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Final Report

Process Evaluation of the 2009-2010 New Homes Program

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EXECUTIVE SUMMARY

This report presents the findings of a process evaluation of the 2009 and 2010 program years of Energy Trust of Oregon's New Homes program. This program, implemented by Portland Energy Conservation Inc. (PECI) and its subcontractors, Conservation Services Group (CSG), and Earth Advantage Inc., promotes improved new-home design techniques and the installation of energy-efficient materials and appliances.

In the past, this program has relied on promoting building to the ENERGY STAR® level. Following a code change that went into effect in June 2008, the program has offered the Energy Performance Score (EPS) as a way to rate and promote new site-built homes and claim savings on all upgrades above code. The goal of the EPS is to educate builders, realtors, and consumers to the relative efficiency of homes and transform market demand toward more energy-efficient homes.

For this evaluation, we reviewed program documents and data, conducted in-depth interviews with 14 Energy Trust staff and implementation contractors, three manufactured home market experts, and three manufactured home builders, and surveyed 37 participant and nonparticipant builders and 58 real estate professional trade allies (REPTAs).

MEASURE REVIEW

A review of the database of 2009 and 2010 program projects and measures found that the most common measures installed through the program were insulation, windows, ventilation, lighting, whole house infiltration, duct system, water heater, and gas furnace. Findings for EPS measures are similar for 2009 and 2010, but there were fewer standalones in 2010 than 2009. About three-quarters of EPS homes had seven to nine measures installed, with eight the modal number. What little variability existed among projects in the measures that were installed was determined largely by how home heating was handled. Generally, installing more measures meant a lower EPS. However, homes with more than seven measures tended to have higher EPS scores, which appeared to have been the result of a higher percentage of gas furnaces, rather than heat pumps, and a greater likelihood of including air conditioning, in homes with more than seven measures.

SITE-BUILT HOMES

Analysis of secondary data shows a continuing decline in new home building permits in Energy Trust territory, but an increase in the percentage of Oregon homes built to ENERGY STAR® specifications.

Preliminary data from an ongoing survey of builders found that most builders did not report significant problems meeting the 2008 code and did not expect significant challenges in meeting

the 2011 code. Nonparticipant builders, however, were more likely to expect challenges with the 2011 code. Builders preferentially sought code-related information from local builders associations and Earth Advantage Institute over the State Department of Building Codes and Energy Trust, with participant builders showing a stronger preference for Earth Advantage.

Builders' reasons for participating in the New Homes program suggest a possible segmentation between those who are opportunistically motivated and those driven purely by the desire to promote energy efficiency. While many participating builders indicated that building efficient homes conveyed a competitive advantage, nonparticipating builders tended to think that customers are not willing to pay for energy efficient features.

Earth Advantage is the dominant face of the program to participant builders, possibly to the extent that it limits Energy Trust's ability to link its name with the program. However, builders were generally satisfied with the program, particularly their interaction with program staff and training they had received.

Participant builders reported generally positive attitudes toward the EPS. Most found it easy to explain to customers and those who had an opinion reported that it was useful to homebuyers. A few, however, thought the EPS underscores high-efficiency homes and does not provide enough information on how to improve a home's efficiency.

Participant builders tend to market their home's efficiency primarily in in-person interactions with potential homebuyers and they were unaware of Energy Trust's marketing of the program; thus, builders may be missing opportunities to market their efficient homes.

Cost to the homebuyer appears to be the largest barrier to installing solar measures on new homes. While managing tax credits was not widely reported as a barrier to installing solar, most respondents would like additional information about solar tax credits and incentives, which may help control the largest barrier to installing solar, cost.

MANUFACTURED HOMES

The manufactured homes market in Oregon has shrunk to one-fifth of what it was in 2000. As a result, many market actors in the manufactured homes industry are experiencing serious financial hardships, resulting in the closing or consolidation of several companies, the diversification of product types offered, and the construction of smaller homes and less expensive homes.

Market experts estimate that 60% to 65% of manufactured homes sold in Oregon are ENERGY STAR®, but manufacturers provided diverse views about the role certifications such as ENERGY STAR® and Eco-rated play in customer buying decisions. Manufacturers do not currently receive incentives to construct more efficient homes. Moreover, because loan products for manufactured homes have higher interest rates than those for site-built homes, customers who want an Eco-rated home may be ineligible to purchase it because their loan terms will not allow them to exceed a certain price.

Manufacturers report willingness to build homes beyond ENERGY STAR® level if there is sufficient customer demand, the housing market stabilizes, or financial mechanisms such as financing options or increased incentives put high-efficiency homes in customers' reach. Manufacturers were resistant, however, to the idea of installing ductless heat pumps in homes, largely because of the cost.

REPTAS

A survey of 58 REPTAs found that REPTAs were satisfied with the training they received from Energy Trust. However, only slightly more than half were satisfied with the REPTA network overall and REPTA contact with Energy Trust was relatively low.

REPTAs reported that they *do* promote energy efficiency with clients and that they do so more since becoming trained Energy Trust trade allies. Almost all respondents said they discuss energy efficient home features with buyers and sellers, most frequently during home tours. They reported recommending specific efficiency upgrades, most commonly windows replacement, adding insulation, and upgrading the furnace. In addition, a large majority of REPTAs had listed energy efficient features or certification in the RMLS listing. Most REPTAs agreed that EPS is a good tool for promoting the efficiency of new homes.

REPTAs less frequently mention Energy Trust's services than they do efficiency in general, doing so somewhat more than half the time with homebuyers but less often with sellers. When they promote Energy Trust, it is most commonly in face-to-face interactions. Fewer than half reported displaying the Energy Trust logos on their marketing materials or on their electronic communications.

A large majority of REPTAs said their clients do not ask about energy efficient mortgages or financial options, and most have never referred buyers or sellers to the Umpqua Bank's Green Street Lending Program.[1] However, several REPTAs indicated interest in better financial options or discounts for energy efficiency upgrades and in training on energy efficient mortgages and financial options.

Awareness of coop marketing support is high among REPTAs but fewer than half had received marketing assistance since 2009. While satisfaction with the application process for marketing assistance was generally positive, a substantial minority of respondents were neutral or even dissatisfied with the process.

[1] Green Street was the only lending program available at the time of this review; however, Energy Trust (to distinguish from the Green Street program) no longer solely promotes Green Street.

RECOMMENDATIONS

Although Energy Trust's New Homes program has managed to maintain and even gain market penetration despite adverse market conditions, the above findings suggest a variety of recommendations.

Builder and REPTA Support

- **Recommendation:** Work with very-high-efficiency home builders to address their belief that the process for calculating the EPS is not accurate for very high efficiency homes.
- **Recommendation:** Work with builders and REPTAs to market efficiency features more actively, such as by helping builders work through the REPTA network to market efficiency features or by allowing builders to link their messages to program marketing.
- **Recommendation:** Be clear and consistent regarding what is expected of agents once they become a REPTA, and generate engagement by offering additional training on energy efficiency financing and possibly an incentive for new energy efficient homes that are purchased.

Program Marketing

- **Recommendation:** Energy Trust may consider exploring the segmentation of the builder market, including how to tailor marketing message to increase participation within each segment.
- **Recommendation:** Adapt program marketing materials to put more emphasis on promoting the credits and incentives associated with solar installations and train BOSs in how to explain them to builders.
- **Recommendation:** Continue and increase efforts to promote the program through local home builders associations, such as by asking the associations to host a link to the program website from their websites or to include information about the program in electronic communications with members. As part of this effort, as well as in program marketing materials, promote the New Homes program as a source of information about the 2011 energy code.

Manufactured Homes

- **Recommendation:** Energy Trust should consider providing incentives to manufacturers to offset the incremental cost of producing homes more efficient than ENERGY STAR®, including rebates to offset the cost of installing a DHP instead of a traditional heating source.

➡ **Recommendation:** Energy Trust could work with manufactured home financing companies to encourage lower interest rates for energy efficient manufactured homes.

MEMO

Date: October 4, 2011
To: Board of Directors
From: Sarah Castor, Evaluation Sr. Project Manager
Matt Braman, Residential Sector Manager, New Homes Program
Subject: 2009-2010 New Home Program Process Evaluation

The last process evaluation of the New Homes Program was completed in 2009. At that time, the program had just completed its transition to the both the 2008 residential code and the Energy Performance Score (EPS) for new homes. Today, it is adapting to the new 2011 residential code.

Results from the survey of builders show that participating builders have largely embraced the EPS and find it easy to explain to homebuyers. In addition, builders who have participated in the program report fewer challenges in meeting new residential codes than nonparticipants. The program works continuously with home builders associations to recruit new participating builders and provide information on the 2011 residential code. To date in 2011, the share of homes in areas served by Energy Trust that received an EPS is 19%, up from about 14% in 2010.

A few builders reported concern that the EPS does not accurately rate very high efficiency homes; the program is aware of a desire by some builders to reach “Net Zero” for their homes and will be developing a “Path to Net Zero” approach in 2012.

Builders did not report much awareness of Energy Trust marketing efforts for new homes. In Q4 of 2011, the program launched a consumer marketing campaign for new homebuyers encouraging potential homeowners to ask builders for the type of information an EPS can provide. Through the Smart Homebuyer Checklist questions buyers can ask builders are provided:

- What are the estimated monthly and annual energy costs for this home?
- What is the Energy Performance Score of this home?
- Is this home solar ready?
- Which high-efficiency features are built-in? (a list is provided)

Builders are no longer able to utilize the Oregon High Performance Homes tax credit to offset the cost of adding solar to new homes. In the absence of this incentive the program plans to focus on getting builders to make homes solar-ready and has set an ambitious goal to increase the market share of solar-ready homes. Solar-ready homes reduce the cost for homeowners to install solar in the future and qualify the builder for up to $400 in Energy Trust incentives.

Manufactured home builders report that Energy Star market share is over 50%, but that few buyers are interested in exceeding Energy Star, due to increased costs and lack of awareness of other energy efficiency labels. In 2010, the program began offering an additional incentive for eco-rated manufactured homes (a higher energy efficiency specification than Energy Star), but plans to discontinue this incentive in 2012 due to the lack of interest and the low volume of manufactured home sales overall. In 2012 program staff will examine if there are additional cost effective opportunities within this market beyond the current Energy Star level. If none, it is expected that the program would have to transition away from this market. In the meantime, Energy Trust will work with NEEA and BPA to develop a regional strategy for encouraging ductless heat pumps in new manufactured homes. Other options may be modular homes and/or the development of an EPS for manufactured homes, as a way to incent manufacturers to build beyond Energy Star.

Finally, results of a survey of Real Estate Professional Trade Allies (REPTAs) associated with both the new and existing homes program showed a need for more clarity around program expectations of REPTAs. The New Homes program will work with Existing Homes staff to re-evaluate the role of REPTAs and improve their engagement with Energy Trust.

1 INTRODUCTION

Energy Trust of Oregon's New Homes program promotes improved new-home design techniques and the installation of energy efficient materials and appliances in new site-built and manufactured homes. The program's overarching goals are to encourage builders to construct energy efficient homes and to support marketing featuring the energy efficiency of these homes. In 2009 the program developed the Energy Performance Score (EPS) as a way to rate the energy efficiency of new site-built homes and claim savings on all upgrades above code. The New Homes program encourages the sale of energy efficient manufactured homes by providing incentives both to retailers for selling ENERGY STAR®- and eco-rated homes and to customers that purchase eco-rated homes.

In March 2011, Energy Trust awarded Research Into Action, Inc. a contract to conduct a process evaluation of the 2009-2011New Homes program. The evaluation portion of this report builds on our previous evaluation of this program and provides information on program processes and the program-related experiences and preferences of builders, retailers, and manufacturers.

PROGRAM DESCRIPTION

The Energy Trust New Homes program seeks to transform the market for both site-built and manufactured new homes in Oregon through outreach and the provision of incentives to home builders, manufactured home retailers, and manufactured home buyers, and other stakeholders such as the REPTA network and through efforts to build homebuyer awareness of energy efficiency.

Portland Energy Conservation Inc. (PECI) is the program management contractor (PMC) for both the site-built and the manufactured homes components of the New Homes program. Conservation Services Group (CSG) provides technical assistance to the program. In addition, Builder Outreach Specialists (BOSs), modelers, and verifiers, employed by the Earth Advantage Institute (EAI), conduct outreach to home builders on behalf of the program.

Site-Built Homes

The site-built homes component of the New Homes program transitioned in 2009 from a focus on promoting ENERGY STAR®-qualified new homes to an approach centered on the home's Energy Performance Score (EPS). EPS is a measure of a home's energy use in millions of Btu per year. Scores range from zero (lowest possible energy use) upward. For each home that receives an EPS, the program provides a report that shows how that home's energy use compares to the Oregon average and to a similar home built to code.

Incentives are still awarded for achieving efficiency benchmarks based on combinations of measures installed ("incentive options"). Homes receive a flat incentive based on the benchmark

achieved: Energy Star ($800), Energy Star with ducts inside ($1600), High Performance ($2400), and Advanced Performance ($4000). There are two pathways each to achieve the Energy Star, High Performance, and Advanced Performance benchmarks.

What is new is that the program provides additional incentives for homes that achieve an efficiency level that falls between two benchmarks. For any consecutive pair of benchmarks, the program provides a maximum additional incentive that is less than the difference between the flat incentives for the two benchmarks – for example, the maximum additional incentive for achieving an efficiency level between the Energy Star and Energy Star with ducts inside benchmarks is $500 (compared to a difference of $800 between the two flat incentives). The purpose is to encourage builders to achieve the next-higher benchmark. For any particular home, the additional incentive is a percentage of the maximum, based on the efficiency level gained relative to the estimated efficiency gain of the next-higher benchmark. For example, if the calculated efficiency of a new home is half-way between that of the Energy Star and the Energy Star with ducts inside benchmarks, the additional incentive is 50% of the $500 maximum, or $250.

A move away from a focus on relatively well defined building option packages (BOPs)[2] is expected to allow for greater flexibility in the program's incentive structure for home builders. The program promotes the EPS as a measure of overall home energy use by describing the EPS as a miles-per-gallon rating for homes.

The shift to a more flexible incentive structure and to the use of EPS to promote a new home's efficiency was a response, in part, to increased energy efficiency requirements in the Oregon residential building code that took effect in June 2008. ENERGY STAR® specifies that builders achieve 15% greater energy efficiency than the building code requires. Stricter building codes make it more difficult for builders to qualify for ENERGY STAR®. The new incentive structure and the focus on EPS are designed to recognize builders who build homes that are more efficient than code but fail to achieve ENERGY STAR® compliance, while also providing incremental incentives to builders who exceed ENERGY STAR® standards.

The program identifies potential participants by maintaining contact with the 29 local building permit authorities throughout Oregon. Within one month after a builder files a new home building permit, the program sends the builder a packet of information and a BOS contacts the builder. In some cases, interested builders seek out program participation because of a referral, advertisement, or interest in energy efficiency. The BOS works with interested builders to develop home plans that include energy efficient features that exceed current building codes.

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[2] See *Engineering Review and Process Evaluation of the Energy Trust New Homes Program*. Prepared for Energy Trust of Oregon by Research Into Action, January 14, 2010. Available on the Energy Trust of Oregon website: http://energytrust.org/library/reports/100114_NewHomes_ProcessEval.pdf

After the project qualifies for the program, the BOS continues to work with the builder to resolve any issues that develop surrounding the installation of efficiency measures and to encourage installation of any additional efficiency measures for which the BOS sees potential. Once construction is complete, program staff calculate the home's actual EPS and provide incentives to the builder based on the final modeling of energy savings.

Manufactured Homes

The manufactured homes component of the New Homes program – promoted as the New Manufactured Homes program – seeks to promote the sale of ENERGY STAR®-qualified or eco-rated manufactured homes. Increased efficiency requirements in Oregon's building codes did not affect manufactured homes in the same way as site-built homes because the manufactured homes have to meet HUD code, which has not changed since 1996, and site built homes have to meet Oregon Energy Code standards, which change every three years. Therefore, EPS ratings have not been applied to manufactured homes. The program targets the manufactured home market with two incentives:

- **Sales Incentives.** The program offers incentives of $300 to manufactured home retailers for each ENERGY STAR®-qualified or eco-rated manufactured home they sell that is placed within Energy Trust's territory.
- **Customer Incentives.** The program offers incentives of $700 to manufactured home buyers for each eco-rated manufactured home they purchase that is placed within Energy Trust's territory.

Building Consumer Awareness

Energy Trust staff view the home-sale transaction as an opportune time to broaden consumer awareness of the value of energy efficiency in new, remodeled, and existing homes. Therefore, in addition to providing incentives to builders for achieving energy savings above code, the program seeks to support builders in promoting efficient new and manufactured homes to homebuyers. As part of this effort, the program has worked with builders to promote EPS-rated homes in home tours. Additionally, BOSs work with real estate agents and builders' subcontractors to educate them about the program. The program also provides financial support to builders who promote EPS and energy efficiency in model homes.

In addition to its work with participating home builders and manufacturers, Energy Trust also supports a network of real estate professional trade allies (REPTAs) to help promote Energy Trust in general and the New and Existing Homes programs more specifically. From Energy Trust's perspective, membership in the REPTA network (and listing on trade ally directory) differentiates these market actors as environmental stewards and offers the expansion of business opportunities based on their program-supported knowledge of energy efficiency and Energy Trust energy efficiency programs; green building; and Green Street lending options. The New

Homes program has no specific requirements for continuing participation in the REPTA network.

Energy Trust recruits knowledgeable real estate professionals to the REPTA network by inviting professionals who have taken the Earth Advantage Institutes Sustainability Training for Accredited Real Estate Professionals (S.T.A.R.) course to attend an additional half-day on relevant Energy Trust programs, services, and incentives. Because S.T.A.R. certification focuses primarily on new and remodeled homes, Energy Trust staff provide the half-day training that also includes additional information on energy efficient opportunities in existing homes. To reinforce topics covered during the classroom training, REPTAs receive a packet of printed materials containing examples of "leave behind" information on Energy Trust programs for RETPA clients, a listing of current incentives on offer, cooperative marketing guidelines, and Energy Trust contact information. Energy Trust further supports those opting to join the REPTA network by reimbursing $100 toward the $365 cost of their S.T.A.R. certification course.[3]

The program also offers cooperative marketing funding to REPTAs on approved marketing projects – up to $4,000 per year for each REPTA. Cooperative marketing funding may be provided for certain co-branding opportunities: direct mail and flyers, business cards, and events. The program provides up to $250 annually to support websites that feature certain required text and a hyperlink to the Existing Homes or New Homes program. To keep trade allies abreast of current program information, Energy Trust distributes electronic copies of their *Insider* newsletter to the REPTA network.

EVALUATION OBJECTIVES

This evaluation builds upon the 2009 evaluation of the New Homes program[4] and documents the program changes that took place since 2009. Furthermore, this process evaluation seeks to provide Energy Trust with insights that will inform program design as the New Homes program responds to changes in the state building code and new home market changes. To best achieve these goals, Energy Trust developed the following research objectives:

➡ Home Builders

- Investigate participating home builders' acceptance and use of the Energy Performance Score (EPS).
- Determine what participating builders value about the program.
- Determine participating builders' satisfaction with the program.

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3 For more information on the S.T.A R. certification course go to: http://www.earthadvantage.org/education-events/certification/star-the-earth-advantage-broker-certification/

4 Cited above, footnote 2.

- Investigate why builders participate or choose not to participate in the program.
- Understand builders' perceptions of energy code changes.
- Identify patterns and trends in installed measures.

➡ **Manufactured Home Builders**

- Understand the manufactured homes market in Oregon.
- Determine what tactics might encourage the sale of eco-rated homes.
- Evaluate program offerings to the manufactured homes industry.

➡ **Real Estate Professional Trade Allies (REPTAs)**

- Determine how REPTAs interact with the New Homes program.
- Identify how REPTA's market Energy Trust.
- Identify how REPTA's market energy efficiency features of homes.

The scope of this report varies in two main ways compared to our 2009 evaluation of this program. To our current scope of inquiry, Energy Trust dropped the engineering review of measures, but added a survey of real estate professional trade allies. Additionally, we provide a review of the 2009 evaluation and identify what changed in this evaluation. The results will help Energy Trust ensure that the programs obtain the greatest possible savings in the new homes market.

METHODOLOGY OVERVIEW

Following a review of program documents, the evaluation team conducted a review of measures installed through the program and conducted in-depth interviews with program staff. The analysis of measures and staff interviews informed our structured interviews with home builders, online surveys for REPTAs and builders, and in-depth interviews with manufactured home builders and market experts. Chapter 2 provides additional details on sampling protocols, methods used for contacting program actors, the types of information provided by each group of respondents, and our method of data analysis.

2 PROCESS EVALUATION METHODOLOGY

Research Into Action staff collected data for this evaluation using the following sources:

- Program documents
- Program data
- In-depth interviews with 14 Energy Trust staff and implementation contractors
- In-depth interviews with three manufactured home market experts
- In-depth interviews with three manufactured home builders
- Structured interviews with seven participant and five nonparticipant builders
- Online survey of 25 builders
- Online survey of 58 real estate professional trade allies (REPTAs)

With permission from each contact, we recorded all in-depth interviews and took detailed notes. We coded and analyzed these data using Microsoft Excel, SPSS, and Nvivo 9 qualitative analysis software. This chapter outlines the type of data we received from Energy Trust, who we interviewed, and key information we learned from each source.

STAFF INTERVIEWS

Between early April and early May, we completed 10 interviews with a total of 14 individuals associated with program management or implementation. These interviews ranged from half an hour to one and one-half hour. Table 2-1 provides an overview of the organizations these respondents represented and their respective roles.

Table 2-1: Staff Interviews

ORGANIZATION	ROLE	NUMBER OF STAFF INTERVIEWED
Energy Trust	Program Sponsor	2
PECI	Program Management Contractor	6
CSG	Technical Assistance	3
Earth Advantage Institute	Builder Outreach Specialists and Manager	3
Total		14

Through these interviews, the evaluation team explored staff roles and communication structures, as well as program direction, strategies, and anticipated changes. The evaluation team also asked program staff for their insights into program challenges, market barriers, and opportunities. Finally, the evaluation team asked program staff what key information they would like to gain from participants to guide the development of questionnaires for home builders and manufactured home builders. (The interview guides are included in Appendix A.)

MEASURE REVIEW

We received a data file from Energy Trust in early April showing all measures installed as part of the New Homes program in 2009 and 2010. We identified 1,001 projects installed in that period that received an EPS or installed a standalone measure or both. Among those projects, we identified the most common measures installed, the number of measures (EPS and standalone) installed by projects, and various installation patterns. The latter included cross-tabulations of EPS measures, identification of the EPS measures associated with projects installing multiple measures, the relationship between number of measures installed and EPS, and the relationship between measure type and EPS.

BUILDER SURVEYS

We surveyed builders participating in the New Homes program as well as some who did not participate. We first conducted pilot open-ended telephone interviews with a sample of participating and nonparticipant builders to ensure that our questions were meaningful and to gauge the range and type of responses. Using the results of the pilot interviews, we then developed a close-ended online survey to collect data from a broader sample of participant and nonparticipant builders.

We launched the online survey first to a group of participant builders that the program specifically targeted. We then worked with the Oregon Home Builders Association (OHBA) to field the online survey with its membership.

These contacts provided responses from 29 participating and 17 nonparticipating builders, as detailed below. The results from these respondents are summarized in Section 5, *SITE-BUILT HOMES*.

Pilot Interviews with Targeted Participants and Nonparticipants

Energy Trust program staff provided us with a list of 48 targeted participant builders and 24 targeted nonparticipant builders. We randomized both lists and contacted builders between mid-May and early June 2011, with a goal of completing five to eight structured phone interviews in each group. Because of the smaller list of nonparticipants and the expected lower cooperation rate, we sent an email request for an interview to those for whom we had an email address in addition to calling them.

We completed the pilot interviews with seven participant and five nonparticipant builders, each lasting 15 to 20 minutes. One of the nonparticipant respondents indicated he had participated in the program in 2008 but had not participated since then. Five of the seven participant builders were small builders (less than eight homes per year) that constructed very low EPS homes in 2009 or 2010. Of the others, one had built as many as 250 homes per year with as many as 100 in the program and the other had built as many as 12 homes per year with as many as seven receiving program incentives. Nonparticipant respondents ranged in size from zero to 250 homes built in the last year. Our pilot-interview builders served geographically disbursed regions in Oregon.

The questions for participant builders covered builder characteristics, familiarity with and perceived challenges of new code changes, decision-making processes regarding use of energy efficiency features, program-related experiences, and marketing and use of EPS. The questions for nonparticipant builders addressed their familiarity with the New Homes program, why they opted not to participate in the program, what energy efficiency features they install in their homes, and about any challenges they had in meeting energy code changes. (The final survey instruments are included in Appendix A). We coded the responses to these interviews and included them in a final combined dataset with close-end survey data.

Online Survey of Energy Trust Targeted Participants

On June 6 we sent emails to the 41 participating builders identified by Energy Trust not interviewed during the pilot, asking them to participate in an online survey. Reminder emails were sent on June 9, 13, and 17. The survey was closed on June 21. As a token of appreciation for completing the survey, all respondents were entered to win one of two $100 gift cards. (The text of the invitation to participate in the online survey is included in Appendix B.)

Of those 41 builders, eight completed the online survey, four emailed invitations were undeliverable because of an insufficient email address, and the remaining 29 builders opted not to complete the survey.

Online Survey of OHBA Membership

OHBA agreed to host a link to the online survey on its website and to ask the 14 builder association chapters across the state to invite their membership their combined statewide membership of approximately 1,000 builders[5] to participate in the online survey.

On June 13 a representative of the OHBA distributed a link to the survey to the local chapters, together with recommended text for an email invitation to members to participate in the survey.

[5] Approximately, 25% of the 4,000 OHBA members are builders. The remaining members are trades people, realtors, mortgage brokers, and others associated with the building industry.

(The text of the invitation to participate in the online survey is included in Appendix B.) As a token of appreciation for completing the survey, all builders who provided their name and email address were entered to win one of two $100 gift cards.

