Process Evaluation of the Home Performance Program Track

Submitted To:

Energy Trust of Oregon

Prepared by:

Dr. Katherine Johnson, President
Johnson Consulting Group
1033 Lindfield Drive, Frederick, MD 21702
Email: kjohnson@johnsonconsults.com

January 12, 2012

Table of Contents

List of Tables

List of Figures

Executive Summary

Energy Trust of Oregon's Home Performance with ENERGY STAR® (Home Performance, or HPwES) program is a residential whole-house energy efficiency program offered for the existing homes market, delivered exclusively by contractor firms employing Building Performance Institute (BPI) certified field staff. Home Performance is founded on the "house as a system" approach to building functionality, which integrates progressive concepts of building science, and places a strong emphasis on health and safety as well as incorporating best building science practices**.**

Johnson Consulting Group was hired by the Energy Trust of Oregon to conduct a process evaluation of its Home Performance with ENERGY STAR® (Home Performance) program track. This process evaluation focused on documenting the current operational practices and identified areas of improvement. A specific component of this process evaluation was to examine the inter-relationship of this program with Energy Trust's Energy Efficiency and Sustainable Technology Act of 2009 (EEAST) compliant pilot demonstration of on-bill financing, Clean Energy Works Oregon. This process evaluation focused on program operations from June 1, 2009 to June 10, 2011. The findings from this process evaluation provide guidance for the Energy Trust staff and management on ways to re-position these offerings in the Oregon Home Performance market.

The key researchable issues for this process evaluation were to:

- Assess the effectiveness of current operations
- Determine customer and trade ally satisfaction and key drivers
- Document the inter-relationship between the Home Performance Program and other program offerings, specifically Clean Energy Works Oregon
- Identify the customer decision-making process, especially the drivers for customer participation and key motivators including energy and non-energy benefits.
- Recommend areas for program improvement

The process evaluation for the Home Performance program track focused on reviewing the current program design and strategy to identify areas for program improvement. The scope of this process evaluation included the following activities:

- Review of the current program database, records, and related materials
- Conduct in-depth staff interviews with key members from both the Energy Trust and Conservation Services Group (CSG) implementation staff
- Conduct in-depth interviews with participating contactors and
- Conduct customer surveys with program participants who only received a Home Performance Assessment and those who completed a Home Performance Assessment and a measure installation.

The results from each activity, as well as the methodology are provided in separate chapters of this report and are summarized in Table E-1.

Table E-1: Summary of Process Evaluation Activities Completed

Data Collection Type	Targeted Population	Sample Frame	Sample Size	Timing
Document Review	All program materials including program database records and marketing materials	CSG	Census	June 2011
In-depth Interviews	Program implementation staff and ETO staff	ETO and CSG	Census	July-August 2011
Customer Surveys	"Program Participants" defined as: "Customers who received a Home Performance assessment and applied for a rebate."	Program Database	30	September 2011
Customer Surveys	"Program Non Participants" defined as: "Customers who received an energy assessment only."	Program Database	15	September 2011

Key Findings and Recommendations

The key findings from the process evaluations are summarized next followed by recommendations for program improvement.

- **Program Results:** *The Home Performance program is operating smoothly;but there are still some areas for improvement.*

From an operations standpoint, the Home Performance program track is performing well. Table E-2 summarizes the key program metrics achieved during the period covered in this process evaluation.

Table E-2: Key Home Performance Program Metrics

Year (based on "Recognized Date", used to book savings)	Assessments (Projects with or without savings)	Projects with energy savings	Measures with energy savings	Average measures per project (energy saving measures /projects only)	kWh Savings	Therm savings	Incentives (not including CO monitors and bonuses)
2010	333	316	989	3.1	49,608	16,856	$284,811
2011 (through 6/30/2011)	249	197	630	3.2	41,292	8,969	$181,577
Total	582	513	1,619	3.2	90,900	25,826	$466,387

Source: CSG's Program Database July 2011

- **Program Tracking:** The program databases are tracking all the key metrics as required by both the Energy Trust and the national Home Performance with Energy Star program.

- **Program Marketing:** The participating contractors like the ways in which they receive information from the Energy Trust and Account Representatives about the program.

    - The most effective ways to reach participating customers is via the Energy Trust website, from the contractors directly, and through bill inserts. Moreover, the findings suggest that the decision to install energy efficient measures is viewed as a "priority" by program participants.
    - Marketing the Home Performance program remains a challenge as it is a difficult concept to explain to customers.

- **Program Changes:** The Home Performance program has shifted away from trade ally development-focused to trade ally maintenance.

- **Role of Home Performance Contractors:** Home Performance contractor participation is dominated by a few large contractors who specialize in air sealing and subcontract out most other services.

    - Home Performance contractors play an important role in encouraging customer participation.

- **Home Performance Contractors Guild:** The guild is viewed as giving the contractors a voice in the Home Performance community; however it is dominated by contractors in the Metro-Portland area.

- **Participation in Other ETO Programs:** Home Performance contractors are actively participating in additional energy efficiency programs, including some sponsored by the Energy Trust as well as some utility specific programs.

- **Inter-Relationship with Clean Energy Works Oregon:** The Clean Energy Works Oregon track is viewed as a "mixed blessing" by the participating contractors.

    - There is some concern by both contractors and programs staff that Clean Energy Works Oregon is siphoning off potential projects from the Home Performance track.
    - Clean Energy Works Oregon fills the financing void not addressed in the Home Performance program.

- **Role of Account Representatives:** The participating contractors view the Account Representatives as essential to their success in the program and rely on them for support, especially with the new software tool.

- **Home Performance Assessment Software:** The Home Performance software assessment tool is viewed as unusable by the majority of participating trade allies.

- **Measures Installed:** The majority of installed measures are for air and duct sealing.

- **Spillover:** Spillover is limited to installing additional low cost/no cost measures rather than purchasing additional equipment.

- **Non-Energy Benefits:** The initial driver for customer participation is energy savings. However, as customers become more educated about the Home Performance program track, their interest in non-energy benefits increases.

    - The three top non-energy benefits are comfort, ability to pay the bill, and reducing the environmental impact.

- **Program Satisfaction:** Overall, customers are happy with the Home Performance program offering.

    - The features customers seem to like best are receiving the incentive, receiving an assessment, and seeing actual energy savings.
    - Non-participants reported slightly higher levels of satisfaction with the Energy Trust compared to program participants.

- **Non-Participants:** There is currently no follow-up mechanism in place to encourage non participants to move forward with even modest energy efficiency improvements after completing the initial Home Performance assessment.

Recommendations for Program Improvement

The findings have also led to some recommendations for program improvement, which are summarized here. A more thorough discussion is provided in Chapter 7 of this report.

- **Program Marketing**: A key difference between participants and non participants is the motivation to make energy efficiency a "priority." Therefore, the Energy Trust should consider ways to encourage customers to make energy efficiency a priority for their households, even encouraging saving for major improvements through a "Christmas Club" account.

- **Reallocating Program Resources:** While the program has shifted its focus, it still needs to provide contractors with support in order to maintain or sustain program participation. This support may include ongoing sales training, marketing materials, or other professional development classes.

- **Provide Online Applications**: This feature could streamline the customer application process and enhance overall program operations.

- **Pay Incentives Directly to Contractors Rather Than Customers:** This would lower the barrier to the cost of the Home Performance Assessment and also provide a way for smaller contractors to remain competitive.

- **Provide Program Information in a webinar or podcast:** This will allow better access for contractors outside of the Metro-Portland area especially for those who cannot attend Home Performance Contractor Guild meetings.

- **Consider Restructuring the Contractor Rating System:** Currently, the smaller contractors believe that the rating system is biased towards larger contractors, so the metrics for receiving a "Star" should be reviewed to ensure smaller contractors are not treated unfairly. This may include looking beyond the total number of jobs completed in a year, to the total number of jobs completed during the course of a contractor's participation in the program.

- **Provide a Better Differentiation of the Home Performance Track:** The program's features and benefits should be more clearly delineated against the other Energy Trust programs.

- **Consider Offering Advanced Training Classes:** The contractors are most interested in advanced topics taught by experienced instructors in Advance Building Performance.

- **Home Performance Assessment Software Must Improve:** Nearly all the contractors reported serious problems with the new CSG software. Until it improves, there will be an ongoing need for software training and support.

- **Encourage non-participants to follow through by offering low cost/no cost energy efficiency measures as part of the initial Home Performance assessment**. Bundling in a group of measures that will lead to small energy savings, such as energy efficient lighting or water conservation measures, will help reinforce to customers the benefits of energy efficiency installations. Following up by encouraging all customers to start saving a little each month for energy efficiency improvements, such as a "Christmas Club" account could also help to move customers to investing in larger projects over time, while also addressing the perceived "financing gap" associated with this program.

MEMO

Date: April 20, 2012
To: Board of Directors
From: Sarah Castor, Evaluation Sr. Project Manager
Marshall Johnson, Residential Sector Manager
Subject: Staff Response to the Process Evaluation of the Home Performance Program Track

This process evaluation marks the first time the Home Performance track has been evaluated independently from the Existing Homes program. In past Existing Homes process evaluations, we felt Home Performance was not given the attention it needed and the growth in this program track in the last two years indicated the time was right for a thorough review.

Findings from the evaluation confirm that customer satisfaction with Home Performance contractors and their work is quite high, matching satisfaction figures from Fast Feedback surveys. Customers are most motivated to take on Home Performance projects by the potential for energy savings and reducing their utility bills, although they also expect an increase in the comfort of their home. Likewise, trade allies are steadfast in their commitment to energy efficiency and occupant health and safety in home renovations.

While we believe many of the report's findings and recommendations to be sound, we especially want to address the following:

- **Allocating program resources:** Program staff has shifted focus from recruiting and training Home Performance trade allies to maintaining an infrastructure to leverage and support market-driven development and growth of the performance contracting industry. The primary goal of the program track is to develop market awareness around the value of Home Performance and process incentives for completed work and deliver quality control of installed measures. Program resources which had previously been allocated to the development of this program track will transition to other tracks and measures in greater need of attention and growth.

  The alliances the program has built with the Home Performance Contractors Guild and Clean Energy Works Oregon (CEWO) should enable this transition. The Guild is a resource for contractor training and best practices and is expanding its geographic reach outside the Portland area. At the same time, CEWO is providing a large number of projects for CEWO-participating contractors and creating significant general interest in Home Performance and comprehensive energy efficiency retrofits.

- **Streamlining the participation process:** A number of improvements to the incentive application process are already underway, including the development of a web form for all Existing Homes (and Home Performance track) measures, which may ease the forms experience for both customers and contractors.

The evaluator also suggested paying the incentive directly to the contractor. The change has been considered internally over the years and the Evaluation Committee expressed a desire to explore the option further with the goal being improved (or at least not decreased) customer satisfaction and lower payment processing costs for Energy Trust.

With regard to the Home Performance modeling software, the evaluation interviews coincided with the launch of CSG's EMHome modeling tool and improvements have been made to the tool since that time. The program has been facilitating a group of Home Performance stakeholders, including representatives of the Home Performance Contractors Guild and CEWO to provide feedback on user experience and recommending changes. The program plans to modify the requirement for energy modeling, as an effort to focus the contractors' role on implementing improvements.

- **Measures installed in Home Performance projects:** Analysis of the program database showed that primarily weatherization projects, including air sealing and some type of insulation measure installed, and very few included heating or water heating equipment. While most contractors report that they subcontract equipment replacement, projects completed through CEWO include equipment upgrades more frequently. We have already seen many CEWO contractors bring other trades, such as electrical work, in-house and we're seeing more traditional HVAC contractors begin to align their business models with the Home Performance approach.

  In addition, air sealing (especially in gas heated homes) is marginally cost effective for existing homes. The program is looking at options for altering the air sealing offering for both the standard and Home Performance tracks.

- **Energy savings and non-energy benefits:** The report findings help to shed light on the issue of non-energy benefits from Home Performance projects. While these benefits are often cited by market actors as important drivers of projects, and results verify that most customers anticipate them, it is also clear from customer surveys that energy savings are a bigger motivation for undertaking weatherization projects than comfort, resale value or other non-energy factors.

- **Star rating system for Home Performance contractors:** Some contractors felt that the star rating system used on the Energy Trust website, and now in the contractor referral process, put smaller trade allies at a disadvantage because of their lower project volume. The program has already adjusted the number of projects required for the three star (highest) rating from 15 to five for Home Performance contractors. This change should put smaller contractors on more equal footing.

1 Introduction

Johnson Consulting Group was hired by the Energy Trust of Oregon to conduct a process evaluation of its Home Performance with ENERGY STAR® (Home Performance, or HPwES) track. This process evaluation focused on documenting the current operational practices and identified areas of improvement. In 2009 the Oregon legislature passed HB 2626, also known as the Energy Efficiency and Sustainable Technology Act of 2009 (EEAST). A specific component of this process evaluation was to examine the inter-relationship of this program with Energy Trust's EEAST compliant pilot demonstration of on-bill financing, Clean Energy Works Oregon (CEWO). This process evaluation focused on operations from June 1, 2009 to June 10, 2011. The findings from this process evaluation provide guidance for the Energy Trust staff and program management on ways to re-position this offering in the Oregon Home Performance market.

1.1 Relationship to Clean Energy Works Oregon

Energy Trust is allied with Clean Energy Works Oregon and provides incentives for energy efficient measures installed through CEWO. Energy Trust contracts with CEWO to fulfill Energy Trust's EEAST obligations. Energy Trust helped conceive and manage the City of Portland pilot, Clean Energy Works Portland, that laid the groundwork for Clean Energy Works Oregon. The services provided through CEWO fall under the Home Performance program track, but are being evaluated under a separate contract. A primary goal of this process evaluation was to document the interrelationship between CEWO and standard Home Performance offerings based on feedback from both contractors and customers.

1.2 Home Performance with ENERGY STAR® *Program Track Description*

This section provides an overview of the program description, its current policies and practices. These descriptions were condensed from the *Home Performance Implementation Manual-2011.*

Energy Trust's Home Performance with ENERGY STAR® (Home Performance) program track is a residential whole-house energy efficiency program option for the existing homes market, delivered exclusively by contractor firms employing Building Performance Institute (BPI) certified field staff. Home Performance is founded on the "house as a system" approach to building functionality, which integrates progressive concepts of building science, and places a strong emphasis on health and safety as well as incorporating best building science practices**.**

The Home Performance program trains contractors to assess and improve the energy performance of homes through work that incorporates diagnostic testing and follows BPI Standards. Program contractors present homeowners with a comprehensive scope of work that, when implemented, provides increased energy efficiency, durability and comfort, and creates a safe and healthy dwelling.

