs and economic development of local economy
- Helped entrepreneurship and marketing by trade allies

Market Overlap and Confusion: The market is a little confusing, potentially for target residents and for the Program. CEWO (funded by ARRA) was called an "interesting" partner, one that causes some confusion (residents reportedly ask "aren't you doing the same thing?"). Since both programs use the CSG call center, others reported no true competition. CEWO was perceived to be an aid, helping finance deeper retrofits, but others noted it drove up costs. Other programs on customer radar include Pacific Power's Be Watt Smart, and rural development programs. State incentives and low income funding sources were cited as potential leveraging sources, not conflicting models.

Cost-Effectiveness: All the respondents stated that the Program was cost-effective. Some relied on the measured benefit-cost ratio exceeding one and meeting Energy Trust goals; others noted that the score would be even higher if the program's other effects were incorporated. These effects included stimulating interest and entrepreneurship in other regional and market entities, green jobs development, cultivating a contractor base (including in rural areas), increased awareness, and other effects. Several suggestions that might improve cost-effectiveness were provided, including:

- Use CEWO to lead people into the Program more effectively
- Expand Savings Within Reach
- Enhance the Energy Savvy tool and provide a better interface for contractors and consumers
- Continue to work on administrative and process efficiencies (examples included the automation of incentive processing that was planned)
- Work with the market more to provide training (and outreach)
- Move more marketing to contractors
- Research on more non-energy benefits[12], which could make more measures pass the cost-effectiveness test (and potentially improve the cost-effectiveness of the Program at the same time)[13]
- Expand offerings for gas customers

[12] Non-Energy Benefits (NEBs) are the (positive and negative) effects, beyond energy savings, that result because of the Program. Examples of NEBs to participants might be comfort, lower maintenance, etc. Societal NEBs include job creation, greenhouse gas emissions reductions, and other effects. NEBs accruing to utilities might be improved system reliability, lower line loss, peak shaving, etc.

[13] We did not drill down with staff for specifics on this point. However, as an example, there has been extensive debate in other states about modifying various tests (especially the total resource test) to better represent total resource impacts, adding greater recognition of environmental and economic impacts, and perhaps household effects (among other elements), to the equation.

Figure 4.4: Staff Satisfaction with Success of Program at Achieving Various Goals *(Satisfaction ranked on a scale of 1 to 7)*

Staff / imple-menter group	Changing market practices	Reducing customer barriers	Affecting the equipment decision to select EE	Reaching/ transfor-ming market sectors	Level of savings achieved	Expan-ding the potential for savings	Augmenting the num-ber of points in the process at which EE can be / is discussed	Groups for which savings achieved	Measures or mix of measures forming the basis for the savings achieved
Energy Trust	5.5	5.5	5.5	6.0	6.5	6.8	6.5	6.0	6.5
CSG-HQ	6.1	5.2	5.1	5.6	6.3	6.3	5.8	5.7	5.8
CSG-Regions	4.7	5.3	5.0	5.3	5.5	5.7	5.5	5.7	4.5
Total	5.7	5.3	5.1	5.6	6.2	6.2	5.8	5.7	5.7

Feedback on Specific Program Elements and Initiatives

We requested feedback on how well a number of Program elements and initiatives were proceeding. These results are summarized in the following section.

Tracking System and Reports: The existence of multiple tracking systems (that do not communicate well) remains an issue. Different systems for tracking service delivery, for budget and savings, and customer relationship management hurts efficiency. However, most of the respondents didn't deal directly with these systems, and many said they didn't even use the reports; others "used them all the time". Those that used specific products seemed satisfied that they produced the reports they needed, but had perceptions that the "other" systems were not user friendly. The lack of a comprehensive dashboard and forecasting facility was noted by one respondent.

Regional Outreach: We interviewed staff from the Metro area, as well as a number of the regional representatives. Progress is being made, but the non-Metro regions still have a way to go, and described a number of the challenges they are facing. Initially, there was little name recognition for Energy Trust in the non-Portland Metro regions. Metro-area staff interviewees suggested that the regional outreach approach was working well (with variations by region and type of outreach), indicated by Residential Awareness Survey scores showing increasing awareness of Energy Trust in outlying areas over the last several years, and a few believe that regional outreach and awareness is mushrooming. Staff noted the regional approach was trying to make Energy Trust "feel present", but that they need to gauge how well the investment is working. Explicit goals (sub metrics) were mentioned as a way to help improve accountability for the regions.

At the local level, the growth in awareness in the outlying regions has come through a variety of outreach methods, including events, presentations to large and small groups, farmer's markets, and a great deal of on-the-ground networking. The regional staff there still has a lot of ground to cover

regarding awareness; regional representation is a key to improvement. The regional representatives made four important comments:

- They feel "out of the loop" due to being distant from headquarters, and because they lack access to the numbers to understand their progress. They don't feel they know if their efforts are cost-effective.
- They feel there is a very big difference between the rural and urban parts of the state that may not be sufficiently recognized, both in terms of communication and networking (events are reportedly hard to find), and in terms of the number and skill-level of contractors. The markets are different. The regional contacts said there are not enough (skilled) contractors in the regions (or not enough contractors at all), and there are too few jobs to allow the contractors that exist to qualify for the star ratings, because the criteria are set based on the quantity of jobs in more urban areas.
- There is a lack of familiarity with Energy Trust, but also a lack of understanding of the Program. They find themselves answering very basic questions about the Program. The "green-ness" of the regions is reportedly quite different.
- Some suggested that progress might be accelerated by taking a partnering approach in the regions[14]; however, they agreed that their regional positions were important to continued progress in the regions, due to the momentum they have established, and the connections they have made.

Energy Savvy: This offering, a web-based self-administered audit tool, was considered to be off to a good start, but work is proceeding to improve it, and make it more strategic. To that end, it has added features to better serve and engage residences. This front-end piece is designed to engage customers by providing access to basic audit-type information based on user inputs, bypassing the cost and labor associated with an in-house audit, providing fast turnaround information, and improving cost-effectiveness. The respondents said it was too early to tell how well it was working, as it has experienced several refinements.

Customer Engagement: This initiative, funneling customer calls into the best services, provides advantages including one stop shopping for customers, ability to direct customers into the appropriate offering depending on their situation, and facilitating follow-up. Some thought it was doing well, but others remarked it began slowly, and there was a suggestion to include more detail in the monthly reports to better track conversion rates. A change to a new segmentation scheme and enhanced follow-up protocols this year is expected to lead to better customer management on high potential customers, improved interest, more "sticking and touches" with households, and better performance tracking.

Customer outreach and targeting: Many were aware that the "target right now is 30-60 year old female homeowners". A long list of the different types of outreach was provided. The main comments on outreach were that they were not targeting rental or mobile homes sufficiently, and that the regions need special treatment. Outreach is thought to spread the word effectively, and create a positive impression in the market. There have been a few instances of misinformation, and a few suggested

[14] No specific suggestions were provided. Consultants list perhaps partnering with local entities like faith-based organizations, potentially communities, chambers of commerce, etc.

the outreach could be “snazzier” or more engaging, particularly to more actively engage people at booths and events.

Who participates (or should): Participation was characterized by staff interviewees as high and runs the gamut of demographic strata. Respondents generally felt the Program’s participation has been trending in the right direction. The focus has expanded beyond the target 30-60 year old female homeowners to include multi-family and triplex units, mobile homes, renters eligible for kits and other refinements. However, some argued that too many, and too many types, of participants make it more problematic for the Trade Ally Network and messaging. Another respondent suggested the Program was reaching the right people, but could be more strategic and innovative in the outreach.

When asked about growth potential and omitted targets, several suggested targeting low income (although Energy Trust’s mandate doesn’t allow it to specifically address this sector), and others suggested better distribution and expansion in non-Metro areas as well as the Metro region. One described the Program and its outreach as trying to get people off the fence on energy efficiency decisions, and another thought the Program was reaching a fairly diverse set of participants, but especially those with jobs and income.

Manufactured Housing: Generally, staff thought the manufactured homes track was valuable, but expected it to saturate the market in 4-5 years (especially in mobile home parks), and then it would scale down to a more minimal, scattered version. They did mention, however, that a version of the track could go back to retrofitted mobile homes and offer wall and ceiling insulation, mechanical ventilation, solar water heating, and potentially solar neighborhoods or PV in areas outside of Metro that are suited. That initiative should end when there are few mobile homes left to address.

Savings within Reach: This track is performing well for a two-year-old offering, and the preapproved contractor outreach model is working. Making contractors responsible for marketing is helpful because Energy Trust doesn’t want to flood a neighborhood with many flyers, and the contractors know how to target. Adding financing will make the program more relevant, and attractive.

Contractor and Trade Ally Issues

The Program carries out a great deal of communication with the contractors, including workshops, round tables, email, the “Insider”, events and other approaches. Staff mentioned that the Program provides useful leads to contractors, but the contractors do not always capitalize on that. Leads sometimes bog down, and contractors vary on their efficiency and uptake.

Interviewees mentioned that the star rating system for trade allies can be and has been helpful in distinguishing higher performance contractors and helping manage resources, but some felt the bar could be raised more. Homeowners understand the star ratings, the quality assurance (QA) system and oversight. The strengths of the star rating system are that the trade allies bring in a great deal of savings, and perform well. The interviewees said feedback from the trade allies on the star rating system was mixed. Some like it and others consider it a barrier. Filling out trade ally application forms (although they are only required every three years) can be a time investment. The threshold of

completing 15 projects can be a barrier to small firms or those operating in the non-Metro areas of the state (although the 15 projects threshold applies to firms hoping for a three-star rating). Although the interviewees said trade allies were initially skeptical about the system, they seem more positive 6-9 months later. Many seem to have forgotten about the star rating system, or only remember when they see a slowdown if their firm got down-ranked with fewer stars.

The Existing Homes Program created awareness and participation, providing a positive impact on contractors (at least anecdotally). The specifications and requirements of the weatherization work required increased knowledge levels, adherence to standard practices, and QC checking on the work. A few suggestions were provided for how Energy Trust could enhance relationships with the trade allies to increase energy savings, including: improving links with distributors, bringing in industry experts for training, quarterly round tables, help with "next" technologies, more partnering with trade associations on best practices workshops, and peer-to-peer strategies.

Perceived Customer Satisfaction, Barriers, Changes, and Next Steps

Perceptions of Participant Satisfaction and Suggestions for Improvement: Participant satisfaction is tracked, monitored, and explored regularly. The scores are routinely high (90% or more satisfied, said the respondents). Few customers report being dissatisfied or disappointed. The staff said that customers generally seem to appreciate that in a bad economy, Energy Trust can help them move forward (and with incentives). Some dissatisfaction comes from specific incidents of mis-information, individuals that needed more specific engagement, or broken inventory in the Energy Saver Kit. Staff reported that some participants in outlying regions were less satisfied than Metro area participants.

Staff perceived the level of interaction with customers to be "about right", or "headed in the right direction". The phone work through customer engagement was cited as very important by some, and they called it important "triage" that helps make sure staff doesn't have to spend too much time in homes, hurting cost-effectiveness. There has been a lot of streamlining, including the use of the 15 minute phone- HER. However, there is a fear that if a phone or in-person contact is not made, the chance to help turn the contact into a conversion is lost. Tailoring to come up with the right balance for flexible engagement was suggested as a priority, but the customer engagement initiative was mostly considered a move in the right direction.

Whether Program Has Reduced Barriers for Customers: Staff responded that the Program reduces some, but not all, of the barriers. When customers are ready and willing to make improvements in their home, the Program helps, and is attractive in the marketplace. The Program clearly and directly addresses the barriers of awareness and cost. The interviewees also noted that Energy Trust works on continuous innovation in the Program, trying to keep participation robust – especially in the Metro area. Others pointed out the message was not as diversified as it could be, and the message isn't as clear in the outlying regions.

Remaining Programmatic and Market Barriers: When asked to identify additional or remaining barriers, respondents discussed an array of topics.

- Financing, costs, economics, and budgets remain barriers. The economy is tough, products are expensive, household are less comfortable investing in measures, and financing options may be needed to continue to move the market. This may be further exacerbated if threatened legislation in 2012 reduces some of the existing tax credits
- Special marketing may be required to increase household comfort with investing in energy efficiency in this economy
- The suggestion for three bids can be a market barrier, considering time and hassle (everywhere), and the lack of qualified contractors in some regions
- Incomplete or biased information (and effective product marketing) in the market still seems to skew households to thinking about windows or other lower priority measures. The Program has the potential to improve basic energy efficiency education and start energy education young to provide a more informed customer base in the long run
- Past experience, and the lack of a relationship with Energy Trust has posed some degree of barrier in capitalizing on potential partnerships with Avista Gas or small PUDs in the region, which might provide additional opportunities. More partnering with more players in the market (including in the training area) may be in the best interest of customers
- Remaining lack of clarity and awareness about Energy Trust and its relationship to the utilities
- Focus on measures may not have fully capitalized on the potential for no-cost behavior savings

Improving Participation: Several suggestions were provided on methods to improve participation. These include:

- Further expanding contacts and referrals by working with faith-based and other organizations, empowering trade allies and other key actors, and working with utilities, as uptake is highest from utility inserts and email blasts
- Continuing expansion in remote regions, where penetration is lower than in the Metro area
- Continuing to streamline forms, developing a universal web form for all measures, and improving customer service representative software for smoother intake, processing, and monitoring

Important Program Contributions and Element to Date: We asked about Program contributions or design elements to be retained as the Program moves forward. The responses covered several areas:

- The Program's innovations, initiatives, and pilots that try to respond to the marketplace
- The Program's engagement with consumers on energy efficiency, and the assistance for homeowners that helps bring them greater comfort
- The Program's history of increasing awareness about energy efficiency, the associated marketing and incentives, and retention of the Program's momentum
- The cash incentives to customers, and the high savings that result from the Program
- The Program's access for moderate income households, and the assistance the Program provides to the residential sector to leverage other funding sources (public and utility sources)
- The cultivation of the Trade Ally Network, and contractor marketing efforts
- Energy saver kits that provide a high proportion of Program savings

Non-Energy Benefits: The interviews were lengthy, and a little less than half the staff interviewed ultimately completed a set of questions about non-energy benefits customer receive from the program. All agreed participating customers benefitted in ways beyond energy savings, and that, on a scoring range of -1.67 to 1.67 (where 1 means the value was equal to energy savings), the staff ranked NEBs as a 1.47, indicating the value of these factors was greater than the value of the energy savings received. When asked the percentage of energy savings that NEBs represented, they replied, on average, 115%. More than half the perceived NEB impact was represented by five factors, including improved comfort, greater satisfaction with the home, perceived ability to sell the home, extended lifetime of equipment, and enhancements to the greater environment.

Continuing need for the program and market exit indicators: Most of the interviewees saw a continuing need for the Program. The point at which the Program should exit the market was variously described as "when all homes are retrofitted", when the Program had made every Oregon home as energy efficient as it could possibly be, when the homes are healthy, safe, and comfortable; when a majority of homes are retrofitted and far more efficient; when the market is transformed and no new technologies are available; when the household's energy bill is as low as possible given the house they are in; or when there is "deep market penetration" - about 50% of the resource potential is achieved and most segments are currently in the single digits. Respondents noted there are significant numbers of measures that are cost-effective and available through the Program.

Other respondents suggested that it would take at least another "generation" (20-30 years) to bring existing stock up to par (with 70%+ of the homes built before World War II with no insulation, old oil furnaces, etc.), and to integrate improved practices (and codes and standards incorporating health and safety and building science) into the market. Legislated energy scores could help drive the market, and if the next generation is taught about greenhouse gases in schools and become homebuyers, and existing contractors with old practices retire, the market moves further, reducing the need for additional Program interventions. This reflects a market transformation-based target, further reflected by a situation in which the majority of homes are retrofitted and far more efficient; the market is transformed, and no new technologies are available, an unlikely situation.

Others characterized the exit point as a closer point in time. A cost barrier to some equipment always remains, a certain steady rate of participation in energy efficiency -- and outreach and education -- occurs, driven by contractors and local governments. Programs or initiatives provide ways to finance appropriate, affordable weatherization (or equipment), and technical training is diffused into the market, though local government, and community colleges. This scenario was envisioned as perhaps 10 years out. Looking back from a 2030 timeframe would provide an interesting perspective, according to the interviewee.

Other respondents suggested that the indicators for market exit might include:

- When the free ridership (for example, on furnaces) is high (indicating market transformation)
- When the economy improves and projects go forth without as much help
- When 90% of Oregon and SW Washington homes are weatherized to code
- When state or national level picks up any program initiatives that are still needed

Program Evolution and Lasting Steps: All the interviewees felt if the Program ceased to exist, it would have a lasting legacy, mostly consisting of the retrofits and savings already installed (which would last their lifetimes, along with the associated health and safety effects), and increased awareness of energy efficiency (and its potential value), which they thought would last one or two years. The seeds for energy efficiency in homes are there, and a number of homes will be able to afford the retrofit. They believed the positive trajectory of interest in energy efficiency would then decline, although it might be picked up by other organizations, and that a subset of the most effective contractors might stay in business. Overall, they thought the discontinuation of the Program at this time would hurt Oregon's standing in the country.

The Program has provided some legacy impacts, including: improvements in best practices by entrepreneurial contractor groups and a market that has embraced some measures that might not have moved forward (higher R-value insulation). Improved staff education was also viewed as a lasting impact.

Next Steps Planned, Recommended Changes, and "Change Process": Staff provided information about some of the next steps planned for refinements in the Program's evolution, including:

- Scope for 2012 included new products, like the Regional Technical Forum's recommendation for prescriptive air sealing of attics and ducts, heat pump water heaters, cold water detergent, and new applications and sales channels for ductless heat pumps
- Expand Program initiatives including: Energy Savvy; customer engagement; trade ally direct install initiatives in new and mobile homes; working with the trade allies to improve the cost-effectiveness of Home Performance; addressing financing for Savings Within Reach; "Build your own Kit" (and increasing the realization rate for kits); moving EPS, the energy performance score, into the existing homes market; introducing financing products (CEWO model to moderate income homes); and improving coordination between CEWO and Existing Homes (now separate contracts, but same staff).
- Expand or enhance the Program in the following ways:
    - Expand to renters, focus on seniors, remodeling market.
    - Link with/ leverage through more community groups and community leaders, especially in the non-Metro areas (including Hispanic groups and more Spanish-language collateral in these regions),
- Provide more attention to behavioral components (i.e. Opower pilot).
- Focus on capitalizing on "touches" with the clients, trying to move them toward closure and conversion.
- Continue (annual) cost-effective refinements in the Program, and continue to review specific cost-effectiveness, satisfaction, and field performance information to inform revisions. Consider increasing the QA/QC percentages above 10-15%.
- Revisit the trade ally star rating system to be sure it makes sense for contractors in rural areas where there are fewer jobs.
- Work toward making universal web-based forms, and potentially go paperless.
- One additional change recommended by an interviewee was to refine the HER to provide a more comprehensive product that very clearly identifies what saves the most energy.

The steps needed to achieve Program changes involve: clear communication and coordination with the Energy Trust on what is to be achieved (with mid-point check-ins), having sufficient resources, approval process for changes, and a 3-6 month timeframe to prepare the market and the contractors for Program modifications.

4.3: Summary

Although all staff "bought into" the kWh and therm goals, there were a variety of other opinions on goals, including goals related to savings, infrastructure development, market transformation, stakeholder relationship development and leveraging, awareness of Energy Trust, and job creation. Strengths of the Program related to its marketing and outreach; technical capabilities and strong leadership in testing, piloting and vetting new technologies; concierge model; contractor and Trade Ally Network; and initiatives tailored to subgroups and service. The weaknesses related to a desire by some interviewees to see greater outreach to currently excluded segments (remodeling, gas measures, renters, etc.) and the unused opportunity to link with realtors and other expanded market actors. Communication, mostly internal, was also cited as a weakness. Staff satisfaction with the Program is high, although it ranks a little lower in the outlying regions than in the Metro area. Satisfaction is highest with the Manufactured Homes and Savings within Reach tracks.

Beyond the savings, staff identified a wide range of other impacts they attributed to the Program. Staff perceived the Program to be cost-effective (citing the reporting and tracking) based on the basic impacts, and believed the Program is and more cost effective than many other offerings. They suggested that the "extra" impacts make the Program even more attractive from a benefit/cost standpoint.

Staff's perceptions of customer satisfaction are high. Staff satisfaction with the Program and performance was also high, ranking from 4.5 to 6.8 on a 7 point scale. The scores were lower in outlying regions and highest for Energy Trust staff; lower for equipment, and higher for the Program's potential to deliver savings in the market.

The lowest satisfaction levels seem to come from the regional staff. This initiative is newer, and regional staff is still becoming familiar with the networks and processes in their regions. However, they had four main concerns about the Program: they feel "out of the loop" in terms of performance data, etc; they are not certain that the large differences they see between urban (Metro) and rural (regional) implementation potential and expectations are being appropriately considered in goal-setting and program design; they note that Energy Trust is relatively unknown or unfamiliar in the regions; and that the best way to move forward quickly may be establishing partnerships and leveraging with regional entities. They especially note that the thresholds for establishing star levels for trade allies are unrealistic for regions – there aren't enough jobs for contractors to undertake. They also find there are fewer media outlets, organizations, and "events" and other opportunities for spreading the word about Energy Trust and the Program, making the job challenging, but the potential still quite high.

Staff remain concerned about the best ways to communicate with trade allies, and credit the Program with helping bring up the knowledge level of the contractors in the state. They also suggest that some

of the contractors are doing more marketing, but also note that some of the leads Energy Trust provides are not always uniformly followed up. One change suggested relates to better mapping the degree of paperwork required to the incentive provided. Extensive paperwork for a $50 rebate represents a lot of extra work for contractors and customers.

There are several areas in which staff perceive remaining programmatic and marketplace barriers that they seem to think the Program might address. These include: funding issues (adding financing options, concerns about federal funds being pulled, etc.); suggestions for multiple bids; remaining concerns about awareness, information and misinformation; partnership opportunities; and a lack of understanding about the relationship between Energy Trust and the utilities.

All agree, however, that the Program has brought key elements that should be retained into the future.

5: CHAPTER 5 - PARTICIPANT AND NON-PARTICIPANT SURVEYS

5.1: Methodology and Fielding

Corona Insights conducted a total of 769 phone surveys with Program participants and non-participants. The survey instrument was designed by SERA staff with assistance and guidance from Energy Trust staff. The names and phone numbers for the survey sample was provided to Corona Insights by Energy Trust. Calls were fielded out of the Corona call center between March 1, 2012 and March 29, 2012. SERA staff conducted the survey analysis. Energy Trust staff determined the survey quotas and categories displayed in Figure 5.1. The categories were Home Energy Review participants that had not installed a measure (NP), Savings Within Reach (SWR) participants, Energy Saver Kit recipients (KIT), HER participants who went on to install a measure (HER) and, participants who installed a specific measure without a prior HER (FULL). The FULL participants were further delineated into five sub-categories; insulation, heat pumps (replacement, upgrades, and ductless heat pumps), water heaters (both tank and tankless), air sealing, and duct sealing. In addition to the goals, Figure 5.1 displays the sample size and the number of completed surveys.

Figure 5.1: Survey Goals, Sample Sizes, and Completes[15]

Category	Goal	Sample (From Energy Trust)	Completes
HERs without a measure (NP)	150	8,477	151
Savings Within Reach participants (SWR)	60	452	63
Energy Saver Kits (KIT)	100	43,350	102
HER's who went on to install a measure (HER)	100	1,699	109
Participants who installed a specific measure without a prior HER (FULL)	340	18,489	344
Total Goal	*750*	*Total Complete*	*769*
FULL Participant sub-categories include:			
Insulation (ceiling, floor, wall, duct)	*100*	*7,744*	*177*
Heat pumps (replacement, upgrade and DHPs)	*60*	*2,984*	*74*
Water heaters (tank and tankless)	*60*	*3,539*	*78*
Air sealing	*60*	*2,159*	*75*
Duct sealing	*60*	*2,063*	*91*

[15] The FULL participant completes was 344, but the FULL subgroups add to 495 because respondents could fall into more than one measure category based on the scope of their project

Weighting

In order to correct for Energy Trust's artificial quotas enforced in the survey, responses were weighted by type based on the distribution of potential respondent types from the lists provided by Energy Trust. The "weighted average" column in the results section displays the weighting. The weighting has no impact whatsoever on any of the tabulations by respondent type. The following table summarizes the weights used:

Figure 5.2: Percentages for Calculating the "Weighted Average"

	Completed Surveys		Available Sample		
Respondent Type	Count	%	Count	%	Weight
FULL	344	45%	13,152	20%	.45155
SWR	63	8%	452	1%	0.08474
HER	109	14%	1,660	3%	0.17987
KIT	102	13%	41,370	64%	3.79024
NP	151	20%	8,477	13%	0.66304

5.2: Program Awareness

The first section of the survey sought to understand the respondent's awareness and understanding of Energy Trust and to learn more about the marketing channels. All of the 769 respondents had definitely heard of Energy Trust and there were a variety of sources from which they received that information. Over one third of the respondents had heard about it through a utility (36% weighted average) and over one-fifth of the respondents through mass media (22% weighted average). Word of mouth (13%) and through a contractor or retailer (14%) were also common mechanisms by which respondents heard of the Program. Among FULL and SWR participants, a plurality of the respondents reported that they had become aware of the Program offerings through a contractor or retailer (29% and 22% respectively). The KIT and HER groups were most likely to hear of Energy Trust through their utility. Over two-fifths (42%) of the KIT group and 31% of the HER group reported that they had heard of Energy Trust through their utility. The only group for which online searches, web links, or the regional Energy Trust representative was reported to be a popular conduit of awareness was the SWR participants (8% for SWR compared to 2% or less for all other groups). Some of the other responses included; church, Habitat for Humanity, another environmental non-profit organization, hardware store, housing inspector, and their jobs. Figure 5.3 displays the distribution of responses to marketing channels.

When asked an open-ended question about what they believe it is that Energy Trust does, the majority of respondents (59% weighted average) thought that *Energy Trust educates people about energy efficiency* and about a third (30%) of the respondents thought that *Energy Trust provides rebates for doing energy efficiency*. The distribution of responses can be seen in figure 5.4.

All of the respondents recalled receiving some type of service from Energy Trust and almost all (98%) were aware that there are rebates, incentives and tax credits available for home measures. The majority of respondents (69%) *strongly* agreed and 21% *somewhat* agreed with the statement that "Energy Trust is a credible information source for Oregon residents about energy efficiency and renewable energy." Only 1% disagreed with the statement.

State law established the System Benefit Charge, and the OPUC established the non-profit Energy Trust of Oregon to administer that fund., Given that genesis for the Energy Trust, it is understandable that there are various responses with regard to Energy Trust's organizational status. However, 47% (weighted average) of the total interviewed did believe Energy Trust to be a non-profit and only 25% answered that Energy Trust is a government agency. A total of 11% of the respondents believed that Energy Trust was a utility. Figure 5.5 displays the responses.

Note that in this chapter, we highlight the most common responses in each column to ease the interpretation of the tables.

Figure 5.3: Marketing / Awareness Channels

	Respondent Type						FULL Types				
	Weighted Avg.	FULL	SWR	HER	KIT	NP	Heat Pump	Water Heater	Air Sealing	Duct Sealing	Insulation
First hand/I used one of their programs or their website, etc.	8%	8%	10%	6%	8%	9%	8%	6%	4%	12%	6%
Word of mouth	13%	14%	19%	19%	11%	20%	9%	13%	15%	19%	16%
Contractor or retailer	14%	29%	22%	8%	11%	9%	41%	24%	23%	24%	28%
Energy Trust	4%	8%	6%	3%	3%	5%	9%	8%	15%	8%	7%
Utility	36%	24%	17%	31%	42%	25%	20%	32%	29%	24%	23%
Mass media	22%	19%	14%	28%	22%	30%	5%	22%	20%	14%	23%
Event	2%	2%	3%	4%	1%	5%	1%	1%	5%	3%	1%
Online search, web links	2%	3%	-	5%	2%	4%	4%	1%	1%	1%	2%
Regional Energy Trust representative	1%	1%	8%	2%	1%	1%	1%	-	1%	1%	1%
City/county	1%	0%	-	-	2%	1%	-	-	1%	-	1%
Do not recall/don't know	-	-	-	-	-	-	-	-	-	-	-
I didn't hear of them	-	-	-	-	-	-	-	-	-	-	-
Other	8%	3%	6%	4%	11%	3%	3%	3%	1%	3%	3%

Figure 5.4: Responses to "What does Energy Trust do?"

	Respondent Type						FULL Types				
	Weighted Avg.	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Educates people about energy efficiency	59%	56%	41%	59%	59%	68%	55%	60%	52%	59%	54%
Provides rebates for doing energy efficiency	30%	47%	38%	33%	26%	23%	46%	54%	51%	44%	46%
Offers audits on homes or businesses	17%	14%	17%	24%	15%	28%	16%	8%	19%	18%	15%
Works with the utilities	4%	8%	5%	4%	3%	6%	7%	4%	16%	14%	10%
Provides my electric and/or gas service	2%	1%	-	-	2%	1%	1%	3%	-	-	1%
Other	18%	10%	17%	12%	23%	11%	12%	8%	9%	9%	11%

Figure 5.5: Belief Regarding Energy Trust Organization

		Respondent Type					FULL Types				
	Weighted Avg.	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Government agency	25%	33%	49%	21%	24%	23%	45%	22%	31%	30%	35%
Non-profit	47%	44%	25%	58%	46%	56%	28%	59%	44%	40%	46%
Utility	11%	8%	6%	9%	13%	10%	9%	8%	7%	7%	6%
Other private business	4%	6%	8%	3%	3%	5%	8%	6%	9%	11%	5%
Don't know	12%	8%	11%	9%	15%	6%	9%	5%	9%	13%	8%

5.3: Decision-Making Process

The respondents were asked a series of questions on the services they received, the improvements chosen, and why they chose to move forward with the selected energy upgrades. In addition, the respondents were also asked to identify any issues or concerns with the Program.

Services Received

There is significant overlap among the participant categories. All of the KIT respondents reported that they recalled receiving an Energy Saver Kit (ESK) and 96% of the HER participants recalled receiving the ESK, although they may be confusing the kit with the CFLs, aerators and showerheads installed during their HER. Less than half of the FULL and SWR respondents reported receiving a kit. When asked whether or not they recalled receiving a Home Energy Review, 100% of the HER group recalled the review, 17% of the KIT participants, 39% of the FULL participants, and 62% of the SWR participants reported having a Home Energy Review.[16] Finally, when asked whether or not they recalled receiving an incentive for energy upgrades, 100% of the FULL participants recalled receiving an incentive, 82% of the HER respondents reported receiving an incentive, and 63% and 22% of the SWR and KIT respondents, respectively, reported receiving an incentive. The full distribution of responses can be seen in Figure 5.6 below.

Figure 5.6: Services Received / Recalled

	Respondent Type						FULL Types				
An Energy Saver Kit that contains light bulbs, a shower head, or faucet aerator											
	Weighted Avg.	FULL (N=344)	SWR (N=63)	HER (N=109)	KIT (N=102)	NP (N=151)	Heat Pump (N=74)	Water Heaters (N=78)	Air Sealing (N=75)	Duct Sealing (N=91)	Insulation (N=177)
Yes	86%	44%	46%	94%	100%	87%	36%	44%	49%	49%	47%
No	13%	53%	54%	6%	-	11%	61%	53%	48%	47%	50%
Don't know	1%	3%	-	1%	-	2%	3%	4%	3%	3%	3%
A home energy review (HER) or an "audit" from Energy Trust…											
Yes	34%	39%	62%	100%	17%	96%	35%	21%	60%	54%	49%
No	60%	56%	29%	-	75%	3%	58%	77%	33%	42%	45%
Don't know	6%	5%	10%	-	8%	1%	7%	3%	7%	4%	6%
An incentive for an energy efficient home improvement from Energy Trust…											
Yes	40%	100%	63%	82%	22%	28%	100%	100%	100%	100%	100%
No	53%	-	32%	12%	69%	66%	-	-	-	-	-
Don't know	7%	-	5%	6%	10%	6%	-	-	-	-	-

[16] Some respondents are incorrectly recalling having an HER.

Home Energy Review Improvements – Installed and Recommended

The HER and Non-Participant respondents were next asked to report what types of home improvements were installed in their homes and what the Home Energy Review recommended they install. The most common installation among the HER category was insulation (53%) followed by windows (34%) and heating equipment (34%). There was a notable discrepancy between the recommended measures and those that were actually installed. Heating equipment was installed more often than recommended and insulation and sealing air or duct leaks slightly less often than recommended.

The distribution of responses can be seen in Figure 5.7 below.

Figure 5.7: Improvements: Installed and Recommended

Which types of improvements were installed in your home?

	HER (n=89)	NP (n=42)
Heating equipment	34%	26%
Water heater	17%	7%
Insulation	53%	31%
Sealing air or duct leaks	17%	7%
Solar electric or solar hot water system	6%	10%
Windows	34%	21%
Other	18%	48%
Don't remember	1%	2%

Which types of services or improvements did the Home Energy Review recommend?

	HER (n=109)	NP (n=145)
Heating equipment	20%	12%
Water heater	6%	12%
Insulation	60%	50%
Sealing air or duct leaks	25%	18%
Solar electric or solar hot water system	2%	2%
Windows	28%	21%
Other	21%	27%
Don't remember	7%	10%

Non-Participant Progress

Between a quarter and a half of the non-participants considering various energy efficiency measures reported that they were moving forward with the improvements. Those that were least likely to move ahead were the respondents considering water heaters, heating equipment, insulation, or solar electric or hot water measures. The responses were varied as to whether or not they would choose a

contractor or “do it yourself” (DIY). Of the potential measures, sealing air or duct leaks was the most likely to be a DIY project and solar was the least common. About half of the respondents were considering installing the measures in the next year. The responses are displayed in Figure 5.8.

Figure 5.8: Non-Participant Progress

Have you begun to make any of these improvements?			*Have you begun these yourself or used a contractor?*			*Are you considering installing any of these measures in the next year?*			
Measure	Yes	No	Measure	DIY	Contractor	Measure	Yes	No	Not Sure
Heating equipment (n=18)	33%	67%	Heating (n=6)	33%	67%	Heating (n=12)	25%	58%	17%
Water heater (n=17)	24%	76%	Water (n=4)	25%	75%	Water (n=13)	38%	62%	0%
Insulation (n=73)	33%	67%	Insulation (n=24)	46%	54%	Insulation (n=49)	59%	35%	6%
Sealing air or duct leaks(n=76)	42%	58%	Sealing (n=11)	82%	18%	Sealing (n=15)	40%	40%	20%
Solar electric or hot water (n=3)	33%	67%	Solar (n=1)	0%	100%	Solar (n=2)	50%	50%	0%
Windows (n=20)	53%	47%	Window (n=16)	38%	62%	Window (n=14)	43%	36%	21%
Other (n=39)	54%	46%	Other (n=21)	81%	19%	Other (n=18)	39%	50%	11%

The Energy Saver Kit

The KIT group was asked to report on what measures they recalled from the kit. Overall, the two most recalled energy saving measures included in the kits were the CFL (88% recalled) and the low-flow shower head (86% recalled). Only 56% remembered receiving the faucet aerator for the kitchen and 29% remembered receiving the bath aerators. When asked to report how many CFLs they recalled receiving the majority (57%) reported they recalled receiving 3-4 CFLs. Only 6% of KIT respondents recalled receiving more than 4 CFLs.