We followed up with the local chapters by telephone to confirm that invitations had been sent, but we could not determine whether, when, or how reminders were sent. As of the date the online survey was closed, it yielded nine participant responses and eight nonparticipant responses. We received no responses to the survey via the link hosted on the OHBA website.

Builder Dataset

Results from the builder interviews and surveys were combined into one dataset for analysis. This allowed us to examine the common questions that were pertinent to all builders as well as examine responses relevant only to participants or nonparticipants. Open-end comments from the pilot interviews were used to elucidate points revealed by the larger dataset.

MANUFACTURED HOMES INTERVIEWS

One of the Energy Trust staff persons we interviewed was responsible for the manufactured home program. This interview helped us better understand the current program, identify recent program changes, and identify trends in the manufactured homes market, allowing us to prepare interview guides for the market experts and manufactured home builders.

In mid-May, we completed two in-depth interviews with a total of three individuals that program staff identified as Northwest manufactured homes industry market experts. Each interview took approximately one hour. Through our analysis of these interviews we gained greater insight into the market for efficiency features in manufactured homes and historical context for the manufactured home industry in Oregon. In addition, we gained a market perspective on how Energy Trust could work with the industry to promote efficiency features.

Energy Trust program staff provided us with a list of nine manufactured home builders. Through consultation with Energy Trust staff and calls to the nine manufacturers we discovered that one of the nine companies went out of business and three were in the process of combining into one company in 2011. As a result, there are now only six manufactured home builders in Oregon. In early June, we completed in-depth interviews with representatives of three of these six manufactured home builders. Our interviews lasted approximately 50 minutes each.

The interview guides for the market experts and manufacturers are included in Appendix A.

REPTA INTERVIEWS

Of the interviewed program staff, three were knowledgeable about the REPTA network. These staff represented Energy Trust, CSG, and PECI perspectives on REPTA training and recruitment,

Energy Trust expectations of the REPTA network, and data tracking of participants and participant activities.

We developed an online survey to delve into the issues related to REPTA activities uncovered by our interviews with program staff. The survey included questions related, but not limited, to REPTA views on Energy Trust training and use of cooperative marketing, REPTA promotion of Energy Trust and energy efficiency, and their knowledge and use of EPS home labels in home sales. The online survey was fielded on May 23, and closed on June 7 with 58 of 343[6] REPTAs completing a survey (17% response rate). We sent reminder notices on May 26 and 31 and June 3.

[6] Energy Trust provided us with a list of 369 REPTAs. Of that list, 17 did not have email addresses listed and an additional nine email addresses were determined to be incorrect. Therefore, we sent the survey to the 343 REPTA contacts with adequate email addresses.

3 MEASURE REVIEW

Builders can receive incentives for installing many measures that will make a home more energy efficient than code. They can apply for incentives for a single standalone measure such as a tankless water heater or they can apply for Energy Performance Score (EPS) incentives based on installing multiple measures. Our analysis of all measures installed in 2009 and 2010 through the program reveal the following.

A total of 1,001 projects in 2009 and 2010 either qualified for an EPS or installed a standalone measure. Of those 1,001 projects, 895 qualified for EPS, with two or more EPS measures installed, and 106 had standalone measures installed. Table 3-1 shows how the number of measures installed per EPS project was distributed. Of EPS projects, about three-quarters had seven to nine measures installed. Most of the rest of those projects had five or six measures. Nearly 90% of those who had any standalones had only one measure installed, and all others had two measures.

Table 3-1: Count and Percent of EPS Projects by Number of Measures Installed

NUMBER OF MEASURES INSTALLED	COUNT	PERCENT
1	0	0%
2	1	0%
3	0	0%
4	3	0%
5	21	2%
6	80	9%
7	104	12%
8	570	64%
9	115	13%
10	1	0%
Total	895	100%

The overall break-down of the EPS-related and standalone measure codes is shown in Table 3-2. This shows the most common measures installed through the program were: insulation, windows, ventilation, lighting, whole house infiltration, duct system, water heater, and gas furnace. Findings for EPS measures are similar for 2009 and 2010. There were fewer standalones in 2010 than 2009.

Table 3-2: EPS-Related and Standalone Measures

MEASURE DESCRIPTION	ALL PROJECTS				ALL EPS PROJECTS			
	COUNT		PERCENT		COUNT		PERCENT	
	2009	2010	2009	2010	2009	2010	2009	2010
EPS: New Single Family, Electric	280	548	71%	90%	278	547	97%	92%
EPS: New Single Family, Gas	211	505	54%	83%	209	501	73%	84%
EPS MEASURES								
EPS Insulation	297	595	76%	98%	288	593	100%	100%
EPS Windows	294	594	75%	98%	285	592	99%	100%
EPS Ventilation	291	590	74%	97%	282	588	98%	99%
EPS Lighting	293	584	75%	96%	284	579	99%	98%
EPS Whole House Infiltration	276	589	70%	97%	268	588	93%	99%
EPS Duct System	263	559	67%	92%	254	557	88%	94%
EPS Water Heater	251	542	64%	89%	249	538	86%	91%
EPS Gas Furnace	185	430	47%	71%	183	428	64%	72%
EPS Air Conditioning	30	114	8%	19%	30	112	10%	19%
EPS Heat Pump	48	88	12%	14%	48	88	17%	15%
EPS Other Heating System	9	2	2%	0%	9	2	3%	0%
EPS Fireplace	0	4	0%	1%	0	4	0%	1%
EPS Zonal Electric	0	4	0%	1%	0	4	0%	1%
EPS Boiler	0	0	0%	0%	0	0	0%	0%

continued

MEASURE DESCRIPTION	ALL PROJECTS				ALL EPS PROJECTS			
	COUNT		PERCENT		COUNT		PERCENT	
	2009	2010	2009	2010	2009	2010	2009	2010
STANDALONES								
Stand Alone Gas Furnace, Zone 1	52	0	13%	0%	0	0	0%	0%
Stand Alone Tankless WH, Single Family	27	9	7%	1%	0	0	0%	0%
Stand Alone Heat Pump (HSPF 9.0) + Cx, Zone 1	9	0	2%	0%	0	0	0%	0%
Stand Alone Duct Seal, Zone 1	6	0	2%	0%	0	0	0%	0%
Stand Alone Heat Pump (HSPF 8.5) + Cx, Zone 1	5	0	1%	0%	0	0	0%	0%
Stand Alone Gas Furnace and Duct Seal, AC, Zone 1	2	0	1%	0%	0	0	0%	0%
Stand Alone Electric Heat Pump Duct Seal	0	1	0%	0%	0	0	0%	0%
Stand Alone Heat Pump (HSPF < 8.5) Duct Seal, Zone 1	1	0	0%	0%	0	0	0%	0%
Stand Alone/Upgrade Fireplace, HE	1	0	0%	0%	0	0	0%	0%
Stand Alone Gas Furnace and Duct Seal, AC, Zone 2	1	0	0%	0%	0	0	0%	0%
Stand Alone Gas Furnace, Zone 2	1	0	0%	0%	0	0	0%	0%

Table 3-3 (next page) shows a cross-tabulation of the common EPS-related and standalone measure codes. This shows the counts of projects with any given pairing of measures. Not surprisingly, the most common measures tended to co-occur. Results are similar for 2009 and 2010.

Since we know that most EPS projects had many measures, we also performed a cross-tabulation of number of measures by measure types (Table 3-4). Note that the modal number of measures installed was eight, which accounted for 570 projects (57% of all projects, 2009-2010 combined). All 570 of those installed the same five EPS measures (infiltration, lighting, insulation, ventilation, and windows), and most of them also installed EPS duct and EPS water heater. A large majority (82%) also installed EPS gas furnace, but about 16% installed EPS heat pump instead. A few (20) installed EPS air conditioning, and very few (3) installed EPS other heating. Thus, most of the variability in what measures were installed is determined by how home heating is handled, and that variability is small.

Table 3-4: Frequency of Installation of Measures by Number of Measures Installed

MEASURE	PERCENT OF PROJECTS WITH MEASURE, BY NUMBER OF MEASURES					
NUMBER OF MEASURES	1	2-5	6	7	8	9-10
EPS Insulation	0%	65%	100%	100%	100%	100%
EPS Windows	0%	53%	100%	100%	100%	100%
EPS Lighting	0%	71%	90%	91%	100%	100%
EPS Ventilation	0%	47%	99%	96%	100%	100%
EPS Whole House Infiltration	0%	29%	93%	91%	100%	100%
EPS Duct System	0%	50%	56%	75%	99%	100%
EPS Water Heater	0%	18%	44%	66%	99%	100%
EPS Gas Furnace	0%	9%	9%	27%	82%	97%
EPS Air Conditioning	0%	6%	0%	8%	4%	98%
EPS Heat Pump	0%	0%	8%	36%	16%	3%
EPS Other Heating System	0%	3%	3%	5%	1%	0%
Stand Alone Duct Seal, Zone 1	2%	12%	0%	0%	0%	0%
EPS Zonal Electric	0%	0%	0%	1%	0%	3%
Stand Alone Gas Furnace, Zone 1	49%	12%	0%	0%	0%	0%
Stand Alone Heat Pump (HSPF 8.5)+Cx, Zone 1	4%	3%	0%	0%	0%	0%
Stand Alone Heat Pump (HSPF 9.0)+Cx, Zone 1	5%	12%	0%	0%	0%	0%
Stand Alone Tankless WH, Single Family	32%	15%	0%	0%	0%	0%
Total Number of Projects by Number of Measures	97	25	80	104	570	116

Table 3-3: Cross-Tabulation of Common EPS and Standalone Measures: All 2009 and 2010 Projects

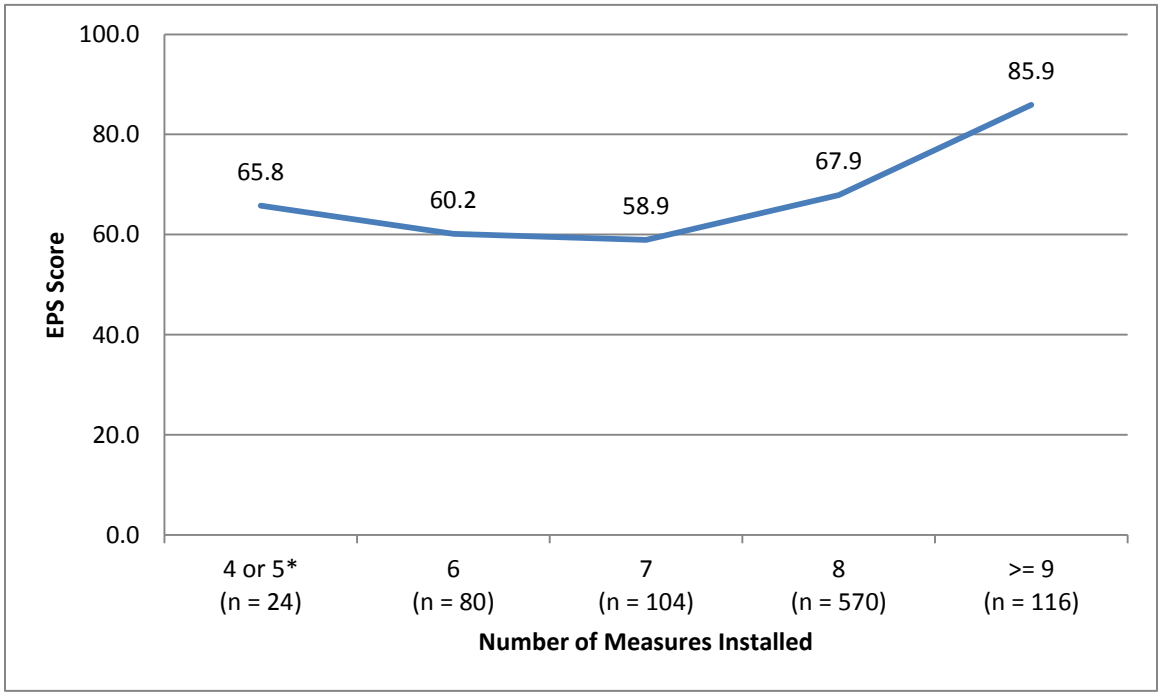
	EPS AIR CONDITIONING	EPS WHOLE HOUSE INFILTRATION	EPS DUCT SYSTEM	EPS GAS FURNACE	EPS LIGHTING	EPS INSULATION	EPS WATER HEATER	EPS VENTILATION	EPS WINDOWS
EPS Whole House Infiltration	142								
EPS Duct System	138	800							
EPS Gas Furnace	119	602	603						
EPS Lighting	144	848	805	602					
EPS Insulation	142	865	822	613	874				
EPS Water Heater	133	775	724	601	782	790			
EPS Ventilation	142	856	813	609	863	881	783		
EPS Windows	142	862	820	613	870	888	788	878	
EPS Heat Pump	4	131	119	0	133	136	113	135	136
EPS Air Conditioning	0	10	5	0	10	11	8	10	10

The pattern for the 115 projects that installed nine measures is similar, except that far fewer of those installed EPS heat pump. Consistently, the additional measure was EPS air conditioning.

As the number of measures drops below eight, the pattern does not change much, but certain measures begin dropping out and the variability in what is installed increases somewhat. Projects that installed seven measures tended to drop out EPS water heater, but also there were more EPS heat pump than gas furnace in that group. Those that installed six measures also tended not to install EPS water heater, but they were less likely to compensate with the heating system, and in fact any EPS home heating tended to drop out relative to the other measures installed, as did EPS duct. Those that installed five projects tended to do EPS lighting and insulation and three out of the following four: windows, ventilation, duct, and (less common) infiltration.

To explore how the above patterns affect home efficiency, we plotted mean EPS against number of measures installed (Figure 3-1). EPS declines as the number of measures increases up to seven measures, but then it suddenly increases. This might in part be explained by the shift from heat pumps to gas furnaces when the number of measures increases from seven to eight, followed by a great increase in the installation of EPS air conditioning as the number of measures increases from eight to nine: even though the air conditioning is efficient, it is still air conditioning, which may raise the EPS.

Figure 3-1: Mean EPS by Number of Measures Installed



* As shown in Table 3-1, one project had two measures, three had four measures, and 21 had five measures. The EPs was not available for the project with two measures, so that project is not included in this graphic. The mean EPS for the three projects with four measures is not shown separately because the small sample would produce an unreliable statistic.

A potential problem with the above analysis is that it is difficult to compare number of measures across heating fuel types: a heat pump automatically includes air conditioning (1 measure) and gas furnaces do not (2 measures). Moreover, standard heat pumps can have an associated duct measure (2 measures), but ductless heat pumps do not (only one measure).

Analyzing EPS by number of measures within heating system types would reduce the sample sizes, which would make such comparisons less reliable. To address this limitation, we performed a regression analysis with EPS as the dependent variable; the independent variables were and total number of measures and several dummy (0, 1) variables indicating the presence or absence of various heating system types (ductless heat pump, ducted heat pump, geothermal heat pump, gas furnace, and air conditioning). The heating system variables were forced into the model ahead of number of measures; thus, the latter would significantly predict EPS in the model only if it had a partial correlation with EPS after the heating system variables were controlled.

The linear regression result showed a statistically significant, albeit weak, partial correlation for number of measures ($ß$ = -.147, partial r = -.115, t = -3.4, p = .001). This shows that, when the effect of various heating system types is controlled, increasing the number of measures produces a linear decrease in EPS, as would be expected. This supports the notion, raised above, that it is the shift from heat pumps to gas furnaces and the addition of air conditioning that increased EPS when more than seven measures were installed.

Based on the above finding, it may be valuable to review the incentive structure to ensure that higher incentives are not in fact given to less efficient new homes just because they incorporate additional measures. At the least, the project database should include one or more fields to capture the combination of measures ("builder options") that each builder followed to qualify for an EPS. This would allow the program to more easily analyze the mean EPS for each combination of measures.

4 PROGRAM AND IMPLEMENTER FEEDBACK

The program design has changed and evolved to reflect market changes since the program's inception in 2005. Currently, the program is designed, managed, and implemented as follows.

PROGRAM COMMUNICATION AND COORDINATION

The New Homes program is organizationally complex. At least 45 people across seven organizations administer, manage, market, conduct outreach, provide training, provide technical support, and implement the program. Table 4-1 shows the number of people associated with the New Homes program and the roles each organization plays.

Table 4-1: Personnel Associated with New Homes Program

ORGANIZATION	ROLE	COUNT
Energy Trust	Program administrator	2
PECI	Program management, marketing, implementation, and data processing	14
Earth Advantage	Implementation and builder outreach and support	14
CSG	Technical support, training, field support	11
State and Portland area Home Builders Associations	Builder outreach and support	2
Other	Builder outreach and support	2
Total		45

Energy Trust and program staff hold a variety of regular meetings to foster communication and coordination across these many entities. Managers from PECI, CSG, and Earth Advantage have a weekly tactical meeting to update each other on upcoming events, issues arising the prior week, and client needs and an approximately 15-minute conference call to check in, provide updates, and brief program status reports for their respective area of responsibility.

Once every two weeks, the PECI and Energy Trust Program Managers meet to discuss overall program direction and management. Parties from all organizations, including management, technical, and field staff, participate in a monthly conference call to inform Energy Trust of the prior month's activities, provide program updates to field staff, and discuss and clarify any issues or program changes that will affect all parties. Finally, all staff meet in-person once or twice a year for a one-day meeting to discuss large program changes and updates.

Until the middle of 2010, PECI and CSG New Homes program staff shared office space. This arrangement allowed for organic communication and coordination to take place. When, PECI

moved offices in the summer of 2010, PECI and CSG staff reported concern that the location change would affect the easy communication they were accustomed to. To solve that problem, CSG and Earth Advantage management staff hold weekly "office hours" at PECI to facilitate communication across the organizations. Reports from program staff suggest that this practice has been a useful technique to foster communication and coordination.

COMMUNICATION AND COORDINATION EFFECTIVENESS

Communication and coordination challenges across the organizations that work together on this program appear to be minimal. Most program staff praised the coordination and communication across organizations. One contact stated, "three totally different companies [and Energy Trust] manage to meet goals and deliver an effective program… I have been surprised how well it works." A BOS indicated that the inclusion of Earth Advantage staff in the weekly tactical meeting about a year and a half ago has improved communication between Earth Advantage employees and the rest of the New Homes staff. Other contacts noted staff have, and use, many avenues to provide feedback about what is working and not working with the program and that that the program did a good job of managing the complexity of the program and, therefore, "the program works really well."

Staff also stressed the collegial and helpful atmosphere across organizations in implementing the program. Contacts commented that "the people are a real asset to this program and I mean that across the board" and "[t]here is phone and email traffic all the time. These relationships are strong and open and happen easily."

One non-Portland based BOS suggested that communication was top-down from the Portland-based program staff, but he did not suggest this was a significant problem and suggested that field staff may not have much to say, making communication somewhat one-sided.

DELAY IN APPROVING MARKETING MATERIALS

While staff report a collegial and helpful working environment, one issue BOSs identified was slowness in receiving marketing materials. One BOS stated "we wait months to get some marketing materials approved. For example, it has taken four to six months to get a cling [window sticker] that says 'solar ready.' [Delays like this] make you think 'why come up with new ideas' because it will just die on the vine?" BOSs indicated they need a two-week turnaround time on approval of materials.

Program staff reported being aware of the delay in marketing material approval. They also indicated an understanding of the issue raised by the BOSs. Program staff reported they are working on solutions to improve turnaround time approval. One possible solution is to create an inventory of marketing collateral that BOSs can use quickly.

PROGRAM STAFF CONCERNS ABOUT THE REAL ESTATE PROFESSIONAL TRADE ALLY (REPTA) NETWORK

Program staff interviews revealed staff concerns over the lack of information on REPTA activities. Particular concerns related to REPTAs' general level of engagement with Energy Trust as a public face for Energy Trust programs and as a source of information on how to save energy, and more specifically to the number of referrals to Energy Trust programs and services and REPTAs' use of co-operative marketing funds for specific project marketing.

The Energy Trust REPTA network database tracks the number of REPTA referrals for the Existing Homes program as well as the co-marketing of Energy Trust's website. However, the database does not track the incidence of cooperative marketing fund use, as tracking this requires merging information from multiple data sources. Review of the REPTA merged database files revealed 23 realtors were associated with 42 home energy reviews and 35 realtors requested cooperative marketing assistance.

Program staff are in the process of reviewing the REPTA network to begin addressing known issues such as the lack of a ready mechanism for reviewing REPTA status vis-à-vis Energy Trust requirements. For instance, while REPTAs that do not submit 10 HER referrals to the Existing Homes program technically may be terminated, this rule is not enforced because it would unfairly penalize REPTAs that primarily sell new homes, and the program did not want to do this. However, by not providing clear expectations of REPTAs, the program may be seen as irrelevant to REPTAs. Furthermore, by not engaging REPTAs more, Energy Trust is missing an opportunity to stay relevant to REPTAs and thus drive interest in efficient homes. Program staff are aware that many REPTAs are not engaged in the program and are strategizing ways to better work with REPTAs.

5 SITE-BUILT HOMES

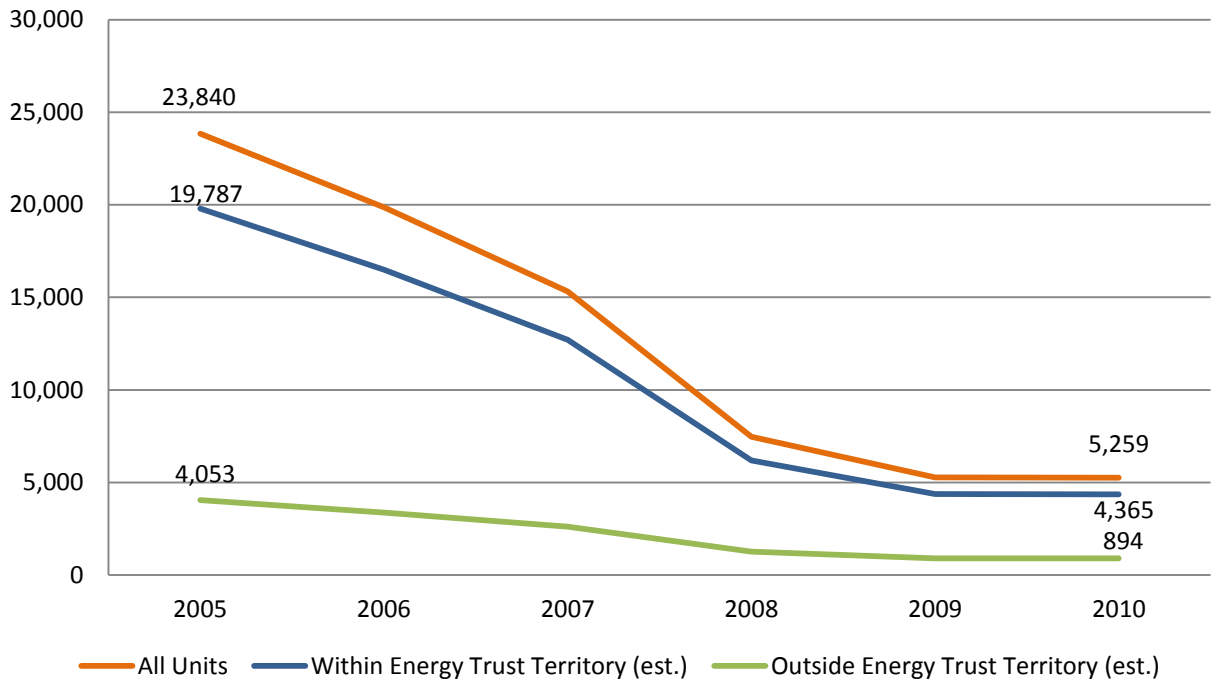
In this chapter we present results from analyses of secondary data on the site-built homes market and our interviews and surveys of 29 participant builders, one former participant builder, and 16 nonparticipant builders to better understand the site built home market and the New Homes program. No subcontractors responded to the survey.

CHARACTERISTICS OF THE SITE-BUILT HOMES MARKET

The Size of the New Homes Market in Oregon

According to the US Census Bureau the new homes market in Oregon over the last decade peaked in 2005 with 23,840 new home building permits filed that year. Figure 5-1 shows that since 2005, new home building permits decreased by 78%. This decrease effected how many homes the New Homes program could possibly influence from almost 20,000 homes in 2005 to less than 5,000 in 2010.

Figure 5-1: Single Family Building Permits in Oregon[1]



[1] For each year, we estimated the number of units inside and outside of Energy Trust territory based on the percentage of Oregon included within Energy Trust territory.

The Market for Energy Efficient Homes in Oregon

The ENERGY STAR® market penetration rate provides an indication of the market for homes built beyond energy code. While the overall new homes market has declined, there has been an increase in the percentage of Oregon homes built to ENERGY STAR® specifications since 2008, from 12% in 2008 to almost 14% in 2009 and more than 15% in 2010. While the Energy Trust New Homes program provides rebates for homes that both exceed and fall below ENERGY STAR® standards, program staff reported that at least 90% of homes in the New Homes program meet or exceed ENERGY STAR® specifications.

According to Energy Trust data, 394 houses received program incentives in 2009 and 608 received incentives in 2010. Therefore, 14% of all homes (608 / 4,365) in Energy Trust territory were program homes in 2010.

CHARACTERISTICS OF BUILDER RESPONDENTS

This section provides a general description of the builder respondents we spoke with, including the areas they represented and the size of the firm they represented.

Since the online survey was delivered to OHBA's entire membership, we asked respondents to indicate their role in the home construction profession. We were principally interested in differentiating between general contractors who take the primary role in building new homes and others who may serve as subcontractors; we designed the only instrument to allow subcontractors to skip over certain questions aimed at general contractors. Of the 29 program participant respondents to the pilot or online survey, 27 were general contractors, one was an architect/engineer, and one was self-classified as "program manager."

Respondents indicated they served areas around the state. Figure 5-2 (next page) shows we were able to contact nonparticipants that represented seven of Energy Trust's regions and we were able to contact participants that represented nine of the regions. Over half the builders reported serving multiple counties, with one builder indicating his company built in 22 counties across Oregon.

