research/into/action inc

Final Report

Fast Feedback Program Rollout: Nonresidential & Residential Program Portfolio

Funded By:

EnergyTrust of Oregon

Prepared By:

research/into/action inc

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ACKNOWLEDGEMENTS

We would like to thank Philipp Degens and Sarah Castor of Energy Trust of Oregon, Inc. for their direction and insight. Staff of Energy Trust's various residential and nonresidential programs helped craft program and measure-specific questions to enable us to collect meaningful data on satisfaction and attribution of program savings. We also thank the Energy Trust call center manager and staff for their cooperative spirit, as well as the various program participants who responded to our survey.

ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

Energy Trust selected Research Into Action, Inc. to assist in the rollout of the new Fast Feedback Methods for collecting participant feedback shortly after completion of program-assisted projects. This rollout was implemented from May through July 2010, across several nonresidential and residential energy efficiency programs. Research Into Action adapted and expanded the data-tracking Methods it had developed for the 2009 pilot study of the Fast Feedback Methods[1] to draw monthly samples and track survey results across the programs. Research Into Action also carried out a portion of the surveys and coordinated with Energy Trust's call center, which carried out the majority of the surveys.

METHODS

Energy Trust identified 23 participant groups to survey. Each of the five nonresidential programs constituted a single survey group, as did the Home Performance, Solar Water Heating, and Residential Solar Electric programs. The samples for the Existing Buildings, New Buildings, and Production Efficiency programs were stratified: in Existing Buildings and Production Efficiency, each sample included roughly equal proportions of lighting, standard non-lighting, and custom projects; in New Buildings, each sample included about equal proportions of standard and custom projects.

In the Existing Single Family program and the Home Products program, 13 survey groups were defined by type of participation (usually, type of measure installed). Sample sizes were computed to achieve 10% precision at 90% confidence for Q2 2010 participation, with populations estimated from Q2 2009 data and revised over the course of the rollout.

We adapted the pilot survey instrument to each survey group. For most survey groups, the instrument covered program satisfaction and two sets of investment/purchase decision questions designed to produce estimates of free-ridership: ratings of program influence and likely actions the respondent would have taken regarding the energy-efficiency measures in absence of the program. In all surveys, respondents were read a list of possible actions, and the respondent was allowed to select as many as were applicable. Some of the possible alternative actions would not necessarily have reduced the energy savings (e.g., performing air sealing or insulation oneself, without a contractor, or installing a different heating system rather than a heat pump), but we assumed those would result in a moderate reduction in savings as a conservative approach.

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1 *Fast Feedback Pilot: Existing Buildings and Production Efficiency Program*. Prepared by Research Into Action, Inc. for Energy Trust of Oregon, March 10, 2010. Available on Energy Trust of Oregon website: *http://energytrust.org/library/reports/100310_FastFeedback.pdf.*

The instrument for the Existing Single Family program Home Energy Review did not include free-ridership questions as the Home Energy Review did not include equipment installation or a service cost. This survey asked about program satisfaction and about recommended improvements that had been carried out or were planned.

ROLLOUT IMPLEMENTATION

In total, Research Into Action and the Energy Trust call center completed the survey with 942 program participants, meeting or exceeding the precision goals in most cases.

The implementation of the rollout generally went smoothly. In some cases, the precision goals were not met because the data-tracking system did not calculate revised sample sizes correctly over the course of the rollout. The issue was identified and corrected.

RESULTS

Nonresidential Programs

All nonresidential programs produced generally high satisfaction. To the degree that satisfaction varied among program elements, respondents were most satisfied with installation quality and (except for New Buildings participants) with the equipment itself (Table ES.1).

Table ES.1: Program Satisfaction and Influence in Nonresidential Energy Efficiency Programs

Program Element	Percent Rating Satisfaction / Influence "4" or "5" on 5-Point Scale by Program			
	Existing Buildings	New Buildings	Multifamily	Production Efficiency
	Satisfaction			
Overall program satisfaction	91%	87%	72%	91%
Installation	94%	86%	94%	95%
Equipment	87%	50%	83%	96%
Tenant comfort	N/a	N/a	89%	N/a
Program representative	86%	84%	78%	93%
Incentive	85%	68%	78%	93%
Technical study	76%	34%	88%	74%
Application process	77%	65%	56%	82%
Tax information	68%	N/a	75%	71%

Continued

Program Element	Percent Rating Satisfaction / Influence "4" or "5" on 5-Point Scale by Program			
	Existing Buildings	New Buildings	Multifamily	Production Efficiency
	Influence			
Incentive	85%	38%	89%	91%
Technical study	76%	38%	88%	82%
Contractor / design professional	71%	65%	65%	54%
Program representative	52%	52%	65%	72%
Maximum influence (of all sources)	95%	82%	89%	93%

Some variability existed among programs, but participants in the New Buildings program differed most from the others in terms of what they were most and least satisfied with; they also had generally the lowest levels of program satisfaction.

The majority of respondents in all nonresidential programs said that one or more elements of the program had a strong influence on their actions. Program influence was weakest in the New Buildings program, but even there, 82% of the respondents gave at least one element an influence rating of "4" or "5" on a five-point scale.

Mean savings-weighted free-ridership was 8% for Production Efficiency, 13% for Existing Buildings – Multifamily, 11% for Existing Buildings, and 40% for New Buildings.[2] The high free-ridership rate in New Buildings was driven largely by a high percentage of respondents who indicated that they would have done the new building project the same way without the program. It is possible that high percentage, in turn, was influenced by the wording of the question and response options. We address this in the body of the report.

Residential Programs

The Home Products, Home Performance, and Solar Water Heating programs produced generally high satisfaction. Satisfaction varied from moderate to high in the Existing Single Family program: it was generally highest for quality of installation and the installation contractor, and lowest for the information that the program provided (Table ES.2).[3]

[2] The Solar Electric program is not evaluated on the basis of free-ridership, so no savings-weighted values are reported. However, the unweighted free-ridership was 11%.

[3] Results for the Solar Water Heating group are not shown in the table, as the number of respondents was small and it would be misleading to report percentages.

Table ES.2: Program Satisfaction and Influence in Residential Energy Efficiency Programs

Program Element	Percent Rating Satisfaction / Influence "4" or "5" on 5-Point Scale By Program			
	Existing Single Family[1]	Home Energy Review	Home Products	Home Performance
Satisfaction				
Overall program satisfaction	84%	93%	89%	90%
Information about energy savings	66%	80%	54%	82%
Information about incentives	65%	64%	55%	N/a
Application process	68%	N/a	77%	80%
Incentive turnaround time	67%	N/a	72%	72%
Installation quality	83%	N/a	N/a	96%
Equipment performance / comfort	77%	N/a	89%	96%
Overall satisfaction with contractor	86%	N/a	N/a	N/a
Influence				
Incentive	62%	N/a	50%	83%
Contractor / salesperson / retailer	56%	N/a	56%	81%
Information from energy trust	59%	N/a	31%	71%
Maximum influence (of all sources)	80%	N/a	75%	92%

[1] Percentages in this column are computed on the combined responses of the multiple survey groups representing this program; they therefore do not reflect the variability in influence ratings found among the survey groups, as discussed in the text.

Many respondents had difficulty rating their satisfaction with the information that the program provided, possibly because they did not recall the information they received. Revising the wording of that question to first ask respondents if they recall receiving information may produce more reliable responses.

Among all residential groups, satisfaction with the incentive turnaround time was most consistent among all survey groups (56% to 80% of respondents rated satisfaction as "4" or "5") and satisfaction with information received about incentives was most variable (36% to 85% rated satisfaction as "4" or "5").

Program influence was more variable among the residential survey groups than among the nonresidential groups. Influence was generally high for the Home Performance and Solar Water Heating groups. Influence levels varied among the groups surveyed for the Existing Single Family program, with the percentage of program participants giving at least one program element an influence rating of "4" or "5", ranging from 68% to 93% – 80% when the multiple survey groups are considered together (see Table ES.2). In the Home Products program, 67% of

clothes washer purchasers and 60% of refrigerator purchasers rated the influence of at least one program facet as a "4" or "5".

Free-ridership varied greatly among the residential programs and in the survey groups within programs. It was greatest among individuals who purchased appliances (61% for refrigerators and 46% for clothes washers in the Home Products program, 49% for water heaters and 46% for heat pumps in the Existing Single Family program). It was least in the Solar Water Heating program (16%), Home Performance program (18%), with the air and duct sealing groups (23%) in the Existing Single Family program, and for refrigerator recycling (28%) in the Home Products program.

Some survey respondents indicated both that without program support they would have cancelled or postponed a project and also that they would have done something else short of cancelling it. We interpreted this as meaning that the person would not have done the project in 2010 and then would have done something with lower savings later.

CONCLUSIONS AND RECOMMENDATIONS

We make the following conclusions and recommendations:

- ***Conclusion 1:*** In the Existing Single Family and Home Products programs, the wording of the questions about satisfaction with delivery of program information about energy savings and about incentives produced unreliable results.

  Recommendation: Revise the questions about delivery of information concerning energy savings and incentives. First, ask respondents if they recall being given any information about energy savings and incentives; ask satisfaction questions only of respondents who can recall being given information.

- ***Conclusion 2:*** Seemingly inconsistent descriptions of what would have been done without program support can have a variety of meanings, with different implications for the calculation of free-ridership.

  Recommendation: Either revise the survey to require respondents to indicate *either* that they would have cancelled or postponed the project *or* that they would have done something else, but not both, or train callers to probe for clarification with respondents who give both answers.

- ***Conclusion 3:*** Some response options describing actions that might have been taken if program assistance had not been available (e.g., performing air sealing or insulation oneself, without a contractor, or installing a different heating system rather than a heat pump) do not provide clear implications about differences in energy savings that the

changes would have caused, requiring that assumptions be made to calculate free-ridership.

Recommendation: Review all survey instruments to determine how each response option contributes to estimation of free-ridership. Eliminate or revise any response option that does not provide a clear interpretation of change in energy savings.

➡ ***Conclusion 4:*** The wording of the project change question and/or response options for the New Buildings program may leave some ambiguity whether the question pertains to the entire construction project or just that equipment covered by the Energy Trust incentives.

Recommendation: Consider rewording the project change question and/or response options for the New Buildings survey. In particular, one response option should specify installing less energy-efficient equipment *in place of the equipment that received program incentives*, and the no change option should indicate: "not changed the *equipment or systems you installed in your construction project* at all."

MEMO

Date: November 4, 2010
To: Board of Directors
From: Sarah Castor, Evaluation Project Manager
Subject: Staff Response to Fast Feedback Rollout Report

Following the successful implementation of Fast Feedback for two commercial programs in 2009, Evaluation and program staff agreed to expand the survey to virtually all Energy Trust programs. We are pleased with the results so far. Findings from the surveys are already being used to adjust program and communications strategies.

Survey results showed less satisfaction with information from Energy Trust than most other aspects of the residential participant experience. In discussing this finding with call center staff who conducted the surveys, it became clear that the low satisfaction was a result of respondents not understanding the question fully and choosing a neutral rating. We have since changed the question to ask specifically about information from our website and printed brochures, and will monitor responses to see if the new wording clears up confusion.

The questions about how the project would have changed in absence of the program need further revision for simplification. These changes will be made once surveys are complete for Q3 participants.

In addition to these changes, we have expanded the survey to commercial solar water heating and small wind participants, and participants from our NW Natural Washington territory. Results for these groups will be reported with Q3 results in January 2010.

We are in the process of analyzing the open-ended responses, categorizing them, and providing pre-coded options for common responses such as “advertize more” or “took a long time to receive incentive” for survey takers to record. This will provide high-level information on respondent feedback while still leaving room for individual comments.

The survey will continue to receive fine tuning as needed and at the end of Q2 2011 we will evaluate Fast Feedback to determine whether changes are needed to the frequency or volume of surveys and reporting.

1 INTRODUCTION

Energy Trust of Oregon, Inc. (Energy Trust) was incorporated as an Oregon nonprofit public benefit corporation in March 2001, and began operation in March 2002 to fulfill a mandate to invest "public purposes funding" for new energy conservation, the above-market costs of new renewable energy resources, and new market transformation in Oregon. It receives funding from a 3% public purposes charge to the rates of the two largest investor-owned electric utilities in the state: Pacific Power and Portland General Electric (PGE). Additionally, under separate agreements with NW Natural and Cascade Natural Gas Corporation, Energy Trust administers funding for gas efficiency. Energy Trust has a responsibility to communicate with the Oregon Public Utilities Commission (OPUC) on how it is spending its funding and what it achieves.

Energy Trust offers an array of residential and nonresidential energy efficiency programs, all of which undergo periodic process and impact evaluations to determine the actual level of program savings and identify program strengths as well as potential areas for improvement. Those evaluations generally include participant surveys to assess a variety of process and impact issues, including program satisfaction and free-ridership estimation.

To improve the reliability of satisfaction and free-ridership data, Energy Trust sought a Methods for collecting, on a rolling basis throughout the year, participant feedback on selected issues shortly after completion of program-assisted projects. Energy Trust selected Research Into Action, Inc. to help develop and test the Methods, which was termed the *Fast Feedback* survey.

Research Into Action conducted a pilot test of the new Fast Feedback Methods in July 2009 through January 2010 with participants in the Existing Buildings and Production Efficiency programs to compare three survey methods: paper, telephone, and web-based. Based on the results of that pilot test, Energy Trust selected the telephone survey method as having the best combination of high completion rates, lack of non-response bias, and ease of administration.

Energy Trust selected Research Into Action to assist in the rollout of the Methods across several nonresidential and residential energy efficiency programs. The nonresidential programs included in the rollout are: Existing Buildings, Existing Buildings – Multifamily, New Buildings, Production Efficiency, and Commercial Solar Electric. The residential programs are: Existing Single Family, Home Products, Home Performance with ENERGY STAR®, Residential Solar Electric, and Solar Water Heating.

Under this contract, Research Into Action adapted and expanded the data-tracking Methods it had developed for the pilot study to draw monthly samples and track survey results across the programs. Research Into Action also carried out a portion of the surveys and coordinated with Energy Trust's call center, which carried out the majority.

This report: documents the methods used and the results of the rollout of the Fast Feedback Methods across Energy Trust's portfolio of energy efficiency programs; describes challenges encountered and how they were resolved; and offers recommendations for the continuation of this Methods.

2 METHODS

This section describes the sample plan for the Fast Feedback rollout, the instrument used and how it was tailored to the various programs, calculation of free-ridership, and key aspects of the rollout's implementation.

SAMPLE PLAN

Energy Trust identified 23 participant groups to survey. Each of the five nonresidential programs constituted a single survey group, as did the Home Performance, Solar Water Heating, and Residential Solar Electric programs. The Existing Single Family program constituted ten survey groups, each comprised of one measure type. The Home Products program constituted three survey groups – two types of appliance purchase and refrigerator recycling. Energy Trust's goal was to survey a sample of participants in each surveyed group that provides the industry-standard levels of 10% precision and 90% confidence.

To compute the initial sample size estimates, we initially used Q2 2009 participation levels as estimates of the eventual Q2 2010 population size. During the course of the rollout, we revised the sample size estimates based on the actual count of projects. Table 2.1 shows the Q2 2009 population, and both the initial and final revised Q2 2010 quotas for each survey group.

In fact, since a given participant may account for more than one project and the samples were of participants and not projects, the final estimated sample sizes were somewhat larger than needed, yielding slightly greater precision. However, the difference was small, since most participants had a single project in any given month.

Table 2.1: Planned Sample Sizes and Quotas by Survey Group

Program	Q2 2009 Population	Q2 2010 Estimated Survey Quota	Q2 2010 Final Survey Quota
Non-Residential			
Existing Buildings – Multifamily	48	24	27
Existing Buildings	420	59	52
New Buildings and New Buildings – Multifamily	60	45	33
Production Efficiency	142	47	44
Commercial Solar Electric	23	10	18

Continued

Program	Q2 2009 Population	Q2 2010 Estimated Survey Quota	Q2 2010 Final Survey Quota
	Residential		
Home Products: Clothes Washer	4,191	67	67
Home Products: Refrigerators	2,101	66	66
Home Products: Refrigerator Recycling	4,000	67	66
Existing Single Family: Air Sealing	1,000	64	55
Existing Single Family: Ceiling Insulation	498	60	60
Existing Single Family: Duct Insulation	157	48	23
Existing Single Family: Floor Insulation	349	57	53
Existing Single Family: Wall Insulation	151	47	38
Existing Single Family: Duct Sealing	550	61	45
Existing Single Family: Heat Pump	360	58	58
Existing Single Family: Home Energy Review	3,053	67	64
Existing Single Family: Water Heater	406	59	61
Existing Single Family: Windows	122	44	47
Home Performance	60	30	31
Solar Water Heating	23	10	8
Residential Solar Electric[1]	38	19	0

[1] The final survey quota for Residential Solar Electric was 0 because zero participation was erroneously reported for that program.

SURVEY INSTRUMENT

For the rollout, we adapted the pilot survey instrument to each survey group. The survey instrument was designed to be very brief – capable of being completed in about five minutes. The pilot instrument covered program satisfaction, indicators of free-ridership, future intentions to work with Energy Trust, additional services desired from Energy Trust, and additional comments (including suggestions for improving current Energy Trust services).

To adapt the instrument to each survey group, we distributed the final pilot version to the staff of each Energy Trust program and requested suggested revisions to each set of questions. The goal, however, was to maintain the same general structure and approximate length of the pilot instrument. We eliminated the question about future intentions to work with Energy Trust, as there was very little variance in the responses to that question in the pilot survey – almost everyone said they would work with Energy Trust the next time they did an equipment installation or upgrade.

The instrument for one survey group was distinct from all the others. The survey for Existing Single Family: Home Energy Review did not include free-ridership questions as the Home Energy Review did not include equipment installation or have a cost associated with the service. Those in this survey group were asked about program satisfaction and for their additional comments. They also were asked if they had made any or were planning to make any of the improvements recommended by the Home Energy Review advisor and, if so, what they had made or planned to make.

Satisfaction

The satisfaction questions varied somewhat among the survey groups, but several core issues were covered for many of the groups. All surveys asked about satisfaction with the overall program experience. In addition, the surveys for most or all of the nonresidential and many of the residential groups addressed satisfaction with the following elements of program experience:

- Performance of equipment installed
- Incentive amount
- Application process
- Quality of installation work

The surveys for most or all nonresidential groups also assessed satisfaction with:

- Interaction with the program representative
- Quality of the technical study (if applicable) or equivalent activities
- Information on how to apply for the tax credit (if applicable)

The surveys for several residential groups assessed satisfaction with:

- Program-related information received from Energy Trust
- Turnaround time for receiving the program incentive
- Ease of finding a contractor

Finally, there were certain topics that were specific to one or two programs or survey groups:

- Tenant comfort (Existing Multifamily)
- Energy Trust inspection (Solar Electric)
- Custom energy report (Home Performance)
- Comfort of home after equipment installation (Home Performance)

- Ease of finding products (Home Products)
- Scheduling (Home Products: Refrigerator Recycling, and Existing Single Homes: Home Energy Review)
- Equipment pickup (Home Products: Refrigerator Recycling)

The respondents to the Home Performance and Existing Single Family surveys were also asked about their satisfaction with the contractor on several dimensions: punctuality, cleanliness, incentive paperwork completion, information provided about Energy Trust incentives, and overall satisfaction. The survey for the Existing Single Homes: Home Energy Review asked about their satisfaction with the program energy advisor on several points: knowledge, courtesy, materials left behind, and recommendations provided.

For each item, satisfaction was rated on a five-point scale, from "1" (not at all satisfied) to "5" (very satisfied).