Installed, Removed, Failed Measures

The KIT respondents who recalled receiving various measures were asked to report on whether or not they installed the measure and if so, did they remove the measure at a later date or did the measure end up failing. The vast majority of respondents, 94%, reported that they installed CFLs compared to only 55% that recalled installing a shower head. The showerhead was the measure most often removed (13% reported they had removed it) compared to the bath faucet aerator (no one reported they had removed it). The CFLs were the measure most likely to have failed (12% reported it failed). Figure 5.9 displays the percentage of respondents who reported that installed various measures, that they removed the measures, or that the measures failed. Representative examples of the responses as to”why” the installed measures were removed by the participant are included below:

CFL:

- Light quality (most common): *I did not like the light quality and I replaced it with a regular bulb*
- Failure: *It started smoking within minutes of being installed*

- Performance: *Takes too long for the bulbs to brighten*
- Other: *I removed one light bulb because it was making my radio have static when I turned on the light*

Shower Heads:

- Performance (most common): *I did not like that there was not enough water flow due to the water restricting feature*
- Replacement: *I put in a hand held shower head instead*
- Remodel: *We are having our bathroom remodeled and the showerhead was removed due to the fact that it did not match the decor*
- Other: *It did not work along with my on demand water heater*

Aerators (both kitchen and bath):

- Replacement / remodel (most common): *I replaced the whole sink including the faucet*
- Performance: *I didn't like the way the water came out*

Figure 5.9: Installed, Removed, and Failed Measures *(KIT participants only)*

	Installed			*Removed*			*Stopped Working*	
Measure	Yes	No		Yes	No		Yes	No
CFL (n=90)	94%	6%	CFL (n=85)	6%	94%	CFL (n=85)	12%	88%
Showerhead (n=88)	55%	45%	Showerhead (n=48)	13%	87%	Showerhead (n=48)	2%	98%
Faucet Aerator (kitchen) (n=57)	67%	33%	Faucet Aerator (kitchen) (n=38)	8%	92%	Faucet Aerator (kitchen) (n=38)	5%	95%
Faucet Aerator (bath) (n=30)	70%	30%	Faucet Aerator (bath) (n=21)	0%	100%	Faucet Aerator (bath) (n=21)	0%	100%

Additional Measures for KIT Participants

Only the KIT participants were asked to report whether or not they were considering making any other efficiency related changes in their home. Slightly over two-thirds of the respondents (68%) reported that they were not considering installing any other measures. Among the 32% of respondents that said they were considering other measures the most popular measure was windows (14%) followed by insulation (9%) and a water heater (4%). Heating systems and air sealing or duct sealing were not popular considerations.

Energy Improvement Drivers

The most common driver reported by the respondents overall and for each of the subgroups was *high energy bills* and the desire to *save on their energy bills*. The participants without an HER were likely to also report that remodels or home additions caused them to look at energy efficiency upgrades (15%) and this was most apparent for the heat pump and water heater subgroups (18% of respondents for both). The SWR and HER participants reported that in addition to the desire to save money on their

energy bills, hot and cold spots and comfort were common drivers for energy efficiency upgrades (17% and 11% of respondents respectively). Only 4% of the respondents reported that outreach materials from Energy Trust made them consider looking into changes and the same percentage, 4%, reported that information from the utility led them to consider making changes. For all of the groups, the "other" non-coded responses were common and between 24% and 30% of the respondents gave open-ended answers. Figure 5.10 displays the distribution of reported drivers. The open-ended answers were analyzed and the responses fell into one of six major categories. The most common response categories were:

- *Replacement / upgrades (most common):* Replacing failed or broken equipment or replacing older equipment with newer upgraded equipment
- *Environment / Green*: Includes conservation, climate change, and other environmental reasons, social responsibility, and personal philosophy
- *Incentives / rebates / tax breaks / free*
- *Recent home purchase*: Respondents who recently purchased a home that needed upgrades
- *Old home*: Those living in older homes
- *Other*: Includes curiosity, health, and noise, among others

Figure 5.10: Drivers for Making Energy Upgrades

	Respondent Type						FULL Types				
	Weighted Avg.	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Hot and cold spots/uncomfortable	7%	13%	17%	11%	5%	7%	11%	6%	15%	13%	14%
High energy bills/save on energy bill	56%	47%	49%	59%	57%	64%	32%	46%	51%	49%	53%
Increase value of the home	1%	3%	2%	2%	1%	-	3%	-	5%	5%	3%
Family was sick too often		-	-	-	-	-	-	-	-	-	-
Someone talked about the Program and the savings	3%	3%	2%	2%	3%	2%	-	1%	5%	4%	4%
Adding on/remodeling	7%	15%	16%	10%	6%	1%	18%	18%	13%	10%	15%
High water bills	3%	1%	2%	1%	4%	3%	-	6%	-	-	-
Kids got flyers from school/suggested	0%	0%	-	-	-	1%	-	-	-	-	1%
Saw an ad/website/web search	1%	2%	2%	1%	1%	-	1%	4%	4%	2%	2%
Communication from utility	4%	1%	-	-	6%	2%	-	3%	1%	2%	1%
Saw information from Energy Trust	4%	4%	3%	6%	3%	6%	4%	5%	3%	2%	3%
Home Energy Review	1%	2%	5%	5%	1%	1%	1%	-	4%	3%	3%
Other	26%	29%	30%	24%	25%	26%	43%	33%	21%	29%	22%

Improvement Timing

The fact that the incentives were available "'now" was reported by 23% of the respondents as the number one reason that they chose to undertake the energy efficiency improvements when they did and not at some other time. This was especially true for the FULL participant group where 33% reported that the incentive availability was the main reason. Issues with the comfort of the home (8% weighted average), remodeling the home (8% weighted average) and the availability of tax credits (6% of weighted average) were other often mentioned responses. However, over half of the respondents gave an open-ended response that could not be coded into one of the 9 listed categories. The open-ended answers were reviewed and several themes emerged. The most common open-ended response was that the respondent had recently purchased or moved into the home. Other very common responses included personal finances, breakdown of existing equipment, and degraded performance of existing equipment. The common themes from the open-ended responses were:

- *Recently moved into the house (most common response)*
- *Equipment failure*: Their current equipment stopped working
- *Equipment performance*: Equipment still works but was not performing optimally
- *Advertising from Energy Trust*: Items mentioned included door to door, pamphlets, advertisements at stores, utility bill ads, and others
- *High Bills / Increased Energy Cost*: reported bills and energy costs were getting higher and they wanted to save money
- *Household budget*: The homeowners had "extra" money in their budget and could afford the upgrade
- *Increased awareness / did not know about it before*
- *Winter / Cold Weather*: Includes those who said the cold weather drove their timing and those who said they wanted to get the improvement done before it got cold

Additional Efficiency Improvements and Achieving Efficiency Goals

The majority of respondents (75% weighted average) reported that the Existing Homes Program did not lead them to undertake additional work beyond what they had originally anticipated. However, 12% reported that participation led to major changes and 13% reported it lead to minor differences. The air sealing respondents were most likely to make additional major changes to their project with nearly one-fifth (19%) of the respondents reporting that they did so. The SWR respondents were least likely to complete additional work with 83% reporting they did not make any additional changes. The respondents that made additional improvements were asked to report what led them to do so. One-third of respondents reported that the Energy Trust incentive freed up their budgets allowing them to

make additional improvements and nearly one-fifth (19%) reported that it was because their contractor strongly recommended undertaking additional improvements.

The distribution of responses can be seen in Figures 5.11 and 5.12.

Figure 5.11: Percent of Respondents Undertaking Additional Work

	Weighted Average	FULL (n=344)	SWR (n=63)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Yes, major changes	12%	12%	2%	12%	10%	19%	15%	15%
Yes, minor differences	13%	13%	16%	15%	15%	13%	18%	12%
No difference	75%	74%	83%	73%	74%	68%	67%	73%

Figure 5.12: Reasons for Undertaking Additional Work

	Weighted Average	FULL (n=88)	SWR (n=11)	Heat Pump (n=20)	Water Heaters (n=20)	Air Sealing (n=24)	Duct Sealing (n=30)	Insulation (n=48)
Energy advisor	16%	16%	18%	15%	10%	25%	17%	21%
Incentive freed up money/could make higher investment	33%	33%	36%	45%	20%	38%	33%	31%
Found problems during the work	17%	17%	27%	10%	25%	17%	13%	19%
Contractor strongly recommended	19%	19%	9%	15%	25%	25%	27%	19%
Other.	32%	32%	18%	25%	40%	33%	37%	31%

Achieving Energy Upgrade Goals

The majority of respondents, 80% overall, reported that the incentive or information from Energy Trust allowed them to accomplish the main changes they wanted to complete in their home. This was most true for the FULL, SWR, and HER participants for which over 90% of the respondents reported that they did accomplish all of their goals. Nearly one-fifth (18%) of the KIT respondents reported that some of their key goals were not met and about one-third (32%) of the NP group reported that some of their key goals were not met. When asked to report what specific goals were not met, the responses were quite varied but once again the open-ended responses were analyzed to uncover themes. The responses that were repeated often fell into two categories – goals and specific measures they wanted installed. The unmet goals and measure installations are shown in Figure 5.13.

Figure 5.13: Goals Not Met and Measures Not Installed

Goals not met	Measures not installed
• *Did not decrease energy use*	• *Insulation*
• *Did not decrease / lower bills*	• *Windows*
• *Save more money*	• *Water heater*
• *Never finished audit*	• *Heating system*
• *Did not find out why my bills were so high*	• *Heat pump*
• *Save water*	• *Add renewable (PV)*
	• *New appliances*

Energy Trust's Role in the Energy Efficiency Upgrade

Around two-thirds (65%) of the FULL and SWR respondents reported that the Energy Trust incentive made it easier to get the energy efficiency upgrade and 32% reported that it did not make a difference. The Air Sealing and Duct Sealing subgroups were most likely to say that the incentive made it easier for them to get the work done (76% of respondents in each sub-category). Among the Water Heater subgroup the responses were nearly evenly split with 51% reporting the incentives made it easier to get the work done and 47% reporting it did not make a difference. Only 1% of the respondents reported that the incentives actually made it *harder* to get the energy efficiency upgrades completed. All of the SWR and FULL participants were asked to tell the interviewer specifically how the Energy Trust incentive made it easier to get the work done. The open-ended responses were sorted into several categories that are included below. The overwhelming reason that the incentive made the project easier to complete was that it reduced the overall cost to the homeowner.

- *Reduced the costs / got money back (most common response):* Respondents who said that they could not afford the measures without rebates, that the rebates helped make the improvements more affordable, or that the rebates made the project fit within the household budget

- *Provided motivation to act:* The literature, outreach, the energy assessment, and the rebates helped motivate households to action

- *The Contractors / Contractor list:* The contractor list made it easier to find a convenient and trusted contractor

- *Provided recommendations on improvements*: The audit helped respondents determine which improvements to make

- *Provided a deadline that kept the project moving forward*: The deadline to receive the incentive helped to keep the project from stalling out

- *Streamlined process / assistance in completing:* Energy Trust provided direct assistance or the program made participation easier than it would have been without the program

- *Made the process more convenient*: Removed barriers to decision making, contractor choice, and scheduling

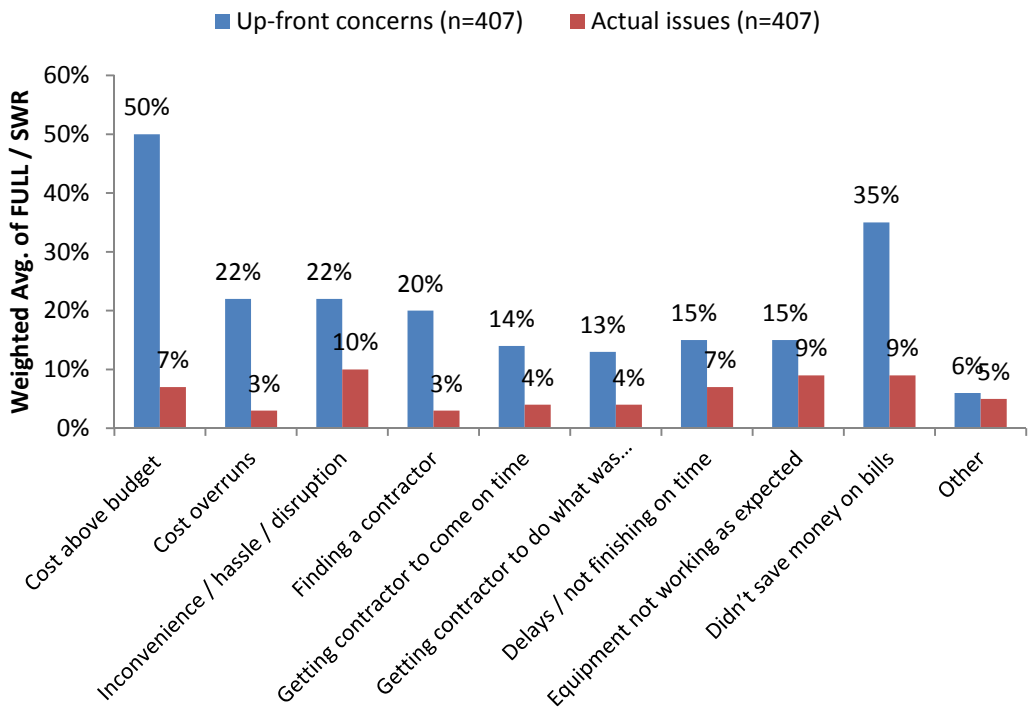
Program Concerns and Delays

The FULL and SWR participants were asked if they had any up-front concerns about getting the energy upgrades completed on their home and whether or not these concerns were actually a problem once they participated. The two largest concerns prior to completing the work were reported to be that the costs of the upgrade would be above the family budget (50%) and that the efficiency upgrades would not really save money on the energy bills once installed (35%). About one-fifth of the respondents also reported that they had concerns about cost overruns (22%), the inconvenience or hassle of getting the work done (22%), and finding a contractor (20%). The perceived barriers were then compared to any actual issues reported by the participants. The largest actual barriers were similar with the most common response being that the upgrade caused an inconvenience or disruption (10%) and not saving money on bills (9%). While only 15% of the respondents thought the equipment not working as expected would be an issue, 9% of the respondents reported it really was an issue. Cost overruns and finding and working with the contractor were an actual issue for 4% or less of the respondents. Figure 5.14 displays the distribution of responses and a selection of representative concerns and issues are displayed below:

- *Perceived Concerns:* Included how contractor would treat the home, the aesthetics of the improvement, reliability of the contractor, paperwork, and the contractor being able to service or back-up what is installed.

- *Actual Issues*: These included a gas leak, calls to move the paperwork forward, paperwork getting lost, equipment not working, lack of air flow due to air sealing, and carbon monoxide leaking from duct work.

Figure 5.14: Perceived and Actual Issues with Energy Upgrades



Program Delays

The majority of respondents (82% weighted average) reported that they did not experience any delays in any step of the assessment, installation, or rebate process. For the 18% of respondents who did see delays, the largest areas were in receiving the kit (3%), and contractor work (3%). The HER group was the most likely to report that there was a delay (76% said there was no delay) in the process and the SWR most often reported there were no delays (83% said no delay). Among the SWR respondents, 10% reported that they did experience delays in the getting the contractor work completed. A very small portion (1% - 4% of respondents) of all the participant categories, with the exception of the HER group, reported that they had experienced delays in receiving the incentive. Among the FULL participant sub-groups, over 10% of both the air sealing and duct sealing participants reported that there was a delay in getting the contractor work done compared to 5% or less for the insulation, water heater, or heat pump participants. There was very little delay experienced among any of the groups in scheduling the energy advisor appointment or selecting a contractor. Figure 5.15 displays the areas of program delay by respondent category.

Figure 5.15: Program Delays

		Respondent Type					FULL Types				
	Weighted Average	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=105)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Receiving information	1%	0%	-	-	1%	-	1%	-	-	-	-
Receiving Kit	3%	0%	-	-	4%	-	-	-	1%	1%	1%
Installing Kit measures	0%	0%	-	-	-	-	-	-	-	-	1%
Energy Advisor appointment	0%	-	2%	1%	-	1%	-	-	-	-	-
HER scheduling	2%	-	-	4%	2%	5%	-	-	-	-	-
Contractor selection	0%	1%	2%	3%	-	-	-	3%	1%	1%	1%
Contractor work	3%	6%	10%	6%	3%	1%	4%	3%	12%	11%	5%
Paperwork	1%	1%	-	4%	1%	1%	3%	1%	1%	3%	1%
Incentive receipt	3%	3%	2%		4%	1%	5%	1%	4%	3%	5%
Inspection	0%	1%	2%	3%	-	-	1%	4%	-	-	1%
None	82%	82%	83%	76%	82%	84%	80%	82%	77%	77%	82%
Other	5%	7%	3%	6%	4%	5%	7%	8%	7%	7%	7%

Getting the Process Moving

Respondents who experienced delays were asked whether the process was able to get moving again and what they had to do to make it happen. Over 91% of the respondents reported that the process did get moving again regardless of the delay category. The exception to this was in *HER scheduling* and *incentive receipt;* however, the number of respondents who reported this was an issue was very small. Only 4 respondents reported that the process slowed down during the HER scheduling and it never got started again and 10 respondents reported that they have not received their incentive or rebate. For each of the steps in the process, the interviewers asked the respondents to report what they had to do to get the process moving again. Most respondents contacted ETO or their contractor when they encountered a delay.

5.4: Program Satisfaction

The participants were asked a series of questions regarding their experience and satisfaction with various aspects of the program.

The Energy Advisor and Contractors

The vast majority of HER participants, 96%, reported that the Energy Advisor listened well and 89% reported that the Energy Advisor was clear in explaining the program and process. Figure 5.16 displays the survey results relating to the Energy Advisor.

Figure 5.16: Energy Advisor Feedback

In your opinion, did the energy advisor listen well? (HER n=80)	
Yes	96%
No	1%
Don't know/don't recall	3%
How clear was the energy advisor at explaining what you needed to be explained?	
Very clear	89%
Somewhat clear	9%
Not very clear	1%
Very unclear	-
Don't know/don't recall	1%

Trade Ally List

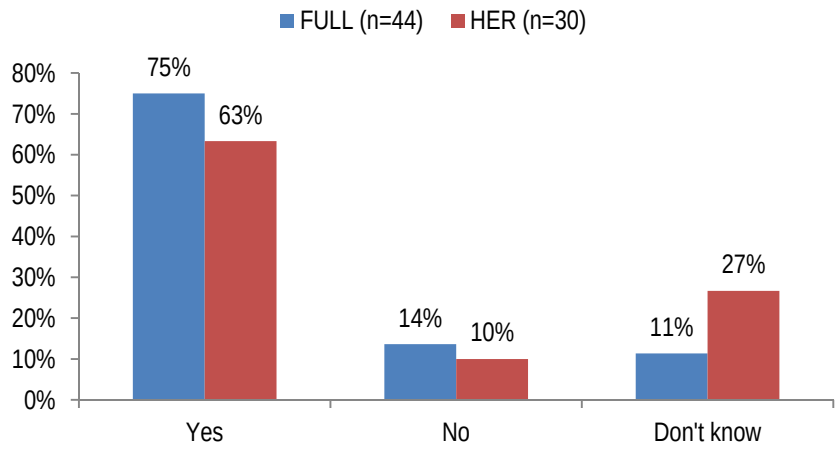
The FULL and HER participants were asked whether or not they consulted the trade ally list prior to selecting a contractor. Two-thirds of HER respondents (67%) reported that they did consult the contractor list compared to less than one-third (31%) of the FULL participants that referred to the list. Among the FULL participant sub-groups the Air Sealing group was most likely to consult the list (41% reported they did) and only 14% of the Heat Pump group reported they used the trade ally list to select a contractor. Figure 5.17 below displays the distribution of responses.

Figure 5.17: Percentage of FULL and HER Participants that Consulted the Trade Ally List

	Respondent Type		FULL Types				
	FULL (n=144)	HER (n=45)	Heat Pump (n=35)	Water Heaters (n=29)	Air Sealing (n=37)	Duct Sealing (n=40)	Insulation (n=77)
Yes	31%	67%	14%	24%	41%	35%	38%
No	63%	27%	77%	76%	54%	55%	53%
Don't know	6%	7%	9%	-	5%	10%	9%

Additionally, the respondents who had consulted the trade ally list were asked if the contractor rating system (one through three stars) was helpful in their selection process. The majority of both groups reported that the ranking system was useful to them in choosing their contractor. The distribution of responses is displayed in Figure 5.18.

Figure 5.18: Percentage of Respondents Reporting the Star Rating System was Useful

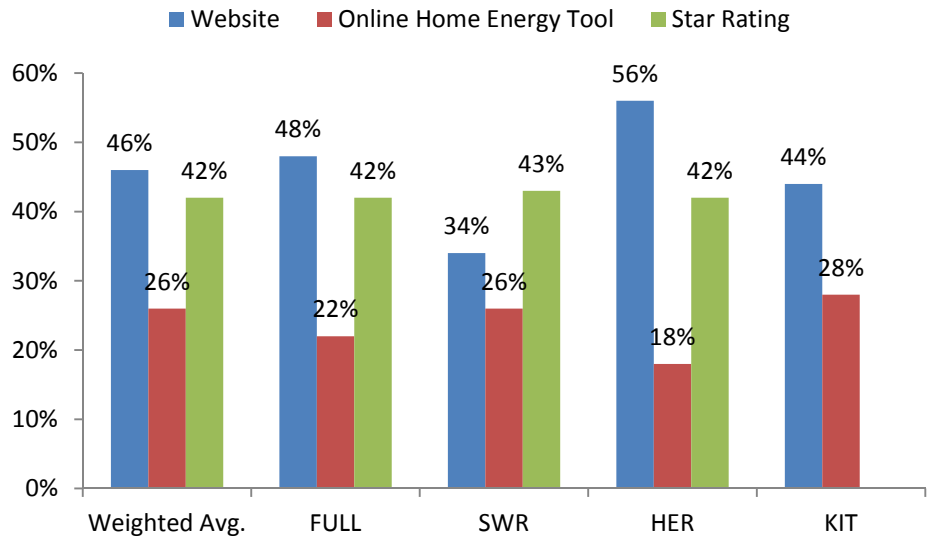


Use of Various Program Features

The majority of respondents reported that they "did not use" three aspects of the program, the website (46% used the tool (weighted average)), the online home energy tool (only 26% used (weighted average)), and the contractor Star rating (42%used (weighted average)). The SWR group had the lowest percentage of respondents using the website (34%), the HER group used the online home energy tool the least (only 18% used it) Figure 5.19 displays the percentage of respondents who reported they used various features of the program[17].

[17] Percent use was based on the number of respondents scoring the feature on the 1 to 5 scale and the percentage of respondents who reported they "Did not use" and "Don't know".

Figure 5.19: Percentage of Respondents Using Various Program Features



Satisfaction Scores[18]

Respondents were asked to rank their level of satisfaction with various aspects of the program on a 1 to 5 scale where 1 was *very dissatisfied* and 5 was *very satisfied*. The weighted scores were compared for the analysis[19]. In addition, the percentage of respondents reporting satisfaction scores of 4 and 5 are presented. The weighted scores take into account the respondents who were "neutral" or "dissatisfied" with the different aspects of the program while the percentage of respondents reporting scores of 4 or 5 displays the total percentage of respondents that reported they are satisfied with the program.

Incentive amounts brought in the lowest satisfaction levels with a score of 4.2 (weighted average), but none of the questioned categories received less than a 4.2 out of 5 satisfaction rating or less than 75% of the respondents reporting scores of 4 or 5. The HER participants reported the highest levels of satisfaction for their overall experience with Energy Trust with a score of 4.7 (KIT was the lowest with 4.4). The SWR participants reported the highest levels of satisfaction with the website (4.6), the online Home Energy Profile (4.9), the Star Rating System (4.6) and the incentive amount (4.4). Figure 5.20 displays the reported levels of satisfaction and Figure 5.21 displays the percentage of respondents reporting scores of 4 or 5.

[18] For the satisfaction ratings, none of the respondents from the Non Participant category were asked to give their ratings and therefore, NP's are not included in the graphs.
[19] Only the respondents who reported they had used the various program features were included in the satisfaction scores

Figure 5.20: Satisfaction Levels by Respondent Type

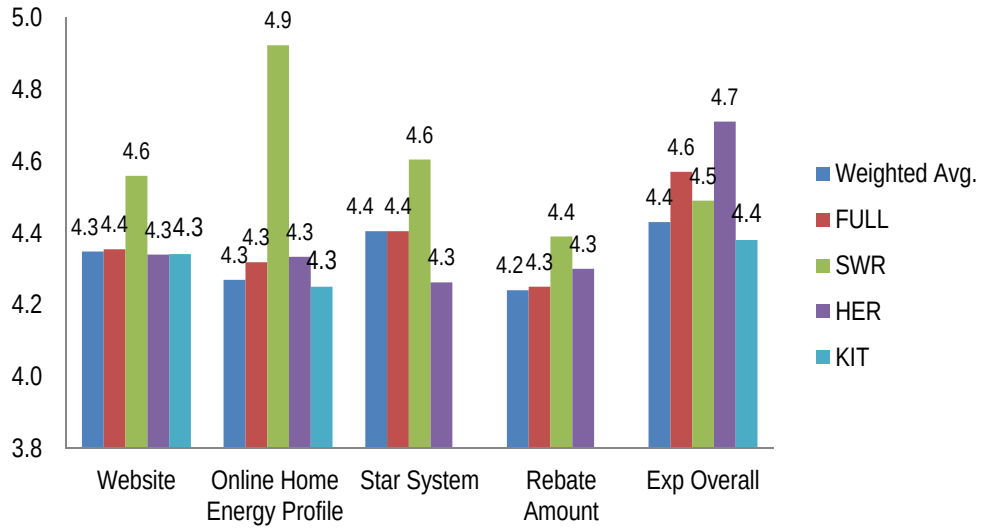


Figure 5.21: Percentage of Respondents reporting Satisfaction Scores of Four or Five

	Weighted Avg.	FULL	SWR	HER	KIT
Website	80%	88%	82%	95%	77%
Online home energy profile	77%	82%	100%	83%	75%
Star system	88%	88%	86%	88%	
Rebate	83%	83%	86%	87%	
Exp. Overall	89%	91%	86%	96%	88%

FULL Participants: The FULL participant sub-group levels of satisfaction were analyzed. Participants installing water heaters and air sealing reported the highest levels of satisfaction with the overall program with scores of 4.6. The lowest rankings were reported by the Air Sealing recipients for the incentive amount (4.0 and 79% 4 or 5 score) and the Heat Pump recipients for the online home energy profile (4.0 and 85% score of 4 or 5). The Heat Pump sub-group also reported comparatively lower levels of satisfaction with the incentive amount (4.1 and 77% 4 or 5 score). Figure 5.22 below displays the distribution of responses for the weighted scores and Figure 5.24 displays the percentage of respondents reporting scores of 4 or 5.

Figure 5.22: Satisfactions Levels by Full Participant Sub Types

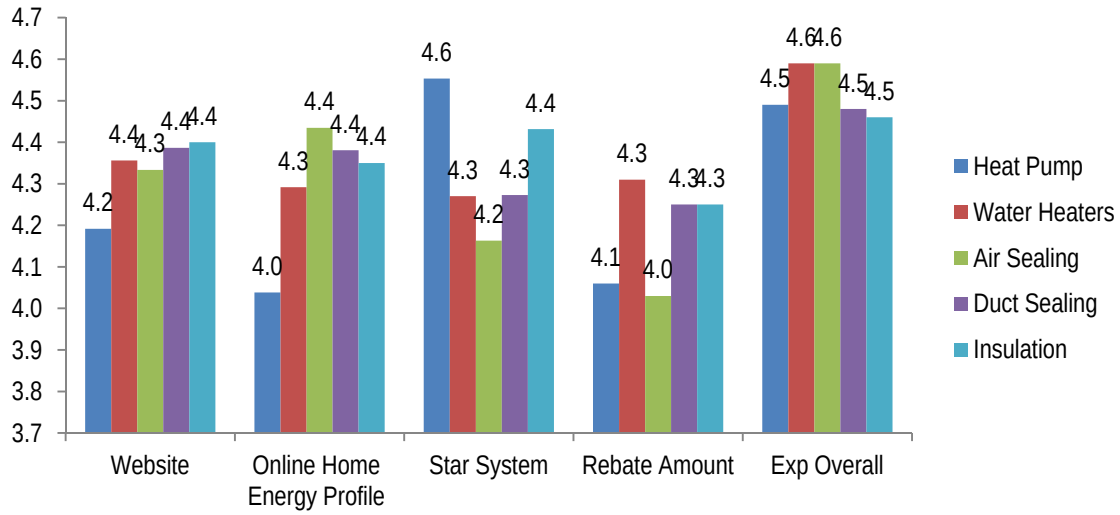


Figure 5.23: Percentage of Respondents reporting Satisfaction Scores of Four or Five by FULL Participant Types

	Heat Pump	Water Heaters	Air Sealing	Duct Sealing	Insulation
Website	83%	92%	88%	89%	89%
Online home energy profile	85%	79%	78%	81%	80%
Star system	89%	81%	82%	82%	91%
Rebate	77%	87%	79%	86%	83%
Exp. Overall	88%	97%	94%	90%	87%

Home Energy Review Process and Energy Advisor: Only HER respondents were asked to rate the Home Energy Review Process and the Energy Advisors, giving them a satisfaction rating of 4.6 (95% 4 or 5 rating) and 4.8 (96% 4 or 5 rating) respectively.

Energy Saver Kits: The KIT respondents rated their satisfaction levels with the kit at 4.4 out of 5 (87% score of 4 or 5).

Satisfaction with the Energy Efficiency Improvements

Respondents were asked to rate their satisfaction levels with aspects of their home improvement projects including the equipment installed, the quality of the improvements or equipment, and the cost of the improvements or equipment on the same 1 to 5 scale.

Overall, the cost of the equipment received the lowest score (4.1 weighted average and 77% 4 or 5 score) and the equipment quality received the highest score (4.4 with 85% reporting scores of 4 or 5). The FULL participants were the most satisfied with the equipment quality (4.6) and the KIT participants were most satisfied with the equipment installed (4.4). The SWR group reported the lowest levels of satisfaction with the equipment installed (3.9 and 76% reporting scores of 4 or 5) and

the HER group was the least satisfied with the cost of the equipment or improvements[20] (3.9). Figure 5.24 displays the weighted average satisfaction rankings regarding the equipment or improvements and Figure 5.25 displays the percentage of respondents reporting scores of 4 or 5.

Figure 5.24: Satisfaction with Equipment or Improvements

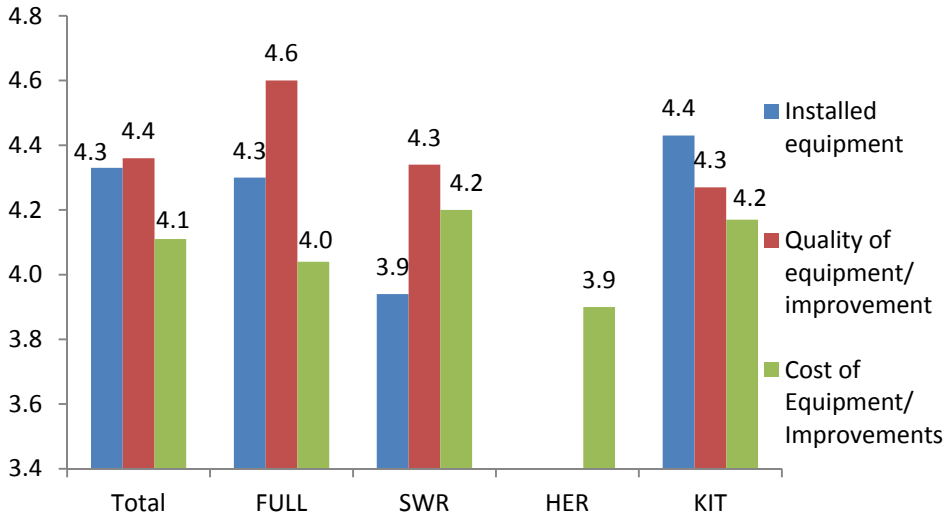


Figure 5.25: Percentage of Respondents reporting Equipment Satisfaction Scores of Four or Five

	Weighted avg.	FULL	SWR	HER	KIT
Installed equipment	85%	87%	76%	-	86%
Quality of equipment / improvement	85%	94%	87%	-	82%
Cost of equipment / improvement	77%	73%	84%	70%	79%

FULL Participants: The FULL sub-groups were examined to compare their levels of satisfaction with the installed equipment or improvements. All of the groups had high rankings for the equipment quality and lower rankings for the cost. The Insulation sub-group had the highest satisfaction score for cost (4.1) and the four other sub-groups all had scores of 3.9 for the cost. The Heat Pump sub-group had the highest score for the equipment itself (4.4). The FULL sub-group scores can be seen in Figures 5.26 and 5.27.

[20] This may have influenced their reluctance to move forward in the program.

Figure 5.26: Equipment or Improvements by Full Participant Sub-Types

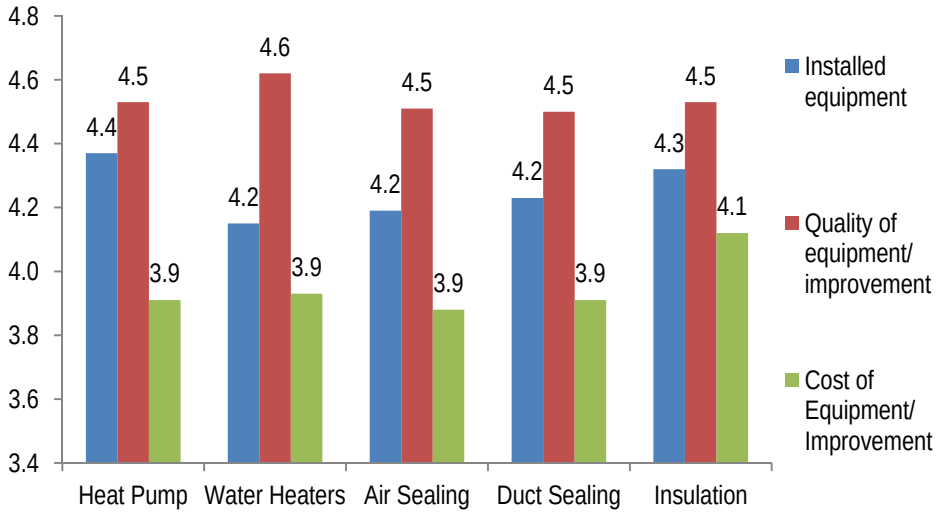


Figure 5.27: Percentage of Respondents Reporting Equipment Satisfaction Scores of Four or Five by Full Participant Sub-Type

	Heat Pump	Water Heaters	Air Sealing	Duct Sealing	Insulation
Installed equipment	88%	82%	84%	86%	87%
Quality of equipment / improvement	92%	93%	92%	93%	93%
Cost of equipment / improvement	67%	68%	72%	71%	77%

Contractor Satisfaction

The FULL, SWR, and HER participants were asked to score their satisfaction with the contractor and selection tool (online contractor list with address and measure filters). Just over a quarter of the respondents reported that they did not use the contractor selection tool and thus could not report their satisfaction (or dissatisfaction) with the program feature. Within the HER group 27% of the respondents reported that they had not used the contractor selection tool and within the FULL participant sub-groups 36% of the Water Heater group reported they did not use the contractor selection tool. Figure 5.28 displays the percentage of respondents who reported they did not use the contractor selection tool.