The builder respondents ranged in size from no homes in 2009 and 2010 to 500 homes. Table 5-1 shows that most respondents were small or medium builders who built 15 or fewer homes in 2009 and 2010, ten of whom built no homes in that period. Of the large builders, four constructed between 21 and 33 homes and two were large-scale production builders that reported building 415 and 500 homes respectively in 2009 and 2010.

Figure 5-2: Respondents' Service Area (*n* = 38)
Multiple Responses Allowed

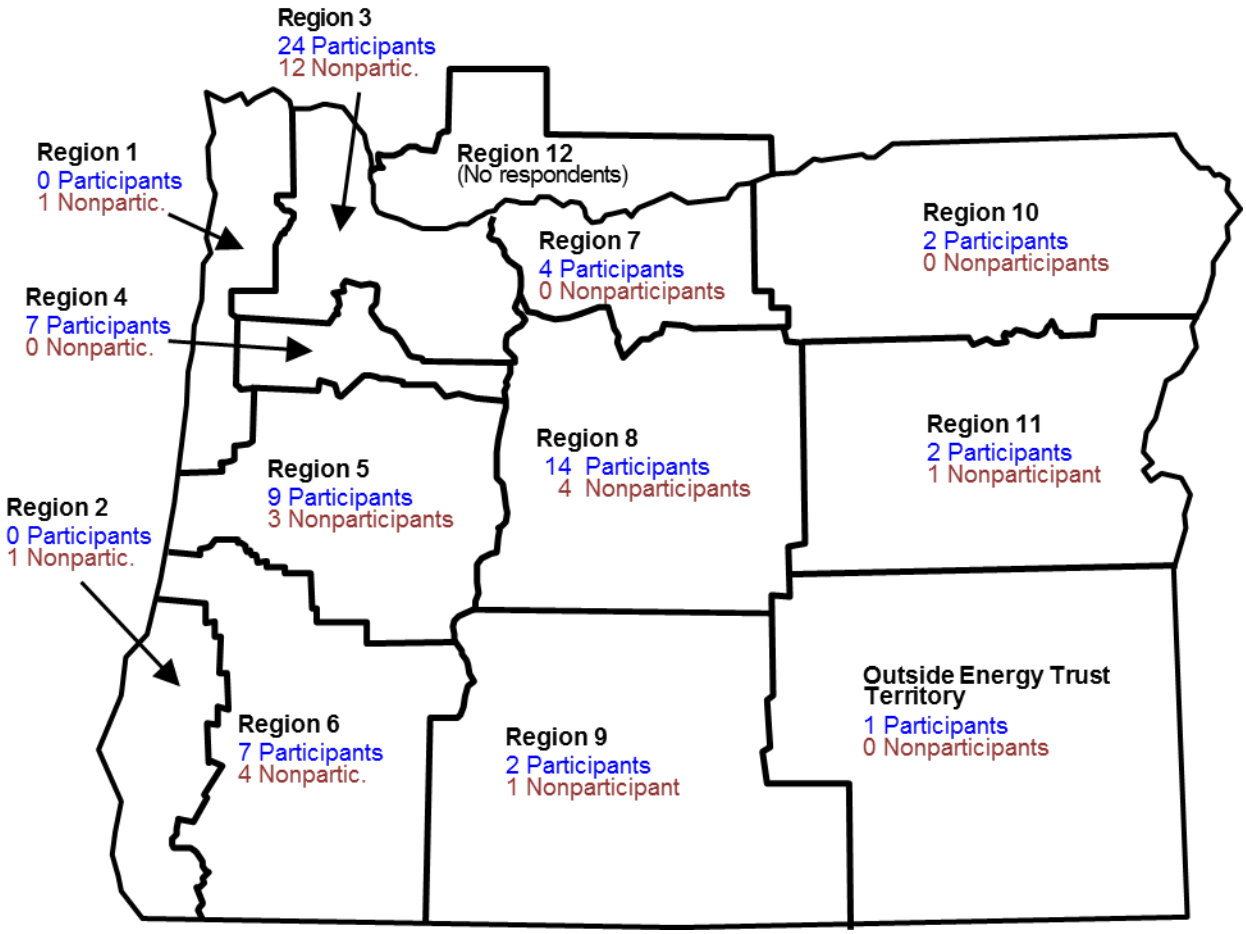


Table 5-1: Respondents Size and Type (*n* = 46)

BUILDER SIZE (#HOMES IN 2009 & 2010)	NON-PARTICIPANT	PARTICIPANT	FORMER PARTICIPANT	TOTAL	PERCENT
Small (0 to 5)	12	11	0	23	43%
Medium (6 to 15)	3	11	0	14	40%
Large (> 15)	1	7	1	9	17%
Total	16	29	1	35	100%

Of the Energy Trust targeted participants all but four were private companies. The remaining four were nonprofit organizations that built houses for low-income households. We were unable to determine the business type of all OHBA respondents.

ENERGY CODES

One of the topics program staff asked us to investigate from all builders we contacted was builder's reactions and experience with the changing Oregon energy code. In this section we discuss the challenges builders reported to meeting code, where they seek information about the code, and what features they use to exceed code.

Challenges to Meeting Code

When asked what challenges builders experienced in reaching the 2008 energy code, more than three-quarters (36 of the 46) indicated they did not have significant problems meeting the 2008 code. This differed somewhat for participant and nonparticipant builders – 25 of 29 (85%) participant builders reported no problems compared to 10 of 17 (63%) nonparticipants – but this finding missed statistical significance (p = .09). Only four respondents (two participants and two nonparticipants) reported difficulty understanding the code and six (three of each) said that meeting code made building more costly.

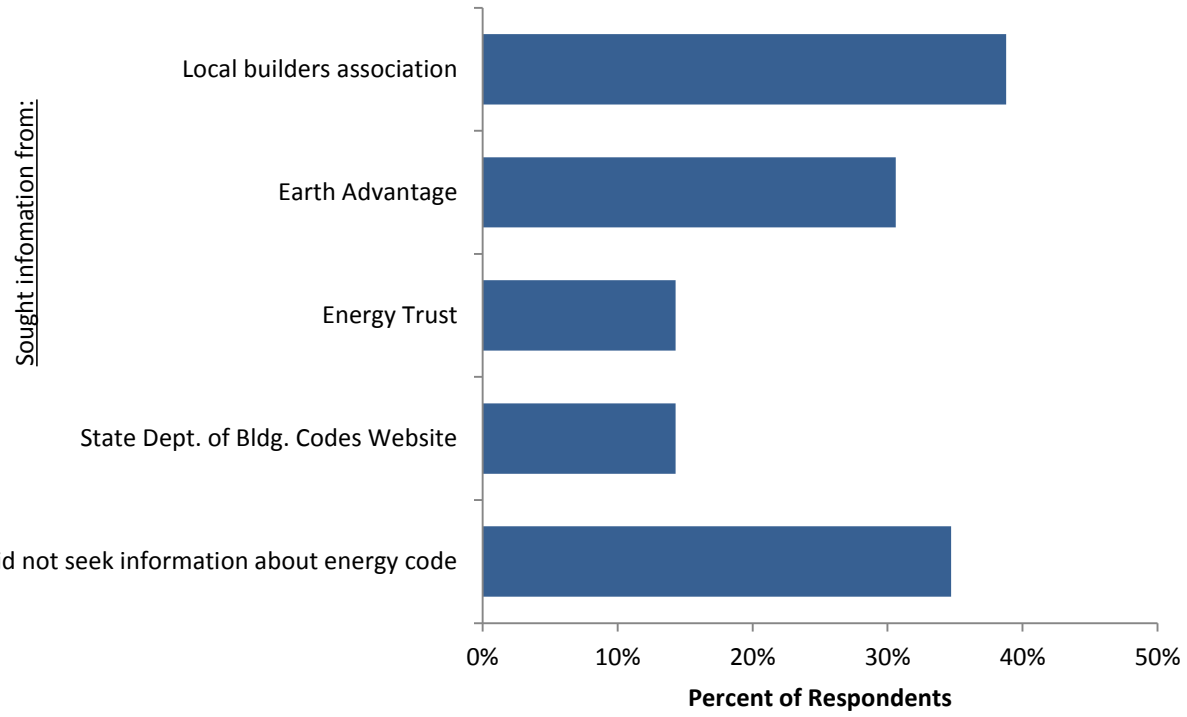
There did seem to be a difference between participants and nonparticipants, however, in terms of expected difficulties with the 2011 code. Participating builders were about twice as likely to say they *did not* expect any challenges to meeting the 2011 code (15 of 29, 52%) as nonparticipating builders (4 of 17, 24%). While this difference just missed statistical significance (p = .06), two differences met the criterion for significance: nonparticipants were more likely than participants to say that understanding or interpreting the code may be a challenge (1 of 29 participating builders, 3%, vs. 5 of 17 nonparticipants, 29%; p = .01) and that it would be difficult to find materials to meet the 2011 code (no participants vs. 2 of the 17 nonparticipants, 12%; p = .05).

On the other hand, while nonparticipants in the sample were somewhat more likely than participants to say that the code changes would adversely affect home buying (53% vs. 38%), the difference did not approach statistical significance (p = .32).

Information about Code Changes

We also wanted to determine builders' readiness for the 2011 code change. When asked if and where builders sought information about the 2011 code change, 30 respondents (65%) reported seeking out information, with similar proportions of participants and nonparticipants reporting this. The preferred source of information did not differ for participants and nonparticipants. About 40% of all respondents (about 65% of those who sought information) contacted their local builders association for information, and nearly as many contacted Earth Advantage (Figure 5-3). Thus, both participant and nonparticipant builders appear to rely more on these sources for information about codes than the State Department of Building Codes, the source of the codes.

Figure 5-3: Sources of Information about 2011 Code Change



How Builders Meet or Exceed Codes

We asked builders (participants as well as nonparticipants) what measures or building practices they used to meet or exceed energy codes. All but five respondents (88% of those who responded) cited at least one measure or practice. As Table 5-2 shows, the most commonly reported measures or practices were upgrading insulation and installing high-efficiency HVAC equipment, followed closely by installing energy efficient appliances and upgrading windows.

Table 5-2: Measures or Building Practices Used to Meet or Exceed Codes (*n* = 42)

MEASURE OR PRACTICE	COUNT	PERCENT
Upgrade insulation beyond code	31	74%
Install high-efficiency HVAC equipment	30	71%
Install energy efficient appliances	29	69%
Upgrade windows beyond code	27	64%
Design the home to minimize need for mechanical heating or cooling equipment	22	52%
Install renewable energy (solar, geothermal, wind) systems into home	13	31%
Other	7	22%

About half incorporated building designs to minimize heating or cooling loads, while about one-third installed renewable systems. Seven respondents provided a variety of other responses, some of which were mainly details about responses or practices already identified (e.g., "I believe in lots of insulation... and I believe in installing high-efficiency water heaters…."). Three respondents each mentioned a single additional measure or practice: building with passive solar orientation; use of high-performance ducts; and use of insulated concrete forms.

The five who said they did not build beyond code all were nonparticipants. One had built 33 homes in 2009 and 2010, two had built three to four and one had built none.

Four builders did not respond to this question.

PARTICIPANT-SPECIFIC ISSUES

This section of the report examines issues specific to participant builders – reasons for participating, program recruitment and subsequent program interactions, familiarity with and perceptions of the EPS, their own and Energy Trusts marketing of new home energy efficiency, barriers to installation of measures, and overall program satisfaction.

Builder Recruitment

We asked builders how they learned about the New Homes program. Table 5-3 indicates that about two-thirds of respondents (17 of the 25) reported they learned through some contact with Earth Advantage. Of those, 14 learned about it from a Builder Outreach Specialist (BOS), while the other three learned from other sources at Earth Advantage.

Table 5-3: How Participant Builders Learned About New Homes Program (Multiple Responses Allowed, *n* = 29)

	COUNT	PERCENT
Earth Advantage Contact	17	59%
Training session	6	21%
Looked for programs that encourage energy efficiency	7	14%
Referral from colleague	2	7%
Advertisement	1	3%
Other	2	7%

Reasons for Builder Participation

We asked builders their reasons for participating in the program. As Table 5-4 shows, the most common reason – given by three-quarters of respondents – was that installing energy efficient

equipment is important to the company's mission. This is not, strictly speaking, a reason for participating, as builders could install energy efficient equipment without participating. However, it may suggest that builders who value energy efficiency participate in the program because it allows them to install energy efficiency measures without greatly increasing the cost of homes. Note that none of the other options really addressed this reason.

Table 5-4: Reasons for Participation
(Multiple Responses Allowed, *n* = 29)

REASON TO PARTICIPATE	TOTAL	PERCENT
Installing energy efficient equipment is important to our company mission	22	76%
To gain market distinction (i.e., to market our company as a "green" builder)	17	59%
To lower utility costs for the homes' residents	16	55%
We wanted a low-cost way to install energy efficient features	12	41%
To receive 3rd party verification	3	10%
Don't know (someone else made the decision)	1	3%

About half of the respondents said they were motivated by gaining market distinction or to lower residents' utility costs. Interestingly, even with a small sample, there was evidence of some segmentation of responses here. Those who were motivated by lowering utility costs were likely also to be motivated by gaining market distinction and seeking low-cost efficiency solutions. Citing the importance of efficiency to the company mission was unrelated to any other response, which is not surprising since most respondents mentioned it. However, two possible segments are suggested:

- Those who are opportunistically motivated: they want to gain market distinction by lowering costs for energy efficiency; they indicate efficiency is important to their mission, but that may be because of its perceived demand in the market place.
- Those who are motivated purely by the desire to promote energy efficiency for its own sake.

It would be interesting to pursue this segmentation analysis with a larger sample, possibly incorporating additional variables such as number of homes built and geographic area served. However, even with additional responses from the ongoing survey, there may not be sufficient data to explore this in depth.

Builder Interactions with the Program

Builders report primarily communicating about the New Homes program with Earth Advantage employees. When asked who participating builders talked with about the New Homes program, nearly three-quarters (22 out of 29) reported talking with a BOS, and about two-fifths reported talking with an Earth Advantage modeler or verifier (see Table 5-5). Ten respondents reported

communicating with Energy Trust staff but it is not likely that one third of respondents had contact with Energy Trust staff. These reports suggest that at least some builders were not aware of the distinction between Energy Trust and Earth Advantage staff.

Table 5-5: Participant Builders Contact with Program (Multiple Responses Allowed, *n* = 29)

	COUNT	PERCENT
Builder Outreach Specialist (BOS)	22	76%
Earth Advantage Modeler or Verifier	11	38%
Program Sponsor or Implementer (Energy Trust or PECI)*	12	41%
CSG Staff, including Subcontractor Outreach Specialist (SOS)	8	28%
None of the above	3	10%

* Ten builders reported having contact with an Energy Trust staff member and four reported contact with a PECI employee, with two reporting both. However, builders may not be aware that the program's trade ally coordinator is an employee of PECI, not Energy Trust, and so may have incorrectly identified a PECI contact as an Energy Trust staff member. Therefore, this table shows the number reporting contact with the program sponsor, Energy Trust, and/or the implementation prime contractor, PECI.

Thus, participant builder responses support staff reports that Earth Advantage is the dominant face of the program to builders. This is not surprising because the program design is heavily reliant on Earth Advantage outreach and support to builders. However, the lack of Energy Trust contact with builders may limit Energy Trust's ability to link its name with the program. During one interview with a builder the program had identified as a targeted nonparticipant, the respondent initially reported he was not aware of the Energy Trust program, but he later indicated he used to participate in the "Earth Advantage Program" in 2008 and earlier. Through further discussion and clarification with this respondent, we realized he was using the Earth Advantage name to describe the incentives he received from Energy Trust.

This association of the New Homes program with Earth Advantage and not Energy Trust may be an issue that Energy Trust may wish to address. The success of the program historically has been tied to the outreach and support that Earth Advantage staff, and specifically BOSs, provide to builders. However, it may be valuable to Energy Trust for program funds to be more closely associated with itself.

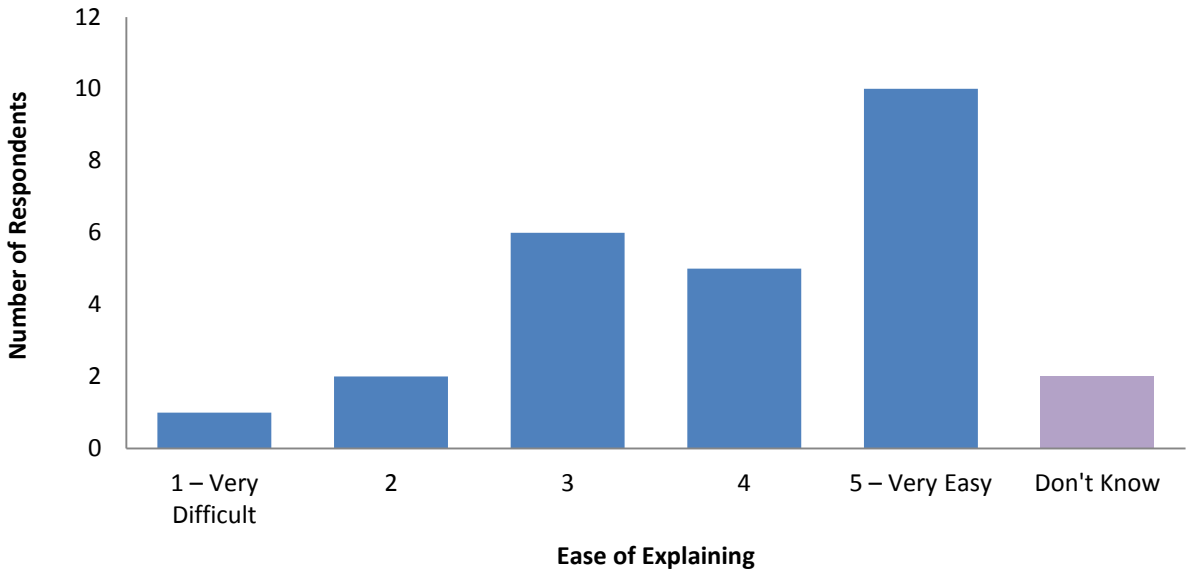
Familiarity with and Use of Energy Performance Score (EPS)

We asked builders about their familiarity with EPS, how easy it was to explain to a potential homebuyer, and their perceptions of its usefulness in marketing homes.

Only one participant builder reported not hearing of the EPS. More than half the participant builders familiar with the EPS found it easy to explain to a potential homebuyer (Figure 5-4). Only two reported it was difficult to explain, one of whom indicated the EPS did not adequately communicate the return on investment of purchasing an energy efficient home. He

thought the use of the EPS was limited to "energy people, not lay people." This response appears at odds with those from most other builders we surveyed, as seen below.

Figure 5-4: Rated Ease of Explaining EPS (*n* = 26)[1]

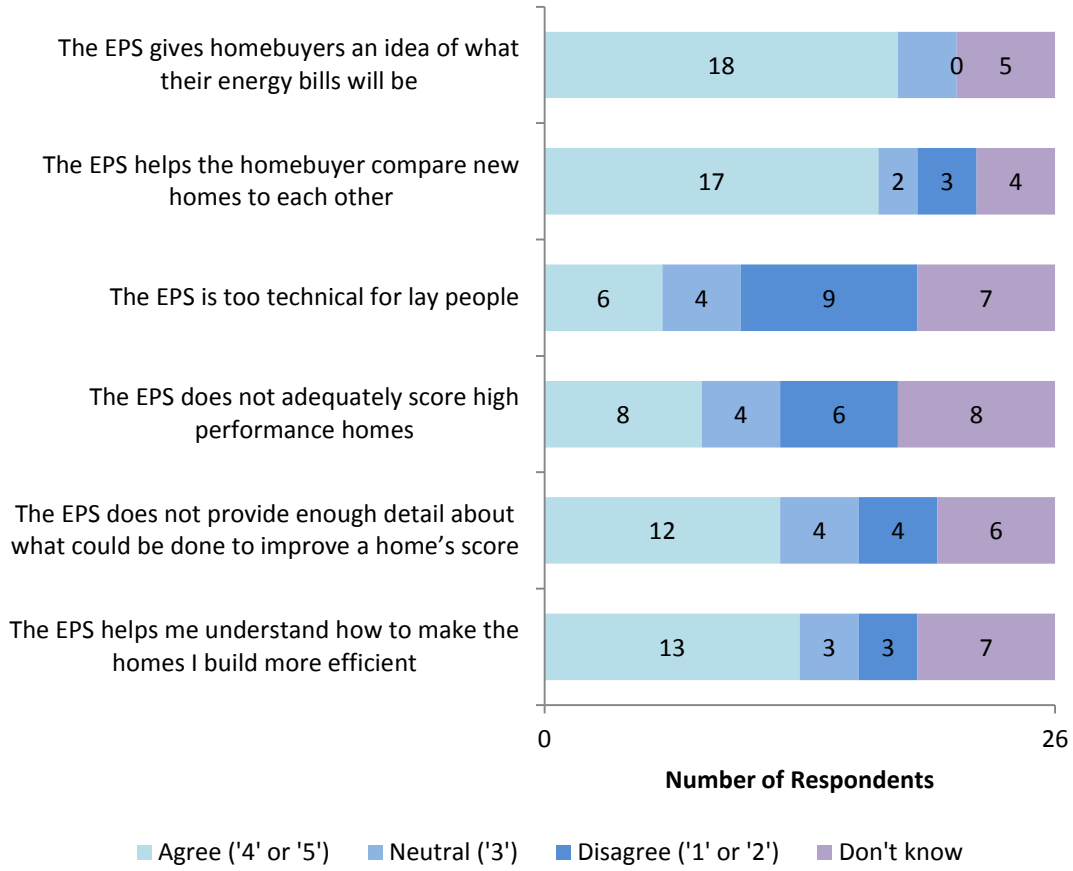


[1] The sample size for these questions is 25 because three survey respondents were not asked this question: one who was not familiar with EPS and two who were not general contractors.

While participant builders were familiar with the EPS, perceptions about its effectiveness varied. We asked respondents to indicate their agreement or disagreement with six statements about the EPS – three addressed its advantages or usefulness to homebuyers and three, its usefulness to builders. Responses were on a five-point scale, from '1' meaning *completely disagree* to '5' meaning *completely agree*. Figure 5-5 shows responses, with '1' and '2' collapsed together into a general *disagree* category and '4' and '5' similarly collapsed into *agree*.[7]

[7] Part of the reason for collapsing responses was to simplify the graphic. However, another reason was to allow us to incorporate pilot respondents' open-ended comments, which we could easily categorize as *agree*, *neutral*, or *disagree*, but could not reliably code into the five-point scale.

Figure 5-5: Perceived EPS Effectiveness (*n* = 26)[1]



[1] The sample size for these questions is 22 because three survey respondents were not asked this question: one who was not familiar with EPS and two who were not general contractors.

The first thing to note about this figure is the relatively large number of respondents who responded "don't know" to several questions. Not surprisingly, this number was particularly high for the questions about EPS's advantages for homebuyers, as many builders do not interact directly with homebuyers.

Respondents who had an opinion generally believed the EPS is useful to homebuyers in terms of providing an idea of their energy bill and allowing them to better compare homes. They also tended to disagree that it was too technical for lay people. Respondents were more evenly split when it came to the EPS's value as a tool to help the builder.

Open-ended comments from pilot survey respondents provided additional detail about perceptions that the EPS does not adequately score high performance homes. Two of the pilot interview participant respondents were hesitant to use the EPS because they thought it underestimated the efficiency of high performing homes. Although there were only two

respondents who made such comments, they represented a large proportion of those who had built very high efficiency homes. According to one of these respondents, a home without a mechanical system or a passive home would not receive an appropriate EPS score. The other respondent did not explain the reason that EPS would underestimate efficiency, but that respondent reported that Energy Trust staff told him his home received an EPS that was too high.

Four of the pilot interview respondents suggested the EPS was helpful for consumers because the EPS:

- *"…Is a simple and understandable form."*
- *"…Is something [concrete about energy] he could share with buyers.*
- *"…Is more information the buyer could use [to make an informed decision on purchasing]."*
- *"…Allows me to show how proactive we are as a builder [in controlling energy costs]."*

One respondent did not like the carbon footprint impact aspect of the EPS sheet because it incorporates the utility power source of where the home it sited. For instance, if he builds a home in a utility territory that burns more coal than a neighboring utility area, the carbon impact value goes up on his home. The respondent reported not liking that aspect of the EPS sheet because he felt he was being negatively scored for something he had no control over.

Another pilot respondent reported the EPS was limited in its utility until more buyers become aware of what the EPS is and how to use it to compare homes. Furthermore, "people do not consider utility costs [when purchasing a home]."

Perceptions of Program Marketing

We asked the 26 general contractors how they marketed their homes' energy efficiency as well as their perceptions of Energy Trust's program marketing strategies.

As Table 5-6 show, the largest share of respondents indicated their marketing efforts were limited to customers viewing a home. Eighteen of 26 respondents (69%) indicated they marketed energy efficiency only while showcasing energy efficiency features during a home tour or when demonstrating ENERGY STAR® or Earth Advantage certifications to customers viewing a home. Fewer respondents (13) reported preparing print materials, and even fewer (eight) reported featuring high-efficiency homes in external publications. Four indicated they do not market the energy efficiency of their homes.