Free-Ridership

Free-ridership assessment was based on the Methods developed for the evaluation of the Energy Trust 2006-2007 Production Efficiency (PE) and Existing Buildings (EB) programs.[4] This assessment comprised three elements: 1) how the project would have changed without program assistance; 2) the availability of funds to do the project without program assistance; and 3) the program's influence on the project. As described in greater detail below, responses indicating that lack of program assistance would have resulted in significant changes to what was done and high program influence on the project were taken to indicate lack of free-ridership. Responses that indicated that lack of program assistance would not have changed what was done and that there was little program influence on the project were taken to indicate free-ridership.

We adapted this Methods to the portfolio of Energy Trust residential and nonresidential programs, again by soliciting feedback from program staff. As described below, a key modification of the Methods relates to the first element: how the project would have changed without program assistance. The idea of an equipment replacement or upgrade project is well understood in commercial and industrial settings, but it may be less applicable to a residential participant.

[4] *Final Report: Impact and Process Evaluation of the 2006-2007 Building Efficiency Program*. Prepared for Energy Trust of Oregon by Research Into Action, Inc., and the Cadmus Group, Inc. (*http://energytrust.org/library/reports/Evaluation_2006-2007_EB_Prog.pdf*).

Project Change without Program Assistance

As in the pilot survey, nonresidential respondents were asked to identify how their project would have changed if they had not participated in the program. For most nonresidential groups, respondents were given the following options:

- Cancelled the project altogether
- Postponed the project more than one year
- Purchased less expensive equipment
- Installed less energy-efficient equipment (slightly, somewhat, or significantly)
- Reduced the project size or scope
- Not changed the project at all

If needed, callers asked probe questions to code responses into one or more of the above options.

The first two categories indicate that lack of program support would have resulted in maximum change compared to what was done with program support, while "not changed the project at all" indicates no change compared to what was done with program support. The other categories indicate some moderate level of change.

Revisions for Nonresidential Survey Groups

For the New Buildings program, an additional option was "would not have done commissioning." "Purchased less expensive equipment" was not included as a response category for this program, as this was not as pertinent to new buildings as it was to existing buildings and processes; instead, "reduced energy design features" was included as a response category.

The response categories for the commercial participants in the Solar Electric program were the same as for the residential participants in that program and are described below.

Revisions for Residential Survey Groups

Rather than asking how a project would have changed without program support, the survey for the residential programs asks what action, from a list, the participant would have taken if the Energy Trust incentive had not been available. For all groups except Home Products: Refrigeration Recycling, the options included: the program-supported activity would not have taken place at all; the activity would have been postponed more than one year; and the activity would have been undertaken in exactly the same way as it had been done with program support. These options indicate that lack of program support would have resulted in maximum change (the first two options) or no change (the third option) compared to what was done with program support.

In addition to the above three statements, each nonresidential survey included one to four additional options indicating a moderate level of change. As with the nonresidential surveys, most of the residential surveys included options for use of less expensive or less efficient equipment (or, in the case of Solar Water Heating, a smaller system). Other moderate change options included:

- Making repairs to existing equipment
- Installing less of a certain type of equipment (e.g., windows, insulation)
- Installing fewer types of equipment (Home Performance)
- Purchasing used equipment (appliances)
- Performing insulation or air sealing oneself, rather than using a contractor
- Installing a different type of heating equipment (heat pump)

We assumed that performing the insulation or air sealing oneself would result in lower energy savings because the quality of installation would not be as good or less insulation would be installed. This may not always be the case, but this was the most conservative approach.

Similarly, installing a different type of heating equipment rather than a heat pump may not necessarily reduce energy savings; however, we chose this assumption as the conservative approach. It may be appropriate in the future to ask respondents what type of heating equipment they would have installed, although the responses may not be reliable.

The survey for participants of the Existing Single Homes program who had windows installed included an additional response option for "project change without program support": *Not taken – additional efficiency actions needed to qualify for the incentive*.

This was included because participants that install windows are required to undertake an additional shell or heating measure to qualify for the windows incentive. The purpose of the question is to ascertain whether some individuals would have undertaken the other measures (for which they would have received a separate incentive), even if they had not had the windows installed. Since the program-attributable savings for the other measures are accounted for separately from those for the windows, whether or not they would have been installed if the windows had not been installed has no bearing on program-attributable savings for the windows. Therefore, this response has no bearing on the free-ridership calculation for windows.

The response options for the refrigeration recycling program were different from all other programs and indicated that lack of program support would have resulted in either a complete change from what they did with program support or no change at all. The responses indicating complete change were:

- Kept using the refrigerator

- Sold the refrigerator through an ad or garage/estate sale
- Gave the refrigerator to charity
- Gave the refrigerator to a friend or family member
- Sold or gave the refrigerator to a used appliance dealer

For all of the above, we assume that the refrigerator would continue to be used.

Responses indicating no change without program support were:

- Taken or had the refrigerator taken to a recycler
- Taken or had the refrigerator taken to a landfill/community waste center

For the above responses, the refrigerator would not continue to be used.

In addition to the above, there were two response categories for which we determined that whether or not the unit continued to be used was unknown:

- Had an appliance retailer remove the unit
- Kept unit but not used it

In the first case, the appliance retailer might resell the unit, but also might recycle it. In the second case, we did not assume deceit, but considered the possibility that the refrigerator might at some future time be recruited back into service despite the owner's original intent.

Availability of Project Funds

Nonresidential respondents were asked whether their firm would have made available the funds needed to cover the entire project cost if it had not received the Energy Trust incentive; available responses were *yes*, *no*, and *don't know*. This was not a meaningful question for the residential survey.

Program Influence

Respondents were asked to rate the influence of several program elements on how the project was done. Influence was rated on a five-point scale, from "1" (not at all influential) to "5" (extremely influential). The identified program elements varied somewhat among the groups, but most or all groups were queried about the influence of the following:

- The program incentive (all residential and nonresidential programs)
- The installation vendor or contractor (most nonresidential and residential), retailers, or design professionals

- The program representative (nonresidential) or information received from Energy Trust (most residential)
- A technical study, technical assistance, building assessment, or solar energy review

In addition, the survey for residential participants in the Solar Electric program asked about the influence of participation in a community-driven solar effort, and the survey for participants in the Home Products: Refrigeration Recycling program asked about the influence of the free pickup and removal of the recycled refrigerator.

Additional Questions

All surveys included two open-ended questions that asked for additional comments and suggestions for improving current Energy Trust services; responses were recorded verbatim for later coding.

In addition to the above questions that were common to all or most surveys, a few additional questions were included in certain surveys:

- *Did you consider Energy Trust's list of approved trade allies when selecting your contractor?* (Home Performance and Existing Single Family)
- *How did you pay for your system?* (residential Solar Electric and Solar Water Heating)
- *Have you applied or will you apply for the Oregon state tax credit for the equipment you purchased?* (Heat pumps, Duct sealing, Home Products, Solar Electric, and Solar Water Heating)
- Have you applied or will you apply for a federal tax credit for the solar system you installed? (Solar Electric, Solar Water Heating, Home Performance, Existing Single Family)
- *Are you replacing, or have you replaced the refrigerator that was recycled?* (Home Products – Refrigerator Recycling)

PROGRAMMING SURVEY INSTRUMENTS

Research Into Action programmed the survey instruments using *Vovici EFM*, an online product designed for email survey campaigns that can be adapted for use with phone surveys.

FREE-RIDERSHIP CALCULATION

For each respondent, we calculated two scores: the *Project Change Score* and the *Program Influence Score*. Both scores ranged from "0" (indicating no free-ridership) to "50" (indicating high free-ridership). The algorithm for calculating each score was specific to the survey group, but used the following general logic.

For nonresidential respondents, the Project Change Score was based on responses to the *project change* question and the *availability of funds* question. For residential respondents, the Project Change Score was based only on responses to the *project change* question. The Project Change Score has three possible values:

- If the project would have been cancelled or changed significantly without program influence, the score is 0, indicating no free-ridership.
- If the project would have changed somewhat, but retained some energy efficiency features results, the score is 25, indicating moderate free-ridership.
- If the project would have changed little or not at all, the score is 50, indicating high free-ridership.

However, if a nonresidential respondent reported that the project would have changed little or not at all without program support, but also reported that the firm *would not* have made available the funds needed to cover the entire project cost without the program incentive, the score is 25 rather than 50.

Additional details specific to the calculation of the Project Change Score for particular survey groups are discussed in the report subsections for those groups.

The Program Influence Score was based on the highest rated influence from among the various program elements rated. This score has five possible values:

- A rating of "5" (highest possible influence rating) results in a score of 0, indicating no free-ridership.
- A rating of "4" results in a score of 12.5, indicating low free-ridership.
- A rating of "3" results in a score of 25, indicating moderate free-ridership.
- A rating of "2" results in a score of 37.5, indicating high free-ridership.
- A rating of "1" (lowest possible influence rating) results in a score of 50, indicating complete free-ridership.

For each individual, we summed the Project Change and Program Influence scores. The resulting sum score ranged in value from 0 to 100 and was interpreted as a percentage indicating overall free-ridership.

If an individual did not provide sufficient data to calculate either a Project Change Score or a Program Influence Score, we calculated two overall free-ridership scores: 1) a *low-scenario* score, which assumed that the missing score (Project Change or Program Influence, whichever we could not calculate) was 0; and 2) the *high-scenario* score, which assumed that the missing score was 50. To allow us to calculate mean free-ridership across all respondents, we also

calculated a third free-ridership score, which was the midpoint of the *low*-scenario and *high*-scenario scores.[5]

STUDY IMPLEMENTATION

Survey-Assignment Protocol

Working with Energy Trust during the pilot study, we established a protocol for drawing samples. The protocol excluded participants that had been contacted for an Energy Trust survey in the previous 12 months, selected a single project if a sampled participant had more than one project in the period of study, and randomized sampled participants to survey-delivery methods.[6] We adapted this protocol for use with the rollout, eliminating the randomization to survey-delivery methods.

The protocol required little modification for the nonresidential survey groups. Some modification was required for the residential programs. It is possible that someone may participate in multiple residential programs. We first identified all survey groups each participant belonged to in a given month; those who belonged to multiple groups were assigned to the group that had the fewest members that month. We then randomly selected from each group.

Data Management

We implemented the above protocol using a Project Tracking File created in *Microsoft Excel*, which we developed for the pilot study and adapted for the rollout. At the beginning of each month, Energy Trust forwarded two *Excel* data files: one with all nonresidential projects completed the previous month and one with all residential projects completed the previous month. Each record in the data file represented one measure; projects with multiple measures were represented by multiple data records.

We uploaded the participation data into separate Project Tracking Files for the nonresidential and residential programs. The files included formulas that: identified unique program participants across the multiple program groups; identified the survey group for each participant; identified and excluded participants that had been contacted for Energy Trust surveys in the past 12 months; calculated monthly samples based on the number of new and cumulative (for that quarter) projects completed; randomized and selected the eligible participants; and generated call

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5 A detailed explanation of the free-ridership approach is given in *Final Report: Impact and Process Evaluation of the 2006-2007 Building Efficiency Program*. Prepared by Research Into Action, Inc., and The Cadmus Group, Inc., for Energy Trust of Oregon, August 3, 2009. Available at *www.energytrust.org*.

6 This protocol is described in *Final Report – Fast Feedback Pilot: Existing Buildings and Production Efficiency Programs*. Prepared by Research Into Action, Inc., for Energy Trust of Oregon, March 10, 2010. Available at *www.energytrust.org*.

lists for each survey group. The files maintained cumulative records of all projects completed during the study period, along with the contact dispositions.

Survey Delivery

The call lists were divided between staff of Research Into Action and of Energy Trust's call center. A Research Into Action or Energy Trust staff member called each selected contact up to five times or until a final disposition (e.g., complete, refusal, incorrect number, ineligible) was recorded or the monthly quota was met. Callers from Research Into Action introduced himself or herself and the survey using the following script:

> Hello, my name is _____ and I am calling from Research Into Action, an evaluation contractor, on behalf of Energy Trust. I understand your company recently completed a project with Energy Trust's [program name] program. I would like to ask you a few questions about your experiences with this recent project. This will take about five minutes of your time. Is now a convenient time to talk or is there a better time to reach you?

The callers from the Energy Trust call center followed a similar script.

The caller offered the name and contact number of the Existing Buildings Evaluation Project Manager to contact for additional information.

The caller recorded the disposition of each call in a call-tracking file, from which the final disposition for each contact was transferred to the Project Tracking File.

PRECISION OF ESTIMATES

As noted elsewhere, the sample sizes were drawn to try to achieve 10% precision of sample estimates at 90% confidence. The actual levels of precision vary among sample estimates, however, for two primary reasons. First, the precision of an estimated percentage is directly related to that percentage: for any given sample size, the precision is lowest for percentages closest to 50% and highest for percentages near the extreme values of 0% and 100%. We estimated sample sizes based on the most conservative case – 50% of the sample giving a particular response. Therefore, precision typically is better than 10% for percentages that vary from 50%. Second, in some cases, the sample was smaller than the targeted sample size, and so the precision did not achieve 10%. These cases are discussed in the appropriate sections of the results discussion.

For each sample estimate, we calculated the actual level of precision at 90% confidence. We report the sample precision for each project change response and free-ridership score. Because of the large number of individual satisfaction and influence values (six response levels for each of several satisfaction and influence categories), for these items we report a range of precision estimates for each survey group, along with a brief summary of cases where the precision was not 10% or better.

All precision estimates incorporated the *finite population correction* factor (*fpc*), which adjusts for the greater precision of estimates derived from small samples that are more than 5% of the population. The *fpc* is calculated as:

$$\sqrt{\frac{N - n}{N - 1}}$$

where N = the applicable population (number of program Q2 2010 participants),

and n = the sample size.

Some satisfaction and influence categories applied to some, but not all, of the respondents in a particular survey group. For example, not all Existing Buildings participants had a technical study or received information about tax credits. In such cases, we calculated the *finite population correction* factor with N defined as the population to which that particular satisfaction or influence category applied – for example, the number that had a technical study or received information about tax credits. To estimate the N for those subgroups, we assumed that the representation of such participants in the overall population was proportional to their representation in the sample.

3 SURVEY RESULTS: CALL DISPOSITIONS

The final call dispositions for the surveys of the nonresidential programs are summarized in Table 3.1. Of a total list of 324 potential contacts, 172 (53%) were contacted and determined to be eligible. These represented 77% of all those for whom eligibility could be determined.

Fifty-one (15%) were contacted and determined not to be eligible. Of the remaining 101 (31%), the survey quotas were met before contact could be achieved, and therefore eligibility could not be determined with certainty.

The 167 completed surveys represent 97% of all those contacted and eligible (there was only a 3% refusal rate) and 75% of all those contacted.

The final call dispositions for the surveys of the residential programs are summarized in Table 3.2. Of a total list of 1,564 potential contacts, 847 (55%) were contacted and determined to be eligible. These represented 92% of all those for whom eligibility could be determined.

Ninety-two (5%) were contacted and determined not to be eligible. Of the remaining 625 (39%), the survey quotas were achieved before contact could be achieved and therefore eligibility could not be determined with certainty.

The 775 completed surveys represent 91% of all those contacted and eligible (there was only a 9% refusal rate) and 83% of all those contacted.

Table 3.1: Call Dispositions for Nonresidential Programs

Disposition	Program					Total	
	Existing Buildings	Existing Buildings - Multifamily	New Buildings	Production Efficiency	Solar Electric	Count	Percent
Eligible							
Completed	57	18	38	44	10	167	51%
Refused	2	1	1	1	0	5	2%
Subtotal	***59***	***19***	***39***	***45***	***10***	***172***	***53%***
Not Eligible							
Missing phone number	0	0	0	0	0	0	0%
Disconnected or wrong number	3	2	4	0	1	10	3%
Out of office during survey period	5	0	1	4	0	10	3%
Did not pass screening	1	0	2	0	0	3	1%
Called for other energy trust survey	4	3	2	2	0	11	3%
Duplicate contact	0	1	6	7	0	14	4%
Contact no longer at job	0	0	2	1	0	3	1%
Language barrier	0	0	0	0	0	0	0%
Subtotal	***13***	***6***	***17***	***14***	***1***	***51***	***15%***
Eligibility Unknown							
Quota met before completed	34	2	7	24	2	69	21%
Quota met before attempted	28	0	2	2	0	32	10%
Subtotal	***62***	***2***	***9***	***26***	***2***	***101***	***31%***
Total	**134**	**27**	**65**	**85**	**13**	**324**	**100%**

Table 3.2: Call Dispositions for Residential Programs

Disposition	Program					
	Existing Single Family	Home Products	Home Performance	Solar Water Heating	Total	
					Count	Percent
Eligible						
Completed	538	202	28	7	775	50%
Refused	38	31	2	1	72	5%
Subtotal	***576***	***233***	***30***	***8***	***847***	***55%***
Not Eligible or Eligibility Unknown						
Disconnected or wrong number	40	26	1	1	68	4%
Not home during survey period	7	10	1	0	18	1%
Did not pass screening	2	0	2	0	4	0%
Language barrier	0	2	0	0	2	0%
Subtotal	***49***	***38***	***4***	***1***	***92***	***5%***
Not Eligible or Eligibility Unknown						
Quota met before completed	424	155	5	2	586	37%
Quota met before call attempted	11	28	0	0	39	2%
Subtotal	***435***	***183***	***5***	***2***	***625***	***39%***
TOTAL	**1060**	**454**	**39**	**11**	**1564**	**100%**

4 SURVEY RESULTS: NONRESIDENTIAL PROGRAMS

This section summarizes survey responses for participants of the Existing Buildings, Production Efficiency, New Buildings, and Existing Buildings Multifamily programs. Results for all solar programs – nonresidential and residential – are shown in *Section 6, SURVEY RESULTS: SOLAR PROGRAMS*.

We present the results of each program in its own subsection, each following the same format. We first present the quantitative analyses of responses to survey questions (satisfaction, influence, project change, and budget availability), followed by free-ridership estimates. For all quantitative analyses, we discuss 90% confidence intervals.[7]

As described in *Section 2, Methods*, for each program we calculated a single free-ridership score for each respondent that provided responses to the project change and program influence questions. For respondents who did not respond to one or both of those sets of questions, we computed a *low*-scenario free-ridership score that assumed the missing data indicated low free-ridership and a *high*-scenario score that assumed the missing data indicated high free-ridership. We then computed the midpoint of the *low*-scenario and *high*-scenario scores for those individuals.

We calculated the mean free-ridership score across all respondents using the midpoint score. We also calculated mean *low*-scenario and *high*-scenario scores – in those cases, if a respondent provided all the data needed to calculate free-ridership, the same score represented both the *low*-scenario and *high*-scenario (and midpoint) cases.

EXISTING BUILDINGS

Fifty-nine participants of the Existing Buildings program responded to the survey. This was equal to the original estimated sample size and slightly above a revised target of 55, the number calculated to achieve 10% precision at 90% confidence for the final Q2 population of 301 projects.

The sample *n* varied among specific questions because those who did not respond or who indicated the question was not applicable to them (e.g., satisfaction with a technical study, if the respondent did not have a technical study) were not counted toward the sample *n*.

[7] See discussion of *Precision of Estimates* in previous section.

Satisfaction

Respondents rated their level of satisfaction with the installed equipment, the incentive amount, the ease of applying for an incentive, the program representative, the quality of equipment installation, the technical study (if there was one), and the information they received about applying for Oregon tax credits, if they received a credit.

Table 4.1 shows that satisfaction ratings were generally high overall for all program elements. The highest ratings were seen for satisfaction with the quality of installation and the equipment itself, followed by (in order) the program representative, the incentive, the technical study, the application, and tax information provided.

Program Influence

Respondents rated the level of influence that various program elements had on their decision to do the program-supported project the way they did it. The specific program elements rated were the program incentive, program representative, equipment vendor or installation contractor, and technical study (if there was one).