Figure 5.28: Percentage of Respondents not using Contractor Selection Tool

Respondent Type	Percent of Total
Total	26%
FULL	26%
SWR	22%
HER	27%
FULL Types	
Heat Pump	27%
Water Heaters	36%
Air Sealing	16%
Duct Sealing	16%
Insulation	23%

Among those respondents who reported that they did use the contractor selection tool the overall score was 4.4 (86% 4 or 5). The levels of satisfaction were lower for the contractor at 4.1 (weighted average) (91% 4 or 5). Within the FULL participant sub-groups the Water Heater participants were least satisfied with their contractor (4.0) and the Heat Pump group was the most satisfied (4.4). Figure 5.29 displays the reported weighted satisfaction scores with the contractor selection tool and the contractors and 5.30 displays the percentage of respondents reporting scores of 4 or 5.

Figure 5.29: Contractor Selection and Contractors

		Respondent Type			FULL Types				
	Weighted Avg.	FULL	SWR	HER	Heat Pump	Water Heaters	Air Sealing	Duct Sealing	Insulation
Contractor selection tool	4.4	4.4	4.5	4.4	4.4	4.3	4.2	4.3	4.3
Selected contractor	4.1	4.2	4.3	-	4.3	4.0	4.2	4.2	4.2

Figure 5.30: Contractor Selection and Contractors scores of Four of Five

		Respondent Type			FULL Types				
	Weighted avg.	FULL	SWR	HER	Heat Pump	Water Heaters	Air Sealing	Duct Sealing	Insulation
Contractor selection tool	86%	86%	87%	86%	86%	86%	83%	80%	85%
Selected contractor	91%	91%	92%		87%	92%	85%	87%	93%

Energy Bill Savings and Other Effects

Lastly, the respondents were asked to rank their satisfaction with the energy bill savings and other effects they might have received as a result of the energy efficiency improvements they made. Overall, these were the program aspects that received the lowest scores by the respondents with a score of 3.2 for energy bill savings (weighted average) and 3.3 for other effects (weighted average). The FULL participants had the highest satisfaction score for the energy bill savings (3.7) and the KIT group had the lowest scores (3.0).

FULL Participants: The Heat Pump subgroup was most satisfied with their energy bill savings and their other non-energy benefits (3.9 score for both). The Water Heater participants were least satisfied with their energy bill savings (3.4).

Figures 5.31and 5.32 display the satisfaction scores for energy bill savings and other effects (NEBs).

Figure 5.31: Energy Bill Savings and Other Effects

	Weighted Avg.	FULL (n=344)	SWR (n=63)	KIT (n=102)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Energy bill savings	3.2	3.7	3.6	3.0	3.9	3.4	3.6	3.9	3.9
Other effects (non-energy benefits)	3.3	3.5	3.9	3.2	3.9	3.4	3.3	3.6	3.5

Figure 5.32: Percentage of Respondents Reporting Scores of Four or Five for Energy Bill Savings and Other Effects

	Weighted Avg.	FULL (n=344)	SWR (n=63)	KIT (n=102)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Energy bill savings	52%	68%	72%	47%	71%	58%	65%	72%	72%
Other effects (non-energy benefits)	58%	67%	76%	56%	76%	63%	63%	69%	65%

Did the Participant Experience with Energy Trust Match Expectations?

Combined, 54% of the respondents (weighted average) reported that their experience with Energy Trust was somewhat or much better than they had expected and only 5% reported it was somewhat or much worse than expected. The remaining 40% of respondents reported that their experience was about the same as what they had expected. The highest levels of exceeded expectations were reported in the SWR group with 44% reporting that their experience was much better than expected. The KIT participants were the least likely to report that their experience with Energy Trust was better than expected. The distribution of responses can be seen in Figure 5.33 below.

Figure 5.33: Overall Experience with Energy Trust of Oregon

	Weighted Avg.	Respondent Type FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)	FULL Types Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Much better than expected	30%	33%	44%	40%	28%	33%	36%	32%	29%	38%	33%
Somewhat better than expected	24%	24%	21%	28%	24%	23%	22%	24%	24%	21%	22%
About the same as I expected	40%	39%	30%	29%	42%	37%	36%	40%	44%	37%	38%
Somewhat worse than expected	4%	2%	5%	2%	5%	4%	4%	3%	1%	1%	3%
Much worse than expected	1%	1%	-	-	1%	3%	1%	1%	1%	2%	2%
No response/did not reply	0%	1%	-	-	-	1%	-	-	-	-	2%

Figure 5.34: Percentage of Respondents Who Would Recommend the Program to Others

	Weighted Avg.	Respondent Type FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)	FULL Types Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Very likely	75%	85%	84%	89%	70%	82%	85%	88%	83%	88%	85%
Somewhat likely	19%	11%	13%	7%	24%	14%	12%	8%	12%	7%	12%
Somewhat unlikely	2%	1%	-	2%	2%	1%	1%	1%	1%	1%	1%
Very unlikely	4%	2%	3%	2%	5%	3%	-	1%	4%	4%	3%
Didn't know	0%	1%	-	-	-	-	1%	1%	-	-	-

Figure 5.35: Word of Mouth

	Respondent Type					FULL Types				
Have you talked to any of your friends, neighbors, coworkers or others about your experience with Energy Trust?	Weighted Avg.	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)	Heat Pump (n=74)	Water Heaters (n=78)	Air Sealing (n=75)	Duct Sealing (n=91)	Insulation (n=177)
Yes	73%	78%	81%	91%	70%	78%	74%	73%	84%	82%	83%
No	26%	19%	17%	8%	30%	20%	26%	24%	12%	15%	15%
Don't recall	1%	2%	2%	1%	-	2%	-	3%	4%	2%	2%

Were they positive or negative comments or both?	Weighted Avg.	FULL (n=269)	SWR (n=51)	HER (n=99)	KIT (n=71)	NP (n=118)	Heat Pump (n=55)	Water Heaters (n=57)	Air Sealing (n=63)	Duct Sealing (n=75)	Insulation (n=147)
Positive only	89%	93%	86%	93%	86%	93%	89%	95%	90%	92%	92%
Negative only	2%	1%	4%	-	3%	1%	-	2%	2%	1%	1%
Both positive and negative	7%	6%	10%	6%	8%	5%	11%	4%	8%	7%	7%
Don't recall	2%	-	-	1%	3%	1%	-	-	-	-	-

The vast majority of respondents, 93% (weighted average), reported that they would participate in the program again with 95% of the FULL and SWR groups and 98% of the HER group reported that they would do it over. The KIT respondents were slightly lower with 92% reporting that they would participate again. The minority of respondents who said that they would not participate again were asked to report why not. The main reasons "why not" reported in the open-ended responses were:

- *Do not need to*: Respondents are now living ina house that is energy efficient
- *Issues with Energy Trust staff or auditors*: Respondents had a bad experience with paperwork, communication, or the audit process
- *Did not realize expected savings*: Expected more energy savings
- *Rebates:* Respondents reported they never got the rebate they were expecting
- *Contractor / Equipment issues:* The contractor or equipment did not perform as expected

Word of Mouth Promotion

Three-quarters of the respondents (75% weighted average) reported that they were very likely to recommend Energy Trust services to other people and another 19% (weighted average) reported that they were somewhat likely to do so. Only 6% of the respondents reported that they were somewhat or very unlikely to recommend the program to others. The HER (89%), SWR (84%), and FULL (85%) groups had the highest percentage of respondents reporting that they were very likely to recommend the program to others compared to the KIT group where 70% reported they were very likely to recommend it to others. Figure 5.34 (above) displays the distribution of responses.

Lastly, the respondents were asked whether or not they had spoken to any of their friends, colleagues, neighbors or others about their experience with Energy Trust. Overall, 73% reported that they had spoken to others with the highest rate recorded by the HER group (91%). The group with the highest proportion of respondents reporting that they did not talk to others was the KIT group with 30% reporting so. Overwhelmingly, the respondents reported that they told others positive comments about the program (89% weighted average shared positive comments only). Figure 5.35 (above) displays the distribution of responses.

5.5: Household Characteristics

The survey respondents were asked a series of household characteristic, energy source, and demographic questions. The characteristics of the survey respondents are displayed in Figure 5.36.

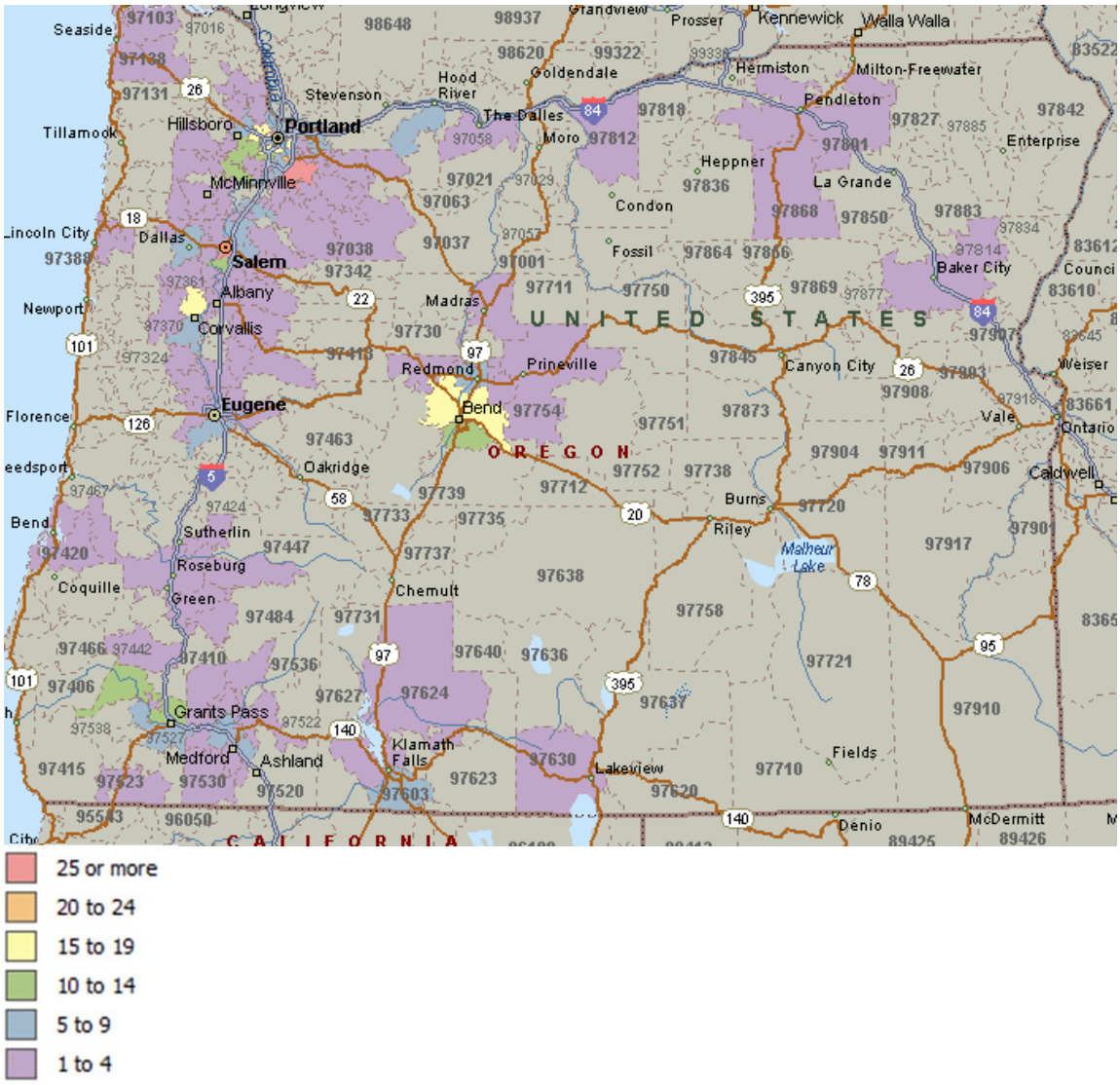
Figure 5.36: Characteristics of Survey Respondents

	Weighted Avg.	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)
Electric power supplier						
Pacific Power	31%	29%	24%	39%	29%	37%
Portland General Electric	66%	66%	76%	55%	68%	58%
Eugene Water and Electric Board	2%	2%	-	1%	2%	1%
Other	2%	3%	-	5%	1%	4%
Do you have natural gas service?						
Yes	69%	67%	67%	61%	71%	67%
No	31%	33%	33%	38%	29%	33%
Don't know	0%	-	-	1%	-	-
Gas service supplier						
NW Natural	90%	94%	93%	87%	89%	86%
Cascade Natural Gas	3%	4%	5%	12%	1%	11%
Avista	7%	1%	-	1%	10%	1%
Don't know	0%	-	2%	-	-	2%
Other	0%	1%	-	-	-	-
Primarily heat source						
Natural gas	60%	56%	63%	56%	62%	61%
Electric	28%	39%	37%	41%	24%	28%
Propane (from a tank on site)	0%	-	-	-	-	1%
Don't know	1%	-	-	-	1%	-
Other	11%	6%	-	3%	14%	10%
Water heater energy source						
Natural gas	53%	54%	48%	43%	54%	48%
Electric	46%	45%	52%	54%	45%	50%
Propane (from a tank on-site)	1%	0%	-	-	1%	1%
Don't know	0%	-	-	-	-	1%
Other	0%	1%	-	3%	-	1%
Age of home						
Before 1970	41%	42%	51%	39%	41%	38%
1970-1979	22%	29%	33%	33%	19%	22%
1980-1986	6%	9%	6%	9%	4%	9%
1987-1992	8%	9%	6%	9%	8%	7%
1993-2000	12%	6%	-	7%	15%	14%

	Weighted Avg.	FULL (n=344)	SWR (n=63)	HER (n=109)	KIT (n=102)	NP (n=151)
After 2000	8%	4%	3%	3%	10%	9%
Don't know	3%	1%	-	-	4%	1%
Home size						
Fewer than 500 sq ft	0%	1%	2%	1%	-	-
500 to less than 1000 sq ft	7%	4%	11%	6%	8%	4%
1000 to less than 1500 sq ft	19%	23%	44%	29%	16%	25%
1500 to less than 2000 sq ft	27%	30%	27%	24%	26%	26%
2000 to less than 2500 sq ft	21%	20%	10%	17%	22%	18%
2500 to less than 3000 sq ft	14%	12%	6%	16%	14%	17%
More than 3000 sq ft	9%	9%	-	4%	10%	8%
Don't know	3%	2%	-	5%	4%	2%
Refused	1%	0%	-	-	1%	-
Number of bedrooms						
1	16%	-	-	-	20%	-
2	5%	14%	-	40%	-	33%
3	27%	57%	-	20%	20%	67%
4	17%	-	-	40%	20%	-
5 or more	35%	29%	-	-	40%	-
Number of people in house						
1	23%	17%	29%	28%	25%	16%
2	45%	51%	33%	45%	43%	46%
3	15%	15%	13%	13%	15%	17%
4	11%	11%	16%	9%	10%	16%
People under 18 in house						
0	68%	72%	56%	75%	66%	69%
1	12%	12%	16%	10%	12%	12%
2	12%	11%	20%	11%	12%	15%
3	7%	3%	7%	4%	9%	5%
4 or more	-	-	-	-	-	-
Refused	1%	1%	2%	-	1%	-
Annual income						
Less than $30K	17%	6%	27%	9%	23%	10%
$30K-$49K	16%	11%	25%	20%	19%	13%
$50K-$74K	15%	20%	14%	17%	12%	21%
$75K-$99K	8%	14%	-	10%	5%	15%
$100K-$149K	8%	10%	2%	9%	8%	7%
$150K or more	7%	7%	2%	1%	7%	8%
Refused	28%	31%	30%	34%	27%	26%
Gender						
Male	43%	51%	40%	48%	41%	41%
Female	57%	49%	60%	52%	59%	59%

Figure 5.37 displays the respondent locations by zip code.

Figure 5.37: Responses by Zip Code



5.6: Non-Energy Benefits Results

The participants and non-participants were asked a battery of questions designed to identify the non-energy benefits (NEBs)[21] that they associated with the Program and installed measures.[22]

To tally the results, the NEB response categories were assigned scores between -1.67 and 1.67, asi identified in Figure 5.38. Scores above "1" indicate the average value was positive, and greater than

[21] The term non-energy benefits refers to both positive and negative factors.

[22] The NEBs battery is included in the survey instruments provided in Appendix C.

the energy savings received. A score greater than "0" indicates a positive value was received. The NEB results can be used to illustrate whether customers (and others) perceive positive (or negative) values from the programs above and beyond the energy savings – market research information that can potentially be used to refine outreach and program offerings.[23]

Figure 5.38. Assigned Scores for NEB Responses

Assigned Score	NEB Interpretation / Response Category
1.67	Positive effect, much more valuable than energy savings
1.33	Positive effect, somewhat more valuable than energy savings
1.00	Postive effect, same value as energy savings
0.67	Positive effect, somewhat less valuable than energy savings
0.33	Positive effect, much less valuable than energy savings
0.00	No change, effect, or value
-0.33	Negative effect, much less costly than the energy savings value
-0.66	Negative effect, somewhat less costly than the energy savings value
-1.00	Negative effect, same cost as value of energy savings
-1.33	Negative effect, somewhat more costly than the energy savings
-1.66	Negative effect, much greater cost than the energy savings

The NEB categories about which we asked are detailed in Figure 5.39. By far, there were more positive comments than negative responses about the NEB categories. The average scores for the participating household groups are illustrated at the bottom of the Figure. The NEB scores (between 1.67 and -1.67) associated with each NEB contributing factor for each interviewee group is provided in the table.[24] (on the -1.67 ot 1.67 scale associated. The results show that each group except the ESK assigned greater value to the NEBs than they did to the savings, with scores reaching as high as 1.24 and higher for several of the full participant groups, and for the average full participant. Non-participants provided a score of 1.1. If we compare this group to their full participant counterparts (participants that took the next step)s, this may imply that the non-participants (or partial participants) differ from the participants in their view of the potential of the measures to deliver effects beyond savings. This may partially explain their status as non-participants and not completing installation of measures. Marketing to increase their confidence in the delivery of NEBs may increase their participation or conversion; this might be achieved by the influence of the Energy Advisor or the contractors (who, as demonstrated later are also fairly confident that NEBs derive from the Program). The group reporting the lowest NEB total was the KIT participants, whose NEB score was 0.93. This lower score may make sense given the nature of the measures installed. Comfort, one of the highest-valued NEBs, is unlikely to be affected by measures provided in kits, so even though their savings would also be lower, the lack of a comfort effect could decrease the relative NEB for this group.

There are several implications of this result. First, the households believe there are NEBs delivered by the Program, and they are significant – similar in value to the savings delivered. Second, the results suggest that their perception is that the households receive a better internal return on investment (ROI) than energy savings alone would imply, and an internal benefit-cost analysis might lead them to

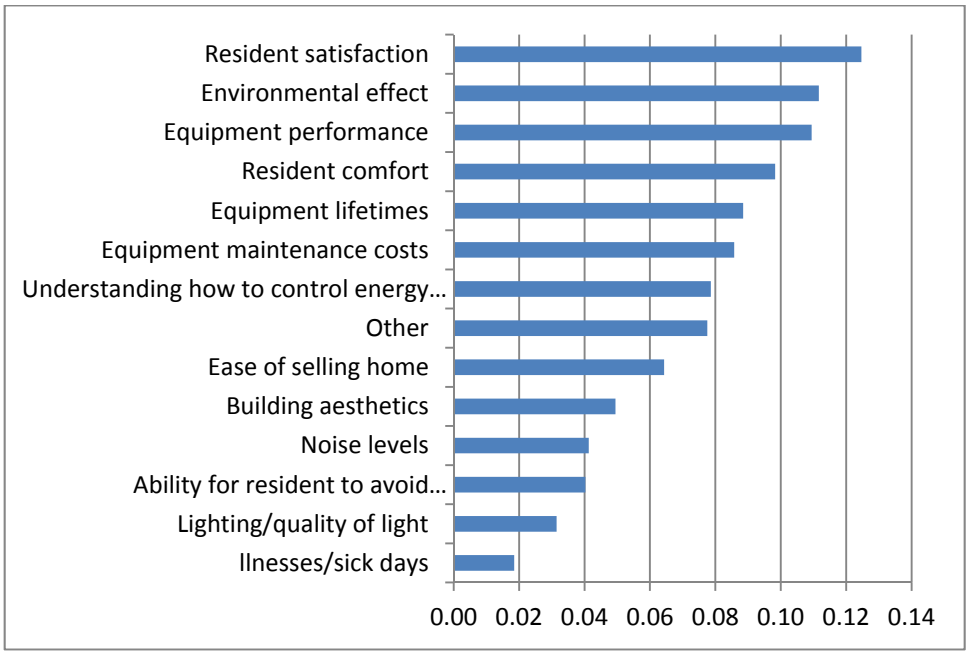
[23] The measurement method uses "labeled magnitude scaling", and the relative terms "much more valuable", "same value", etc. are assigned numeric multipliers and summed and averaged. The responses were assigned a scoring range from -1.67 to 1.67, as follows.
[24] Individual scores were normalized to sum to the "total" score provided.

more measures than an analysis based on savings alone – if any other remaining barriers can be removed (e.g. financing, etc.). The average scores are presented in ranked order in Figure 5.40.

Figure 5.39: Individual Category and Total NEB Scores for Household Participant Groups and Non-Participants (score ranges 1.67 to -1.67)

	Total	Respondent Type					FULL Types				
	Total	Full	SWR	HER	KIT	NP	Heat Pump	Water Heaters	Air Sealing	Duct Sealing	Insu-lation
Equipment maintenance costs	0.09	0.08	0.06	0.09	0.08	0.09	0.10	0.06	0.08	0.09	0.08
Equipment performance	0.11	0.12	0.12	0.11	0.10	0.11	0.14	0.12	0.10	0.12	0.12
Equipment lifetimes	0.09	0.09	0.09	0.08	0.09	0.08	0.10	0.10	0.08	0.08	0.09
Resident satisfaction	0.12	0.13	0.12	0.13	0.12	0.13	0.14	0.13	0.14	0.14	0.14
Resident comfort	0.10	0.13	0.12	0.13	0.09	0.09	0.14	0.13	0.13	0.14	0.14
Building aesthetics	0.05	0.06	0.06	0.05	0.04	0.05	0.06	0.08	0.06	0.06	0.06
Lighting/quality of light	0.03	0.04	0.03	0.02	0.03	0.03	0.04	0.03	0.04	0.03	0.04
Noise levels	0.04	0.06	0.05	0.05	0.03	0.04	0.06	0.04	0.07	0.07	0.07
Ease of selling home	0.06	0.12	0.12	0.10	0.04	0.07	0.13	0.12	0.12	0.13	0.13
Ability for resident to avoid moving/stay in home	0.04	0.07	0.06	0.05	0.03	0.05	0.07	0.05	0.07	0.08	0.07
Environmental effect	0.11	0.11	0.12	0.10	0.11	0.12	0.11	0.12	0.11	0.12	0.11
Ilnesses/sick days	0.02	0.02	0.03	0.02	0.02	0.03	0.03	0.02	0.02	0.03	0.02
Understanding how to control energy bills/costs	0.08	0.08	0.09	0.08	0.08	0.09	0.09	0.08	0.08	0.08	0.08
Other	0.08	0.11	0.00	0.12	0.06	0.11	0.06	0.13	0.09	0.06	0.12
Total NEBs Score (-1.67 to 1.67); Ratio of Energy Savings	1.02	1.24	1.08	1.12	0.93	1.10	1.27	1.22	1.20	1.24	1.25

Figure 5.40: Value of Total Non-Energy Benefits for Average Participants



5.7: Summary

The following bullets summarize the overall survey findings:

- **Program awareness:** Utility companies and mass media are the two most popular marketing channels. However, contractors, retailers and word of mouth were also effective ways to inform potential participants about the Program. On-line communication, the website, and regional representatives were not as effective as marketing tools. Most respondents were aware of Energy Trust's role but there is still some confusion about how Energy Trust interacts with utilities and what type of entity Energy Trust is (non-profit, corporation, or utility). Despite some confusion, Energy Trust is perceived as a reliable source for information on energy efficiency.

- **Services Received:** There is significant overlap among the participant categories and Program tracks.

- **Home Energy Improvements – Installed and Recommended**: The recommended measures are not necessarily the ones that participants chose to install. The most common improvements included insulation, windows and heating equipment. Air sealing and duct sealing were often recommended but not one of the top four installed measures. There were some noted differences in installed measures between the various Program tracks.

- **Non- Participants Progress:** A portion of the non-participants are moving forward on various energy improvements including windows and air or duct sealing. They were less likely to be moving forward with heating, water heating, or solar improvements. Insulation may be installed

in the next year by some of the non-participants.

- **The Energy Saver Kit**: CFLs were the most commonly recalled and installed ESK measure. Although most recalled receiving the low-flow shower head they were more likely to install the aerators than the shower head. Shower heads were also the most commonly removed item. There are performance, preference and quality related issues with the energy efficient CFLs, shower heads, and aerators that led to people removing them prior to equipment failure. Finally, the ESK may help lead to the installation of additional measures for about third of the KIT respondents.

- **Energy Improvement Drivers:** High energy bills and the desire to save money on energy bills were the two primary drivers to energy improvements. Comfort and remodeling were also common drivers, but not as popular. Energy Trust's marketing and outreach and utility outreach were not common drivers for undertaking a home energy improvement. While the availability of incentives was the main determinant of when the participants chose to undertake the project, other common reasons included recently moving or purchasing a home, equipment failure, performance and comfort levels.

- **Additional Efficiency Improvements and Achieving Efficiency Goals:** Once the first improvement project has been completed, about a quarter of respondents reported that they completed additional energy efficiency improvements. The Energy Trust Program helped some participants free up money to make the additional improvement while others did the improvement based on the contractor recommendations. The vast majority (80% or more) of HER, SWR, and FULL participants achieved their energy goals through the improvement but about one-fifth of the KIT participants did not achieve all their energy goals. Unmet goals included specific measures not yet installed or energy savings and bill savings expectations not met.

- **Energy Trust's Role in the Energy Efficiency Upgrade:** For the majority of FULL and SWR participants, Energy Trust made it easier for them to complete their energy efficiency upgrade. Financial assistance was a major asset but technical assistance, streamlining the process, and deadlines were mentioned as useful resources contributed by Energy Trust.

- **Program Concerns and Delays:** Prior to undertaking efficiency upgrade projects, FULL and SWR participants reported they were concerned about the cost of the project being too high and that they would not save money on energy bills once the projects were completed. Cost overruns, finding a contractor, and the hassle of completing the work were also mentioned as perceived concerns. In actuality, cost overruns and finding a contractor were not issues but the hassle of completing the project, not saving money on their bills, and the EE equipment not working properly were. For most participants there were not any significant delays in the process. The hold-ups, for the small percentage of respondents that experienced delays, were receiving the ESK, HER scheduling, and the contractor work. It took the participants calling Energy Trust, sending Energy Trust a letter, or contacting the contractor directly to get the work started again.

- **The Energy Advisor and Contractors:** The Energy Advisor is doing his/her job well with almost all of the HER participants reporting that the Energy Advisor was clear in explaining the process and a good listener to what they wanted done.

- **Trade Ally List:** While most of the HER participants did consult the trade ally list when choosing a contractor the majority of the FULL participants did not; this was especially apparent in the Heat Pump sub-group. Among those that did consult the list, the star rating system was reported to be a useful tool for choosing their contractor.

- **Use of Various Program Features:** The website, the online home energy tool (Home Energy Profile), and the Star rating system were not used by the majority of respondents. However, the respondents who reported that they did use the various tools gave the tools high satisfaction scores.

- **Satisfaction Scores:** Overall, all interview categories were very satisfied with the Program and most of the Program features including the website, the online tools, the Star system, the ESK, and the HER. The Program feature receiving the lowest comparative score was the incentive amount. Respondents were highly satisfied with the energy efficiency equipment installed and the quality of the equipment or improvement made. They were slightly less satisfied with the cost of the equipment or improvements. This was especially true in the HER and FULL participant groups. Respondents reported higher satisfaction scores for the contractor selection process than the actual contractors that they selected. Of all the groups, the heating equipment participants reported the lowest level of satisfaction with their contractor. The resulting energy bill savings from the energy improvement received the lowest satisfaction scores among all participant groups.

- **Did the Participant Experience with Energy Trust Match Expectations:** The majority of respondents in all categories reported that their overall experience with Energy Trust was somewhat or much better than expected and nearly all of the respondents (greater than 90%) reported that they would participate again. Among the minority of respondents who reported they would not participate again, the reasons why were: issues with the contractors, not saving as much energy or money as expected, issues with the equipment and not receiving the incentive as expected. The majority of all respondents reported that they were likely to talk to someone else about their experiences with Energy Trust and if they did so, almost all reported they would have positive things to say.

6: CHAPTER 6 - TRADE ALLY INTERVIEWS

The trade ally (TA) interview guides were designed to gather the data and feedback necessary to evaluate the full trade ally experience. This includes the Program benefits, process, impacts on the market, and suggestions for changes or improvements. Overall, the trade allies had a positive experience with the Program and almost every trade ally reported that they would participate in the Program again. However, there were a number of specific areas in which the trade allies felt Energy Trust could change the Program to improve the experience and results. We address the full survey findings in the following section.

6.1: Methodology and Fielding

SERA staff contacted trade allies within Energy Trust of Oregon's Existing Homes Program to conduct detailed phone interviews. The interview guide was developed by SERA with feedback and direction from Energy Trust staff. The initial trade ally list included 630 unique business contacts ranging in rating levels from zero to three stars. Only trade allies listed with one to three stars (active) were eligible for the survey. Eligible businesses were randomized to provide a cross section of participating trade allies by rating. A total of 320 trade allies were contacted by phone, often with multiple attempts to each, and a total of 102 completed surveys were attained. The surveys were fielded between March 22, 2012 and April 20, 2012 and ranged in length from 15 minutes to over 40 minutes with an average duration of 25.5 minutes. Figure 6.1 displays the disposition of calls.

Figure 6.1: Calls and Completes

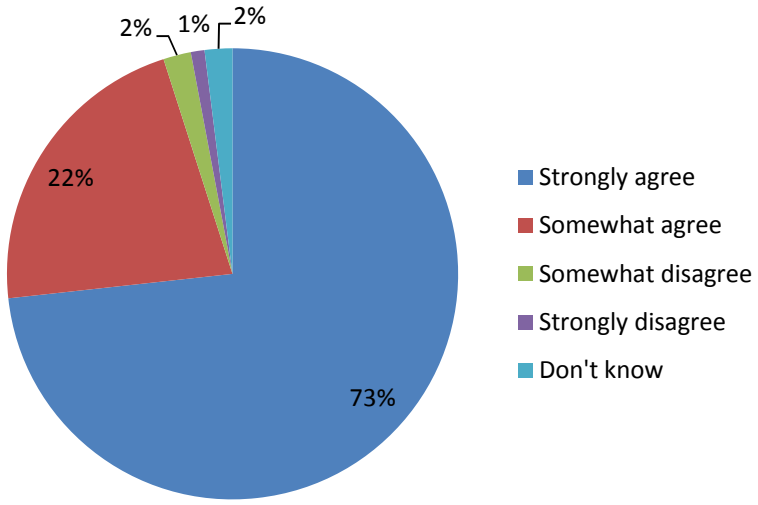
Category	Number
Total Number of Contacts from ETO	630
Ineligible Contacts (No stars)	195
Trade Allies Contacted	320
Unresponsive	180
Refusals	10
Schedule / No Show	15
Surveys Began	105
Ineligible (no applications submitted)	3
Surveys Completed	*102*

Introduction

The majority of interviewees (74%) strongly agreed that Energy Trust is "a credible information source…" about energy efficiency and only 5% disagreed with the statement. This is crucial to

participation and helps contractors to "buy into" the Program, represent it well to their customers and be satisfied with the overall process and results. Figure 6.2 displays the results.

Figure 6.2: Respondent Agreement With the Statement "Energy Trust is a Credible Information Source…"



Respondent Information

Business Type, Size and Service Area

Figure 6.3 displays the respondent demographics including the utility area(s) serviced, the primary business type, the year the business was established, and the year in which the business was established.

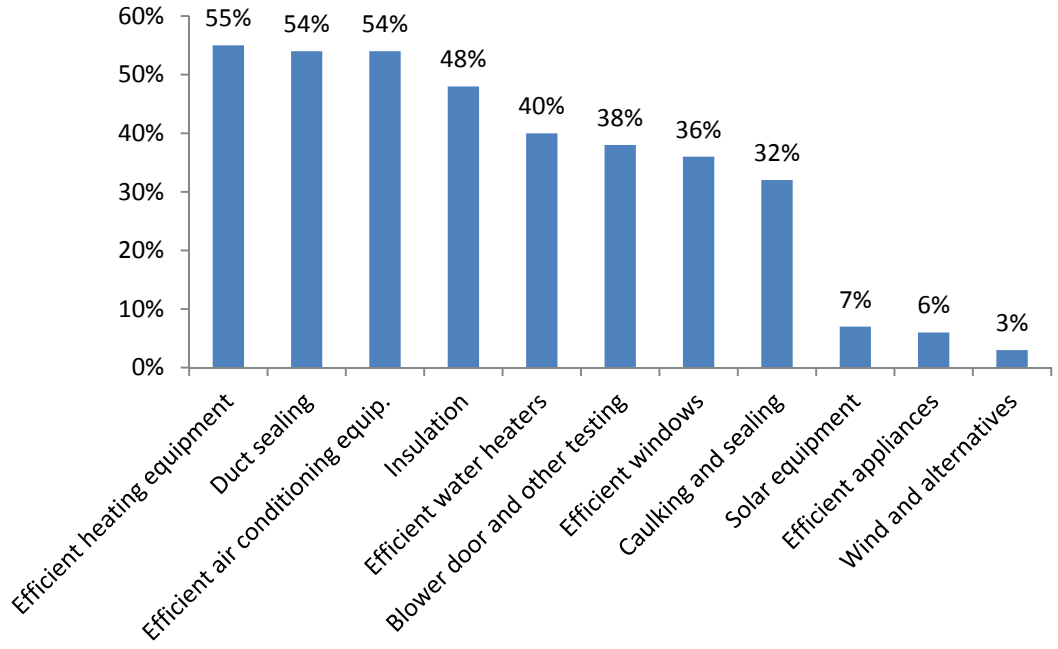
Figure 6.3: Business Demographics *(note: respondents could report more than one utility area)*

Utility Area	Pacific Power	NW Natural	PGE	Cascade Natural Gas	Avista	Statewide	EWEB	
	61%	*63%*	*56%*	*14%*	*5%*	*2%*	*2%*	
Primary Services	HVAC Installation / Service	Weatherization Services	General Contractor	Plumber	Energy Efficiency Service Provider	Windows	Home Performance Contractor	Solar Electric Installer
	49%	*25%*	*20%*	*10%*	*10%*	*2%*	*1%*	*1%*
Year Established	2008-2012	2000-2007	1990-1999	1980-1989	1970-1979	1960-1969	1950-1959	Pre- 1950
	17%	*24%*	*18%*	*16%*	*9%*	*6%*	*5%*	*5%*
Employees	76 to 90	51 to 75	26 to 50	11 to 25	6 to 10	1 to 5		
	2%	*2%*	*5%*	*20%*	*31%*	*40%*		

Business Services

Heating (55%), air conditioning[25] (54%) and duct sealing were the three most common efficiency services offered followed closely by insulation (48%). Less than 10% of the interviewees reported they provided renewable services (solar 7%, wind 3%), and appliances (6%). Figure 6.4 displays the distribution of responses.