Table 5-6: Market Energy Efficiency of Homes (Multiple Responses Allowed, *n* = 26)

	COUNT	PERCENT
Showcase energy efficiency or certification (Earth Advantage or ENERGY STAR®)	18	69%
Print marketing materials showcasing the energy efficiency features	13	50%
Feature high energy efficiency homes in newspapers, magazines, or newsletter articles	8	31%
Don't market the energy efficiency features of homes	4	15%

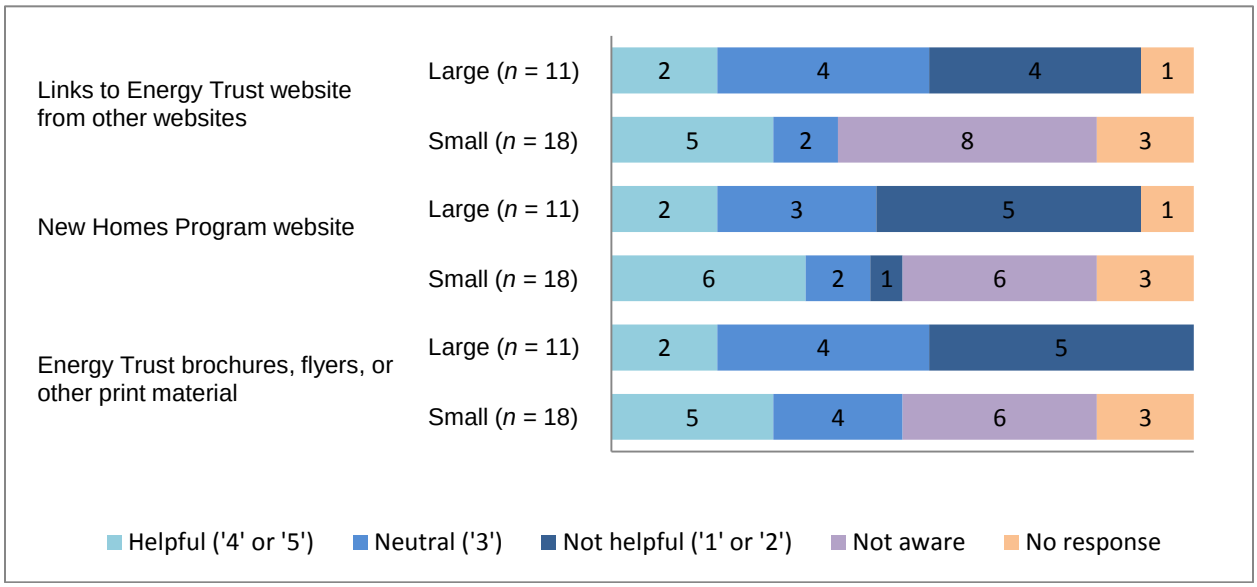
These results suggest participants are not generally marketing the energy efficiency of their homes other than to customers already viewing the home. For instance, no builders suggested they promote the energy efficiency features of their homes in RMLS listings or that they work with real estate agents to promote energy efficiency. Note that when we split the builder sample on between small (five or fewer homes) and large (more than five homes), we found little difference between smaller builders and larger builders in how they market energy efficiency features, although the larger builders were somewhat more likely to say they do not specifically market energy efficiency features (27% vs. 0%, $p < .05$).

Participant builders were often unaware of Energy Trust efforts to promote New Homes. When we asked the 26 general contractors to rate how helpful various marketing efforts conducted by Energy Trust were[8], respondents were generally more likely to report being unaware of the marketing efforts as to report them helpful.

When we split the sample, we found some differences between larger and smaller builders. It was only the smaller builders who were more likely to report being unaware of the marketing activities than to find them helpful (see Figure 5-6). However, while none of the large builders reported being unaware of Energy Trust marketing, they were about twice as likely to find it not helpful than helpful. In either case, these results suggest builders are not coordinating the marketing of their homes with the larger efforts of Energy Trust. If builders are better able to connect with Energy Trust marketing efforts, they have the potential to promote energy efficiency and Energy Trust in the new homes marketplace.

[8] Again, respondents rated marketing efforts on a five-point scale, from *not at all helpful* to *very helpful*. We collapsed the two lowest and two highest response categories to simplify the figure.

Figure 5-6: Helpfulness of Energy Trust Marketing Strategies



As mentioned earlier in the report, BOSs reported that getting marketing materials into the field in a timely manner was a problem. Results from respondents did not specifically indicate problems with receiving marketing materials. However, there appears to be room for builders to better connect their marketing efforts with those of Energy Trust.

Barriers to Installing Solar Measures

Cost to the homebuyer appears to be the largest barrier to installing solar measures on new homes, with 23 out of 27 (87%) respondents citing it as a barrier (Table 5-7). Several respondents suggested seven other potential barriers. Seven of those mentions spoke to limitations in the supply or delivery of solar equipment: five said it was difficult to find a qualified installer or to train construction staff to install solar equipment and one each mentioned the relative paucity of distributors in Oregon or the long wait times to receive solar materials. Only three builders thought there was not a significant barrier to installing solar.

Table 5-7: Barriers to Installing Solar (Multiple Responses Allowed, *n* = 27)

	COUNT	PERCENT
The initial cost of installing solar is too high for typical homebuyer	23	88%
Difficult to finding qualified solar installer or train staff to install	5	19%
There are too few distributors of solar equipment in Oregon	1	4%
It takes too long to receive solar materials for projects	1	4%
Zoning restricts installation of solar panels in some areas	1	4%

	COUNT	PERCENT
Solar not valued in appraisal	1	4%
Uncertainty about how to obtain solar tax credits	1	4%
No significant barrier exists	3	12%

We also asked respondents what additional information about solar energy they would find useful. While only one participant respondent reported managing tax credits was a barrier to installing solar, 19 of the 27 respondents said they would like additional information about tax credits and incentives associated with solar projects. This suggests that builders may be unclear about how to use tax credits and incentives to help control the largest barrier to installing solar, cost. One possible strategy to boost solar installation in New Homes is to better promote the credits and incentives associated with solar installations.

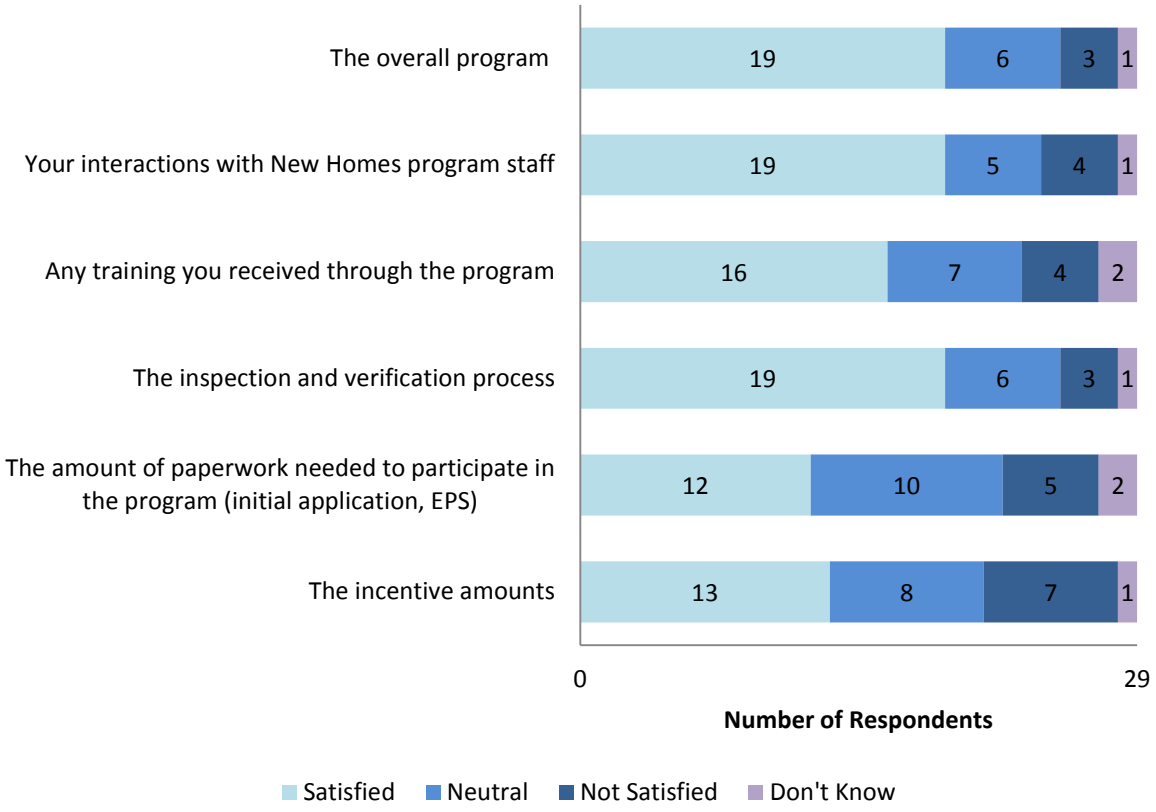
Six of the 27 respondents said it would be useful to have news on latest developments in the field, five would like information on site selection of solar equipment, and one wanted general information on retrofitting solar into existing properties.

Program Satisfaction

Participants report general satisfaction with the program. When asked about their satisfaction with six different aspects of the program[9], there were always more satisfied respondents than dissatisfied. As Figure 5-7 shows, most participants were particularly satisfied with training received, and interactions with program staff.

[9] Respondents rated satisfaction on a five-point scale, from *not at all satisfied* to *very satisfied*. We collapsed the two lowest and two highest response categories to simplify the figure.

Figure 5-7: Satisfaction with Program (*n* = 29)



We received nine comments from those builders that expressed some type of dissatisfaction with the program. Five of these respondents expressed frustration with what one called "the bureaucratic and confusing process." Not surprisingly, most comments about incentives were that they need to be larger, but one respondent indicated incentives needed to be received faster. Two comments were about training: one was that the program training was too simplistic and one was that insufficient notice was given of training opportunities.

Another respondent that expressed overall satisfaction with the program did report that the program was confusing when he first enrolled. He thought there were too many people involved and still thinks "it is still not clearly laid out on who does what and how to get a home through the program." Because of this initial problem with enrollment, this respondent and five other pilot interview respondents reported relying on their BOS to handle program paperwork and coordinate their program participation.

NONPARTICIPANT-SPECIFIC ISSUES

Finally, the survey included some questions relevant solely to nonparticipant builders. We received responses from17 nonparticipants, five targeted by Energy Trust and 12 from the online OHBA survey. The results from the five targeted by Energy Trust provide the richest source of data because we conducted open-ended phone interviews with these respondents. Therefore, our analysis includes counts from the 17 respondents where appropriate, but we rely on the in-depth interviews for much of our analysis.

Reasons for Not Participating

When asked why they had not participated, nonparticipants, the most common response was that buyers do not want to pay for energy efficiency features. Other responses were that the program seemed complicated, burdensome, and not worth the effort. (See Table 5-8).

Table 5-8: Reasons for Not Participating in Program
(Multiple Responses Allowed, *n* = 17)

	COUNT
My customers do not want to pay for energy efficient features	6
Not fully aware of program	5
Program requirements are too burdensome	4
The incentive is not worth the effort	3
Economic conditions not good for participation	2
The application is too complicated	1
I have not built any new homes in 2009 or 2010	1

Open-ended responses from pilot interviews revealed that respondents thought home buyers were more interested in spending money on non-efficiency related items in the home. For example, one respondent reported that if a customer is choosing between new grass and an energy efficiency feature, the customer will choose grass.

Four participants reported they were not fully aware of the program. Two of these respondents indicated they had some contact with the program but one of these respondents was hesitant that "the process [of participation] would be as smooth" as it was explained to him. The other respondent suggested he was aware of the program but was unwilling to look into the details.

Of the four respondents that found program requirements too burdensome, two specified what they found difficult. One believed the insurance requirements were too strict. The other respondent, a large scale production builder, suggested that the Energy Trust program was more complex and harder to navigate than what he was used to in other states. Specifically, this respondent thought there were too many third parties associated with the program, which made the program hard to understand. In other utility service areas the builder deals directly with the

program sponsor. This was an easier model to understand for this respondent. Given the program's implementation model, it is not clear how to address this builder's concerns short of assigning a single point of contact to large production builders like this one.

Four of the five pilot interview respondents indicated their homes are built beyond energy code. Three of those four installed insulation beyond code levels, three installed high-efficiency furnaces (92% and above), one installed high-efficiency water heaters, one installed windows above code, and one installed ENERGY STAR® appliances in all homes. Despite installing efficiency measures beyond code, two of these in-depth respondents indicated their customers do not want to pay for energy efficiency features.

Nonparticipant Transition to Participant

At least two of the 2009 and 2010 nonparticipant respondents indicated they have just recently started to participate in the program. One respondent started one house under the auspices of the program in spring 2011. This respondent decided to participate this year because a customer wanted a high performance home and he saw the program as a way to help him construct the home.

The other respondent was getting ready to install standalone measures that would receive incentives in summer 2011. This builder reported participating in other efficiency programs in other states but had elected not to participate in Energy Trust in the past because he found the program confusing. He reported he was going to start participating in the program in a small way by receiving some standalone measure incentives. If this process is not too onerous, the builder indicated he will pursue additional incentives in the program in the future.

Participant Transition to Nonparticipant

One builder that was targeted by Energy Trust as a nonparticipant reported he was a program participant in 2008 and years prior. He discontinued participating in 2008 because he could not justify the extra $3,000 he was investing in each house to exceed energy code. This builder reported not being able to charge more for the house.

One problem this builder had when he was a participant was explaining the benefits of energy efficiency to customers. He was intrigued by what he heard about the EPS because he thought it would be a helpful tool to help explain the value of efficiency to homebuyers. However, this builder did not express a willingness to participate in the program in the near term.

6 MANUFACTURED HOMES

Energy Trust program staff, market experts, and manufacturers all reported that the manufactured homes industry is undergoing change and many market actors are experiencing serious financial hardships. This includes the bankruptcy of a large participating builder, the closing of about 20 retailers in Oregon over the past two years, and the consolidation of several companies. Manufacturers are responding to these economic conditions by diversifying the product types they offer, building smaller homes, and building less expensive homes. However, each manufacturer revealed different perspectives about the role of energy efficiency features in the current marketplace.

This chapter characterizes the manufactured homes market, examines the pressures it is experiencing, and demonstrates how energy efficiency features could be promoted in the current market.

CHARACTERISTICS OF MANUFACTURED HOMES MARKET

Size of the Manufactured Home Market

Figure 6-1 (next page) displays the current size of the manufactured homes market in Oregon and how the market has shrunk in the last decade. In 2010, the number of homes sited in Oregon is approximately one-fifth what it was in 2000. Much of that decline happened from 2005 to 2010, when the number of homes sited in Oregon decreased by 75%. Furthermore, our estimates show that 2011 manufactured homes in Oregon will be even lower than 2010, indicating the market is still in decline.[10]

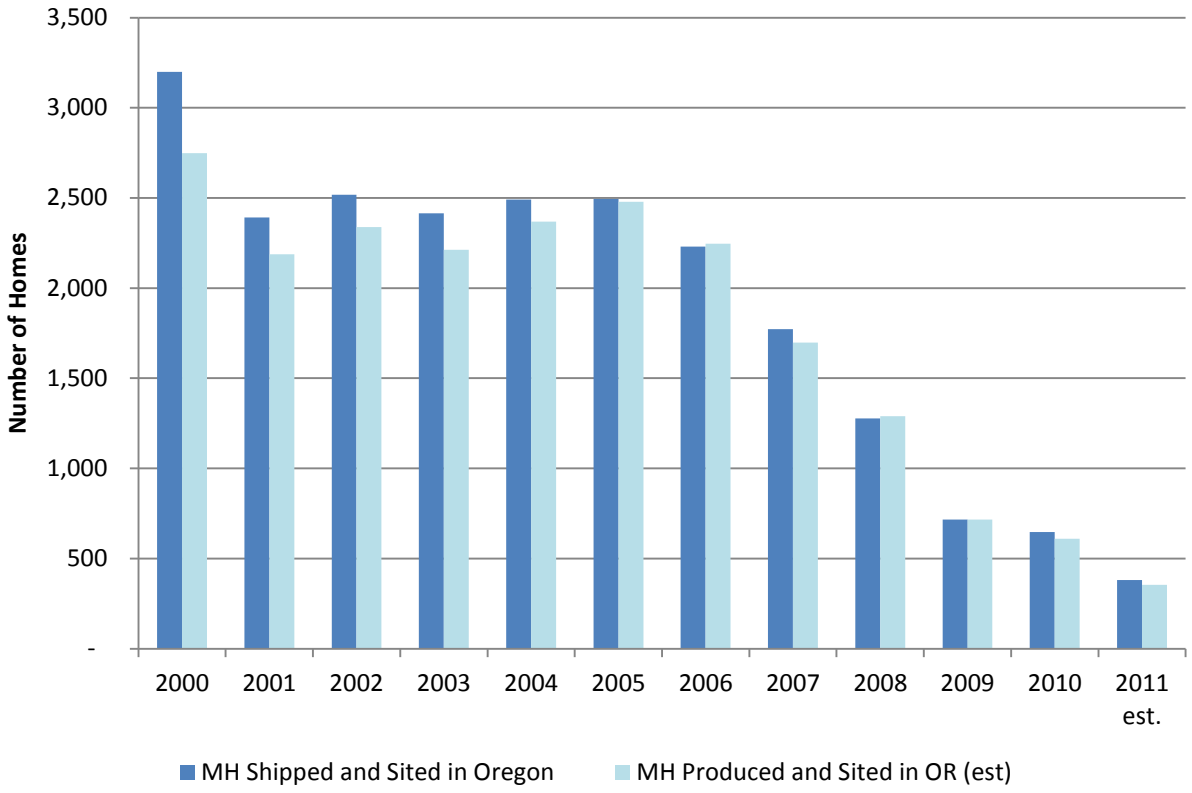
Market Penetration of Energy Efficient Homes

Market experts estimate that 60% to 65% of manufactured homes sold in Oregon are ENERGY STAR®. Interviews with three of the six Oregon manufacturers suggest that the percentage may be lower. One manufacturer thought that fewer than 50% of all homes sold are ENERGY STAR®, one estimated only 30%, and one thought 60% was correct. The manufacturers were not relying on data for their estimates whereas the market experts used data from Northwest Energy Works and the Oregon Manufactured Housing Association (OMHA) to create an estimate.

[10] OMHA reports 127 homes were shipped and sited in Oregon and 296 were produced in Oregon from January to April 2011. Assuming manufactured homes are sited at a similar rate as the first 4 months of the year and assuming 40% of the produced homes stay in Oregon, we estimate a total of 736 homes will be sited in Oregon in 2011.

However, the market experts were using data from two years ago and the market for ENERGY STAR® homes may have decreased along with the rest of the market.

Figure 6-1: Manufactured Homes (MH) Located in Oregon[1]



[1] Data provided by the Oregon Manufactured Housing Association (OMHA) and reported to the Manufactured Housing Institute.

Economic Downturn

Market experts described the manufactured home market as "in crisis." Similarly, manufacturers describe the market as "brutalized," "going downhill," and "almost wiped out." One market expert told us almost half of all manufactures in Oregon have gone out of business in the last two to three years. We found out just how many companies have gone out of business when we were given a list of nine manufacturers by Energy Trust and determined only six were unique contacts. The other three either went out of business or consolidated with other companies. Furthermore, at least one of the six manufacturers was in bankruptcy.

The contraction of the manufactured home industry appears to be twofold. According to one market expert, the first reason was the lax lending practices offered to manufactured home buyers in the early 2000s by manufacturers. Manufacturers were offering customers financing on

homes they could not afford. As a result manufacturers had a few boom years of selling but then started losing money rapidly when those customers could no longer make their monthly payments. This resulted in manufacturers having loan loss rates of 30% or higher, which led to manufacturers going out of business.

Secondly, the manufactured homes industry contracted even further in the last three to four years. For example, in April 2011, three of the approximately 50 retailers in Oregon went out of business and more retailers are expected to go out of business in 2011. According to market experts, this second contraction was due to the overall collapse in the housing market, the inability to offer competitive financing rates to consumers, and high unemployment rates.

MANUFACTURER RESPONSE TO ECONOMIC DOWNTURN

Program staff and market experts report the industry is "doing anything they can to stay afloat." For instance, all three manufacturers report recently entering the modular homes market[11]. One has offered modular homes since about 2004 to areas outside the Northwest. The other two builders reported entering the modular market within the last year. Despite offering modular homes, none report building any in Oregon. Modular homes have to be built to site-built standards in Oregon, unlike other states such as Montana. Constructing a modular home to site-built standards means additional regulatory hurdles such as having licensed electricians and plumbers do installation work. Therefore, the process of building a modular home is much different than what manufactured home builders are familiar with. Despite the lack of business in the modular homes market in Oregon, manufacturers report getting into the business for three reasons: 1) to build in other states, 2) to diversify their building industry offerings, and 3) to "protect their shelf space" from competitors.

All manufacturers reported building smaller homes over the last three years. For example, one manufacturer stated that 25% of all 2008 sales were triple-wide sections, while those currently make up only 5% of his sales. The primary reason for building smaller homes according to these manufacturers and one market expert is that customers can afford less. Triple-wide sections can cost $100,000 or more and require more extensive site work. According to manufacturers, customers are less interested in larger homes with more amenities and are now requesting affordable entry-level homes.

Manufacturers, ENERGY STAR®, and Eco-Rated Homes

Manufacturers, market experts, and program staff respondents all told a similar story regarding the economic downturn and the industry's response. However, there is a greater diversity of

[11] A modular home is a home whose components are built in a factory, trucked to a site, and then assembled on site. Unlike a manufactured home, a modular home must meet the same building code requirements as a site-built home.

opinion about the role certifications such as ENERGY STAR® and eco-rated play in a customer's buying decision. For example, one manufacturer reported selling a smaller percentage of ENERGY STAR® homes today than three years ago, one reported selling a higher percentage, and one reported selling about the same percentage. Furthermore, each builder reported selling a different percentage of energy efficient homes.

The manufacturer that was selling a smaller percentage of ENERGY STAR® homes today than two to three years ago indicated that was happening because customers are more likely to choose the cheapest option available nowadays. ENERGY STAR® homes cost about $2,000 to $3,000 more than a standard HUD-built home, and this manufacturer reported more customers are not willing to pay extra for ENERGY STAR® or any other "green" certified home today. Consequently, he reported a 15% to 20% decrease in production of ENERGY STAR® homes over the last two to three years. However, his sales of eco-rated equivalent homes continue to represent about 15% of his production.

In contrast, the respondent that reported he was selling a larger percentage of ENERGY STAR® homes than two to three years ago indicated the customer base has changed in the last three years to one more likely to seek out efficiency. Customers today typically have to demonstrate an adequate down payment and meet stricter lending rules to purchase a home. According to this respondent, these customers tend to be more aware of the benefits of energy efficiency and are more likely to pay for an ENERGY STAR® home than the customers of three to four years ago. However, this respondent reports customers are not willing to go beyond ENERGY STAR® and get an eco-rated home. In fact, this respondent was in the process of building his first eco-rated home at the time of the interview and did not anticipate selling large numbers of eco-rated homes in the near future.

The respondent that suggested he was selling about the same percent of ENERGY STAR® homes as he was two to three years ago reported this was happening because customers continue to recognize the ENERGY STAR® brand and associate his homes with that brand. This respondent reported that 90% to 95% of all homes his company produces are ENERGY STAR® rated and have been that way for almost 20 years. Even customers of his entry-level homes choose very few amenities but still opt for ENERGY STAR®. Despite this manufacturer's embrace of ENERGY STAR®, this manufacturer never built an eco-rated home.

Energy Efficiency Drivers

As evidenced by the lack of eco-rated homes produced by the manufacturers we spoke with, manufacturers report not seeing a demand for energy efficiency in the market beyond ENERGY STAR®. All manufacturers indicate they would build homes beyond ENERGY STAR®, such as eco-rated, in at least one of four scenarios: 1) customers start demanding eco-rated or certain efficient options; 2) the housing market stabilizes and house prices stop dropping; 3) consumers could receive better financing for purchasing an efficient home or; 4) an incentive became available to manufacturers to offset all or most of the additional $3,000 to $4,000 required to make a home as efficient as eco-rated.

Customer Demand

For demand to be created for homes more efficient than ENERGY STAR®, customers need to be familiar with it the way they are familiar with ENERGY STAR®. One manufacturer stated "we have not [built to the] eco-rated [standard]. We could do so fairly easily but we have not seen demand for it. There is no true brand recognition for eco-rated [like there is for ENERGY STAR®]. Customers don't know what eco-rated is….ENERGY STAR® name is potent with most consumers."

Another problem is customers do not tend to shop for energy efficiency features in their homes. "Customers do not come in [to retailers] saying I want an energy efficient home." Rather, if energy efficiency fits into the customer's pre-existing budget then they may choose efficiency as an option.

Creating demand among consumers requires marketing to the consumer. One possible method is expanding the EPS to manufactured homes. All three manufacturers indicated that having an EPS for manufactured homes would help explain the value of energy efficiency to buyers. According to one respondent "there are some buyers that could not care less" about efficiency because they do not see value in it. However, if the EPS could explain the value of efficiency to buyers, then perhaps there would be greater demand for efficiency measures.

Stable Housing Market

One manufacturer thought demand for efficiency measures was primarily about having a stable housing market. According to this manufacturer, "consumers keep waiting for a lower price" in the housing market which makes it almost impossible for a manufacturer to do anything that would raise the price of a house. Customers are reluctant or unable to purchase anything beyond basic features in the current market according to this respondent. This includes purchasing energy efficiency features to kitchen upgrade amenities. Once housing prices stop declining, the market for energy efficiency features and other amenities will increase according to this respondent.

Financing for Efficient Homes

Another manufacturer suggested there is not adequate financing for customers. "If we can drop the price down for consumers [with better financing] we could build more [efficient homes]." A market expert also suggested that making manufactured home financing align with site-built home financing would help customers purchase homes. Currently, customers of manufactured homes receive interest rates of between 8% and 10% whereas site-built homebuyers are receiving 4% to 5%. These high interest rates for manufactured homes, combined with strict lending standards (income verification, at least a 10% down payment, job verification), are

keeping people from purchasing manufactured homes. Energy efficient mortgages (EEMs) are available for manufactured as well as site-built homes.[12] One possible strategy to encourage the sale of efficient homes beyond ENERGY STAR® may be to research EEMs and provide information on them to manufacturers.

Incentives to Manufacturer

Not surprisingly, all manufacturer respondents stated that incentives from Energy Trust direct to the manufacturer would encourage production of eco-rated homes. Furthermore, each respondent reported interest in reviving the BPA manufactured homes program that existed in the 1990's. This program provided 100% of the additional costs to the manufacturer that made the home more efficient than code. Initially this program provided a subsidy of 100% to manufacturers to build more efficient homes and manufacturers all agreed this lead to the sale of more efficient homes. As the subsidy decreased to 50%, the sale of more efficient homes slowed, and when the program went away so did sales of homes more efficient than code.