Table 4.1 shows that all four elements were considered influential by the majority of respondents. The highest level of influence came from the program incentive. The installation contractor and the technical study (where applicable) had somewhat less influence on the project, and the program representative had the least influence on how the project was done.

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that 70% of the respondents indicated that at least one program element was *extremely influential* and another 25% assigned at least one element an influence rating of "4" on the five-point scale. In fact, only three respondents failed to assign at least one element a rating of "4" or greater.

Project Change

We asked respondents what they would have done if they had not received program assistance. As Table 4.2 shows, more than half indicated they would either have cancelled the project outright or postponed it more than one year (and some gave both responses). About one-fifth indicated they would have done the same project just as they had done.

Seven respondents gave somewhat contradictory responses, both indicating they would have either cancelled or postponed the project and indicating that they would have installed less efficient equipment or reduced the project size or scope. This was not truly contradictory, however, as those respondents indicated that they would have cancelled or postponed the project but then later done a less efficient or scaled-down project. When those seven respondents are excluded, nine respondents (16%) said they would have installed less efficient equipment.

Table 4.1: Existing Buildings Program Satisfaction and Influence Ratings

Program Facet / Influence Source	Satisfaction / Influence Rating[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Satisfaction (1 = Not at All to 5 = Very)												
Overall (*n* = 59)	1	2%	1	2%	3	5%	16	27%	38	64%	0	0%
Equipment (*n* = 56)	0	0%	0	0%	0	0%	8	14%	41	73%	7	13%
Incentive (*n* = 58)	1	2%	0	0%	8	14%	15	26%	34	59%	0	0%
Application (*n* = 54)	1	2%	1	2%	9	17%	17	31%	25	46%	1	2%
Program representative (*n* = 52)	0	0%	1	2%	4	8%	12	23%	33	63%	2	4%
Installation (*n* = 50)	0	0%	1	2%	2	4%	8	16%	39	78%	0	0%
Technical study (*n* = 40)	0	0%	3	8%	1	3%	9	23%	21	53%	6	15%
Tax information (*n* = 51)	1	2%	2	4%	8	16%	14	27%	21	41%	5	10%
Influence (1 = Not at All to 5 = Extremely)												
Incentive (*n* = 58)	4	7%	1	2%	4	7%	19	33%	30	52%	0	0%
Program representative (*n* = 50)	4	8%	3	6%	11	22%	11	22%	15	30%	6	12%
Contractor (*n* = 49)	3	6%	2	4%	7	14%	10	20%	25	51%	2	4%
Technical study (*n* = 38)	1	3%	1	3%	4	11%	13	34%	16	42%	3	8%
Maximum influence[2] (*n* = 59)	0	0%	1	2%	2	3%	15	25%	41	70%	0	0%

[1] At 90% confidence, the precision of *satisfaction* and *influence* ratings ranged from less than 1% to 10% in all cases except those relating to the technical study, for which the sample was lower than the other items: for the technical study, the satisfaction rating of "5" was precise to ±12% and the influence ratings of "4" and "5" were precise to ±11% and ±12%. For any given *n*, precision is greatest for estimates closest to 0% or 100% and lowest for estimates closest to 50%. The *n* for each category does not include those who did not respond or indicated the question was not applicable to them.

[2] For each respondent, this is the influence of the factor (incentive, program representative, vendor, or technical study) that exerted the greatest influence for that person.

Table 4.2: How the Project Would Have Changed Without the Existing Buildings Program (Multiple Responses Allowed)

Type of Change	Count	Percent (*N* = 59)	Precision
Cancelled or postponed	33	56%	10%
Cancelled	23	39%	9%
Postponed > 1 year	16	27%	9%
Installed less efficient equipment[1]	9	15%	7%
Reduced project size or scope[1]	8	14%	7%
No change	13	22%	8%
Don't know	1	2%	3%

[1] The counts for these responses exclude seven respondents who indicated they would have cancelled or postponed the project and then later installed less efficient equipment (four respondents) and/or reduced the project size or scope (six respondents).

Budget Availability

We asked respondents whether their firm would have made available the funds needed to cover the entire cost of the project if it had not received the incentive. Of the 59 respondents, 32 (54%) answered this question affirmatively. Responses to this question varied for those answering the project change question: of those who said they would have done the project the same way without the program, 100% said their firm would have made the funds available, compared to 50% of those who indicated they would have made some change to the project and 36% who said they would have cancelled or postponed the project without program support.

Free-Ridership

The mean unweighted and savings-weighted midpoint, *low*-scenario, and *high*-scenario free-ridership values are shown in Table 4.3. Mean unweighted free-ridership for the Existing Buildings program was 22%, with individual scores ranging from 0% to 87.5%.

Table 4.3: Mean Free-Ridership Scores / Precision for the Existing Buildings Program

Weighting (n = 59)[1]	Midpoint	Low Scenario	High Scenario
Unweighted	22.0% / ±4.9%	21.2% / ±4.9%	22.9% / ±5.0%
Savings-weighted	11.4% / ±3.5%	11.2% / ±3.5%	11.5% / ±3.5%

[1] The precision is for 90% confidence. Although free-ridership is expressed as a percentage, it is calculated as a mean of all individual free-ridership scores. Therefore, the precision is calculated using the standard error of the mean rather than the standard error of a proportion.

The savings-weighted means were about half the unweighted means, reflecting a strong inverse relationship between project size (energy savings) and free-ridership score. It often is assumed that free-ridership is higher in large projects, since large projects have a longer planning cycle and so decisions about what equipment to use are more likely to have been made by the time there is a potential for program influence. The current finding suggests, however, that even large projects are being done with program assistance in mind, perhaps because the Existing Buildings program has been around long enough that businesses think about them as soon they start planning an upgrade.

The 2009-2010 Existing Buildings program[8] found that energy efficiency often is an important consideration from the start of upgrade planning, largely because of its impact on energy costs, and that energy efficiency investments must make financial sense. As the current research found, the Energy Trust incentive had the most influence on upgrade decisions of all aspects of the program. Taken together, these findings are consistent with the idea that at least part of the reason that program participants consider energy-efficient options at the outset of upgrade planning is that they expect the Energy Trust incentive to help that choice make financial sense.

NEW BUILDINGS

Thirty-eight participants of the New Buildings program responded to the survey. This was fewer than the original estimated sample size, but was slightly above the revised target of 36, the number calculated to achieve 10% precision at 90% confidence for the revised Q2 population of 77 projects.

The mean building size of the survey respondents was 42,461 square feet, compared with a mean of 53,329 square feet for those Q2 2010 program participants who were not selected for the survey. The difference was not statistically significant, so there is no evidence of systematic bias related to building size.

The sample *n* varied among specific questions because those who did not respond or who indicated the question was not applicable to them (e.g., satisfaction with a technical study, if the respondent did not have a technical study) were not counted toward the sample *n*.

Satisfaction

Respondents rated their level of satisfaction with the installed equipment, the incentive amount, the ease of applying for an incentive, the program representative, the quality of equipment installation, and the technical study (if there was one). Table 4.4 shows that satisfaction ratings were generally moderate to high for all program elements.

[8] *Final Report: Process Evaluation of 2009 Existing Buildings Program*. Prepared by Research Into Action for Energy Trust of Oregon, December 1, 2010. Available at *www.energytrust.org*.

Table 4.4: New Buildings Program Satisfaction and Influence Ratings

Program Facet / Influence Source	Satisfaction / Influence Rating[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Satisfaction (1 = *Not at All* to 5 = V*ery)*												
Overall (*n* = 38)	1	3%	2	5%	2	5%	12	32%	21	55%	0	0%
Equipment (*n* = 26)	0	0%	0	0%	3	12%	6	23%	7	27%	10	38%
Incentive (*n* = 37)	0	0%	6	16%	5	14%	11	30%	14	38%	1	3%
Application (*n* = 37)	1	3%	2	5%	10	27%	6	16%	18	49%	0	0%
Program Rep. (*n* = 37)	1	3%	1	3%	2	5%	4	11%	27	73%	2	5%
Installation (*n* = 35)	0	0%	1	3%	0	0%	9	26%	21	60%	4	11%
Technical Study (*n* = 12)	0	0%	0	0%	2	17%	2	17%	2	17%	6	50%
Influence (1 = *Not at All* to 5 = *Extremely)*												
Incentive (*n* = 37)	5	14%	6	16%	11	30%	5	14%	9	24%	1	3%
Program representative (*n* = 35)	6	17%	3	9%	3	9%	8	23%	10	29%	5	14%
Design professional (*n* = 29)	3	10%	1	3%	3	10%	12	41%	7	24%	3	10%
Technical sudy (*n* = 16)	3	19%	3	19%	1	6%	2	13%	4	25%	3	19%
Maximum influence[2] (*n* = 38)	0	0%	2	5%	3	8%	14	37%	17	45%	2	5%

[1] At 90% confidence, the precision of *satisfaction* and *influence* ratings ranged from less than 1% to 10% in nearly all cases except those relating to the technical study, for which the samples were lower than the other items: for the technical study, satisfaction ratings of "3," "4," and "5" were precise to ±13% and influence ratings of "1," "2," and "5" were precise to ±12% or ±13%. The *n* for each category does not include those who did not respond or indicated the question was not applicable to them.

[2] For each respondent, this is the influence of the factor (incentive, program representative, vendor, or technical study) that exerted the greatest influence for that person.

The highest ratings were seen for the program representative and the quality of the installation. Slightly lower satisfaction was reported for the incentive and the application procedure. Performance of installed equipment was generally satisfactory, and satisfaction with the technical study (for those who had one) was moderate to high. Note that the low sample sizes for the latter two satisfaction categories make those results less reliable than for the other categories.

Program Influence

Respondents rated the level of influence of the program incentive, program representative, design professional, and technical study (if there was one) on their decision to do the program-supported project the way they did it. Table 4.4, above, shows that, although high influence ratings ("4" or "5" on the five-point scale) were somewhat more common than low ones ("1" or "2"), the design professional appeared to wield the greatest influence on project execution, and the Energy Trust incentive and technical study appeared to exert the least influence.

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that 45% of the respondents indicated that at least one program element was *extremely influential*, and another 37% assigned at least one element an influence rating of "4" on the five-point scale. Only five respondents (18% of the sample) failed to assign at least one element a rating of "4" or greater.

Project Change

We asked respondents what they would have done if they had not received program assistance. As Table 4.5 shows, only one respondent indicated that they would have cancelled the project and none said they would have postponed it more than one year. About three-fifths said that they would have done the project exactly as they had. The rest indicated some degree of change short of cancelling the project, the most common responses being that they would have installed less efficient equipment or would have reduced the energy-efficient design features.

Table 4.5: How the Project Would Have Changed Without the New Buildings Program (Multiple Responses)

Type of Change	Count	Percent (*N* = 38)	Precision
Cancelled	1	3%	3%
Not done commissioning	5	13%	6%
Installed less efficient equipment	12	32%	9%
Reduced project size or scope	6	16%	7%
Reduced energy efficient design features	10	26%	8%
No change	23	61%	9%
Don't know	2	5%	4%

The 12 respondents who said they would have installed less efficient equipment were distributed among those saying it would have been slightly (3), somewhat (5), or significantly (4) less efficient.

Of the 23 respondents who indicated no change, four also said they would have installed less energy-efficient equipment, of whom three also said they would have reduced energy-efficient design features. For those four participants, the free-ridership calculation was based on the some change response rather than the no change response.

Considering the wording of the project change question and the various response options, the high percentage of respondents indicating no change is not surprising. The question was: *How would your project have changed, if at all, if your business had not participated with Energy Trust?*

The response options were:

- Cancelled the project altogether
- Postponed the project more than one year
- Reduced project size or scope
- Not done commissioning
- Reduced energy-efficient design features
- Installed less energy-efficient equipment
- Not changed your project at all

In the case of someone participating in the Existing Buildings or Production Efficiency program, the various response options clearly refer to a specific equipment or facility retrofit. For a participant of the New Buildings program, however, they could refer just to those aspects of the building project that were affected by the Energy Trust incentive or to the entire construction project.

Following the end of data collection for Q2 2010, the question wording was changed to: *Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available?*

The response options had not been changed as of the preparation of this report. The following revisions to the response options may help clarify this question further:

- Cancelled the entire construction project altogether
- Postponed the entire construction project more than one year

- Installed less energy-efficient equipment in place of the equipment that received program incentives
- Reduced the overall energy-efficient design features of the building
- Not changed the equipment or systems you installed in your construction project at all

Budget Availability

We asked respondents whether their firm would have made available the funds needed to cover the entire cost of the project if it had not received the incentive. Twenty-seven respondents (71% of the sample) said that their firm would have made the funds available. The percentage of respondents who answered this way was related to the answers given to the "project change without program assistance" question.

Of the 19 respondents who had said they would have done the project the same way without the program (and did not give another, contradictory, response), 95% said their firm would have made the funds available. Of the 16 respondents who indicated they would have changed, but not cancelled or postponed, the project without the program, 38% said their firm would have made the funds available. (Only one person said they would have cancelled the project.)

Free-Ridership

The mean savings-weighted and unweighted midpoint, *low*-scenario, and *high*-scenario free-ridership values are shown in Table 4.6. The moderate levels of program influence and the high percentage of respondents who indicated that they would have done the new building project the same way without the program resulted in mean unweighted free-ridership of 46%, with individual scores ranging from 0% to 87.5%.

Table 4.6: Mean Free-Ridership Scores / Precision for the New Buildings Program

Weighting (*n* = 38)[1]	Midpoint	Low Scenario	High Scenario
Unweighted	45.8% / ±4.4%	41.0% / ±4.9%	50.7% / ±4.7%
Savings-weighted	39.8% / ±5.5%	36.2% / ±5.5%	43.3% / ±6.0%

[1] The precision is for 90% confidence. Although free-ridership is expressed as a percentage, it is calculated as a mean of all individual free-ridership scores. Therefore, the precision is calculated using the standard error of the mean rather than the standard error of a proportion.

The savings-weighted means were somewhat lower than the unweighted means, reflecting a slight inverse relationship between project size (energy savings) and free-ridership score. Thus, builders appear more likely to incorporate Energy Trust incentives into their planning for construction projects that incorporate greater amounts of energy efficiency than those involving less energy efficiency.

EXISTING BUILDINGS – MULTIFAMILY

Eighteen participants of the Existing Buildings – Multifamily program responded to the survey. This was fewer than the revised target of 24, the number calculated to achieve 10% precision at 90% confidence for the revised Q2 population of 40 projects. This resulted from an error in the formula for calculating monthly samples in the early part of the rollout period. Although the error was corrected and all program participants in the final month of data collection were included in the sample, the final Q2 sample did not achieve the targeted precision level.

The sample *n* varied among specific questions because those who did not respond or who indicated the question was not applicable to them (e.g., satisfaction with a technical study, if the respondent did not have a technical study) were not counted toward the sample *n*.

Satisfaction

Respondents rated their level of satisfaction with the installed equipment, the incentive amount, the ease of applying for an incentive, the program representative, the quality of equipment installation, the technical study (if there was one), the information they received about applying for Oregon tax credits (if they received a credit), and tenant comfort resulting from the equipment installation.

Table 4.7 shows that satisfaction ratings were generally moderate to high overall for all program elements. The highest satisfaction ratings went to the quality of the equipment installation and the equipment itself. Slightly lower satisfaction was reported for tenant comfort – a reflection of equipment performance. The program representative and the technical study (when applicable) produced somewhat lower, but still fairly high, satisfaction ratings. Lower levels of satisfaction were reported for the incentive and information about tax credits, but still three-quarters or more of respondents reported satisfaction levels of "4" or "5" on the five-point scale for those two items.

The lowest levels of satisfaction were reported for the application process – this was the only program feature for which more respondents reported more moderate ("3" on the five-point scale) than high satisfaction.

Program Influence

Respondents rated the level of influence of the program incentive, program representative, equipment vendor or installation contractor, and technical study (if there was one) on their decision to do the program-supported project the way they did it.

Table 4.7 shows that all four elements were considered influential by the majority of respondents: the incentive and technical study (when applicable) exerted similarly high levels of influence on the project; somewhat less influence was attributed to the contractor; the Energy Trust program representative had the least influence on the project, although about two-thirds of respondents still rated that influence as "4" or "5" on the five-point scale.

Table 4.7: Existing Buildings – Multifamily Program Satisfaction and Influence Ratings

Program Facet / Influence Source	Satisfaction / Influence Rating[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Satisfaction (1 = *Not at All* to 5 = V*ery)*												
Overall (*n* = 18)	0	0%	2	11%	3	17%	4	22%	9	50%	0	0%
Equipment (*n* = 18)	0	0%	0	0%	1	6%	2	11%	13	72%	2	11%
Incentive (*n* = 18)	1	6%	1	6%	2	11%	7	39%	7	39%	0	0%
Application (*n* = 18)	2	11%	1	6%	5	28%	7	39%	3	17%	0	0%
Program representative (*n* = 18)	1	6%	1	6%	2	11%	4	22%	10	56%	0	0%
Installation (*n* = 18)	0	0%	0	0%	0	0%	2	11%	15	83%	1	6%
Technical study (*n* = 8)	0	0%	0	0%	1	13%	3	38%	4	50%	0	0%
Tax Information (*n* = 16)	1	6%	1	6%	2	13%	8	50%	4	25%	0	0%
Tenant comfort (*n* = 17)	0	0%	0	0%	1	6%	4	24%	11	65%	1	6%
Influence (1 = *Not at All* to 5 = *Extremely)*												
Incentive (*n* = 18)	1	6%	0	0%	1	6%	6	33%	10	56%	0	0%
Program representative (*n* = 17)	2	12%	1	6%	3	18%	7	41%	4	24%	0	0%
Contractor (*n* = 17)	1	6%	1	6%	4	24%	2	12%	9	53%	0	0%
Technical study (*n* = 8)	0	0%	0	0%	1	13%	3	38%	4	50%	0	0%
Maximum influence[2] (n = 18)	0	0%	1	6%	1	6%	3	17%	13	72%	0	0%

[1] At 90% confidence, the precision of most "satisfaction" and "influence" ratings ranged from less than 1% to 14%. The precision was 10% or less for all satisfaction and influence ratings of "1"or "2" and most satisfaction ratings of "3." The precision ranged from 9% to 14% for most satisfaction and influence ratings of "4" or "5." For responses related to the technical study, precision ranged from 15% to 22%. The *n* for each category does not include those who did not respond or indicated the question was not applicable to them.

[2] For each respondent, this is the influence of the factor (incentive, program representative, vendor, or technical study) that exerted the greatest influence for that person.

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that 72% of the respondents indicated that at least one program element was *extremely influential*, and another 17% assigned at least one element an influence rating of "4" on the five-point scale. Only two respondents failed to assign at least one element a rating of "4" or greater.

Project Change

We asked respondents what they would have done if they had not received program assistance. As Table 4.8 shows, just over half said they would have cancelled the project or postponed it more than one year, while about one-sixth said they would have done the project just as they did it. The other respondents indicated they would have done some project, but in a way that would not have saved as much energy.

Table 4.8: How the Project Would Have Changed Without Existing Buildings – Multifamily Program (Multiple Responses)

Type of Change	Count	Percent (*N* = 18)	Precision
Cancelled or postponed > 1 year	10	56%	14%
Cancelled	5	28%	13%
Postponed > 1 year	5	28%	13%
Bought less expensive equipment	4	22%	12%
Installed less efficient equipment	5	28%	13%
Reduced project size or scope	5	28%	13%
No change	3	17%	11%
Don't know	0	0%	0%

A few respondents said they would have cancelled or postponed the project, but also indicated some other, less complete, change. The context indicated that those respondents were indicating that they would have done a project with some changes, but not during this program year – that is, they would have cancelled or postponed the project and then later done something with fewer savings.

