

Energy Trust of Oregon

Request for Proposals:

**2020 Fast Feedback Survey
Administration**

Responses to Questions

1. *Question: What is the historical response rate for web survey invitations? Does it vary dramatically by program?*

Answer: We only began testing Fast Feedback as a web survey in 2018. For residential survey respondents, we had a 35% response rate for those that were invited to take the web survey by email AND offered a \$10 completion incentive. Those that were invited to take the web survey, and were offered no incentive or were entered into a lottery, had a 25% response rate. There was some variability within residential web survey response rates by measure type—solar PV, smart thermostat, and insulation participants had slightly higher than average response rates while clothes washer, gas furnace, and ducted heat pump participants had slightly lower than average response rates. Web surveys were not as effective with business customers, so we will only be conducting a phone survey for non-residential participants. To read more about the results of our 2018 Fast Feedback survey mode experiment, please see the report on our website, here: <https://www.energytrust.org/wp-content/uploads/2019/07/Fast-Feedback-2018-End-of-Year-Report-Draft-6.21.19-Final-wSR2.pdf>.

2. *Question: Is there an exclusion period after participants take a survey? In other words, if a participant engages in another program later in the year, will they be eligible to take another survey?*

Answer: Yes, there is an exclusion period. Residential participants are excluded from taking Fast Feedback if they have answered another Energy Trust survey within the past one year (at the time monthly sampling occurs). Non-residential participants are excluded if they have answered another Energy Trust survey within the past six months.

3. *Question: Can you provide an idea of the number of participants who participate in more than one program during the year?*

Answer: In the residential survey, we generally exclude very few participants each month because they completed another survey within the past year. The impact on sampling is insignificant. However, in the non-residential survey, the six-month survey exclusion criterion has a material impact on the number of participants eligible to take the survey. This tends to be a noteworthy but manageable issue for the Production Efficiency and Existing Multifamily programs, where customers frequently complete multiple projects throughout the year and 10-20% of customers may have completed another survey within the past six months. It has generally been less of an issue for the Existing Buildings and Commercial Solar programs.

4. *Question: Can you confirm our expectation that data collection is expected to begin by March 31, to be completed by April 30, for projects completed by January 31? If not, when does Energy Trust anticipate that data collection will begin, and for what project months?*

Answer: 2020 data collection will begin after we have selected a survey administration vendor and completed a contract and the vendor is prepared to field the survey. Prior to fielding, the vendor must translate, program, QC, and test the survey instruments, and receive, clean, and prepare the participant sample. Energy Trust must be confident that the vendor has all of the systems in place

to ensure a successful survey before surveys will begin. There is no specific date by which the vendor must begin surveys for January 2020 participants. However, we do like to complete surveys as soon after participation as practicable, while maintaining a minimum of one month between participation month and survey month. Regardless of when the vendor begins the 2020 surveys, we do expect that the vendor will “catch up” so that they are conducting surveys one to two months after the month of participation. This may require conducting surveys with multiple months of participants at once or temporarily accelerating the survey fielding schedule. As such, all 2020 surveys should be completed by the end of February 2021 to allow time for analysis and reporting for the 2020 annual report.

5. *Question: Will Energy Trust provide the selected vendor with the Spanish version of the previous instrument used so that the vendor does not have to translate the entire instrument from scratch?*

Answer: Yes, we can provide those instruments to the selected vendor, although we made significant changes to the 2020 survey instruments since the 2019 instruments were translated.

6. *Question: The RFP states, as part of cleaning participant data, that the selected vendor will summarize project information. Is the purpose of these summaries for vendor reporting on data cleaning and sampling procedures to Energy Trust each month? If so, is there any other purpose for these summaries as part of the data cleaning task? Understanding the function of this component will help us develop a more comprehensive proposal.*

Answer: No, the purpose of summarizing project information is related to aggregating participant data for sampling. There is no reporting component to this step of data management. The quota group structure of the 2020 survey is somewhat complex, due to the number of overlapping quota groups where a participant can simultaneously be a member of multiple groups. This data management step is to ensure that project information is correctly summarized if a participant completed multiple measures, so that they are assigned to the correct quota groups for analysis and reporting.

7. *Question: Can you please elaborate/clarify what is meant by “data cleaning logic” referenced in Task 5? Can you provide a more detailed example of data cleaning logic used in previous years? Understanding the scope of this task will be helpful for developing a more accurate budget.*

Answer: What we mean by “data cleaning logic” is the code or steps used by the selected vendor to take the raw project data from Energy Trust and prepare it for sampling. As stated on page 7 of the RFP, this includes tasks like removing duplicates, identifying incomplete records, identifying the best contact and contact information, and removing ineligible projects and contacts. It also includes aggregating participant data and summarizing key project information, such that customer contacts that participated in more than one program or project take only one survey and are assigned to the appropriate quota groups. As Energy Trust program offerings shift over time and data entry varies, this data cleaning logic may need to be updated periodically, but probably not more than a couple times per year.

8. *Question: Will it be possible for the selected vendor to receive the monthly participant data a minimum of 5 working days prior to the start of each month's data collection efforts?*

Answer: The selected vendor will determine the start date, schedule, and logistics for each month's data collection efforts. If it will take a minimum of five working days from receipt of monthly participant data to fielding that month's survey, then we suggest that bidders include that in the schedule and assumptions presented in their proposals. Also, Energy Trust's ability to pull and provide the next month's participant data to the vendor is dependent on the vendor completing surveys for the prior month. Energy Trust must receive a survey disposition list from the prior month so that we can flag customers that took the survey before pulling the next month of participant data. This process ensures that we do not ask a customer to take the survey too frequently, as discussed above in question 2.

9. *Question: Can Energy Trust make last year's mid-year and annual report templates available to the prospective vendors? Having access to these reports will help us more accurately estimate the work required to fulfill these project deliverables.*

Answer: Yes, we can provide the 2019 mid-year report to bidders. It is attached as an appendix to this document. We are unable to share the 2019 annual report because it has not yet been completed.