Figure 6.4: Energy Efficiency Features or Building Practices Offered *(Note: respondents could report multiple categories)*



6.3: Program Expectations and Requirements

Trade Ally Motivations, Benefits and Initial Hesitations

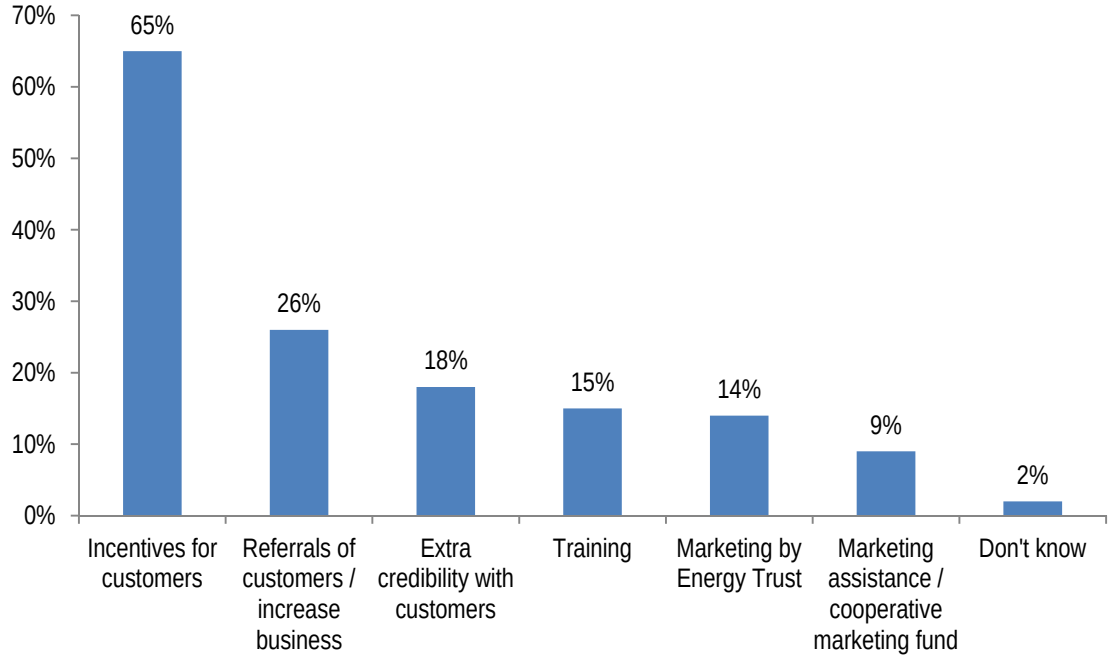
Trade allies were asked a battery of questions in order to gain a greater understanding of their motivations for joining the Program and to discover whether or not their expectations of the Program process and benefits were met.

Why Become a Trade Ally

[25] Not an incentivized measure by Energy Trust, except in the case of heat pumps where air conditioning is incidental.

There were several major reasons that contractors originally became TAs in the Program, with incentives for their customers (65%) being the primary reason. The TAs reported they wanted financial benefits for their customers so that they could provide and install the best equipment possible, often resulting in jobs that might not have been possible or would not have gone forward without the incentives. More than a quarter (26%) of the respondents reported that becoming a trade ally increased their business or provided more business referral. Additionally, nearly one-fifth (18%), felt that having the "backing" of Energy Trust would result in their customers having greater trust and confidence in their company. Training that Energy Trust provides about energy efficiency as well as the large amount of marketing the Program directs toward the residential sector was noted by 15% or less of the respondents. Figure 6.5 displays the distribution of responses.

Figure 6.5: **Attractive Program Features**



Benefits of Becoming a Trade Ally

Many of the respondents reported that the benefits they received after becoming a trade ally were the same as the reasons they became TAs in the first place, however, there were also some additional unexpected benefits. The most frequently mentioned was that their companies got more customers (48%) with 14% saying that they got different customers than they would have gotten without the Program. Again, many contractors felt that the Energy Trust name adds credibility to their services as well as contributing to deeper customer trust. Over one-third of the respondents (37%) noted that they liked receiving expanded services or incentives from Energy Trust and 30% finding it helpful to have their companies' name on a list and to be rated. Just over one-fifth of the respondents (21%) reported that they saw the training by Energy Trust as a benefit and 19% reported that the marketing materials and advertising were a benefit. Other Program benefits mentioned were:

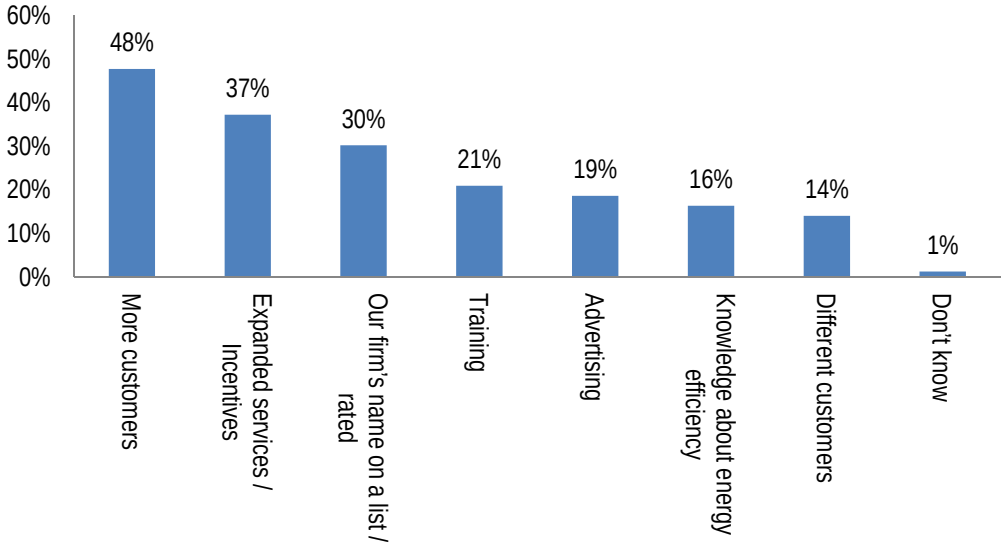
- *By being in the Program contractors felt they are on the leading edge of technology and are "up" on the newest high efficiency equipment*
- *They had to become a trade ally to be competitive in their area*
- *Being a TA "leveled the playing field"*
- *Getting feedback on installs and project work through the inspections.*

It is worth noting that a few interviewees remarked that the benefits to TA contractors had recently decreased for the following reasons:

- *Energy Trust is no longer giving incentives for gas furnaces in some areas, so this affected their business*
- *Many companies have ventured into fields that were outside of their specialties due to the Program*
- *The Program took some existing customers away by increasing competition in the energy efficiency field and the other ("new") contractors provide inferior quality of work for their customers*
- *Since non-trade ally contractors were sometimes eligible for the incentives this decreased their business and does not provide any advantages to companies that met the insurance and other conditions required to be a TA.*

The results are shown in Figure 6.6 below.

Figure 6.6: Benefits of Becoming a Trade Ally



Distinguishing Trade Allies in the Market

The vast majority (83%) of the TAs felt that being a trade ally distinguished their company in the marketplace; however, only 73% used their TA status in their marketing. Among the respondents

(17%) who they did not use TA status in marketing, many said it was because “everyone else is” a TA, the market is saturated, or because of the fact that even non-TAs can get the rebates there is no incentive for customers to use the qualified trade allies. Even so, the few contractors that believed TA status does not make their company stand out reported they continue to use the TA distinction in their marketing and on their websites.

Hesitations or Concerns Prior to Enrolling

In general, 73% of the interviewees didn’t have any hesitation about becoming a trade ally in the Existing Homes Program. Among those that did have hesitations, the major concern was about the cost and the amount of paperwork (22%). Other potential issues were insurance requirements and that the Program might not continue which were brought up by 2% and 1% of the interviewees that expressed hesitations, respectively. Some of the other potential concerns mentioned included:

- *Worries that the training would take them away from their businesses for too long*
- *That there were a lot of requirements and they didn’t know what they were*
- *They wouldn’t be able to figure out who to call to get answers*
- *Would not be able to keep up with changes in requirements*
- *Did not think that it was fair that non-trade allies were able to get incentives.*

Trade Ally Requirements and Communication

When asked what they thought about the conditions required to become a trade ally, the majority of respondents (53%) believed that the requirements increased the prestige and the vast majority of respondents (84%) thought that the reasons behind the Program requirements were very clear. Only 13% of the respondents reported that the TA requirements should be made more stringent and 8% though that the requirements were too stringent. Those who recommended tougher requirements were very emphatic and felt that the Program as well as their companies would benefit from this change. Many of them also wanted the incentives to be available to TAs only.

Communication

Preferred Communication Channels

When respondents were asked if they read “the Insider”, 67% said “Yes”, although there was often prompting with “the emailed newsletter” required. Even though most said they read Insider, only 28% said that was the best way to inform them of Program changes, preferring instead a direct email (72%), perhaps with “program change” in the subject line (Figure 6.7). The comment was often made that they simply “scanned” Insider when they had time. Round tables and one-on-one communication were also recognized as useful communication channels. The majority of respondents (68%) stated that the communication of Program changes was not a barrier to participating. Despite this, the respondents stated that they did not know who to contact with questions and that it was difficult to get a hold of “the same person twice”, giving the impression of high turnover with Energy Trust staff and a

lack of consistency in the information shared with TAs. It was suggested that having a third party track TA information[26] has led to inaccuracies in documentation and renewals.

Figure 6.7 displays the preferred communication channels and 6.8 shows the responses to whether or not trade allies believed communication issues created a barrier to participation.

Figure 6.7: Trade Ally Preferred Communication Channels

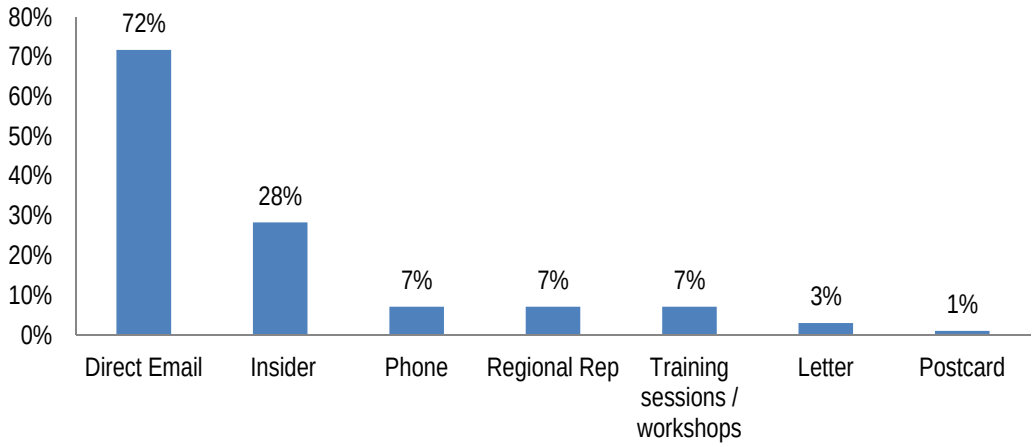
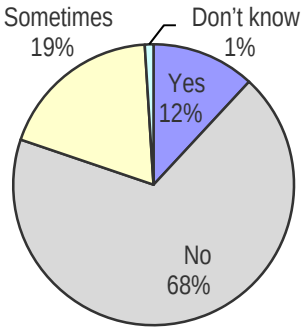


Figure 6.8: Is Communication of Program Changes a Barrier to Participation?



Experience with the Program

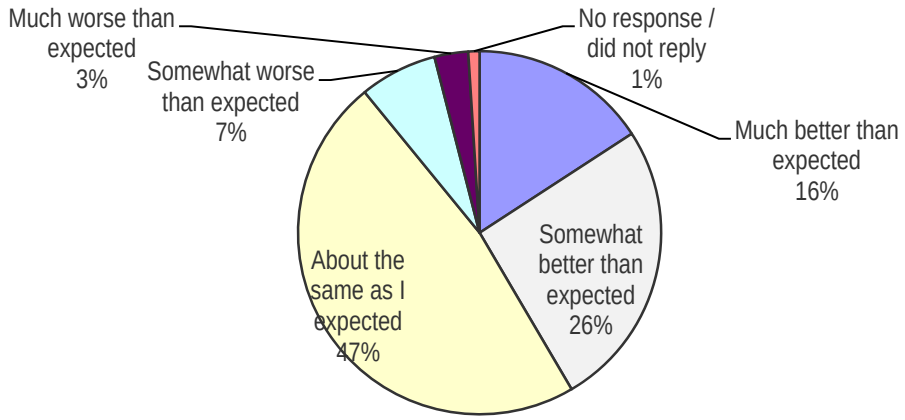
Overall, nearly 50% of the respondents found that their experiences with the Program had matched their original expectations and 42% reported that their experiences were better than their expectations. Only 10% stated that they were worse. Almost all (98%) of the respondents reported that they would become a trade ally again if they could do it over, with only 8% of those having some hesitations. When asked to report why they had hesitations the most common reason was the

[26] Insurance certificate and licensing tracking is provided by EBIX Incorporated.

insurance requirements. Almost all (98%) of the interviewees said that they would likely recommend the Existing Home Program to customers in the future with only 2% saying that they would be unlikely to recommend it. The small minority that were not satisfied with the Program thought that it was too complicated, took too much time to participate in, and that the training involved areas their company wasn't involved in and was not useful to them.

Figure 6.9 displays the results.

Figure 6.9: Trade Ally Experience with the Existing Homes Program

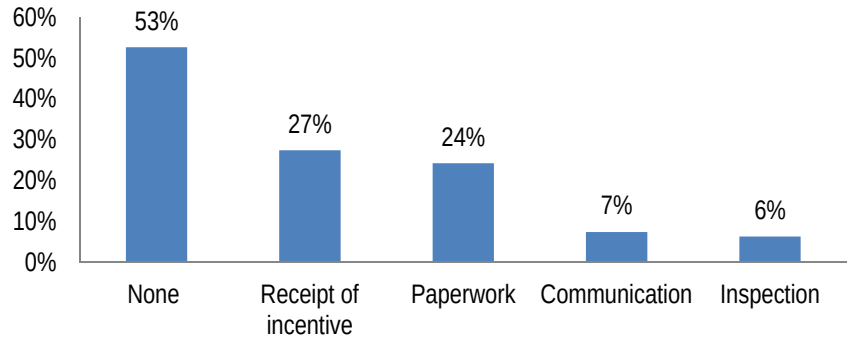


Program Delays

When asked to report if they experienced delays, and if so, where, just over half (53%) of the respondents said that they did not experience any delays in the process. Over a quarter of the respondents (27%) reported that they had experienced delays receiving the incentive and 24% reported that they had experienced delays due to paperwork. Issues related to paperwork included duplicative forms, paperwork getting "lost", and not being able to do some things online. Communication and inspections caused delays for less than 10% of the respondents but there was some concern raised about inconsistencies in the inspection process. The inconsistencies reportedly led to some installations not passing when respondents felt they should have and others with sub-par work passing.

The TAs who did experience delays were asked to report what it took to get the process moving again. The majority, 56%, said it took repeated phone calls, faxes, or emails to Energy Trust to move the process forward. Comments ranged from "Energy Trust staff often loses our paperwork" to "there's not enough staff". The overall sense from TAs that experienced delays was that at times Energy Trust felt disorganized with too many staff turnovers. A common suggestion for improving this was to set up a system where TAs could track the incentive process online providing clearer communication between Energy Trust, the TAs, and their customers. Figure 6.10 displays the Program delay areas.

Figure 6.10: Where Were There Delays in the Process



6.4: Trade Ally Rating System and Development Fund

The contractor rating system uses one to three stars to rate the participating trade allies on the Energy Trust website. The respondents were asked a series of questions to gather feedback and input on the rating system including the criteria for stars.

Star Rating for Trade Allies

The majority of respondents (59%) was familiar with, or had heard of, the new system compared to 41% of those we spoke with that were not aware of the star rating system. Of those that were aware of the system, 78% knew how the scores were generated and 70% knew how many stars they had on the website. The respondents that were familiar with the star rating system were asked to report what they thought about it. Over one-third thought it was "ok" and 27% reported that they liked the star rating system a lot. However, 28% reported that they did not like the star rating system.

When asked to report why they didn't like the rating system there were three common reasons:

- Stars were perceived to be based more on volume of work, not quality (most common): Many of the respondents reported that due to their small size, they are unable to complete the volume of work achieved by larger firms and therefore receive fewer stars, though their quality of work may in fact be better.

- Specialized contractors are disadvantaged: Contractors that specialize in only one type of measure felt that they could not compete in the new rating system simply because they are not able to get enough volume of work across the different measure categories.

- Notification: Also mentioned as an issue for contractors was not enough time between notification of needed training (or any notification), and reduction of stars.

Figure 6.11 displays the percentage of respondents who reported they did or did not like the star system and Figure 6.12 displays the results of whether they thought the star rating system was being applied fairly.

Figure 6.11: Feelings Regarding the Star Rating System

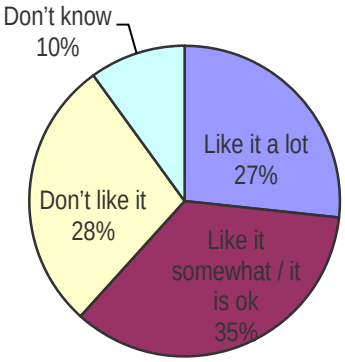
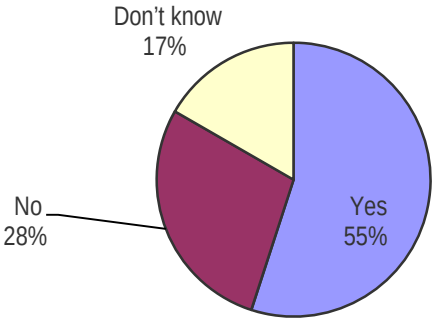


Figure 6.12: Is the Star Rating System Criteria Applied Fairly



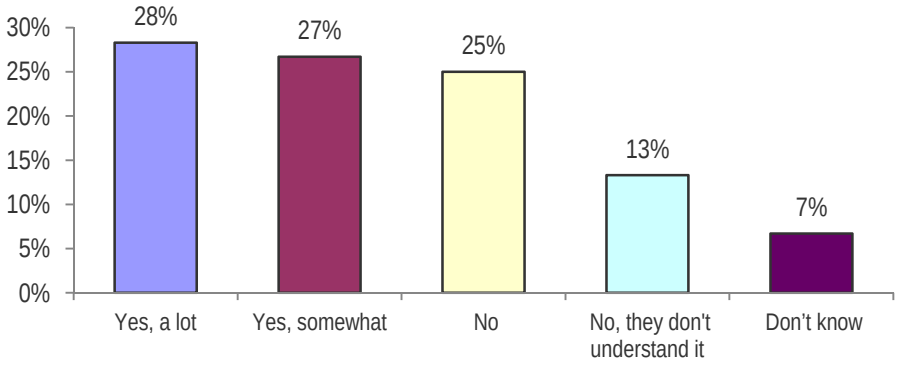
Star Rating and the Consumer

The majority of respondents (72%) reported that they had not heard their customers mention that they used the star system to select a contractor. Slightly over a quarter (26%) of TAs said they have heard customers mention using the rating system with 13% saying that their customers mention it "a lot" and 13% reporting they only mention it "a little". However, over half of the respondents (55%) thought that the star rating system was useful to customers compared to 38% who thought it was not useful.

Some of the concerns regarding the rating system were:

- *Customers go down the list and only pick "Three Star" contractors*
- *There isn't any clear language on the website explaining the criteria for the stars*
- *Customers may not understand that less stars does not necessarily mean the contractor has poor quality work or customer service issues*

Figure 6.13: Do You Think the Rating System is Helpful to Consumers?



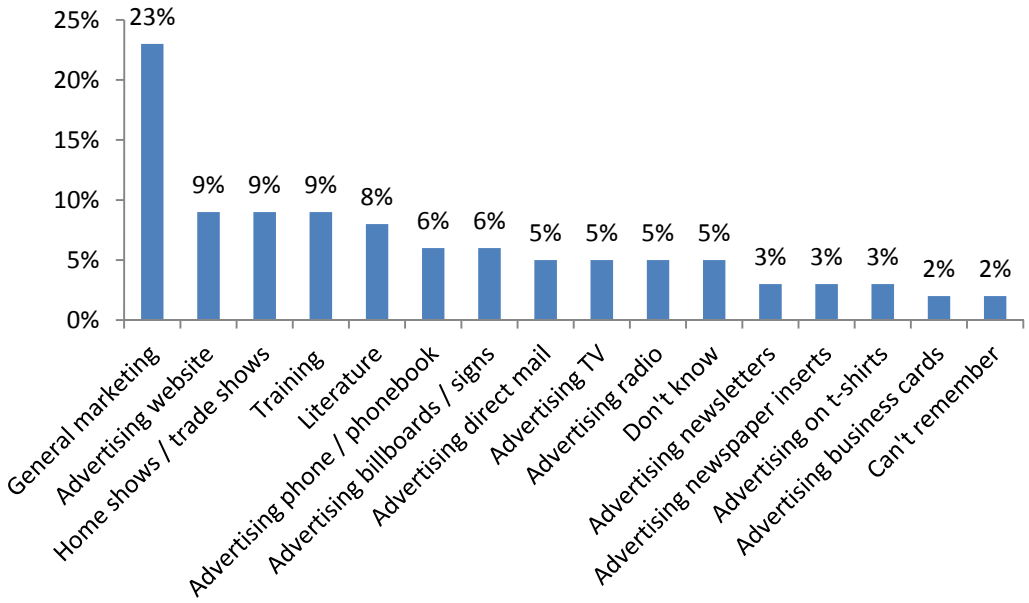
Lastly, the respondents were asked to provide any suggestions for improving the existing rating system. The ideas for changes included:

- *Listing separate stars for quality, quantity, and customer service*
- *Making ratings based on specific measures*
- *Giving detailed descriptions of the star meanings and requirements on the webpage for customers*
- *Make the training specific to the measures the contractor actually installs*
- *Allow more time for contractors to respond to training notifications or customer service issues before their rating was negatively affected*

Trade Ally Development Fund

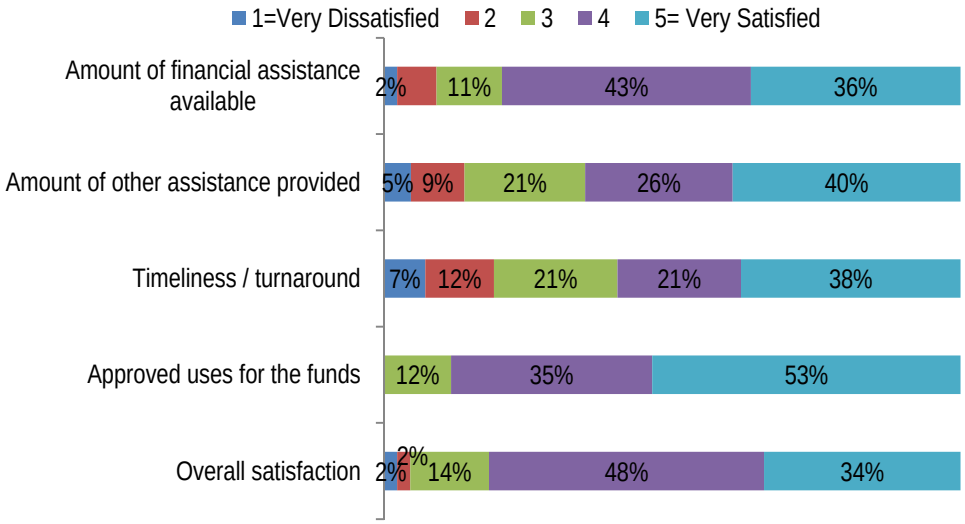
The vast majority of respondents, 78%, were aware of the Trade Ally Development Fund, but many of those needed prompting by referring to the previous name of the Cooperative Marketing Fund, suggesting that there is good awareness of the Fund, just not the new name. Of the respondents that were aware of the fund, a little over half (54%) reported that they had used the fund at some time. As seen in Figure 6.14, the majority of TAs (75%) used the funds for advertising and marketing of various forms (includes general marketing 18%, website marketing 9%, and literature 8%) with only 18% using them for trade shows and training. Figure 6.15 displays the distribution of responses.

Figure 6.14: Trade Ally Development Fund Uses



Respondents were asked to rank their levels of satisfaction with the fund on a 1 to 5 scale where 1 was *very dissatisfied* and 5 was *very satisfied*. The variety of approved uses for the fund received the highest satisfaction rating compared to other areas (53% very satisfied). The timeliness of reimbursement was the feature receiving the lowest satisfaction scores followed by the amount of assistance provided. However, the dollar amount of assistance provided seems appropriate as nearly 80% gave it a rating or 4 or 5. This was reflected in comments such as *"How can you complain about free money*?" Figure 6.15 displays the results graphically.

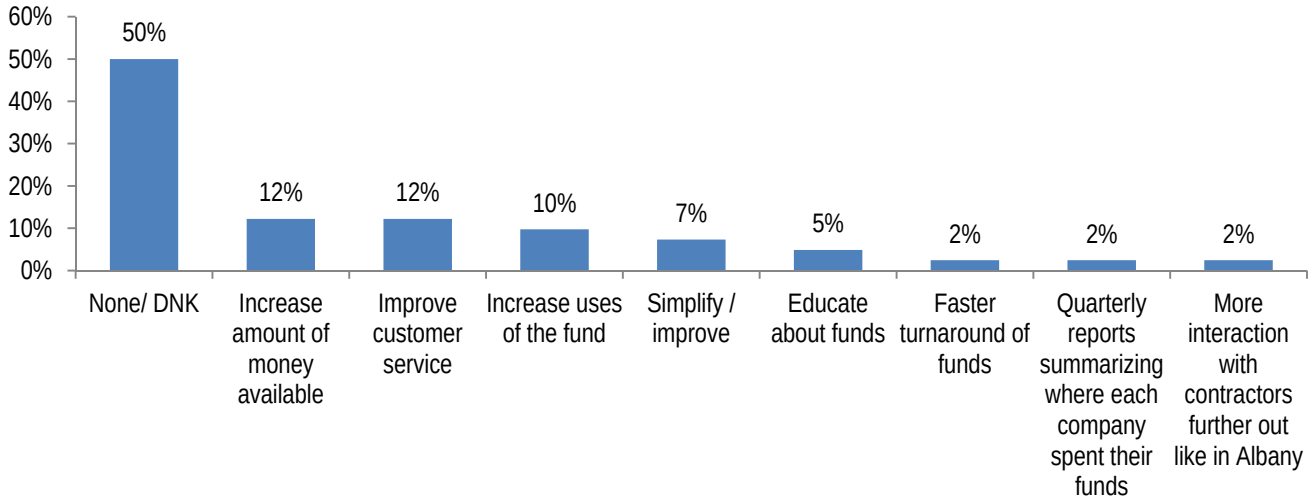
Figure 6.15: Trade Ally Development Fund Satisfaction



Recommendations for the Fund

The respondents were asked to provide potential recommendations for improving the fund. Despite 88% of fund users being satisfied or very satisfied with the approved uses of the fund, 10% still recommended increased uses for the fund. This seemed to primarily focus around blower door testing equipment as many contractors stated the initial investment for this equipment was cost prohibitive. Other suggestions included increasing the amount of money available (12%), improving customer service (12%), and simplifying the process (7%). Figure 6.16 displays the suggestions for improvement.

Figure 6.16: Suggestions for Improving the Trade Ally Development Fund



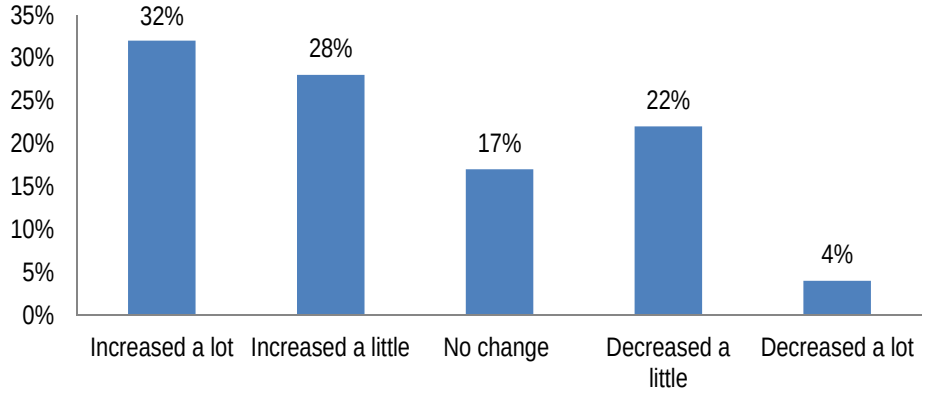
6.5: Market Trends, Barriers, and Motivations

Multiple questions were asked regarding trends in energy efficiency work, customer motivations, barriers and drivers, and trade ally practices to market energy efficient upgrades and projects.

Market Trends and Drivers

Figure 6.17 suggests that energy efficient installations are moving in an upwards trend with 60% reporting that their energy efficiency work has increased either a little or a lot in the last two years compared to just over a quarter of the respondent that believe the number of energy efficiency projects has decreased over the last two years. Figure 6.17 displays the responses.

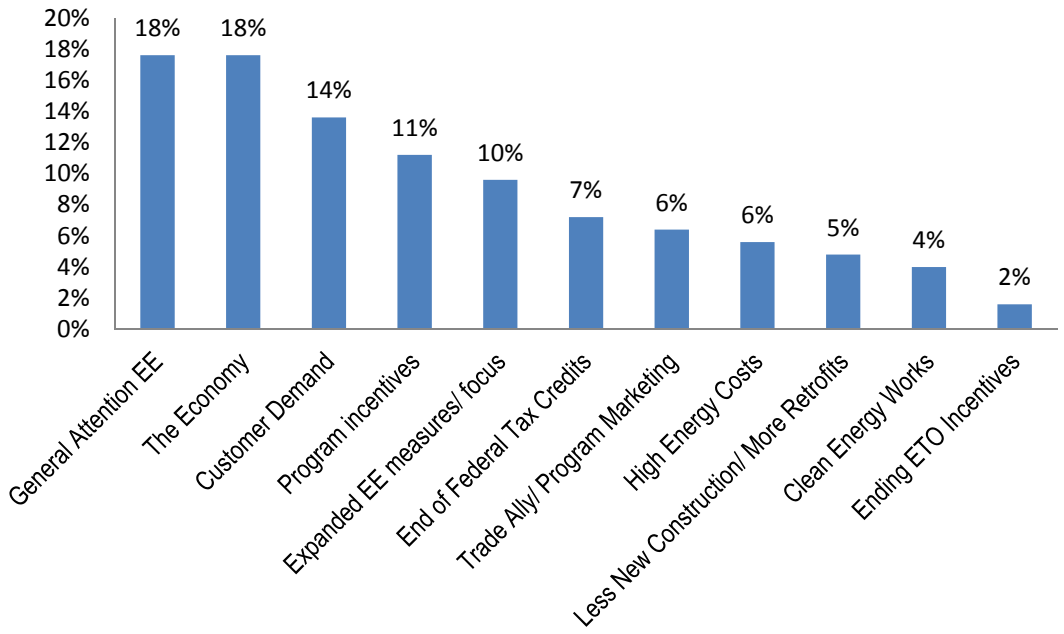
Figure 6.17: Amount of Energy Efficient Projects over the Last two Years



Market Drivers

Overall, it appears the economy, customer demand, incentives, and Energy Trust programs, are believed to be factors behind the positive change. It is worth noting that the economy was cited as one reason for both an increase and a decrease in the amount of energy efficient projects in the last two years. Combined, 21% of the respondents reported that incentives, the trade ally program, or CEWO were driving the market toward more energy efficient upgrades and installations. The trade allies also believe that customers themselves and the increased attention given to ”green” products and energy efficiency are driving the market. Negatively, one of the downsides has been the decrease in federal tax credits with no other fund source to make up the difference. For certain businesses that specialize in furnaces for example, Energy Trust ending those incentives has had a large impact on their work. Also the incentive levels are not always large enough to cover the cost premium associated with the high efficiency installations. Figure 6.18 displays the distribution of responses.

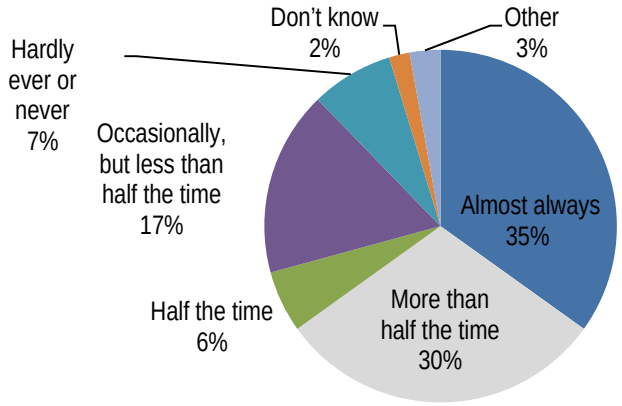
Figure 6.18: Market Drivers



Customer Drivers

Trade allies estimated what percentage of their customers asked them about energy efficient options. Nearly two-thirds of the respondents (65%) reported that their customer asked about EE almost always or more than half the time. Less than 10% reported that their customers hardly or never asked them about energy efficient options. A small minority of respondents said that they never have to bring it up because they specialize in EE and the customer comes to them with that already in mind. Figure 6.19 displays the results graphically.

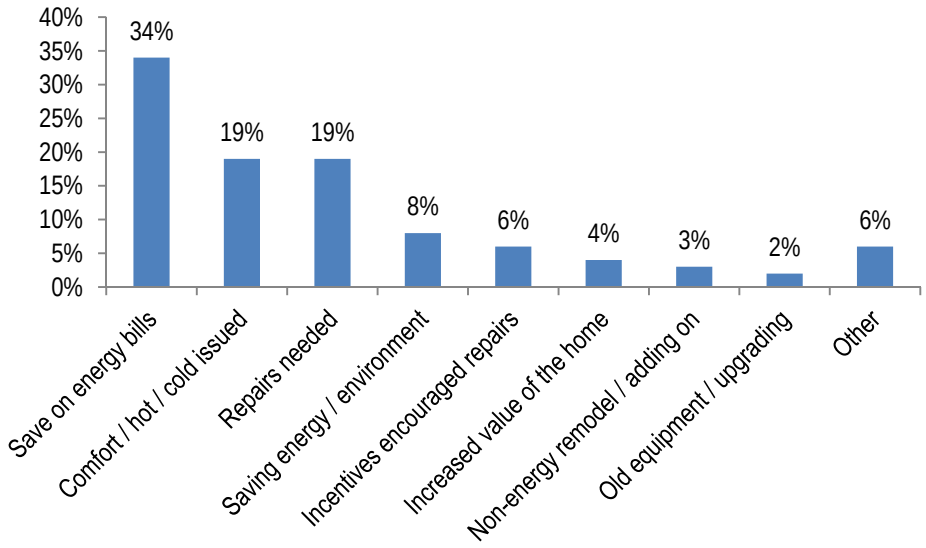
Figure 6.19: Percentage of Customers Bringing Up Energy Efficiency



A desire to save money on their energy bills (34%), comfort (19%), and repairs (19%) were reported as the three most common customer drivers to complete an energy efficiency upgrade. The

environment and incentives were reported as customer drivers by 8% and 6% of the trade allies respectively. Word of mouth, web search and advertising, and safety reasons were reported as customer drivers for upgrades by less than 1% of the respondents. Figure 6.20 displays the results graphically.