The overall objective of the program is to develop a self-sustaining market for performance contracting in Oregon. Consumers seek out the services of Home Performance contractors because they are trained weatherization problem solvers.

The current Home Performance Team consists of a Program Manager, Field Manager, Program Coordinator and Account Managers. The Home Performance Program Manager oversees the entire program and operations staff. The Program Coordinator offers administrative support to the Program Manager, Field Manager, the Account Managers and the entire Home Performance trade ally network. The Account Managers provide technical field support, business development and program support for individual Home Performance trade ally companies.

Eligibility Requirements

All Existing Homes incentives are available for Home Performance projects. For a project to be considered a Home Performance project, the participant must have a comprehensive assessment, one complete installed measure and a test-out. Only approved Home Performance with ENERGY STAR (HPwES) contractors and trade allies may conduct these assessments and install eligible measures. All single family homes up to four units are eligible for HPwES projects and incentives.[1]

Trade Allies

The Home Performance network of trade ally contractors provides Home Performance services to participants. Contractors must be willing to offer homeowners HPwES services remediating energy and health and safety issues which are identified. Participating contractors and their subcontractors must have the proper BPI and PTCS certifications, as well as licenses required by the state of Oregon to perform related work. All contracting companies in the Home Performance program employ at least one technician certified by the Building Performance Institute.

Specific requirements for becoming a Home Performance trade ally include:

- The contractor must be an active trade ally of the Home Energy Solutions program.
- The contractor must attend BPI training for certification, or have proof of BPI certification in two or more disciplines.
- The contractor must own or be willing to purchase necessary diagnostic testing equipment.
- Upon completion of BPI certification, the contractor must commit to the terms and conditions of the program by submitting a Home Performance Participation Agreement (Form 371A), a dispute resolution policy and BPI certifications.

1.3 Application Processing

The participant application process is summarized in the following flowchart, developed from the Home Performance Implementation Manual August 2011. One important program component that was explored in this process evaluation was to identify the role that contractors play in actually completing the Home Performance application. As the following flow chart illustrates, the program is designed for the contractor to complete the application on the customers' behalf.

[1] Information summarized from the Home Performance Implementation Manual

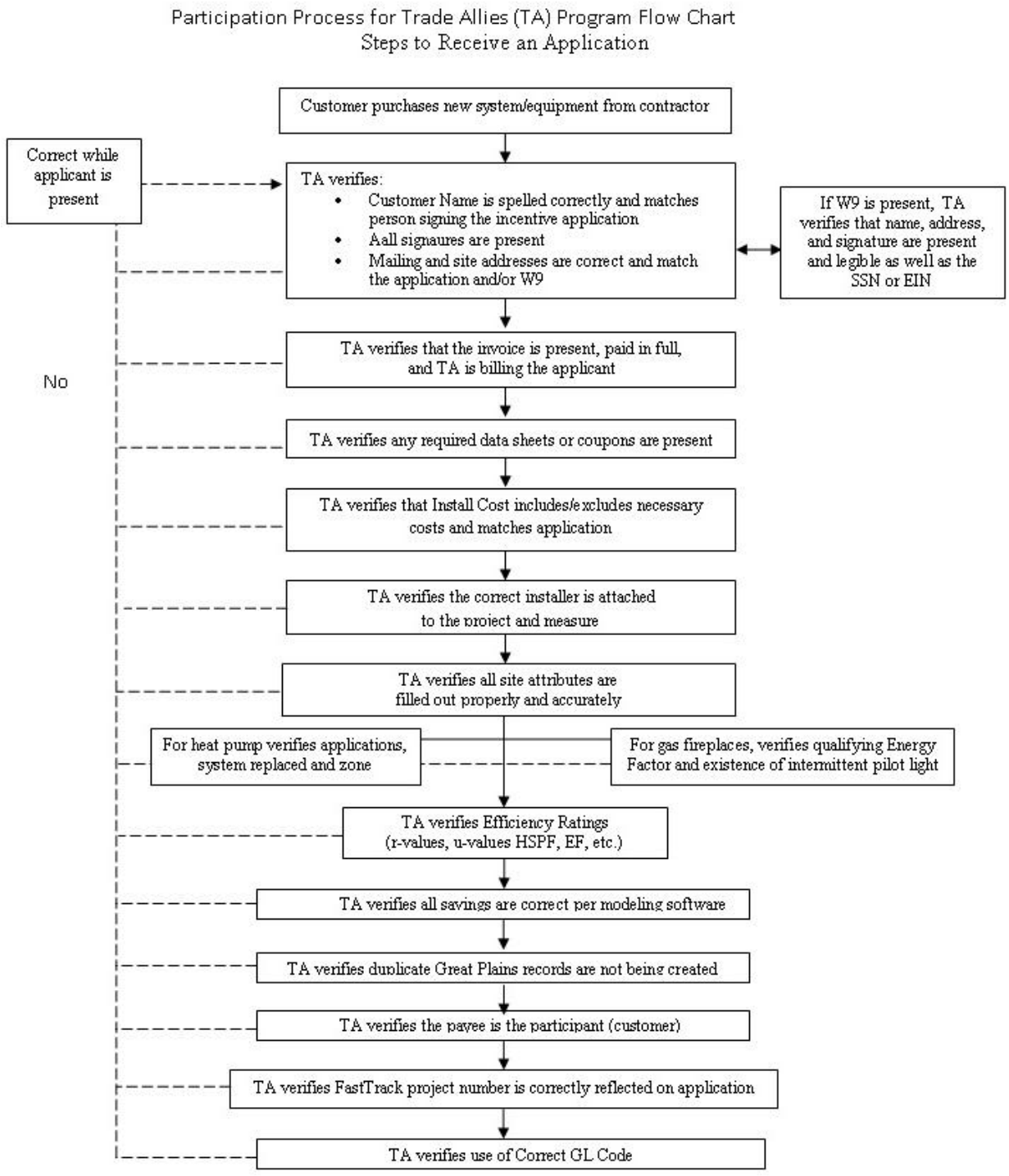

Figure 1: Participation Process-for Trade Allies[2]

[2] Taken from Home Performance Implementation Manual August 2011

The trade allies must verify that all essential information is correct including the correct spelling of the customer name, ensuring that the signature matches the application, correct mailing address and other pertinent details. It is also the responsibility of the contractor to ensure that the project invoice is correct and includes the appropriate costs which match the incentive application. All equipment components must also be completed correctly including documenting the specifics for each measure such as equipment type installed, verification of equipment replaced, square footage and efficiency ratings for installation measures and that the savings assumptions from Home Performance software are recorded.

However, the implementation manuals program flows depicted in Figures 1 and 2 are not accurate and will need to be fixed in the next version published by CSG.

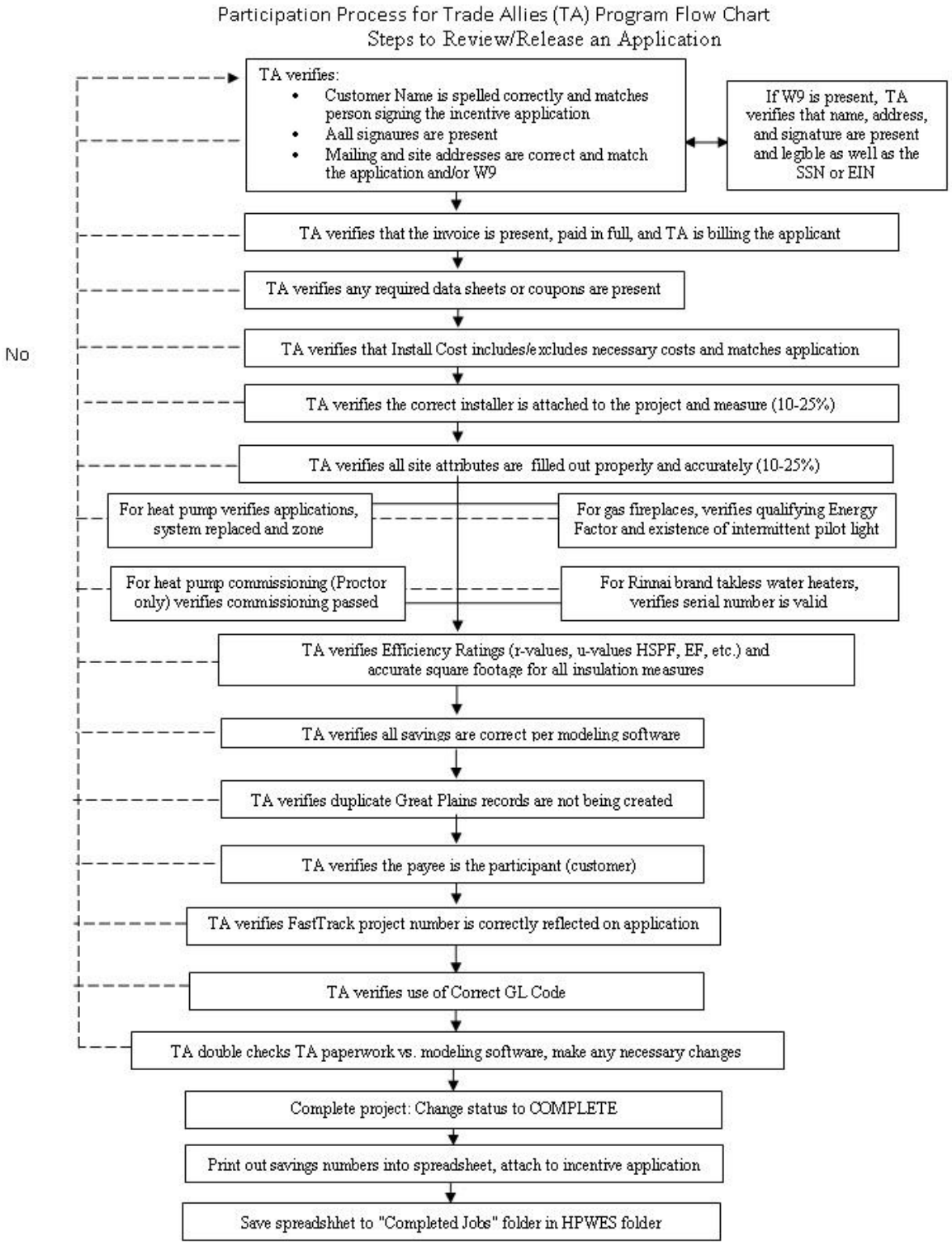

Figure 2: Steps to Release an Application[3]

[3] Taken from Home Performance Implementation Manual August 2011

Once the application has been completed correctly, it is then sent to the Energy Trust for review and approval. Energy Trust staff then verify the application to ensure that it conforms to the program requirements, as illustrated in Figure 3.

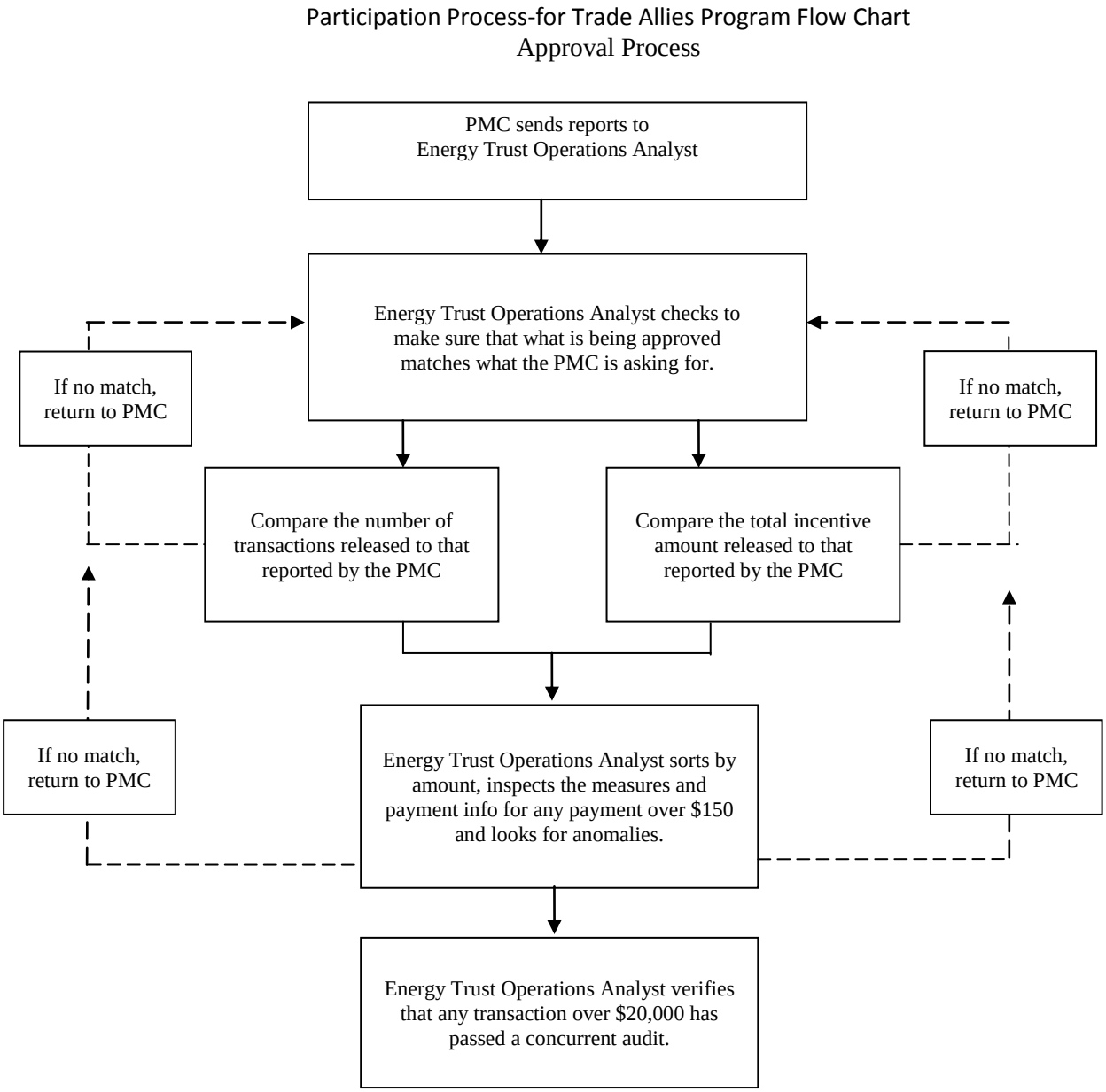

Figure 3: Approval Process [4]

[4] Taken from Home Performance Implementation Manual August 2011

1.4 Program Tracking

The Home Performance program track is monitored by the implementation contractor, CSG. The Home Performance team reports on program progress in monthly, quarterly and annual reports. Home Performance data is monitored on spreadsheets containing data from GoldMine (the customer relationship management database) and FastTrack (Energy Trust's program tracking database).