10. *We are not entirely clear on the course of action for overlapping quota groups. There seem to be some contradictory instructions, e.g.:*

- *p. 7 - "overlapping quota groups are noted in Tables 1 through 4 below. In these cases, completing a survey with one participant will count towards two (or more) survey quotas"*
- *p. 9 - "however, the selected vendor will need to draw additional sample for the overlapping quota groups to ensure they achieve the target number of completes."*

Our question is: for respondents who fall in more than one quota group - does the completed survey count towards two or more quotas, or does it count only towards one quota (in which case the respondent gets excluded from the sample lists prepared for any other quotas and we need to draw additional individuals to ensure the quota goals are met)?

Answer: Yes, for a survey respondent that falls in more than one quota group, a completed survey counts towards all relevant quota groups. The text on page 9 is referring to the primary versus secondary quota groups that are displayed in Tables 1-4 of the RFP. Read the table notes carefully. The issue at hand is that achieving the quota for one quota group does not necessarily ensure that the quota will be achieved for the secondary quota. So, the selected vendor will have to assess the overlap between quota groups and determine how many participants need to be sampled to achieve the quotas for all overlapping quota groups. We provided some rough estimates in the table notes in the RFP about how many additional surveys may need to be completed to achieve a secondary quota once a primary quota is fulfilled, based on our expectation of overlap between groups.

11. Question: *Task 5 - Conduct Sampling and Create Recruitment Lists - will we receive Energy Trust's Do Not Contact List to ensure that we can exclude certain contacts from the recruitment lists?*

Answer: Yes, a Do Not Contact flag is included with each month's transmission of participant data.

12. Question: *Task 8. Analysis and Reporting - p. 18 - the results are to be tabulated by quota groups. Will the quota groups be combined into larger segments, or will you require data to be displayed by each individual quota? Based on Tables 1-4, we expect 18 residential quotas, 19 non-residential quotas, 8 multi-family quotas, and 15 industry/agricultural quotas. Are these numbers correct?*

Answer: Correct. However, only the program-level results need to be tabulated and summarized for all relevant survey questions. At the quota group level, we are expecting that only key results will be tabulated and reported on. As listed on page 17 of the RFP, key results include overall satisfaction, satisfaction with program representative, and program influence. Because there are so many quota groups in the 2020 survey, the quota group level results will probably be most efficiently presented in tables and charts, rather than narrative text. For residential survey respondents, we will also likely want to report respondent demographics at the quota group level, as demonstrated in the 2018 annual report (online) and 2019 mid-year report (attached).

13. Question: *Can you shed more light on the program influence metric? We understand this is a custom-built metric Energy Trust has been using in previous research. How is it calculated and what does it involve?*

Answer: The program influence metric is a brand-new metric that we have not used before. It will replace the free ridership metric that we calculated in previous years. The influence metric will be based on responses to the battery of influence questions in each survey instrument—Q6 in the residential survey and Q5 and Q6 in the non-residential survey (see appendix of RFP for survey instruments). The metric will be computed similarly to the satisfaction scores. For the residential survey, we will first compute the maximum influence rating for each respondent across all influence items in Q6, except Q6F. We will then compute the percent of participants in each group with a maximum influence rating of four or five out of five. The denominator will be the number of valid, numeric responses in each group, excluding “don't know,” “not applicable,” and “refused” responses. This will be the residential influence metric, representing the “percent influenced” by Energy Trust programs to complete the project that we provided an incentive for.

For the non-residential survey, the calculation of the influence metric will be similar, but will combine the responses of Q5 and Q6. First, we will convert the binary response to Q6 into an influence rating. Responses of “Yes” will receive an influence score of one, while responses of “No” will receive an influence score of five. We will compute the maximum influence rating for each respondent across all influence items in Q5 and the calculated influence score from Q6. Then we will compute the percent of participants in each group with a maximum influence rating of four or five out of five. The denominator will be the number of valid, numeric responses in each group, excluding “don't know,” “not applicable,” and “refused” responses. Using the maximum influence

rating, we will compute the percent of participants reporting a maximum rating of four or five out of five. This will be the non-residential influence metric.

14. Question: We assume the non-residential survey will be a daytime study, with calls to be conducted during regular business hours - at least for the commercial, industry, and agricultural participants. What is the calling protocol for the multifamily participant quota? Will it be an evening/weekend study, or will it also be a daytime study?

Answer: Most Multifamily program participants are businesses that own or manage multifamily properties, so a daytime study should be conducted for the majority of the sample. However, there is a growing segment of attached residential unit owners that directly participate in the Multifamily program. Although ownership status and relationship to the property is confirmed within the survey, we do have some project information to indicate whether a given participant is likely to be a unit owner or not. We would prefer that participants identified as likely unit owners be included in an evening/weekend study, similar to the residential survey.