Budget Availability

We asked respondents whether their firm would have made available the funds needed to cover the entire cost of the project if it had not received the incentive. Eight respondents (44% of the sample) said that their firm would have made the funds available. The percentage of respondents who responded this way was related to the answers given to the "project change without program assistance" question. Of the three respondents who said that they would have done the project the

same way without the program, all reported that their firm would have made the funds available; however, two of the four respondents who said they would have done some project with fewer savings said their firm would have covered the entire cost of the project and only two of the ten respondents who said they would have cancelled or postponed the project gave that response.

Free-Ridership

The mean unweighted and savings-weighted midpoint, *low*-scenario, and *high*-scenario free-ridership values are shown in Table 4.9. Mean free-ridership for the Existing Buildings - Multifamily program was 18%, with individual scores ranging from 0% to 87.5%.

Table 4.9: Mean Free-Ridership Scores / Precision for the Existing Buildings - Multifamily Program

Weighting (n = 18)[1]	Midpoint	Low Scenario	High Scenario
Unweighted	18.1% / ±7.8%	16.7% / ±7.9%	19.4% / ±8.1%
Savings-weighted	13.3% / ±5.6%	13.0% / ±5.6%	13.7% / ±5.8%

[1] The precision is for 90% confidence. Although free-ridership is expressed as a percentage, it is calculated as a mean of all individual free-ridership scores. Therefore, the precision is calculated using the standard error of the mean rather than the standard error of a proportion.

As with the New Buildings program, the savings-weighted means were somewhat lower than the unweighted means, reflecting a slight inverse relationship between project size (energy savings) and free-ridership score. As argued above, this suggests that building owners may be planning on Energy Trust incentives from the beginning of the planning cycle for even large projects.

PRODUCTION EFFICIENCY

Forty-four participants of the Production Efficiency program responded to the survey. This was somewhat fewer than the revised target of 49, the number calculated to achieve 10% precision at 90% confidence for the revised Q2 population of 175 projects.

The sample *n* varied among specific questions because those who did not respond or who indicated the question was not applicable to them (e.g., satisfaction with a technical study, if the respondent did not have a technical study) were not counted toward the sample *n*.

Satisfaction

Respondents rated their level of satisfaction with the installed equipment, the incentive amount, the ease of applying for an incentive, the program representative, the quality of equipment installation, the technical study (if there was one), and the information they received about applying for Oregon tax credits, if they received a credit. Results are shown in Table 4.10.

Table 4.10: Production Efficiency Program Satisfaction and Influence Ratings

Program Facet / Influence Source	Satisfaction / Influence Rating[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Satisfaction (1 = *Not at All* to 5 = V*ery)*												
Overall (*n* = 44)	0	0%	0	0%	4	9%	7	16%	33	75%	0	0%
Equipment (*n* = 44)	1	2%	0	0%	0	0%	10	23%	32	73%	1	2%
Incentive (*n* = 44)	0	0%	1	2%	2	5%	9	20%	32	73%	0	0%
Application (*n* = 44)	1	2%	2	5%	3	7%	11	25%	25	57%	2	5%
Program representative (*n* = 43)	0	0%	0	0%	3	7%	8	19%	32	74%	0	0%
Installation (*n* = 41)	0	0%	0	0%	2	5%	10	24%	29	71%	0	0%
Technical study (*n* = 23)	0	0%	1	4%	3	13%	5	22%	12	52%	2	9%
Tax information (*n* = 38)	1	3%	1	3%	7	18%	12	32%	15	39%	2	5%
Influence (1 = *Not at All* to 5 = *Extremely)*												
Incentive (*n* = 44)	1	2%	0	0%	3	7%	11	25%	29	66%	0	0%
Program representative (*n* = 39)	2	5%	2	5%	7	18%	14	36%	14	36%	0	0%
Contractor (*n* = 33)	1	3%	3	9%	10	30%	10	30%	8	24%	1	3%
Technical study (*n* = 22)	1	5%	0	0%	1	5%	7	32%	11	50%	2	9%
Maximum influence[2] (*n* = 44)	1	2%	0	0%	2	5%	7	16%	34	77%	0	0%

[1] At 90% confidence, the precision of most "satisfaction" and "influence" ratings ranged from less than 1% to 10%. For the technical study and tax information, ratings of "4" or "5" were precise to ±12% up to ±15%. The *n* for each category does not include those who did not respond or indicated the question was not applicable to them.

[2] For each respondent, this is the influence of the factor (incentive, program representative, vendor, or technical study) that exerted the greatest influence for that person.

Table 4.10 shows that satisfaction ratings were generally high overall for all program elements. The highest ratings were for the equipment, the incentive, the program representative, and the quality of the equipment installation. Satisfaction was somewhat lower – but still generally high – for the application process, the technical study, and the information provided about tax credits.

Program Influence

Respondents rated the level of influence that four program elements had on their decision to do the program-supported project the way they did it. Table 4.10 shows that all four elements were considered influential by the majority of respondents, in the following order: incentive, technical study (if there was one), program representative, and contractor or vendor.

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that 77% of the respondents indicated that at least one program element was *extremely influential*, and another 16% assigned at least one element an influence rating of "4" on the five-point scale. Only three respondents failed to assign at least one element a rating of "4" or greater.

Project Change

We asked respondents what they would have done if they had not received program assistance. As Table 4.11 shows, about three-quarters said they would have cancelled the project or postponed it more than one year, while less than one-tenth said they would have done the project just as they did it. The other respondents indicated they would have done some project, but in a way that would not have saved as much energy.

Table 4.11: How the Project Would Have Changed Without the Existing Buildings Program (Multiple Responses)

Type of Change	Count	Percent (*N* = 44)	Precision
Cancelled or postponed > 1 year	34	77%	9%
Cancelled	21	48%	11%
Postponed > 1 year	17	39%	10%
Bought less expensive equipment	5	11%	7%
Installed less efficient equipment	2	5%	5%
Reduced project size or scope	6	14%	7%
No change	4	9%	6%

A few respondents said they would have cancelled or postponed the project, but also indicated some other, less complete, change. The context indicated that those respondents were saying that they would have done a project with some changes, but not during this program year – that is,

they would have cancelled or postponed the project and then later done something with lower savings.

Budget Availability

We asked respondents whether their budget could have accommodated the full project cost without Energy Trust program support. Eight of the 44 respondents (18%) answered in the affirmative. Responses to this question were related to how respondents answered the "project change without program assistance" question.

Of the four respondents who said that they would have done the project the same way without the program, all reported that their firm would have made the funds available; however, only one of the six respondents who said they would have done some project with lower savings said their firm would have covered the entire cost of the project and only three of the 34 respondents (9%) who said they would have cancelled or postponed the project gave that response.

Free-Ridership

The mean unweighted midpoint free-ridership for the Production Efficiency program was 11.1% (±4.6%)[9], with individual scores ranging from 0% to 100%. Mean *low*-scenario free-ridership (i.e., assuming that the cases with missing data would have had low free-ridership) and mean *high*-scenario free-ridership (i.e., assuming that the cases with missing data would have had high free-ridership) were the same as the midpoint.

The mean savings-weighted value was 8.4% (±4.0%). As with Existing Buildings and Existing Buildings – Multifamily, industrial businesses appear to rely at least as heavily on Energy Trust incentives in planning large equipment upgrades as small ones.

[9] The precision is for 90% confidence. Although free-ridership is expressed as a percentage, it is calculated as a mean of all individual free-ridership scores. Therefore, the precision is calculated using the standard error of the mean rather than the standard error of a proportion.

5 SURVEY RESULTS: RESIDENTIAL PROGRAMS

This section presents survey results for participants in the Existing Single Family, Home Products, and Home Performance programs. Results for the Solar Water Heating program are shown in *Section 6, SURVEY RESULTS: SOLAR PROGRAMS*.

We present the results of each program in its own subsection, each following the same format. We first present the analyses of responses to survey questions (satisfaction, influence, and project change), followed by free-ridership estimates. For all quantitative analyses, we discuss 90% confidence intervals.[10]

As described in *Section 2, Methods*, for each program we calculated a single free-ridership score for each respondent that provided responses to the project change and program influence questions. For respondents who did not respond to one or both of those sets of questions, we computed a *low*-scenario free-ridership score that assumed the missing data indicated low free-ridership and a *high*-scenario score that assumed the missing data indicated high free-ridership. We then computed the midpoint of the *low*-scenario and *high*-scenario scores for those individuals.

We calculated the mean free-ridership score across all respondents using the midpoint score. We also calculated mean *low*-scenario and *high*-scenario scores – in those cases, if a respondent provided all the data needed to calculate free-ridership, the same score represented both the *low*-scenario and *high*-scenario (and midpoint) cases.

EXISTING SINGLE FAMILY PROGRAM

A total of 461 participants of the Existing Single Family program responded to the survey: 55 for the air sealing measure, 43 for duct sealing, 58 for heat pumps, 51 for floor insulation, 40 for wall insulation, 68 for ceiling insulation, 25 for duct insulation, 62 for water heaters, 59 for windows, and 76 for home energy reviews. In most cases the final samples were equal to or greater than the final revised targets. In two cases – floor insulation and duct sealing – the final samples were slightly lower than the targets. In some cases, the sample *n* varied slightly among specific questions because those who did not respond to a question were not counted toward the sample *n*.

Results for all Existing Family program survey groups, except for home energy review, are presented in this subsection. The survey for home energy review differed somewhat from those for the other groups; therefore, the results are presented separately, in the next subsection.

[10] See discussion of “Precision of Estimates” in Section 2, *Methods*.

Satisfaction

Respondents rated their level of satisfaction with the information that the program provided about energy savings and incentives, the application process, the time required to receive the incentive (the turnaround time), the quality of the equipment installation, the resulting home comfort, and the performance of the installed equipment.

Table 5.1 shows, for each program facet, the count and percentage of respondents in each survey group that provided a satisfaction rating of "4" or "5" on the five-point scale. Detailed results are shown in Appendix A.

Satisfaction ratings were moderate to high for all program elements, although ratings generally were highest for quality of installation. While satisfaction ratings tended to be similar across the remaining program facets, they generally were lowest for the information that the program provided. Feedback from the call center suggested that many respondents did not understand this question, possibly because they could not recall receiving any information. Although *don't know* was included as a response option, it is possible that some respondents indicated moderate satisfaction when they could not recall receiving information. To address this in the future, the survey will first ask respondents if they received program information; only those who indicated receiving information will be asked their satisfaction.

Considering overall program satisfaction, respondents in the water heater and ceiling insulation groups were the most satisfied (92% and 91%, respectively, giving ratings of "4" or "5"), and those in the duct insulation and windows groups were the least satisfied. However, even in those two groups, nearly three-quarters of respondents gave satisfaction ratings of "4" or "5."

Two additional observations merit attention. First, for the wall, flooring, and ceiling insulation groups, the overall program satisfaction was higher than that for any single facet – cases where the whole is greater than the sum of the parts. Second, while there was some variability across the survey groups in the rated satisfaction of all program facets, the variability was greater for some facets than others. The greatest variability in satisfaction was seen in information about incentives (ranging from 36% to 84% with satisfaction ratings of "4" or "5") and the least variability was for turnaround time (ranging from 56% to 74%).

Table 5.2 shows satisfaction ratings for various facets of the contractors' performance. Satisfaction generally was high. In nearly all cases, at least 80% of respondents – and in most cases, at least 90% of respondents – gave ratings of "4" or "5" (on the five-point scale) for punctuality, cleanliness, and quality of installation work. Across groups, 72% to 87% of respondents gave "4" or "5" ratings for the contractors' completion of the program paperwork. Contractors received the lowest ratings for information they provided about incentives, but for all measures at least 58%, and up to 86%, of respondents rated the contractors highly on this.

Table 5.1: Program Satisfaction Summary for the Existing Single Family Program

Survey Group	Satisfaction ratings of 4 or 5 (On 5-Point Scale), by Program Facet[1]													
	Overall Program Satisfaction		Information about Energy Savings		Information about incentives		Application		Turnaround		Quality of Installation[2]		Performance of Measure / Comfort of Home	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air sealing (n=55)	46	84%	30	55%	33	61%	24	67%	34	65%	43	83%	27	56%
Heat pump (n=58)	50	86%	32	59%	37	66%	31	66%	40	69%	56	97%	49	84%
Duct sealing (n=43)	35	81%	28	65%	28	65%	27	73%	28	65%	35	81%	32	74%
Ceiling insulation (n=68)	62	91%	46	69%	40	59%	51	76%	43	67%	50	82%	45	67%
Wall insulation (n=40)	31	78%	29	72%	25	64%	24	67%	25	64%	29	74%	28	72%
Floor insulation (n=51)	44	86%	32	63%	29	59%	38	76%	33	66%	36	78%	34	71%
Duct insulation (n=25)	18	72%	12	48%	9	36%	10	43%	14	56%	22	88%	20	80%
Water heater (n=62)	57	92%	42	69%	44	73%	38	68%	46	74%	48	96%	54	87%
Windows (n=59)	43	73%	48	84%	47	84%	33	56%	35	59%	30	64%	55	93%

[1] The precision is ±10% or better for all percentages in this table. For each question, the denominator includes respondents who answered *don't know*, but not those who did not answer the question. For each measure, the maximum sample is shown in parentheses, but the actual denominator may vary by program facet.

[2] Quality of installation was not assessed for the Heat Pump group.

Table 5.2: Satisfaction with Contractor Summary for the Existing Single Family Program

Survey Group	Satisfaction with contractor ratings of 4 or 5 (On 5-Point Scale), by Characteristic[1]											
	Punctuality		Cleanliness		Quality of Installation Work		Incentive Paperwork Completion		Information about Incentives		Overall Satisfaction with Contractor	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air sealing (n=55)	45	87%	50	96%	45	92%	40	80%	36	71%	47	90%
Duct sealing (n=43)	40	93%	40	93%	35	81%	34	87%	31	76%	38	88%
Heat pump (n=58)	54	93%	57	98%	56	97%	47	87%	48	86%	55	95%
Ceiling insulation (n=68)	54	96%	53	95%	48	86%	40	74%	36	68%	52	91%
Wall insulation (n=40)	33	85%	32	82%	34	89%	29	78%	21	58%	34	87%
Floor insulation (n=51)	42	93%	42	91%	36	78%	38	84%	29	71%	41	89%
Duct insulation (n=25)	23	92%	23	92%	23	92%	18	72%	18	72%	19	76%
Water heater (n=62)	53	90%	54	92%	54	92%	44	83%	40	73%	52	90%
Windows (n=59)	54	93%	54	93%	55	95%	43	81%	40	75%	50	88%

[1] The precision is ±10% or better for all percentages in this table. For each question, the denominator includes respondent who answered "don't know", but not those who did not answer the question.

We asked respondents whether they had considered Energy Trust's list of approved trade allies when selecting their contractor. As seen in Table 5.3, only in the duct insulation survey group did the majority of respondents indicate they had done so, and that was just over half. In the other groups, the percentage who had consulted Energy Trust's trade ally list ranged from 13% to 41%.

Table 5.3: Respondent Use of Energy Trust Trade Ally List

Measure	Respondents Who Considered Energy Trust's List of Trade Allies[1]	
	Count	Percent
Air sealing (n=55)	14	26%
Duct sealing (n=43)	10	23%
Heat pump (n=58)	13	22%
Wall insulation (n=40)	15	38%
Floor insulation (n=51)	9	18%
Ceiling insulation (n=68)	28	41%
Duct insulation (n=25)	13	52%
Water heater (n=62)	8	13%
Windows (n=59)	10	17%

[1] The precision was ±10% or better for all but two groups: wall insulation (±12%) and duct insulation (±16%).

Given that trade allies view being an Energy Trust trade ally as a benefit, it may be worthwhile to conduct further research to find out why so many participants do not consider the Energy Trust trade ally list – is it because they are not aware of it or do they have other reasons for selecting a contractor from other sources? If the former, these findings may point to the need to promote the trade ally list more strongly or to feature it more clearly on applications and program- and measure-specific information on the website. It also would be useful to know how many people chose Energy Trust trade allies, even if they did not get them from the list.

Program Influence

Respondents rated the level of influence that various program elements had on their decision to do the program-supported installation the way they did it. Table 5.4 shows the count and percentage of respondents in each survey group that provided an influence rating of "4" or "5" on the five-point scale for each program element. Detailed results are shown in Appendix A. The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. Overall, the highest program influence was seen in the duct sealing, air sealing, heat pump, and wall insulation groups – for those groups, the most influential program element was given a rating of "4" or "5" by 84% to 93% of the respondents. Even among the other groups, though, at least 68% of the respondents gave an influence rating of "4" or "5" to at least one program element.

Table 5.4: Program Influence Summary for the Existing Single Family Program

Survey Group	Influence ratings of 4 or 5 (On 5-Point Scale), by Source of Influence[1]							
	Program Incentive		Contractor		Information Received from Energy Trust		Maximum Program Influence	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air sealing (n=55)	35	66%	38	73%	19	40%	48	87%
Duct sealing (n=43)	25	58%	35	81%	26	63%	40	93%
Heat pump (n=58)	31	54%	20	35%	41	71%	49	84%
Wall insulation (n=40)	27	69%	20	53%	21	57%	34	85%
Ceiling insulation (n=68)	39	57%	26	46%	33	49%	52	76%
Floor insulation (n=51)	33	65%	20	48%	28	58%	39	76%
Duct insulation (n=25)	16	64%	13	52%	11	46%	19	76%
Water heater (n=62)	30	50%	24	45%	25	43%	42	68%
Windows (n=59)	34	59%	28	54%	29	51%	45	76%

[1] The precision is ±10% or better for all percentages in this table. For each question, the denominator includes respondent who answered *don't know*, but not those who did not answer the question.

One finding worth noting is that the rated influence of the three program elements varied considerably for some survey groups but very little for others. The percentage of respondents giving ratings of "4" or "5" ranged by more than 30 percentage points for the heat pump and air sealing groups and over 20 percentage points for duct sealing. On the other hand, for the water heater and windows, the range spanned less than 10 percentage points. The influence varied moderately (in the teens) among program elements for the four insulation groups. In all four of those groups, the incentive had the greatest influence.

Also worth noting is that, as with the satisfaction ratings, the influence ratings were more variable for some program elements than for others. Most variable were the ratings for the contractor: the percentages of respondents giving a rating of "4" or "5" spanned a range of 46 percentage points. Least variable were ratings for the incentive, for which the range was 19 percentage points.

Project Change

We asked respondents what they would have done if they had not received program assistance. All surveys allowed respondents to indicate that the project would not have been done, would have been postponed for more than one year, would have been done with some changes, or would have been done the way it was; however, the response options indicating some change varied somewhat among survey groups.

Table 5.5 shows the most common responses. The percentage reporting that they would not have done the project or postponed it more than one year varied considerably among the survey groups. Fewer than one-quarter of those who installed a heat pump or a water heater gave that response, while about half or more of those who had air or duct sealing, or wall or duct insulation, gave it. The proportion of those who installed floor or ceiling insulation or windows who gave that response fell in between those ranges.

The distribution of those who said they would have done exactly the same thing without the program mirrored somewhat – but not perfectly – the distribution of those who said they would not have done the installation at all.

Those who installed floor insulation, duct insulation, heat pumps, and water heaters were the most likely to report a change that fell short of complete cancellation or postponement. About one-fifth to one-quarter of the floor and duct insulation respondents said they would have installed insulation, but less of it, without the program. Similar percentages of those in the heat pump and water heater groups said they would have installed less expensive equipment, and somewhat fewer of each of those groups said they would have installed less efficient equipment. (Note that some respondents gave both responses – therefore, these percentages do not sum.)