The metrics for tracking program progress are:

- Total energy savings
- Number of Test-ins
- Number of Sites with Installed Measures
- Number of Quality Control (QC) inspections by Site

The Contact Center handles all of the customer record management through the GoldMine database. Contractor information is maintained in GoldMine as well as CoreApp (CSG's program tracking database). The Program Coordinator enters all information related to Home Performance into GoldMine including BPI certifications, Home Performance service and the date the contractor joined the program.

Home Performance with ENERGY STAR savings are calculated in the PMC audit software and then transferred manually to FastTrack.

Quality Control

The Home Performance track is required to inspect and report at least five percent of all projects submitted by a company to stay in compliance with EPA requirements. The program also meets the standard 10 percent inspection rule set by Energy Trust of Oregon.

The Account Managers are responsible for providing both Quality Assurance and Quality Control inspections for Home Performance projects. A Quality Assurance inspection process is conducted to provide either oversight on the project or to advise the technician on best practices for a particular measure. These inspections are documented by the Account Manager in the CoreApp database.

1.5 Program Marketing and Outreach

The Home Performance program is marketed through the Energy Trust's Existing Homes marketing and through the Conservation Services Group (CSG) implementation team. Specific marketing activities include:

- Developing marketing collateral for Home Performance trade allies to promote the program and their services.
- Targeted direct mails and emails to new customers as well as past-Home Energy Review participants recommended a Home Performance assessment.
- A Home Performance assessment coupon
- Dedicated Home Performance web page on www.energytrust.org.
- Community presence through local events and presentations around the state to promote program awareness
- Bill stuffers promoting Home Performance and customer engagement process.
- Utility specific marketing

CSG Marketing develops collateral to be used by Home Performance trade allies for business development. Advertising collateral may be translated into a variety of languages[5] – and includes the following:

- Home Performance recruitment fact sheet
- Home Performance program fact sheet
- Existing Homes incentive grid
- Program and measure fact sheets
- Presence in all Home Energy Review Leave Behind packet materials
- Home Performance videos

The process evaluation also assessed the effectiveness of these advertising materials and outreach activities and identified areas for program improvement and message refinement.

[5] This information was based on the Home Performance Implementation Manual August 2011

2 Process Evaluation Methodology

The process evaluation for the Home Performance program focused on reviewing the current program design and strategy to identify areas for program improvement. The scope of this process evaluation included the following activities:

- Review of the current program database, records, and related materials
- Conduct in-depth staff interviews with key members from both the Energy Trust and Conservation Services Group (CSG) implementation staff
- Conduct in-depth interviews with participating contactors and
- Conduct customer surveys with program participants who only received a Home Performance Assessment and those who completed a Home Performance Assessment and a measure installation.

The results from each activity, as well as the methodology are provided in separate chapters of this report and are summarized in Table 1.

Table 1: Summary of Process Evaluation Activities Completed

Data Collection Type	Targeted Population	Sample Frame	Sample Size	Timing
Document Review	All program materials including program database records and marketing materials	CSG	Census	June 2011
In-depth Interviews	Program implementation staff and ETO staff	ETO and CSG	Census	July-August 2011
Customer Surveys	"Program Participants" defined as: "Customers who received a Home Performance assessment and applied for a rebate."	Program Database	30	September 2011
Customer Surveys	"Program Non-Participants" defined as: "Customers who received an energy assessment only."	Program Database	15	September 2011

2.1 Key Researchable Issues

The key researchable issues for this process evaluation were to:

- Assess the effectiveness of current program operations
- Determine customer and trade ally satisfaction and key drivers
- Document the inter-relationship between the Home Performance track and other program offerings, specifically Clean Energy Works Oregon
- Identify the customer decision-making process, especially the drivers for customer participation and key motivators including energy and non-energy benefits.
- Recommend areas for program improvement

2.2 Process Evaluation Tasks

Document Review

The process evaluation team received a comprehensive set of program materials, databases and tracking systems, as summarized in Table 2. These materials were separated by function and reviewed. The findings from this review were incorporated into the development of the in-depth interview guides and the survey instruments for the participating and non-participating customer surveys.

Table 2: Summary of Program Information Received

Program Areas	Type of Materials Received
Program History	Program Implementation Manual, August 2011
Marketing Materials	Examples of Program Marketing Materials including brochure, fact sheet, Incentive Grid
Program Database	All program records from January 1, 2010- June 10, 2011
Contractor Information	Current Home Performance Contractor Participation List
	Certification and Join Date Database
	Contractor Participation Agreement
	Template Dispute Resolution Policy
Program Participation Requirements	Customer Incentive Application
Marketing Tracking Database	Stored as a separate file in with customer complaint “tickets”

Marketing Materials Review

The review of marketing materials included examining the current website site and documenting the types of materials that were used to promote customers to visit the website, complete the in-home assessment, and install the energy efficiency measures. See screen shot in section 4.5.

Tracking Data Analysis

This review examined the program database used to document Home Performance activities during the program period for this process evaluation.

In-Depth Interviews

The Johnson Consulting Group team conducted in-depth interviews with key staff involved with program management and implementation of the Home Performance program. These interviews lasted approximately one hour and addressed all aspects of program design, operations, and results to date (see Appendix A for a copy of the interview guide). Table 3 summarizes the respondents who participated in the in-depth interviews of the Energy Trust and CSG staff.

The focus of the program staff and implementer interviews were to:

- Review current program operations and procedures
- Document changes in program operations and policies
- Describe the current Home Performance market and
- Identify areas for program improvement.

The Johnson Consulting Group also interviewed 15 participating contractors who are currently participating in the Home Performance program. This group of contractors was drawn from a sample of the most and least active contractors in the Home Performance program from June 2009-June 2011.

The trade allies focused on the following key issues:

- Describe current trade ally business models
- Determine trade ally perceptions of:
  - Growth in and current state of the Home Performance market
  - The Energy Trust's efforts to drive participation
  - The Energy Trust's trade ally requirements, such as BPI training and certification, and project volume
- Describe the most effective ways trade allies have found to promote Home Performance on their own
- Document the inter-relationships of other energy efficiency programs, especially Clean Energy Works Oregon
- Identify key drivers of customer participation including both energy and non-energy benefits
- Measure overall satisfaction with Home Performance and Energy Trust of Oregon

Table 3: Summary of In-Depth Interviews with Utility and Program Implementation Staff

Organization	Staff Interviewed	Key Roles
Energy Trust of Oregon	Program Manager	• Oversee the current program, with a budget of $14 million. • Other responsibilities include managing the third-party program implementer, Conservation Services Group (CSG).
Conservation Services Group (CSG)	Senior Program Coordinator	• Oversee a variety of program activities for Conservation Services Group (CSG), the third-party program implementer
	Account Representative	• Provide a variety of assistance: • Training on the energy audit software developed by CSG • Recruit new contractors into the program • Provide ongoing technical assistance
	Account Representative	

Customer Surveys

The Johnson Consulting Group developed and Ward Research fielded the participant and non-participant surveys in September 2011. Table 4 illustrates the sample sizes we used for this evaluation. Note that non-participating customers were defined as only receiving a Home Performance Assessment rather than "true" non-participants. However, these customers were selected specifically to explore reasons for not continuing with a Home Performance project. The findings from the surveys are summarized in Chapter 5.

The areas for investigation in the customer surveys for program participants were:

- Determining the motivations and challenges to participation and improving home energy efficiency in general
- Assessing satisfaction with elements of service (Custom Home Energy Report, assessment information)
- Describing the process of contractor selection, Energy Trust's trade ally list/ experience with contractor
- Assessing knowledge and perceptions of Energy Trust
- Measuring use/satisfaction with Energy Trust's website and online resources
- Examining the importance of both energy and non-energy benefits in the participant decision-making process
- Documenting measures installed as part of the program and additional installed measures (spillover)
- Gauging free ridership levels
- Identifying areas for program improvement
- Gathering key demographic information

For the non-participants, (i.e., those customers who only had a Home Performance Assessment), the customer surveys focused on the following issues:

- Determining the motivations and challenges for not continuing with a Home Performance project
- Documenting any energy efficiency actions completed on their own or through other Energy Trust programs
- Assessing satisfaction with Energy Trust
- Identifying areas for program improvement
- Gathering key demographic information

Table 4: Sample Sizes for Customer Surveys

Survey Group	Number of Respondents
Participating customers	30
Non-participating customers	15

3 Program Database and Materials Review

This chapter summarizes the findings from the review of program materials and the program database.

3.1 Program Database Review

The Johnson Consulting Group team reviewed the current Home Performance database records from January 1, 2010 through June 10, 2011, as provided by Energy Trust. There were a total of 2405 measures installed in 566 unique projects recorded in the database. This section summarizes the key program metrics that were captured in this database. Overall, the program is on track to meet its energy savings goals, shown in Table 5.

Table 5: Summary of Key Program Metrics

Year (based on "Recognized Date", used to book savings)	Assessments (Projects with or without savings)	Projects with energy savings	Measures with energy savings	Average measures per project (energy saving measures /projects only)	kWh Savings	Therm savings	Incentives (not including CO monitors and bonuses)
2010	333	316	989	3.1	49,608	16,856	$284,811
2011 (through 6/10/2011)	249	197	630	3.2	41,292	8,969	$181,577
Total	582	513	1619	3.2	90,900	25,826	$466,387

Table 6 shows the distribution of measures installed excluding the 85 records of assessment only customers. The most commonly installed measures through this program were air sealing, accounting for 19 percent of all completed projects. Ceiling insulation accounted for another 13 percent of completed projects. These two measures accounted for more than one-half of all installed measures during this time period.

Table 6: Distribution of Measures Installed in the Home Performance Program

Measure Installed	Number of Projects n=2,318	% of Total n=2,318
Blower door test	457	20%
Air Sealing	433	19%
Ceiling/Attic Insulation	295	13%
Duct Leakage Test	240	10%
Floor Insulation	221	10%
Duct Sealing	176	8%
Duct Insulation	130	6%
Wall Insulation	115	5%
Knee Wall Insulation	68	3%
Windows	53	2%
Rim Joist Insulation	49	2%
Duct Sealing	42	2%
Tankless Water Heater	15	1%
Water Heater, 93 Efficiency	9	0%
Air Sealing, Ele % of Cost	6	0%
New Heat Pump Cx w/Duct Sealing Z1	5	0%
Heat Pump, Ele Furnace Replacement HSPF 9.0+	2	0%
Loan Off-Set	1	0%
HPF Air Sealing, Ele % of Cost	1	0%
Grand Total (excluding assements only)	2318	100%

Program participation is dominated by a few large home performance contractors. The top 15 contractors accounted for 87 percent of the total projects listed in the program database during the program evaluation time frame.

The database identified a total of 85 customers who received the Home Performance Assessments only without completing any subsequent measures. The number of customers who only had a Home Performance assessment were fairly evenly distributed across the entire contractor base; with the most active contractors reporting no more than six Home Performance assessment-only jobs. These findings suggest that the contractors are doing a good job of using the Home Performance Assessment as the building block to encourage customers to install additional energy efficiency measures.

Consistent with the findings from the customer survey results (see Section 6); the average size of participating homes was 2,098 square feet. However, the homes ranged in size from 610 square feet to 5,810 square feet.

As

Table 7 shows, most program participants receive electric services from Portland General Electric (PGE) (67%) and receive gas service from NW Natural (NWN) (75%).

Table 8 shows that most customers (80%) use gas to heat their homes compared to electricity (20%).

Table 7: Distribution of Heating Providers by Utility

Electric Provider	Number of Participants	Percentage of Total
Portland General Electric	1606	67%
Pacific Power	729	30%
Natural Gas Provider	**Number of Participants**	**Percentage of Total**
NW Natural	1804	75%
Cascade Natural Gas	251	10%
Total	2405	

Table 8: Heating Fuel

Heating Fuel	Number of Customers	Percent of Total
Electric	474	20%
Gas	1931	80%
Grand Total	2405	100%

This program is also reaching a broad range of homes. According to the information provided in the program database, most homes (50%) were built prior to 1960. The biggest cluster of homes being treated in this program were from the building boom from 1960-1979, which accounted for 30 percent of the Home Performance projects recorded during this program evaluation time period. Table 9 and Figure 5 illustrate these findings.

Table 9: Age of Houses by Decade from Database

Decade Home was Built	Number of Homes Bbuilt	Percentage of Homes Built
Pre-1900	15	1%
1900-1919	243	10%
1920-1939	442	19%
1940-1959	379	16%
1960-1979	718	30%
1980-1999	497	21%
2000-2009	95	4%
Grand Total	2.389	100%

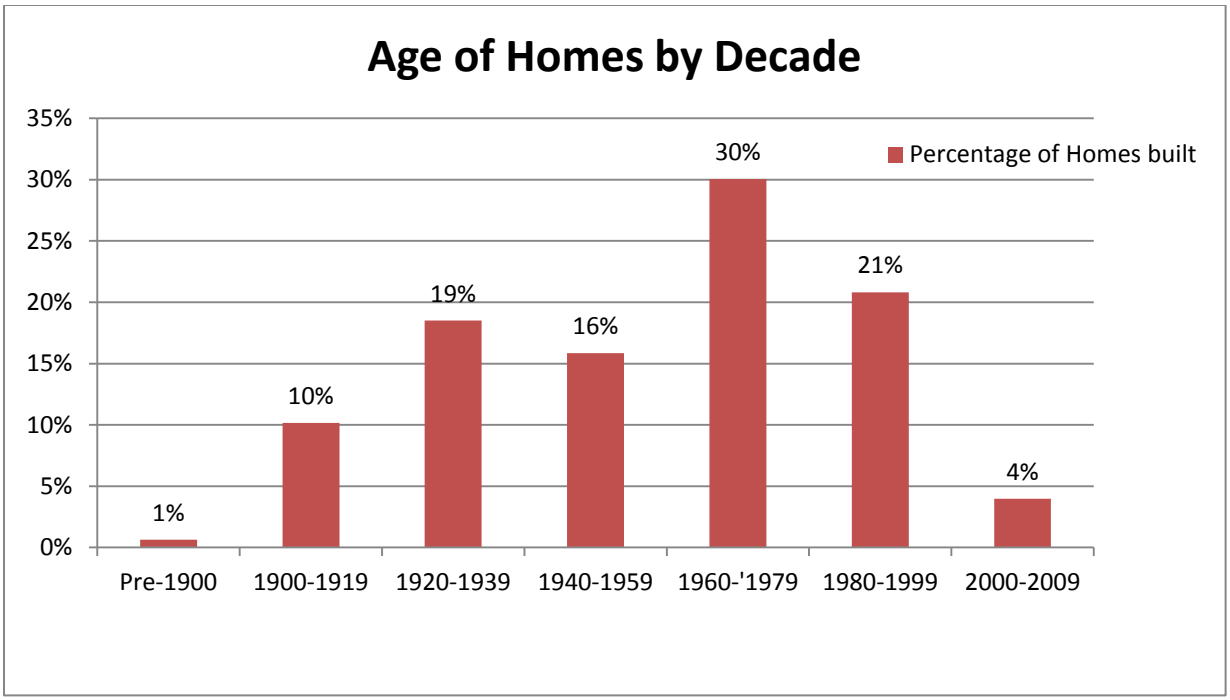

Figure 5: Age of Homes by Decade from Database

Table 10: Distribution of Home Performance Projects by Top Cities

City	Count of Projects	Percent of Total	Cumulative Total
Portland	1211	50%	50%
Bend	281	12%	62%
Lake Oswego	117	5%	67%
Beaverton	106	4%	71%
Hillsboro	66	3%	74%
West Linn	61	3%	76%
Eugene	44	2%	78%
Milwaukie	40	2%	80%
Oregon City	34	1%	81%
Tigard	33	1%	83%
Tualatin	31	1%	84%
Gresham	27	1%	85%
Newberg	25	1%	86%
Salem	18	1%	87%
Boring	17	1%	87%

The findings show that the participation is dominated by a few large contractors, who most often provide air sealing services. The program participants are concentrated in the Metro-Portland area.