Appendix A: Fast Feedback 2019 Mid-Year Report



Fast Feedback 2019

Mid-Year Report

October 28, 2019

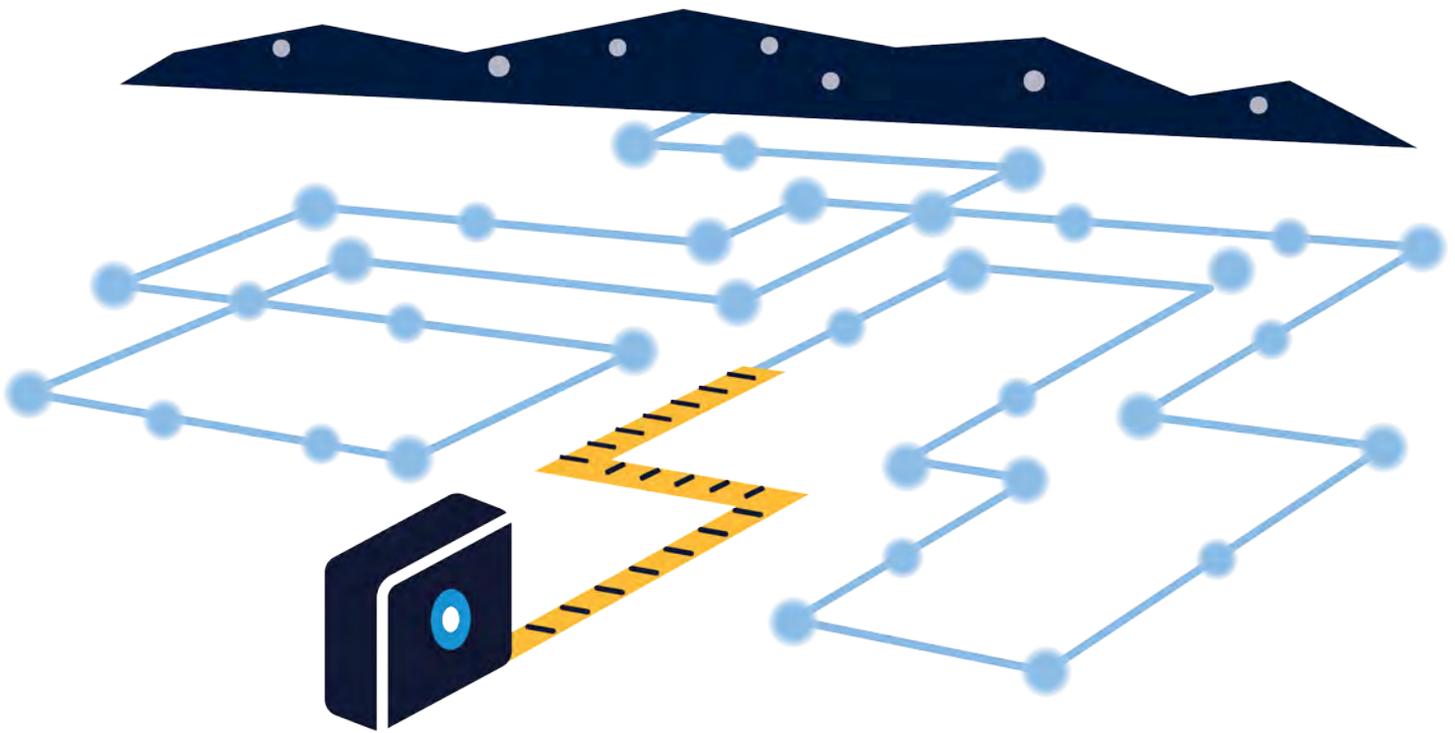


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Executive Summary

Opinion Dynamics conducted the first half of the 2019 Energy Trust of Oregon (Energy Trust) program participant feedback survey (Fast Feedback) from April 2019 through August 2019. This report summarizes the analysis conducted by Opinion Dynamics and results of the survey. The purpose of the analyses was to summarize Fast Feedback survey findings by program and quota group.

Residential Survey Summary

Residential survey results indicated a high level of overall program satisfaction across all measure groups (Table 1). Satisfaction levels were generally consistent with previous years.

Table 1. Summary of Residential Satisfaction

<i>Measure Group</i>	<i>Number of Survey Respondents</i>	<i>Overall Satisfaction ^a</i>
Residential - Oregon	935	94%
Boiler	6	100%
Ceiling Insulation	87	90%
Clothes Washer	90	94%
Ductless Heat Pump	99	95%
Floor Insulation	63	93%
Gas Fireplace	89	99%
Gas Furnace	164	97%
Heat Pump	84	97%
Spa Cover	80	89%
Thermostat	196	96%
Wall Insulation	20	100%
Windows	112	97%
Residential - Washington	80	100%
Moderate Income Track	75	98%
Solar PV System	80	89%

^a Percentage of participants reporting high satisfaction (a rating of 4 or 5 on a scale from 1 “not at all satisfied” to 5 “very satisfied”).

Analysis of the survey results revealed several other key high-level findings, which are largely consistent with the previous year’s findings. About half of participants obtained information from Energy Trust before taking their efficiency action. Participants’ contractors generally had the greatest influence on their decisions, with the incentive and other factors more influential for certain measures.

Participants easily found and selected contractors, most commonly by word of mouth, usually after getting one or two bids. For most measure groups, a minority of participants (about one-third or fewer) reported having considered the Energy Trust list of trade allies, in large part because about one-quarter to one-third of them were unaware of the list. Of those who did consider the list, in all cases the majority (usually just over half to about three-quarters) reported they considered the star rating system.

In terms of measure-specific questions, the survey found that most incented smart thermostats have been and were still installed; more than half of heating systems replaced still operating systems (which was especially the case for heat pumps); and gas fireplaces most likely replaced a wood burning fireplace or stove. Nearly all assessed indices varied among measure groups.

Nonresidential Survey Summary

Nonresidential survey results demonstrate a high level of overall program satisfaction across all quota groups; satisfaction with interactions with the Energy Trust program representative was also consistently high, yet more variable among quota groups (Table 2). Satisfaction levels were generally consistent with previous years.

Table 2. Summary of Nonresidential Satisfaction

Quota Group	Number of Survey Respondents	Satisfaction ^a	
		Overall	Interaction with Program Representative
Existing Buildings - Oregon	90	94%	98%
Existing Buildings - Custom	10	100%	100%
Existing Buildings - Lighting	30	97%	100%
Existing Buildings - Standard	30	93%	100%
Existing Buildings - Direct Install	20	90%	89%
Existing Buildings - Washington	9	100%	100%
Production Efficiency	80	98%	97%
Production Efficiency - Custom	20	95%	100%
Production Efficiency - Lighting	30	97%	93%
Production Efficiency - Standard	30	100%	100%
Existing Multifamily	89	98%	96%
Existing Multifamily - Incentives	60	97%	94%
Existing Multifamily - Direct Install	29	100%	100%
Commercial Solar	14	100%	100%

^a Percentage of participants reporting high satisfaction (a rating of 4 or 5 on a scale from 1 “not at all satisfied” to 5 “very satisfied”).