Not shown in the table is the fact that four of the 58 (7%) respondents who had heat pumps installed said they would have installed a different type of heating system, without specifying the type of system. Also, 3 of the 59 (5%) respondents who had windows installed said that without the program they would not have taken the additional efficiency actions required to receive the windows incentive (see *Survey Instrument*, in the ***Error! Reference source not found.*** section).

Table 5.5: How the Project Would Have Changed Without the Existing Single Family Program

Survey Group	Percentage of Respondents Reporting Each Type of Change[1]													
	Would Not Have Done or Postponed		Would Have Done Work by Self		Would Have Installed Less		Would Have Done Project with Some Change				Would Have Done Exactly the Same		Don't Know	
							Installed Less Expensive Measures		Installed Less Efficient Measures					
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air sealing (n=55)	31	56%	1	2%	5	9%	0	0%	0	0%	13	24%	6	11%
Wall insulation (n=40)	19	48%	0	0%	2	5%	0	0%	0	0%	16	40%	4	10%
Floor insulation (n=51)	21	41%	2	4%	10	20%	0	0%	0	0%	17	33%	4	8%
Ceiling insulation (n=68)	25	37%	3	4%	1	2%	0	0%	0	0%	36	53%	3	4%
Duct insulation (n=25)	12	48%	2	8%	6	24%	0	0%	0	0%	5	20%	1	4%
Duct sealing (n=43)	20	46%	0	0%	0	0%	0	0%	0	0%	20	46%	5	12%
Heat pump (n=58)	8	14%	0	0%	0	0%	11	19%	10	17%	32	55%	3	5%
Water heater (n=62)	14	23%	0	0%	0	0%	15	24%	6	10%	33	53%	0	0%
Windows (n=59)	22	37%	0	0%	2	3%	4	7%	4	7%	30	51%	0	0%

[1] The precision is ±10% or better for all percentages in this table. For each question, the denominator includes respondent who answered *don't know*, but not those who did not answer the question.

If a respondent said they would have installed a less efficient heat pump, water heater, or windows, we asked whether it would have been slightly, somewhat, or significantly less efficient. Similarly, we asked those who said they would have done less air sealing if they would have done slightly, somewhat, or significantly less. As shown in Table 5.6, no clear trends were seen; however, the small number of respondents who indicated they would have installed less energy-efficient equipment or done less air sealing limits the conclusions that can be drawn.

Table 5.6: Project Changes for the Existing Single Family Program

Group	Air Sealing	Heat Pump	Water Heater	Windows
Slightly	1	1	2	2
Somewhat	1	6	2	2
Significantly	2	3	2	0
Don't know	3	0	0	0
Total	7	10	6	4

Free-Ridership

The mean midpoint, *low*-scenario, and *high*-scenario free-ridership values are shown in Table 5.7. The mean midpoint free-ridership was lowest for the air and duct sealing groups, slightly higher for duct, wall, and floor insulation, and highest for the water heater, heat pump, ceiling insulation, and windows groups.

Table 5.7: Mean Free-Ridership Scores for the Existing Single Family Program[1]

Group	Midpoint	Low Scenario	High Scenario
Air sealing (n=55)	23.2%	19.5%	26.8%
Wall insulation (n=40)	23.2%	19.5%	26.8%
Floor insulation (n=51)	45.7%	42.2%	49.1%
Ceiling insulation (n=68)	31.3%	27.5%	35.0%
Duct insulation (n=25)	34.3%	31.9%	36.8%
Duct sealing (n=43)	41.2%	39.0%	43.4%
Heat pump (n=58)	28.5%	26.5%	30.5%
Water heater (n=62)	48.8%	46.4%	51.2%
Windows (n=59)	40.0%	37.9%	42.2%

[1] All percentages in this table are precise to ±10% or better. The precision is for 90% confidence. Although free-ridership is expressed as a percentage, it is calculated as a mean of all individual free-ridership scores. Therefore, the precision is calculated using the standard error of the mean rather than the standard error of a proportion.

EXISTING SINGLE FAMILY – HOME ENERGY REVIEW

Seventy-six individuals who had a home energy review under the Existing Single Family program responded to the survey. This survey queried the respondents about their satisfaction and whether they had made, or in the next 12 months planned to make, any of the improvements recommended by the energy advisor that visited their home under the program.

Satisfaction

Respondents were asked about their satisfaction with the overall program experience, the scheduling process, the recommendations and packet of materials left by the energy advisor, as well as that person's knowledge and courtesy, and the information provided on how to apply for Energy Trust incentives. Results are summarized in Table 5.8.

The table shows a high level of satisfaction with the home energy review. Respondents were particularly satisfied with the courtesy and knowledge of the energy advisor and with the scheduling process, but satisfaction levels also were high with the recommendations made and the materials left behind. Satisfaction was lowest with information on how to apply for Energy Trust incentives; nevertheless, about two-thirds of respondents reported satisfaction levels of "4" or "5" on the five-point scale for this item.

Improvements Made or Planned

The survey asked respondents if they had made any of the improvements recommended by the energy advisor and if they are planning to make any of the recommended improvements in the next 12 months. Of 76 respondents, 33 (43%) indicated that they had already made at least one of the improvements recommended by the advisor**.** Thirty-five respondents (46%) indicated that they were planning to take at least one of the recommended actions in the next 12 months.

As Table 5.9 shows, insulating was the most common improvement that had been made, followed by window replacement. Those two improvements were also the most common improvements planned for the next 12 months, but in reverse order. These findings make sense in light of the relative ease and expense of the two types of improvements. No more than two respondents indicated that they had made – or planned for the next 12 months – any other single type of improvement.

Table 5.8: Program Satisfaction Ratings for Home Energy Review

Program Facet	Satisfaction Rating, by Program Facet[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Overall (*n* =76)	1	1%	0	0%	4	5%	23	30%	48	63%	0	0%
Scheduling process (*n* = 75)	0	0%	1	1%	5	7%	9	12%	57	75%	3	4%
Recommendations provided by energy advisor (*n* = 76)	1	1%	4	5%	6	8%	17	22%	46	61%	2	3%
Knowledge of energy advisor (*n* =76)	1	1%	4	5%	4	5%	19	25%	48	63%	0	0%
Courtesy of energy advisor (*n* =76)	0	0%	0	0%	0	0%	5	7%	71	93%	0	0%
Packet of materials left by energy advisor (*n* =76)	2	3%	1	1%	5	7%	20	26%	41	54%	7	9%
Information on how to apply for energy trust incentives (*n* =75)	4	5%	1	1%	10	13%	10	13%	39	51%	11	14%

[1] The precision is ±10% or better for all percentages in this table. For each question, the denominator includes respondent who answered *don't know*, but not those who did not answer the question. Because of rounding error, the percentages for a given satisfaction category do not necessarily sum to 100. Most of the error is in cells with counts of 0 or 1.

Table 5.9: Improvements Made and Planned

Improvements	Count	Percent (*N* = 76)	Precision
Recommended Improvements Made			
Insulation	13	17%	7%
Windows	5	7%	5%
Duct sealing	2	3%	3%
Water heater, duct insulation	1 each	1%	2%
Improvements Planned in Next 12 Months			
Windows	8	11%	6%
Insulation	4	5%	4%
Gas furnace, water heater, duct sealing, solar electric (PV), air sealing	2 each	3%	3%
Heat pump, duct insulation, install more CFLs, turn down thermostat, attic vent, furnace maintenance, weather stripping	1 each	1%	2%
Don't know	7	9%	5%

HOME PRODUCTS

A total of 208 participants of the Home Products program responded to the survey: 75 for clothes washer purchase, 63 for refrigerator purchase, and 70 for refrigerator recycling. The samples for clothes washer purchase and refrigerator recycling exceeded the final revised target; that for refrigerator purchase was slightly below the target.

In some cases, the sample *n* varied slightly among specific questions because those who did not respond to a question were not counted toward the sample *n*.

Satisfaction

In addition to rating overall program satisfaction, all respondents rated their level of satisfaction with information received about energy savings and Energy Trust incentives, and the turnaround time for receiving the incentive. Respondents who purchased a clothes washer or refrigerator also rated their satisfaction with ease of finding eligible products, the performance of the installed product, and the application process. Respondents who recycled a refrigerator rated their satisfaction with the scheduling and pickup processes.

Table 5.10 shows the count and percentage of respondents in each survey group that gave satisfaction ratings of "4" or "5" (on the five-point scale) to the applicable program elements.

Satisfaction ratings were generally high overall for most program elements. Among respondents who purchased new appliances, satisfaction was highest for the products' performance.

Table 5.10: Program Satisfaction Summary for the Home Products Program

Program Facet	Satisfaction ratings of 4 or 5 (On 5-Point Scale) for Each Program Facet, by Survey Group[1]					
	Clothes Washer (n=75)		Refrigerator (n=63)		Refrigerator Recycling (n=70)	
	Count	Percent	Count	Percent	Count	Percent
Overall program satisfaction	67	89%	55	87%	63	90%
Information about energy savings	32	49%	37	63%	22	50%
Information about incentives	34	52%	37	64%	20	47%
Turnaround	49	65%	45	73%	55	79%
Finding eligible products	58	83%	50	79%	0	0%
Performance of installed measure	67	89%	56	90%	0	0%
Application	56	75%	49	79%	0	0%
Scheduling process	0	0%	0	0%	64	93%
Pickup process	0	0%	0	0%	66	96%

[1] The precision is ±10% or better for all but four percentages in this table: for the refrigerator purchase, the results are precise to ±12% for information about incentives and turnaround; for refrigerator recycling, the results are precise to ±12% for information about energy savings and information about incentives. For each question, the denominator includes respondents who answered *don't know*, but not those who did not answer the question.

Satisfaction was somewhat lower – but still high – for ease of finding eligible products and the application process. Among the respondents who recycled refrigerators, satisfaction was highest for the scheduling and pickup processes. Among all respondents, satisfaction was lowest for the information provided about energy savings and about Energy Trust incentives. Of those who purchased a clothes washer or recycled a refrigerator, about half gave satisfaction ratings of "4" or "5" for those two program elements. Detailed results are shown in Appendix A.

Program Influence

Respondents rated the level of influence that the program incentive, the information received from Energy Trust, and the salesperson or retailer had on their decision to purchase the incented equipment or recycle their refrigerator. Those who recycled refrigerators also were asked what influence having free pickup and removal had on their decision.

Table 5.11 shows the count and percentage of respondents in each survey group that gave influence ratings of "4" or "5" (on the five-point scale) to the applicable influence sources.

Among the respondents that purchased appliances, responses did not generally show that the assessed items exerted high levels of influence. In most cases, more than two-thirds of these respondents gave influence ratings *other than* "4" or "5" on the five-point scale. There was only one case in which more than half of the respondents rated the influence as a "4" or "5" – the salesperson or retailer had that level of influence for 57% of the respondents who purchased a clothes washer.

Table 5.11: Program Influence Summary for the Home Products Program

Program Facet	Influence ratings of 4 or 5 (On 5-Point Scale) for Each Program Facet, by Survey Group[1]					
	Clothes Washer (n=75)		Refrigerator (n=63)		Refrigerator Recycling (n=70)	
	Count	Percent	Count	Percent	Count	Percent
Program incentive	23	32%	20	32%	59	86%
Information from energy trust	12	17%	16	26%	30	52%
Salesperson or retailer	41	57%	27	45%	21	75%
Free pickup and removal	0	0%	0	0%	63	91%
Maximum influence[2]	50	67%	38	60%	67	96%

[1] At 90% confidence, the precision of all percentages in this table is ±10% or better. The *n* for each category does not include those who did not respond or indicated the question was not applicable to them.

[2] For each respondent, this is the influence of the factor (program incentive, information received, salesperson or retailer, or free pickup and removal) that exerted the greatest influence for that person.

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that 67% of clothes washer purchasers and 60% of refrigerator purchasers rated the influence of at least one program facet as a "4" or "5".

Among the respondents that recycled a refrigerator, most of the rated elements showed high levels of influence, particularly free pickup and removal and the program incentive. Nearly all of these respondents rated the influence of at least one item as a "4" or "5".

Detailed results are shown in Appendix A.

Project Change

We asked respondents what they would have done if they had not received program assistance. As Table 5.12 shows, three-quarters of those who purchased appliances through the Home Products program reported that they would have purchased exactly the same appliance without the program's assistance. About one-seventh to one-fifth said they would have purchased a less expensive appliance. Fewer than one-tenth of either group gave any other response.

Table 5.12: How Appliance Purchase Would Have Changed Without the Home Products Program (Multiple Responses Allowed)

Type of Change	Respondents Indicating Each Type of Change, by Type of Appliance					
	Clothes Washer (n=75)			Refrigerator (n=63)		
	Count	Percent	Count	Percent	Count	Percent
Not purchased or postponed	5	7%	5%	1	2%	3%
Repaired existing equipment	1	1%	2%	0	0%	0%
Purchased less expensive equipment	10	13%	6%	12	19%	8%
Purchased used equipment	0	0%	0%	0	0%	0%
Purchased less energy-efficient equipment	3	4%	4%	5	8%	6%
Purchased exactly the same equipment	56	75%	8%	47	75%	9%
Don't know	3	4%	4%	1	2%	3%

For those who recycled a refrigerator, the actions that respondents reported they would have done without the program were well distributed across a range of possibilities (Table 5.13).

Table 5.13: How Refrigerator Recycling Would Have Changed Without the Home Products Program (Multiple Responses Allowed)

Type of Change	Count	Percent (*N* = 70)	Precision
Sold unit through ad or garage sale	7	10%	6%
Sold or gave unit to a used appliance dealer	7	10%	6%
Taken or had unit taken to landfill waste center	17	24%	8%
Taken or had unit taken to a recycler	13	19%	8%
Had an appliance retailer remove the unit	5	7%	5%
Kept using the unit	2	3%	3%
Kept unit but not used it	1	1%	2%
Given unit to charity	3	4%	4%
Given unit to friend or family	11	16%	7%
Don't know	9	13%	7%

Three of the possible responses indicated that the refrigerator would have been taken out of use: they would have taken the refrigerator to a landfill waste center, taken it to a recycler, or kept but not used it. Thirty respondents (43%) gave one or more of these answers, only one of whom said they would have kept the unit, but not continued to use it.

Several responses indicated that the old refrigerator probably would not have been taken out of use. Twenty-eight respondents (40%) gave one of those responses. Five respondents said they would have had an appliance retailer remove the unit; it is not clear from this option whether the unit would then have been resold or recycled. Nine respondents did not know what they would have done.

Free-Ridership

The mean midpoint, *low*-scenario, and *high*-scenario free-ridership values are shown in Table 5.14. Mean midpoint free-ridership was 56% for purchase of a clothes washer and 61% for purchase of a refrigerator. Free-ridership was much lower (28%) for refrigerator recycling.

Table 5.14: Mean Free-Ridership Scores / Precision for the Home Products Program

Score Type	Midpoint	Low Scenario	High Scenario
Clothes washer (*n* = 75)	56.0% / ±4.3%	54.7% / ±4.6%	57.3% / ±4.4%
Refrigerator (*n* = 63)	61.1% / ±5.0%	59.9% / ±5.4%	62.3% / ±4.8%
Refrigerator recycling (*n* = 70)	27.9% / ±4.5%	22.1% / ±4.8%	33.6% / ±5.0%

[1] The precision is for 90% confidence. Although free-ridership is expressed as a percentage, it is calculated as a mean of all individual free-ridership scores. Therefore, the precision is calculated using the standard error of the mean rather than the standard error of a proportion.

HOME PERFORMANCE

Twenty-eight participants of the Home Performance program responded to the survey. This was slightly below the final target sample for this program, but constituted 51% of the total Q2 2010 population of 55 program participants. Review of the data-tracking file showed that 16 Home Performance program participants also had participated in other Energy Trust residential energy efficiency programs in the same month that they participated in Home Performance, and they had been assigned to another survey group. The survey sample, in fact, constituted 72% of the population of program participants that had not been assigned to another survey group.

In some cases, the sample *n* varied slightly among specific questions because those who did not respond to a question were not counted toward the sample *n*.

Satisfaction

In addition to rating overall program satisfaction, all respondents rated their level of satisfaction with: information received from Energy Trust about the program; the Home Performance custom energy report that was provided as part of the program service; the incentive application process; the turnaround time for receiving the incentive; the quality of the installation work; and the comfort of their home after the work was performed.

Table 5.15 shows the responses. Satisfaction ratings were generally high overall for most program elements, particularly for the quality of the installation work and the resulting comfort of the home. Satisfaction was lowest for the application paperwork and the incentive turnaround, but in both cases, large majorities of respondents gave satisfaction ratings of "4" or "5" on the five-point scale.

Program Influence

Respondents rated the level of influence of the program incentive, the Home Performance contractor, and information received from Energy Trust on their decision to receive the Home Performance services. As Table 5.16 shows, respondents reported high levels of influence by all three of the above.

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that 71% of respondents rated at least one program element as *extremely influential* (a "5" on the five-point scale) and another 21% gave at least one rating of "4".

Project Change

We asked respondents what they would have done if they had not received program assistance. About one-fifth of the sample said they would have done exactly the same improvements without the program.

Twenty of the 28 respondents – including 11 of those who said they would have cancelled or postponed the home improvement – said that they would have made less extensive improvements than they did through the program. Many of these respondents reported multiple alternatives, the most common of which were making some repairs to their home or equipment (14) and making fewer energy-efficient improvements (14).

For the purpose of calculating free-ridership, we interpreted respondents' statements that they would have cancelled or postponed the home improvement *and* done some less extensive improvement as meaning that they would not have done any improvement in 2010, and would then have done some improvement later that was less extensive than what they did through the program.

Table 5.15: Program Satisfaction Ratings for the Home Performance Program

Program Facet	Satisfaction Rating, by Program Facet[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Program Satisfaction (1 = *Not at All* to 5 = V*ery)*												
Overall (*n* = 28)	0	0%	1	4%	2	7%	8	29%	17	61%	0	0%
Program information received (*n* = 28)	0	0%	1	4%	3	11%	6	21%	17	61%	1	4%
Custom energy report (*n* = 28)	1	4%	0	0%	3	11%	6	21%	14	50%	4	14%
Application (*n* = 24)	0	0%	2	8%	2	8%	10	42%	9	38%	1	4%
Turnaround (*n* = 25)	2	8%	1	4%	4	16%	6	24%	12	48%	0	0%
Installation (*n* = 25)	0	0%	0	0%	1	4%	6	24%	18	72%	0	0%
Comfort of home (*n* = 25)	0	0%	0	0%	1	4%	5	20%	19	76%	0	0%
Contractor Satisfaction (1 = *Not at All* to 5 = V*ery)*												
Punctuality (n=28)	0	0%	1	4%	4	14%	2	7%	21	75%	0	0%
Cleanliness (n=27)	0	0%	0	0%	2	7%	4	15%	21	78%	0	0%
Installation (n=25)	0	0%	0	0%	1	4%	6	24%	18	72%	0	0%
Incentive paperwork (n=27)	1	4%	1	4%	2	7%	6	22%	17	63%	0	0%
Information about incentive (n=25)	1	4%	1	4%	0	0%	6	24%	17	68%	0	0%
Overall (n=28)	0	0%	1	4%	3	11%	6	21%	18	64%	0	0%

[1] The precision is ±10% or better for most percentages in this table. Most satisfaction ratings of "5" are precise to ±11%; those for the application and turnaround time are precise to ±12%, and the rating of "4" for the application process is precise to ±13%. For each question, the denominator includes respondent who answered *don't know*, but not those who did not answer the question.