3.2 Review Program Marketing Materials

The Home Performance program is currently marketed in a variety of ways to both customers and contractors. The primary approach has been to either drive customers to the Energy Trust's dedicated website or promote the program in brochures sent out to customers. Most of the marketing materials are developed in-house by either the Energy Trust's marketing staff or through the CSG marketing staff.

The Home Performance program is marketed primarily as an extension of the Existing Home's program offerings.

The concept of a whole house approach is a difficult one for customers to fully understand and appreciate. The Home Performance contractors described the difficulties they face with explaining this program to customers, and therefore tend to rely on a one-on-one approach. Similarly, the customer surveys also reinforced the importance of contractor interactions in influencing program participation decisions.

Overall, the program marketing materials are clear and well designed with a well-defined "call to action" of having a customer contact a Home Performance contractor. However, there may need to be more direct promotion of the Home Performance program in order to generate additional interest in it. Examples of current marketing materials are provided in Appendix B.

4 Staff and Third-Party Interviews

As part of the overall process evaluation, Johnson Consulting Group also completed four in-depth interviews with the key staff involved in operating the Home Performance program for Energy Trust of Oregon. In-depth interviews were conducted with the following key staff:

- The Program Manager
- The Senior Program Coordinator who oversees a variety of program activities for Conservation Services Group (CSG), the third-party program implementer and
- Two account representatives who work for the implementation contractor CSG

These in-depth interviews focused on current program operations, the ways in which the program has evolved, and challenges to program participation. The key findings from these interviews are summarized next.

4.1 Roles and Responsibilities

All the staff is deeply involved in the daily operations of the Home Performance Program. The program manager is a full-time employee of the Energy Trust of Oregon and his responsibility is to oversee the current Existing Homes program, with a budget of $14 million according to CSG staff. His primary responsibility is managing the third-party program implementer, Conservation Services Group (CSG).

CSG has a senior program coordinator who has been working with the Home Performance Program since October 2009. Her primary role is to coordinate communications between the independent Home Performance contractors who deliver the services and CSG. She also is in charge of managing the program databases including tracking key metrics, producing program reports, assisting with marketing and changes in program design, and providing ongoing assistance to the account representatives.

CSG has assigned seven regional account representatives who work directly with trade allies, including the Home Performance contractors. They provide a variety of assistance including training on the energy audit software developed by CSG, recruit new contractors into the program and provide ongoing technical assistance. The account representative based in Portland spends 100 percent of his time working with this program, while the account representative based in Bend, Oregon devotes about 20 percent of her time this program.

4.2 Program Goals and Strategies

This program is a key component to achieving the Energy Trust's overall residential energy savings goals in both therms and kilowatt hours (kWh). Based on the current performance, this program will contribute to 25 percent of the overall therm savings goals for the Energy Trust as part of the Existing Homes Program. Its contribution on the electric side is smaller, about 140,000 kWh. As the staff explained, the Home Performance energy savings goals are bundled with other program options, such as Clean Energy Works Oregon.

All the staff respondents indicated that the program has been performing well even though the program goals and objectives had changed and evolved during the past two years. For example, the terms of the participation agreement were simplified and the bonus for participating contractors was eliminated. The quality control criteria had also been revised so that the first three projects are inspected. These changes were driven because of the dramatic increase in overall contractor participation during the past two years of program operations.

4.3 Role of Home Performance Contractors

The Home Performance program is contractor-driven, and therefore recruiting contractors to participate in the program has been essential to its long-term success. However, the in-depth interviews documented the ways in which the Home Performance program has changed its focus as it has become more established in the Oregon market.

First, there is no longer an emphasis on recruiting eligible contractors. As the respondents all observed, the number of eligible contractors has increased dramatically in the past two years. Therefore, most program activities are focused on maintaining the existing trade ally network through training and support, according to both program and CSG staff.

The dramatic increase in participating contractors has also affected the ways in which CSG provides services and support to the contractors. The support activities are now moving towards helping the participating contractors become more self-sufficient, as the Energy Trust does not want to continue subsidizing the Home Performance market. Instead, the focus has been to move to more of a "free market" approach.

Given this shift in focus, the program and implementation staff are trying to determine the best approach to still provide support to the Home Performance contractors while still moving into more of a free market model. The staff recognizes that while there is no longer an emphasis on contractor recruitment, it will be important to provide current contractors with some continuing level of ongoing support. This finding was also emphasized strongly in the interviews with contractors, who reiterated the value they place on the support they receive from their assigned account managers.

The program and implementation staff also wants to encourage a more competitive and self-sustaining Home Performance market. They reported that some participating Home Performance contractors are already starting to develop their own types of financing plans, which will move the program more to the free market model envisioned by program staff.

4.4 Relationship with Clean Energy Works Oregon

During the past year, the Home Performance track is facing a new form of collaboration in the Portland area though the development of CEWO. This offering combines a home energy assessment and a financing offer for resulting projects as a way to reduce the first-cost barrier associated with making whole house improvements. Many of the Home Performance contractors are also participating in CEWO. This dual program offering has created some confusion in the market, according to staff, as there is an

overlap between the two programs. However, this program has been a boon to the contractors by generating additional demand for the Home Performance services which are incentivized through the Energy Trust's program portfolio.

A major difference is that the CEWO offers financing to complete the projects identified by these contractors, while in the traditional Home Performance program track, customers must pay cash or secure financing on their own. The staff reports that this financing offering has been a strong part of the appeal of CEWO to both customers and contractors to participate.

Clean Energy Works Oregon was developed in part to "create jobs for historically disadvantaged workers," and therefore has a different set of underlying program goals and objectives. CEWO also has an Energy Advisor which, according to some program staff, helps to advise both the customer and the contractor in developing an appropriate work scope.

Unlike the traditional market model, Clean Energy Works Oregon assigns the Home Performance contractors specific jobs, thus eliminating the competitive market forces, according to both program and CSG staff.

Because of the high level of customer interest in CEWO, contractors are focused on getting the projects completed quickly, which may mean they are focused on "maximizing revenues not maximizing savings." As a result, some of the program implementation staff believed that CEWO may be adversely affecting the Home Performance market.

This is due primarily to the delays in program implementation for CEWO projects, the staff further explained. Since the contractors are assigned projects from CEWO, a backlog of projects has been created which may also affect overall customer service for the program. The staff observed that projects coming in through the non-CEWO Home Performance track are completed more quickly compared to those projects coming in from CEWO. Of course, this may be expected given that CEWO also requires gathering additional information necessary for the financing portion of the CEWO program offering.

The staff also noted that there is some ongoing tension between those contractors who have been involved with the program since the beginning and the newer contractors who may be entering the program through Clean Energy Works Oregon. This is especially true among the smaller contractors who may meet the eligibility requirements to participate in the CEWO program track, as these staff members observed.

The staff respondents also indicated that there was a perception among some contractors that the CEWO contractors were getting "more visibility" than non-CEWO contractors, further fueling ill will among these two contractor groups.

4.5 Marketing and Outreach Activities

Interviews with the program staff and implementers also explored the overall effectiveness of the current marketing activities used to promote the Home Performance program track.

Program Marketing

According to the program staff, the bill inserts are viewed as an effective marketing tool in reaching potential customers. The bill inserts were sent to customers in four to five cities, which is a good way to reach customers beyond the Metro-Portland area.

The program website was also viewed as effective in providing in-depth information about the program offering, its features and benefits. It also provides a way for customers to locate potential contractors, according to these staff interviews.

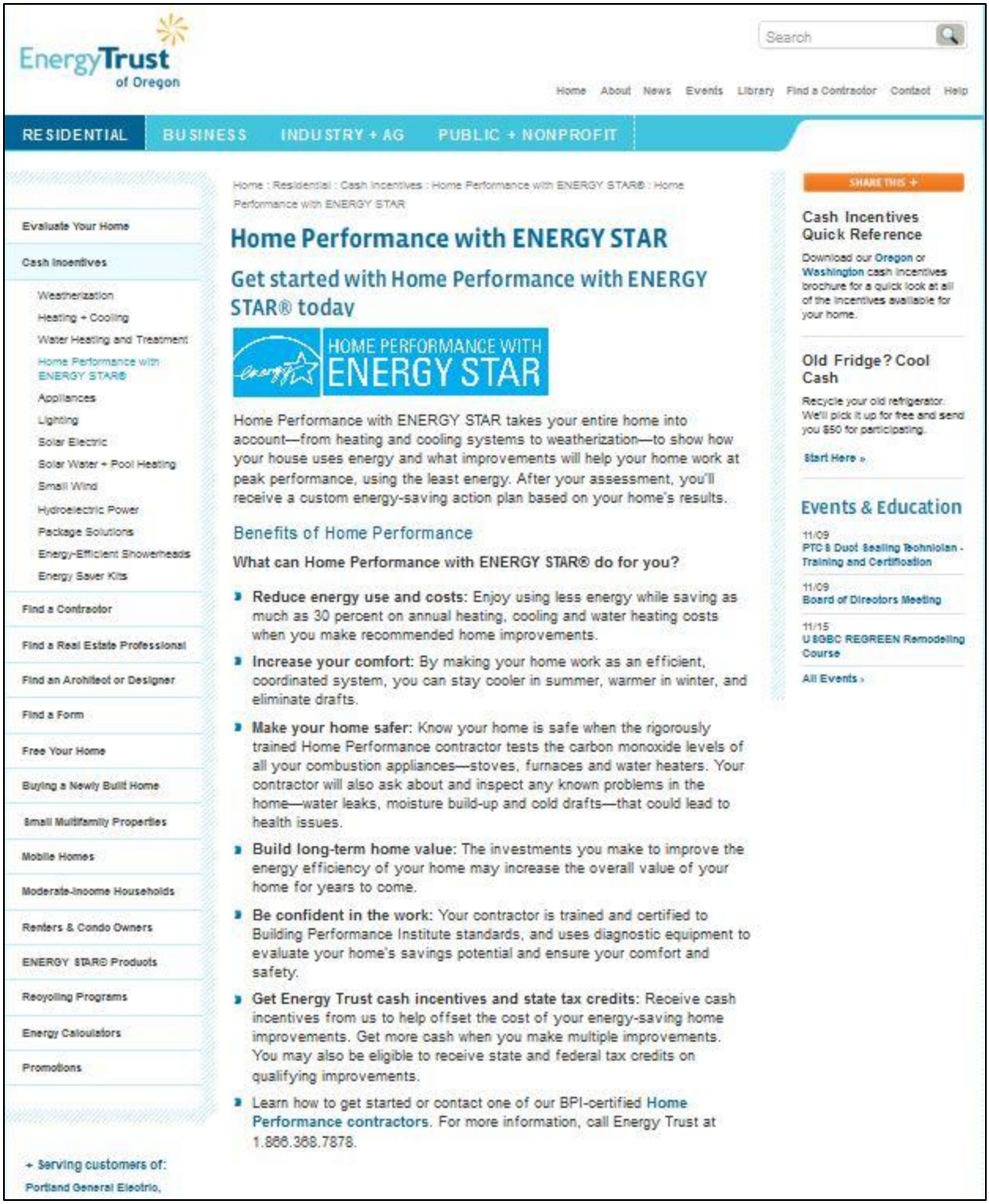

Figure 6: Screen Capture of Website

Community Outreach

The marketing activities for the program have also extended to community outreach, especially beyond the metro-Portland area. These activities included presentations at customer events and home shows. However, these activities provide information on all of the Energy Trust's programs, not just the Home Performance program track as a way to build general awareness.

Another marketing tool available to eligible contractors is the co-op advertising fund. According to the respondents, this offering has been revised and increased during the past year as a way to further support the Home Performance contractors in promoting the program by offering up to $12,000 per year in co-op advertising compared to $8,000 for standard trade allies. The program budget was increased as a way to help encourage further collaboration between the contractors and the Energy Trust.

4.6 Program Results/Participation Levels

Although contractor participation has increased dramatically during the past year, the Home Performance track is not expected to meet its electric goals. This is mainly due to the influence of CEWO according to program and implementation staff interviewed. All the respondents expressed concerns about the future role of the Home Performance program, noting that most of the current types of projects completed are Home Performance projects, but they are financed through CEWO.

The respondents also observed that many of the projects coming through the Home Performance program track tend to be smaller jobs focused on fixing insulation rather than equipment installations.

Overall, the implementation staff reported that the customers are happy, but some contractors are not, especially those who have not been able to compete effectively during the current economic downturn.

4.7 Program Administration and Delivery

All the respondents emphasized that this is a contractor-driven program, and therefore the paperwork processing for the rebate incentives is most often completed by the Home Performance contractor. While this approach is usually successful, there have been a few glitches regarding incentive applications that needed to be resolved. For example, the application process is still cumbersome because according to the program staff, the customers have to complete an eight-page paper application which then takes between six to eight weeks to receive approval. The staff said the major reason for the long application form is to conform to the Energy Trust requirements.

Given the complexities of the application, the implementation staff reported that sometimes applications are not filled out correctly which leads to processing delays. The staff reported that there are "dozens" of applications that are not completed correctly and that leads to further delays for rebate processing. Even the current approval time of six weeks "for a check is a long time," which has led to some customer frustration, the staff reported.

The staff reported that the contractors are also encouraged to provide customers with the Home Performance Assessment Report and use that as a tool to encourage the customers to install the recommended measures.