Among nonresidential survey participants, the Energy Trust incentive was the most consistently highly rated influencer, followed by information received from Energy Trust. Nonresidential participants showed high levels of satisfaction with their program experience, with levels generally consistent with those observed in prior years.

Introduction

Opinion Dynamics conducted the first half of the 2019 Energy Trust Energy Trust program participant Fast Feedback from April 2019 through August 2019. This report's main purpose is to report on Fast Feedback survey findings by program and quota group to provide useful feedback for program staff and stakeholders.¹

The rest of this report is divided into four main sections:

- Methods and Survey Response
- Residential Combined Survey Results
- Nonresidential Combined Survey Results
- Summary and Conclusions

The first section provides a brief explanation of the survey modes, information on the availability of contact information and survey responses by sector and group, and a description of how the research team weighted the combined data to control for possible mode effects.

The second and third sections present the Fast Feedback summary findings for the residential and nonresidential sectors. They are subdivided by survey topic and include assessment of satisfaction ratings by time (program year) by measure/quota groups.

The final section presents the research team's key conclusions from the Fast Feedback data collection.

¹ The nonresidential quota groups were based on program and program track, while the residential quota groups were based on the measure types for which participants received Energy Trust incentives.

Methods and Survey Response

This section describes the survey modes and experimental conditions, the availability of contact information and the number of survey responses by sector and group, and the method for weighting the combined data to control for possible mode effects.

Survey Fielding

Energy Trust has been using the monthly Fast Feedback phone survey since 2010 to assess free-ridership, satisfaction, and selected other aspects of program experiences in a sample of customers who participated in Energy Trust programs in the prior month.

Each month, Energy Trust Evaluation staff provided the research team with a dataset of recent survey-eligible residential and non-residential participants. The research team cleaned the data set by removing any records flagged as “do not contact” and any records with duplicate names, emails, or project identification numbers. For projects associated with multiple measures and quota groups, the research team assigned a random number to each record, sorted the list, and kept only the first measure and quota group associated with each duplicate project identification number. The research team randomly sampled eligible participants from each quota group and created recruitment lists for both the residential and nonresidential surveys. The sampling rates (percentage of records sampled from the cleaned lists) for the residential and nonresidential surveys were 31% and 34%, respectively.

The research team administered the residential survey first on the web, with follow-up phone calls to non-respondents. At the beginning of the monthly survey, the research team sent a recruitment email to all sampled residential participants with a valid email address. The email included a short recruitment message with a survey web link. The recruitment email offered all residential participants a \$5 gift card for completing the survey. The research team sent reminder emails to non-respondents approximately one week after the initial contact. Residential participants that did not respond to the survey within approximately one week of the reminder were then queued for phone follow-up. Customers who did not have a valid email address on file were immediately advanced to the phone survey.

The research team administered the nonresidential survey by phone only. Callers made up to five contact attempts to each sampled nonresidential participant until reaching the monthly quota or exhausting the monthly recruiting list.

Availability of Contact Information

Table 3 shows the percentages of all residential and nonresidential program participants with phone and email contact information. In the residential sector more participants have email than phone information, and in the nonresidential sector, both types of contact information are more plentiful. All participants have at least some type of contact information.

Table 3. Availability of Contact Information by Sector and Type

Type of Information	Residential (n = 13,547)	Nonresidential (n = 3,049)
Phone	88%	100%
Email	94%	92%
Both	82%	92%
Either	100%	100%

Number of Respondents

Table 4 shows the total number of survey responses by mode, sector, and quota group. The research team completed the survey with 1,452 respondents (1,170 residential and 282 nonresidential). Residential phone and web responses met or exceeded all quotas except for boiler and ducted heat pump. The research team made multiple contact attempts with all available participants in these quota groups. The overall residential response survey rate was 31% (22% for web and 23% for phone).

Nonresidential phone responses met or exceeded all quotas except for Existing Buildings – Washington and Existing Multifamily – Direct Install. The research team made multiple contact attempts with all available participants in these quota groups. The overall nonresidential response survey rate was 37%.

Table 4. Number of Responses by Mode, Sector, and Quota Group

Measure Group (Residential) or Quota Group (Nonresidential)	Web	Phone	Total	6-Month Quota
Residential				
Residential – Oregon	712	298	1,010	1,030
Clothes Washer	72	18	90	90
Ceiling Insulation	73	14	87	80
Other Insulation	50	33	83	80
Ducted Heat Pump	46	38	84	90
Ductless Heat Pump	67	32	99	90
Gas Fireplace	71	18	89	80
Gas Furnace	84	80	164	90
Boiler	3	3	6	20
Smart Thermostat	170	26	196	170
Smart Thermostat – Rebate	73	17	90	
Smart Thermostat – Instant Coupon	74	6	80	
Spa Cover	55	25	80	80
Windows	91	21	112	90
Residential – Washington	70	10	80	80
Moderate Income Track	70	10	80	80
Residential Solar PV	65	15	80	80
Nonresidential				
Commercial Solar	0	14	14	14
Existing Buildings	0	99	99	134
Existing Buildings - Washington	0	9	9	14
Existing Buildings - Oregon	0	90	90	100
Existing Buildings - Custom	0	10	10	20
Existing Buildings - Direct Install	0	20	20	20
Existing Buildings - Lighting	0	30	30	30
Existing Buildings - Standard	0	30	30	30
Existing Multifamily	0	89	89	90
Existing Multifamily - Direct Install	0	29	29	30

Measure Group (Residential) or Quota Group (Nonresidential)	Web	Phone	Total	6-Month Quota
Existing Multifamily - Incentives	0	60	60	60
Production Efficiency	0	80	80	80
Production Efficiency - Custom	0	20	20	20
Production Efficiency - Lighting	0	30	30	30
Production Efficiency - Standard	0	30	30	30
Nonresidential Total	0	282	282	318
Residential + Nonresidential				
Total	847	605	1,452	1,348

^a Residential Total includes both Oregon and Washington. The Moderate Income Track overlaps with Oregon and Washington.