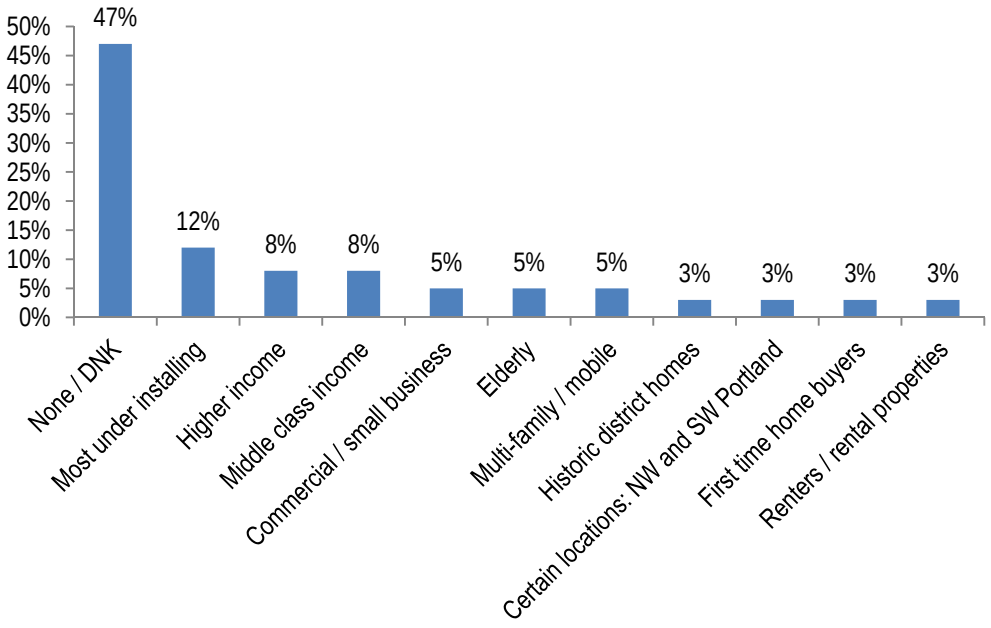
Figure 6.20: Customer's Primary Reason for Undertaking Projects



Underserved Market Segments

When asked about segments of the market that are underserved or under investing in energy efficient options, the bulk of respondents could not identify any obvious gap. The next most common response is that it is a problem across the entire market with all sectors under investing in energy efficiency (12%). Around one-tenth of TAs observed that it is middle (8%) or higher income residents (8%) that are not moving in the direction of more energy efficiency with some suggesting that it is possibly because these sectors can afford to pay the higher energy bills or are not as affected by the rising costs. Figure 6.21 displays the responses for underserved market segments.

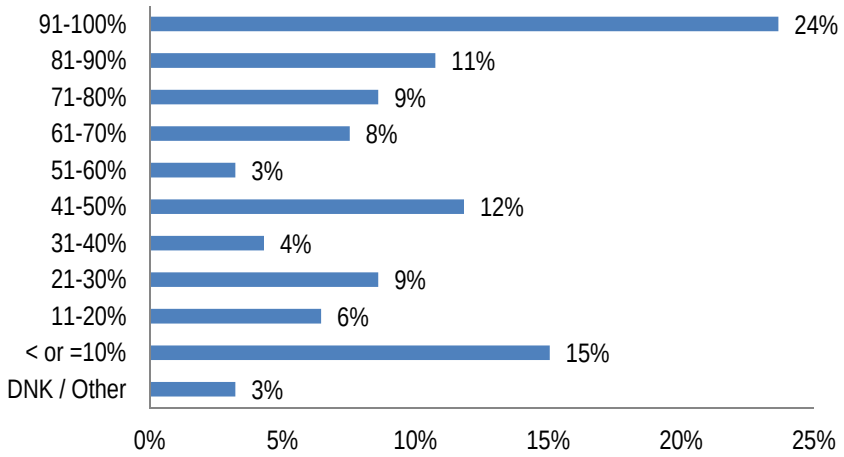
Figure 6.21: Underserved Customer Groups



Qualifying Projects

For nearly a quarter of the TAs, between 91- 100% of their work qualified for Energy Trust's Program. Another 31% perform qualifying work more than half the time. However, 46% of responding TAs say that less than half of their work would qualify for the Program. Some of contractors with the lowest number of qualifying jobs attributed the low percentage to having the only incentives they *could* qualify for being discontinued. Figure 6.22 displays the percentage of TA jobs that qualify for an incentive.

Figure 6.22: Percentage of Qualifying Jobs

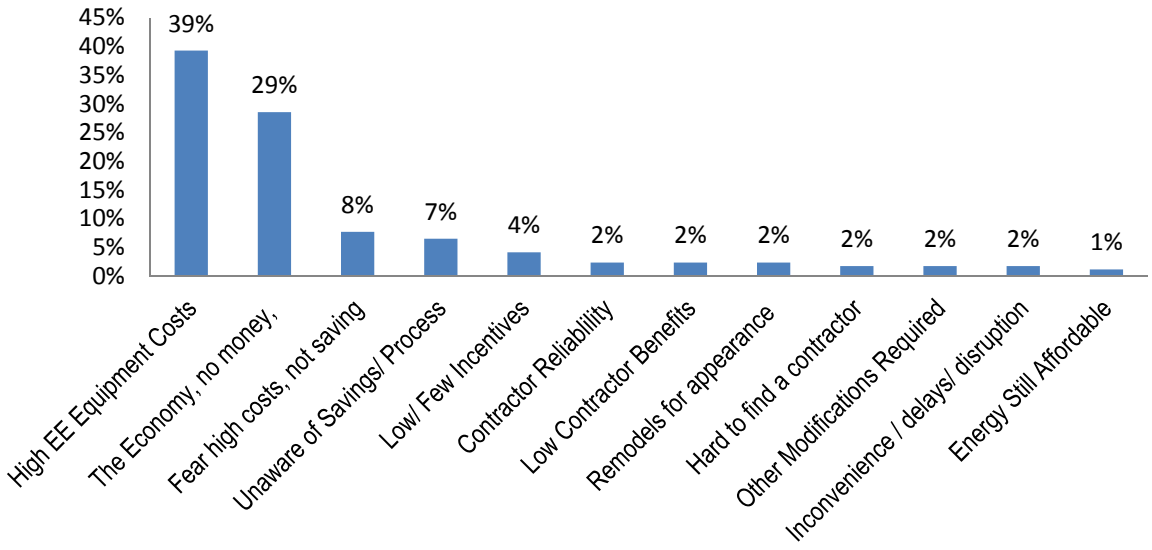


Addressing Barriers

Barriers

The cost premium associated with energy efficient measures was reported to be the largest barrier to more energy efficiency upgrades in the residential market with nearly two-fifths of all respondents reporting this was the number one barrier (39%). The second largest barrier was reported to be the economy or lack of capital (29%). It is worth noting that the economy was characterized as a "double edged sword" by a number of the respondents. On one hand, the rising cost of energy and slow economy drives more projects by making saving money on utility bills more attractive; conversely, the higher initial cost of energy efficient equipment makes investing cost prohibitive. Other barriers included a fear of projects not actually reducing energy use or bills (8%), lack of awareness (7%), and incentives being too low or scarce (4%). Figure 6.23 displays the distribution of responses.

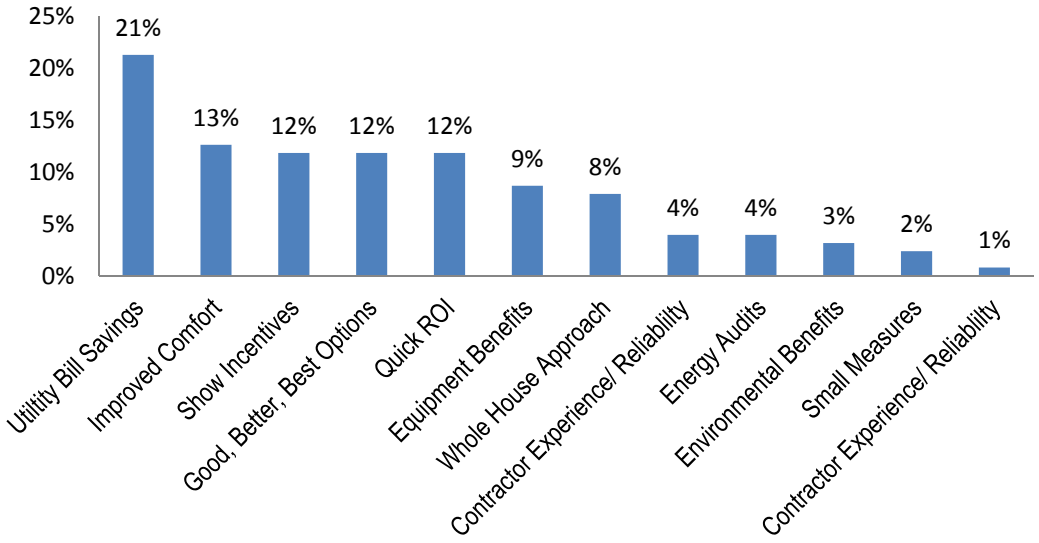
Figure 6.23: Barriers to More Energy Efficiency work in the Residential Market



Marketing Messages

The trade allies were asked to report how they marketed their energy efficient products and installations. As expected, some of the main arguments TAs use for encouraging clients to invest in energy efficient measures are utility bill savings (21%), comfort (13%), and options for reducing the payback period (12%). The incentives were also reported as a main selling point by 12% of the respondents. Providing customers with "Good, Better, Best" alternatives was cited as a way to increase the options for clients combining efficiency and rebates with affordability. Another common response that firms suggested the benefits of the higher efficiency equipment or use a "Whole House approach" in which the trade allies promoted the advantages of EE and suggest the option to start out with small, less expensive measures and move toward larger improvements in the future. Environmental benefits were not reported as a major selling point. The trade ally marketing messages are displayed in Figure 6.24.

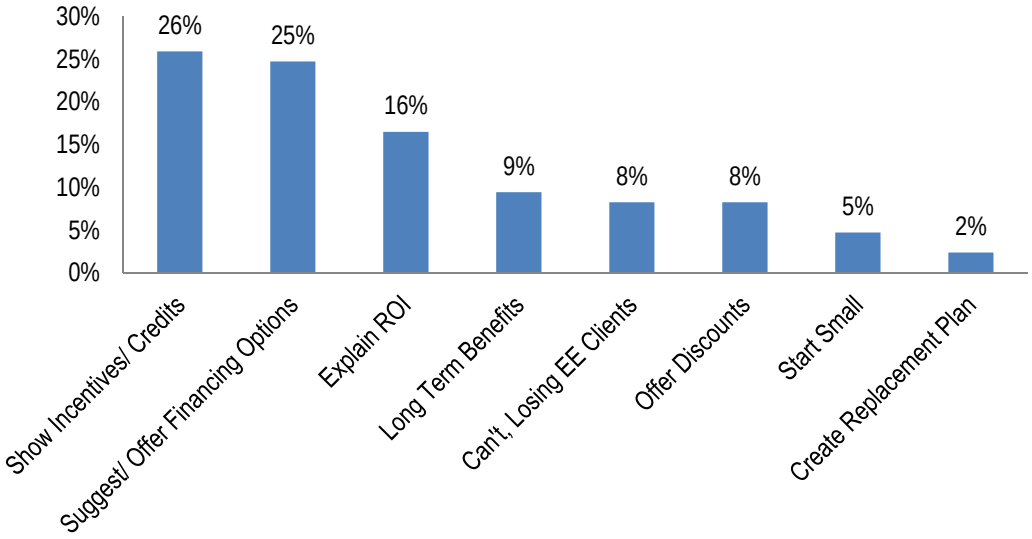
Figure 6.24: Trade Ally Marketing Messages



Addressing Customer Barriers

Over a quarter (26%) of TAs said that they show customers potential credits or incentives to help remove economic barriers and another 25% reported that they suggest potential financing options to their customers. Another common way to address barriers was to fully explain the potential return on investment (ROI) from the energy upgrades to their clients. Figure 6.25 displays the ways that TA are attempting to address barriers in the market.

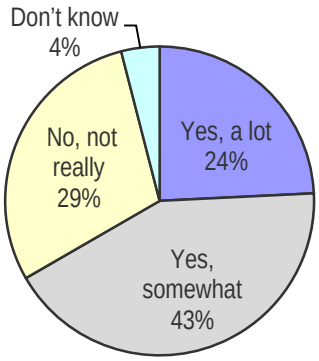
Figure 6.25: How do you Address these Barriers?



Just over two-thirds of the respondents reported that the Program has been helpful in overcoming the barriers to EE installations and improvements compared to only 29% who felt that the Program had not been helpful in addressing barriers. Some of those who said the Program was not really helpful

reported they worked with gas furnaces and they no longer have access to incentives. Others that reported it was not useful felt the incentives were not high enough to cover the additional cost of higher efficiency equipment or that people were unaware of the Program. Figure 6.26 displays the distribution of responses.

Figure 6.26: Has the Program Helped Reduce Barriers

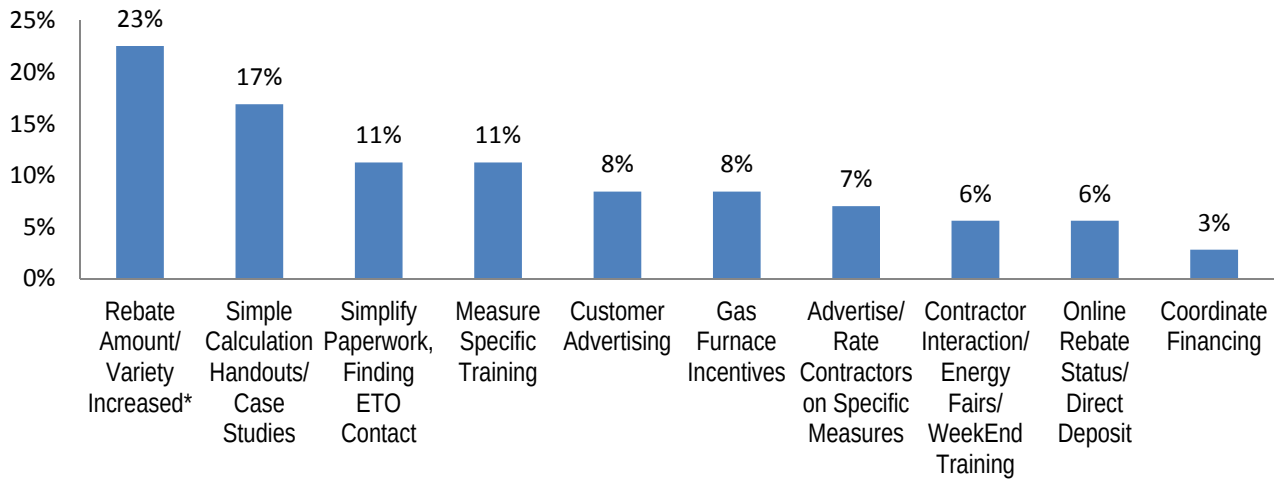


Lastly, the respondents were asked to report in what ways they felt the Program has been most helpful. The incentives were the most common (43%), along with reduced costs for homeowners (22%); however education (18%) and marketing (11%) were also common responses.

6.6: Programmatic Changes

In numerous sections of the survey, respondents commented that they would like to see an increase in the incentive amount, an increase in the measures covered, or a return of discontinued incentives. This is especially true for those companies who work with natural gas equipment. When asked directly to suggest ways that Energy Trust could work better with the trade allies to increase energy savings increasing the incentive amount (23%), literature with case studies demonstrating ROIs and calculations showing the same (17%), simplified process and paperwork (11%), and measure specific training (11%) were the most common suggestions. Figure 6.27 shows the assortment of suggestions.

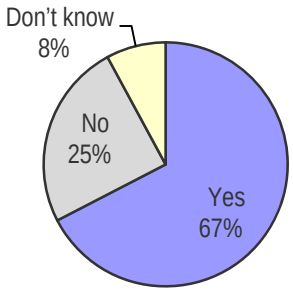
Figure 6.27: How can Energy Trust work better with TAs to Increase Energy Savings in the Marketplace?



Limiting Who Gets Incentives

The majority of the trade allies, or 67%, reported they would like the Program to be changed so that only the approved trade allies were eligible to receive the incentives. They saw this as a huge advantage and most were quite emphatic about it. Only 25% of the interviewees reported that they would not like that change. Several declared that they would like customers and trade allies to be the only ones eligible - not non-trade ally contractors. Some were worried that if homeowners did their own projects, they would create problems. Quite a few others felt that everyone should have a chance to get some money back and therefore nobody should be excluded.

Figure 6.28: Should Only Trade Allies be Eligible for Incentives



Suggestions for Program Refinements

Lastly, respondents were asked to provide suggestions for overall improvement to the Program. The suggestions fell into one of several broad categories: marketing and outreach, incentives, Program process, the website, and TA ratings and certification. The common suggestions for each category are included in Figure 6.29.

Figure 6.29: Trade Ally Suggestions

Marketing and Outreach:

- More advertising and outreach by Energy Trust would make a difference
- Marketing should be focused and increased in rural and non-Portland areas
- Have more Energy Trust representatives attend trade shows
- Representatives should talk directly to customers face to face

Incentives

- Increase the incentive amount
- Decrease the amount of time it takes for the customer to receive their incentive(s)
- Bring back the incentives for gas furnaces[27] (or other measures)
- Sliding scale of incentives for different levels of improvements
- Blower test equipment is expensive – provide a rebate / incentive to help companies purchase these materials

Paperwork and Process Changes

- The paperwork and process should be simplified and streamlined, since this is often a source of frustration and difficulty for both customers and contractors
- Email rebate updates to track progress of incentives / rebates
- Having an on-line or electronic application that would accept an electronic signature from a customer
- The quality of the inspectors / inspections vary allowing some non-quality work to pass an inspection and others to be rejected
- Improved training within Energy Trust for TA contact / customer service representatives to ensure they provide the same information no matter who you talk to
- Lists of point contact personnel for specific issues

Trade Ally Training

- Training sessions cover the same information and do not provide additional value to returning TAs.
- Case studies and information they could apply to specific type clients would be desirable
- Requirements for training often involve travel and considerable expense for small companies – make incentive / rebate money available for this

The Website

- Make it easier to access Program, rebate, and contractor information
- Simplify customer pages of the website to make it easier for them access Program information
- Include more extensive contractor profiles that would allow differentiation between contractors (on website)
- Be able to track their customer's / company's rebate status on-line
- Should not base ratings on job volume because this impacts the smaller businesses - rank should be based on quality and not quantity
- Add clear language on the website explaining the criteria for the stars

TA Rating / Certification

- Promote TAs as higher level of contractor - let customers know the TA status is not just given to contractors, but that they have to earn it
- Ratings should not base ratings on job volume because this impacts the smaller businesses - rank should be based on

[27] An ETO reviewer notes that condensing furnaces are now code.

quality and not quantity

- Energy Trust notify trade allies by email prior to a change to their company's rating
- Only certified TAs should be eligible for the rebates since they have "jumped through all of the hoops" in terms of insurance and requirements to be classified as a Trade Ally

6.7: Non-Energy Benefits Results

The trade allies were asked a battery of questions designed to identify the non-energy benefits (NEBs), including negative factors, that they associated with the Program and installed measures.[28] The NEB categories about which we asked are detailed in Figure 6.30. By far, there were more positive comments than negative responses about the NEB categories. Comfort, equipment performance, satisfaction, noise, and improved ability to sell the home were features that were most commonly mentioned as positive effects from the Program and measures; maintenance and aesthetics were the most frequently mentioned negative effects, but they were only mentioned by 6% of respondents each.

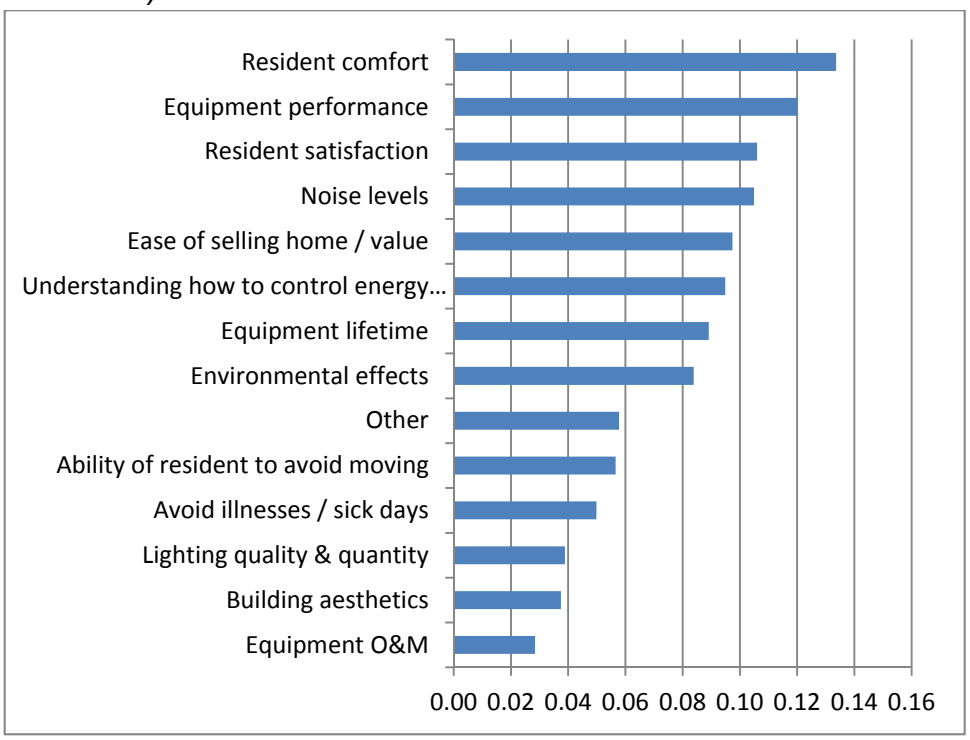
On average, the contractors assigned a value of 1.1 to the total of the NEBs, a score computed on a scale of -1.67 to 1.67, where a score greater than "1" means the NEB is more valuable than the energy savings. The results showed that, overall, the trade allies believed that the value of the NEBs to the households was greater than the value of the energy savings.

There are several implications of this result. First, trade allies believe there are NEBs delivered by the Program, and they are significant – similar in value to the savings delivered. Second, the results suggest that their perception is that the households receive a better internal ROI than energy savings alone would imply.

Figure 6.30 provides the ranked average scores for component NEBs for the contractors. Each result represents a total of both positive and negative NEB values. Contractors believe the most valuable NEBs households receive are improved comfort and improved equipment performance (highest scores), followed by satisfaction with the measures, reduced noise, and improved ability to sell the property. These results indicate that contractors believe households receive and value these additional benefits delivered by the Program – and believe they are at least as valuable as the savings. The two factors with the highest negative NEBs were equipment maintenance, and the quality of the light in the home. Aesthetics and lifetime were also given net negative values by some respondents.

[28] The NEBs battery is included in the survey instruments provided in Appendix C. The interpretation of the scores assigned was provided in Chapter 5.

Figure 6.30: Average Non-Energy Benefits Scores by Compoent for Trade Allies (Total NEB score = 1.1)



6.8: Summary

The results of the survey are summarized below:

- **Introduction:** Energy Trust is viewed by trade allies as a credible source of information for Oregon residents about energy efficiency and renewable energy.

- **Trade Ally Motivations, Benefits and Initial Hesitations**: The features that first attracted trade allies to participate in the Program were the ability to help customers secure incentives (which was seen as a way to boost sales and jobs), the potential to increase overall business, and the credibility the Energy Trust name lends to the participating trade allies. The outreach materials and the development fund were not reported as attractive features to many. The initial concerns about participation centered around paperwork, the time commitment required to participate, and the potential cost. Once they were enrolled in the Program TAs found that it did increase their business volume and helped provide incentives to customer. The TAs found added and unexpected value in the Program due to it increasing their knowledge about energy efficiency and the rating system and approved contractor list. The Program helps to distinguish trade allies in the marketplace and even the few contractors that believed TA status does not make their company stand out reported they continue to use the TA distinction in their marketing and on their websites

- **Trade Ally Requirements and Communication:** The justification for and the reasons behind the Program requirements are clear and understood and the level of the requirements is about right. Some of the TAs believe that only approved trade allies should be eligible for incentives and that allowing non-certified trade allies to get incentives reduces the value of the trade ally label.

- **Communication**: A lack of communication regarding Program changes is not a barrier to TAs but there were some negative issues noted with consistency in customer service communication to Energy Trust. While the Insider is recognized by the majority of the trade allies, direct email is the preferred communication channel for future changes as the Insider is often just skimmed or briefly reviewed.

- **Experience with the Program:** Trade allies overwhelmingly report a positive experience with the Program. For the vast majority of TAs the Program experience matched or exceeded what they expected. Nearly all of the respondents (98%) reported they would participate again and that they would recommend the Program to their future customers. The small minority that were not satisfied with the Program thought that it was too complicated, took too much time to participate in, and that the training involved areas their company wasn't involved in and was not useful to them.

- **Program Delays:** Program delays were reported as an issue by nearly half of respondents. The delays were experienced in receiving the incentive and delays associated with the paperwork. Communication and inspections are generally not holding up the process but inconsistent and varying levels of inspections were raised as a concern. There was a perception of disorganization among Energy Trust staff by the TAs that did experience delays.

- **Star Rating for Trade Allies**: Most TAs are familiar with the system and most, but not all, like the system. Those that do not like the system believe it unfairly ranks smaller firms (those with less volume of jobs) and those firms that are more specialized. Some also report that there is not enough notification about losing stars or trainings. TAs, for the most part, believe that the rating system is useful for customers although they believe the majority of customers are not using the system. The TAs thought the star system could potentially be improved by basing the stars around quality instead of quantity, a clearer explanation of how the stars are scored for consumers, and potentially having stars for specific measures. Additionally, some felt that the trainings should be less general and more specific to provide more value for the attendees.

- **Trade Ally Development Fund**: While most TAs are aware of the Development Fund by function (if not in name) less than half are using it. The funds are used generally for traditional and web marketing and outreach including mail, literature, web advertising, and mass media. However, the funds are also being used by some participants to help pay for trainings and trade shows. The wide variety of approved fund uses is a strong attribute of the Development Fund while the timeliness of reimbursement, although viewed favorably by most, is the weakest aspect of the fund. Improving the turnaround time, customer service aspect and potentially increasing the amount of funds available were possible suggestions provided.

- **Market Trends and Drivers:** The amount of energy efficient jobs completed by TAs has been increasing over the last couple of years. There is a general increase in awareness about, and demand for, energy efficiency that is helping to fuel the increase as well as the economy and high energy prices. Energy Trust programs and incentives are also viewed as a market driver by respondents. The majority of customers are asking TAs about energy efficient options due to their desire to save money on bills, increase the comfort of their homes, and to make repairs to existing equipment. The incentives are helping to encourage upgrades but TAs do not believe the Energy Trust outreach materials, website, or literature are necessarily driving customers to ask about EE. Additionally, the incentive levels are not always large enough to cover the cost premium associated with the high efficiency installations.

- **Underserved Market Segments:** Most trade allies could not pinpoint a specific underserved market segment. However, some felt the middle and upper income segments may be underserved because they have less of a drive to reduce their bills and save money from energy efficiency than other segments, “they can afford to pay higher bills”. The elderly and mobile home owners were also mentioned.

- **Qualifying Projects:** Most of the trade allies do not have issues installing or completing qualifying improvements. The exception to this was reported by those who had their incentives discontinued, particularly gas and furnace incentives and perhaps some duct sealing.

- **Addressing Barriers:** While the Program has helped to reduce barriers for most TAs, the cost of energy efficient equipment and the funds needed to purchase upgrades remain two of the largest barriers. The economic downturn is helping to both drive more installations (a desire to save on bills) and hamper them (less money to complete a project). There is also a reticence among some customers to complete projects due to an uncertainty surrounding the savings they will actually see. TAs highlight the bill savings resulting from various improvements, the increased comfort, the ROI of the measures, and the available incentives when marketing high efficiency equipment. The environmental benefits are a less common selling point. In order to overcome the barriers the trade allies suggest the incentives, financing options, and explain how the measures can pay for themselves.

- **Programmatic Changes:** Increased rebates amounts and levels, a return of discontinued incentives, case studies and calculations to help show ROI, and decreased paperwork were four changes most often suggested for the Program moving forward. The trade allies would also like to see incentives limited to approved trade allies only.

APPENDIX A – DETAILED TRACKING DATA REVIEW

SERA staff reviewed the Program documentation related to the Existing Homes Program including the data on activity, the monthly reports, the implementation manual and past evaluations. This section of the evaluation reviews the Program documentation.

Data Review: Total Program Activity

A total of 32,433 homes participated in the single family track of the Existing Homes Program; 58% of the participants were in 2010 and 42% were in 2011. The 32,433 homes installed 47,242 individual measures[29]. The Existing Manufactured Homes track had 7,174 recorded participants who installed a total of 51,071 measures. A total of 82,776 Energy Saver Kits (ESK) were distributed. Figure A.1 displays the total participants and measures for each of the three Program tracks.

Figure A.1: Total and Annual Program Participants and Measures by Track

	Existing Homes (Single Family)		Existing Manufactured Homes		Energy Saver Kits
	Total homes	*Total measures*	*Total homes*	*Total measures*	*Total homes*
2010	18,865 (58%)	26,548 (56%)	2,411 (34%)	14,443 (38%)	50,038 (60%)
2011	13,568 (42%)	20,694 (46%)	4,763 (66%)	36,628 (72%)	32,738 (40%)
Total	32,433	47,242	7,174	51,071	82,776

A.1: Single Family Track Data

Total Activity

The single family track had 32,433 participating homes in 2010 and 2011 with 58% of the total participating in 2010 and 42% participating in 2011. Combined, 47,242 measures (including home energy reviews) were installed with an average of 1.45 measures installed per home. Figure A.2 displays the total activity of the Existing Homes Program in 2010 and 2011.

[29] A home energy review (HER) is included as a measure.

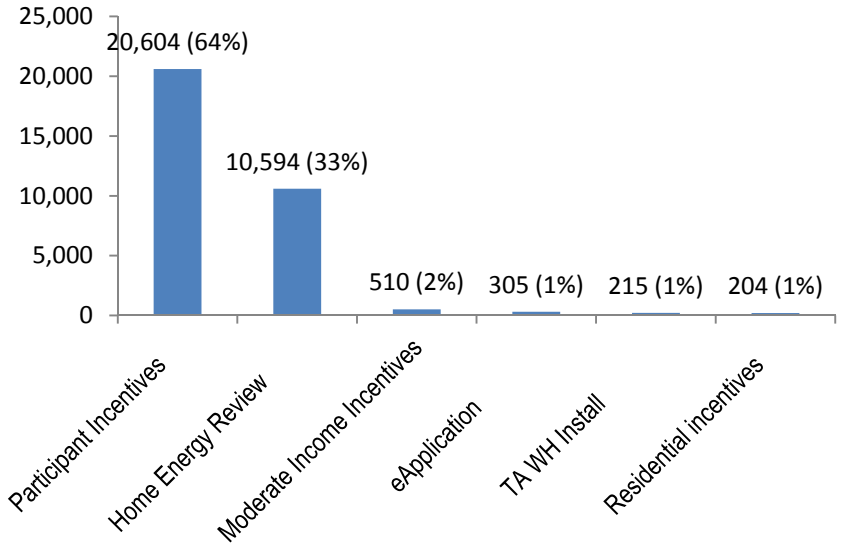
Figure A.2: Single Family Total Activity

	Total homes	Total measures	kWh	Therms
2010	18,865 (58%)	26,548 (56%)	6,977,528	765,417
2011	13,568 (42%)	20,694 (46%)	6,416,900	484,538
Total	32,433	47,242	13,394,428	1,249,955

Activity by Track

The majority of participants were coded as the Participant Incentive track (64%) followed by the Home Energy Review track (33%). Only 2% of the participants were in the Moderate Income Incentives track. The distribution of total participants by program is shown in Figure A.3.

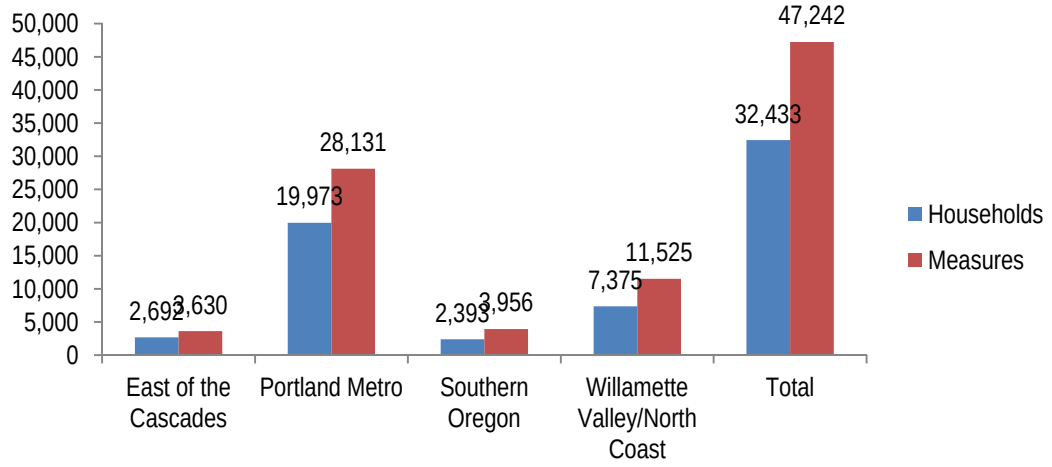
Figure A.3: Total Participants by Program Track



Activity by Region

The majority of the activity was in the Portland metro area with a total of 19,972 participating homes (62%) and 28,131 (60%) of the measures installed in the Metro area. The Willamette Valley had 28% of the participating homes, East of the Cascades had 8.3%, and Southern Oregon had the least amount of regional activity with only 7.4% of the total homes located in the region. Figure A.4 displays the total track activity by region.