However, the current practice of paying the incentive to the customer rather than directly to the contactor has been a point of discussion and debate among both contractors and the implementation staff. The staff indicated that it may be another barrier to customer participation which could be alleviated by offering applications online.

4.8 Program Tracking

The Home Performance program also has developed an extensive tracking system which documents all key metrics including marketing activities, measure installation and requirements as needed to conform to the national Home Performance with ENERGY STAR standards. This information is provided on a weekly basis to the Energy Trust of Oregon's program staff.

Energy Trust also provides tracking studies on a quarterly basis to determine if "customers are happy with the Home Performance contractors."

The implementation staff conducts Quality Control inspections which includes customer ratings with the contractor and the installation. Customers are now asked to rate the contractor's performance using one, two, or three stars. They also track any customer complaints, forward the information to the appropriate account manager, and then documents the overall resolution, the staff said.

The Energy Trust is also in the process of developing a new database that will provide additional project management features. Therefore, the staff is interested in developing ways to track information in a more streamlined approach and perhaps move away from a paper-based incentive application.

4.9. Areas for Program Improvement

Both program and CSG staff identified areas for program improvement. These recommendations focused on reallocating the resources regarding account management functions currently performed by CSG, streamlining the application process, and improving the overall marketing to both customers and contractors. Each recommendation is summarized next.

Reallocating Program Resources

As the in-depth interviews demonstrated, the Home Performance program is entering a new phase and is now facing new challenges in the Home Performance market. A key issue for program staff is to determine the best way to deploy the Home Performance resources that will continue to meet the needs of its contractors while also promoting the program to potential customers. Program staff supported a reallocation of CSG's efforts, focusing less on software training and more on other types of contractor support such as advanced training classes on building science rather than helping contractors develop work scope or market the program.

The CSG staff also reinforced the need for additional program marketing, especially to home owners. This may be even more important, given the confusion in the market regarding the various program options available including the Energy Trust's other programs as well as CEWO.

The implementation staff is also concerned that despite the Energy Trust's marketing activities in the past, this message is still not reaching the more rural parts of the state. The implementation staff also reported that the "green messaging" may not resonate among customers in rural areas who also may not be able to make the recommended Home Performance improvements on their own.

Provide Online Applications

The implementation staff strongly supported the move towards online application process. They believed this would enhance overall program operations and accelerate the rebate processing time. They believed this would accelerate application processing time and also "make it as easy as possible" for participating contractors.

5 Contractor Interviews

This section summarizes the key findings and recommendations from the in-depth interviews with 15 contractors who are currently participating in the Home Performance program. This group of contractors was drawn from a sample of the most and least active contractors in the Home Performance program from January 2010-June 2011.

Overall, these were experienced contractors with an average tenure in the home improvement business of 7.67 years. They had a total of 153 employees, with an average of 10.2 employees per firm.

These contractors were also firmly entrenched in the energy efficiency community reporting that, on average, 78 percent of their sales were from energy efficiency projects and 73 percent were from incentivized measures. Despite the poor economy, all but two contractors reported that their sales have increased during the past year. However, as these findings show, the majority of those sales were through Clean Energy Works Oregon rather than the free market Home Performance program track.

5.1 Reasons for Contractor Participation

These contractors have been participating in this program ranging from one month to more than five years. The average length of time that they have participated was 2.7 years. The main reasons for participating in this program according to these contractors were because the program was well-structured, and aligned well with their own business goals and objectives. Moreover, these contractors strong believe in the Home Performance methodologies and philosophy.

The contractors reported that they liked the ability to access the training and co-op dollars available through the Energy Trust. Several contractors viewed that teaming with the Energy Trust would be a good way to expand their businesses, especially those contractors who specialize in energy efficiency and related sustainable business practices.

5.2 Participation Rates

However, as enthusiastic as these contractors are about the overall Home Performance program track, most reported that the number of assessments and projects completed through this program were much lower than they expected. While most contractors reported that business has increased during the past year, most of that work was attributed to Clean Energy Works Oregon, rather than the free market Home Performance track. Project work directly attributable to the Home Performance program represents a relatively small percentage of their total business.

According to these contractors, these 15 participating contractors have completed a total of 2,092 assessments. On average, the contractors reported completing, on average, 139 assessments during the past year. These assessments led to completing a total of 582 projects, slightly more than a quarter (27%) of all assessments completed. But not all these assessments led to projects completed through the Home Performance track.

Some contractors reported relatively high close rates between 50 and 90 percent. On average, these participating contractors completed 48.5 projects. The contractors reported that there was a "fair amount of crossover" between the Home Performance and CEWO projects. Recently, most of the projects, as high as 90 percent have come from the CEWO track while only about 10 percent are from the Home Performance program.

5.3 Home Performance Services Provided

The Home Performance contractors reported the types of services they offer to customers. They also indicated which services accounted for most of their work and which ones they sub-contracted out to other contractors. Ninety-three percent of the contractors reported conducting Home Performance assessments. Many also installed duct sealing (80%), air sealing (73%), duct insulation (73%), floor (73%) and ceiling (67%) insulation (see Table 11). While a few (33%) contractors reported installing heating systems and water heating (33%), most tended to subcontract out those services. The contractors also subcontract out specialized mechanical, plumbing and other services such as mold or moisture remediation.

Table 11: Comparison of Services Offered by Home Performance Contractors

Home Performance Activity	Types of HP services provided (n=15)	% of Total	Primary HP Services Performed (n=15)	% of Total	Types of HP Services Contracted Out (n=15)	% of Total
Conduct HP Assessments	14	93%	11	73%	0	0%
Install Air Sealing	11	73%	12	80%	0	0%
Install Ceiling Insulation	10	67%	11	73%	4	27%
Install Wall Insulation	9	60%	12	80%	5	33%
Install Floor Insulation	11	73%	11	73%	3	20%
Install Duct Sealing	12	80%	12	80%	0	0%
Install Duct Insulation	11	73%	8	53%	1	7%
Install Windows	8	53%	4	27%	2	13%
Install Water Heaters	5	33%	4	27%	5	33%
Install Heating Systems	5	33%	4	27%	5	33%
Install Solar PV/water heating systems	2	13%	0	0%	1	7%

5.4 Customer Feedback

According to these contractors, the features customers like best about this program include the incentives that reduce the cost of both the home energy assessments and the eligible equipment, and the validation that comes with having the contractor conduct the home assessments

None of the contractors reported receiving any negative feedback from the customers regarding the program.

As a way to better understand the customer decision-making, the contractors were asked to identify if the customers seemed motivated by energy savings or non-energy benefits such as health, safety and comfort issues. Contractors reported that the initial driver for customer participation is energy savings. However, for a few customers, comfort and health and safety become bigger motivators as they learn more about the program.

5.5 Role of Financing

These participating contractors also addressed the role that financing plays regarding helping customers participate in the program. Seventy-nine percent of the participating contractors interviewed said that financing or the availability of funds was a barrier to program participation while 21 percent disagreed.

One contractor, active in both CEWO and Home Performance tracks, said that the size of the average Home Performance project grew from $5,100 to $6,800 when the CEWO program began. In 2010, this contractor is now working statewide through the CEWO and the average job size is $15,000 due the availability of financing through the CEWO. Consequently, the number of completed Home Performance jobs has dropped off considerably.

As one contractor observed, the financing helps the customer "say yes" to the project because money is available. But the contractor also acknowledged that the overall market for home assessments has to be sustainable without the availability of either financing programs or rebates for the home assessments.

5.6 Decision-Making

Most (69%) contractors indicated that the customers would not have gotten an assessment without the incentive, while the remaining (31%) said they would have gotten an assessment without the incentive.

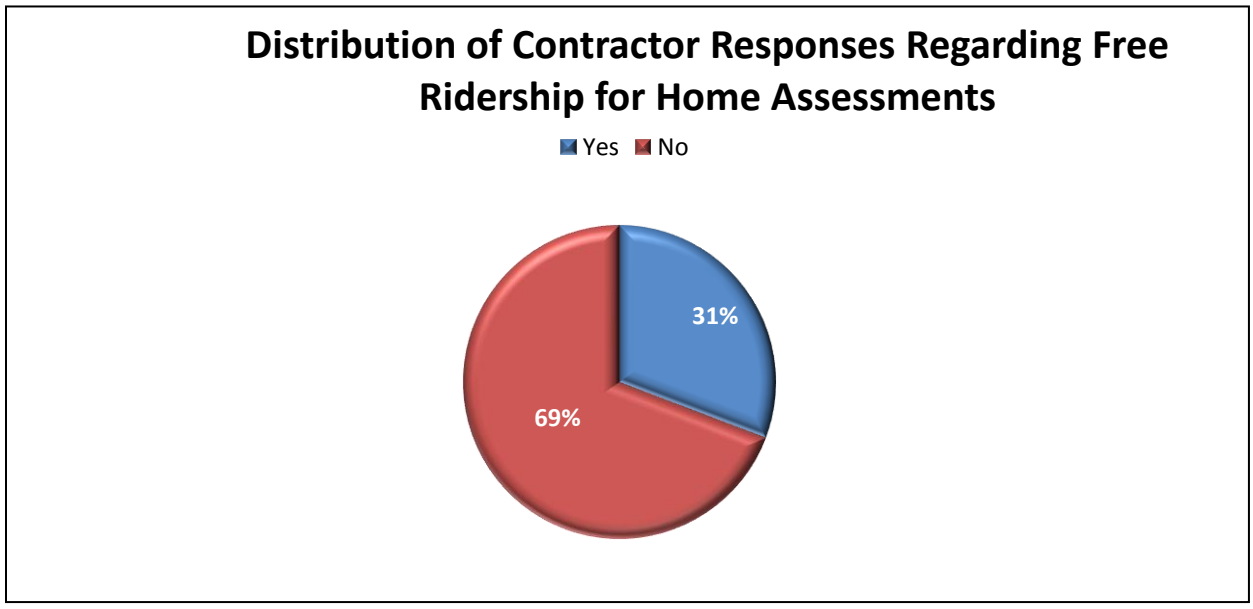

Figure 7: Distribution of Contractor Responses Regarding Free Ridership for Home Assessments

Similar to the findings regarding the incentive, 34 percent would have installed the eligible energy efficient measures on their own, without the Energy Trust's Home Performance Program.

5.7 Program Influence

The contractors also rated the level of influence that various Home Performance features had on the customers' decision to participate. Using a five point scale, where a "5" meant "Extremely Influential" and "1" is "Not at all Influential," the ratings are summarized in Table 12. As these ratings show, the contractors said the information they provided customers had the highest influence on customer decision-making, with an average of 4.50, compared to the information provided by Energy Trust through its marketing materials (4.07) or the incentive (3.57).

Table 12: Influence of Home Performance Features

Influence of Home Performance Program Features	Energy Trust Incentive for the HP Assessment (n=15)	% Responding (n=15)	Information and Materials from Energy Trust about the HP Program	% Responding (n=15)	Information you provide as part of the HP Assessment	% Responding (n=15)
1- Not at all Influential	2	13%	0	0%	1	7%
2	2	13%	1	7%	0	0%
3	2	13%	5	33%	1	7%
4	3	20%	4	27%	5	33%
5- Extremely Influential	6	40%	4	27%	7	47%
Don't Know	0	0%	1	7%	1	7%
Total	15	100%	15	100%	15	100%

As these findings illustrate, 80 percent of the contractors said that the information they provided as part of their assessment was "Influential" (i.e., receiving a rating of "4" or "5"), and 47 percent rated this program feature as "Extremely Influential" in the customer decision-making. A total of 60 percent of the participating contractors indicated that the Energy Trust incentive was "Influential" in the customers' decision to participate in this program track, while the information about the program was rated as "Influential" by 54 percent of the contractors.

5.8 Program Marketing and Outreach

These contractors also provided feedback regarding the marketing and outreach activities that are used to promote the Home Performance program conducted by the Energy Trust of Oregon and its implementation contractor, CSG.

Overall, the contractors received information about the Home Performance program, especially the emails/newsletters (39%), the information posted on the Energy Trust's website (21%) and communications with their assigned account representative (21%) (see Table 13).

Table 13: Ways Contractors Receive Information About the Home Performance Program

Ways Receive Information about ETO's HP Program	Number of Responses (n=15)	Percent Responding
ETO Website	3	27%
Communications from ETO/CSG Account Managers	6	40%
Emails/Newsletters	11	73%
Presentations at contractor events	4	27%
Contractor Training Classes	1	7%
Total	15	100%

However, some contractors wanted the Energy Trust to provide information in webcasts or podcasts, in case they cannot attend the quarterly roundtables in person.

5.9 Contractor Rating System

Two participating contractors were not pleased with the new rating system that the Energy Trust uses to rank eligible contractors on its website. According to these contractors, the rating system of one to three stars is unfairly biased against the smaller contractors because they are based on project volume, which seemed unfair to the smaller contractors. These contractors further said the new rating system has also led to a decline in overall sales.

5.10 Customer Marketing and Outreach

These 15 contractors also provided information regarding the effectiveness of the customer outreach strategies. According to the respondents, the most effective marketing strategies to reach customers were from the Energy Trust's website (23%) and from the bill inserts (23%).

Of note, contractors noted the lack of differentiation by the Energy Trust between Home Performance and its various offerings, such as Home Energy Reviews.

Several contractors reported conducting marketing activities on their own, but most conceded that the only effective approach was one-on-one personal marketing. The other types of marketing activities including print media, radio advertising, or brochures are considered much less effective.

5.11 Co-Op Advertising Fund/Trade Ally Development Fund

All but two contractors are aware of the co-op program and most have participated in the program. Those contractors who have not yet participated explained that the program requirements were too restrictive for them to benefit from the co-op advertising support. But overall the feedback has been positive regarding the availability of this resource.

5.12 Home Performance Contractors Guild

Nine of the 15 contractors (60%) were members of the Home Performance Contractors' Guild while 40 percent were not. The majority of contractors interviewed are active in the guild, with several of the respondents directly involved as either a founding member or board member. The reason contractors are not involved in the guild is primarily geographic, as the guild is located in the Portland metropolitan area.

Overall, the contractors viewed the guild as a benefit for the Home Performance community by providing a forum to share ideas and provide a "level playing field."

5.13 Participation in Other Energy Trust of Oregon Programs

These contractors are participating in other energy efficiency programs, including those sponsored by the Energy Trust of Oregon, programs sponsored by other utilities in the state, and Clean Energy Works Oregon. As Table 14 shows, most contractors are participating in the Savings Within Reach (50%) program.