Language of Survey and Language Barriers

All surveys were offered in English and Spanish. All completed surveys were completed in English. The phone survey subcontractor noted four instances of language barriers in the residential sector and none in the nonresidential sector. Interviewers identified two of the respondents as South or East Asian and one as Polish. The interviewer was unable to identify remaining respondent’s spoken language.

Use of Weighted Data

The research team used weighting for two purposes: 1) to ensure program-level results are representative of the participant population due to purposeful sampling approaches that, while ensuring statistical precision for a given quota group, lead to an unrepresentative measure assortment among respondents; and 2) to control for differences in the likelihood that a residential participant would be recruited to the web and phone survey. The research team used the same weighting approaches developed in previous years surveys which are described in the following subsections. Unless otherwise specified, all residential results reported below are based on analyses with weighted data. Nonresidential results are unweighted because all surveys were only conducted over the phone.

Controlling for Measure and Quota Group Differences

The research team used data weights (“Measure weight”) to control for measure and quota group differences among residential respondents, which ensures that the sample’s assortment of measures is representative of the residential participant population. The Measure weight was used in isolation when analyzing and reporting demographic results. The Measure weight also contributed to the Overall weight (described below), which was used when analyzing and reporting all non-demographic results. In addition to the Measure weight component, the Overall weight included two demographic-based weights that correct for certain under-sampled demographic groups. These weighting schemes are described in detail below.

First, for each residential respondent, the team assigned a Measure weight. For web respondents, the Measure weight was calculated as:

$$\text{Measure weight (web)} = \frac{\% \text{ all residential respondents with respondent's measure}}{\% \text{ residential web respondents with respondent's measure}}$$

The Measure weight was calculated similarly for residential phone respondents.

The team also calculated weights to adjust for the percentage of White/Caucasian respondents (Ethnicity weight) and the percentage of respondents with incomes at least \$100,000 (Income weight). As most ethnicity categories, other than White/Caucasian, constituted a very small percentage of residential respondents, the team dichotomized all residential respondents as either White/Caucasian or people of color to calculate the Ethnicity weight.

For residential web respondents, the Ethnicity weight was calculated as:

$$\text{Ethnicity weight (web)} = \frac{\% \text{ all residential respondents with respondent's ethnicity}}{\% \text{ residential web respondents with respondent's ethnicity}}$$

The Ethnicity weight was calculated similarly for residential phone respondents.

Finally, for residential web respondents, the Income weight was calculated as:

$$\text{Income weight (web)} = \frac{\% \text{ all residential respondents with income } \geq \$100,000}{\% \text{ residential web respondents with income } \geq \$100,000}$$

The Income weight was calculated similarly for residential phone respondents.

The team calculated a final Overall weight for each residential respondent as the product of the Measure weight, the Ethnicity weight, and the Income weight.

Note that the research team applied *only* the Measure weight when comparing residential web and phone respondents on demographic variables. The team applied the Overall weight when comparing web and phone respondents on other survey responses and when reporting overall results across measure groups.

Controlling for Mode Differences

When examining the demographics of the combined web and phone responses for individual measure groups, there is no need to control for any possible interrelationship among mode (web or phone), measure group, and demographics, as each analysis is of a single measure type.² Therefore, the existing Measure and Overall weights, described above, are not appropriate for this set of analyses.

However, it is still necessary to account for possible demographic differences between web and phone respondents. Web and phone respondents were extremely similar on household size but differed somewhat on income, ethnicity, and age (web respondents were more likely to have household incomes of at least \$100,000, less likely to report being white only, and less likely to be 60 or older). Therefore, if web respondents are over- or under-represented in the survey, relative to phone respondents, then failing to account for that fact when combining responses may misrepresent the demographics of the participant population. The

² The one exception is the combination of wall and floor insulation into the "other insulation" group. These are sufficiently similar that the research team did not consider controlling for interrelationships among mode, measure group (wall or floor insulation), and demographics to be a concern.

weighting of web and phone responses must then take two factors into consideration: the number of participants solicited by each mode and the response rate for each mode.

When examining demographics, the research team weighted the data to adjust for differences, within each measure and quota group, both in the number of participants solicited to the web and phone surveys and in response rate.

For each measure or quota group, the Number Solicited weight for web respondents was calculated as:

$$\text{Number Solicited weight (web)} = \frac{\text{Half the total number of respondents in group}}{\text{Number of web respondents in group}}$$

The numerator for this weight is half the total number of respondents because that is the expected number of respondents by mode if both modes have an equal response.

The Number Solicited weight was calculated similarly for phone respondents.

For each measure or quota group, the Response Rate weight for web respondents was calculated as:

$$\text{Response Rate weight (web)} = \frac{\text{Overall response rate for group}}{\text{Web response rate for group}}$$

The Response Rate weight was calculated similarly for phone respondents.

For each respondent, the Mode weight was calculated as the product of the Number Solicited weight and the Response Rate weight.

Residential Combined Survey Results

Analysis of the survey results revealed details about participants' experiences. Some key high-level findings are:

About half of participants received some information from Energy Trust before taking their efficiency action, which varied among measure groups.

Of those who installed heating systems, over half replaced systems that were still functioning, but this was more common among participants installing heat pumps than gas furnaces. Gas fireplaces were by far most likely to have replaced a wood burning fireplace or stove.

For most measures, contractors had the greatest influence on participant decisions, but the incentive was most influential for thermostats and spa covers, and the efficiency rating was most influential for gas fireplaces.

Participants easily found and selected contractors, most commonly by word of mouth or online; they usually chose a contractor after getting one or two bids; about one-third considered the Energy Trust list of trade allies and about two-thirds of those considered the star rating system, but both varied by measure group.

Participants most commonly paid for their equipment with cash or a credit card.

Participants were satisfied with their program experience, at levels generally consistent with previous years. Satisfaction somewhat varied by measure type.