Table 5.16: Program Influence Ratings for the Home Performance Program

Source of Influence	Influence Rating[1]											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
	Influence (1 = *Not at All* to 5 = *Extremely)*											
Incentive (*n* = 28)	1	4%	0	0%	4	14%	8	29%	15	54%	0	0%
Information from energy trust (*n* = 27)	4	15%	1	4%	3	11%	8	30%	11	41%	0	0%
Home performance contractor (*n* = 27)	1	4%	1	4%	2	7%	10	37%	12	44%	1	4%
Maximum influence[2] (*n* = 28)	1	4%	0	0%	1	4%	6	21%	20	71%	0	0%

[1] The precision is ±10% or better for most percentages in this table. Influence ratings of "5" are precise to ±11% or better. For each question, the denominator includes respondent who answered *don't know*, but not those who did not answer the question.

[3] For each respondent, this is the influence of the factor (incentive, information received, or contractor) that exerted the greatest influence for that person.

As Table 5.17 shows, just over half reported that without the program they would not have done home improvements or would have postponed them more than one year. On the other hand, five respondents – about one-fifth of the sample – said they would have done exactly the same improvements without the program.

Table 5.17: How the Project Would Have Changed Without the Home Performance Program (Multiple Responses Allowed)

Type of Change	Count	Percent (*N* = 28)	Precision
No home improvement or postponed > 1 year	16	57%	11%
No home improvement	2	7%	6%
Postponed > 1 year	14	50%	11%
Done some equipment or home repairs	14	50%	11%
Fewer energy efficiency improvements	14	50%	11%
Installed less expensive equipment	6	21%	9%
Installed less energy-efficient equipment	6	21%	9%
No change	5	18%	8%

Twenty of the 28 respondents – including 11 of those who said they would have cancelled or postponed the home improvement – said that they would have made less extensive improvements than they did through the program. Many of these respondents reported multiple alternatives, the most common of which were making some repairs to their home or equipment (14) and making fewer energy-efficient improvements (14). Of the six respondents who said they would have installed less energy efficient equipment, two said it would have been slightly less efficient, one said that it would have been somewhat less efficient, and three said that it would have been significantly less efficient.

For the purpose of calculating free-ridership, we interpreted respondents' statements that they would have cancelled or postponed the home improvement *and* done some less extensive improvement as meaning that they would not have done any improvements in 2010 and would then have done some improvement later that was less extensive than what they did through the program.

Free-Ridership

As described in *Section 2, Methods*, we calculated a single free-ridership score for each respondent that provided responses to the project change and program influence questions.

For respondents who did not respond to one or both of those sets of questions, we computed a *low*-scenario free-ridership score that assumed the missing data indicated low free-ridership and

a *high*-scenario score that assumed the missing data indicated high free-ridership. We then computed the midpoint of the *low*-scenario and *high*-scenario scores for those individuals. We calculated the mean free-ridership score across all respondents using the midpoint score.

We also calculated mean *low*-scenario and *high*-scenario scores – in those cases, if a respondent provided all the data needed to calculate free-ridership, the same score represented both the *low*-scenario and *high*-scenario (and midpoint) cases.

The mean *low*-scenario, midpoint, and *high*-scenario scores are shown in Table 5.18. Mean midpoint free-ridership was 18%.

Table 5.18: Mean Free-Ridership Scores / Precision for the Home Performance Program

Score Type (*n* = 28)	Midpoint	Low Scenario	High Scenario
Mean	17.9% / ±5.8%	16.1% / ±5.9%	19.6% / ±6.1%

6 SURVEY RESULTS: SOLAR PROGRAMS

This section shows the results for the two solar programs for which survey results were obtained: the Solar Electric program and the Solar Water Heating program. As described in *Section 2, Methods,* we calculated a single free-ridership score for each respondent, based on answers to the project change and program influence questions. All respondents provided sufficient data to compute a free-ridership score for these two programs, so it was not necessary to calculate *low*-scenario and *high*-scenario scores.

SOLAR ELECTRIC

Ten nonresidential participants of the Solar Electric program responded to the survey. This was less than the final target sample of 18 for this program, but represented 42% of the program's Q2 2010 projects. Through an error in the generation of the lists of program participants from Energy Trust's FastTrack database, no residential participants of the Solar Electric program were surveyed. Because of the small sample, we report number of responses but not percentages.

Satisfaction

In addition to rating overall program satisfaction, all respondents rated their level of satisfaction with information they received about solar energy and solar energy incentives, the ease of finding a contractor to install the system, the quality of the installation, the performance of the system, the application process, and the turnaround time to receive the incentive. Table 6.1 shows the responses.

Table 6.1: Program Satisfaction Summary for the Solar Electric Program

Program Facet	Satisfaction Rating by Program Facet				
	1, 2, or 3	4	5	Don't Know	No Response
Overall program satisfaction	0	3	7	0	0
Information about solar energy	2	1	5	0	2
Information about incentives	1	3	2	1	3
Ease of finding contractor	1	3	6	0	0
Quality of installation	2	1	7	0	0
Performance of installed measure	0	2	2	6	0
Application	2	2	3	2	1
Turnaround time	0	4	3	3	0

Satisfaction ratings were generally high for all program elements, with no more than two of the 10 respondents giving a rating of "3" or lower to any program facet.

Program Influence

Respondents rated how much their decision to install a solar electric system was influenced by the program incentive, the Energy Trust technical study (if one was performed), information provided by Energy Trust other than that obtained through the technical study, and the solar contractor.

As Table 6.2 shows, all respondents reported being influenced by the incentive ("4" or "5" on the five-point scale) and nine of the ten respondents said they were influenced by the contractor. Only two of the ten respondents had a technical study performed, one of whom reported moderate influence (rating of "3" on the five-point scale), while the other could not answer. Few reported that their decision was much influenced by other information they received from Energy Trust.

Table 6.2: Program Influence Summary for the Solar Electric Program

Source of Influence	Influence Rating by Program Facet				
	1, 2, or 3	4	5	Don't Know	Not Applicable
Program incentive	0	2	8	0	0
Energy trust technical study	1	0	0	1	8
Other information from energy trust	5	1	2	1	1
Solar contractor	1	2	7	0	0
Maximum influence	0	1	9	0	0

The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that nine of the ten respondents rated at least one program element as *extremely influential* (a "5" on the five-point scale) and the other gave at least one rating of "4".

Project Change

We asked respondents what they would have done if they had not received program assistance. Eight of the ten reported that without the program they would not have installed the system and the other two said they would have installed the same system they did, even without program support. Of the eight who said they would not have installed the system, two also said they would have postponed installing the system more than one year (one respondent) or would have installed a smaller system (one respondent). For the purpose of calculating free-ridership, we treated those two respondents as if they would not have installed the system in 2010.

Free-Ridership

Mean free-ridership was 11.2%, with a minimum of 0% and a maximum of 62.5%. The mean value is precise to ±9.7%.

SOLAR WATER HEATING

Seven participants of the residential Solar Water Heating program responded to the survey. This represented 88% of the program's Q2 2010 projects. Because of the small sample, we report counts of responses, but not percentages.

Satisfaction

In addition to rating overall program satisfaction, all respondents rated their level of satisfaction with information they received about: solar energy, solar energy incentives, and other savings opportunities; the ease of finding a contractor to install the system; the quality of the installation; the performance of the system; and Energy Trust's inspection of the system.

Table 6.3 shows the responses. Satisfaction ratings were generally high for all program elements – for five of the eight program facets rated, all respondents gave a satisfaction rating of "4" or "5" and for the other three program facets, all but one respondent gave a "4" or "5" rating. One respondent responded "don't know" to each of two program facets, and one gave a satisfaction rating of "3" to one facet. Percentages are not reported because of the small sample.

Table 6.3: Program Satisfaction Summary for the Solar Water Heating Program

Program Facet	Satisfaction Rating by Program Facet				
	1, 2, or 3	4	5	Don't Know	No Response
Overall program satisfaction	0	1	6	0	0
Information about solar energy	0	2	3	1	1
Information about incentives	0	3	4	0	0
Ease of finding contractor	0	1	5	0	1
Quality of installation	0	0	7	0	0
Performance of installed measure	0	1	6	0	0
Information about other savings opportunities	1	0	5	1	0
Energy trust inspection of the system	0	0	7	0	0

Program Influence

Respondents rated how much their decision to install a solar water heating system was influenced by the program incentive, a solar energy review (if they received one), information from a solar workshop, information provided by Energy Trust other than that obtained through the solar energy review or a workshop, and the solar contractor.

As Table 6.4 shows, six of the seven respondents gave an influence rating of "4" or "5" (on the five-point scale) for the incentive, and five of the six respondents gave ratings of "4" or "5" for the contractor. Of the five respondents who had a solar energy review, three indicated influence of "4" or "5". Only two respondents had attended a solar workshop. The table also shows the distribution of each respondent's maximum influence rating – that is, the highest rating that each respondent gave to any program element. This shows that three of the seven respondents rated at least one program element as *extremely influential* (a "5" on the five-point scale) and three others gave at least one rating of "4".

Table 6.4: Program Influence Summary for the Solar Electric Program

Source of Influence	Influence Rating by Program Facet				
	1, 2, or 3	4	5	Don't Know	No Response
Program incentive	1	3	3	0	0
Solar energy review	2	2	1	0	2
Information from solar workshop	1	1	0	0	5
Other information from energy trust	2	2	1	2	0
Contractor	1	2	3	1	0
Maximum influence	1	3	3	0	0

Project Change

We asked respondents what they would have done if they had not received program assistance. Six reported that without the program they would not have installed the system or would have postponed installing it more than one year and one said they would have installed exactly the same system without the program. One of those who said they would have postponed installing the system also said they would have installed a smaller system. For the purpose of calculating free-ridership, we interpreted that respondent's response as meaning that they would not have installed any system in 2010, but later would have installed a smaller system than they installed through the program.

Free-Ridership

Mean free-ridership was 16.1%, with a minimum of 0% and a maximum of 75%. The mean value is precise to ±14.2%.

7 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The implementation of the rollout generally went smoothly. In some cases, the precision goals were not met because the data-tracking system did not calculate revised sample sizes correctly over the course of the rollout. The issue was identified and corrected.

This report does not represent a full process evaluation; therefore, our recommendations mainly relate to the data collection Methods. However, one recommendation arises from survey findings concerning the Existing Single Family and Home Products programs.

CONCLUSIONS AND RECOMMENDATIONS

We make the following conclusions and recommendations:

- ***Conclusion 1:*** In the Existing Single Family and Home Products programs, the wording of the questions about satisfaction with delivery of program information about energy savings and about incentives produced unreliable results.

  Recommendation: Revise the questions about delivery of information concerning energy savings and incentives. First, ask respondents if they recall being given any information about energy savings and incentives; ask satisfaction questions only of respondents who can recall being given information.

- ***Conclusion 2:*** Seemingly inconsistent descriptions of what would have been done without program support can have a variety of meanings, with different implications for the calculation of free-ridership.

  Recommendation: Either revise the survey to require respondents to indicate *either* that they would have cancelled or postponed the project *or* that they would have done something else, but not both, or train callers to probe for clarification with respondents who give both answers.

- ***Conclusion 3:*** Some response options describing actions that might have been taken if program assistance had not been available (e.g., performing air sealing or insulation oneself, without a contractor, or installing a different heating system rather than a heat pump) do not provide clear implications about differences in energy savings that the changes would have caused, requiring that assumptions be made to calculate free-ridership.

Recommendation: Review all survey instruments to determine how each response option contributes to estimation of free-ridership. Eliminate or revise any response option that does not provide a clear interpretation of change in energy savings.

➡ ***Conclusion 4:*** The wording of the project change question and/or response options for the New Buildings program may leave some ambiguity whether the question pertains to the entire construction project or just that equipment covered by the Energy Trust incentives.

Recommendation: Consider rewording the project change question and/or response options for the New Buildings survey. In particular, one response option should specify installing less energy-efficient equipment *in place of the equipment that received program incentives*, and the no change option should indicate: "not changed the *equipment or systems you installed in your construction project* at all."

APPENDICES

APPENDIX A: DETAILED SATISFACTION RATINGS

APPENDIX B: SURVEY INSTRUMENTS

A DETAILED SATISFACTION RATINGS

The following tables present detailed satisfaction ratings for each of the programs.

Table A.3: Existing Single Family Program Satisfaction Ratings

Category of Satisfaction	Satisfaction Rating (1 = *not at all* to 5 = *very*)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air Sealing (n=55)												
Overall program satisfaction (*n* = 55)	0	0%	4	7%	5	9%	18	33%	28	51%	0	0%
Information about energy savings (*n* = 55)	0	0%	1	2%	8	15%	12	22%	18	33%	16	29%
Information about incentives (*n* = 54)	1	2%	2	4%	5	9%	17	31%	16	30%	13	24%
Application (*n* = 36)	1	3%	3	8%	4	11%	8	22%	16	44%	4	11%
Turnaround (*n* = 52)	6	12%	1	2%	8	15%	15	29%	19	37%	3	6%
Quality of installation (*n* = 52)	0	0%	1	2%	6	12%	12	23%	31	60%	2	4%
Comfort of home (*n* = 48)	0	0%	0	0%	2	4%	8	17%	19	40%	19	40%
Duct Sealing (n=43)												
Overall program satisfaction (n = 43)	2	5%	1	2%	4	9%	11	26%	24	56%	1	2%
Information about energy savings (n = 43)	0	0%	0	0%	6	14%	14	33%	14	33%	9	21%
Information about incentives (n = 43)	0	0%	1	2%	4	9%	14	33%	14	33%	10	23%
Application (n = 37)	1	3%	3	8%	2	5%	16	43%	11	30%	4	11%
Turnaround (n = 43)	5	12%	3	7%	6	14%	11	26%	17	40%	1	2%

Continued

Category of Satisfaction	Satisfaction Rating (1 = *not at all* to 5 = *very)*											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Duct sealing (n=43), cont.												
Quality of installation (n = 43)	0	0%	0	0%	2	5%	7	16%	28	65%	6	14%
Comfort of home (n = 43)	0	0%	1	2%	1	2%	5	12%	27	63%	9	21%
Heat Pump (n=58)												
Overall program satisfaction (n = 58)	1	2%	0	0%	4	7%	10	17%	40	69%	3	5%
Information about energy savings (n = 54)	2	4%	0	0%	6	11%	13	24%	19	35%	14	26%
Information about incentives (n = 56)	2	4%	1	2%	5	9%	15	27%	22	39%	11	20%
Application (n = 47)	2	4%	2	4%	8	17%	15	32%	16	34%	4	9%
Turnaround (n = 58)	3	5%	4	7%	8	14%	12	21%	28	48%	3	5%
Performance of equipment (n = 58)	0	0%	1	2%	0	0%	5	9%	44	76%	8	14%
Wall Insulation (n=40)												
Overall program satisfaction (n = 40)	0	0%	3	8%	6	15%	15	38%	16	40%	0	0%
Information about energy savings (n = 40)	1	3%	1	3%	3	8%	15	38%	14	35%	6	15%
Information about incentives (n = 39)	2	5%	0	0%	4	10%	10	26%	15	38%	8	21%
Application (n = 36)	2	6%	2	6%	7	19%	12	33%	12	33%	1	3%

Continued

Category of Satisfaction	Satisfaction Rating (1 = *not at all* to 5 = *very*)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Wall Insulation (n=40), cont.												
Turnaround (n = 39)	1	3%	4	10%	6	15%	14	36%	11	28%	3	8%
Quality of installation (n = 39)	0	0%	1	3%	4	10%	8	21%	21	54%	5	13%
Comfort of home (n = 39)	0	0%	0	0%	2	5%	9	23%	19	49%	9	23%
Floor Insulation (n=51)												
Overall program satisfaction (n = 51)	0	0%	0	0%	7	14%	13	25%	31	61%	0	0%
Information about energy savings (n = 51)	1	2%	1	2%	6	12%	14	27%	18	35%	11	22%
Information about incentives (n = 49)	0	0%	0	0%	10	20%	13	27%	16	33%	10	20%
Application (n = 50)	0	0%	3	6%	8	16%	13	26%	25	50%	1	2%
Turnaround (n = 50)	1	2%	6	12%	10	20%	11	22%	22	44%	0	0%
Quality of installation (n = 46)	0	0%	1	2%	5	11%	3	7%	33	72%	4	9%
Comfort of home (n = 48)	0	0%	0	0%	3	6%	16	33%	18	38%	11	23%
Ceiling Insulation (n=68)												
Overall program satisfaction (n = 68)	1	1%	0	0%	4	6%	18	26%	44	65%	1	1%
Information about energy savings (n = 67)	3	4%	1	1%	7	10%	18	27%	28	42%	10	15%

Continued

Category of Satisfaction	Satisfaction Rating (1 = *not at all* to 5 = *very*)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Ceiling Insulation (n=68), cont.												
Information about incentives (n = 68)	2	3%	4	6%	8	12%	15	22%	25	37%	14	21%
Application (n = 67)	2	3%	2	3%	8	12%	20	30%	31	46%	4	6%
Turnaround (n = 64)	3	5%	2	3%	14	22%	15	23%	28	44%	2	3%
Quality of installation (n = 61)	1	2%	1	2%	2	3%	10	16%	40	66%	7	11%
Comfort of home (n = 67)	0	0%	1	1%	2	3%	19	28%	26	39%	19	28%
Duct Insulation (n=25)												
Overall program satisfaction (n = 25)	1	4%	0	0%	6	24%	5	20%	13	52%	0	0%
Information about energy savings (n = 25)	1	4%	3	12%	6	24%	6	24%	6	24%	3	12%
Information about incentives (n = 25)	3	12%	3	12%	7	28%	5	20%	4	16%	3	12%
Application (n = 23)	5	22%	3	13%	3	13%	5	22%	5	22%	2	9%
Turnaround (n = 25)	2	8%	3	12%	6	24%	6	24%	8	32%	0	0%
Quality of installation (n = 25)	0	0%	0	0%	3	12%	4	16%	18	72%	0	0%
Comfort of home (n = 25)	0	0%	0	0%	1	4%	3	12%	17	68%	4	16%

Continued

Category of Satisfaction	Satisfaction Rating (1 = *not at all* to 5 = *very*)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Water Heater (n=62)												
Overall program satisfaction (n = 62)	0	0%	2	3%	3	5%	19	31%	38	61%	0	0%
Information about energy savings (n = 61)	0	0%	3	5%	7	11%	12	20%	30	49%	9	15%
Information about incentives (n = 60)	0	0%	3	5%	7	12%	15	25%	29	48%	6	10%
Application (n = 56)	1	2%	3	5%	10	18%	13	23%	25	45%	4	7%
Turnaround (n = 62)	2	3%	2	3%	8	13%	23	37%	23	37%	4	6%
Quality of installation (n = 50)	1	2%	0	0%	0	0%	11	22%	37	74%	1	2%
Comfort of home (n = 62)	0	0%	0	0%	3	5%	9	15%	45	73%	5	8%
Windows (n=59)												
Overall program satisfaction (n = 59)	3	5%	3	5%	9	15%	16	27%	27	46%	1	2%
Information about energy savings (n = 57)	3	5%	1	2%	4	7%	14	25%	34	60%	1	2%
Information about incentives (n = 56)	3	5%	1	2%	3	5%	15	27%	32	57%	2	4%
Application (n = 59)	5	8%	4	7%	16	27%	13	22%	20	34%	1	2%
Turnaround (n = 59)	6	10%	2	3%	13	22%	11	19%	24	41%	3	5%
Quality of installation (n = 47)	1	2%	0	0%	3	6%	9	19%	21	45%	13	28%
Comfort of home (n = 59)	0	0%	0	0%	1	2%	8	14%	47	80%	3	5%