Ductless Heat Pumps

Another possible way to promote energy efficiency is promote the use of ductless heat pumps (DHP) in manufactured homes. Despite attempts by Energy Trust, the Northwest Energy Efficiency Alliance (NEEA), Northwest Energy Works, and others to explain the value of installing DHP in manufactured homes, no manufacturer has reported selling a DHP. However, two of the three manufacturers we spoke with indicated interest in putting DHPs in their homes.

At least one manufacturer indicated he was not including DHPs in his homes because DHPs were coming into the market at a time when "we are just trying to keep the doors open." This manufacturer reported that anything that is more expensive than what is currently being used in homes, such as DHPs, is not being seriously considered at this time.

SUGGESTED PROGRAM CHANGES

The manufactured homes market does not appear to have changed dramatically since the 2009 evaluation of this program. ENERGY STAR® homes continue to constitute the largest share of homes built beyond HUD code, there is almost no uptake for eco-rated homes, and manufacturers are reluctant to install any efficiency measure beyond what they are already doing. To promote the production of efficient homes beyond ENERGY STAR® a new tactic seems necessary.

[12] See, for example, the following websites: *http://www.capitalhomebuilders.com/mortgage.asp* and http://www.revolutiongreenpower.com/energy-efficient-mortgage.html.

One possible tactic is for Energy Trust to incent manufacturers to offset the incremental cost of producing homes more efficient than ENERGY STAR®. Similarly, Energy Trust could provide rebates to offset the cost of installing a DHP instead of a traditional heating source. In the current economic climate, manufacturers appear reluctant to make any changes to their existing offerings that will increase prices. Rather, they are looking for any way to make homes more affordable.

Another tactic Energy Trust could pursue is working with manufactured home financing companies to encourage lower interest rates for energy efficient manufactured homes. Customers may be more willing to purchase an eco-rated or similar home if their monthly payment would be similar to a standard site-built home. Currently, even if a customer wanted an eco-rated home, they may be ineligible to purchase it because their loan terms will not allow them to exceed a certain price.

Expanding the EPS to manufactured and modular homes might also encourage the production of more efficient homes by creating demand among buyers. If buyers have a way to easily value efficiency they may be more willing to purchase a more efficient home whether it is a manufactured, modular, or site built home.

7 REAL ESTATE PROFESSIONAL TRADE ALLIES (REPTAS)

This chapter characterizes the Real Estate Professional Trade Allies (REPTAs), evaluates the promotion of Energy Trust and energy efficiency via the REPTA network, and examines the level of engagement REPTAs have with Energy Trust, including their satisfaction with the Energy Trust REPTA training and their involvement with cooperative marketing support.

In May 2011, Research Into Action fielded a web survey to 343 REPTAs. Fifty-eight (17%) completed the survey, providing a sample adequate to ensure an overall confidence level of 90% with ±10% precision.[13]

CHARACTERISTICS OF REPTAs

According to Energy Trust records and the survey sample, most REPTAs serve Portland Metropolitan Region (Table 7-1). Survey data also revealed that in 2010, most (89%) of REPTAs' single-family home sales were sales of existing homes, on average. New in-fill homes and homes in a new development comprised 5% and 6% of the sales, respectively.

Table 7-1: Geographic Distribution of REPTA

REGION	POPULATION		SAMPLE	
	COUNT[1]	PERCENT	COUNT	PERCENT
Portland Metropolitan Region	326	88%	53	91%
Willamette Valley/North Coast	44	12%	6	10%
Southern Oregon/South Coast	17	5%	2	3%
East of the Cascades	28	8%	3	5%

[1] From Energy Trust Records. REPTAs may serve more than one geographic region. Table represents 368 REPTA serving in 415 regions.

REPTAs had many reasons for becoming a trade ally. From a list of five possible reasons, more than half of the REPTAs selected three top reasons for becoming a trade ally: 1) to "distinguish themselves as a 'green realtor' in the field," 2) to "learn more about residential energy efficiency," and 3) to be "affiliated with Energy Trust" (Table 7-2). Other common responses were to obtain marketing assistance from Energy Trust and to "obtain the $100 incentive" toward the cost of S.T.AR. certification.

[13] In May 2011, CSG provided Research Into Action with a list of 368 REPTA contacts; 343 included usable email addresses.

Table 7-2: Reasons for Becoming an Energy Trust REPTA (Multiple Responses Allowed, *n* = 58)

REASONS	COUNT	PERCENT
To distinguish myself as a "green realtor" in my field	45	78%
To learn more about residential energy efficiency	36	62%
To be affiliated with Energy Trust	31	53%
To access cooperative marketing assistance from Energy Trust	26	45%
To obtain $100 Energy Trust incentive	22	38%
Other- for work (3 comments); right thing to do (1 comment)	4	6%

As we would assume from RETPA training, these contacts were familiar with Energy Performance Score (EPS) home labels (81% of respondents) and Regional Multiple Listing Service (RMLS) fields listing energy efficient features of a home (96% of 46 responding[14]). However, a large majority of our REPTA contacts (89%) had not marketed a home with an EPS score.

ENGAGEMENT WITH ENERGY TRUST

As noted elsewhere, Energy Trust provides REPTAs with a half-day training on Energy Trust, its programs, and opportunities for promoting energy efficiency. We assessed satisfaction with the training on a five-point scale, from '1' meaning *very dissatisfied* to '5' meaning *very satisfied*.

Survey data revealed that about 76% of REPTAs (44 contacts) were satisfied with this training.[15] The respondents that indicated some dissatisfaction most commonly said that training "was not what they expected" (3 out of 4 comments). When asked what they found to be the most useful component of the training, the most commonly mentioned components were learning how Energy Trust can help their clients and information about Energy Trust's products and services (11 contacts each). We also asked about the least useful parts of the training. Nine comments by eight realtors indicated uncertainty about how to utilize Energy Trust resources. These contacts were not sure about who to contact, how to follow-up with Energy Trust, or how to get marketing assistance from Energy Trust.

Survey responses suggest that the REPTAs should be well versed on current energy efficiency and sustainability issues. In addition to receiving S.T.A.R and REPTA training, 45% (26 contacts) mentioned that they have taken additional training. Six of those 26 contacts mentioned

14 An erroneous skip pattern excluded this and other questions from 12 respondents. The affected questions are identified where they occur.

15 Combined ratings of "very satisfied" (26%) and "satisfied" (51%) to assess an overall level of satisfaction among REPTAs.

taking continuing education or other classes on efficiency, sustainability, or EPS, while four others obtained an Eco-Broker certification. In addition, four contacts mentioned attendance at green or energy realtor seminars. Six contacts who took additional training did not specify the training type.

To assess the level of engagement REPTAs have with Energy Trust after the training session, we asked REPTAs to report on their correspondence with Energy Trust. Survey data revealed that REPTA contact with Energy Trust was relatively low, with 57% (33 contacts) reporting making contact "within the last year." REPTAs primarily reported contacting Energy Trust about cooperative marketing assistance (12 of the 33) and to a lesser degree to refer clients for a home energy audit (7 of the 33). In another 11 instances, REPTAs called Energy Trust to get information on retrofits, services and rebates for their own home (6) or for clients (4).

Overall, 53% of REPTAs were satisfied with the REPTA network[16]; however, it is worth noting that 34% of the REPTAs were neutral in their opinion of the network. Of five REPTAs reporting some dissatisfaction with the network, two provided us with an explanation: one disliked the referral requirement for cooperative marketing assistance, and the other wanted the latest news from Energy Trust and for "things to be easier" in general.

PROMOTION OF ENERGY TRUST VIA REPTA NETWORK

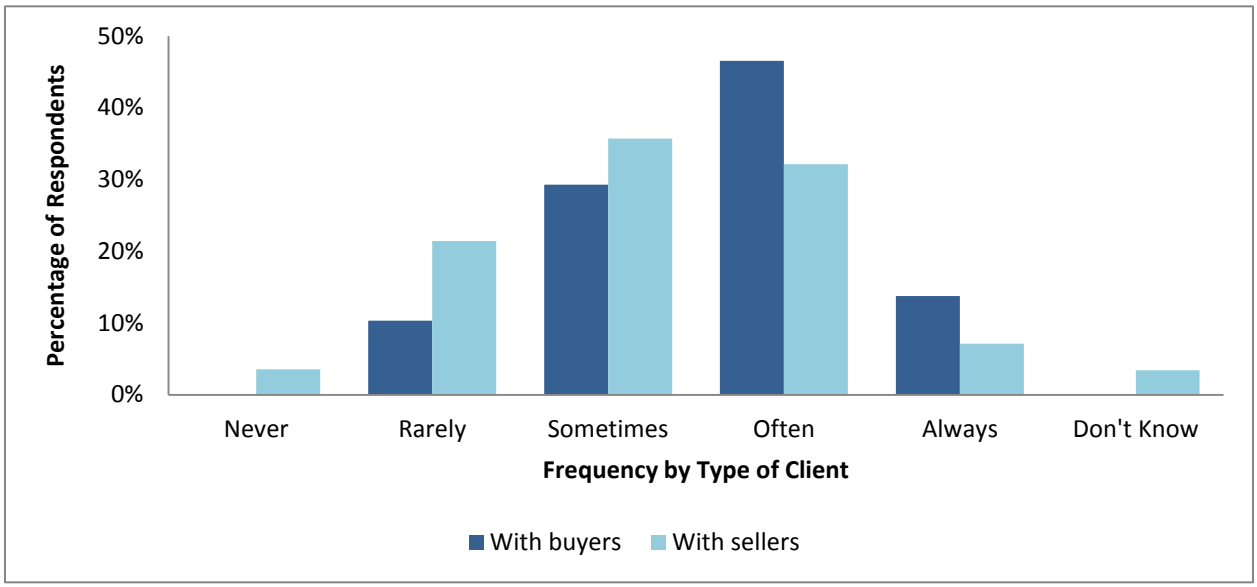
Energy Trust supports the REPTA network for several reasons; however, the core function of the network is the promotion of Energy Trust and Energy Trust services during their interactions with clients. Survey responses revealed that REPTAs frequently mention Energy Trust's services to their clients who are buying and selling homes.

REPTAs reported that they discuss Energy Trust offers more than half the time, on average, when working with homebuyers, (61% "often" or "always"). By contrast, these types of discussions occur less frequently with sellers (39% "often or "always"; Figure 7-1). The difference between these two patterns of response is statistically significant (Wilcoxon Signed-Rank Test[17] at $p < 0.01$).

16 This includes five respondents who indicated they were *very satisfied* and 26 who indicated they were *satisfied* on a five-point satisfaction scale.

17 Significance determined by using the Wilcoxon Signed-Rank Test, a non-parametric test that analyzes ordinal variables comparing two related set of responses.

Figure 7-1: Frequency of Discussing Energy Trust Offers with Clients



When we asked REPTAs which of six options describe how they might promote Energy Trust, they most commonly indicated face-to-face interactions with clients – specifically: 1) telling buyers and sellers about Energy Trust offerings, and 2) referring clients (buyers and sellers) for a Home Energy Review. Fewer than half of the REPTAs (in the 40% range) reported displaying Energy Trust logos on their marketing materials or on their electronic communications (Table 7-3). Only a small percentage of REPTAs (12% to 16%) reported not promoting Energy Trust to either buyers or sellers or limited activities to distributing postcards and brochures.

Table 7-3: Promotion of Energy Trust
(Multiple Responses Allowed, *n* = 58)

METHOD	BUYERS	SELLERS
I tell clients about Energy Trust offerings	74%	53%
I refer clients for a Home Energy Review	57%	47%
Energy Trust logos and information are on my printed marketing materials	40%	41%
Energy Trust logos and information are on my electronic communications	41%	38%
I distribute Energy Trust postcards and brochures	16%	12%
I don't promote Energy Trust	14%	16%

Although the majority of REPTAs had marketed Energy Trust services to their clients, many had suggestions on how Energy Trust could (and should) better help them to market Energy Trust. Ten out of 41 contacts suggested that delivery of customizable and relevant marketing materials from Energy Trust would be helpful. Seven of these contacts wanted more information about

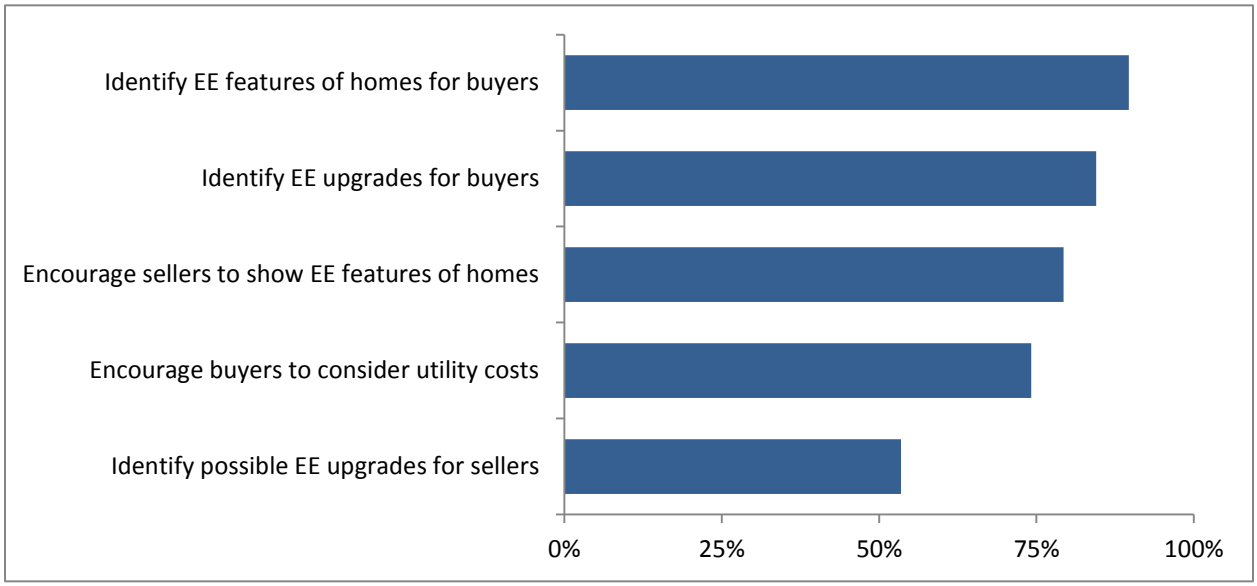
latest products, services, or classes from Energy Trust. A smaller group would like to have easy access to Energy Trust information (5 comments), simpler information (4 comments), and additional training (3 comments).

GENERAL PROMOTION OF ENERGY EFFICIENCY

In addition to marketing Energy Trust specifically, Energy Trust assumes that, in general, trained REPTAs will promote energy efficiency in homes during their interactions with clients. The following section presents an assessment of the promotion of energy efficiency by REPTAs during their various interactions with home buying and selling clients, including the listing of energy efficient home features on the RMLS.

Almost all of the REPTAs in the network discuss energy efficient home features with buyers and sellers. Energy efficiency is generally identified as a "feature" of the home – one that is either in place or a needed upgrade. In addition, about three-quarters of the REPTAs actively encourage buyers and sellers to consider the value of energy efficiency during the market transaction. REPTAs do this by encouraging sellers to market their home's specific energy efficient features, and encourage buyers to consider a home's utility costs (Figure 7-2).

Figure 7-2: Content of REPTAs' Discussions with Clients (*n* = 58)



When we asked REPTAs what energy efficiency upgrades they typically identify for their clients, 49 were able to identify at least one type of upgrade. Of those, the three top recommendations were: replacing windows (33 comments), adding insulation (24 comments), and upgrading the furnace (27 comments). Survey data (Table 7-4) suggest that REPTAs are equally likely to discuss with clients the energy efficiency of existing homes as they are the

efficiency features of new homes, doing so approximately three-quarters of the time in both cases.

Table 7-4: Percent of Time Discussing Energy Efficiency of Homes with Clients

	MEAN	90% CI	*n*[1]
Existing Homes	79%	78% - 80%	44
New In-fill Homes	73%	72% - 74%	21
New Development Homes	72%	71% - 73%	17

[1] The number of responses varied because not all respondents answered all parts of this question. Some REPTAs gave an answer for only those types of homes that they have sold in the last year, whereas others answered this question for all three types of homes.

REPTAs also reported more often discussing energy efficiency with their clients *after* becoming trained Energy Trust trade allies. As seen in Table 7-5, almost two-thirds of our contacts reported discussing the efficiency of existing and new homes more often now than before joining the REPTA network.

Table 7-5: Discussion of Energy Efficiency Since Becoming a REPTA

	INCREASED	SAME	DECREASED
Existing Homes (*n* = 56)[1]	*63%*	*36%*	*2%*
New In-fill Homes (*n* = 28)	*64%*	*32%*	*4%*
New Development Homes (*n* = 26)	*65%*	*31%*	*4%*

[1] The number of responses varied because not all respondents answered all parts of this question.

In total, 38 respondents reported that they discuss energy efficiency more often since becoming a REPTA. When asked the reason becoming a REPTA had this effect, most reported it was because of their training: 89% and 74% mentioned Earth Advantage (S.T.A.R.) and Energy Trust training, respectively. One half (19) of these contacts also said their discussion of energy efficiency had increased because of current economic conditions. For 16 respondents (42%), client demand was another reason they were discussing energy efficiency more often.

As one might expect, REPTAs most often talked to their clients about energy efficiency during the home tours: this was indicated by all but two of the 39 respondents who were asked when they talk to buyers about energy efficiency. With sellers, 27 of the 38 REPTAs who were queried said they discussed energy efficiency during initial consultation or when listing the home on the RMLS.

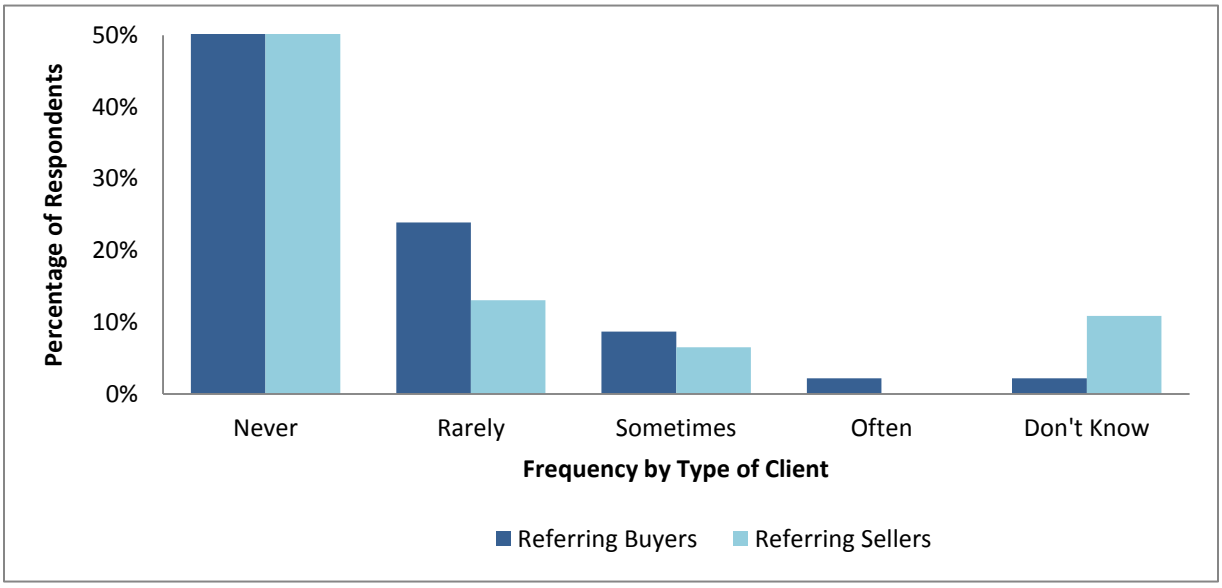
Real estate professionals may also emphasize energy efficient features by calling out related features on the RMLS listing. All but two of the 46 respondents asked said they were familiar that RMLS has fields available to list energy efficiency features or certification.[18] Of those 44 respondents who knew about the fields for listing energy efficiency information, 35 (80%) had listed energy efficient features or certification in the RMLS.

When describing what features they listed, 14 of those 35 said "any that apply." The most commonly given responses were furnaces (9 mentions), windows (6 mentions), insulation (4 mentions), and appliances in general (4 mentions) water heaters (3 mentions). Two REPTA also mentioned listing LEED, Energy Star, or Earth Advantage certifications.

PROMOTION OF ENERGY EFFICIENCY VIA FINANCIAL OPTIONS

Of the 46 REPTAs we queried about energy efficient mortgages or financial options, 42 (91%) reported that their clients do not ask about those things. In addition, about two-thirds of these contacts have never referred buyers or sellers to the Umpqua Bank's Green Street Lending Program, and most of the rest have done so rarely (Figure 7-3).

Figure 7-3: Frequency of Referrals to Umpqua Bank's Green Street Lending Program



REPTAs gave varied responses about the financial tools they needed to offer to clients who are selling or buying an energy efficient home. Out of 34 contacts who responded to an open-ended

[18] This was another item that erroneously skipped 12 respondents.

question, eight were unfamiliar with these loan products and said they needed general information about energy efficient mortgages or financial tools. Seven REPTAs wanted better financial options or discounts for energy efficiency upgrades. And three REPTAs mentioned a need for appraisers with knowledge of the value of energy efficient features.

Although REPTAs are not currently utilizing current financial tools for energy efficient homes, there is a demand for learning about these tools. In particular, of the 46 respondents queried on this subject, 19 (40%) of REPTAs were interested in taking training on energy efficient mortgages and financial options.

PROMOTION OF ENERGY TRUST AND ENERGY EFFICIENCY VIA COOPERATIVE MARKETING

Cooperative marketing funds, available for Energy Trust approved marketing projects, serve to promote the REPTA as a resource for energy efficiency and promote Energy Trust incentives to customers. While awareness of this marketing support is high among REPTAs (88% among 58 REPTAs surveyed), it appears that a small percentage of REPTAs have not gotten (or have forgotten) this message. Among those aware of cooperative marketing, about 49% (25 of 51 aware) indicated that they had received marketing assistance at some time since 2009.

Although the above figure is fairly consistent with Energy Trust data showing that about 40% (23 of 58) of our survey sample received coop marketing assistance, there was some level of inconsistency between the self-report and Energy Trust data on an individual basis. Of the 25 respondents who said they had received coop marketing assistance, Energy Trust data indicated only 14 actually had received such assistance; and of the 23 who said they had not received the assistance, Energy Trust data showed the three had gotten it. Some of the inconsistency may have resulted from confusion of the $100 training incentive with the coop marketing incentive

Those who indicated they received marketing funds in the past rated their satisfaction with the application process: just over half of these contacts were *very satisfied* (8%) or *satisfied* (48%) while 28% were *neutral*, and 16% were *dissatisfied* with the application process for marketing assistance. REPTAs dissatisfied with the marketing application process sited difficulty in applying or getting approval or difficulty finding the right person at Energy Trust.

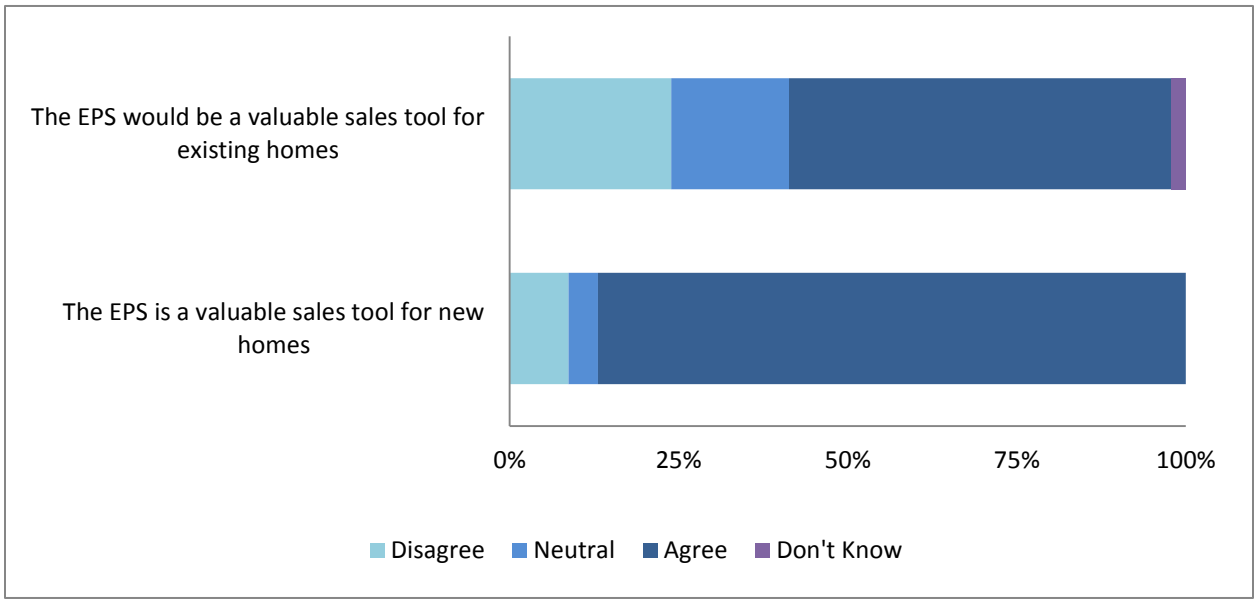
Among the 25 REPTAs who reported receiving cooperative marketing funds, the most commonly selected reason for applying for cooperative marketing assistance was “to associate [their] business with the Energy Trust brand” (10 mentions). Nearly as many of these REPTAs applied for cooperative marketing “to market themselves as a ‘green realtor’” (9 mentions). Only a minority used this opportunity “to save money on marketing” (5 mentions).

Among the 23 contacts in the sample who reported not receive marketing assistance since 2009, seven did not pursue the opportunity because it was “too complicated.” Six REPTAs reported forgetting about cooperative marketing or simply having other things on their minds.