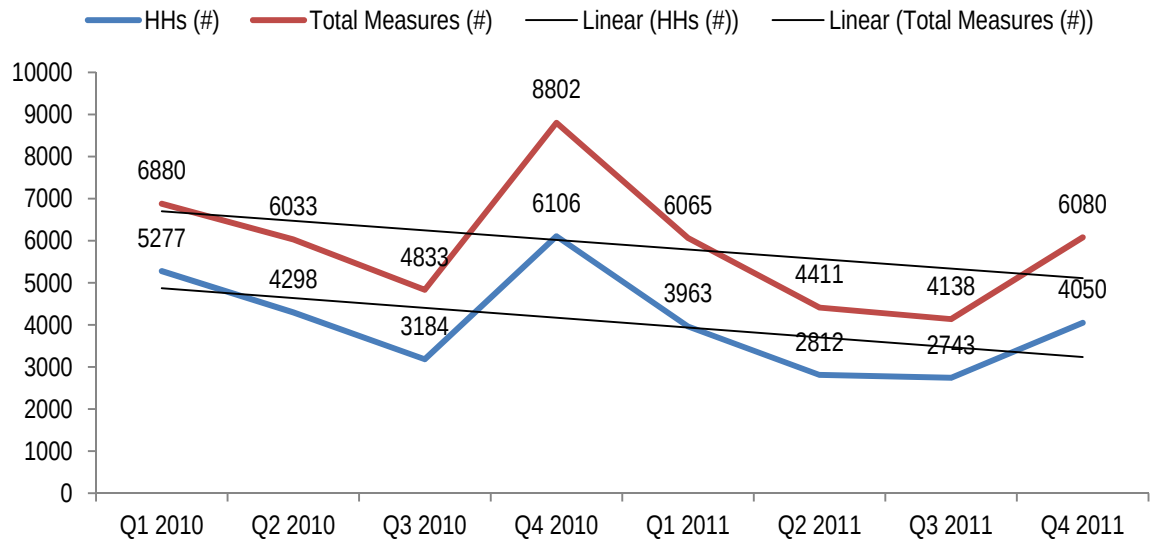
Figure A.4: Total Program Activity by Region



Activity by Quarter[30]

The households (HHs) visited and the total measures installed were examined by quarter. The quarter with the most activity was the fourth Quarter of 2010 followed by Quarter 1 in 2010 and Quarter 4 in 2011. The slowest Quarters were the second and third Quarters in 2011. It is worth noting that the shift from January to December is due to application processing and booking rules. There appears to be a very slight downward trend. The distribution is shown in Figure A.5..

Figure A.5: Total Activity by Quarter



[30] The quarter is based on the Recognized Date – the date the measure savings were recognized (booked). The Recognized Date was used to track the quarterly activity as opposed to the installation date because this date determines which program year the savings count toward.

Total Activity by Utility

Electric Utilities: Nearly two-thirds of the total participants were located in PGE territory and 30.1% were in PAC territory. Another 5.2% of the participants were in non-qualifying electric utility territory. Figure A.6 displays the total participants by electric utility territory.

Gas Utilities: Two-thirds of the total participants were located in NWN territory and 4.3% were in CNG territory. The other 28.8% of participants were located in non-qualifying gas utility territories. Figure A.6 displays the total activity by gas utility.

Figure A.6: Total Activity by Utility

Gas Utility	Count	Percentage	Electric Utility	Count	Percentage
Non-Qualifying	9,354	28.8%	Non-Qualifying	1,686	5.2%
CNG	1,399	4.3%	PAC	9,763	30.1%
NWN	21,680	66.8%	PGE	20,984	64.7%

Installed Measures

Total Measures

A total of 47,242 measures were installed with an average of 1.45 measures per participating household. The most common measure or action completed was a *Home Energy Review* (10,652). This was followed by *Ceiling Insulation* (5,500), *Floor Insulation* (3,688), and *Air Sealing* (3,391). *Knee wall Insulation* (489), *Boilers* (114), and *Direct Vent Gas Heaters* (5) were the least common measures installed. Figure A.8 displays the total installed measures.

Figure A.8: Installed Measures

Measure	Count	Measure	Count
Air sealing	746	Gas fire	2,288
Boiler	114	Gas furnace	1,934
Ceiling insulation	5,500	Heat pump replace	809
Commissioning	2,092	Heat pump upgrade	2,244
Ductless heat pump	872	Home energy review	10,652
Duct insulation	910	Knee wall insulation	489
Duct sealing	2,006	Tank water heater	1,861
Duct testing	2,435	Tankless hot water	1,835
Floor insulation	3,688	Wall insulation	1,447
Direct vent gas heater	5	Windows	2,609
	Total	*47,242*	

Measures installed by Region

For all four regions, the *Home Energy Review* was the most popular measure. In addition, *air sealing* was popular in all four regions. *Ceiling insulation* and *floor insulation* were popular measures in the Portland Metro and Willamette Valley regions. Households in the East region often got *duct testing* while in the South region *heat pump upgrades* and *commissioning* measures were popular. Figure A.9 displays the measures installed by region graphically and figure A.10 displays the counts of measures installed by region.

Figure A.9: Distribution of Measures Types by Region

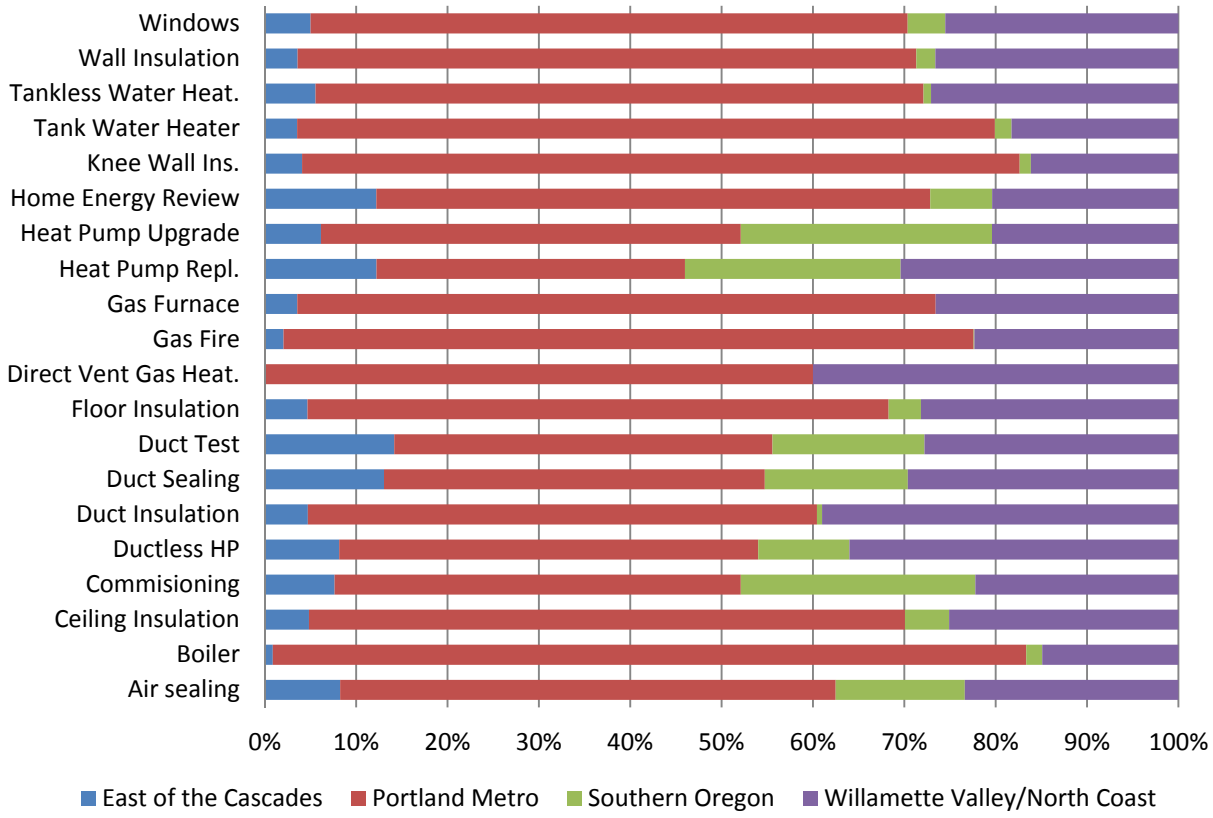


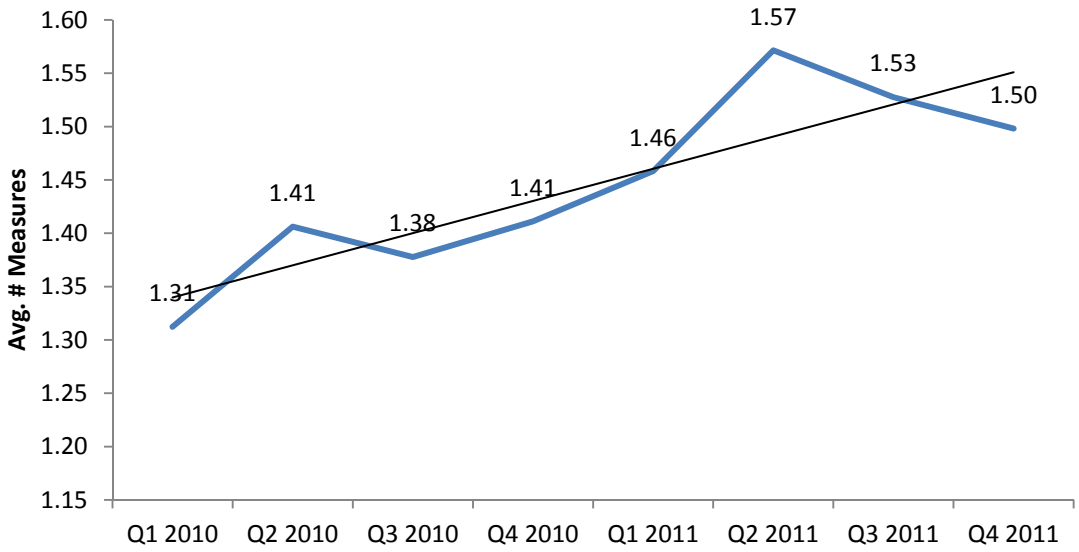
Figure A.10: Counts of Measure Types by Region

	Air sealing	Boiler	Ceiling Insulation	Commissioning	Ductless Heat Pump
East of the Cascades	280	1	266	160	76
Portland Metro	1839	94	3588	930	428
Southern Oregon	479	2	266	537	93
Willamette Valley/North Coast	793	17	1380	465	336
	Duct Insulation	Duct Sealing	Duct Test	Floor Insulation	Direct Vent Gas Heater
East of the Cascades	43	262	345	173	0
Portland Metro	507	836	1008	2345	3
Southern Oregon	5	314	405	131	0
Willamette Valley/North Coast	355	594	677	1039	2
	Gas Fire	Gas Furnace	Heat Pump Replacement	Heat Pump Upgrade	Home Energy Review
East of the Cascades	47	69	99	138	1300
Portland Metro	1728	1351	273	1031	6459
Southern Oregon	2	0	191	617	722
Willamette Valley/North Coast	511	514	246	458	2171
	Knee Wall Insulation	Tank Water Heater	Tankless Water Heater	Wall Insulation	Windows
East of the Cascades	20	66	102	52	131
Portland Metro	384	1421	1221	980	1705
Southern Oregon	6	34	15	30	107
Willamette Valley/North Coast	79	340	497	385	666

Measures installed per participant

The trend has been for the number of measures installed per participating household to increase. The overall average was 1.45 measures installed per household. In 2010 the average number of measures installed per participant was 1.41 and in 2011 it rose to 1.51. The average was close or just over 1.5 measures per household for three of the last three Quarters of 2011. Figure A.11 displays the average measures installed per household.

Figure A.11: Measures Installed per Participant by Quarter



Incentives, Costs, and Savings

Figure A.12 displays the average and annual amounts for the total cost of the home upgrade and the average amount per household per month and per year. The total installation cost of all the measures was reported to be $89,260,982, nearly 10 times larger than the Energy Trust incentive of $9,358,300. The average installation cost per household was $2,898 with an average incentive of $289. While the total installation cost and total Energy Trust incentive was lower in 2011 than 2010, the average per household for both total installation and Energy Trust incentive was higher in 2011 than 2010.

Figure A.12: Average and Annual Installation Costs and Energy Trust Incentives

	Total Installation Cost	Avg / HH	Energy Trust Incentive	Avg / HH
Monthly average	$3,719,208	$2,910	$389,929	$290
2010	$51,838,430	$2,793	$5,080,474	$272
2011	$37,422,552	$3,043	$4,277,826	$308
Total	*$89,260,982*	*$2,898*	*$9,358,300*	*$289*

The installation costs and incentives were also examined by region. The Portland Metro area received $5,413,071 in incentive dollars, 58% of the total incentives. The Willamette Valley / North Coast received $2,496,259 incentive dollars, or 27% of the total. Together, these two regions accounted for 85% of the incentives spent. The Southern Oregon region had the highest incentive per household at $352. This was $127 higher than the average incentive per household in the East of the Cascades region in which the average was only $225 per household. The East of the Cascades region also had

the lowest average total install cost per household of $1,901 and the Southern Oregon region had the highest average install cost per household at $3,542. The incentives and total installation costs by region are displayed in figure A.13.

Figure A.13: Incentives and Dollars spent by Region

Region	Total Energy Trust Incentive	Average of Energy Trust Incentive per Household	Total Installation Costs	Average Cost Install per Household
East of the Cascades	$606,231 (6%)	$225	$4,737,241	$1,901
Portland Metro	$5,413,071 (58%)	$271	$55,166,664	$2,897
Southern Oregon	$842,738 (9%)	$352	$8,078,298	$3,542
Willamette Valley/North Coast	$2,496,259 (27%)	$338	$21,278,782	$3,044
Total	*$9,358,300*	*$289*	*$89,260,985*	*$2,898*

Participant Characteristics

Finally, SERA undertook a brief review of the participant household characteristics. The average year built was 1964 with a median of 1971, and the average square footage was 1,925 with a median size of 1,800 square feet. Nearly half of the homes (47%) were built pre-1970 and 24% were built between 1970 and 1979. Only 4% of the participant homes were built in 2000 or later. The most common size category was 1,500 – 1,999 square feet (28%). Figures A.14- A.16 display the distribution of house size and year built, size only and year built alone.

Figure A.14: Distribution of Participants by Size of home and Year Built[31]

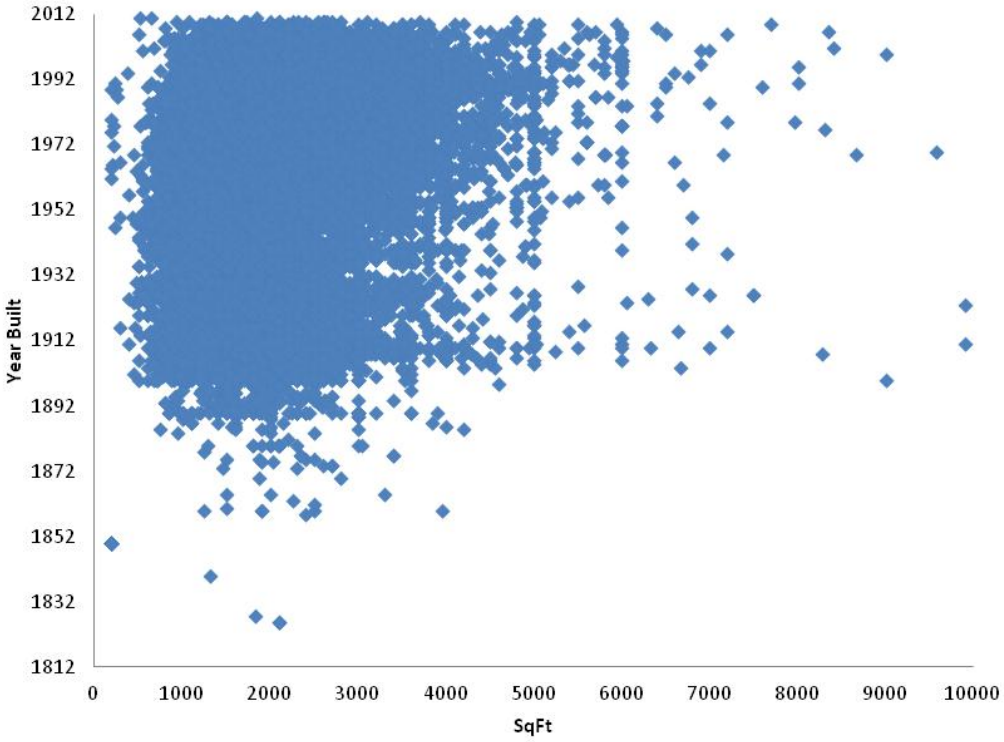
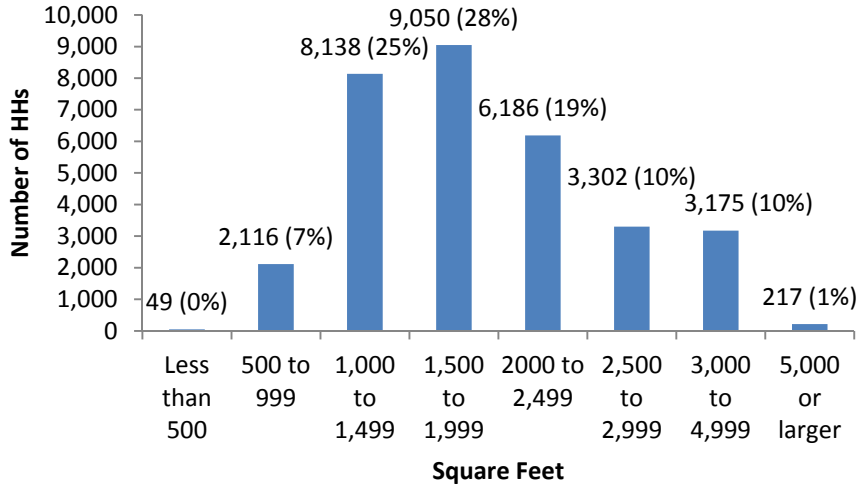
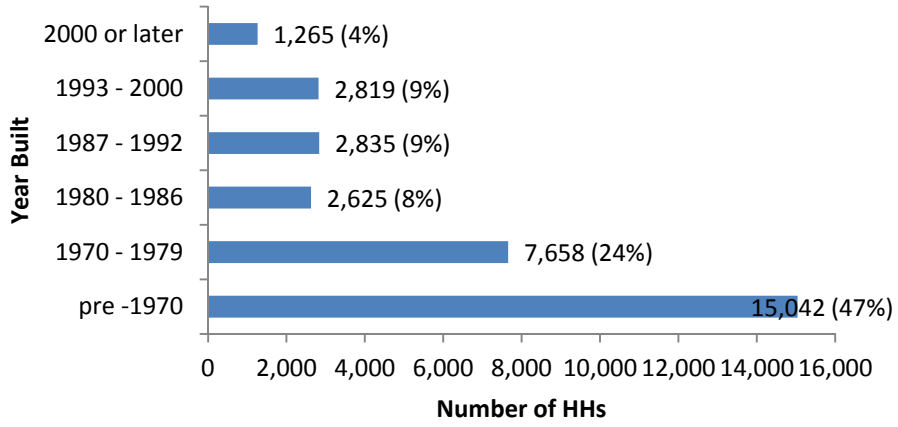


Figure A.15: Participant Home Sizes



[31] Note that for about 1% of sites the age and square feet are missing or invalid in the dataset.

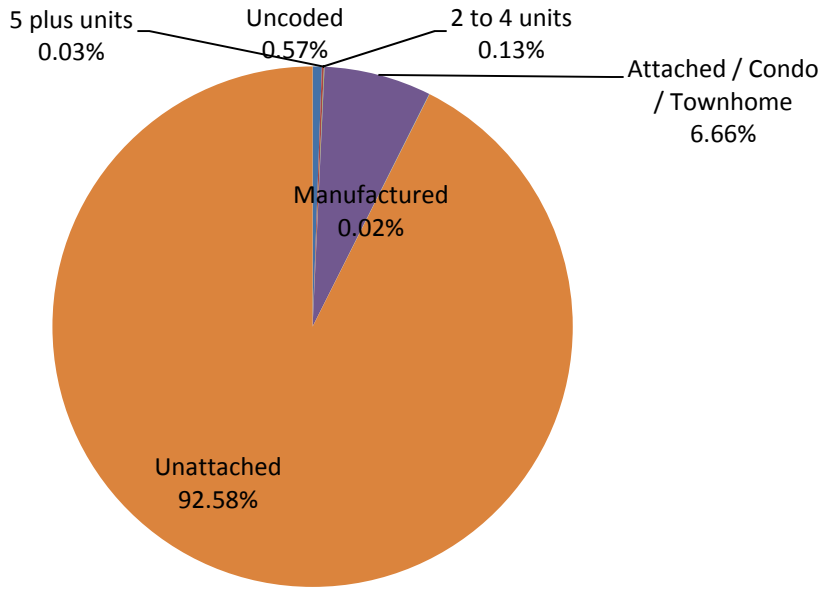
Figure A.16: Participant Homes by Year Built



Housing Stock

The vast majority of participants, 93%, were in unattached single family homes. Manufactured homes, homes in multi-family complexes with more than 5 units, and those in complexes with 2 to 4 units combined for less than .5% of the participants. Only 7% of the participants were classified as being in attached homes, condominiums, or townhomes. The distribution of housing types is shown in Figure A.17.

Figure A.17: Distribution of Housing Types



A.2: Existing Manufactured HomesData

Total Activity

A total of 7,174 mobile homes participated in the Existing Manufactured Homes track of the Program in 2010 and 2012 with about one-third (34%) participating in 2010 and 66% participating in 2011. A total of 51,071 measures (including home energy reviews) were installed in the nearly 7,200 homes with an average of 7.1 measures installed per household. Figure A.18 displays the total activity of the XMH program in 2010 and 2011.

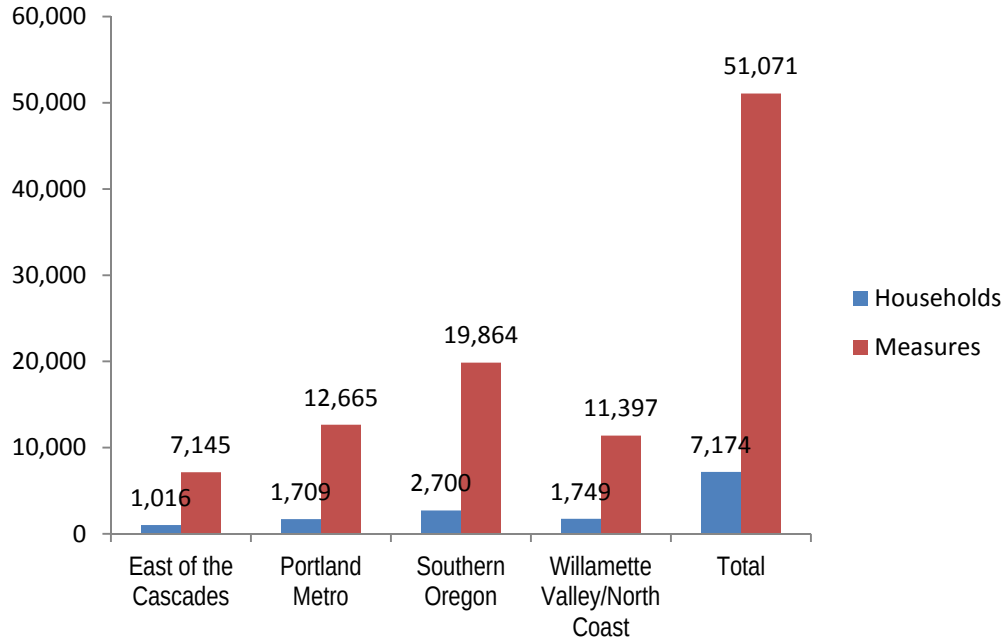
Figure A.18: Homes and Measures by Program Year

	Total homes	Total measures
2010	2,411 (34%)	14,443 (38%)
2011	4,763 (66%)	36,628 (72%)
Total	*7,174*	*51,071*

Activity by Region

The Southern Oregon region saw the most track activity with 37% or 2,700 of the total participating homes located in the region. The least active region was East of the Cascades with 1,016 homes or representing 14% of the total participants. Figure A.19 displays the total track activity by region.

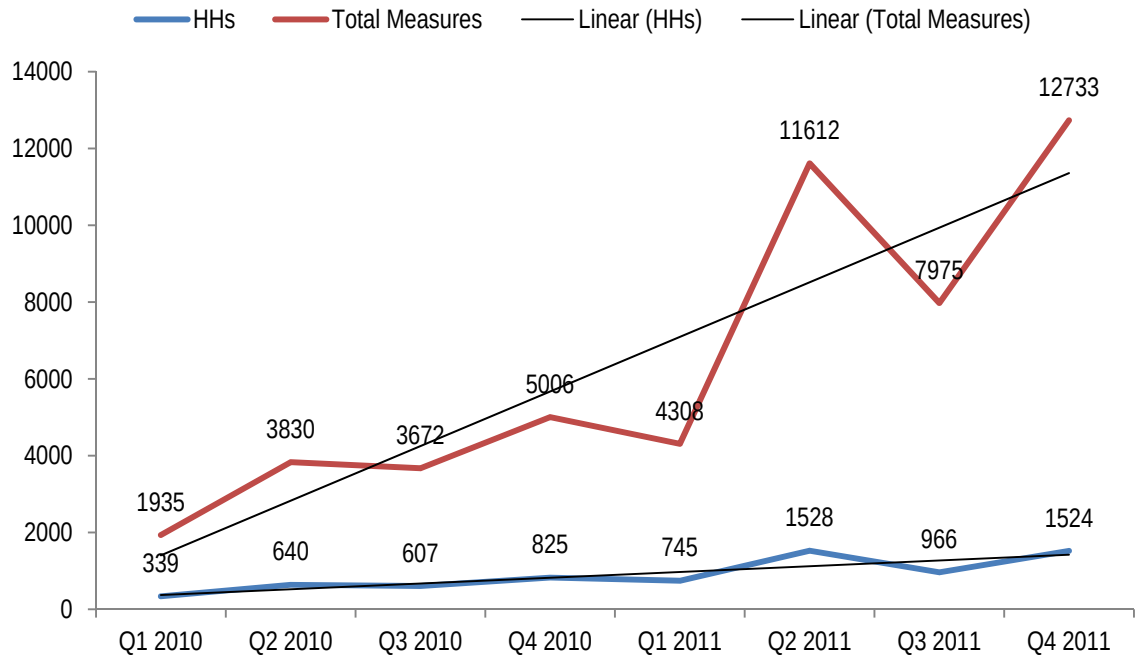
Figure A.19: Total Program Activity by Region



Activity by Quarter[32]

The households visited and the total measures installed were examined by quarter. Quarters 2, 4, and 3 had the greatest volume of homes participating. The slowest quarters for recorded participants were Quarters 1 and 3 of 2010 Similar to the single family data, the shift from January to December is due to application processing and booking rules. Although there is a slight positive trend in the total number of participants per month, the trend for the number of installed measures exhibits a strong upward trajectory. This indicates that the number of measures installed per household is increasing Figure A.20 displays the total activity by quarter (both participants and measures) graphically

Figure A.20: Total Activity by Quarter



Total Activity by Utility

Electric Utilities: The majority of participants were located in Pacific Power territory (59.7%) and 39.7% of the manufactured homes participants were located in PGE territory. Less than 1% of the participants were in non-qualifying utility territories.

Gas Utilities: The majority of participants (92.7%) were recorded as not having any gas service (value was “none”, “n/a”, or blank). Most of the homes with gas service were located in NW Natural territory (5.7%) and less than one percent of the homes were in Cascade Natural Gas territory (0.9%)

[32] The quarter is based on the Recognized Date – the date the measure savings were recognized (booked). This date was used as opposed to the Because this date determines which program year the savings count toward

The distribution of activity by utility territory is shown in figure A.22 below.

Figure A.22: Total Activity by Utility

Gas Utility	Count	Percentage	Electric Utility	Count	Percentage
Non-Qualifying	55	0.8%	Non-Qualifying	26	0.4%
Cascade Natural Gas	61	0.9%	Pacific Power	4,281	59.7%
NW Natural	407	5.7%	PGE	2,851	39.7%
None, N / A, or Blank	767	92.7%	N / A	16	0.2%

Installed Measures

Total Measures

A total of 51,071 measures were installed with an average of 6.7 measures per participating household. The most common measure or action completed was lighting (9,110). This was followed by aerators (8,256), showerheads (7,613), blower door tests (7,140) and duct tests (7,125). Heat pump upgrades (1), heat pump replacements (1), tanked hot water heaters (4), floor insulation (8), and windows (18) were the least common measures installed. Figure A.23 displays the total number of measures installed.

Figure A.23: Measure Counts by Type

Measure	Number
Aerator	8,265
Air sealing	3,430
Blower door test	7,140
CO Monitor	1,324
Duct sealing	7,041
Duct test	7,125
Floor insulation	8
Heat pump replacement	1
Heat pump upgrade	1
Lighting	9,110
Shower head	7,613
Tank water heater	4
Windows	18
Total	*51,071*

Measures installed by Region

Figure A.24 displays the measures installed by region graphically and Figure A.25 displays the counts of measures installed by region. Lighting was the most popular measure in all four regions. Duct sealing was a common measure in the Portland Metro region and the Willamette Valley / North Coast region and less common in the other two regions. Showerheads were most common in the East of the Cascades and Southern Oregon regions.

Figure A.24: Measures by Region

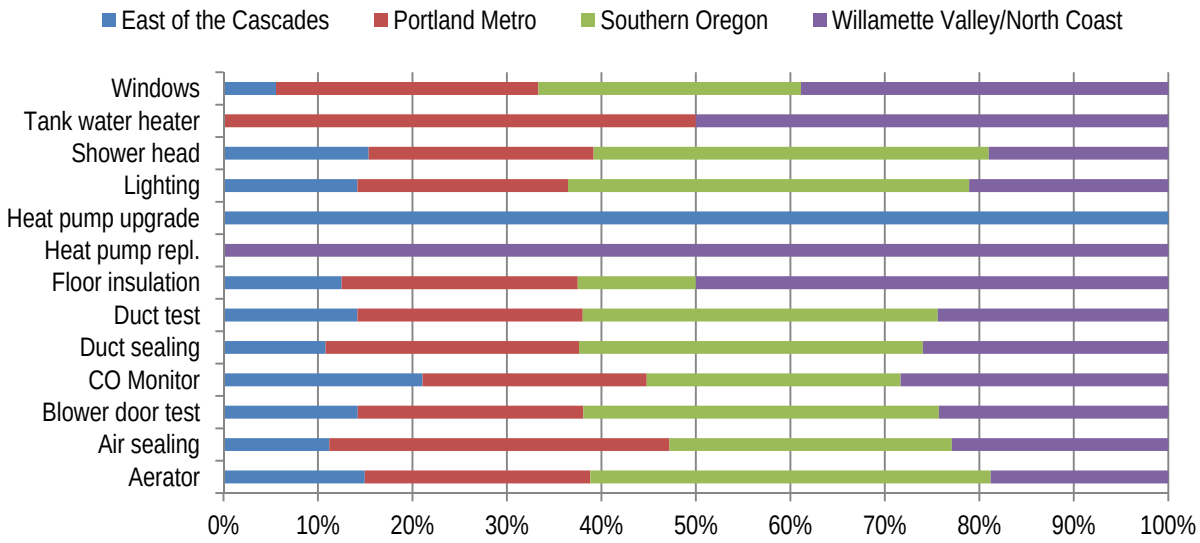


Figure A.25: Counts of Measure Types by Region

Region	Aerator	Air sealing	Blower door test	CO Monitor	Duct Sealing	Duct Test
East of the Cascades	1,234	384	1,014	279	761	1,010
Portland Metro	1,971	1,235	1,705	314	1,889	1,699
Southern Oregon	3,499	1,025	2,687	356	2,562	2,677
Willamette Valley/North Coast	1,552	786	1,734	375	1,829	1,739

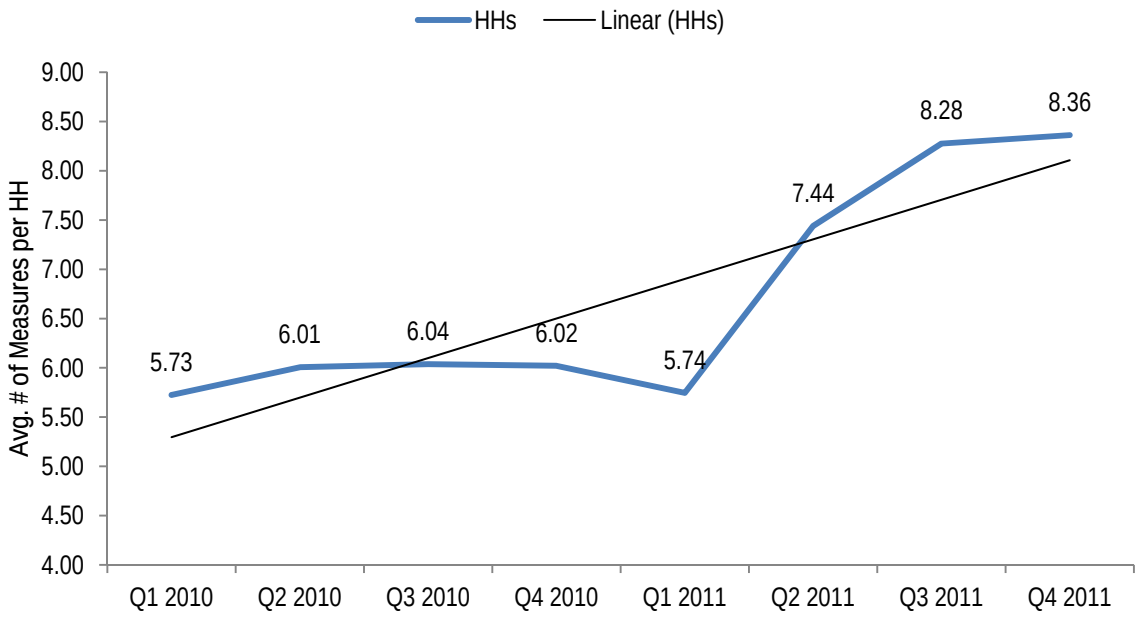
Region	Floor Insulation	Heat Pump Replace-ment	Heat Pump Upgrade	Lighting	Shower head	Tanked water heater
East of the Cascades	1	-	1	1,291	1,169	-
Portland Metro	2	-	-	2,030	1,813	2
Southern Oregon	1	-	-	3,868	3,184	-
Willamette Valley/North Coast	4	1	-	1,921	1,447	2

Region	Windows
East of the Cascades	1
Portland Metro	5
Southern Oregon	5
Willamette Valley/North Coast	7

Measures Installed Per Participant

As with the single family track, the trend has been for the number of measures installed per participating household to increase. The average in 2010 was 5.9 measures per household and the average per household in 2011 jumped by 1.6 measures to 7.5 per household. There was a large increase in the number of measures installed per household in Quarters two, three and four of 2011. May of 2011. The three measures that increased most dramatically in their installation were shower heads, aerators, and lighting. Figure A.26 displays these results graphically.

Figure A.26: Measures Installed per Participant by Quarter



Incentives and Savings

The total Energy Trust incentives for the manufactured homes track were $3,742,927[33]. The average incentive per household was $522 throughout the duration of the track. The average in 2010 was slightly higher at $543 that 2011 at $509. The maximum reported incentive paid to an individual household was $1,384. Figure A.27 displays the total and average incentive levels for the track.