Table 14: Other Energy Efficiency Programs Contractors Are Participating In

Other Energy Efficiency Programs Contractors Are Participating In	Total Number of Responses	% of Responses
Standard (prescriptive) Incentives for Single Family Home	2	13%
Existing Manufactured Homes	3	20%
Savings within Reach	10	67%
Service to NW Natural Customers	3	20%
Other	2	13%
Total	15	100%

5.14 Clean Energy Works Oregon

Eleven of the 15 contractors were also participating in Clean Energy Works Oregon. Sixty-six percent of the contractors said that Clean Energy Works was easier for customers to participate in while the same percentage said that the Home Performance program was easier for the contractors.

The contractors had mixed reactions regarding the relationship of Clean Energy Works Oregon and the Home Performance Program. While some contractors said that Clean Energy Works Oregon has led to substantially increased sales of Home Performance projects, it was to the detriment of the free-market Home Performance program track. The availability of financing has opened up the market to a whole new market segment — older homes that require renovations. These contractors reported that CEWO projects now account for the majority of their Home Performance project work.

The contractors reported that the program track used is determined by the customers. If the customers have funding available, they go through the Home Performance program track; otherwise, they opt for CEWO.

Contractors also indicated that Clean Energy Works Oregon had a much more complicated application process which leads to long lead times and cash flow issues. This program also excludes the smaller contractors, which was also viewed as a hindrance to the overall development of the Home Performance market in Oregon.

Lastly, these contractors acknowledged that there were clear benefits to customers who opted to participate in Clean Energy Works Oregon over the traditional Home Performance program. It provided an avenue for funding larger projects and led to the possibility of deeper energy savings. However, a few contractors doubted that the current Clean Energy Works Oregon staff had the ability to fully appreciate those synergies and move projects in this direction.

Overall, the contractors viewed Clean Energy Works Oregon as a catalyst in the Home Performance market but they are not sure what the long-term effects of the program will be.

5.15 Role of the Account Representatives

The contractors all reported that they heard from their CSG account representatives on a monthly basis. The contractors viewed their account representatives as a good technical resource who serves as a good contact point for the program. Most contractors relied on the account representative to provide technical support, answer questions regarding the new modeling software, and help them develop and refine project bids and work scopes.

The contractors rated the importance of account representatives on a five-point scale, were a "5" meant "Extremely Important" and "1" meant "Not at all Important." Overall, the contractors gave a rating of 4.14, suggesting that the account representatives play an important role in supporting these contractors in the Home Performance program. Two-thirds (69%) of contractors reported that the role of the account representative should stay the same, while 15 percent said that the role should increase while only eight percent said it should decrease.

5.16 Training Classes

The contractors also indicated their interest in the additional training classes sponsored by Energy Trust of Oregon. They also provided suggestions for additional topics of interest as well. As Table 15 shows, the contractors were most interested in Advance Building Performance Training (53%), Bid Development (53%) and Business Development (47%).

Table 15: Additional Training Classes Contractors May be Interested In

Possible Topics for Contractor Training	Number Mentioning (n=15)	Percent Mentioning
Advanced Building Performance Training	8	53%
Bid Development	8	53%
Business Development	7	47%
Training on cost effectiveness	6	40%
Training on home energy software	5	33%
Other	5	33%
Project Management	3	20%
Attended trade ally breakfast	3	20%

5.17 Home Performance Assessment Software

Most of the contractors reported extremely negative feedback regarding the new software tool, EnergyMeasure Home, developed by CSG. While some contractors admitted that the tool was an improvement over the previous version, there are still many glitches and errors to work through. Several contractors indicated the software in its current design was not usable in the Oregon market, since it did not allow for the specific housing types such as half-story levels which are prevalent in the Oregon residential market. They also pointed out that the software calculated energy savings incorrectly which causes problems in completing the assessments for the customers.

5.18 Home Energy Assessment Reports

All the contractors provide the report to their customers and also follow up with the reports, as this is critical to closing the follow-on Home Performance project work. The contractors reported that the customers like the report but they also provide the information in their own reports rather than using the format from the CSG software tool.

5.19 Program Satisfaction

The contractors also rated their satisfaction with the various components of the Home Performance program using a five-point scale, where a "5" meant "Very Satisfied" and a "1" meant "Not at all Satisfied." As Table 16 and Table 17 show , the contractors gave the highest rating to the responsiveness of the CSG staff (4.36 average rating) and the Energy Trust program overall (4.36). They awarded the lowest scores to the processing time (3.07 average rating) and the ways in which the program is promoted to contractors (3.07).

Table 16: Satisfaction with the Home Performance Program

Satisfaction with the Home Performance Program Features	Average Rating
Overall Satisfaction with the Energy Trust	4.36
Responsiveness of CSG/ETO Staff	4.36
The ways the ETO promotes the HP Program to residential customers	3.79
Incentive application requirements	3.36
Processing time for incentive applications	3.07
The ways the ETO promotes the HP Program to its contractors	3.07

As Table 17 shows, the contractors reported the highest "Satisfied" ratings (i.e., scores of "4" or "5) were for Overall Satisfaction with Energy Trust.

Table 17: Distribution of "Satisfied Ratings" Among Participating Contractors

Contractor Satisfaction Ratings	Percent Rating "4" or "5"
Responsiveness of CSG/ETO Staff	80%
Overall Satisfaction with Energy Trust	80%
The ways the ETO promotes the HP Program to residential customers	67%
The ways the ETO promotes the HP Program to its contractors	60%
Incentive application requirements	33%
Processing time for incentive applications	27%

Overall, these ratings suggest that the contractors value the Energy Trust in general and the personal services provided by their account representatives (see previous section). But they still have concerns regarding application processing and marketing issues that need to be resolved.

5.20 Areas for Program Improvement

The contractors also provided some additional suggestions for program improvement. These suggestions focused on improving communication and outreach with the contractors, to alleviate concerns about the program and foster a better sense of understanding about the effects of changes in program rules and guidelines. A few contractors wanted to eliminate the new rating system.

The contractors also wanted the Energy Trust staff to run the program consistently, rather than changing the requirements every few years. The contractors invest in training employees about program requirements, which are subsequently modified, which then leads to improperly completed applications or delays in application processing.

The Contractors Guild may be the appropriate forum for the Energy Trust staff to provide updates on program staff and solicit feedback regarding planned program changes.

6 Customer Surveys

6.1 Customer Survey Results

The process evaluation for the Home Performance program also included a survey of both participating and non-participating customers. The surveys were fielded in September 2011. All 584 eligible program participants were included in the sample, and a total of 30 surveys were completed. The non-participants were defined as those customers who had received a Home Performance assessment from August 2009 through May 2011, but had not completed any additional work. A total of 15 surveys were completed from a sample of 67 eligible non-participants.

6.2 Respondent Characteristics

The survey respondents were primarily concentrated in the metro-Portland area. Most were electric customers of Portland General Electric (PGE) (47%) and NW Natural Gas (40%). Table 18 illustrates the distribution of survey respondents by utility.

Table 18: Distribution of Survey Respondents by Utility Provider

	Participants		Non-Participants	
Company	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**
Portland General Electric	16	76%	5	24%
Pacific Power	12	60%	8	40%
NW Natural Gas	11	62%	7	39%
Cascade Natural Gas	7	88%%	4	13%

*multiple response question

6.3 Program Awareness

The survey respondents were asked to recall how they had heard about the Home Performance program. One-fifth of all respondents mentioned seeing a magazine or newspaper ad (20%) about the program and 18 percent recalled seeing a bill insert. The other responses mentioned by both participants and non-participants are summarized in Table 19.

Table 19: Comparison of Ways Respondents Learned About the Home Performance Program

Measure	Participants (n-30)		Non-Participants (n=15)		Total Respondents (n=45)	
	Total Responding	Percent Responding	Total Responding	Percent Responding	Total Responding	Percent Responding
Saw an ad in a magazine/ newspaper	9	30%	0	0%	9	20%
From a bill insert	5	17%	3	20%	8	18%
From the installation contractor	5	17%	1	7%	6	13%
From the ETO Website	4	13%	1	7%	5	11%
From a friend/ neighbor/relative (word of mouth)	5	17%	0	0%	5	11%
Home show/trade fair	3	10%	2	13 %	5	11%
Received flyer from company or contractor	0	0%	2	13 %	2	4%
Heard an ad on the radio	1	3%	0	0%	1	2%
Other	2	7%	5	33%	7	16%

*multiple response question

Participants were significantly more likely to recall hearing about the program from a magazine ad (30%) compared to non-participants (0%) while non-participants were significantly more likely to recall learning about the program from a contractor flyer (13%) compared to participants (0%). Instead, program participants were more likely to have learned about the program directly from the contractor (16%) compared to non-participants (11%) or from the Energy Trust website (13%) compared to non-participants (11%). Participants were also significantly more likely to have learned about this program through word-of-mouth (17%) compared to non-participants (0%). Bill inserts were mentioned by nearly equal proportions of both participants (17%) and non-participants (20%).

These findings suggest that the messages are reaching program participants across a variety of communications channels. The most effective among program participants are print ads (28%) or from direct communication with either contractors (16%) or friends/relatives (16%). In contrast, non-participants are more likely to have learned about the Home Performance program through flyers/direct mail (22%) or attending a trade fair/home show (22%). Across the board, bill inserts seem to have promoted program awareness most effectively across both program participants (16%) and non-participants (33%).

The customer surveys also probed more fully on the influence of the Energy Trust website in encouraging program participation. More than two-thirds (64%) of all survey respondents said they either visited the Energy Trust website or received a program brochure before scheduling a Home Performance assessment.

Of note, non-participants (73%) were slightly more likely to have visited the Energy Trust website or review a brochure, compared to participants (60%) as shown in Table 20.

Table 20: Visited Website or Received Brochure Before Scheduling the Home Performance Assessment

	Participants		Non-Participants		Total Respondents	
Response	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**
Yes	18	60%	11	73%	29	64%
No	7	23%	4	27%	11	24%
Total	30	100%	15	100%	45	100%

6.4 Measures Installed

All of the survey respondents also indicated if they had installed any energy efficiency measures in their home for which they received an incentive. The installed measures are summarized in Table 21. It shows that air sealing was the most commonly installed measure among all respondents (33%). Of interest, air sealing was installed by seven program participants and eight non-participants.

Table 21: Distribution of Measures Installed by Survey Respondents

	Participants		Non-Participants		Total Respondents	
Measure	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**
Air Sealing	7	23%	8	53%	15	33%
Duct Testing	5	17%	2	13%	7	16%
Attic/ Ceiling Insulation	5	17%	2	13%	7	16%
Home Performance Assessment*	4	13%	2	13%	6	13%
Duct Sealing	3	10%	0	0%	3	7%
Floor Insulation	3	10%	0	0%	3	7%
Wall Insulation	1	3%	1	7%	2	4%
High-Efficiency Windows	1	3%	0	0%	1	2%
Water Heater	1	3%	0	0%	1	2%
Total	30	100%	15	100%	45	100%

* A total of six respondents only recalled receiving an incentive for the home performance assessment even though all respondents did receive this rebate.

Of interest, all of the non-participants indicated they had installed measures on their own after visiting the Energy Trust website or receiving an Energy Trust brochure. The non-participants reported installing the following energy savings improvements on their own, with or without receiving an incentive. As Table 22 shows, most often, seven out of 15 non-participants (46%) reported installing insulation in their homes including floor (19%), ceiling (19%) or weatherization (19%). Other energy efficiency measures were installed by fewer non-participants. Of note, 12 out of 15 non-participants reported receiving an incentive for these installations.

Table 22: Measures Installed by Non-Participants

Measure Installed*	**Number of Responses**	**Percent of Responses**
Floor Insulation	7	19%
Ceiling Insulation	7	19%
Weatherization/Caulking	7	19%
Duct sealing	4	11%
Windows	4	11%
Wall Insulation	3	8%
Other	4	11%
Total	36	100%

*multiple response question

6.5 Home Performance Contractor

Most (33%) respondents hired a Home Performance contractor to improve or increase their home's overall energy efficiency, according to the survey respondents. The other most commonly cited reasons among both participate and non-participants were to reduce the energy bill or save money (22%). The other common reasons mentioned by participants included improving overall comfort (10%) and the need to insulate the home (10%). Reducing the environmental impact was also mentioned by both participants (5%) and non-participants (13%) (see Table 23).

Table 23: Respondents' Reasons For Hiring a Home Performance Contractor

Reasons for Hiring a Home Performance Contractor*	Participant Total (n=30)	Percent of Total	Non-Participant Total (n=15)	Percent of Total	All Respondents	Percent of Total
Improve/increase energy efficiency/reduce energy use	10	33%	11	73%	21	33%
Save Money/Reduce bill	9	30%	5	33%	14	22%
Make my home more comfortable to live in	4	13%	0	0%	4	6%
Needed insulate/weatherize my home	4	13%	0	0%	4	6%
Rebate/Government incentives available	4	13%	0	0%	4	6%
To find the issues with my house	3	10%	0	0%	3	5%
Help the environment	2	7%	3	20%	5	8%
Needed to replace equipment/upgrade	2	7%	4	17%	6	10%
It was recommended	2	7%	0	0%	2	3%

*multiple response question

6.6 Follow-Up Recommendations from Home Performance Contractors

A total of 53 percent of the respondents said that their contractor did not provide any follow-on recommendations. Among participants, half of the respondents (47%) said their contractor did provide follow-up recommendations compared to only 20 percent (n=3) of the non-participants. Rather, most non-participants indicated their contractor did not provide follow-up recommendations (67%) compared to 47 percent of the participants.

Among participants, 43 percent reported that they implemented all of the additional recommendations, while 30 percent said they implemented "most of them." Only five (17%) said they did nothing at this time.

Among those respondents who did not implement additional recommendations (n=26), the majority of both participants (53%) and non-participants (56%) said that the "cost is prohibitive." Moreover, the majority of these respondents (50%) indicated they are "not sure when" they will implement these recommendations. Another 19 percent of the customers are not planning to implement these recommendations anytime in the future.

Only three participants indicated that the Oregon Residential Energy Tax Credit influenced their decision to participate in this program. Five participants reported that they will be applying for applicable federal tax credits associated with the installation of energy efficiency equipment.

Most (n=14) did not have any additional energy saving measures installed. Four respondents (2 participants and 2 non-participants) (15%), had improvements to airflow, while two participants had duct cleaning and one had radon testing.

Two-thirds (63%) of the participants consulted Energy Trust's list of approved trade allies when selecting a contractor while 33 percent did not.

Nearly all the participants (93%) had the contractor complete the paperwork for the Energy Trust incentive. Similarly, 97 percent of all the participants had the contractor complete the paperwork to receive a state tax credit.

6.7 Decision-Making

Using a five-point scale, where "5" meant "Very Likely" and "1" meant "Not at all Likely," the survey respondents rated the likelihood of having a Home Performance assessment conducted on their own without the information or incentive from the Energy Trust.

As Table 24 shows, the clear majority of participants were "Not at all Likely" to have had an assessment on their own (40%), while another 20 percent indicated a likelihood rating of "2."