The following subsections provide details of the above for each measure group. Where percentages are reported, they are based on weighted data, as described in Section 3.5.

Residential Respondent Demographics

Analysis of respondent demographics indicate that Black/African American, Hispanic/Latino, and other non-white groups are under-represented in the Energy Trust participant population compared to the general population of Oregon. Those with higher incomes and those who are older are over-represented in the participant population. Analysis also shows that Energy Trust participants in Oregon tend to be more concentrated in the Portland Metro and Hood River region, and less concentrated in the North Coast, Willamette Valley, and Eastern Oregon regions, compared to the general population.^{3, 4}

People of color are *most* represented among participants surveyed about ceiling insulation, clothes washers, and smart thermostats (Table 5). They are *least* represented among participants surveyed about gas fireplaces and gas furnaces.

³ The Oregon income, household size, and ethnicity population data come from the U.S. Census Bureau (<https://www.census.gov/quickfacts/or>; <https://statisticalatlas.com/state/Oregon/Household-Income>).

⁴ Note that all tables show the distribution of demographic characteristics for boiler participants as percentages despite the small sample size for that participant group. Normally, the research team does not show percentages for groups with small sample sizes, as doing so may suggest a level of precision that does not exist. In this case, the research team decided to show percentages for the sake of consistency. However, the research team advises caution in interpreting the percentages for the boiler group as those percentages have a 90% confidence interval of about plus-or-minus 25%.

Table 5. Respondent Race/Ethnicity by Measure or Quota Group

Measure/Quota Group	Respondent Race/Ethnicity (%)							
	White or Caucasian	Black or African American	Hispanic or Latino	Asian, Indian, or Pacific Islander	Native American	Middle Eastern or North African	Other Races	People of Color Total
Boiler (n = 6)	83.3%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%	16.7%
Ceiling Insulation (n = 87)	81.4%	0.0%	13.0%	4.9%	0.7%	2.1%	0.7%	21.4%
Clothes Washer (n = 90)	84.3%	2.1%	2.1%	12.1%	0.7%	0.7%	0.0%	17.9%
Heat Pump (n = 84)	89.3%	2.2%	6.0%	5.8%	1.1%	0.0%	0.0%	15.1%
Ductless Heat Pump (n = 99)	90.0%	0.0%	5.5%	1.5%	1.5%	1.5%	0.0%	10.0%
Other Insulation (n = 83)	88.4%	0.0%	5.3%	4.2%	2.1%	2.6%	0.0%	14.2%
Gas Fireplace (n = 89)	94.8%	0.7%	1.5%	2.2%	0.0%	4.4%	0.7%	8.9%
Gas Furnace (n = 164)	93.6%	0.6%	3.2%	3.8%	0.6%	1.2%	0.0%	8.8%
Residential Solar PV (n = 80)	94.2%	0.8%	2.4%	6.6%	0.8%	0.8%	0.0%	10.6%
Smart Thermostat (n = 196)	83.0%	0.6%	5.7%	12.3%	1.0%	0.6%	0.6%	20.9%
Spa Cover (n = 80)	94.7%	0.0%	4.1%	1.0%	1.0%	4.3%	1.0%	11.4%
Windows (n = 112)	91.4%	1.1%	1.7%	7.5%	0.0%	1.1%	0.0%	10.9%
Moderate Income Track (n = 75)	91.8%	1.4%	5.4%	1.3%	0.0%	1.4%	0.0%	9.5%
Residential - Washington (n = 80)	92.8%	0.7%	2.9%	5.1%	0.0%	1.4%	0.0%	10.1%
Residential - Oregon (n = 1,090)	89.0%	0.8%	4.7%	6.2%	0.9%	1.6%	0.3%	14.2%
Oregon Overall (Census)	87.1%	2.5%	12.7%	5.2%	1.1%	not reported	3.0%	20.0%

Energy Trust participants tend to have higher incomes than the general Oregon population, especially participants surveyed about residential solar PV, clothes washers, and smart thermostats (Table 6).

Table 6. Household Income by Measure or Quota Group

Measure/Quota Group	Household Income (%)			
	< \$35,000	\$35,000 to \$50,000	\$50,000 to \$100,000	≥ \$100,000
Boiler (n = 6)	33%	0%	0%	67%
Ceiling Insulation (n = 87)	11%	12%	42%	35%
Clothes Washer (n = 90)	5%	9%	44%	42%
Heat Pump (n = 84)	15%	22%	44%	18%
Ductless Heat Pump (n = 99)	17%	21%	50%	12%
Other Insulation (n = 83)	20%	18%	48%	15%
Gas Fireplace (n = 89)	3%	19%	55%	23%
Gas Furnace (n = 164)	18%	29%	39%	14%
Residential Solar PV (n = 80)	1%	11%	56%	32%
Smart Thermostat (n = 196)	1%	8%	43%	47%
Spa Cover (n = 80)	8%	9%	49%	34%
Windows (n = 112)	15%	7%	56%	23%
Moderate Income Track (n = 75)	39%	43%	16%	3%
Residential - Washington (n = 80)	2%	13%	32%	52%
Residential - Oregon (n = 1,090)	12%	17%	47%	25%
Oregon Overall (Census)	33%	14%	31%	22%

Energy Trust participants tend to be slightly older than the general Oregon adult population (Table 7).⁵ Those surveyed about gas furnaces and those in the Moderate Income Track tended to be the oldest participants. Those surveyed about smart thermostats were the only group demonstrating a younger mean age than the Oregon population.

Table 7. Respondent Age by Measure or Quota Group

Measure/Quota Group	Respondent Age			
	% 18-39	% 40-59	% 60+	Mean Age
Boiler (n = 6)	17%	17%	67%	59
Ceiling Insulation (n = 87)	30%	26%	44%	50
Clothes Washer (n = 90)	28%	35%	36%	52
Heat Pump (n = 84)	20%	26%	55%	58
Ductless Heat Pump (n = 99)	17%	39%	44%	55
Other Insulation (n = 83)	22%	36%	42%	54
Gas Fireplace (n = 89)	6%	23%	71%	57
Gas Furnace (n = 164)	15%	31%	55%	59

⁵ The U.S. Census reports the percentage of the entire population across all age brackets. The research team recalculated the percentages in each age group 18 years old and older, to compare to the Energy Trust participant population.