Table A.4: Existing Single Family Contractor Satisfaction Ratings

Category of Satisfaction	Satisfaction Rating (1 = Not At All To 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air Sealing (n=55)												
Punctuality (*n* = 52)	1	2%	3	6%	3	6%	6	12%	39	75%	0	0%
Cleanliness (n = 52)	0	0%	2	4%	0	0%	9	17%	41	79%	0	0%
Quality of work (n = 49)	0	0%	1	2%	2	4%	7	14%	38	78%	1	2%
Incentive paperwork (n = 50)	3	6%	0	0%	4	8%	7	14%	33	66%	3	6%
Incentive information (n = 51)	3	6%	0	0%	6	12%	9	18%	27	53%	6	12%
Overall satisfaction (n = 52)	1	2%	2	4%	2	4%	11	21%	36	69%	0	0%
Duct Sealing (n=43)												
Punctuality (n = 43)	0	0%	0	0%	3	7%	2	5%	38	88%	0	0%
Cleanliness (n = 43)	0	0%	2	5%	1	2%	9	21%	31	72%	0	0%
Quality of work (n = 43)	0	0%	0	0%	2	5%	7	16%	28	65%	6	14%
Incentive paperwork (n = 39)	0	0%	2	5%	2	5%	6	15%	28	72%	1	3%
Incentive information (n = 41)	0	0%	0	0%	6	15%	4	10%	27	66%	4	10%
Overall satisfaction (n = 43)	0	0%	0	0%	5	12%	10	23%	28	65%	0	0%

Continued

Category of Satisfaction	Satisfaction Rating (1 = Not At All To 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Heat Pump (n=58)												
Punctuality (n = 58)	3	5%	0	0%	1	2%	3	5%	51	88%	0	0%
Cleanliness (n = 58)	1	2%	0	0%	0	0%	6	10%	51	88%	0	0%
Quality of work (n = 58)	2	3%	0	0%	0	0%	6	10%	50	86%	0	0%
Incentive paperwork (n = 54)	5	9%	0	0%	1	2%	7	13%	40	74%	1	2%
Incentive information (n = 56)	2	4%	1	2%	0	0%	10	18%	38	68%	5	9%
Overall satisfaction (n = 58)	2	3%	0	0%	1	2%	9	16%	46	79%	0	0%
Wall Insulation (n=40)												
Punctuality (n = 39)	0	0%	2	5%	4	10%	5	13%	28	72%	0	0%
Cleanliness (n = 39)	0	0%	0	0%	6	15%	8	21%	24	62%	1	3%
Quality of work (n = 38)	0	0%	2	5%	0	0%	10	26%	24	63%	2	5%
Incentive paperwork (n = 37)	2	5%	1	3%	4	11%	8	22%	21	57%	1	3%
Incentive information (n = 36)	4	11%	3	8%	2	6%	9	25%	12	33%	6	17%
Overall satisfaction (n = 39)	0	0%	2	5%	3	8%	13	33%	21	54%	0	0%

Continued

Category of Satisfaction	Satisfaction Rating (1 = Not At All To 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Floor Insulation (n=51)												
Punctuality (n = 45)	0	0%	1	2%	1	2%	10	22%	32	71%	1	2%
Cleanliness (n = 46)	0	0%	2	4%	2	4%	8	17%	34	74%	0	0%
Quality of work (n = 46)	0	0%	0	0%	6	13%	8	17%	28	61%	4	9%
Incentive paperwork (n = 45)	0	0%	1	2%	3	7%	10	22%	28	62%	3	7%
Incentive information (n = 41)	1	2%	1	2%	2	5%	8	20%	21	51%	8	20%
Overall satisfaction (n = 46)	1	2%	1	2%	3	7%	8	17%	33	72%	0	0%
Ceiling Insulation (n=68)												
Punctuality (n = 56)	0	0%	0	0%	2	4%	5	9%	49	88%	0	0%
Cleanliness (n = 56)	0	0%	0	0%	2	4%	8	14%	45	80%	1	2%
Quality of work (n = 56)	1	2%	0	0%	2	4%	7	13%	41	73%	5	9%
Incentive paperwork (n = 54)	3	6%	4	7%	4	7%	4	7%	36	67%	3	6%
Incentive information (n = 53)	2	4%	2	4%	5	9%	8	15%	28	53%	8	15%
Overall satisfaction (n = 57)	1	2%	1	2%	3	5%	12	21%	40	70%	0	0%

Continued

Category of Satisfaction	Satisfaction Rating (1 = Not At All To 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Duct Insulation (n=25)												
Punctuality (n = 25)	0	0%	1	4%	1	4%	4	16%	19	76%	0	0%
Cleanliness (n = 25)	1	4%	1	4%	0	0%	5	20%	18	72%	0	0%
Quality of work (n = 25)	0	0%	1	4%	1	4%	6	24%	17	68%	0	0%
Incentive paperwork (n = 25)	2	8%	2	8%	2	8%	6	24%	12	48%	1	4%
Incentive information (n = 25)	0	0%	2	8%	2	8%	5	20%	13	52%	3	12%
Overall satisfaction (n = 25)	1	4%	0	0%	5	20%	4	16%	15	60%	0	0%
Water Heater (n=62)												
Punctuality (n = 59)	1	2%	1	2%	4	7%	9	15%	44	75%	0	0%
Cleanliness (n = 59)	1	2%	0	0%	4	7%	7	12%	47	80%	0	0%
Quality of work (n = 59)	1	2%	2	3%	1	2%	9	15%	45	76%	1	2%
Incentive paperwork (n = 53)	2	4%	6	11%	0	0%	6	11%	38	72%	1	2%
Incentive information (n = 55)	1	2%	3	5%	5	9%	10	18%	30	55%	6	11%
Overall satisfaction (n = 58)	1	2%	0	0%	5	9%	9	16%	43	74%	0	0%

Continued

Category of Satisfaction	Satisfaction Rating (1 = Not At All To 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
	Windows (n=59)											
Punctuality (n = 58)	2	3%	0	0%	2	3%	6	10%	48	83%	0	0%
Cleanliness (n = 58)	2	3%	0	0%	2	3%	6	10%	48	83%	0	0%
Quality of work (n = 58)	1	2%	0	0%	2	3%	8	14%	47	81%	0	0%
Incentive paperwork (n = 53)	5	9%	2	4%	3	6%	13	25%	30	57%	0	0%
Incentive information (n = 53)	5	9%	2	4%	5	9%	9	17%	31	58%	1	2%
Overall satisfaction (n = 57)	2	4%	0	0%	5	9%	6	11%	44	77%	0	0%

Table A.5: Existing Single Family Program Influence Ratings

Category of Influence	Influence Rating (1 = *Not At All* To 5 = *Extremely)*											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Air Sealing (*n*=55)												
Energy trust incentive (n = 53)	6	11%	3	6%	7	13%	9	17%	26	49%	2	4%
Contractor (n = 52)	1	2%	2	4%	6	12%	12	23%	26	50%	5	10%
Energy trust information (n = 48)	8	17%	1	2%	9	19%	11	23%	8	17%	11	23%
Maximum influence (n = 55)	2	4%	2	4%	2	4%	10	18%	38	69%	1	2%
Duct Sealing (n=43)												
Energy trust incentive (n = 43)	10	23%	1	2%	7	16%	8	19%	17	40%	0	0%
Contractor (n = 43)	3	7%	1	2%	2	5%	9	21%	26	60%	2	5%
Energy trust information (n = 41)	4	10%	2	5%	3	7%	12	29%	14	34%	6	15%
Maximum influence (n = 43)	0	0%	0	0%	3	7%	8	19%	32	74%	0	0%
Heat Pump (n=58)												
Energy trust incentive (n = 57)	15	26%	2	4%	7	12%	7	12%	24	42%	2	4%
Energy trust information (n = 57)	15	26%	3	5%	7	12%	8	14%	12	21%	12	21%
Contractor (n = 58)	11	19%	2	3%	1	2%	14	24%	27	47%	3	5%
Maximum influence (n = 58)	7	12%	0	0%	2	3%	12	21%	37	64%	0	0%

Continued

Category of Influence	Influence Rating (1 = *Not At All* To 5 = *Extremely*)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Wall Insulation (n=40)												
Energy trust incentive (n = 39)	4	10%	2	5%	6	15%	13	33%	14	36%	0	0%
Contractor (n = 38)	11	29%	4	11%	1	3%	10	26%	10	26%	2	5%
Energy trust information (n = 37)	5	14%	2	5%	7	19%	12	32%	9	24%	2	5%
Maximum influence (n = 40)	1	3%	2	5%	2	5%	12	30%	22	55%	1	3%
Floor Insulation (n=51)												
Energy trust incentive (n = 51)	7	14%	1	2%	9	18%	16	31%	17	33%	1	2%
Contractor (n = 42)	11	26%	2	5%	7	17%	7	17%	13	31%	2	5%
Energy trust information (n = 48)	7	15%	2	4%	6	13%	17	35%	11	23%	5	10%
Maximum influence (n = 51)	5	10%	1	2%	6	12%	13	25%	26	51%	0	0%
Ceiling Insulation (n=68)												
Energy trust incentive (n = 68)	14	21%	4	6%	9	13%	15	22%	24	35%	2	3%
Contractor (n = 57)	16	28%	1	2%	9	16%	11	19%	15	26%	5	9%
Energy trust information (n = 67)	16	24%	3	4%	9	13%	16	24%	17	25%	6	9%
Maximum influence (n = 68)	7	10%	2	3%	6	9%	18	26%	34	50%	1	1%

Continued

Category of Influence	Influence Rating (1 = *Not At All* To 5 = *Extremely*)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Duct Insulation (n=25)												
Energy trust incentive (n = 25)	2	8%	1	4%	5	20%	5	20%	11	44%	1	4%
Contractor (n = 25)	7	28%	2	8%	1	4%	7	28%	6	24%	2	8%
Energy trust information (n = 24)	3	13%	4	17%	4	17%	5	21%	6	25%	2	8%
Maximum influence (n = 25)	2	8%	1	4%	2	8%	4	16%	15	60%	1	4%
Water Heater (n=62)												
Energy trust incentive (n = 60)	19	32%	2	3%	9	15%	14	23%	16	27%	0	0%
Contractor (n = 53)	20	38%	4	8%	3	6%	11	21%	13	25%	2	4%
Energy trust information (n = 58)	17	29%	4	7%	8	14%	11	19%	14	24%	4	7%
Maximum influence (n = 62)	9	15%	2	3%	7	11%	18	29%	24	39%	2	3%
Windows (n=59)												
Energy trust incentive (n = 58)	10	17%	4	7%	10	17%	15	26%	19	33%	0	0%
Contractor (n = 52)	16	31%	2	4%	6	12%	11	21%	17	33%	0	0%
Energy trust information (n = 57)	10	18%	4	7%	14	25%	15	26%	14	25%	0	0%
Maximum influence (n = 59)	5	8%	2	3%	6	10%	17	29%	28	47%	1	2%

Table A.6: Home Products Program Satisfaction Ratings

Category of Satisfaction	Satisfaction Rating (1 = Not at All to 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Clothes Washer (n=75)												
Overall program experience (n = 75)	1	1%	0	0%	6	8%	20	27%	47	63%	1	1%
Information about energy savings (n = 65)	3	5%	2	3%	9	14%	10	15%	22	34%	19	29%
Information about incentives (n = 65)	4	6%	3	5%	6	9%	10	15%	24	37%	18	28%
Application form (n = 75)	3	4%	3	4%	8	11%	22	29%	34	45%	5	7%
Turnaround time (n = 75)	2	3%	6	8%	14	19%	13	17%	36	48%	4	5%
Ease of finding eligible products (n = 70)	1	1%	6	9%	1	1%	13	19%	45	64%	4	6%
Performance of equipment (n = 75)	1	1%	2	3%	4	5%	10	13%	57	76%	1	1%

Continued

Category of Satisfaction	Satisfaction Rating (1 = Not at All to 5 = Very)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Refrigerator (n=63)												
Overall program experience (n = 63)	0	0%	1	2%	7	11%	15	24%	40	63%	0	0%
Information about energy savings (n = 59)	3	5%	1	2%	4	7%	18	31%	19	32%	14	24%
Information about incentives (n = 58)	3	5%	4	7%	3	5%	16	28%	21	36%	11	19%
Application form (n = 62)	0	0%	2	3%	7	11%	20	32%	29	47%	4	6%
Turnaround time (n = 62)	2	3%	4	6%	11	18%	19	31%	26	42%	0	0%
Ease of finding eligible products (n = 63)	3	5%	1	2%	4	6%	12	19%	38	60%	5	8%
Performance of equipment (n = 62)	0	0%	1	2%	4	6%	14	23%	42	68%	1	2%
Refrigerator Recycling (n=70)												
Overall program experience (n = 70)	0	0%	1	1%	6	9%	11	16%	52	74%	0	0%
Information about energy savings (n = 44)	0	0%	0	0%	2	5%	8	18%	14	32%	20	45%
Information about incentives (n = 43)	1	2%	2	5%	1	2%	9	21%	11	26%	19	44%
Scheduling process (n = 69)	0	0%	0	0%	4	6%	8	12%	56	81%	1	1%
Pick-up process (n = 69)	1	1%	2	3%	0	0%	4	6%	62	90%	0	0%
Turnaround time (n = 70)	3	4%	2	3%	7	10%	13	19%	42	60%	3	4%

Table A.7: Home Products Program Influence Ratings

Category of Influence	Influence Rating (1 = Not at All to 5 = Extremely)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Clothes Washer (n=75)												
Energy trust incentive (n = 73)	20	27%	9	12%	21	29%	12	16%	11	15%	0	0%
Energy trust information (n = 69)	25	36%	8	12%	20	29%	5	7%	7	10%	4	6%
Salesperson or retailer (n = 72)	9	13%	7	10%	14	19%	18	25%	23	32%	1	1%
Maximum influence (n = 75)	5	7%	2	3%	17	23%	22	29%	28	37%	1	1%
Refrigerator (n=67)												
Energy trust incentive (n = 63)	24	38%	8	13%	11	17%	12	19%	8	13%	0	0%
Energy trust information (n = 61)	25	41%	8	13%	7	11%	9	15%	7	11%	5	8%
Salesperson or retailer (n = 60)	15	25%	10	17%	8	13%	10	17%	17	28%	0	0%
Maximum influence (n = 63)	7	11%	10	16%	8	13%	16	25%	22	35%	0	0%

Continued

Category of Influence	Influence Rating (1 = Not at All to 5 = Extremely)											
	1		2		3		4		5		Don't Know	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Refrigerator Recycling (n=70)												
Free pick-up and removal (n = 69)	4	6%	0	0%	2	3%	6	9%	57	83%	0	0%
Energy trust incentive (n = 69)	1	1%	1	1%	8	12%	13	19%	46	67%	0	0%
Energy trust information (n = 58)	5	9%	0	0%	5	9%	8	14%	22	38%	18	31%
Salesperson or retailer (n = 28)	3	11%	1	4%	3	11%	6	21%	15	54%	0	0%
Maximum influence (n = 70)	1	1%	0	0%	1	1%	6	9%	61	87%	1	1%

B SURVEY INSTRUMENTS

EXISTING BUILDINGS (BE)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall program experience	1	2	3	4	5	Don't know	N/A
Incentive amount	1	2	3	4	5	Don't know	N/A
Ease of applying for incentive	1	2	3	4	5	Don't know	N/A
Interaction with program representative	1	2	3	4	5	Don't know	N/A
Quality of Energy Trust-funded technical study (if you had one, else "N/A")	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of equipment installed	1	2	3	4	5	Don't know	N/A
Information on how to apply for the state tax credit (if you did not get a tax credit, answer "N/A")	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

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3. How would your project have changed, if at all, if your business had not participated with Energy Trust? Please select all that apply. Would you have

- ☐ Postponed the project more than 1 year
- ☐ Cancelled the project altogether
- ☐ Reduced project size or scope
- ☐ Installed less energy efficient equipment (please specify:
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Not changed your project at all
- ☐ Don't know

4. If your firm had not received the incentive, would it have made available the funds needed to cover the entire cost of the project?

☐ Yes ☐ No ☐ Don't know

5. How influential were the following elements on your decision to incorporate energy efficient features in your project? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the equipment you did" and 5 indicating "had a great influence on your decision to install the equipment you did." How influential:

How influential:	Not at all				Extremely		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Installation contractor	1	2	3	4	5	Don't know	N/A
Energy Trust program representative	1	2	3	4	5	Don't know	N/A
Energy Trust-funded technical study	1	2	3	4	5	Don't know	N/A

6. Are there any additional services you think Energy Trust should offer?

_____

_____

_____

7. Any additional comments?

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_____

EXISTING MULTIFAMILY (BEM)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall program experience	1	2	3	4	5	Don't know	N/A
Incentive amount	1	2	3	4	5	Don't know	N/A
Ease of applying for incentives	1	2	3	4	5	Don't know	N/A
Interaction with program representative	1	2	3	4	5	Don't know	N/A
Quality of Energy Trust building assessment (if you had one, else "N/A")	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Information on how to apply for the state tax credit (if you did not get a tax credit, answer "N/A")	1	2	3	4	5	Don't know	N/A
Performance of equipment installed	1	2	3	4	5	Don't know	N/A
Tenant comfort	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. How would your project have changed, if at all, if your business had not participated with Energy Trust? Please select all that apply. Would you have:

- ☐ Postponed the project more than 1 year
- ☐ Cancelled the project altogether
- ☐ Installed less expensive equipment
- ☐ Installed less energy efficient equipment (please specify):
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Reduced project size or scope
- ☐ Not changed your project at all
- ☐ Don't know
- ☐ Other (please specify): _____

4. If you had not received the incentive, would you have made available the funds needed to cover the entire cost of the project?

☐ Yes ☐ No ☐ Don't know

5. How influential were the following elements on your decision to incorporate energy efficient features in your project? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the equipment or make the building improvements you did" and 5 indicating "had a great influence on your decision to install the equipment or make the building improvements you did."
How influential:

How influential:	Not at all				Extremely		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Installation contractor	1	2	3	4	5	Don't know	N/A
Energy Trust program representative	1	2	3	4	5	Don't know	N/A
Energy Trust building assessment (if applicable)	1	2	3	4	5	Don't know	N/A

6. Are there any additional services you think Energy Trust should offer?

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_____

_____

7. Any additional comments?

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_____

_____

CLOTHES WASHER (EHP)

0. Do you recall applying for an incentive or rebate from Energy Trust for your clothes washer?

☐ Yes ☐ No

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentives available	1	2	3	4	5	Don't know	N/A
Incentive application form	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A
Ease of finding eligible products	1	2	3	4	5	Don't know	N/A
Performance of clothes washer	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust rebate NOT existed (check all that apply):

☐ Would not have purchased a new washer
☐ Postponed purchase more than one year
☐ Repaired existing washer
☐ Purchased a less expensive washer
☐ Purchased a used washer
☐ Purchased a less energy efficient washer (please specify):
  ☐ Slightly ☐ Somewhat ☐ Significantly
☐ Purchased exactly the same washer
☐ Don't know

4. Have you applied or will you apply for the Oregon state tax credit for the washer you purchased?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my washer

5. How influential were the following elements on your decision to purchase an energy efficient washer? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to purchase the washer you did" and 5 indicating "had a great influence on your decision to purchase the washer you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A
Salesperson or retailer	1	2	3	4	5	Don't know	N/A

6. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

7. Any additional comments?

_____

_____

_____

REFRIGERATOR RECYCLING (EHP)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentive available	1	2	3	4	5	Don't know	N/A
Scheduling process	1	2	3	4	5	Don't know	N/A
Pick-up process	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust fridge recycling offer NOT existed (do not read, probe and record proper category):

- ☐ Sold unit through ad or garage/estate sale
- ☐ Sold or gave unit to a used appliance dealer
- ☐ Taken or had unit taken to landfill/community waste center
- ☐ Taken or had unit taken to a recycler
- ☐ Had an appliance retailer remove the unit
- ☐ Kept using the unit
- ☐ Kept unit but not used it
- ☐ Given unit to charity
- ☐ Given it to friend or family
- ☐ Don't know

4. Are you replacing, or have you replaced the refrigerator that was recycled?

☐ Yes, with a new model ☐ Yes, with a used model ☐ No, not replacing ☐ Don't know

5. How influential were the following elements on your decision to recycle your refrigerator or freezer? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to recycle the unit" and 5 indicating "had a great influence on your decision to recycle the unit."