Table 24: Participants' Likelihood of Hiring a Home Performance Assessment On Their Own

Free Ridership	**Total**	**% of Total**
5 -Very Likely	3	10%
4	3	10%
3	6	20%
2	6	20%
1- Not at all Likely	12	40%
Total	30	100%
Average Rating	2.30	

The participants also indicated the degree of influence three factors had on their decision to participate in the Home Performance program: The Energy Trust Incentive, the Printed Materials, and the Home Performance contractor. The participants rated the degree of influence on a five-point scale, were a "5" meant "Extremely Influential" and a "1" meant "Not at all Influential." As Table 25 illustrates, the contractors were viewed as the most influential factor in the decision to participant, further indicating the overall importance of the Home Performance contractor in the decision to participate in this program.

Table 25: Influence of Program Factors on Participants' Decision-Making Process

	Energy Trust Incentive		**Information and Printed Materials**		**Contractor Providing HP Assessment and Installation**	
Degree of Influence	**Total**	**% of Total**	**Total**	**% of Total**	**Total**	**% of Total**
5- Extremely Influential	1	17%	1	17%	4	67%
4	1	17%	0	0%	1	17%
3	3	50%	3	50%	0	0%
2	1	17%	1	17%	0	0%
1-Not At all Influential	0	0%	1	17%	0	0%
Don't Know	0	0%	0	0%	1	17%
Average Rating	3.33		2.83		4.80	

6.8 Participant Spillover

The program participants also indicated if they had installed additional energy savings measures on their own, without a rebate, as Table 26 summarizes.

Table 26: Additional Energy Savings Actions Taken by Survey Respondents

Additional Actions Done by Respondents*	Number of Participants	Percent of Total	Number of Non-Participants	Percent of Total	Total	Percent of Total
Purchased energy efficient appliances	6	26%	5	17%	11	21%
Installed low flow showerheads	4	17%	3	10%	7	13%
Purchasing energy efficient lighting	3	13%	4	13%	7	13%
Lowered Thermostat Setting	0	0%	5	17%	5	9%
Added caulking/ weatherization	1	4%	3	10%	4	8%
Installed insulation in attics/walls/ceilings	1	4%	2	7%	3	6%
Purchased a new heating system	1	4%	1	3%	2	4%
Purchased a programmable thermostat	1	4%	1	3%	2	4%
Lowered setting on water heater	1	4%	1	3%	2	4%
Installed low-flow faucet aerators	1	4%	0	0%	1	2%
Purchased a new water heater	1	4%	0	0%	1	2%
Completed an Online Energy Audit	0	0%	1	3%	1	2%
Purchased Windows	0	0%	1	3%	1	2%
Did Something Else	3	13%	3	10%	6	11%
Total	23	100%	30	100%	53	100%

*multiple response question

These findings suggest that the survey respondents were able to implement low cost/no cost measures to reduce energy efficiency, but few actually purchased additional energy efficiency equipment such as water heaters (2%) or windows (2%).

6.9 Non-Energy Benefits

The program participants also answered a series of questions regarding the possible non-energy benefits they expected and received by installing the energy efficiency measures.

The first set of questions asked the respondents if they expected to receive any type of non-energy benefits before completing the installations. A second set of questions asked them if they had experienced any non-energy benefits since the improvements were made. Table 27 compares these findings.

Table 27: Comparison of Non Energy Benefit Expectations Before and After Measure Installation

Respondent Expectation of Results	Before Measure Installation		After Measure Installation		
	Number Responding	% of Total	Number Responding	% of Total	Net Difference
Comfort	28	93%	28	93%	0%
Environmental Impact/Carbon Footprint	22	73 %	18	60%	-13%
Ability to pay bills	21	70%	21	70%	0%
Home Value	14	53%	8	27%	-26%
Health/indoor air quality	12	40%	13	43%	3%
Equipment performance	10	33%	11	37%	4%
Noise reduction	7	23%	11	37%	14%
Safety of home	4	13%	3	10%	-3%

*multiple response question

As this table shows, the respondents' expectations initially were highest to see improvements in comfort (93%), reduction in environmental impacts (73%) and an improved ability to pay the energy bill (70%). These expectations were met or exceeded slightly after the measure installation in the following areas: comfort (93%), and the ability to pay the energy bill (70%), equipment performance (33% before, 37% after), noise reduction (23% before, 37% after) and health and indoor air quality (40% before, 43% after).

However, in the remaining categories, the respondents expectations were not met, including the anticipated benefit of environmental impact from the measure installation (60%) and the effect on home value (53% before, 27% after).

The program participants also indicated which three non-energy benefits had the largest impact on their decision to participate in the program. The three top responses were Comfort mentioned by 28 participants (100%), Ability to Pay the Bill (66%) mentioned by 21 participants and Environmental Impact (52 %) mentioned by 22 participants, as shown in Table 28.

Table 28: The Three Most Important Factors in the Decision to Make Energy Efficiency Improvements

Factor	Number Mentioning	% Mentioning
Comfort	29	100%
Ability to pay bills	19	66%
Environmental Impact/Carbon Footprint	15	52%
Equipment Performance	5	17%
Noise Reduction	5	17%
Health/Indoor Air Quality	2	7%
Safety of Home	2	7%
Other	2	2%

*multiple response question

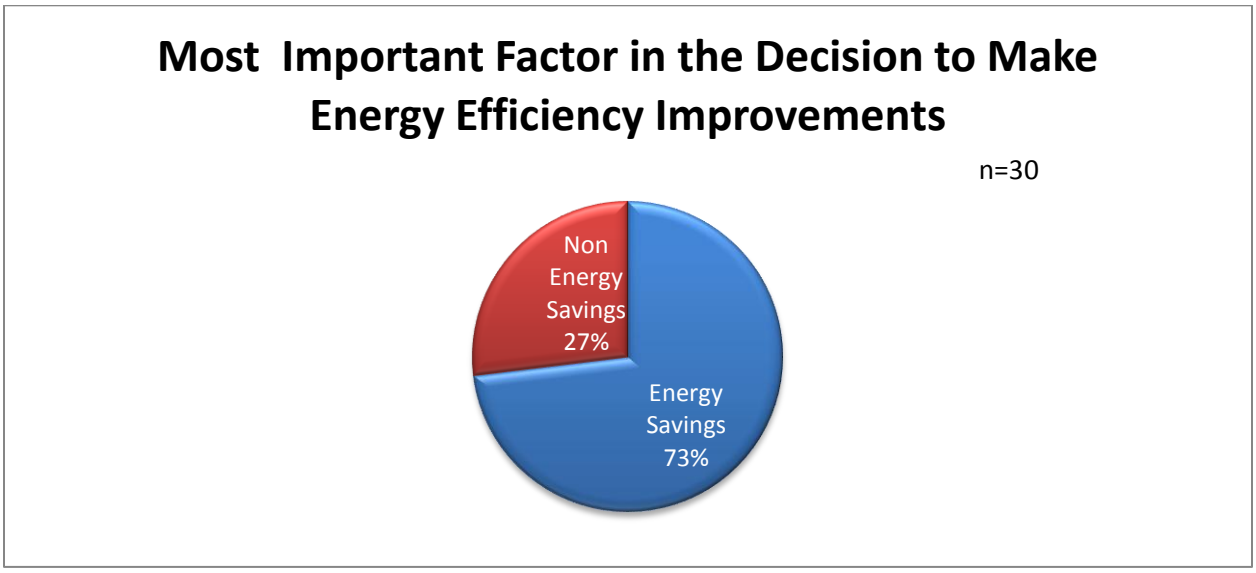

Figure 8: Most Important Factor in the Decision to Make Energy Efficiency Improvements

The program participants were then asked which factor was most important to their decision to make the energy efficiency improvements — the energy savings or non-energy savings. As Figure 6 shows, nearly three-quarters of the respondents (73%) mentioned that energy savings was the most important factor compared to the non energy benefits (27%).

Table 29 explores the participants' motivations more fully by comparing their reasons against their most highly rated non-energy benefit (see Section 6.2). The three most highly rated non-energy benefits were comfort (n=40); ability to pay the bill (n= 33) and environmental impact (n=39).

Table 29: Participants' Reasons For Hiring a Home Performance Contractor by Most Important Non-Energy Benefit

Reasons for Hiring a Home Performance Contractor*	Most Important Non-Energy Benefit		
	Comfort (n=28)	Ability to Pay Bill (n=22)	Environmental Impact (n=19)
Improve/increase energy efficiency/reduce energy use	9	7	7
Save Money/Reduce bill	8	8	7
Make my home more comfortable to live in	4	3	4
Needed insulate/weatherize my home	4	4	1
Rebate/Government incentives available	4	3	3
To find the issues with my house	2	1	1
Help the environment	2	1	2
Needed to replace equipment/upgrade	2	2	1
It was recommended	2	2	1
Other	3	2	2
Total	40	33	29

*multiple response question

The desire to improve or increase energy efficiency was the most commonly mentioned reason across all participant categories, with the desire to save energy or reduce the bill as the second most commonly mentioned reason. Surprisingly, comfort came in as the third most commonly mentioned reason for hiring a Home Performance contractor. Nearly three quarters of the participants (73%) said that energy savings was a more important factor than non-energy benefits, respondents in both groups rated improving the overall home efficiency/reducing energy use as the number on reason for hiring a Home Performance contractor (42% among Energy Savings respondents and 29% among Non-Energy Benefit respondents).

These findings suggest that a message focusing on the "whole house" approach to Home Performance appears to have a positive effect on program participation.

6.10 Satisfaction

Respondents were asked a series of questions using a 5 point scale where "5" meant "Very Satisfied" and "1" meant "Not at all satisfied" measuring their satisfaction with the Home Performance Program. Participants were asked several questions; non-participants were asked only about their overall satisfaction with the Energy Trust of Oregon. Overall, the participants appeared to be "Satisfied" with nearly all features of the Home Performance experience, as illustrated in Table 30 and Figure 9.

Table 30: "Satisfied" Ratings of Home Performance Components

Satisfaction Ratings of Home Performance Components	Number of Respondents Giving a "4" or "5"- " Satisfied" Rating (n= 30)	Percentage of Respondents Giving a "4" or "5"- "Satisfied" Rating
Contractor Who Performed HP Assessment	29	97%
Your Overall Experience with the HP	28	93%
Comfort of your home after measures were installed	27	90%
Quality of Installation	25	83%
Turnaround Time to Receive Incentives	24	80%
The Home Performance Energy Assessment Report	24	80%
Incentive Application Form	23	77%
Price Paid for Installation	21	70%

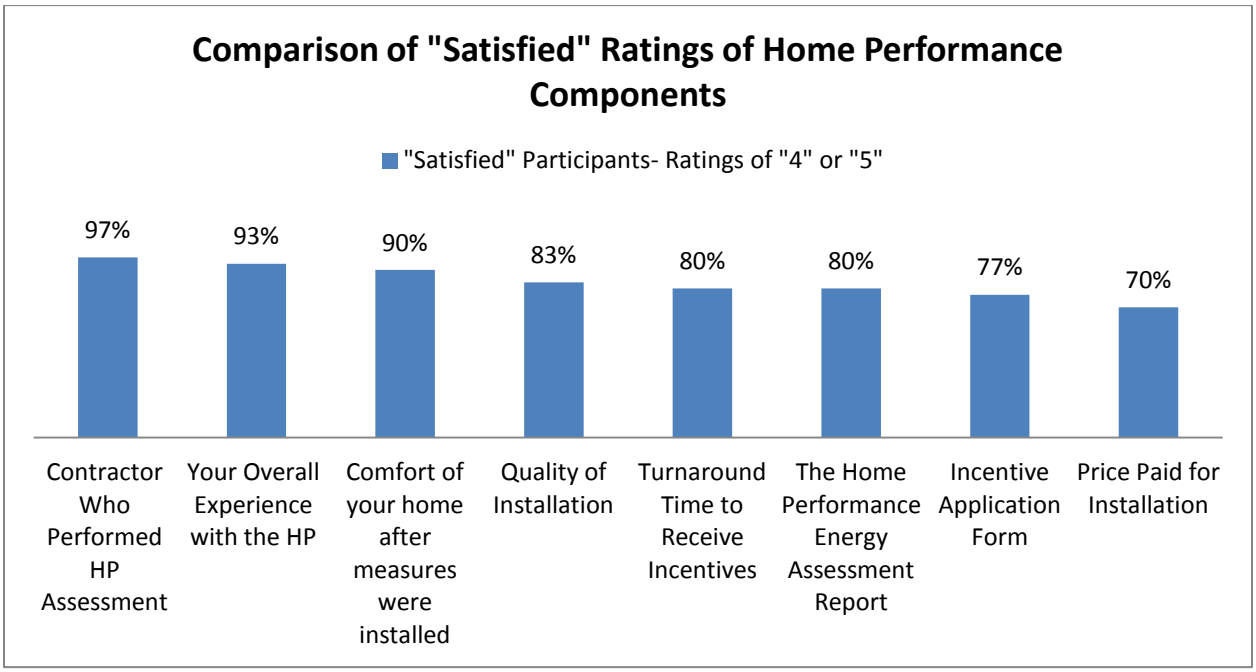

Figure 9: Comparison of "Satisfied" Ratings of Home Performance Components

6.11 Suggestions for Program Improvement

Most (49%) program participants did not offer any suggestions for program improvements, while 11 percent suggested advertising the program more and nine percent wanted the incentives to increase.

The non-participants were also asked why they decided not to go forward with a comprehensive Home Performance project. Consistent with the findings from both the staff and contractor interviews, the biggest barrier to program participation was the fact that these non-participating customers could not afford a Home Performance project. Their responses are summarized in Table 31. These findings further suggest that an area for program improvement would be to provide customers in the Home Performance track some type of financing option, or at least make them aware of other options available through the Energy Trust program portfolio.

Table 31: Reasons Non-Participants Did Not Go Forward with a Comprehensive HP Project

Reasons for Not Going Forward with a Comprehensive Home Performance project	Number Mentioning (n=15)	Percent of Total
Couldn't Afford It	6	40%
I did it myself	4	27%
I didn't agree with them	2	13%
Other	1	7%
Don't Know/Refused	3	20%

The findings suggest that the Home Performance Program Track needs to identify additional ways to encourage customers to follow through with the recommendations at some future point. One approach may be to develop a savings plan, similar to a "Christmas Club" approach in which customers set aside money each month to save for major improvements over time.

Another approach, which could encourage non participants to follow through, would be to include a set of low-cost/no cost energy measures as a part of the initial Home Performance assessment. This approach would demonstrate, quickly and easily, the types of energy reductions possible through even modest improvements while also ensuring even "non participants" receive some energy savings from these measures.