Measure/Quota Group	Respondent Age			
	% 18-39	% 40-59	% 60+	Mean Age
Residential Solar PV (n = 80)	23%	42%	35%	53
Smart Thermostat (n = 196)	55%	33%	12%	39
Spa Cover (n = 80)	10%	46%	44%	56
Windows (n = 112)	19%	45%	36%	52
Moderate Income Track (n = 75)	15%	20%	65%	62
Residential - Washington (n = 80)	15%	52%	33%	49
Residential - Oregon (n = 1,090)	24%	34%	43%	53
Oregon Overall (Census)	38%	33%	29%	48

Energy Trust participants tend to be similar to the general Oregon adult population in size of household (Table 8).

Table 8. Size of Household by Measure or Quota Group

Measure/Quota Group	Size of Household			
	% 1-2	% 3-4	% 5+	Mean # of Occupants
Boiler (n = 6)	67%	17%	17%	2.7
Ceiling Insulation (n = 87)	52%	38%	10%	2.9
Clothes Washer (n = 90)	66%	27%	6%	2.5
Heat Pump (n = 84)	72%	21%	7%	2.4
Ductless Heat Pump (n = 99)	67%	32%	1%	2.3
Other Insulation (n = 83)	57%	33%	8%	2.5
Gas Fireplace (n = 89)	80%	14%	7%	2.2
Gas Furnace (n = 164)	61%	33%	6%	2.5
Residential Solar PV (n = 80)	44%	44%	12%	3.0
Smart Thermostat (n = 196)	41%	39%	20%	3.1
Spa Cover (n = 80)	53%	37%	9%	2.7
Windows (n = 112)	55%	35%	10%	2.7
Moderate Income Track (n = 75)	74%	22%	4%	2.2
Residential - Washington (n = 80)	59%	28%	12%	2.7
Residential - Oregon (n = 1,090)	59%	33%	8%	2.6
Oregon Overall (Census)	n/a	n/a	n/a	2.5

In terms of geographic dispersion, Oregon Energy Trust participants tend to be more concentrated in the Portland Metro and Hood River area than the general Oregon population; the percentage of surveyed participants from Southwest Washington was similar to that in the entire Oregon-Southwest Washington region (Table 9). The distribution of participants across geographic areas differed considerably among measure and quota groups. Those most heavily concentrated in the Portland Metro and Hood River area were those surveyed about ceiling insulation, clothes washers, and smart thermostats. Those least heavily concentrated in that area were those surveyed about ducted and ductless heat pumps.

Table 9. Geographic Region by Measure or Quota Group

Measure/Quota Group	Geographic Region (%)						
	Portland Metro and Hood River	North Coast	Willamette Valley	Southern Oregon	Central Oregon	Eastern Oregon	SW Washington
Boiler (n = 6)	100%	0%	0%	0%	0%	0%	0%
Ceiling Insulation (n = 87)	76%	0%	10%	12%	1%	1%	0%
Clothes Washer (n = 90)	77%	1%	14%	6%	1%	1%	0%
Heat Pump (n = 84)	34%	1%	27%	16%	18%	4%	0%
Ductless Heat Pump (n = 99)	33%	2%	27%	29%	8%	1%	0%
Other Insulation (n = 83)	60%	2%	25%	11%	2%	2%	0%
Gas Fireplace (n = 89)	55%	7%	29%	1%	1%	1%	6%
Gas Furnace (n = 164)	48%	4%	26%	7%	1%	1%	14%
Residential Solar PV (n = 80)	44%	0%	34%	13%	9%	0%	0%
Smart Thermostat (n = 196)	64%	4%	9%	8%	2%	0%	12%
Spa Cover (n = 80)	59%	2%	7%	28%	4%	0%	0%
Windows (n = 112)	50%	1%	24%	8%	2%	2%	14%
Moderate Income Track (n = 75)	47%	1%	31%	12%	9%	0%	0%
Residential - Washington (n = 80)	0%	0%	0%	0%	0%	0%	100%
Residential - Oregon (n = 1,090)	57%	2%	22%	12%	5%	1%	0%
Residential Total (n = 1,170)	53%	2%	21%	11%	4%	1%	7%
Oregon Overall (Census)	44%	4%	27%	14%	6%	5%	n/a
Oregon & SW WA Overall (Census)	41%	4%	25%	13%	6%	5%	7%

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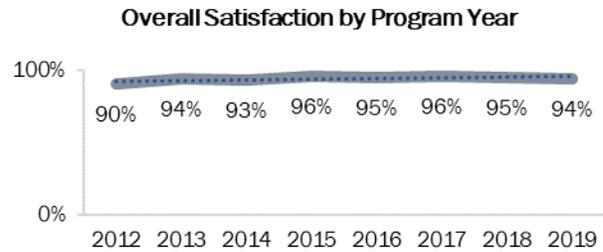
Program Experience by Measure and Quota Group

Clothes Washer

Consistent with previous years, clothes washer participants ($n = 90$) showed high levels of satisfaction with all facets of the experience (Table 10).⁶

Table 10. Satisfaction with Program Experience

Satisfaction Item	Percent
Overall experience ($n = 90$)	94%
Performance of new measure ($n = 90$)	95%
Ease of finding eligible products ($n = 86$)	89%
Incentive application form ($n = 88$)	91%
Time it took to receive incentive ($n = 88$)	86%



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About one-third of clothes washer participants (36%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Participants most commonly paid for their clothes washer with cash or a credit card (Table 11).