Figure A.27: Average and Annual Installation Costs and Energy Trust Incentives

	Incentive	Avg. / HH
Monthly average	$155,955	$526
2010	$1,313,203	$543
2011	$2,429,725	$509
Total	*$3,742,927*	*$522*

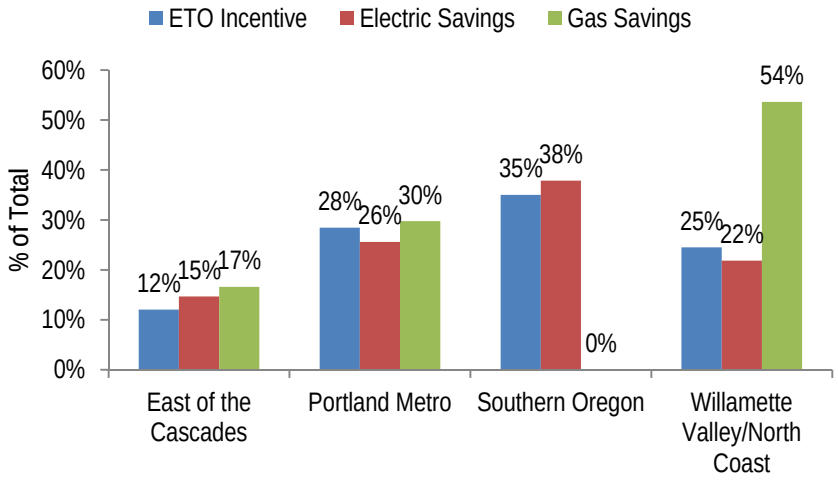
The Energy Trust incentives were also examined by region. Just over one-third of the incentives were distributed in the Southern Oregon region (35% of total) and the Portland Metro and Willamette Valley / North Coast both saw around a quarter of the total incentives (28% and 25% respectively). The Portland Metro region had the highest incentive level per household at $623 and the East of the Cascades region had the lowest at $443. Figure A.28 displays the total and average household incentives in the XMH track by region.

[33] Unlike the single family track, the vast majority of manufactured homes participants did not have any out of pocket costs for the installations. The total amount paid by these participants (not the incentives) was only $82,726 with only 33 households or 0.5% paying a portion of the installation cost.

Figure A.28: Total and Average Incentives by Region

	Total Incentive	Average Incentive
East of the Cascades	$ 450,450 (12%)	$443
Portland Metro	$1,065,054 (28%)	$623
Southern Oregon	$1,310,104 (35%)	$485
Willamette Valley/North Coast	$917,320 (25%)	$524
Total	*$3,742,927*	*$522*

Figure A.29: Total and Average Incentives by Region, Compared to Savings



Participant Characteristics

Lastly, SERA reviewed the manufactured homes participant household characteristics. The average year built was 1985 with a median year built of 1987. The average size was 1,250 square feet with a median of 1,248 square feet. Almost half of the homes were between 1,000 and 1,499 square feet. Nearly one-third of the homes (32%) were built between 1970 and 1979 and one quarter of the homes (25%) were built between 1993 and 200. The household characteristics are displayed graphically in Figures A.30-A.31.

Figure A.30: Distribution of Participants by Size of Home and Year Built[34]

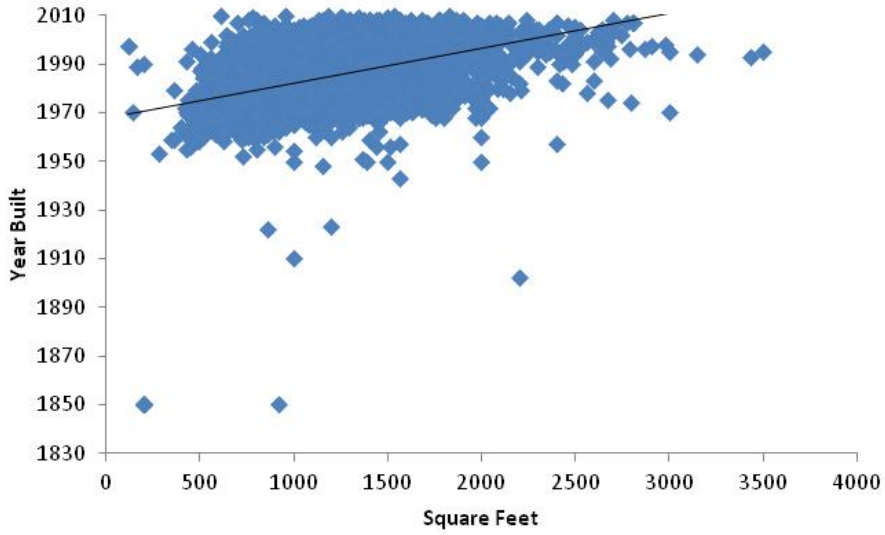
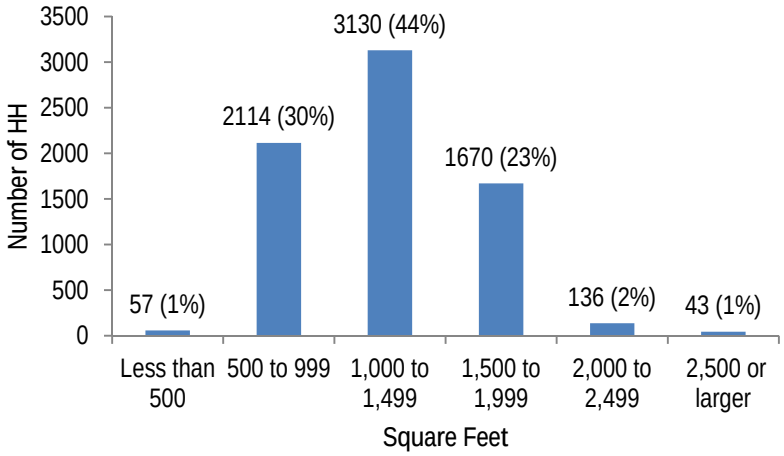
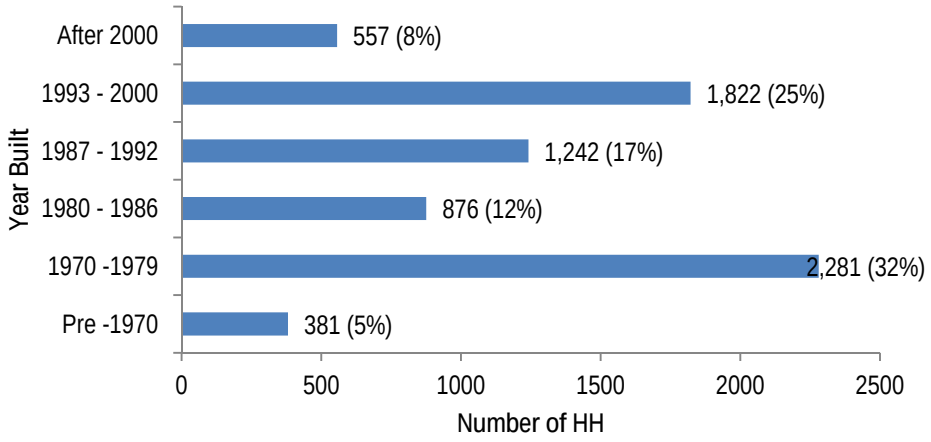


Figure A.31: Participant Home Sizes



[34] [34] Note that for about a half a percent of sites the age and square feet are missing or invalid in the dataset.

Figure A.32: Participant Homes by Year Built



A.3: Energy Saver Kits (ESK) Data

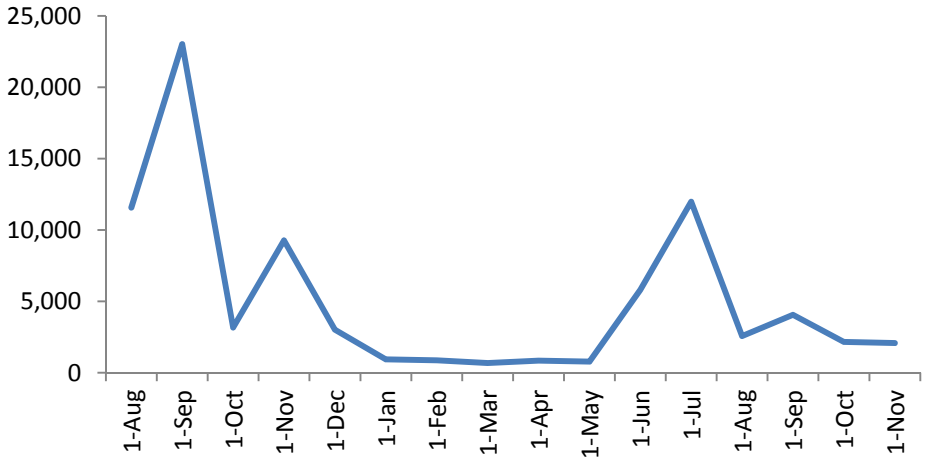
Totals and Counts

Between August 2010 and November 2011 a total of 82,776 ESKs were delivered to Oregon households. The most ESKs were distributed in September 2010 (23,026) while the month with the least amount of kits distributed was March 2011 with only 673 ESK. The average number of kits delivered per month was 9,738 with a much lower median value of 2,791. As displayed in Figure A.34, a number of months had totals near or above 10,000 ESK (August 2010, September 2010, November 2010, July 2011) however there was a lull in the distributions between January 2011 and May 2011 in which the number of kits distributed did not exceed 1,000. Figure A.33 displays the total number of kits, incentive, and savings as well as the monthly averages and Figure A.34 displays the number of kits distributed per month.

Figure A.33: Energy Saver Kits Totals

	Total	Average (monthly)	Min	Max
Total number of Kits	82,776	9,738	673	23,026
Incentive	$1,692,769	$199,149	$13,763	$470,882
kWh Savings	18,536,559	2,180,772	152,178	5,575,182
Therms Savings	344,541	40,534	2,567	76,000

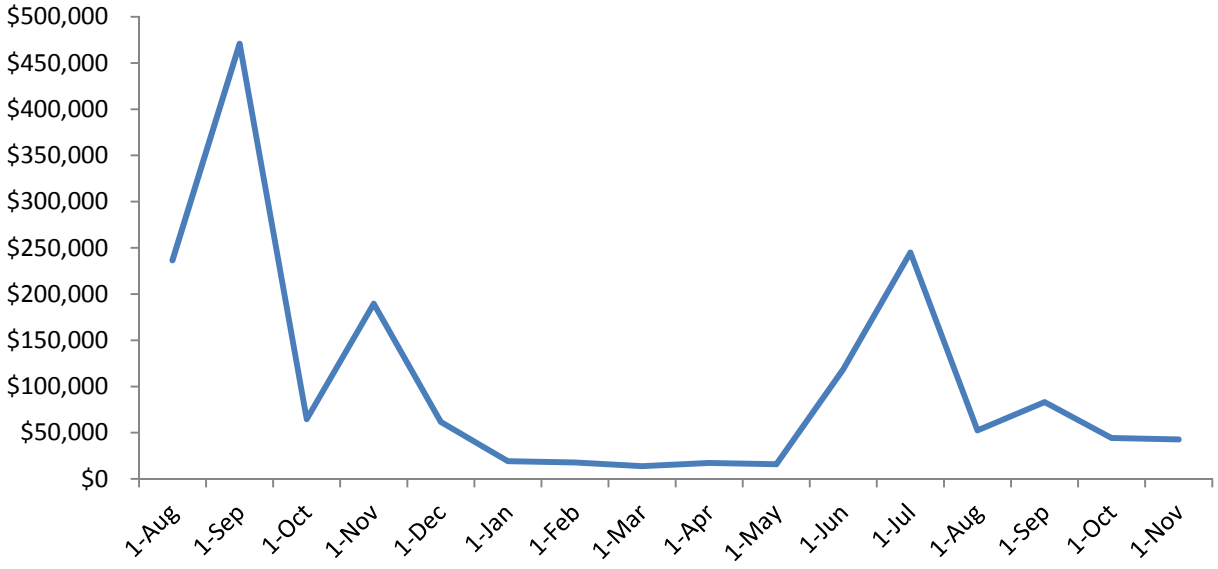
Figure A.34: Energy Saver Kits Monthly Counts



Incentives

The Energy Trust incentive per kit was static at $20.45. Thus the Energy Trust incentives paid out correlate directly to the number of kits distributed over the same period. The total incentive level over the studied period was $1,692,769 with an average monthly amount of $199,149. Once again, the median was much lower at only $57,076 an indication the wide range of monthly incentives paid. The Energy Trust incentives by month can be seen in figure A.35.

Figure A.35: Energy Saver Kits Monthly Incentives



Electricity and Gas Savings

Overall, the program is estimated to have saved 18,536,559 kWh of electricity use and 344,541 therms in Oregon. As with the incentive levels, the gas and electricity savings are directly correlated to

the number of kits distributed as a deemed savings amount was used to estimate the savings. The month with the highest estimated new electricity savings was September 2010 and the highest level of estimated new gas savings was observed in the same month. The monthly energy savings can be seen in Figure A.36.

Figure A.36: Energy Savings by Month

	Working KW (2010)	Working Therms (2010)		Working KW (2011)	Working Therms (2011)
10-Jan	NA	NA	11-Jan	190,794	4,368
10-Feb	NA	NA	11-Feb	197,922	2,867
10-Mar	NA	NA	11-Mar	152,178	2,567
Ap-10	NA	NA	11-Apr	183,270	3,395
10-May	NA	NA	11-May	170,748	2,836
10-Jun	NA	NA	11-Jun	1,312,791	24,633
10-Jul	NA	NA	11-Jul	2,729,988	50,063
10-Aug	2,712,663	45,737	11-Aug	534,282	12,596
10-Sep	5,575,182	76,000	11-Sep	613,455	28,721
10-Oct	785,601	9,439	11-Oct	452,775	8,994
10-Nov	1,831,809	50,197	11-Nov	507,111	5,796
10-Dec	585,990	16,332	11-Dec	NA	NA

A total of 5,448,804 kWh were saved in Pacific Power territory and 13,082,640 were in PGE territory. The vast majority of gas savings (98%) were in NW Natural territory and 6,697 therms or 2% of the total gas savings were in Cascade Natural Gas territory. Figure A.37 displays the estimated total savings of the ESK track by utility company.

Figure A.37: Savings by Utility Territory

Utility	Electric Savings (kWh)	Utility	Gas Savings (Therms)
Pacific Power	5,448,804 (29%)	Cascade Natural Gas	6,697 (2%)
PGE	13,082,640 (71%)	NW Natural	337,120 (98%)
Other	3,417 (<1%)	Other	725
Total	*18,534,861*	*Total*	*344,541*

Electric Utilities

The majority of kits were distributed in PGE territory (72%) and 27% of the kits were distributed in Pacific Power (PAC) territory. Only a small portion of the total kits, 1%, were delivered to households in other utility company territories. Figure A.38 displays the percentage of kits in each utility and Figure A.39 shows the total number of kits distributed in each utility company's territory by month.

Figure A.38: Percentage of Kits by Electric Utility Territory

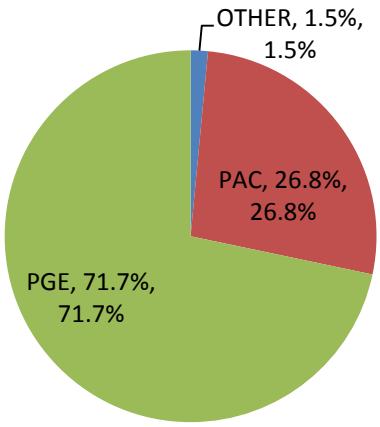
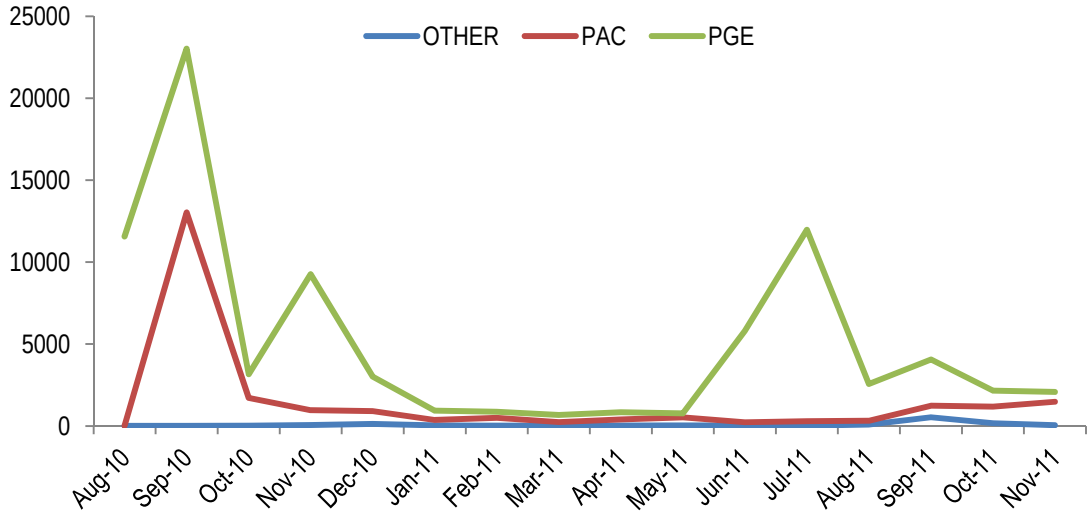


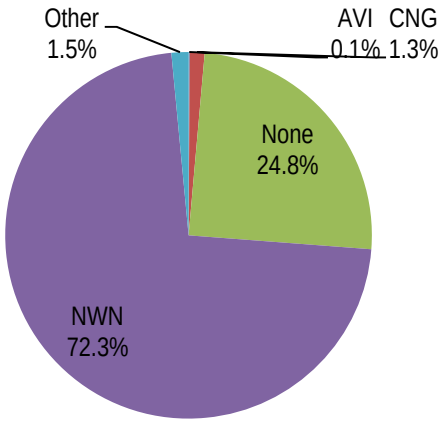
Figure A.39: Number of Kits by Electric Utility Territory



Gas Utilities

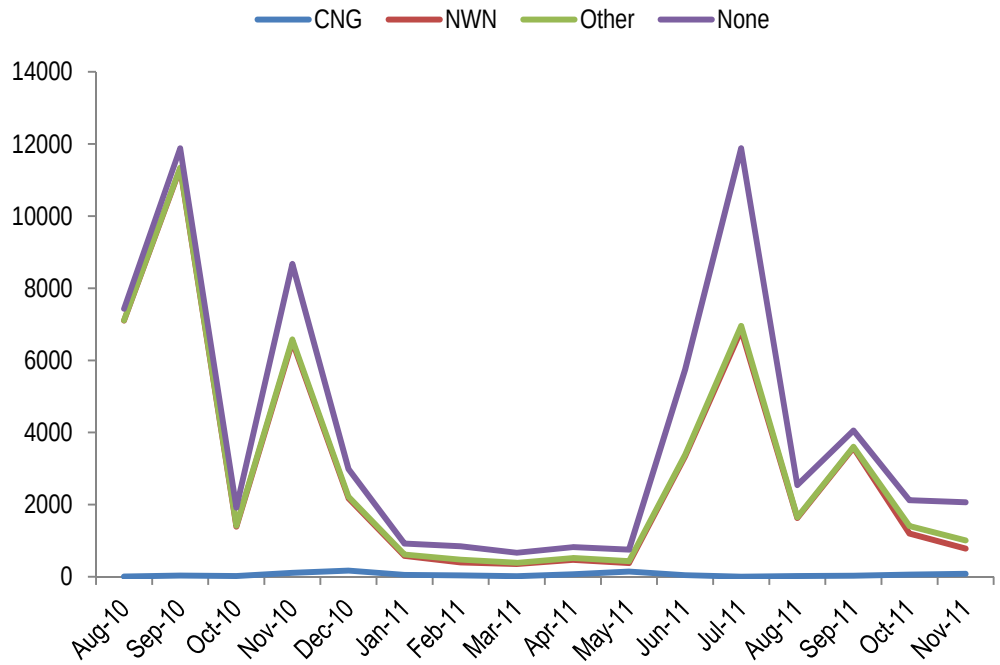
The majority of kits were distributed in NW Natural (NWN) (72%) territory. A quarter of the kits (25%) were distributed to households without any gas service and a combined 3% of ESK were distributed in territories of "other" gas companies.. Figure A.40 displays the percentage of kits in each utility and Figure A.41 shows the total number of kits distributed in each gas utility's territory by month.

Figure A.40: Percentage of Kits by Gas Utility Territory



Note: CNG refers to Cascade Natural Gas; AVI refers to Avista, which is not served by Energy Trust.

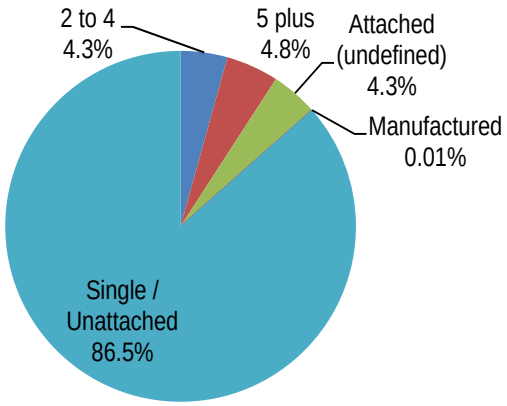
Figure A.41: Number of Kits by Gas Utility Territory



Housing Type

An analysis of the housing stock distribution shows that the vast majority, 87%, of ESKs were distributed to single / unattached homes. Nearly 5% were distributed to homes in buildings with 5 or more units and 4% were sent to homes with 2 to 4 units and to attached (undefined) homes. Only 0.01% of the total ESKs were distributed to manufactured homes. Figure A.42 displays the total percentage of ESKs by housing type.

Figure A.42: ESK Distribution by Housing Stock



APPENDIX B – DOCUMENT REVIEW LIST

The following is a list of documents reviewed as part of the analysis in Chapter 3.

Figure B1. List of documents reviewed as part of "Document Review", Chapter 3

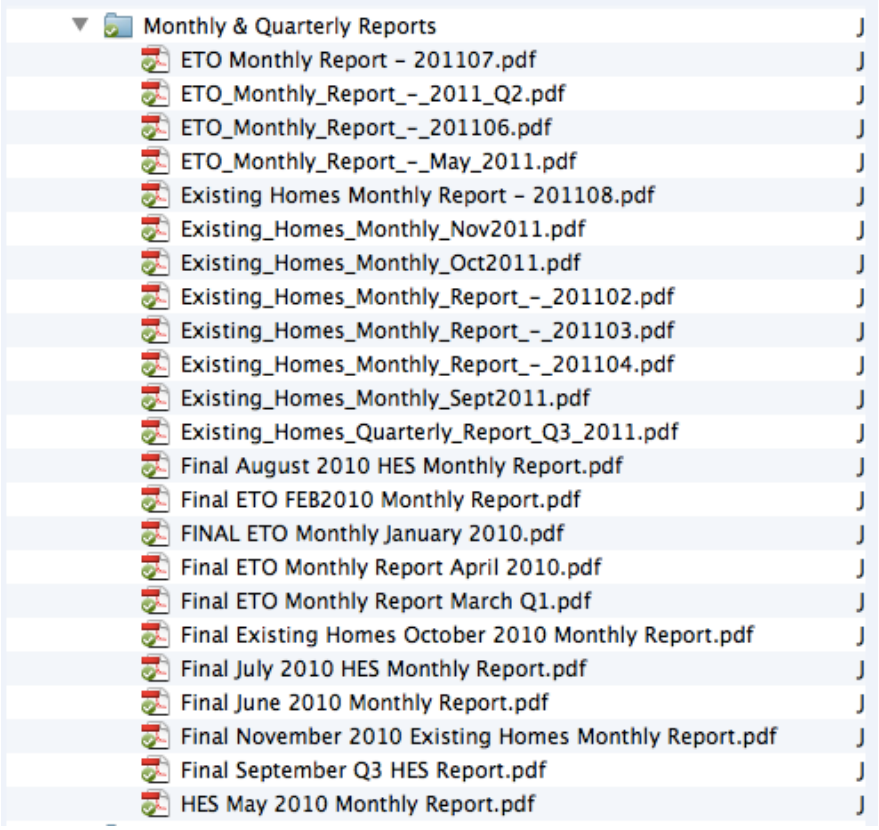


Figure B.2: Marketing Materials Reviewed

Collateral Material (general)	Utility-Specific Materials	Utility-Specific Materials
Energy Saver guide	Portland General Electric	Cascade Natural Gas
Washington Cash Incentive Grid	August '11 PGE Bill Insert	April '11 Bill Insert
Energy Saver Kit Zoolights Poster	February '11 PGE Bill Insert	August '11 Bill Insert
Custom Home Energy Report	PGE Home Connection - October '11	February '11 Bill Insert
ESK Zoolights Poster	Pacific Power	January '11 Bill Insert
Existing Manufactured Homes Brochure	April '11 Voices Newsletter	July '11 Bill Insert
Home Energy Review Fact Sheet	August '11 PP Bill Insert	June '11 Bill Insert
Home Energy Review Leave Behind	February '11 PP Bill Insert	March '11 Bill Insert
Existing Homes Trade Ally Cooperative	January '11 Voices Newsletter	May '11 Bill Insert
Marketing Guidelines	July '11 PP Bill Insert	November '11 bill insert
Home Performance with Energy Star Fact	June '11 PP Bill Insert	September '11 Bill Insert
Sheet	July '11 Voices Newsletter	October '11 Bill insert

Oregon Cash Incentives Grid (one sheet)	March '11 Voices Newsletter	
Savings Within Reach Fact Sheet	May '11 PP Bill Insert	
Oregon Cash Incentives Grid	September '11 PP Bill Insert	
Heat Your Water with the Power of the Sun	May '11 Voices Newsletter	
Additional Incentives for New Home Builders	NW Natural	
Fact Sheet - WA	January '11 Comfort Zone Newsletter	
Put Savings Within Your Reach: Affordable	July '11 Comfort Zone Newsletter	
Energy Solutions	March '11 Comfort Zone Newsletter	
Savings Within Reach Brochure	NW Natural March '11 Bill Insert	
Existing Homes Trade Ally Fact Sheet	May '11 Comfort Zone newsletter	
Washington Cash Incentives		

C: APPENDIX C – HOUSEHOLD SURVEY INSTRUMENT

ENERGY TRUST OF OREGON - EXISTING HOMES PROCESS EVALUATION
HOUSEHOLD SURVEY – PARTICIPANT AND NON-PARTICIPATING
SERA / DRAFT 3

INTRODUCTION

Hello, my name is _____, and I'm calling from SERA on behalf of Energy Trust of Oregon. Our firm has been hired to evaluate the Existing Homes program and we are talking to homeowners who have received a Home Energy Review, Energy Saver Kit or a cash incentive for an energy efficient home improvement to get information on their experience with Energy Trust. The information you provide me will be completely confidential and will help Energy Trust improve its services.

Do you have some time now or can we schedule another time in the next couple of days? It takes approximately 15 minutes and respondents will be entered into a drawing for two $100 Visa gift cards. Would you be willing to talk?... if needed… we really need your input to help improve the program…

<Key for reviewers - F, FULL = Full participant – got measures and incentive
SWR – Savings within Reach – get all same as FULL except as noted
HER - got HER plus measures/incentives
KIT = Kit participant – got kit; no other services
NP = Non-participant – HER, no energy saving measure
If blank (or <all>), all get the question.>

SECTION A: AWARENESS

A1. Are you familiar with the organization called Energy Trust of Oregon?
1. Yes, I have definitely heard of it
2. Maybe I have heard of it [THANK AND TERMINATE]
3. No, I have not heard of it [THANK AND TERMINATE]
4. Other / specify [THANK AND TERMINATE]

A2. <If 1 or> How did you hear of Energy Trust? (Do not read – post code all responses)
1. First hand / I used one of their programs or their website, etc.
2. Word of mouth (friend, neighbor, family, co-worker / colleague)
3. Contractor or retailer
4. Energy Trust (website, representative, advertisement)

5. Utility (website, bill insert, representative, advertisement)
6. Mass media (sign, billboard, newspaper/magazine ad, TV/radio ad)
7. Event (conference, similar, workshop)
8. Online search, web links
9. Regional Energy Trust representative
10. City / county
11. Other / Specify
12. Do not recall / don't know [THANK AND TERMINATE]
13. I guess I didn't hear of them [THANK AND TERMINATE]

A2b. Do you remember getting some kind of service from Energy Trust? It may have been a kit, a home energy review, an incentive of an energy efficient home improvement?

1. Yes
2. No [THANK AND TERMINATE]
3. Don't know [THANK AND TERMINATE]

A2b. <If A1=2 or A2=12 or A2=13 or A2b=2> Thanks, but we're looking for people that are familiar with the Energy Trust. Thanks so much!

A3. To the best of your knowledge, what does Energy Trust do? (Open end / post-classify – check all that they mention)

1. Educates people about energy efficiency
2. Provides rebates for doing energy efficiency
3. Offers audits on homes or businesses
4. Works with the utilities
5. Provides my electric and/or gas service
6. Other (specify)

A4. Are you aware that rebates, incentives, and tax credits are available for installing certain energy saving equipment or renewable energy systems in your home?

1. Yes
2. No
3. Don't know

A5. Do you agree or disagree with the following statement? Energy Trust is a credible information source for Oregon residents about energy efficiency and renewable energy. Would you say you: [READ LIST]

1. Strongly agree with this statement.
2. Somewhat agree
3. Neither agree nor disagree
4. Somewhat disagree
5. Strongly disagree
6. Don't know

A6. To the best of your knowledge, do you think Energy Trust is a… [READ LIST]

1. Government agency
2. Non-profit
3. Utility
4. Other private business
5. Don't know

SECTION B: DECISION-MAKING / THE "NEED"

B1. Our records show you have received services from Energy Trust. Which of the following Energy Trust services did you receive?

	Yes	No	DNK	➔If yes, about when?
a) An Energy Saver Kit that contains light bulbs, a shower head, or faucet aerator				Month/Year
b) A home energy review (HER) or an "audit" from Energy Trust				Month/Year
c) An incentive for an energy efficient home improvement from Energy Trust				Month/Year

<if B1c=YES> B2. Which types of improvements were installed in your home? (Check all that apply) [DO NOT READ LIST]

1. Heating equipment
2. Water heater
3. Insulation
4. Sealing Air or duct leaks
5. Solar electric or solar hot water system
6. Windows
7. Other (specify)

<If B1b=YES>: B4. Which types of services or improvements did the Home Energy Review recommend be upgraded? [DO NOT READ LIST]

1. Heating equipment
2. Water heater
3. Insulation
4. Sealing air or duct leaks
5. Solar electric or solar hot water system
6. Windows
7. Other (specify)

<If B1b=YESand we have them recorded as NP>:
B5. Have you begun to make any of these improvements? [ASK FOR ALL MENTIONS IN B4, IF NO SKIP TO B5.2]
B5.1 Have you begun these Yourself or via a contractor? [ASK FOR ALL YES IN B5]
B5.2 Are you considering installing any of these in the next year? <Select down to only those they recall were recommended by the HER> (Check all that apply)

	B5	B5.1		
Measure / service	Begun improvement	Proceeded DIY	Proceeded Contractor	Considering in next year
1. Heating equipment	YES/NO	❑	❑	❑
2. Water heater	YES/NO	❑	❑	❑
3. Insulation	YES/NO	❑	❑	❑
4. sealing air or duct leaks	YES/NO	❑	❑	❑
5. Solar electric or solar hot water system	YES/NO	❑	❑	❑
6. Other (specify)	YES/NO	❑	❑	❑

<If B1 a=YES or B1b=yes>
B6. Which energy saving items did you receive in your "kit" or as part of the program? (DO NOT READ Check all that apply)

1. Compact Fluorescent light / CFL light bulb (How many _____)
2. Shower head
3. Faucet aerator for kitchen (swivel)
4. Faucet aerator for bath
5. Other (specify)
6. None [SKIP TO B7]
7. Not sure [SKIP TO B7]

B6a. Which of the items from the "kit" did you install? (Check all that apply)

1. Compact Fluorescent light / CFL light bulb (How many _____)
2. Shower head (how many _____)
3. Faucet aerator for kitchen / swivel type (How many ____)
4. Faucet aerator for bath (How many ____)
5. Other (specify)

<If B1 a=YESor B1b=YES>
B6b. Did you remove any of these items after installing it? [CHECK ALL THAT APPLY] ?
B6b.1 In approximately what Month and year did you remove the (insert item) [ASK FOR ALL YES RESPONSE IN B6B]
B6b.2 Did any item stop working after you installed it? (Check all that apply)
B6b.3 In approximately what month and year did the (insert item) stop working [FOR ALL YES RESPONSES FROM B6B.2]
B6b.4 Why did you remove the (insert item) after installing it? [ASK FOR EACH ITEM WITH A YES RESPOSE IN B6B AND A NO RESPONSE IN B6b.2]

	B6b	B6b.1	B6b.2	B6b.3	B6b.4
Item	Removed		Stopped Working / about when?		Comments – what happened?

CFL light bulb	YES/NO	MONTH/YEAR	YES/NO	MONTH/YEAR	Why / What happened?
Shower head(s)	YES/NO	MONTH/YEAR	YES/NO	MONTH/YEAR	Why/What happened?
Faucet aerator for kitchen(s)	YES/NO	MONTH/YEAR	YES/NO	MONTH/YEAR	Why/What happened?
Faucet aerator for bath	YES/NO	MONTH/YEAR	YES/NO	MONTH/YEAR	Why/What happened?
Other	YES/NO	MONTH/YEAR	YES/NO	MONTH/YEAR	Why/What happened?

<If B1 a=YES> KIT GROUP ONLY

B7. Are you considering making any other energy efficiency-related changes in your home? If yes, which measures? (Check all that apply) [DO NOT READ LIST]

1. No, not considering
2. Heating system
3. Water heater
4. Insulation
5. sealing air or duct leaks
6. Solar electric or solar hot water system
7. Windows
8. Other (specify)

B8. What made you consider looking into or making changes to your home in the first place (Check all that apply) [DO NOT READ LIST]

1. Hot and cold spots / uncomfortable
2. High energy bills / save on energy bill
3. Increase value of the home
4. Family was sick too often
5. Someone talked about the program and the savings (friend, co-worker, other)
6. Adding on / remodeling
7. High water bills
8. Kids got flyers from school / suggested
9. Saw an ad / website / web search
10. Communication from utility – bill insert, newsletter, direct mail
11. Saw information from Energy Trust
12. Energy Trust Home Energy Review
13. Other (specify)

<FULL>: B12. Were you concerned about any of the following issues in getting the work accomplished?

B12.1 Did any of these issuesturn out to be a problem?

	B12	B12.1

	Concern up front	Actually a problem?
a) Cost above your household budget	Y N DNK	Y N DNK
b) Possible cost overruns on the project	Y N DNK	Y N DNK
c) Inconvenience / hassle / disruption	Y N DNK	Y N DNK
d) Finding a contractor	Y N DNK	Y N DNK
e) Getting contractor to come when scheduled	Y N DNK	Y N DNK
f) Getting contractor to do what was requested	Y N DNK	Y N DNK
g) Delays / not finishing on time	Y N DNK	Y N DNK
h) Equipment not working as expected	Y N DNK	Y N DNK
i) Didn't save money on bills	Y N DNK	Y N DNK
j) Other / specify	Y N DNK	Y N DNK

<FULL> B13. Do you think the Energy Trust incentive made it easier, made no difference, or made it harder to get the work accomplished?

1. Easier [ASK B13.1]
2. No difference
3. Harder [ASK B13.1]
4. Don't know

B13.1 can you tell me specifically how the energy trust incentive made it easier or harder to get the work accomplished

<FULL> B14. Did you install any equipment or undertake work beyond what you originally anticipated?

1. Yes, major changes
2. Yes, minor differences
3. No difference
4. Don't recall

<FULL IF B14=1 OR 2> B15. What led you to select the additional improvements you ultimately selected?