USE AND PERCEPTIONS OF THE ENERGY PERFORMANCE SCORE (EPS)

The Department of Energy (DOE), utilities, and home builders are exploring the use of home labeling as a way to educate consumers and promote energy efficiency. Labels include, among others, LEEDS, ENERGY STAR®, DOE's Home Energy Saver, and the Energy Performance Score (EPS). When asked about the EPS, most REPTAs (87%) agreed that EPS is a good tool for new homes (Figure 7-4), whereas a significantly smaller percent (58%) agreed that EPS is a good tool for existing homes (Wilcoxon Signed-Rank Test[19] at $p<0.01$).

Figure 7-4: Agreement or Disagreement That EPS Is Valuable for Existing and New Homes (*n* = 46)



We asked those who agreed that EPS is a valuable tool for new homebuyers why they thought so. Of the 40 respondents who said it was valuable for new homebuyers, only 16 explained their rating. The most common category of response pointed to the fact that the tool provides consumers with comparable information about the home's energy usage or related monetary savings. Only two gave reasons why they thought EPS is not valuable for new homebuyers: one said that it may delay the closing process and one simply referred to the public's unfamiliarity with it.

Again, most respondents did not explain why they said the EPS was or was not a good tool for rating existing homes. Only seven explained positive ratings, mainly referring to the tool's ability to distinguish homes in the market place, indicate money or energy savings, or identify

[19] Significance determined by using the Wilcoxon Signed-Rank Test, a non-parametric test that analyzes ordinal variables comparing two related set of responses.

where to invest in upgrades. Twelve explained negative or neutral ratings, mainly raising concerns about potentially disadvantaging existing homeowners by reducing their home's value, doubts about the modeling behind the ratings, or the difficulty in dealing with it or pointing to public unfamiliarity or lack of concern about efficiency.

When asked about information or materials needed to help make EPS "a more valuable sales tool," 33 contacts provided responses. The most common response, given by seven of the contacts, was that an easy-to-understand explanation of the EPS would be most valuable. Six contacts wanted information about EPS to give to clients. Other suggestions, given by one to two respondents, were to provide information about EPS's validity, realistic information on upgrading existing older homes, providing information on greatest-impact upgrades and those that would also generate rebates or tax credits, and providing information via social networks.

8 CONCLUSIONS AND RECOMMENDATIONS

Despite adverse market conditions, Energy Trust's New Homes program has managed to maintain market penetration, with some gains over the past few years. We offer the following conclusions and recommendations to Energy Trust program staff for continuing program gains.

PROGRAM MARKETING

Conclusion: By focusing on in-person interactions with potential homebuyers, window clings, and flyers, participant builders as well as REPTAs may be missing other opportunities to market their efficient homes although REPTAs also list energy efficient home features in the RMLS. The fact that builders were largely unaware of Energy Trust program marketing efforts further suggests missed opportunities.

- ➡ **Recommendation:** Work with builders and increase efforts to work with REPTAs to market efficiency features more actively, such as by helping builders work through the REPTA network to market efficiency features. Increase outreach to builders to participate in cooperative marketing.

Conclusion: Evidence suggests builders may be segmented between those who promote efficiency opportunistically, those who value energy efficiency for its own sake, and those who believe the market is not willing to pay for efficiency (nonparticipants). Such segmentation may suggest opportunities to increase participation by tailoring marketing messages.

- ➡ **Recommendation:** Energy Trust may consider exploring the segmentation of the builder market, including how to tailor marketing message to increase participation within each segment.

Conclusion: Builders may be unclear about how to use tax credits and incentives to help control the largest barrier to installing solar, cost. This suggests that a possible strategy to boost solar installation in New Homes is to better promote the credits and incentives associated with solar installations.

- ➡ **Recommendation:** Work with BOSs to ensure that they have the appropriate information about current tax credits and incentives for solar installations to provide to builders.

BUILDER AND REPTA SUPPORT

Conclusion: Nonparticipant builders' expected difficulties with the 2011 energy code present an opportunity for the New Homes program. Promoting Energy Trust as a source of code-related information for nonparticipants may serve as an entrée to recruiting them into the program. Since nonparticipant show a strong preference for obtaining code-related information from local home

builders associations, it may continue to be valuable to Energy Trust to work closely with the builder associations to promote the program.

➡ **Recommendation:** Continue and increase efforts to promote the program through local home builders associations. As part of this effort, as well as in program marketing materials, promote the New Homes program as a source of information about the 2011 energy code.

Conclusion: The EPS may underscore very high-efficiency homes, resulting in diminishing returns on builders' efficiency gains and discouraging builders from pursuing the highest efficiency levels.

➡ **Recommendation:** Work with very-high-efficiency home builders to address their belief that the process for calculating the EPS is not accurate for very high efficiency homes.

Conclusion: While REPTAs were satisfied with program training, they were not highly engaged with the New Homes or Existing Homes programs and do not promote them heavily. There is no clear incentive for them to promote these programs to their customers. Moreover, a complicated application process may keep many from taking advantage of cooperative marketing assistance, and lack of knowledge about energy efficiency financing may prevent them from referring buyers to financing programs. REPTAs are in a good position to influence home purchase decisions, and engaging REPTAs more fully in the program could create demand that may engage more builders, potentially speeding up the program's market penetration.

➡ **Recommendation:** Be clear and consistent regarding what is expected of agents once they become a REPTA, and investigate ways to generate engagement, such as by offering additional support in the cooperative marketing application process, training on how to sell energy efficiency features, and possibly an incentive for new energy efficient homes that are purchased.

MANUFACTURED HOMES

Conclusion: Lack of perceived demand for efficient manufactured homes means that manufacturers do not perceive any incentive to construct more efficient homes. In particular, manufacturers do not have an incentive to add DHP to their homes.

➡ **Recommendation**: Energy Trust should consider offering incentives to manufacturers to offset the incremental cost of producing homes more efficient than ENERGY STAR® as well as to offset the cost of installing a DHP instead of a traditional, ducted heating system.

Conclusion: Lack of low-interest loan products may prevent manufactured home buyers from purchasing high-efficiency manufactured homes.

➡ **Recommendation:** Energy Trust should investigate energy efficient mortgages and provide information on them to manufactured home manufacturers.

APPENDICES

APPENDIX A: INTERVIEW GUIDES AND SURVEY INSTRUMENTS

APPENDIX B: SURVEY RECRUITMENT COMMUNICATIONS

APPENDICES

A INTERVIEW GUIDES AND SURVEY INSTRUMENTS

INTERVIEW GUIDE FOR ETO NEW HOMES PROGRAM STAFF

Introduction

The purpose of the process evaluation is to review program direction in 2009 and 2010, strategies, and anticipated changes; and obtain insights on program challenges and market barriers and opportunities.

Overview

1. [Former Program Manager] How long were you the Program Manager for the New Home program? When did you leave that position?
2. [Interim Program Manager] What is your role with the New Home program? How, if at all, has that changed with [previous program manager's] departure?
3. From your perspective, what have been the program's chief challenges since January 2009? How are you dealing [did you deal] with these challenges?
4. Tell me about the changes that have been made to program design since 2009, in particular, dropping ESTAR Building Option Packages and adding incentives for manufactured home manufacturers: How and why were those decisions made?
5. Were they the correct decisions? If not, why not?
6. How about any changes to program management and administration or marketing and outreach? What was changed and why?
7. Did the changes produce the expected results? If not, why not?
8. What is your overall view of how well program implementation has gone the past two years?
9. Any issues with data management?

Coordination/Communication

There are quite a number of program actors working together…

10. [Interim Program Manager] In your role, what kind of direct contact have you had with the other program actors – PECI, Earth Advantage, the BOC, and CSG staff working on the New Homes program?

    a. [If any direct contact:] Have you seen any communication challenges among the team members or between the team members and builders or the media? If so, please explain. How were those issues dealt with? Have they been resolved? What else might be done?

11. [Former Program Manager] How did you manage staying in touch with all of the other program actors: PECI, Earth Advantage, the BOC, and CSG staff working on the New Homes program?

    a. Do team members have regular meetings?

    b. From what you've seen, have there been any communication challenges among the team members (PECI, EAI, and CSG)?

    c. How about challenges in the team members' interactions with builders or with the media about the program?

    d. How were those issues dealt with? Have they been resolved? What else might be done?

12. [Former Program Manager] Were you satisfied with the level of feedback that you got from these program actors?

    a. If not, what would you have liked to see change? [What more could have been done?]

Feedback from Team Members

13. We'll be talking with BOS's, CSG staff, and builders. Are there any issues that you are hearing [heard] from BOS's we should be aware of?

14. What about CSG staff – any issues or challenges there?

Close

[Q16 – Q18, Diane Only]

15. [Interim Program Manager] From what you see, what is working really well? . .

16. [Interim Program Manager] What do you think most needs to change? . .

17. [Interim Program Manager] Is there anything that seems to stand in the way of making those changes at this time? . .

18. Finally, do you have anything to add? Is there anything I've forgotten to ask you about? . .

INTERVIEW GUIDE FOR NEW HOMES PROGRAM STAFF

Introduction

The purpose of the process evaluation is to review program direction in 2009 and 2010, strategies, and anticipated changes; obtain feedback on findings from the measure review; and obtain insights on program challenges and market barriers and opportunities.

Overview – Program Progress

1. What are your current roles with the New Home program?
2. Have you had any challenges since January 2009 recruiting and training program staff? Which ones? How are you dealing with these challenges?
3. What major changes have been made to program design since 2009? Dropped ESTAR Building Option Packages - right? What is (or are) the new performance-based path(s)? Is there some parallel between them and the ESTAR BOPs?
    a. How is this working for the program this year? Are you on target to meet saving goals?
    b. What changes did dropping BOPs mean for program implementation?
        i. How did this effect the calculation of incentives?
    a. I understand that there is a new incentive to manufactured home builders? Has that effectively encouraged manufacturer participation (at higher levels this year than in previous years)?
4. What, if any, changes have been made in the following program areas in the past two years (focus on 2009 and 2010)
    a. Changes to program management or administration?
    b. What about any changes in marketing and outreach?
        ii. Marketing:
        iii. Outreach:
        iv. Were any other changes to incented measures or incentive levels made?
    c. What about builder recruitment – any changes there?

i. Was there a trade ally re-enrollment effort? Describe – when it was done, response, etc?

ii. Any changes to builder application processes?

iii. Tell us about changes to the "pathways" – how BOPs changed etc. [Get a description of ways builders participate]

d. Has the role of the Builder Outreach Specialists changed at all?

i. How?

e. Has the role of CSG changed at all?

i. Any changes to how savings estimations are being calculated or modeled

f. And lastly, any changes to your use of EPS?

5. Oh, and what about data management – any issues there? How have they been addressed?

6. Has anyone mentioned any difficulties in recording project data in the database?

Verification Procedures

LEAD IN: It appears from my read of the manual that Oregon Dept of Energy (ODOE) certifies homes for ESTAR status, and that the NH Program just allows the ESTAR BOP verifiers to do their jobs.

It sounds like the program has a company called Delta-T visit 10% of non-BOP homes, 100% QA on modeling, and field verification for an additional 5% of homes. My questions are:

7. Does this mean that there's no program verification of homes that have been certified as ESTAR by ODOE? Please explain. (Probes: Is it assumed that if a house passes ESTAR certification then it meets some program pathway? Or that the builder did everything on the program application?)

8. What's the difference between Delta-T's 10% QA of non-BOP homes and the 5% field verification by the programs technical team (I'm assuming the "technical team" includes EAI and CSG folks)?

9. How have the weekly "Complete & Missing Information Reports (CMIR) been working to track project progress and keep BOS and verifiers informed? Are there any issues with project tracking that we should be aware of?

10. The New Homes manual refers to "performance testing contractors," "verifiers," and "raters" (Trade Ally application form 871A) – who does performance testing and how do raters and verifiers differ from performance testers? At what points in the program process are these trade allies employed?

Coordination/Communication

There are quite a number of program actors working together…

11. How do you manage staying in touch with all of the other program actors: Earth Advantage, the BOC, and CSG staff?

    a. Do team members have regular meetings?

    b. Would you say that team members (EAI and CSG) understand their respective roles as program representatives when interacting with builders? When interacting with the media about the program?

12. Are you satisfied with the level of feedback that you get from these program actors?

    a. If not, what would you like to see change? [What more could be done?]

General Perceptions of Building Industry – Staff Experience

13. In general, what are your perceptions of the building industry's efforts to adapt to the new energy codes?

14. How do you think builders will adapt to the reach code – they are voluntary, right?

15. How is the industry as a whole adapting to current building practices, especially energy-efficient features.

16. Do you think the building industry will adopt the use of labels and certifications – voluntarily or will they wait to see if use of labels like the EPS are made mandatory?

17. What about the realtors – what is your perception of their views on labels and certifications?

18. We heard one manufactured home builder say (in last evaluation) that as codes increase they were likely to stop participating in the program. It could be that he was worried about being able to exceed code levels enough to get a profitable incentive from the program. Do you see any issues with New Homes Program being able to continue to incent above rising code standards?

Challenges and Issues to be Aware of When Interviewing Other Program Actors

19. New codes went into effect in April 2008; did new codes go into effect in June 2009 as well? How has this affected the program?

20. And what is the status of the new "reach" codes?

    a. How are you planning to integrate these codes into the program? [Changes expected in design or implementation?]

21. With increasingly stringent codes, what, if any, challenges do you foresee in meeting program savings goals [challenges to program success]?

    a. What are they? (Lack of funding sufficient to incent builders, lack of participation, what?)

    b. And what strategies are being developed to overcome these challenges?

22. We'll be talking with BOS's, CSG staff, and builders. Are there any issues that you are hearing from BOS's we should be aware of

    a. Regarding Training?

    b. Any specific coordination or communication issues?

        i. What about the post construction EPS modeling process – that involves a lot of coordination. Are verifications being completed in a timely manner, are reports complete so that the final EPS can be run in a timely manner?

    c. What do you hear from builders:

        ii. are incentive payments getting out in a timely manner?

        iii. Do builders have any issues with their initial EPS scores, or their final scores?

    d. What do you hear from BOSs – what if any Issues are they having working with builders?

    e. Any other BOS issues we should know about?

23. What about CSG staff – any issues or challenges there? Perhaps issues mentioned by Warren Cook (at PECI now, a former CSG employee), things you are working on with CSG?

    a. Maintaining the EPS calculator?

b. CSG delivery of trainings? [geographic locations, reach, attendance, other?]

c. And what about issues with site-built or manufactured home builders that we should be aware of before talking with them? Such as:

   i. Specific concerns over additional costs, incentive levels, meeting and exceed codes?

   ii. Problems getting qualified measures?

   iii. Issues around the process for getting their incentive payments?

   iv. Challenges with selling the EPS new or manufactured homes?

Before we get to a few general closing questions…

24. Would you clarify for us

a. What makes a house "solar ready"?

b. What does it take to move from "solar ready" to a solar install?

c. Does this differ for PV or solar thermal?

d. What are the "solar ready" incentives?

e. How much does solar ready really reduce the cost of going solar later?

f. In our preliminary review of the measures database, two measures kind of confused us because they didn't have associated savings. What would count as a "Primary Heating System" measure (25 instances - perhaps hydronic and radiant systems not captures under boilers, heat pumps and furnaces?). And what about the "Gas – Sales Performance Incentive Fund" measure) - 9 instances?.

g. Why is it that only a TA can receive an EPS? [Training? Verification, what? Have the opportunity first to bid the installation job?]

h. Who manages the registered TA list?

i. How often is it updated?

j. How is it that TA are dropped from the list?

k. We're finding some builders from the FastTrack database that weren't on the TA list but it seems like they should have been. Any explanations for this?

Examples include:
Palazzo Custom Homes LLC (51 projects)
DR Horton (17 projects)
Central City Homes, LLC (13 projects)
Arbor Homes (13 projects)
Michael Knighten Construction Co Inc (7 projects)
Bridge City Investment Group (6 projects)
Timbercraft Homes Inc (5 projects)
Montero & Associates LLC (2 projects – low EPS)
Dreambuilder Custom Homes (1 project – low EPS)

Close

25. What would you say is working really well? . .

26. What would you most like to change? . .

27. Is there anything that seems to stand in the way of making those changes at this time? . .

28. Finally, do you have anything to add? Is there anything I've forgotten to ask you about? . .

[At conclusion of interview, mention that we may need their assistance with the on-line web survey of builders, specifically with either getting a membership list from OHBA or getting OHBA to agree to host a link to the survey on their website.]

INTERVIEW GUIDE FOR NEW HOMES MANUFACTURED HOMES PROGRAM STAFF

Introduction

The purpose of the process evaluation is to review program direction in 2009, 2010 and early 2011, strategies, and anticipated changes; obtain feedback on findings from the measure review; and obtain insights on program challenges and market barriers and opportunities.

Overview – Program Progress

1. What are your current roles with the New Home program?
    a. What major changes have been made to program design since 2009?
    b. How is the program design working so far? Are you on target to meet your saving goals?
    c. Basically, the program encourages manufacturers to build to the Eco-Rated standard over the Energy-Star standard. Is that right?
    d. I understand that there is a new incentive to manufactured home builders – can you explain that incentive to me? [Probe: what do manufacturers have to do to get the incentive?]
    e. How did you decide on that incentive?
    f. What effect do you think that has had on participation compared to previous years?
    g. What incentives are being offered to MF home retailers?
    h. What (if anything) more might be done to encourage program participation?
        i. By manufacturers?
        ii. By retailers?
2. What, if any, changes have been made to marketing and outreach to retailers and to manufacturers in the past two years (our focus is on 2009, 2010 and early 2011)?
3. Were any other changes made to incented measures or incentive levels?
4. What about manufacturer recruitment – any changes there?

a. Is there a manufacturer application processes? IF YES: How has that been working since 2009.

5. What do you hear from retailers about challenges with selling the Eco-rated manufactured homes? [SUSAN: CAN YOU CHECK MY EDITS HERE? THE QUESTION WAS A BIT GARBLED.]

6. Currently the EPS (Energy Performance Score) isn't used to generate a rating for manufactured homes. Are you considering adding an EPS rating to your homes? [Sarah: "Would seem to be pretty easy, except for factoring in appliances that weren't included in the sale."]

7. How are energy use / savings levels established?

8. Oh, and what about data management – any issues there? How have they been addressed?

9. Has anyone mentioned any difficulties in recording project data in the database?

Verification Procedures

10. LEAD IN Question: Earth Advantage certifies the Eco-Rating, is that right?

11. How does this process work – is each manufactured home certified separately, or is the manufacturers home plan certified to meet Eco-rated standards? Please explain…

12. Does the program track the number of certified MF homes by participating builders and the number of those units sold?

    a. What sort of market tracking is done?

Coordination/Communication

There are quite a number of program actors working together…

13. Do you stay in touch with all of the other program actors: Earth Advantage, the BOS?, and CSG staff?

    a. Do team members have regular meetings?

    b. What types of issues are discussed?

14. Are you satisfied with the level of feedback that you get from these program actors?

    a. If not, what would you like to see change? [What more could be done?]

General Perceptions of Building Industry – Staff Experience

15. Please clarify for me the difference between "standard manufactured homes" and "modular" homes?

    a. How do costs differ between these two types of homes?

    b. How, if at all, do the benefits of participating in the New Homes program differ for "standard" versus "modular" homes?

16. In general, what are your perceptions of the manufactured homes building industry's efforts to adapt to the new energy codes?

17. Will the new "reach codes" apply to manufactured homes builders?

    a. How do you think manufacturers will adapt to the reach code – they are voluntary, right?

18. How is this industry as a whole adapting to current building practices, especially energy-efficient features?

19. How many different ECO labels and certifications are available for manufactured homes? [Eco-rating, Energy Star rating, others?]

    a. Do you see this as an issue going forward – a lack of standardization across the industry?

    b. What advantages does certification offer manufacturers?

    c. What are the disadvantages to ECO certificates – what are you hearing from nonparticipants?

Challenges and Issues to be Aware of When Interviewing Other Program Actors

20. We heard one manufactured home builder say (in last evaluation) that as codes increase they were likely to stop participating in the program. It could be that he was worried about being able to exceed code levels enough to get a profitable incentive from the program. Do you see any issues with New Homes Program being able to continue to incent above rising code standards?

21. Besides increasingly stringent codes, what, if any, challenges do you foresee in meeting program savings goals [challenges to program success]?

a. What are they? (Lack of funding sufficient to incent builders, lack of participation, what?)

b. And what strategies are being developed to overcome these challenges?

22. We'll be talking with manufacturers. Are there any issues that you are hearing from them that we should be aware of?

a. Are incentive payments getting out in a timely manner?

b. Additional costs to upgrade the home or tough market right now?

c. What about with Earth Advantage staff – any issues or challenges there?

iii. with the certification process in general or their dealings with manufacturers?

23. What do you hear from retailers – current challenges with selling the Eco-rated manufactured homes?

Before we get to a few general closing questions…

Close

24. What would you say is working really well?

25. What would you most like to change?

26. Is there anything that seems to stand in the way of making those changes at this time?.

27. Finally, do you have anything to add? Is there anything I've forgotten to ask you about?

INTERVIEW GUIDE FOR PECI MARKETING STAFF

Introduction

The purpose of the process evaluation is to review program direction in 2009 and 2010, strategies, and anticipated changes; and obtain insights on program challenges and market barriers and opportunities.

Overview

1. What is your job title?
2. Can you describe for me all your roles and responsibilities in the Efficient New Homes Program? How long have you had these roles and responsibilities?
3. Please describe the program's marketing activities in 2009 and 2010. What activities are specifically targeted to…
    a. Builders?
    b. Manufactured home manufacturers?
    c. REPTAs?
    d. Home buyers?
4. What are the marketing goals with respect to REPTAs and home buyers? [Clarification if needed: The builders and manufacturers are the program participants, so the goal is to get them to participate in the program. What exactly are they trying to stimulate the REPTAs and home buyers to do?]
5. How do you know if you've achieved those goals?
6. What generally is working best in terms of reaching…
    a. Builders?
    b. Manufactured home manufacturers?
    c. REPTAs?
    d. Home buyers?
7. What, if anything, has not worked well?

8. What changes, if any, in program marketing were made…
    a. From 2009 to 2010?
    b. From 2010 to the present?
9. [If changes:] Why were those changes made?
10. Did they produce the desired results?
11. What other changes might be made?
12. Are you involved in coop advertising? If so, how is that going?
    a. Are builders taking advantage of it?
    b. Are some using it more than others? If so, how might you get more builders to use it?
    c. Do you think the campaigns that use coop advertising have been effective? Why or why not? What could be done to make them more effective?
    d. Do you have any thoughts about how coop advertising assistance could be improved?
13. Is there anything else you'd like to tell me about the program's marketing that I haven't asked you about?

INTERVIEW GUIDE FOR CSG MANAGER(S)

Introduction

The purpose of the 2009-2010 process evaluation is to review current program operations, document anticipated changes; review measures review; and obtain insights on program challenges and market barriers and opportunities. Our conversation will probably take about one hour.

Overview

1. As I understand it, your current roles with the New Home program include training of Builder Outreach Specialists, building energy modeling, and pre- and post-construction EPS reports. Have I missed anything?

Training

2. Let's talk about the trainings. Would you give me a run-down of how you plan and conduct the BOS trainings?

   [Probe to cover:

   - ✓ Planning and coordination with Earth Advantage who does BOS recruitments (right?)
   - ✓ Typical number of attendees [might get this in program reports?]
   - ✓ Number of sessions offered in 2010 [might get this in program reports?]
   - ✓ State-wide coverage – typical distance traveled by BOS trainees
   - ✓ General topics covered in the trainings (application processes, measures, …. itemize:)
   - ✓ Do BOS's typically attend one training, or do they attend refresher sessions?
   - ✓ How are program changes communicated to ALL BOS's - newsletter, emails, who maintains BOS contact and email lists, their status (new, returning, active, not-active)?
   - ✓ Post-training follow-up with BOS – how many call with questions? How often do they call? What are their questions?

3. What changes did dropping BOPs mean for training? In terms of trainings, what have been the pros and cons of dropping BOPs?

4. Have you had any challenges since January 2009 training BOS staff? Specify

   a. How are you dealing with these challenges?

5. Do BOS's in any one area of the state have more or different challenges than others? What are they? How are you dealing with these challenges?

Modeling and EPS

Now let's talk about your roles related to modeling and EPS.

6. First, what major changes have been made to program design since 2009 that affect your modeling and EPS roles with the program? Explain:
    a. What are the pros and cons of the new "pathways" approach?
    b. How did this program changes effect EPS modeling?
    c. …effect the calculation of incentives?
7. In your view, have your interactions with the Builder Outreach Specialists changed since 2009 (beginning of new program cycle)?
    a. How?
8. Has the EPS changed at all (since 2009)?
    a. How?
9. And what about data management – have you had any issues there either in getting information from other program team members, or in your reporting requirements to Energy Trust?
    a. How have they been addressed? Or how would you like to see them addressed?

Verification Procedures

LEAD IN: It appears from my read of the manual that Oregon Dept. of Energy (ODOE) certifies homes for ESTAR status, and that the NH Program just allows the ESTAR BOP verifiers to do their jobs. It sounds like the program has a company called Delta-T visit 10% of non-BOP homes, 100% QA on modeling, and field verification for an additional 5% of homes.

My questions are:

10. Does this mean that there's no program verification of homes that have been certified as ESTAR by ODOE? Please explain. (Probes: Is it assumed that if a house passes ESTAR certification then it meets some program pathway? Or that the builder did everything on the program application?)
11. What's the difference between Delta-T's 10% QA of non-BOP homes and the 5% field verification by the programs technical team (I'm assuming the "technical team" includes EAI and CSG folks)?

12. How have the weekly "Complete & Missing Information Reports (CMIR) been working to track project progress and keep BOS and verifiers informed? Are there any issues with project tracking that we should be aware of?

13. Who prepares the EPS for a specific home – do you do that or is that done by the "rater" (person who conducts the on-site visit)?

IF CSG DOES NOT PREPARE THE EPS, SKIP REMAINING QUESTIONS IN THIS SECTION AND GO TO Q19.