How influential:	No influence				Great influence		
Free pick-up and removal	1	2	3	4	5	Don't Know	N/A
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A
Salesperson or retailer	1	2	3	4	5	Don't know	N/A

6. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

7. Any additional comments?

_____

_____

_____

REFRIGERATOR (EHP)

0. Do you recall applying for an incentive or rebate from Energy Trust for your refrigerator?

☐ Yes ☐ No

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentives available	1	2	3	4	5	Don't know	N/A
Incentive application form	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A
Ease of finding eligible products	1	2	3	4	5	Don't know	N/A
Performance of new refrigerator	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust rebate NOT existed (check all that apply):

☐ Would not have purchased a new refrigerator
☐ Postponed purchase more than one year
☐ Purchased a used refrigerator
☐ Purchased a less expensive refrigerator
☐ Purchased a less energy efficient refrigerator (please specify):
  ☐ Slightly ☐ Somewhat ☐ Significantly
☐ Purchased exactly the same refrigerator
☐ Don't know

4. Have you applied or will you apply for the Oregon state tax credit for the refrigerator you purchased?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my refrigerator

5. How influential were the following elements on your decision to purchase an energy efficient refrigerator? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to purchase the refrigerator you did" and 5 indicating "had a great influence on your decision to purchase the refrigerator you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A
Salesperson or retailer	1	2	3	4	5	Don't know	N/A

6. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

7. Any additional comments?

_____

_____

_____

AIRSEALING (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentives available	1	2	3	4	5	Don't know	N/A
Incentive application paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentives	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Comfort of home after air sealing	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have had air sealing done
- ☐ Would have postponed more than 1 year
- ☐ Would have performed air sealing yourself
- ☐ Would have had less air sealing done
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Would have had exactly the same work done
- ☐ Don't know

4. How influential were the following elements on your decision to have air sealing performed? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to have the work performed the way you did" and 5 indicating "had a great influence on your decision to have the work performed the way you did."

How influential:	No influence				Great influence		
Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Air sealing contractor	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A

5. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

6. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

7. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

8. Any additional comments?

_____

_____

_____

DUCT SEALING (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about available incentives	1	2	3	4	5	Don't know	N/A
Program paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your rebate	1	2	3	4	5	Don't know	N/A
Quality of duct sealing	1	2	3	4	5	Don't know	N/A
Comfort of home after duct sealing	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have had ducts sealed
- ☐ Would have postponed more than one year
- ☐ Would have had exact same work done
- ☐ Don't know

4. Have you applied or will you apply for the Oregon state tax credit for duct sealing?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

5. How influential were the following elements on your decision to have your ducts sealed? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to seal your ducts" and 5 indicating "had a great influence on your decision seal your ducts."

How influential:	No influence				Great influence		
Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Duct sealing contractor	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A

6. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

7. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

8. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

9. Any additional comments?

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_____

HEAT PUMP (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentives available	1	2	3	4	5	Don't know	N/A
Program paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentives	1	2	3	4	5	Don't know	N/A
Performance of heat pump	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have installed a heat pump
- ☐ Would have postponed more than one year
- ☐ Installed less expensive heat pump
- ☐ Installed less energy efficient heat pump (please specify):
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Installed a different type of heating system
- ☐ Installed the same heat pump
- ☐ Don't know

4. Have you applied or will you apply for the federal tax credit for your heat pump?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my heat pump

5. Have you applied or will you apply for the Oregon state tax credit for your heat pump?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my heat pump

6. How influential were the following elements on your decision to install the heat pump? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the heat pump you did" and 5 indicating "had a great influence on your decision to install the heat pump you did."

How influential:	No influence				Great influence		
Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A
Heat pump contractor	1	2	3	4	5	Don't know	N/A

7. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

8. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

9. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

10. Any additional comments?

_____

_____

_____

HOME ENERGY REVIEW (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Scheduling process	1	2	3	4	5	Don't know	N/A
Recommendations provided by the energy advisor	1	2	3	4	5	Don't know	N/A
Knowledge of energy advisor	1	2	3	4	5	Don't know	N/A
Courtesy of energy advisor	1	2	3	4	5	Don't know	N/A
Packet of materials left by energy advisor	1	2	3	4	5	Don't know	N/A
Information provided on how to apply for Energy Trust incentives	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Since your Home Energy Review, have you made any of the improvements recommended by the advisor?

☐ Yes ☐ No ☐ Don't know

4. (If 3=Yes) What did you do? (do not read, check appropriate boxes)

☐ Gas furnace
☐ Heat pump
☐ Insulation
☐ Windows
☐ Water heater
☐ Duct insulation
☐ Duct sealing
☐ Duct testing
☐ Clothes washer
☐ Solar electric/photovoltaic (PV)
☐ Solar water heating
☐ Turned down thermostat
☐ Purchased setback thermostat

- ☐ Turn off lights more
- ☐ Installed more CFLs
- ☐ None
- ☐ Other (please specify): _____
- ☐ Don't know

5. Are you planning to take any of the recommended actions in the next 12 months?

☐ Yes ☐ No ☐ Don't know

6. (If 5=Yes) What do you plan to do? (do not read, check appropriate boxes)

- ☐ Gas furnace
- ☐ Heat pump
- ☐ Insulation
- ☐ Windows
- ☐ Water heater
- ☐ Duct insulation
- ☐ Duct sealing
- ☐ Duct testing
- ☐ Clothes washer
- ☐ Solar electric/photovoltaic (PV)
- ☐ Solar water heating
- ☐ Turned down thermostat
- ☐ Purchased setback thermostat
- ☐ Turn off lights more
- ☐ Installed more CFLs
- ☐ None
- ☐ Other (please specify): _____
- ☐ Don't know

7. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

8. Any additional comments?

_____

_____

_____

INSULATION (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

	How satisfied: Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentives available	1	2	3	4	5	Don't know	N/A
Incentive application paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Comfort of home after insulation installed	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have installed any insulation
- ☐ Would have postponed installation more than one year
- ☐ Would have installed insulation yourself
- ☐ Installed less insulation
- ☐ Installed exactly the same amount of insulation
- ☐ Don't know

4. Have you applied or will you apply for the federal tax credit for the insulation you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

5. How influential were the following elements on your decision to install insulation? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the insulation you did" and 5 indicating "had a great influence on your decision to install the insulation you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Installation contractor	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A

6. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

7. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

8. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

9. Any additional comments?

_____

_____

_____

WATER HEATER (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about available incentives	1	2	3	4	5	Don't know	N/A
Incentive application paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentives	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of water heater	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have installed
- ☐ Would have postponed more than one year
- ☐ Installed less expensive water heater
- ☐ Installed less energy efficient water heater (please specify:)
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Installed exactly the same water heater
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for the water heater you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my water heater

5. Have you applied or will you apply for the Oregon state tax credit for the water heater you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my water heater

6. How influential were the following elements on your decision to install energy efficient water heater? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the water heater you did" and 5 indicating "had a great influence on your decision to install the water heater you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Installation contractor	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A

7. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

8. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

9. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

10. Any additional comments?

_____

_____

_____

WINDOWS (HES)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about energy savings	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about incentives available	1	2	3	4	5	Don't know	N/A
Incentive application paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your rebate	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Comfort of home after windows installed	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have installed any windows
- ☐ Would not have taken additional efficiency actions needed to receive window incentive
- ☐ Would have postponed installation more than one year
- ☐ Installed less expensive windows
- ☐ Installed less energy efficient windows (please specify:)
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Installed fewer windows
- ☐ Installed exactly the same quantity and quality of windows
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for the windows you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply to my windows

5. How influential were the following elements on your decision to install energy efficient windows? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the windows you did" and 5 indicating "had a great influence on your decision to install the windows you did."

How influential:	No influence				Great influence		
Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Window contractor	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A

6. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

7. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

8. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

9. Any additional comments?

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_____

HOME PERFORMANCE (HPF)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about Home Performance	1	2	3	4	5	Don't know	N/A
Home Performance Custom Energy Report	1	2	3	4	5	Don't know	N/A
Incentive application paperwork	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Comfort of home after work performed	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken if Energy Trust incentives were not available (check all that apply):

- ☐ Would not have done any home improvements
- ☐ Would have done some repairs on equipment or home
- ☐ Made fewer energy efficient improvements
- ☐ Would have postponed improvements more than one year
- ☐ Installed less expensive equipment
- ☐ Installed less energy efficient equipment (please specify:)
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Made exactly the same home improvements
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for any of the installed equipment or improvements?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

5. Have you applied or will you apply for the Oregon state tax credit for any of the installed equipment or improvements?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

6. How influential were the following elements on your decision to receive Home Performance services? Please base your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to receive Home Performance services" and 5 indicating "had a great influence on your decision to receive Home Performance services."

How influential:	No influence				Great influence		
Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Home Performance contractor	1	2	3	4	5	Don't know	N/A
Information from Energy Trust	1	2	3	4	5	Don't know	N/A

7. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Punctuality	1	2	3	4	5	Don't know	N/A
Cleanliness	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Incentive paperwork completion	1	2	3	4	5	Don't know	N/A
Information provided about Energy Trust incentives	1	2	3	4	5	Don't know	N/A
Overall satisfaction with the contractor	1	2	3	4	5	Don't know	N/A

8. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?

☐ Yes ☐ No ☐ Don't know

9. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

10. Any additional comments?

_____

_____

_____

NEW BUILDINGS (NBE)

0. Were you the sole major decision maker on this project?

☐ Yes ☐ No If not, who else is an appropriate contact? _____

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall program experience	1	2	3	4	5	Don't know	N/A
Incentive amount	1	2	3	4	5	Don't know	N/A
Ease of applying for incentive	1	2	3	4	5	Don't know	N/A
Interaction with program representative	1	2	3	4	5	Don't know	N/A
Program design services (if you did not receive, answer "N/A")	1	2	3	4	5	Don't know	N/A
Installation of energy efficient features	1	2	3	4	5	Don't know	N/A
Information on how to apply for the state tax credit (if you did not get a tax credit, answer "N/A")	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. How would your project have changed, if at all, if your business had not participated with Energy Trust? Please select all that apply. Would you have:

☐ Cancelled the project altogether
☐ Postponed the project more than 1 year
☐ Reduced project size or scope
☐ Not done commissioning
☐ Reduced energy efficient design features
☐ Installed less energy efficient equipment (please specify:)
  ☐ Slightly ☐ Somewhat ☐ Significantly
☐ Not changed your project at all
☐ Don't know

4. If your firm had not received the incentive, would it have made available the funds needed to cover the entire cost of the energy efficient equipment and design?

☐ Yes ☐ No ☐ Don't know

5. How influential were the following elements on your decision to incorporate energy efficient features in your project? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your design or decision to install the equipment you did" and 5 indicating "had a great influence on your design or decision to install the equipment you did." How influential:

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Design professionals	1	2	3	4	5	Don't know	N/A
Energy Trust program representative	1	2	3	4	5	Don't know	N/A
Energy Trust-funded technical assistance	1	2	3	4	5	Don't know	N/A

6. Are there any additional services you think Energy Trust should offer?

_____

_____

_____

7. Any additional comments?

_____

_____

_____

PRODUCTION EFFICIENCY (PEF, PEL)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall program experience	1	2	3	4	5	Don't know	N/A
Incentive amount	1	2	3	4	5	Don't know	N/A
Ease of applying for incentive	1	2	3	4	5	Don't know	N/A
Interaction with program representative	1	2	3	4	5	Don't know	N/A
Quality of Energy Trust-funded technical study (if you had one, else "N/A")	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of equipment installed	1	2	3	4	5	Don't know	N/A
Information on how to apply for the state tax credit (if you did not get a tax credit, answer "N/A")	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. How would your project have changed, if at all, if your business had not participated with Energy Trust? Please select all that apply. Would you have:

- ☐ Postponed the project more than 1 year
- ☐ Cancelled the project altogether
- ☐ Purchased less expensive equipment
- ☐ Installed less energy efficient equipment (please specify:)
  - ☐ Slightly ☐ Somewhat ☐ Significantly
- ☐ Reduced project size or scope
- ☐ Not changed your project at all
- ☐ Don't know

4. If your firm had not received the incentive, would it have made available the funds needed to cover the entire cost of the project?

☐ Yes ☐ No ☐ Don't know

5. How influential were the following elements on your decision to incorporate energy efficient features in your project? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the equipment you did" and 5 indicating "had a great influence on your decision to install the equipment you did."

How influential:	Not at all				Extremely		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Installation contractor	1	2	3	4	5	Don't know	N/A
Energy Trust program representative	1	2	3	4	5	Don't know	N/A
Energy Trust-funded technical study	1	2	3	4	5	Don't know	N/A

6. Are there any additional services you would be interested in receiving?

- ☐ Compressed air tuning
- ☐ Energy management services
- ☐ O&M measures
- ☐ Gas efficiency incentives
- ☐ Training
- ☐ Other: _____

7. Any additional comments?

_____

_____

_____

COMMERCIAL SOLAR (SLE)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

	How satisfied: Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about solar energy	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about solar incentives	1	2	3	4	5	Don't know	N/A
Incentive application	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A
Ease of finding contractor	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of solar electric system	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive NOT existed (check all that apply):

- ☐ Would not have installed
- ☐ Would have postponed more than one year
- ☐ Installed smaller system
- ☐ Installed exactly the same system
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for the solar system you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

5. Have you applied or will you apply for the Oregon state tax credit for the solar system you installed?

☐ Yes ☐ No ☐ Wrote over to contractor ☐ Don't know ☐ Does not apply

6. How influential were the following elements on your decision to install the solar system? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the solar system you did" and 5 indicating "had a great influence on your decision to install the solar system you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Energy Trust-funded technical study (if you received one)	1	2	3	4	5	Don't know	N/A
Other information from Energy Trust	1	2	3	4	5	Don't know	N/A
Solar contractor	1	2	3	4	5	Don't know	N/A

7. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

8. Any additional comments?

_____

_____

_____

RESIDENTIAL SOLAR (SLE)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about solar energy	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about solar incentives	1	2	3	4	5	Don't know	N/A
Ease of selecting a contractor	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of your solar system	1	2	3	4	5	Don't know	N/A
Energy Trust inspection of your system	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive NOT existed (check all that apply):

- ☐ Would not have installed
- ☐ Would have postponed more than one year
- ☐ Installed smaller system
- ☐ Installed exactly the same system
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for the solar system you installed?

☐ Yes ☐ No ☐ Not aware of tax credit ☐ Don't know ☐ Does not apply

5. Have you applied or will you apply for the Oregon state tax credit for the solar system you installed?

☐ Yes ☐ No ☐ Not aware of tax credit ☐ Don't know ☐ Does not apply

6. How influential were the following elements on your decision to install the solar system? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the solar system you did" and 5 indicating "had a great influence on your decision to install the solar system you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Solar energy review (if you received one)	1	2	3	4	5	Don't know	N/A
Information from a solar workshop	1	2	3	4	5	Don't know	N/A
Other information from Energy Trust	1	2	3	4	5	Don't know	N/A
Participation in a community-driven solar effort	1	2	3	4	5	Don't know	N/A
Solar contractor	1	2	3	4	5	Don't know	N/A

7. How did you pay for your system? (check all that apply)

- ☐ Cash or savings
- ☐ Home equity loan or line of credit
- ☐ Unsecured loan
- ☐ Equipment loan or power purchase agreement
- ☐ Don't know
- ☐ Other: _____

8. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

9. Any additional comments?

_____

_____

_____

RESIDENTIAL SOLAR WATER HEATING (SLH)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about solar energy	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about solar incentives	1	2	3	4	5	Don't know	N/A
Information provided by Energy trust about other energy saving opportunities	1	2	3	4	5	Don't know	N/A
Ease of selecting a contractor	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of solar water heater system	1	2	3	4	5	Don't know	N/A
Energy Trust inspection of your system	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive NOT existed (check all that apply):

- ☐ Would not have installed
- ☐ Would have postponed more than one year
- ☐ Installed smaller system
- ☐ Installed exactly the same system
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for the solar water heating system you installed?

☐ Yes ☐ No ☐ Not aware of tax credit ☐ Don't know ☐ Does not apply

5. Have you applied or will you apply for the Oregon state tax credit for the solar water heating system you installed?

☐ Yes ☐ No ☐ Not aware of tax credit ☐ Don't know ☐ Does not apply

6. How influential were the following elements on your decision to install the solar water heating system? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the solar water heating system you did" and 5 indicating "had a great influence on your decision to install the solar water heating system you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Solar energy review (if you received one)	1	2	3	4	5	Don't know	N/A
Information from a solar workshop	1	2	3	4	5	Don't know	N/A
Other information from Energy Trust	1	2	3	4	5	Don't know	N/A
Contractor	1	2	3	4	5	Don't know	N/A

7. How did you pay for your system? (check all that apply)

- ☐ Cash or savings
- ☐ Home equity loan or line of credit
- ☐ Unsecured loan
- ☐ Equipment loan or power purchase agreement
- ☐ Don't know
- ☐ Other: _____

8. Is there any other information about Energy Trust services or incentives that we should provide?

_____

_____

_____

9. Any additional comments?

_____

_____

_____

SMALL WIND (VSW)

1. Thinking of your participation with Energy Trust, please indicate the number that corresponds to your satisfaction with the following elements, with 1 indicating "not at all satisfied" and 5 indicating "very satisfied".

How satisfied:	Not at all				Very		
Overall experience	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about wind energy	1	2	3	4	5	Don't know	N/A
Information provided by Energy Trust about wind energy incentives	1	2	3	4	5	Don't know	N/A
Turnaround time to receive your incentive	1	2	3	4	5	Don't know	N/A
Ease of finding contractor	1	2	3	4	5	Don't know	N/A
Quality of installation work	1	2	3	4	5	Don't know	N/A
Performance of wind electric system	1	2	3	4	5	Don't know	N/A

2. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?

_____

_____

_____

3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive NOT existed (check all that apply):

- ☐ Would not have installed
- ☐ Would have postponed more than one year
- ☐ Installed smaller system
- ☐ Installed exactly the same system
- ☐ Don't know

4. Have you applied or will you apply for a federal tax credit for the wind system you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

5. Have you applied or will you apply for the Oregon state tax credit for the wind system you installed?

☐ Yes ☐ No ☐ Don't know ☐ Does not apply

6. How influential were the following elements on your decision to install the wind system? Please indicate your answer on scale of 1 to 5, with 1 indicating "did not have any influence on your decision to install the wind system you did" and 5 indicating "had a great influence on your decision to install the wind system you did."

How influential:	No influence				Great influence		
Energy Trust incentive	1	2	3	4	5	Don't know	N/A
Energy Trust-funded technical study (if you received one)	1	2	3	4	5	Don't know	N/A
Other information from Energy Trust	1	2	3	4	5	Don't know	N/A
Installation contractor	1	2	3	4	5	Don't know	N/A

7. Were any grants used to reduce the cost of your system?

☐ No ☐ Yes (name of granting institution) _____

8. How did you pay for your system? (check all that apply)

☐ Cash or savings
☐ Home equity loan or line of credit
☐ Unsecured loan
☐ Equipment loan or power purchase agreement
☐ Don't know
☐ Other: _____

9. Is there any other information about Energy Trust services or incentives that we should provide?

_____
_____
_____

10. Any additional comments?

_____
_____
_____