1. <if HER> Energy advisor
2. Incentive freed up money / could make higher investment
3. Found problems during the work
4. Contractor strongly recommended
5. Other / specify

B16. Why did you make, or consider making, the changes to your home when you did? Why not 1 year earlier or 1 year later? [DO NOT READ LIST]

1. Incentive available now
2. Tax credits available now
3. Contractors available now
4. Comfort problems
5. Sick residents
6. New baby / elderly <parents, etc.> moved in
7. Remodeling / adding to home now
8. Friend / colleague told me about incentives

9. About to sell
10. Other / specify

B17. As a result of the incentive or information from Energy Trust, did you accomplish the main changes you wanted made in your home?

1. Yes, my objectives were accomplished [SKIP TO E1A]
2. No, some key goals weren't met [ASK B17.1]
3. Don't know [SKIP TO E1A]
4. Refused [SKIP TO E1A]

B17.1 Which specific goals were not met? _____

SECTION E: SATISFACTION AND NEXT STEPS

E1a. On a scale from 1 to 5 how would you rate your satisfaction with the following elements of your experience with Energy Trust? Say "1" if you were very dissatisfied; and "5" if you were very satisfied, or "did not use". (Randomize)

Subgroup (F,HER,KIT)	Topic	Satisfaction (1=very dissatisfied; 5-very dissatisfied); did not use; do not know
ALL	a) Energy Trust's website	DNU 1 2 3 4 5 dnk
ALL	b) Energy Trust's online Home Energy Profile tool (if asked, "An online tool where you answered some questions & it gave you an idea of potential for energy savings in your home, and suggestions on energy improvements to your home.)	DNU 1 2 3 4 5 dnk
HER	c) The Home Energy Review process	DNU 1 2 3 4 5 dnk
F,HER	d) The contractor rating system – the star system	DNU 1 2 3 4 5 dnk
HER	e) My Energy Advisor	DNU 1 2 3 4 5 dnk
KIT	f) The Energy Saver Kit	DNU 1 2 3 4 5 dnk
ALL EXCEPT KITS (incl. SWR)	g) The amount of the rebate/incentive	DNU 1 2 3 4 5 dnk
F except SWR	h) The timeliness of the rebate/incentive	DNU 1 2 3 4 5 dnk
F except SWR	i) The paperwork requirements	DNU 1 2 3 4 5 dnk
ALL	j) Experience with Energy Trust overall	DNU 1 2 3 4 5 dnk

E1b. On a scale from 1 to 5 how would you rate your satisfaction with the following elements of your home improvement project? Say "1" if you were very dissatisfied; and "5" if you were very satisfied, or "did not use". (Randomize)

Subgroup (F,HER,KIT)	Topic	Satisfaction (1=very dissatisfied; 7-very dissatisfied); did not use; do not know
F,KIT	a)The equipment or devices I installed	DNU 1 2 3 4 5 dnk
F,KIT	b)The quality of the improvements/equipment/devices	DNU 1 2 3 4 5 dnk

ALL	c)The cost of the improvements/equipment/devices	DNU 1 2 3 4 5 dnk
F,HER	d)The contractor selection process	DNU 1 2 3 4 5 dnk
F	e)The contractor I selected	DNU 1 2 3 4 5 dnk
F,KIT	f)The energy bill savings I received because of the improvements/equipment/devices	DNU 1 2 3 4 5 dnk
F,KIT	g)Other effects I received because of the improvements/equipment/devices	DNU 1 2 3 4 5 dnk

E2. Where were there any waits or delays for any of the following in the process?

E2.1 Was the delay on Energy Trust's side, or on your side? (DO NOT READ, ask for d,e,f,g,h,j,& k]

		E2	E2.1	
		Delay	Program side	Participant side
A	Receiving information	❑		
B	Receiving Kit	❑		
C	Installing Kit measures	❑		
D	Energy Advisor appointment	❑	❑	❑
E	HER scheduling	❑	❑	❑
F	Contractor selection	❑	❑	❑
G	Contractor work	❑	❑	❑
H	Paperwork	❑	❑	❑
I	Incentive receipt	❑		
J	Inspection	❑	❑	❑
k	Other (specify)	❑	❑	❑

E2A. Did the process get moving again? (if it did)? [ASK FOR ALL CHECKED IN E2]

1. It didn't get going again
2. If it did,[ASK E2a.1]

E2a.1 What got the process moving again? [SPECIFY]

Refused / DNK

<IF E1a.e not equal to DNU> E3a. In your opinion, did the energy advisor listen well?

1. Yes
2. No
3. Don't know / don't recall

<IF E1a.e not equal to DNU> E3b. How clear was the energy advisor at explaining what you needed explained?

1. Very clear
2. Somewhat clear
3. Not very clear
4. Very unclear
5. Don't know / don't recall

<IF E1d not equal to DNU – also omit SWR> E4a: Did you consult the trade ally list before selecting a contractor?

1. Yes
2. No
3. Don't know
4. Other (specify)

<IF E1dnot equal to DNU – also omit SWR> E4b: Was the star ratings of contractors helpful in your selection process?

1. Yes
2. No
3. Don't know
4. Other (specify)

E5. Overall, how well did your experience with Energy Trust match with your expectations?

1. Much better than expected
2. Somewhat better than expected
3. About the same as I expected
4. Somewhat worse than expected
5. Much worse than expected
6. No response / did not reply

E6. If you had it to do over again, would you apply for incentives or use the consultation services or get a kit again?

1. Yes, definitely
2. Yes, with hesitations (specify)
3. No (explain)
4. Don't know

E8. How likely are you to recommend Energy Trust incentives and services to others?

1. Very likely
2. Somewhat likely
3. Somewhat unlikely

4. Very unlikely
5. Didn't know / no response

(keeping, but will kill if time problems) E9. Have you talked to any of your friends, neighbors, co-workers, or others about your experience with Energy Trust?

1. No
2. Don't recall
3. Yes ➔

   If yes, were they positive or negative comments or both?

   1. Positive only
   2. Negative only
   3. Both positive and negative
   4. Don't recall

E10. Do you have any suggestions for how Energy Trust could work with you better?

_____

SECTION D: NON-ENERGY BENEFITS – (NEBS)

D1. We'd like to ask you about a variety of impacts that are sometimes associated with energy efficiency measures. [TEXT IN PARENTHESIS IS ONLY FOR CLARIFICATION ABOUT WHAT A POSITIVE OR NEGATIVE IMPACT MIGHT BE.]

For each of the following, did installing energy efficient equipment make a positive, negative, or no difference?	Positive, negative, or no difference?	IF POSITIVE: Is the benefit more valuable or less valuable than the energy savings (MLV=much less valuable; SMV=somewhat more valuable; sv=same value)	IF NEGATIVE: Are the problems more costly than the energy savings? (MLC=much less costly; SMC=somewhat more costly; SC=same cost)
a. Equipment maintenance costs (lower/higher)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
b.Equipment performance (better/worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
c. Equipment lifetimes (longer/shorter)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
d. Resident satisfaction (increase/decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
e. Resident comfort (increase/decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
f. Building aesthetics / appearance (better/worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
g. Lighting / quality of light (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
h. Noise levels (quieter / louder)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
i. Ease of selling home / value (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
j. Ability for resident to avoid moving / stay in home (increase / decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC

For each of the following, did installing energy efficient equipment make a positive, negative, or no difference?	Positive, negative, or no difference?	IF POSITIVE: Is the benefit more valuable or less valuable than the energy savings (MLV=much less valuable; SMV=somewhat more valuable; sv=same value)	IF NEGATIVE: Are the problems more costly than the energy savings? (MLC=much less costly; SMC=somewhat more costly; SC=same cost)
k. Environmental effect (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
l. Illnesses / sick days (fewer / more)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
m. Understanding of how to control energy bills / costs (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
n. Other	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
o. Overall – combination of all the positive and negative impacts	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC

F. HOUSEHOLD CHARACTERISTICS

F1. Who supplies your electric power?

1. Pacific Power (sometimes called by its old name of Pacific Power and Light or PP&L)
2. Portland General Electric (usually called PGE)
3. Eugene Water and Electric Board (usually called E-WEB)
4. Other (specify)

F2. Do you have natural gas service? If so, from which supplier? (If confusion – we don't mean the kind of gas from a tank in your yard)

1. No
2. Yes
3. Don't know

<IF F2=2> F2b: Who supplies your gas service?

1. NW Natural
2. Cascade Natural Gas
3. Avista
4. Other (specify)
5. Don't know

F3. Do to primarily heat your home with…?

1. Natural Gas
2. Electric
3. Propane (from a tank on-site)
4. Other (specify)
5. Don't know

F4. Is your water heater…

1. Natural Gas?

2. Electric?
3. Propane? (from a tank on-site)
4. Other (specify)
5. Don't know

F5. About when was your home originally built?

1. Before 1970
2. 1970 to 1979
3. 1980 to 1986
4. 1987 to 1992
5. 1993 to 2000
6. After 2000
7. Don't know

F6. Can you estimate the approximate square footage of your home? [IF DON'T KNOW ASK F7 ALL OTHERS SKIP TO F11]

1. Fewer than 500 square feet
2. 500 to less than 1,000 square feet
3. 1,000 to less than 1,500 square feet
4. 1,500 to less than 2,000 square feet
5. 2,000 to less than 2,500 square feet
6. 2,500 to less than 3,000 square feet
7. More than 3,000 square feet
8. Don't know
9. Refused

F7. To help estimate the size of your home, can you tell us how many bedrooms there are in your home? (use 0 for studio type)

____

F11. Including yourself, how many people live in your household?

1. 1
2. 2
3. 3
4. 4
5. 5 or more
6. Refused

F12. And how many people living in your household are under the age of 18?

1. 0
2. 1
3. 2
4. 3
5. 4 or more
6. Refused

F13. Which zipcode do you live in? _____

F14. Finally, what is your annual household income?

1. Less than $30K
2. $30K-49K (49999)
3. $50-74K (74999)
4. $75-99K (99999)
5. $100-149K (149999)
6. $150K or more
7. Refused

F15 (DO NOT READ)

1. Male
2. Female

G. CLOSING

That completes our interview. Thank you so much. I have your contact phone number as _____. May I enter you in the drawing for the Visa gift cards?

Thank you very much for your help. Have a great day.

D: APPENDIX D – STAFF SURVEY GUIDE

ENERGY TRUST OF OREGON – PROCESS EVALUATION
STAFF QUESTIONNAIRE – DRAFT 5

Interview Date_____ Interviewer Initials: _____
Start time: _____ End time: _____

INTRO:
As you may recall, SERA was selected to conduct a process evaluation of the Existing Homes Program for Energy Trust. That includes consideration of the regional outreach and engagement, major measures, the energy saver kits, energy savvy, the home energy review, savings within reach, and the trade ally network efforts for single family and manufactured homes.

Can you talk now, or is there a better time to reach you? (Scheduled time / best number):
_____

A. Background
1. Your Name: _____

2. Phone / email: _____

3. Your Position: _____

4. How long you have been with the company [ETO for Marshall, Susan; rest other companies]:
_____years
5. How long on this program: _____years
6. How long in the residential energy efficiency field: _____years

7-8. Which element(s) of the program were you involved in? Which were you MOST involved in?

Involved (check):		Most involved: (circle)	
	Regional outreach strategy *<ask regional reps>*		Energy saver kits *<Sarah Spansail/call center>*
	Customer engagement initiative *<position vacant – discuss with Marshall, Terry, maybe Shawn &Sarah Spansail/call center>*		
	Energy savvy *<Marshall, possibly Terry>*		
	Savings within reach *<Tim>*		
	Trade ally network tiering and development fund *<Tim, Matt, Sara Brockmeier>*		Manufactured homes / focus *<Matt, Tim>*
	Marketing *<Susan, Katharine, Stephanie>*		Program Design *<Marshall, Terry, Lewis>*

9. I understand you were most involved in ____(above list from Sarah)_____. I'm going to direct most of the questions to that program / element. Is that OK? Are there other programs or elements you also want to weigh in on? (list).

10.Please briefly describe your responsibilities on the program(s):

B. Program development / design / outcomes *<Marshall, Terry, Lewis>*

1. What do you see as the goal(s) of the program?

2. How is / was the program supposed to work?

3. What was the logic / barrier / connection that the program(s) was trying to solve; how does the market work / not work; where was the program trying to intervene in the market?

4. Has the program been successful in achieving that goal / solving that market weakness? How / how not?

5. What are the strengths of the program? Were changes needed in order to achieve those strengths?

6. Weaknesses of the program / design? What changes might help address those weaknesses?

7. Did the program match (as executed) match with your expectations? Why / why not?

8. How satisfied are you with the following aspects of the program? (1=very unsatisfied; 7=very satisfied)

	Regional outreach strategy		Energy saver kits
	Customer engagement initiative		Major measures (list)
	Energy savvy		
	Savings within reach		Single family initiatives / focus
	Trade ally network tiering and development fund		Manufactured homes / focus
	??		

9. Describe rationale for scores of 1 or 2, or 6 or 7.

10. Do you think the program is cost-effective? Is it effective in other ways? Why / why not?

11. How could its effectiveness or cost-effectiveness be improved?

C. Delivery and Tracking System *<all>*

1.How well do you think implementation is going for the program?

2. What are the strengths / weaknesses of the performance?

3. Have the program processes changed? Have they improved? Any suggestions? Does it meet your expectations? <If relevant, how about installations requirements for contractors?>

4. Are you involved in / familiar with the program tracking system used at Oregon Trust (Fast Track/being updated to Epicor)? Are you involved / familiar with the tracking system at CSG (CoreApp)? How / what aspect?

5. Strengths / Weaknesses of the tracking system?

6. Is the tracking system something you use? Is it (sufficiently) accessible and easily understood / used? If not, explain.

7. What is it used for? What kind of reports do you use from it? What other needs are there that are not being met?

8. Planned changes? Changes you'd suggest?

D. Household Outreach and Participant Satisfaction with the Program *<Focused on Marshall, Terry, Lewis, SarahS, Shawn, Regional Reps, marketing staff – less for Tim, Matt, Sara B/trade ally staff>*

1. How do potential participants hear about the program? What channels / what are the marketing outreach / approaches?

a. Who are the target participants? What is the current strategy? How do they interact with those responsible for design and implementation?

2. What are the strengths / weaknesses of this approach?

3. How is the regional outreach approach working? How are needs different in different regions? How could this be improved?

4. How is energy savvy working? How do you see this being used long term? How should we drive more households to the site?

5. How is "customer engagement"? Is it working so far? What have been the challenges since it began on October 1? What is your best guess about whether It is encouraging households to install more measures sooner?

6. With the outreach provided, do you think households get a sufficient and accurate picture of the program? Are they often surprised by aspects of the program?

7. What types of customers participate? Which don't? Does that match with the program "plan" (and/or need)? What does that say about the marketing and design?

8. Is participation where you think it should be? Is it the "right" participants? What groups you'd like to see participating are not doing so? Why / why not?

    a. What about manufactured housing? This sector is going strong right now. When do you see exiting or maximizing the potential from this sector? What other measures could be offered to these participants?

    b. Savings within reach… Is the current participation volume an appropriate level? Should / could we be doing more? How? Is the preapproved contractor approach working?

9. What would improve participation in any /all relevant sectors?

10. Do you think participants are satisfied with the program? What aspects?

11. Where are participants less satisfied?

12. Is the level of staff interaction with households sufficient? Too much? Explain.

13. Does the program reduce (important) barriers for the market? Is it attractive in the marketplace?

14. Has the attractiveness or the effectiveness in addressing barriers improved with the program changes implemented over the last X years? How / how not?

12. Is there a role for performance / recognition / incentives for those responsible for achieving conversion? *<could be staff? Trade allies?>* (to improve completions?)?

13. What are the key question(s) you'd like to be sure we ask the program participants in our evaluation? The partial participants (those who had a HER and didn't follow through)? The non-participants who haven't been involved at all?

E. Trade Allies and Market Interactions *<focused on Marshall, Terry, Tim, Matt, Sara B, Lewis>*

1.Do you think trade allies are getting a sufficient and accurate picture of the program? Are they often surprised by aspects of the program?

2. How would you describe the quality of interactions, understanding, and commitment with the trade allies?

- What is their role, specifically?
- What do you think the trade allies get from the program (be specific)? Are their needs /expectations being met? Are there shortfalls / gaps / concerns / opportunities?
- Is there sufficient interaction / communication?

3. How about the relationships (quality of interactions, understanding, commitments) with jurisdictional partners? Any differences between regions / geographic areas? Any strengths / weaknesses? Areas for improvement?

- What is their role?
- What do you think the jurisdictions get from the program (be specific)? Are their needs /expectations being met? Are there shortfalls / gaps / concerns / opportunities?

- Is there sufficient interaction / communication?

4. . How is the tiering system supposed to work? How do you think he "tiering" system is working? Is it an improvement over the older method (the long list on the website sortable by specialties, city, or region)? Has it helped with prioritizing?

5. What are the Strengths / weaknesses of the tiering system?

6. How do you think trade allies feel about the "tiering" system?

7. Is the level of staff interaction with trade allies sufficient? Too much? Explain.

8. How would you describe changes in "standard practice" in the market before vs. after the program intervened? How has that changed? Can the program be credited with some of that change? All of that?

- Are there differences by measure in what the program can take credit for? (gas furnaces, duct sealing, air sealing; vs. heat pumps, windows, or other)?

9. Have there been changes in: (explain each response)

- The numbers or types of actors in the market? [Maybe newer actors like real estate / appraisers, raters, Home Depot, etc.].

- Interactions between the relevant actors (Energy Trust, utilities, installers, businesses, realtors, etc.)?

10. How do you think ETO can enhance its relationships with the trade allies to increase energy savings?

11. Is there a role for performance / recognition / incentives for those responsible for achieving conversion? (to improve completions?)?

- What do you know about the annual award program? Is it effective?

12. Are certain companies / trade ally types / doing an exceptionally good job? Poor? Are there any lessons to be gained? Explain.

13. What are the key question(s) you'd like to be sure we ask the participating program allies in our evaluation? Non-participants?

E. Outcomes and Attributable Impacts *<Subsets for some respondents>*

1. Has the program: (score 1-7; 1 for not at all; 3 for somewhat; 5 for quite a bit; 7 for extremely positive / strong impact)

a. Been responsible for changing standard practice in the market? Which ones?	1 2 3 4 5 6 7 dnk
b. been effective at reducing barriers? Which ones?	1 2 3 4 5 6 7 dnk
C.Been effective at affecting folks who wouldn't have selected EE? Describe?	1 2 3 4 5 6 7 dnk
d. Reached – and transformed - important market actors? Which ones?	1 2 3 4 5 6 7 dnk

2. Have the program changes in recent years (as discussed above) resulted in improvements in any of the following? (Explain each response)

a. Level of savings achieved	1 2 3 4 5 6 7 dnk
b. the potential for savings	1 2 3 4 5 6 7 dnk
c. Points at which savings are / can be discussed	1 2 3 4 5 6 7 dnk
d. Groups for which savings are achieved	1 2 3 4 5 6 7 dnk
e. Measures or mix of measures achieving savings	1 2 3 4 5 6 7 dnk

3. Do you think the program is experiencing a lot of free ridership? Any idea how much? Would you consider it a problem for the program? Describe / explain.

4. Do you think the program is resulting in a lot of spillover? Any idea how much? Would you consider it a success of the program? Describe / explain.

5. Are there other programs "interfering" with the program's impacts in the market? Helping? Which ones? [be ready for comments on changes in state tax credits for heating systems and duct sealing]

6. Do you think other market actors are picking up changes in practices because of the program? What / how much?

7. In your judgment, what is a reasonable lower bound for your estimate of the savings achieved by the average participant? An upper bound? Which program interventions or elements are most responsible? Is the program achieving (about) the level of savings you hoped / planned for?

8. Can you name (other) market effects achieved by the program? Which interventions or elements are most responsible? (Prompts might include supply / availability; equipment reliability; education of actors; other)

9. If the program ceased tomorrow, which (if any) effects do you think would last? How long?

10. We'd like to ask you about a variety of impacts that are sometimes associated with energy efficiency equipment or building practices. Based on your judgment, or what you've heard, What POSITIVE impacts, beyond energy savings, do you think participants get from participating in the program? NEGATIVE impacts?

Compared to standard equipment or design features, does installing a program approved measures or receiving a Home Energy Review lead to (positive / negative) or no difference in…	Is the impact of this factor positive (+1/0/-1) or negative or no effect compared to standard equipment / practices?	For those with POSITIVE effect…➔ Compared to the annual energy savings, is the benefit more valuable or less valuate than the energy savings (MLV=much less valuable; SMV=somewhat more valuable; sv=same value)	For those with NEGATIVE effect…➔ Compared to the annual energy savings, are the problems more costly than the energy savings? (MLC=much less costly; SMC=somewhat more costly; SC=same cost)
a. Equipment maintenance costs (lower/higher)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
b.Equipment performance (better/worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
c. Equipment lifetimes (longer/shorter)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
d. Resident satisfaction (increase/decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
e. Resident comfort (increase/decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
f. Building aesthetics / appearance (better/worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
g. Lighting / quality of light (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
h. Noise levels (quieter / louder)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
i. Ease of selling home / value (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
j. Ability for resident to stay in home / not move (increase / decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
k. Environmental effect (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
l. Illnesses / sick days (fewer / more)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
m. Knowledge of bill / control over bill (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
n. Other	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC

Compared to standard equipment or design features, does installing a program approved measures or receiving a Home Energy Review lead to (positive / negative) or no difference in…	Is the impact of this factor positive (+1/0/-1) or negative or no effect compared to standard equipment / practices?	For those with POSITIVE effect…➔ Compared to the annual energy savings, is the benefit more valuable or less valuate than the energy savings (MLV=much less valuable; SMV=somewhat more valuable; sv=same value)	For those with NEGATIVE effect…➔ Compared to the annual energy savings, are the problems more costly than the energy savings? (MLC=much less costly; SMC=somewhat more costly; SC=same cost)
11. Overall – combination of all the positive and negative impacts	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC

F. Possible changes / enhancements *<all>*

1. Are there planned program changes you're aware of? If so, what?

2. Do you think these changes will help the program? Which aspects?

3. What is the one greatest contribution of this program you wouldn't like to see lost?

4. Are there new or key market barriers the program should be addressing – or could possibly address? Describe?

5. Do you have other suggestions to improve one or more of the program's elements or the overall design? Please describe (be specific).

6. What will it take to get these changes in place?

7. Is there still a need for this program? For all of its elements? At what point would you see the program "exiting" the market? What "indicators"? What might be needed next?

THANK THEM!

APPENDIX E – CONTRACTOR SURVEY INSTRUMENT

ENERGY TRUST OF OREGON - EXISTING HOMES PROCESS EVALUATION
PARTICIPANT TRADE ALLY SURVEY
SERA / DRAFT 9 (timing is minutes)

INTRODUCTION

Hello, my name is _____, and I'm calling from SERA on behalf of Energy Trust of Oregon. Our firm has been hired to evaluate the Existing Homes program. We are talking to Participating contractors to gather feedback on your experiences with the program and also home improvement work in the State.

It takes approximately XXX minutes and respondents will be entered into a drawing for two $100 Visa gift cards.

The information you provide me will be completely confidential and will help Energy Trust improve its services.

Do you have some time now? If NO;

We really need your input to help improve the program.
Can we schedule another time in the next couple of days?

Date:_____ Time:_____

Best Number?_____ Name:_____

MISSIONS INCLUDE:

- Perceptions of and experience with Energy Trust and new tiering system
- Awareness of an experience with the development fund (formerly cooperative marketing fund)
- How they encourage EE measure installations in existing homes
- How Energy Trust can enhance its relationship with trade allies to increase energy savings.

SECTION A: SCREENING AND AWARENESS

A1. Are you aware of Energy Trust of Oregon's Existing Homes Program? [If needed: This program provides ratings and provides incentives for installing energy efficiency features in existing homes].

1. Yes, I have definitely heard of it

2. Maybe I have heard of it
3. No, I have not heard of it ➔ stop interview and thank
4. Other / specify

A2. Did you submit, or help customers submit, an application for incentives from Energy Trust of Oregon's Existing Homes Program in 2010 or 2011?

1. Yes
2. No ➔ stop interview and thank them.
3. Don't know

➔ If "stop", say "Thanks, but we're looking for people that have worked with the Existing Homes Program. Thanks so much!"

A7. Do you agree or disagree with the following statement? Energy Trust is a credible information source for Oregon residents about energy efficiency and renewable energy. Would you say you:

7. Strongly agree with this statement.
8. Somewhat agree
9. Neither agree nor disagree
10. Somewhat disagree
11. Strongly disagree
12. Don't know

SECTION B: PROGRAM DECISION-MAKING

B1. What features attracted you to become a trade ally of the program in the first place?

1. Referrals of customers / increase business
2. Incentives for customers
3. Training
4. Extra credibility with customers
5. Marketing by Energy Trust
6. Marketing assistance / cooperative marketing fund
7. Other (specify)
8. Don't know

B3. What elements caused hesitation in participating in the program?

1. Insurance requirements
2. Don't need the business
3. Distance from Portland / center of the program
4. Concerns about paperwork
5. "Rating" system
6. Other (specify)

7. Don't know

B4. What does your firm get out of the program? What is the value of the program to you?

1. More customers
2. Different customers
3. Expanded services
4. Training
5. Knowledge about energy efficiency
6. Advertising
7. Our firm's name on a list / rated
8. Other (specify)
9. Don't know

B7. What could make the program more successful? What would help increase your business more? How else could the program bring you more referrals or business? How could the program enhance its relationships with trade allies to increase savings? *(Listen for contractor referral process)*
<open end>

B8. Does being a Trade Ally "distinguish" you in the market? Do you use that in your marketing? (don't read)

1. Yes it distinguishes, and we use it
2. Distinguishes, we don't use it
3. No doesn't distinguish
4. Other (specify)

(Cut if too long) B9. If only trade allies could get the incentive, would you like a change like that?

1. Yes
2. No
3. Don't know
4. Other, specify

B10. Do you read the "Insider"? *(If needed, an emailed newsletter for Trade Allies about Energy Trust programs, activities and resources.)*

1. Yes

2. No
3. Don't know
4. Other, specify

B11. What is the best way to inform you about changes to the program?

1. Insider
2. Email
3. Phone
4. Letter
5. Postcard
6. Regional Rep
7. Training sessions / workshops
8. Other (specify)

B12. Is communication of program changes a barrier to program participation?

1. Yes
2. No
3. Don't know
4. Other, specify

B14. Where are there waits or delays in the program process? (check all that apply)

1. Paperwork
2. Receipt of incentive
3. Inspection
4. None (→ B.16)
5. Other (specify)

B15a. *(If b14 shows delays)* What got it going again (if it did)?

3. It didn't get going again
4. If it did, what got it going _____
5. Refused / DNK

B16. How likely are you to recommend the program to customers in the future?

1. Very likely
2. Somewhat likely
3. Neither likely nor unlikely
4. Somewhat unlikely
5. Very unlikely
6. Other, specify
7. Don't know

B16a. If unlikely, why?
(open end)

B16b. Anything that could make that more likely?
(Open end)

B18. Are the conditions of becoming a trade ally too stringent, or do these conditions bring more meaning to the program?

1. Too stringent
2. Bring extra meaning
3. Neither
4. Other (specify)
5. Don't know

B18a. Are the reasons behind the program requirements clear? Yes/No.
If not, what is the best way to provide more information?
1. Rountables
2. Emails
3. One-on-one conversations
4. Other?_____

B19. Are you familiar with the new trade ally rating system, with assigns up to three stars to contractors based on [Marshall, please fill in]?

1. Yes
2. **No** ➔ skip to Question B26
3. Don't know

B19a. Overall, what do you think of the new rating system?

1. Like it a lot
2. Like it somewhat / it is ok
3. Don't like it
4. Don't know
5. Other specify

B20. Do you think the rating system has been helpful to consumers?

1. Yes, a lot
2. Yes, somewhat
3. No
4. Other (specify)
5. Don't know

B21. Have you heard customers mention the rating system or say they used it in selecting a contractor?

1. Yes, a lot
2. Yes, somewhat
3. No
4. Other (specify)
5. Don't know

B22. Do you know how the rating system scores are generated?

1. Yes
2. No
3. Other (specify)
4. Don't know

B23. Do you know how many stars your business has on the website?

1. Yes
2. No
3. Other (specify)
4. Don't know

B24. Do you think the rating system and criteria are applied fairly?

1. Yes
2. No
3. Other (specify)
4. Don't know

B25. Do you have any suggestions for the rating system's design, operation, or use?
<open ended>

B26. Is your firm aware of the "trade ally development fund" or the cooperative marketing fund?
<IF NEEDED, …>

1. Yes
2. No
3. Other (specify)
4. Don't know

B27. Has your firm used the "development fund"?

5. Yes
6. No
7. Other (specify)
8. Don't know

B28. If yes, how did you use it?
(open end)

B29. How satisfied were you with the following aspects of the development fund (1-5, don't know):
1. Amount of financial assistance available
2. Amount of other assistance provided
3. Timeliness / turnaround
4. Overall satisfaction
5. Approved uses for the funds (conferences, trade assoc. dues, marketing, training, etc.)

B30 Do you have any suggestions for the development fund's design, operation, or use?
<open ended>

B41. What customer groups (beside low income) are still underserved or under-investing in energy efficiency?
<open end>

B42. What changes or suggestions do you have for the program?
<open end>

C. MARKET SITUATION

C1. Has the amount of energy efficiency work you do in the market increased in the last 2 years compared to before?

1. Yes a lot
2. Yes a little
3. No change
4. Decreased a little
5. Decreased a lot
6. Other, specify

C2. <If C1=YES> What do you think caused the change (check all that apply)?

1. Program incentives
2. being a trade ally
3. general attention to energy efficiency
4. customers asking for it
5. fact that the new construction market has fallen so this (and retrofits) are a higher percent of my business
6. Increase in the number of other firms joining the market in the last 2 years?
7. Other (specify)

C3. How often do customers bring up the topic of energy efficiency when discussing home improvements with you?

1. Almost always
2. More than half the time
3. Occasionally, but less than half the time
4. Hardly ever or never
5. Other, specify
6. Don't know

C4. What is the customer's primary driver for doing projects?

1. Saving money / high energy bills
2. Saving money / high water bills
3. Saving energy
4. Hot and cold spots / comfort
5. Repairs needed for the home
6. Doing a non-energy remodel / adding on / remodeling
7. Family was sick too often / Health
8. Safety
9. Increase value of the home
10. Someone talked about the program and the savings (friend, co-worker, other)
11. Kids got flyers from school / suggested
12. Saw an ad / website / web search
13. Communication from utility – bill insert, newsletter, direct mail
14. Saw information from Energy Trust
15. Energy Trust Home Energy Review
16. Other (specify)

C5. How do you encourage energy efficiency measures in existing homes?

C7. About what percent of your remodeling / retrofit / repair jobs are within the program?_____%

C12. What are the barriers to more energy efficiency work in the residential market? (check all that apply; do not read / classify as they mention)

1. Not much interest in retrofits other than basic remodels for appearance (countertops, etc.)
2. No money to spend on remodeling / retrofits
3. Concerns costs will be above household budgets
4. Concerns about possible cost overruns on the project
5. Inconvenience / hassle / disruption
6. Finding a contractor
7. Getting contractor to come when scheduled
8. Getting contractor to do what was requested
9. Delays / not finishing on time
10. Equipment not working as expected
11. Didn't save money on bills
12. Other / specify

C12a. Which of the ones you mentioned is the most important barrier? **#** _____

C12b. How do you / your firm try to address these barriers?
(open end)

C13. Has the program been helpful in addressing or reducing any of those barriers? If so, how?

1. Yes, a lot
2. Yes, somewhat
3. No, not really
4. Don't know
5. Other specify

C13a. If yes, how? (open end)

C15. How can the Energy Trust work better with Trade Allies such as yourself to increase energy savings in the marketplace? (open end until a few have been completed)

C15. Overall, how well has your experience with Energy Trust matched with your expectations?

7. Much better than expected
8. Somewhat better than expected
9. About the same as I expected
10. Somewhat worse than expected
11. Much worse than expected
12. No response / did not reply

C16. If you had it to do over again, would you become a Trade Ally or work with the Energy Trust's Existing Homes Program again? (post code, check all that apply)

5. Yes, definitely trade ally
6. Yes, definitely program
7. Yes, with hesitations trade ally (specify)
8. Yes, with hesitation program (specify)
9. No (explain)
10. Don't know

SECTION D: NEBS

D1. We'd like to ask you about a variety of impacts that are sometimes associated with energy efficiency measures.

For each of the following, does installing retrofit energy efficient equipment in households make a positive, negative, or no difference?	Positive, negative, or no difference?	IF POSITIVE: Do you think benefit to households is more valuable or less valuable than the energy savings (MLV=much less valuable; SMV=somewhat more valuable; sv=same value)	IF NEGATIVE: Are the problems to households more costly than the energy savings? (MLC=much less costly; SMC=somewhat more costly; SC=same cost)
a. Equipment maintenance costs (lower/higher)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC

For each of the following, does installing retrofit energy efficient equipment in households make a positive, negative, or no difference?	Positive, negative, or no difference?	IF POSITIVE: Do you think benefit to households is more valuable or less valuable than the energy savings (MLV=much less valuable; SMV=somewhat more valuable; sv=same value)	IF NEGATIVE: Are the problems to households more costly than the energy savings? (MLC=much less costly; SMC=somewhat more costly; SC=same cost)
b.Equipment performance (better/worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
c. Equipment lifetimes (longer/shorter)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
d. Resident satisfaction (increase/decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
e. Resident comfort (increase/decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
f. Building aesthetics / appearance (better/worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
g. Lighting / quality of light (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
h. Noise levels (quieter / louder)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
i. Ease of selling home / value (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
j. Ability for resident to avoid moving / stay in home (increase / decrease)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
k. Environmental effect (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
l. Illnesses / sick days (fewer / more)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
m. Understanding of how to control energy bills / costs (better / worse)	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
n. Other	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC
o. Overall – combination of all the positive and negative impacts	+1 0 -1 ___	MLV SLV SV SMV MMV	MLC SLC SC SMC MMC

F. BUSINESS CHARACTERISTICS

F1. In which Energy Trust Regions do you work? (check all that apply)

5. All across the state
6. Pacific Power (sometimes called by its old name of Pacific Power and Light or PP&L)
7. Portland General Electric (usually called PGE)
8. Eugene Water and Electric Board (usually called E-WEB)
9. NW Natural
10. Cascade Natural Gas
11. Avista
12. Other (specify)

F2. Which of the following describes your company?

1. Builder / developer
2. Weatherization services
3. General contractor
4. HVAC installation / service

5. Plumber
6. Energy efficiency service provider
7. Solar electric installer
8. Other, specify _____

F3. What types of energy efficiency features or building practices do you (or your company) directly offer? (don't read / answer all that apply)

1. Caulking / sealing
2. Duct sealing
3. Insulation
4. Efficient windows
5. Efficient water heaters
6. Efficient heating equipment
7. Efficient air conditioning equipment
8. Solar equipment
9. Wind and alternatives
10. Efficient appliances
11. Blower door and other testing
12. Other (specify)

F4. About how many employees are there at this location? _____

F5. How many offices does your firm have in the State of Oregon? ___

F6. When was your firm established? _____

F7 (DO NOT READ)

3. Male
4. Female

G. CLOSING

That completes our interview. Thank you so much. I have your contact phone number as _____. May I enter you in the drawing for the Visa gift cards?

Thank you very much for your help. Have a great day.