14. Tell me about any back-and-forth communications you have with BOS (and builders?) regarding the pre-construction EPS – changes to be considered. Is the pre-construction EPS typically calculated once or more often due to changes in the pathway/plans resulting from an initial EPS?

15. How long does it take for you to prepare an EPS? How does this vary depending on the quality and amount of information supplied by the builder/BOS?

16. Do some builders come to the program after they have started building? How often? How does the time involved differ when the builder is in the "building" stage compared to the "planning" stage?

17. What about the post-construction EPS modeling process – that involves a lot of coordination too. Tell me about how you coordinate with the rater – the person who verifies the installation. How has that been going this year?

    a. Do you have much back-and-forth with the BOS (and/or the builder?) during the post-construction EPS?

    b. Is one EPS typically calculated? Under what circumstances would it be run (calculated) more than once?

18. How is the incentive calculated and re-calculated? Explain this process: who the information is sent to? Does the pre-construction EPS set the builder's minimum incentive? How many builders try to qualify for a "bump" incentive?

    a. In your view, could anything be done to help smooth out the post-construction EPS?

    b. …smooth out the calculation of incentive levels (pre-construction and post-construction)?

Coordination/Communication

There are quite a number of program actors working together…

19. How do you manage staying in touch with all of the other program actors: PECI, and Earth Advantage?

a. Do team members have regular meetings?

b. Besides trainings do you have any regular, perhaps annual, meetings with the BOS's

20. Are you satisfied with the level of feedback that you get from PECI and Earth Advantage?

a. If not, what would you like to see change? [What more could be done?]

Challenges and Issues to be Aware of When Interviewing Other Program Actors

21. Has CSG staff experienced any challenges with program implementation this year? What issues, and how are/were they resolved?

22. [IF CSG does the EPS] When you first get builder plans, what supporting information do you get from the BOS? Do these sources of information tend to be complete? How do you deal with incomplete information (that holds up your initial EPS)?

a. What could be done to smooth out this process?

23. New codes went into effect in April 2008. Can you tell me about any code changes since then [new 2010 codes] and how they have affected the program?

24. [If no new code changes]: In your view, how have builders been adapting to the 2008 codes?

25. And what issues for you do you foresee with the new "reach" codes?

26. With increasingly stringent codes, what, if any, challenges do you foresee in meeting program savings goals [challenges to program success]?

a. Is there anything CSG can do to help the program meet these challenges?

27. We'll be talking with BOS's. Are there any issues that you are hearing from BOS's we should be aware of?

Close

28. What would you say is working really well?

29. What would you most like to change?

30. Is there anything that seems to stand in the way of making those changes at this time?

31. Finally, do you have anything to add? Is there anything I've forgotten to ask you about?

INTERVIEW GUIDE FOR OUTREACH MANAGER AND BUILDER OUTREACH SPECIALISTS (BOS)

Introduction

Hello, my name is _____. Energy Trust of Oregon has hired my company to evaluate its New Homes program. We're talking to program outreach staff such as you to get feedback on your experiences with the program in 2009 and 2010. The information you give me will be completely confidential and will help Energy Trust improve its services to Oregon ratepayers. Do you have some time now or can we schedule another time in the next couple of days? It takes approximately 30 minutes to go through the questions I have for you.

Background Questions

1. How long have you been ["the Outreach Manager" or "a Builder Outreach Specialist"] with the Energy Trust New Homes program? Specify:

Questions 2 through 4 – Outreach Manager only

2. About how many BOS's are you working with now?
    a. How many builders does each one typically work with?
    b. How does this vary depending on geographical location (urban versus rural)?
    c. Compared to 2008-2009, what is your view of the new homes building industry around the state in 2010-11?
3. Several groups work together to implement this program. Would you describe your communications with other team members – let's start with Energy Trust program staff.
    a. Do you communicate directly with Energy Trust staff? [what about and how often:]
    b. What about with PECI program managers? [what about and how often:]
    c. What about with CSG staff? Tell me about your communications related to BOS trainings - we'll talk about CSG and EPS calculations in a couple of minutes.
        i. What role do you play in facilitating CSG training sessions? [Supply contact list? What else?]
        ii. Do you also attend the training sessions – what role do you have during trainings?
    d. Are you generally satisfied with the level of communication you have with these other program staff: ETO? PECI? CSG? What might be done better?

e. If you've experienced any notable communications issues since 2009, what was done to deal with them?

i. And are the issues resolved now?

4. What specifically is your role in recruiting BOSs on behalf of the program? Specify

a. Has your role changed since 2009? In what ways?

b. What if any challenges do you have recruiting and keeping BOS's?

c. Given the new incentive structure (dropped BOPs for one thing, performance based incentives, etc.) what do you see as the main challenges for the BOS's in:

i. Builder recruitment:

ii. Program facilitation: [Probes: Do you have a pivotal role as facilitators between builders and technical staff, verifiers, etc.?]

All BOSs (Including Outreach Manager, if Applicable)

5. About how many builders and sub-contractors are you each working directly with now? What proportion are general contractors? Sub-contractors?

a. Outreach Manager if applicable: Total ____ GCs ____ Sub-contractors ____

b. Portland area BOS: Total ____ GCs ____ Sub-contractors ____

c. Bend area BOS: Total ____ GCs ____ Sub-contractors ____

d. Salem area BOS: Total ____ GCs ____ Sub-contractors ____

e. _____ area BOS: Total ____ GCs ____ Sub-contractors ____

6. How have numbers changed since 2009- up, down, about the same?

a. In general, why do you think that is?

7. Besides the other BOSs, what other types of program staff do you work with? (Outreach Manager, verifiers, raters, etc.)

a. Overall, how would you describe the communications you have with each of those staff groups?

b. Where is coordination working well, where might it be improved? In what ways?

8. What specifically is your role in contacting and/or recruiting builders and contractors on behalf of the program? Specify _____

a. Methods of contacting: phone calls, emails, face-to-face, follow-ups. How many contacts does it typically take before a builder signs up?

b. [Ways of recruiting and benefits emphasized] What do you find works the best to get builders involved? Keep them involved?

    i. Does this differ for sub-contractors? How

c. What do you think of the current incentive structure: is it…

    i. …easy to explain to builders? Sub-contractors?

    ii. What about the "bump" incentive – do builders to see the potential benefit to them?

    iii. Is not being able to tell potential builders or subs what their incentive levels would be a recruiting issues? For whom, and how big of an issue, how do you deal with this?

    iv. If you could, what would you change about the incentive structure?

d. What pros and cons (advantages or drawbacks) about the program do you hear from participating builders?

    i. Pros: [advertising assistance, trainings, niche marketing, …]

        1. Do subs have different views?

    ii. Cons: [might include concerns with current incentive structure, not knowing up-front the amount of the "bump" incentive, building costs, the market, other risks they are concerned about]

        1. Do subs have different views?

e. What about builder and subs who don't sign up - what pros and cons (of participation) do they see? [concerns with current incentive structure, not knowing up-front the amount of the "bump" incentive, building costs, the market, other risks they are concerned about]

    i. Pros builder:

    ii. Pros sub:

    iii. Cons builder:

    iv. Cons subs:

9. In addition to recruiting, Outreach Specialists work directly with builders and contractors. Please describe the steps (process) that you, the builder, and other technical staff like raters and others go through to decide what measures to install.

10. How does EPS fit into this decision process? [cover both the Specialists' decision process regarding which measures to recommend, and builder's decisions regarding which recommendations to implement]

    a. Is that first EPS run once, or can that be a "do-over process" in some cases? Why is that? And what is your role in those cases?

    b. How does the EPS process differ for builders/contractors working on a custom (one-off) project versus a larger project (with several homes)? Specify. And how does your role differ in each case?

    c. Do most <u>new</u> builders you work with come into the program at the pre-construction stage or a mix of pre- and post-start?

        i. How does the stage of building project effect your interactions and getting the first EPS done?

        ii. How does this differ from subs?

    d. How is this process different when it comes to post-construction verification? [Are other types of staff involved (verifiers?)?

    e. In your experience, how well is the whole EPS and Verification process working?

        i. What is working well?

        ii. Where are the glitches?

        iii. What would make things work better?

11. In your experience, what are the benefits of program training of builders and subs?

    a. Short term benefits to the program?

    b. Short term benefits to the builder or sub

    c. Long term benefits to the program (and the industry?)

    d. Long-term benefits to the builder or sub?

12. Did the program provide you with any specialized training? How would you rate the training? ["not at all useful," "somewhat useful," "very useful," DK] Why? What other training would be useful to Outreach Specialists, in general?

13. What do you think are the most valuable program services that you as a BOS provide to builders? What services could be eliminated with the least negative consequences?

INTERVIEW GUIDE FOR SITE-BUILT HOME BUILDERS – PARTICIPANTS & NONPARTICIPANTS – OPEN END

Hello, my name is _____. Energy Trust of Oregon has hired my company to evaluate its New Homes program. We're talking to builders and subcontractors such as you that have received program incentives to get feedback on your experiences with the program. The information you give me will be completely confidential and will help Energy Trust improve its services to Oregon ratepayers. Do you have some time now or can we schedule another time in the next couple of days? It takes approximately 25 minutes to go through the questions I have for you.

Screening Questions

1. Are you aware of Energy Trust of Oregon's New Homes program? [If needed: This program provides incentives for installing energy-efficient features, making a home more efficient than other homes built to code.]
   () Yes
   () No
   () Don't know

IF Q1<> = "Yes" Skip to Q3.

2. Did you submit an application for incentives from the Energy Trust Efficient New Homes program in 2009 or 2010?
   () Yes
   () No
   () Don't know

3. Which of the following best describes your company?
   () Builder
   () General Contractor
   () Developer
   () HVAC Installations and Service
   () Plumber
   () Energy efficiency service provider
   () Solar electric installer
   () Other, specify _____

IF Q2 = "Yes" Skip to Q6.

Questions 4 and 5: Nonparticipant Only

4. What types of energy efficiency features or building practices do you use that allow your homes to exceed energy code?

IF Q1= " Yes" and Q2= "No"

5. You indicated you were aware of the Energy Trust program but elected not to participate. Why? [PROBES: Program seemed to cumbersome, customers not interested in energy efficiency]

Codes

There was an energy code change in 2008, and another is coming in summer 2011.

6. What challenges, if any, did you have reaching the 2008 energy code? [PROBE: Were there significant cost increases? Were materials not available?]

7. Do you know (or have an idea about) what the 2011 energy codes will be?
   () Yes
   () No
   () Don't know

IF Q7 <>= "Yes" go to Q9

8. What challenges, if any, do you foresee in meeting the 2011 energy code? [PROBE: Significant cost increases? Materials not available?]

Builder/General Contractor Characteristics

	a)…2009?	b)…2010?
9. About how many total homes did you complete in…		

IF Q2 <>= "Yes" Skip to Q11.

	a)…2009?	b)…2010?
10. About how many New Construction homes did you complete that qualified for Energy Trust incentives in…		

11. What counties in Oregon do you serve?

12. Do you build homes on spec, custom order, or both? (Multiple responses allowed)
    [] Build homes on spec
    [] Custom order
    [] Don't know
    [] Refused

Decisions to Install Energy Efficient Features

13. How are subcontractors involved in determining what energy efficiency features to install? [PROBE: Do subcontractors provide the builder a range of efficiency options? Do subcontractors push higher-than-code efficiency options? How often are subcontractors involved? What determines whether a subcontractor is involved?]

IF Q2 <>= "Yes" Skip to Q28.

Program Knowledge and Participation (Participant Only)

14. Who have you interacted with regarding the Energy Trust New Homes program? (Multiple responses allowed)
    [] Builder Outreach Specialist (Earth Advantage)
    [] Modeler or Verifier (Earth Advantage)
    [] Modeler or Verifier (if other than Earth Advantage; please specify_____)
    [] Energy Trust staff
    [] CSG Staff
    [] PECI Staff
    [] No one in particular
    [] Other, specify: _____

15. How did you learn about the Energy Trust New Homes program? (Multiple responses allowed)
    [] Builder Outreach Specialist (BOS) from Earth Advantage
    [] Advertisement in trade publication
    [] Referral from colleague (other builder or tradesperson)
    [] Energy Trust contacted me (if yes; then how were you contacted?_____)
    [] I went looking for programs that encourage energy efficiency
    Training
    [] Other, specify: _____
    [] Don't know

16. Please identify from the following reasons why you chose to participate in the program. (Multiple responses allowed)

[] Energy Trust helped my company gain market distinction (i.e. – we wanted to market our company as a "green" builder)
[] We wanted to lower utility costs for the homes' residents
[] We wanted a low-cost way to install energy-efficient features
[] Installing energy-efficient equipment is important to our company ethos
[] It was part of my contract
[] Other, specify:_____
[] Don't know (someone else made the decision)

IF Q3 = "Builder" OR "General Contractor" go to Q20

Program Knowledge and Participation (Subcontractors only)

We will not survey subcontractors during pilot interviews but these will be included in the close-end questionnaire)

17. About what percent of the time do builders ask your opinion about what types of features to install?
() Never
() 1-20%
() 21- 40%
() 41-60%
() 61-80%
() 81-100%
() Don't know
() Refused

IF Q17 <>= "Never" go to Q19

18. Does this mean you do not provide input about what type of equipment or features are installed?
() Yes
() No
() Don't know

IF Q18 = "Yes" go to Q20

19. How often do you push an option that exceeds Oregon energy code?
() Never
() 1-20%
() 21- 40%

() 41-60%
() 61-80%
() 81-100%
() Don't know
() Refused

Features (Participant Only)

20. How do you decide what energy efficient features to install? [PROBES: Experience, BOS told me what to install, incentive levels]

21. Have there been energy efficiency features you wanted to install through the program but could not for some reason?
() Yes
() No
() Don't know

IF Q21 <>= "Yes" go to EPS

22. a) What features did you want to install?	b) Why were you unable to install these features? [PROBES: Were the features too expensive, not available, not incented?]
a.	
b.	
c.	

23. What do you perceive as the primary barrier to incorporating solar into your new construction and why?

24. Are you interested in learning more about solar?

25. What do you think you need to know or have in order to install or sell solar?

Marketing (Participant Only)

26. How do you market the energy efficient homes you build? [PROBES: Have your own marketing staff/realtors, feature EPS on brochures, etc.]

27. Are you aware of Energy Trust's efforts to market the New Homes program? [PROBES: Broad commercial ads, press releases, conducting outreach to specific audiences, etc.] If

yes, have they helped to sell any of your homes so far? How have they helped sell homes? Do you think these marketing efforts have helped you sell your homes?

EPS

28. Have you heard of Energy Performance Score, or EPS?
    () Yes
    () No
    () Don't know

IF Q28 <>= "Yes" skip to Q34

29. How has EPS been described to you?

30. What do you see as the pros and cons of EPS? [PROBES: Easy to explain, not easy to explain, encourages new home purchases?]

IF Q2 <>= "Yes" go to Q33

Question 14 to 16: Participant Only

31. Who have you worked with from the program to get an EPS? Can you describe the process?

32. Has receiving the preliminary estimated EPS ever prompted you to make adjustments to your project to help receive a lower (better) final EPS? What have you changed to improve the project?? (Probe: smaller home)

33. How do you use EPS in the marketing of the homes you sell? Does EPS help you sell your homes faster than similarly sized and located houses? Do buyers understand and appreciate what EPS means? (How does that vary by type of home, type of buyer?)

IF Q2 <>= "Yes" Skip to Q38.

Program Processes

34. [Participant Only] On a scale of one to five with 1 being "not at all satisfied" and 5 being "very satisfied," how would you describe your satisfaction with …… [read first one]. And what about [reiterate thru list ….

	1 – Not at all satisfied	2	3	4	5 – Very satisfied	Comments
… your interactions with New Homes program staff?	()	()	()	()	()	

	1 – Not at all satisfied	2	3	4	5 – Very satisfied	Comments
… the amount of paperwork needed to participate in the program (initial application, EPS)	()	()	()	()	()	
… the incentive amounts?	()	()	()	()	()	
… any training you received through the program?	()	()	()	()	()	
… the inspection and verification process?	()	()	()	()	()	
… the overall program?	()	()	()	()	()	

35. As a percentage of the home's selling price, approximately how much of a premium do you think energy efficiency is worth to homebuyers?

IF ANY of Q34 <>= 1 or 2 go to Q37

36. [Participant Only] You indicated some dissatisfaction with the program. Why are you dissatisfied?

Closing

37. [Participant Only] What, if anything, do you think would make the program better?

38. Do you have any other comments?

INTERVIEW GUIDE FOR SITE-BUILT HOME BUILDERS – PARTICIPANTS & NONPARTICIPANTS – CLOSE END (MOSTLY) WEB SURVEY

All Respondents

1. The Energy Trust of Oregon is seeking your input about the building industry in Oregon and the market for energy efficient features in new homes. As a token of appreciation, we will enter each person that completes a survey in a drawing to win one of two $100 gift cards. The survey takes approximately 10 minutes to complete.

All survey results are confidential and no one at Energy Trust will know your individual responses. Thanks for your

2. Which of the following best describes your company?
   () Builder (new homes only, no renovation work)
   () General Contractor (new homes or renovation work)
   () HVAC Installations and Service
   () Plumber
   () Electrician
   () Home performance contractor
   () Solar electric installer
   () Finance (banking, mortgage, etc.)
   () Real estate professional
   () Other, explain _____

IF Q1 = "Finance" or "Real estate professional" SKIP TO END OF SURVEY

3. What counties in Oregon does your business serve?

There was an energy code change in 2008, and another is coming in summer 2011.

4. What challenges, if any, did you have reaching the 2008 energy code?
   [] I did not have any significant problems meeting the 2008 code
   [] Finding materials necessary to meet code was difficult. Which materials:_____
   [] Meeting the 2008 energy code added significant cost to each house I built
   [] Understanding or interpreting code requirements was a challenge
   [] Other, please explain: _____

IF Q4 <> "Understanding or interpreting code requirements was a challenge" SKIP to Q7

5. What in particular was difficult to understand or interpret?

6. Who did you seek assistance from to help you understand codes?

7. Where did you get information about the 2011 Energy Code change?
   [] Local builders association
   [] State Department of Building Codes Website
   [] Earth Advantage
   [] Energy Trust
   [] I do not seek out information about the 2011 Energy Code
   [] Other, please explain: _____

8. What challenges, if any, do you foresee in meeting the 2011 energy code?
   [] Costs increases associated with code changes will negatively affect home buying
   [] Finding materials needed to meet the 2011 energy code will be difficult
   [] Understanding or interpreting the code requirements may be a challenge
   [] Other, please explain
   [] I do not see any challenges to meeting 2011 energy code

9. In total, how many applications for incentives have you submitted to the New Homes program?

IF Q1 = "HVAC Installations and Service" OR "Plumber" OR "Electrician" OR "Home performance contractor" OR "Solar electric installer" SKIP TO Subcontractor Questions.

Builder Questions

10. About how many custom and spec home projects did you complete in 2009 and 2010?

	2009	2010
a. Custom		
b. Spec		

DISPLAY Q11 IF Q9 > 0 AND Q2 = Builder OR Contractor

11. [Participant Only] About how many homes of each type, custom and spec, did you complete that qualified for Energy Trust incentives in 2009 and 2010?

	2009	2010
a. Custom		
b. Spec		

DISPLAY Q12 IF Q9 > 0 AND Q2 = Builder OR Contractor

12. How familiar are you with the Energy Trust New Homes Program, which provides incentives for installing energy-efficient features, making a home more efficient than other homes built to code? Would you say you are…
    () Not at all familiar
    () Somewhat familiar
    () Very familiar

DISPLAY Q13 IF Q9 > 0 AND Q2 = Builder OR Contractor

13. You indicated you are familiar with the New Homes program. Is that because you…
    () currently have houses enrolled in the program
    () do not have houses currently enrolled but have in the past
    () plan on enrolling houses in the program soon
    () heard or read about the program
    () are not sure why I am familiar with the program

    IF Q13 <> "do not have houses currently enrolled but have in the past" SKIP TO Q15

14. Please explain why you do not have houses currently enrolled in the program?

DISPLAY Q15 IF Q9 > 0 AND Q2 = Builder OR Contractor

15. [Participant Only] How did you learn about the Energy Trust New Homes program? (Please select all responses that apply)
    [] Builder Outreach Specialist (BOS) from Earth Advantage
    [] Advertisement in trade publication
    [] Referral from colleague (other builder or tradesperson)
    [] Energy Trust contacted me (if yes; how were you contacted?_____)
    [] I went looking for programs that encourage energy efficiency
    [] Training session
    [] Other, explain: _____
    [] Don't know

DISPLAY Q16 IF Q9 = 0 AND Q2 = Builder OR Contractor

16. What kept you from submitting applications to the New Homes program in 2009 or 2010? (Please select all responses that apply)
    [] Program requirements are too burdensome. Explain _____
    [] The application is too complicated
    [] The incentive is not worth the effort.
    [] I prefer not to install energy efficient features in new homes. Why? _____
    [] My customers do not want to pay for energy efficient features

[] I have not built any new homes in 2009 or 2010
[] I worked only as a subcontractor on new homes
[] Other – explain _____

Decisions to Install Energy Efficient Features

17. What energy efficiency features or building practices do you use to exceed energy codes? (Please select all responses that apply)
[] Upgrade windows beyond code
[] Upgrade insulation beyond code
[] Install energy efficient appliances
[] Install high efficiency HVAC equipment
[] Design the home to minimize need for mechanical heating or cooling equipment
[] Install renewable energy (solar, geothermal, wind) systems into home
[] Other, please explain: _____

DISPLAY Q18 IF Q2 = "Builder" OR "Contractor"

18. How are subcontractors involved in determining what energy efficiency features to install?
() Subcontractors are not involved
() Subcontractors help me determine what energy efficiency features to install
() Subcontractors provide me with a range of efficiency options and I decide which ones to install.
() Other, please explain: ___

IF Q1 <> "Builder" OR "Contractor"

Program Knowledge and Participation (Participant Only)

19. Have you talked with any of the following about the New Homes program? Check all that apply:
[] Builder Outreach Specialist (Earth Advantage)
[] Subcontractor Outreach Specialist
[] Modeler or Verifier (Earth Advantage)
[] Modeler or Verifier (if other than Earth Advantage; please explain:_____)
[] Energy Trust staff
[] Conservation Services Group (CSG) Staff
[] PECI Staff
[] None of the above
[] Other, explain: _____

20. Why did you participate in the New Homes program? Check all that apply:
    [] To gain market distinction (i.e. – to market our company as a "green" builder)
    [] To lower utility costs for the homes' residents
    [] We wanted a low-cost way to install energy-efficient features
    [] Installing energy-efficient equipment is important to our company mission
    [] It was part of my contract (for subcontractors only)
    [] Other, please explain:_____
    [] Don't know (someone else made the decision)

Features (Participant Only)

21. How do you decide what energy efficient features to install? Select all that apply.
    [] Familiarity with specific features
    [] Previous experience of how well certain features performed in my other homes
    [] Builder Outreach Specialist (BOS) told me what to install
    [] Building science consultant told me what to install
    [] I install energy efficient features that I think are most likely to attract buyers
    [] I install as many energy efficiency features as possible
    [] Other, please explain:_____

22. Have you ever wanted to install specific energy efficiency features through the program but could not for some reason?
    () Yes
    () No
    () Don't know

IF Q22 <> "Yes" SKIP TO Q24

23. a) What features did you want to install?	b) Why were you unable to install these features?			
	Too expensive	Features not available	Program would not allow feature	Other, please explain:_____
a.				
b.				
c.				

Marketing

24. [Participant Only] How do you market the energy efficient (EE) homes you build? Select all that apply:
    [] Showcase EE features during home tours
    [] Feature high EE homes in newspapers, magazines, or newsletter articles
    [] Print marketing materials showcasing the EE features
    [] Showcase 3rd party certification of homes (Earth Advantage, Energy Star)
    [] I don't specifically market the EE features
    [] Other, Please explain: _____

25. On a scale of 1 to 5 where 1 equals "not at all helpful" and 5 equals "very helpful", how helpful were the following Energy Trust marketing efforts

	1	2	3	4	5	Not aware of this effort
Billboard advertising the New Homes program	()	()	()	()	()	()
Energy Trust brochures, flyers, or other printed materials promoting the program	()	()	()	()	()	()
The Energy Trust page that promotes the New Homes program	()	()	()	()	()	()
Links to Energy Trust website from a non-Energy Trust website)	()	()	()	()	()	()
Other, please explain: _____	()	()	()	()	()	()
I have not seen any Energy Trust New Homes marketing efforts	()	()	()	()	()	()

Solar

26. What significant barriers are there to incorporating solar into new construction?
    [] The initial cost of installing solar is too expensive for typical homebuyer
    [] Finding a qualified solar installer is difficult
    [] There are too few distributors of solar equipment in Oregon
    [] It takes too long to receive solar materials for projects
    [] Training construction staff how to install solar is difficult
    [] No significant barrier exists

[] Other, please explain: _____

27. What additional solar information would you find useful to your company?
[] Specifics about site selection for solar
[] News on the latest developments in the field
[] How to manage the tax credits and incentives associated with solar
[] Other, please explain: _____

EPS

28. Have you heard of Energy Performance Score, or EPS?
() Yes
() No
() Don't know

IF Q28 <> "Yes" skip to Q34

29. On a scale of 1 to 5 with 1 equaling "very difficult to explain" and 5 equaling "very easy to explain", how easy or difficult is it to explain the EPS to a potential homebuyer?
() 1 – very difficult to explain
() 2
() 3
() 4
() 5 – very easy to explain

30. On a scale from 1 to 5 where 1 equals "strongly disagree" and 5 equals "strongly agree", how much do you agree or disagree with the following statements about the EPS.