6.12 Demographics

All survey participants live in single family homes, and all but one own their own home. On average, participants tended to live in smaller, older homes compared to non-participants.

The average home square footage for non-participants is 2,260 square feet - 337 square feet larger than the average participants' home (1,923 square feet). On average, homes were 43 years old. The overall household occupancy average for both participants and non-participants was 2.3 people per household.

Respondents were asked whether the number of people that lived in the house full time had changed over the last year. Overall a majority of households (80%) have kept the same occupancy level. Thirty-three percent of the non-participants reported an occupancy change over the last year, compared to only 14 percent among program participants (see Table 32).

Table 32: Comparison of Occupancy Changes

	Participant		Non-Participant		Total Respondents	
Occupancy Level	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**
Increased	2	7%	2	13%	4	9%
Decreased	2	7%	3	20%	5	11%
Stayed the same	26	87%	10	67%	36	80%
Total	30	100%	15	100%	45	100%

Respondents were asked for their combined household income level before taxes for the year of 2010. Overall, there were no discernible differences in annual household incomes between the respondent groups, with 40 percent of the respondents reporting annual household incomes of $75,000 or more as shown in Table 33.

Table 33: Comparison of Annual Income Levels Between Participants and Non-Participants

Income	**Participant**		**Non-Participant**		**Total Respondents**	
	Total Responding	**Percent Responding**	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**
Less than $30,000	1	3%	3	20%	4	9%
$30,000 but under $50,000	3	10%	3	20%	6	13%
$50,000 but under $75,000	7	23%	1	7%	8	18%
$75,000 but under $100,000	7	23%	1	7%	8	18%
$100,000 or more	4	13%	6	40%	10	22%
Total	30	100%	15	100%	45	100%

Similarly, there were no statistically significant differences in the respondents' educational levels across groups. Overall, the clear majority of all respondents (72%) had a college education or higher, with similar levels of educational attainment among both participants (76%) and non-participants (60%), as shown in Table 34. These findings suggest that the decision to install energy efficiency improvements is

not limited by income, since a higher percentage of non participants reported income levels of $100,000 or more. Rather, it appears that participants have decided to make energy efficiency improvements a "priority" and this message should be reinforced in the marketing messages used by the Energy Trust.

Table 34: Comparison Educational Levels Between Participants and Non-Participants

	Participant		Non-Participant		Total Respondents	
Education Level	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**	**Total Responding**	**Percent Responding**
Some High School	0	0%	1	7%	1	2%
High School Graduate	2	7%	5	33%	7	16%
Some College	5	17%	0	0%	5	11%
College	10	33%	6	40%	16	36%
Graduate	13	43%	3	20%	16	36%
Total	30	100%	15	100%	45	100%

7 Key Findings and Recommendations

This section summarizes the key findings and recommendations from the process evaluation activities conducted for the Home Performance program track. These findings have been organized by the key issues identified in this process evaluation.

- **Program Results:** *The Home Performance program is operating smoothly; but there are still some areas for improvement*

From an operations standpoint, the Home Performance program is performing well. But from a program activity level, it is well below program targets.

According to the staff, Home Performance is not expected to meet its electric goals. Moreover, the program staff, implementers and contractors are concerned about the future role of Home Performance track. Although contractors are completing Home Performance projects, the majority are completed through Clean Energy Works.

- **Program Tracking:** *The program databases are tracking all the key metrics as required by both the Energy Trust and the national Home Performance with ENERGY STAR program.*

The Home Performance program has developed an extensive tracking system which documents all key metrics including marketing activities, measure installation, requirements as needed to conform to the national Home Performance with ENERGY STAR standards. This information is provided on a weekly basis to the Energy Trust of Oregon's program staff. The Energy Trust also provides tracking studies on a quarterly basis to determine if "customers are happy with the Home Performance contractors."

- **Program Marketing:** *The participating contractors like the ways in which they receive information from the Energy Trust and Account Representatives about the program.*

Overall, the contractors liked the ways in which they receive information about the Home Performance program, especially the emails/newsletters and communications with their assigned account representatives. All but two contractors are aware of the co-op program and most have participated in the program**.**

> *The most effective ways to reach participating customers is via the Energy Trust website, from the contractors directly, and through bill inserts.*

These customer survey findings suggest that the messages are reaching program participants across a variety of communications channels. The most effective among program participants are print ads or from direct communication with either contractors or friends/relatives or from the Energy Trust website. In contrast, non-participants are more likely to have learned about the Home Performance program through

flyers/direct mail or attending a trade fair/home show. Across the board, bill inserts seem to have promoted program awareness most effectively across both program participants and non-participants.

Marketing the Home Performance program remains a challenge as it is a difficult concept to explain to customers.

The process evaluation findings point out the difficulties of marketing the concept of a whole house. The Home Performance contractors tend to rely on a one-on-one approach. Similarly, the customer surveys also reinforced the importance of contractor interactions in influencing program participation decisions.

- **Program Changes:** *The Home Performance program has shifted away from contractor develop-focused to contractor maintenance.*

There is no longer an emphasis on recruiting eligible contractors because the number of eligible contractors has increased dramatically in the past two years. Therefore, most contractor activities are focused on maintaining the existing trade ally network through training and support, according to both program and CSG staff.

- **Role of Home Performance Contractors:** *The Home Performance contractor participation is dominated by a few large contractors who specialize in air sealing and subcontract out most other services.*

The main reasons for participating in this program according to the participating contractors were because the program was well-structured, and aligned well with their own business goals and objectives. Moreover, these contractors strongly believe in the Home Performance methodologies and philosophy,

The Home Performance contractors play an important role in encouraging customer participation.

The contractors believed that the information they provided customers had the highest influence on customer decision-making compared to the information provided by Energy Trust through its marketing materials or even the incentive.

The participants rated the Home Performance contractor as having the most influence on their decision to participate, while the printed informational materials had the least influence, and the influence of the Energy Trust of Oregon's incentive was regarded a neutral influence, with an average rating of 3.3.

- **Home Performance Contractors Guild:** *The guild is viewed as giving the contractors a voice in the Home Performance community; however it is limited to contractors in the Metro-Portland area.*

The majority of contractors interviewed are active in the guild, with several of the respondents directly involved as either a founding member or board member. The reason contractors are not involved in the guild is primarily geographic, as the guild is located in the Portland metropolitan area. Overall, the contractors viewed the guild as a benefit for the Home Performance community.

- **Contractor Participation in Other ETO Programs:** *These contractors are actively participating in additional energy efficiency programs, including some sponsored by the Energy Trust as well as other utility programs.*

All of the contractors are participating in other energy efficiency programs, including those sponsored by the Energy Trust of Oregon, programs sponsored by other utilities in the state, and Clean Energy Works Oregon.

- **Inter-Relationship with Clean Energy Works Oregon:** *Clean Energy Works Oregon is viewed as a "mixed blessing" by the participating contractors.*

The contractors had mixed reactions regarding their views regarding the relationship of Clean Energy Works Oregon and Home Performance. While some contractors cited that Clean Energy Works Oregon has led to substantially increased sales of Home Performance projects, it was to the detriment of the Home Performance program. Many contractors said that Clean Energy Works Oregon was siphoning off jobs that would have originally been completed through the Home Performance program.

The contractors also indicated that Clean Energy Works Oregon had a much more complicated application process which leads to long lead times and cash flow issues. Some contractors viewed this program as excluding the smaller contractors, which was also viewed as a hindrance to the overall development of the Home Performance market in Oregon.

> *There is some concern by both contractors and programs staff that Clean Energy Works Oregon is siphoning off projects from the Home Performance program track.*

Unlike the traditional market model, Clean Energy Works Oregon assigns the Home Performance contractors specific jobs, thus eliminating the competitive market forces. The contractors are focused on "maximizing revenues not maximizing savings."

While most contractors reported that business has increased during the past year; most of that work was attributed to Clean Energy Works Oregon, rather than free-market Home Performance projects. Project work directly attributable to the standard Home Performance track represents a relatively small percentage of their total business.

> *Clean Energy Works Oregon fills the financing void not addressed in the Home Performance track.*

The contractors acknowledged that there were clear benefits to customers who opted to participate in Clean Energy Works Oregon over the traditional Home Performance program. It provided an avenue for funding larger projects and led to the possibility of deeper energy savings. However, a few contractors doubted that the current Clean Energy Works Oregon staff had the ability to fully appreciate those synergies and move projects in this direction.

Overall, the contractors viewed Clean Energy Works Oregon as a catalyst in the Home Performance market. However, the long-term effects are still not well understood.

- **Role of Account Representatives:** *The participating contractors viewed the Account Representatives as essential to their success in the program and relied on them for support, especially with the new software tool.*

The contractors viewed their account representatives as a good technical resource who serves a good contact point for the program. Most contractors relied on the account representative to provide technical support, answer questions regarding the new modeling software, and help them develop and refine project bids work scopes. Overall, the contractors gave a rating of 4.14 out of 5, suggesting that the account representatives play an important role in supporting these contractors in the Home Performance program.

- **Home Performance Assessment Software:** *The Home Performance software assessment tool (in its current state) is unusable.*

While some contractors admitted that the tool was an improvement over the previous version, there are still many glitches and errors to work through. Several contractors indicated the software in its current design was not usable in the Oregon market, since it did not allow for housing types.

- **Measures Installed:** *Most of the measures installed are air and duct sealing.*

Conducting the Home Performance assessments, air and duct sealing, and insulation services accounted for the majority of these contractors work. While a few install heating systems and water heating, most tended to subcontract out those services. The contractors also subcontract out specialized mechanical, plumbing and other services such as mold or moisture remediation.

Most contractors indicated that the customers would not have gotten an assessment without the incentive. On a scale of "1" to "5" regarding the likelihood of having an assessment on their own; the participants provided a rating of 2.30 for program participants, suggesting that free ridership rates were low for this program.

- **Spillover:** *Spillover is limited to installing additional low cost/no cost measures rather than purchasing additional equipment.*

The survey respondents reported implementing low cost/no cost measures to reduce energy efficiency, but few actually purchased additional energy efficiency equipment such as water heaters or windows.

- **Non-Energy Benefits:** *The initial driver for customer participation is energy savings. However, as customers become more educated about the Home Performance program, their interest in non-energy benefits increases. The three top non-energy benefits are comfort, ability to pay the bill, and reducing the environmental impact.*

The initial driver for customer participation is energy savings. The desire to improve or increase energy efficiency was the most commonly mentioned reason for participating in the Home Performance program. The desire to save energy or reduce the bill was the second most commonly mentioned reason. Surprisingly, comfort came in as the third most commonly mentioned reason.

However, comfort and health and safety become bigger motivators as they learn more about the program. Moreover, the findings suggest that the decision to install energy efficiency improvements is not limited by income, since a higher percentage of non participants reported income levels of $100,000 or more. Rather, it appears that participants have decided to make energy efficiency improvements a "priority" and this message should be reinforced in the marketing messages used by the Energy Trust.

- **Program Satisfaction:** *Overall, customers are happy with Home Performance.*

None of the contractors received any negative feedback from the customers, and survey respondents reported a high level of satisfaction with the program.

> *The features customers seem to like best are receiving the incentive, receiving an assessment, and seeing actual energy savings.*

However, contractors are frustrated with the program, especially regarding marketing and the software tool.

The contractors value the Energy Trust in general and the personal services provided by their account representatives. But they still have concerns regarding application processing and marketing issues that need to be resolved.

> *Non-participants reported slightly higher levels of satisfaction with the Energy Trust compared to program participants.*

The average satisfaction rating was 4.71 out of 5 for all the survey respondents.

- **Non Participants:** *There is currently no follow-up mechanism in place to encourage non participants to move forward with even modest energy efficiency improvements after completing the initial Home Performance assessment.*

Consistent with the findings from both the staff and contractor interviews, the biggest barrier to program participation was the fact that these non-participating customers could not afford a Home Performance project.

7.1 Recommendations for Program Improvement

- **Reallocating Program Resources:** *While the program has shifted its focus, it still needs to provide contractors with support to maintain or sustain program participation. The contractors indicated that their Account Representatives provide a valuable role. Therefore, any reallocation of resources must focus on maintaining contractor support; at least until the new software tool is operational.*

The Home Performance program track is facing new challenges in the Home Performance market with the advent of Clean Energy Works Oregon. Program staff supported a reallocation of CSG's efforts, focusing less on software training and more on other types of contractor support. However, the contractors clearly indicated an ongoing need for them, and therefore would not be pleased if this support decreased.

- **Provide Online Applications:** *This feature could streamline the customer application process and enhance overall program operations.*

Both the contractors and the implementation staff strongly supported the move towards an online application process. They believed this would enhance overall program operations and accelerate the rebate processing time.

- **Pay Incentives Directly to Contractors Rather Than Customers:** *This would lower the barrier to the cost of the Home Performance Assessment and also provide a way for smaller contractors to remain competitive.*

- **Provide Program Information in a Webinar or Podcast:** *This will allow better access for contractors outside of the Metro-Portland area especially for those who cannot attend Home Performance Contractor Guild meetings.*

- **Consider Restructuring the Contractor Rating System:** *Currently it seems biased towards larger contractors, and the metrics should be reviewed to ensure smaller contractors are not treated unfairly.*

The new rating system of one to three stars appears to unfairly bias against the smaller contractors because they are based on project volume. Some contractors attributed their decline in sales to the new rating system.

- **Provide a Better Differentiation of the Home Performance Program:** *The program's features and benefits should be more clearly delineated against the other Energy Trust programs.*

- **Consider Offering Advanced Training Classes:** *The contractors are most interested in advanced topics taught by experienced instructors in Advance Building Performance.*

In addition to classes in bid development, many contractors also wanted specialized training in insulation and duct sealing techniques.

- **Home Performance Assessment Software Must Improve.** *Nearly all the contractors reported serious problems with the new CSG software. Until it improves, there will be an ongoing need for software training and support.*

The contractors are not happy about constantly testing the software in the field. Therefore, Energy Trust should work directly with CSG to make the identified improvements as quickly as possible rather than requiring the contractors to use a faulty product for an extended period of time.

- **Encourage non participants to follow through by offering low cost/no cost energy efficiency measures as part of the initial Home Performance assessment.** *Bundling in a group of measures that will lead to small energy savings, such as energy efficient lighting or water conservation measures, will help reinforce to customers the benefits of energy efficiency installations*.

- **Promote other types of "financing" programs including saving for major energy efficiency improvements**. *The Energy Trust should provide customers with information about other types of financing that may be available for these types of projects.*

However a more practical idea may be to encourage financially constrained customers to start saving a little each month for energy efficiency improvements. This notion, similar to a "Christmas Club" account could also help to move customers to investing in larger projects over time, while also addressing the perceived "financing gap" associated with this program.