	1	2	3	4	5	Don't know
The EPS gives homebuyers an idea of what their energy bills will be	()	()	()	()	()	()
The EPS helps the homebuyer compare new homes to each other	()	()	()	()	()	()
The EPS helps me understand how to make the homes I build more efficient	()	()	()	()	()	()
The EPS does not provide enough detail about what could be done to improve a home's score	()	()	()	()	()	()
The EPS does not adequately score high performance homes	()	()	()	()	()	()

	1	2	3	4	5	Don't know
The EPS is too technical for lay people	()	()	()	()	()	()

IF Q3 = "Not at all familiar" SKIP TO Q39

Questions 31 to 33: Participant Only

31. How often has receiving the preliminary estimated EPS prompted you to make adjustments to your project to help receive a lower (better) final EPS?
    () Never
    () Infrequently
    () Frequently
    () Always

IF Q31 <> "Never" SKIP TO Q33

32. What have you changed to lower (better) your project's EPS?___
    [] Windows
    [] Insulation
    [] Appliances
    [] Heating equipment
    [] Cooling equipment
    [] Other, please explain: _____

33. How do you use the EPS in the marketing of homes you sell?
    [] We have not marketed the EPS
    [] We explain the EPS in marketing materials
    [] We present the EPS of a specific home in marketing materials for that home
    [] We show sample EPS to prospective homebuyers
    [] Other, please explain: _____

Program Processes

34. [Participant Only] On a scale of one to five with 1 being "not at all satisfied" and 5 being "very satisfied," how would you describe your satisfaction with ….

	1 – Not at all satisfied	2	3	4	5 – Very satisfied	Comments
… your interactions with New Homes program staff?	()	()	()	()	()	
… the amount of paperwork needed to participate in the program (initial application, EPS)	()	()	()	()	()	
… the incentive amounts?	()	()	()	()	()	
… any training you received through the program?	()	()	()	()	()	
… the inspection and verification process?	()	()	()	()	()	
… the overall program?	()	()	()	()	()	

IF ANY of Q34 <> 1 or 2 SKIP TO Q36

35. [Participant Only] You indicated some dissatisfaction with the program. Why are you dissatisfied?

36. [Participant Only] What, if anything, do you think would make the program better?

37. If you increase the energy efficiency of a house by ____% above code, how much more, as a percent, can you sell that home for?

As a percentage of the home's selling price, approximately how much of a premium do you think energy efficiency is worth to homebuyers?

Program Knowledge and Participation (Subcontractor Only)

38. How familiar are you with the Energy Trust New Homes Program, which provides incentives for installing energy-efficient features, making a home more efficient than other homes built to code? Would you say you are…
    () Not at all familiar
    () Somewhat familiar
    () Very familiar

39. You indicated you are familiar with the New Homes program. Is that because you…
    () currently have houses enrolled in the program

() do not have houses currently enrolled but have in the past
() plan on enrolling houses in the program soon
() heard or read about the program
() are not sure why I am familiar with the program

40. [Participant Only] How did you learn about the Energy Trust New Homes program? (Please select all responses that apply)
[] Builder Outreach Specialist (BOS) from Earth Advantage
[] Advertisement in trade publication
[] Referral from colleague (other builder or tradesperson)
[] Energy Trust contacted me (if yes; how were you contacted?_____)
[] I went looking for programs that encourage energy efficiency
[] Training session
[] Other, explain: _____
[] Don't know

41. [Nonparticipant Only] What kept you from submitting applications to the New Homes program in 2009 or 2010? (Please select all responses that apply)
[] Program requirements are too burdensome. Explain _____
[] The application is too complicated
[] The incentive is not worth the effort.
[] I prefer not to install energy efficient features in new homes. Why? _____
[] My customers do not want to pay for energy efficient features
[] I have not built any new homes in 2009 or 2010
[] I worked only as a subcontractor on new homes
[] Other – explain _____

42. About what percent of the builders you work with ask your opinion about what types of energy-efficiency features to install?
() Never
() 1-20%
() 21- 40%
() 41-60%
() 61-80%
() 81-100%
() Don't know
() Refused

IF Q42 <> "Never" go to Q44

43. What seems to affect whether a builder asks your opinion about what features to install in a new home? Is it when…
    [] …the builder is unsure about new technology
    [] …the builder wants certain energy efficiency measures installed
    [] ... the builder is a large production builder
    [] … the builder is small custom builder
    [] … Don't know

44. How often do you push for options that exceed Oregon energy code?
    () Never
    () 1-20%
    () 21- 40%
    () 41-60%
    () 61-80%
    () 81-100%
    () Don't know
    () Refused

IF Q3 = "Not at all familiar" SKIP TO Q47

Program Knowledge and Participation (Participant Only)

45. Have you talked with any of the following about the New Homes program? Check all that apply:
    [] Builder Outreach Specialist (Earth Advantage)
    [] Subcontractor Outreach Specialist
    [] Modeler or Verifier (Earth Advantage)
    [] Modeler or Verifier (if other than Earth Advantage; please explain:_____)
    [] Energy Trust staff
    [] Conservation Services Group (CSG) Staff
    [] PECI Staff
    [] None of the above
    [] Other, explain: _____

46. Why did you participate in the New Homes program? Check all that apply:
    [] To gain market distinction (i.e. – to market our company as a "green" builder)
    [] To lower utility costs for the homes' residents
    [] We wanted a low-cost way to install energy-efficient features
    [] Installing energy-efficient equipment is important to our company mission
    [] It was part of my contract (for subcontractors only)

[] Other, please explain:_____
[] Don't know (someone else made the decision)

Features (Participant Only)

47. How do you decide what energy efficient features to install? Select all that apply.
[] Familiarity with specific features
[] Previous experience of how well certain features performed in my other homes
[] Builder Outreach Specialist (BOS) told me what to install
[] Building science consultant told me what to install
[] I install energy efficient features that I think are most likely to attract buyers
[] I install as many energy efficiency features as possible
[] Other, please explain:_____

48. Have you ever wanted to install specific energy efficiency features through the program but could not for some reason?
() Yes
() No
() Don't know

IF Q48 <> "Yes" SKIP TO Q50

49. a) What features did you want to install?	b) Why were you unable to install these features?			
	Too expensive	Features not available	Program would not allow feature	Other, please explain:_____
a.				
b.				
c.				

Marketing

50. [Participant Only] How do you market the energy efficient (EE) homes you build? Select all that apply:
[] Showcase EE features during home tours
[] Feature high EE homes in newspapers, magazines, or newsletter articles
[] Print marketing materials showcasing the EE features
[] Showcase 3rd party certification of homes (Earth Advantage, Energy Star)

[] I don't specifically market the EE features
[] Other, Please explain: _____

51. On a scale of 1 to 5 where 1 equals "not at all helpful" and 5 equals "very helpful", how helpful were the following Energy Trust marketing efforts

	1	2	3	4	5	Not aware of this effort
Billboard advertising the New Homes program	()	()	()	()	()	()
Energy Trust brochures, flyers, or other printed materials promoting the program	()	()	()	()	()	()
The Energy Trust page that promotes the New Homes program	()	()	()	()	()	()
Links to Energy Trust website from a non-Energy Trust website)	()	()	()	()	()	()
Other, please explain: _____	()	()	()	()	()	()
I have not seen any Energy Trust New Homes marketing efforts	()	()	()	()	()	()

Solar

52. What significant barriers are there to incorporating solar into new construction?
[] The initial cost of installing solar is too expensive for typical homebuyer
[] Finding a qualified solar installer is difficult
[] There are too few distributors of solar equipment in Oregon
[] It takes too long to receive solar materials for projects
[] Training construction staff how to install solar is difficult
[] No significant barrier exists
[] Other, please explain: _____

53. [Participant Only] On a scale of one to five with 1 being "not at all satisfied" and 5 being "very satisfied," how would you describe your satisfaction with ….

	1 – Not at all satisfied	2	3	4	5 – Very satisfied	Comments
… your interactions with New Homes program staff?	()	()	()	()	()	
… the amount of paperwork needed to participate in the program (initial application, EPS)	()	()	()	()	()	
… the incentive amounts?	()	()	()	()	()	
… any training you received through the program?	()	()	()	()	()	
… the inspection and verification process?	()	()	()	()	()	
… the overall program?	()	()	()	()	()	

IF ANY of Q53 <> 1 or 2 SKIP TO Q55

54. [Participant Only] You indicated some dissatisfaction with the program. Why are you dissatisfied?

55. [Participant Only] What, if anything, do you think would make the program better?

Closing

56. Do you have any other comments?

INTERVIEW GUIDE FOR MANUFACTURED HOMES MARKET EXPERTS

Introduction

The purpose of the 2009-2010 process evaluation is to review current program operations, document anticipated changes; review measures review; and obtain insights on program challenges and market barriers and opportunities. I am speaking to you today because I would like to learn more about the manufactured homes market in OR. Our conversation will probably take 20-30 minutes.

Market Trends

1) Generally speaking, what trends have you seen in the manufactured homes market over the last 2-3 years? [PROBES: Fewer manufacturers, use of different materials, greater adoption of energy certifications etc.]

    a) What effect has the economic downturn had on the manufactured homes market?

    b) Have you noticed manufacturers moving towards constructing modular homes? If so, why do you think this is happening?

    c) How energy efficient are modular homes?

    d) Are manufacturers moving towards including more EE measures in homes? If so, why do you think this is happening? [PROBE: customers are demanding more EE, something else]

    e) Has there been a change in the size of homes being constructed?

    f) Anything else?

2) What "green" certifications exist for manufactured homes? I am familiar with Northwest ENERGY STAR and eco-rated. Are there others?

3) What is being done on a national and regional level to assist with certification?

4) Over the last 2-3 years, what measures do manufacturers typically install to get a home ENERGY STAR rated?

    a) What measures do manufacturers typically install to get a home eco-rated?

    b) What about ductless heat pumps (DHPs)? Are manufacturers including the use of DHPs in homes in greater numbers than in the past? If so, why?

        i) Are there any barriers to getting DHPS into manufactured homes?

        ii) What can Energy Trust do to promote the use of DHPs in manufactured homes?

5) How is the efficiency of a manufactured home established? Is it more prescriptive (i.e. install measure x, y, and z and the home is ENERGY STAR or eco-rated or some other designation) or is it more custom (i.e. each home is tested with things like blower doors to determine efficiency)?

Market Data

6) I understand there is not as much data about the manufactured home market as there is about the site-built home market? For instance, unlike stick built homes where the builder must file a permit in the county where the home will be built, there does not appear to be any repository of manufactured home data. Therefore…

   a) Is there a good source of data about the manufactured home market other than NEEM?

   b) How do you determine things such as the size of the manufactured home market in OR?

   c) How does one track sales of all MH and determine what percent of all manufactured homes are ENERGY STAR?

      i) Eco-rated?

   d) How does one determine how many MH come from out of state?

      i) Similarly, how many eco-rated or ENERGY STAR homes built in OR go to other states?

7) I understand estimates of the percent of manufactured homes that are ENERGY STAR rated range from about 60-65% and this percentage is on the rise. Is this accurate?

   a) If not, what is the correct percentage?

   b) Assuming market is over 60% ENERGY STAR, why are so many homes ENERGY STAR rated?

8) Do you know what percent of homes in Oregon are eco-rated?

9) Do you suspect that 60-65% of all manufactured homes will be eco-rated in the next 2-3 years? OR do you think it will take a longer period of time for the market to have that many eco-rated homes available? Please elaborate.

Energy Trust Program

10) Are you familiar with the Energy Trust Manufactured Homes program? Yes No

11) The Energy Trust incentives are encouraging retailers to sell eco-rated homes, do you think a similar system would encourage manufacturers to build them? What barriers exist, if any, to manufacturers constructing eco-rated homes? [PROBES: Is it cost? something else?]

a) If there are barriers, how can these barriers be overcome? What strategies do you think would be useful?

b) What is the price difference between a traditional/standard manufactured home, ENERGY STAR home, and eco-rated home assuming they are all about the same size and have similar amenities?

c) Do manufactures have trouble finding adequate materials to build eco-rated homes? Specify.

d) Are you familiar with the Energy Performance Score (EPS) for new stick-built homes? [If not, explain EPS]. Do you think having an EPS for manufactured homes would be helpful?

12) Is there anything in particular we should know about the manufactured homes market as we conduct our evaluation of this program?

INTERVIEW GUIDE FOR MANUFACTURED HOME BUILDERS

Introduction

The purpose of the 2009-2010 process evaluation is to review current program operations, document anticipated changes; review measures review; and obtain insights on program challenges and market barriers and opportunities. Our conversation will probably take about one hour.

Market Trends

1) Generally speaking, what trends have you seen in the manufactured homes market over the last 2-3 years? [PROBES: Fewer manufacturers, use of different materials, greater adoption of energy certifications etc.]

   a) What effect has the economic downturn had on the manufactured homes market?

   b) Has your company started to construct modular homes? If so, why?

   c) Are you aware of whether other manufacturers are starting to get into the modular home market?

   d) In the last 2-3 years has your company been including more EE (energy efficiency) measures or features in homes?

      i) Are you selling a higher percentage of ENERGY STAR homes than 2-3 years ago?

      ii) If so, why do you think this is happening? [PROBE: ETO incentives, customers are demanding more EE, something else]

      iii) And if so, is ENERGY STAR baseline? Or do your homes qualify for eco-rated or Earth Advantage certification?

      iv) What would move you to build only eco-rated homes?

   e) Has there been a change in the size of homes you construct? In the last 2-3 years have you been selling smaller homes? Larger homes? Why do you think this is happening?

2) What "green" certifications exist for manufactured homes? I am familiar with Northwest ENERGY STAR, eco-rated (FOR PALM HARBOR ONLY – Palm Harbor sells Earth Advantage Homes which are similar to eco-rated). Are there others?

3) Over the last 2-3 years, what measures do you install to get a home –ENERGY STAR rated?

   a) What measures do you install to get a home Eco-rated?

   b) What about ductless heat pumps (DHPs (aka - minisplits, PTACs)? Are you including DHPs in homes in greater numbers than in the past? If so, why?

4) How is the efficiency of a manufactured home established? Is it more prescriptive (i.e. install measure x, y, and z and the home is –ENERGY STAR or eco-rated or some other designation) or is it more custom (i.e. each home is tested with things like blower doors to determine efficiency)?

   a) [Preface question with description of EPS?] Would you like to see an Energy Performance Score (EPS) for manufactured homes?

5) How do you determine how many traditional homes, ENERGY STAR homes, and eco-rated homes to construct each year? [PROBES: Do you rely on input from your retailers? Conduct independent market studies?]

6) Do you have trouble finding materials or measures to construct eco-rated homes?

   a) If so, what materials or measures do you have trouble finding?

Market Data

7) Estimates show that approximately 60-65% of manufactured homes sold in Oregon are ENERGY STAR rated. Does 60-65% market share sound right to you?

   a) If not, what is the correct percentage?

   b) What do you think would help manufactures build even more efficient homes that ENERGY STAR? [PROBES: Training on how build more efficient homes, greater incentives, Incentives for particular measures]

8) Of all the homes you build, what percent are ENERGY STAR?

   a) What percent of ENERGY STAR homes stay in OR versus shipped out state?

   b) Do you see the percent of ENERGY STAR homes you build increasing, decreasing, or staying about the same over the next 2-3 years?

9) Of all the homes you build, what percent are eco-rated?

   a) What percent of eco-rated homes stay in OR versus shipped out state?

   b) Do you see the percent of eco-rated homes you sell increasing, decreasing, or staying about the same over the next 2-3 years?

10) What is the cost difference between building a traditional/standard manufactured home (one that is built to HUD code only) –ENERGY STAR home, and eco-rated home assuming they are all about the same size and have similar amenities?

   a) What efficiency measures in an ENERGY STAR home cost the most?

   b) What efficiency measures in an eco-rated home cost the most?

Energy Trust Program

11) Do you know who Energy Trust is and the programs it offers?

12) Would you be more inclined to build ENERGY STAR or eco-rated homes if Energy Trust offered an incentive to manufacturers? What additional barriers exist, if any, to manufacturers such as yourself to constructing ENERGY STAR or eco-rated homes? [PROBES: Is it cost? Something else?]

    a) If there are barriers, how can these barriers be overcome? What strategies do you think would be useful?

13) Please describe your interactions with Energy Trust (APT) staff?

    a) How often do you communicate with them?

Conclusion

14) Is there anything in particular we should know about the manufactured homes market or about your relationship with Energy Trust as we conduct our evaluation of this program?

SURVEY INSTRUMENT FOR REPTAS

1. In order to become a trade ally, you were required to take a half-day training at Energy Trust that was subsequent to the Earth Advantage STAR training. How satisfied were you with the Energy Trust training?
   () Very Dissatisfied
   () Dissatisfied
   () Neutral
   () Satisfied
   () Very Satisfied

If Q1 <> "Very dissatisfied" or "dissatisfied" Skip to Q3.

2. You indicated some dissatisfaction with the Energy Trust training. What were you dissatisfied with? (Select all that apply)
   () Training not what I expected
   () Training was too long
   () Content was too basic
   () Content was too complicated
   () Other, please specify

3. What did you find most useful about the Energy Trust training?

4. What did you find least useful about the Energy Trust training?

5. Have you taken any training in addition to the Earth Advantage STAR training or the Energy Trust training to learn about energy efficiency in homes?
   () Yes
   () No

If Q5 = "No" Skip to Q7.

6. Please list any additional training you have taken about energy efficiency in homes.

7. Why did you decide to become an Energy Trust Trade Ally? (Select all that apply)
   [] To distinguish myself as a "green realtor" in my field
   [] To be affiliated with Energy Trust
   [] To access cooperative marketing assistance provided by Energy Trust
   [] To learn more about residential energy efficiency
   [] To obtain $100 Energy Trust incentive
   [] Other, please specify _____

8. Other than enrolling as a Real Estate Professional Trade Ally or REPTA, have you contacted Energy Trust within the last year?
   () Yes
   () No
   () Don't know

If Q8 = "No" skip to Q11.

9. Who did you contact at Energy Trust?

10. Why did you contact Energy Trust?

11. How often do you discuss Energy Trust and/or its offerings with your clients?

	Never	Rarely	Sometimes	Often	Always
Buyers	()	()	()	()	()
Sellers	()	()	()	()	()

12. Please select the ways you promote Energy Trust to buyers and sellers. (Select all that apply)

	Buyers	Sellers
Energy Trust logos and information are on my printed marketing materials	[]	[]
Energy Trust logos and information are on my electronic communications (email signatures, websites, blogs)	[]	[]
I tell clients about Energy Trust offerings	[]	[]
I refer clients to Energy Trust for a Home Energy Review (HER)	[]	[]
I distribute Energy Trust postcards and brochures	[]	[]
I don't promote Energy Trust	[]	[]

If Q12 <> "I distribute Energy Trust postcards and brochures " OR "I don't promote Energy Trust " skip to Q14.

13. You indicated that you don't promote Energy Trust to your clients. Why is that?

14. Please select the ways you promote energy efficiency (EE) in homes. (Select all that apply)
   [] For buyers, I identify opportunities for making EE upgrades
   [] For sellers, I identify opportunities for making EE upgrades

[] I encourage buyers to consider utility costs when considering a home
[] I encourage sellers to showcase EE features
[] For buyers, I identify a home's EE features (such as a high efficiency furnace, or new insulation)
[] I don't promote energy efficiency of homes

If Q14 = "I don't promote energy efficiency of homes" skip to Q16.

15. What energy efficiency upgrade opportunities do you typically identify for your clients?

16. You indicated you don't promote energy efficiency. Why is that? Is it because… (Select all that apply)
[] You don't have enough information about energy efficiency to offer clients
[] Energy efficiency is not something clients ask about
[] You do not know how to compare the energy efficiency of homes
[] The Energy Trust information you have doesn't address your clients needs
[] You hesitate to compare the energy efficiency of homes because it can vary so much
[] Any other reasons, specify: _____

17. What could Energy Trust do to help you promote Energy Trust to your clients?

18. What is your overall satisfaction with the REPTA program?
() Very Dissatisfied
() Dissatisfied
() Neutral
() Satisfied
() Very Satisfied

If Q18 <> "very dissatisfied" or "dissatisfied" skip to Q20.

19. You indicated some dissatisfaction with the REPTA program. Please describe why you are dissatisfied.

20. Considering your sales of single-family homes since January 2010 about what percent were...
_____ ...existing home sales?
_____ ...new in-fill homes (a new home in an existing neighborhood)?
_____ ...new homes in a new development?

21. What percent of the time do you discuss the energy efficiency of these types of homes?

	What percent?	Since becoming a REPTA, has this percentage increased, stayed the same, or decreased?		
	%	Increased	Stayed the same	Decreased
Existing homes	()	()	()	()
New in-fill home	()	()	()	()
New development	()	()	()	()

If Q21 <> "Increased" Skip to Q23.

22. You indicated you're discussing energy efficiency (EE) more since becoming a REPTA. Why is that? (Select all that apply)
    [] Energy Trust training
    [] Earth Advantage (S.T.A.R). training
    [] Current economic conditions
    [] Client demand for EE
    [] Other, please specify _____

Display Q23 if Q21 "What Percent" is greater than "0."

23. At what point in the process do you generally talk to buyers about energy efficiency? (Select all that apply)
    [] During initial consultation with the buyer(s)
    [] During tour of home
    [] During the bidding process
    [] Other _____

Display Q24 if Q21"What Percent" is greater than "0."

24. At what point in the process do you generally talk to sellers about energy efficiency? (Select all that apply)
    [] During my initial consultation with the seller(s)
    [] When an offer for the house is received
    [] When listing the home on the RMLS
    [] Other _____

25. Are you familiar with the Energy Performance Score or EPS for new homes?
    () Yes
    () No

() Don't know

If Q25 <> "Yes" skip to Q29.

26. Have you marketed a home with an Energy Performance Score or EPS for a client?
() Yes
() No
() Don't know

27. Please indicate how much you agree or disagree with each of the following statements.

	Choose one					**Why did you choose this option?**
	Strongly disagree	**Disagree**	**Neither disagree or agree**	**Agree**	**Strongly agree**	**Please provide as much detail as possible.**
The EPS is a valuable sales tool for new homes.	()	()	()	()	()	
The EPS would be a valuable sales tool for existing homes.	()	()	()	()	()	

28. What information, materials, or tools would help make EPS a more valuable sales tool for you?

29. Are you aware that RMLS has fields available to list a home's energy efficient features and/or certification(s)?
() Yes
() No
() Don't know

If Q29 <> "Yes" Skip to Q31.

30. Do you list energy efficient features or certifications in the RMLS for your clients?
() Yes, what features do you list? _____
() No

() Don't know

If Q30 <> "No" skip to Q32.

31. Why don't you list energy efficient features or certifications in the RMLS? (Select all that apply)
    [] Not sure what to list
    [] Unable to validate features or certifications
    [] Don't see value in listing
    [] Too cumbersome to list
    [] Other, please specify _____

32. How often do you refer any of your clients to Umpqua Bank's Green Street Lending program?

	Never	Rarely	Sometimes	Often	Always
Buyers	()	()	()	()	()
Sellers	()	()	()	()	()

33. Are your clients asking about energy efficient mortgages and financing options?
    () Yes
    () No
    () Don't know

34. What financing tools do you need to offer your clients that are selling or buying an energy efficient home?

35. Would you like training on energy efficient mortgages and financing options?
    () Yes
    () Maybe
    () No

36. The Energy Trust offers cooperative marketing funds for real estate agents. Are you aware of this offer?
    () Yes
    () No
    () Don't know

If Q36 <> "Yes" Skip to Q41.

37. Have you received Energy Trust cooperative marketing funds in 2009, 2010, or 2011?
    () Yes

() No, why not? _____
() Don't know

If Q37 <> "Yes" Skip to Q41.

38. Please rate your satisfaction with the application process for cooperative marketing assistance.
() Very Satisfied
() Satisfied
() Neutral
() Dissatisfied
() Very Dissatisfied

If Q38 <>"Very dissatisfied" or dissatisfied" skip to Q40.

39. You indicated some dissatisfaction with applying for cooperative marketing assistance. Why is that?

40. Which of the following best describes your reason for applying for cooperative marketing assistance?
() To associate my business with the Energy Trust brand
() To market myself as a "green realtor"
() To save money on marketing
() Other _____

41. What more could the Energy Trust do to help you promote energy efficient homes?

B SURVEY RECRUITMENT COMMUNICATIONS

LETTER TO LOCAL HBA EXECUTIVE OFFICERS

Dear Executive Officers [of the Local HBAs],

Energy Trust of Oregon's (ETO) New Homes Program is being evaluated by an independent organization called Research Into Action. We have received a builder survey to determine how effective ETO's outreach has been. They are hoping to survey builders who have and haven't participated in ETO's programs. If these programs aren't helping our builders improve the quality and better market homes to consumers, then we want them to change. Please send the following to your builder members and ask that they take the time to complete the survey. Thank you.

To Builder Members:

Energy Trust of Oregon's New Homes Program provides education, verification and incentives to encourage our industry to build more energy efficiently. This program is currently being evaluated to determine why builders participate in the program, why they don't, how the program could be improved and what goes into the decision making process for a builder considering energy efficient measures. OHBA is continually offering suggestions to Energy Trust on how to improve their program but this is a great opportunity for you to influence their program. Additionally, upon completion of the survey you have the option to be entered to win one of two $100 gift cards as a token of appreciation for completing the survey.

Please fill out this builder survey:

https://researchintoaction.qualtrics.com/SE/?SID = SV_bKuNLDjeFktwIzq

Thank you,

INVITATION TO PARTICIPATE IN BUILDER SURVEY

TO: OR Builders

Subject Line: Enter to Win a $100 Gift Card for Completing Energy Trust Survey

Dear _____,

The Energy Trust of Oregon is seeking your input about the building industry in Oregon and the market for energy efficient features in new homes. As a token of appreciation, we will enter each person that completes a survey in a drawing to win one of two $100 gift cards. The survey takes approximately 10 minutes to complete.

We've engaged Research Into Action, an independent evaluation firm in Portland, OR to conduct this email survey for us. Listening to firms like yours is the best way for us to gauge how we are doing and how we might do better. We hope that you'll find time in your busy schedule to provide your feedback so we can cater our programs to meet the needs of Oregon.

All survey results are confidential and no one at Energy Trust will know your individual responses.

Sincerely,

The Energy Trust of Oregon