Table 11. Payment Method ($n = 90$) (Multiple Responses Allowed)

Method	Percent
Cash	38%
Credit card	61%
Loan	0%
On-bill financing	3%
Vendor financing	3%
Non-Energy Trust incentives	1%
Other	0%
Don't know or no answer	0%

All items assessed demonstrated similar levels of influence on participant purchase decisions (Table 12).

Table 12. Influence Ratings

Influence Level	Energy Trust Incentive ($n = 90$)	Information from Energy Trust ($n = 88$)	Retail Salesperson ($n = 88$)
High	46%	47%	48%
Medium	29%	26%	19%
Low	25%	27%	32%
Don't know or no answer	0%	0%	1%

⁶ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Participants most commonly said that, without the program, they would have done exactly the same thing they did with the program (Table 13).

Table 13. Actions Would Have Taken without Program Support (n = 90)

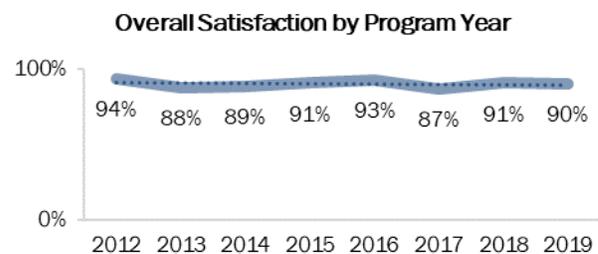
Action	Percent
Would not have purchased or installed the measure	2%
Would have postponed purchase and installation for a year or more	4%
Would have purchased or installed a less expensive alternative	25%
Would have purchased or installed a less energy efficient alternative	12%
Would have done exactly the same thing	56%

Ceiling Insulation

Consistent with previous years, ceiling insulation participants (n = 87) showed high levels of satisfaction with all facets of the experience except for the incentive application form and information received about the Energy Trust incentive from their contractor (Table 14).⁷

Table 14. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 87)	90%
Comfort of home after measure (n = 79)	92%
Incentive application form (n = 74)	81%
Time it took to receive incentive (n = 79)	88%
Contractor-related Experience	
Overall experience (n = 78)	91%
Quality of installation (n = 75)	96%
Information on Energy Trust incentive (n = 77)	74%
Communication (n = 75)	89%
Completion of incentive paperwork (n = 62)	94%



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About two-thirds of ceiling insulation participants (67%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (85%) participants reported it was easy to find and select a contractor (Table 15). Participants most commonly found their contractor through the Energy Trust website or some other online source. Most (60%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, about three-quarters (71%) considered the star rating system. About half (56%) of participants got two to three contractor bids to do the work, with most others getting a single bid (39%). A large majority (84%) reported that the contractor did at least some of the application paperwork.

⁷ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Table 15. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 85)		Considered List of Approved Trade Allies (n = 79)	
Easy (4 or 5)	85%	Yes	40%
Not easy or difficult (3)	12%	No	26%
Difficult (1 or 2)	1%	Was not aware of list	32%
Don't know or no answer	1%	Don't know or no answer	1%
How Participant Found Contractor (n = 76) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 29)	
Word of mouth	13%	Yes	21 of 29
Energy Trust website or service	34%	No	3 of 29
Online (Yelp, Angie's List, etc.)	30%	Was not aware of system	4 of 29
Retailer or manufacturer	0%	Don't know or no answer	1 of 29
Govt./non-profit event or referral	0%	Number of Contractor Bids (n = 76)	
Prior use or acquaintance	2%	One bid	39%
Advertisement	2%	Two to three bids	56%
Utility	6%	More than three bids	4%
Miscellaneous or don't know	12%		

Participants most commonly paid for their ceiling insulation with cash or a credit card (Table 16).

Table 16. Payment Method (n = 87) (Multiple Responses Allowed)

Method	Percent
Cash	65%
Credit card	28%
Loan	6%
On-bill financing	3%
Vendor financing	0%
Non-Energy Trust incentives	0%
Other	5%
Don't know or no answer	0%

Of all items assessed, information from Energy Trust had the least influence on their purchase decision (Table 17).

Table 17. Influence Ratings

Influence Level	Energy Trust Incentive (n = 86)	Information from Energy Trust (n = 84)	Contractor (n = 76)
High	59%	50%	66%
Medium	18%	18%	13%
Low	23%	30%	20%
Don't know or no answer	0%	2%	1%

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Participants most commonly said that, without the program, they would have done exactly the same thing as they did with the program support (Table 18).

Table 18. Actions Would Have Taken without Program Support (n = 87)

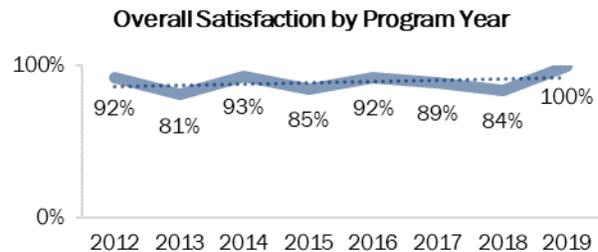
Action	Percent
Would not have had the services or work performed	10%
Would have postponed purchase and installation for a year or more	16%
Would have purchased or installed a smaller amount or quantity	10%
Would have made fewer energy efficient improvements	16%
Would have done exactly the same thing	52%

Wall Insulation

Most wall insulation participants (n = 20) showed high levels of satisfaction with all facets of the experience (Table 19), denoting an all-time high compared to previous years.⁸

Table 19. Satisfaction with Program and Contractor Experience

Satisfaction Item	Count
Program-related Experience	
Overall experience (n = 20)	20 of 20
Comfort of home after measure (n = 17)	16 of 17
Incentive application form (n = 17)	16 of 17
Time it took to receive incentive (n = 18)	18 of 18
Contractor-related Experience	
Overall experience (n = 20)	19 of 20
Quality of installation (n = 20)	20 of 20
Information on Energy Trust incentive (n = 18)	16 of 18
Communication (n = 19)	19 of 19
Completion of incentive paperwork (n = 16)	16 of 16



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About half of participants (12 of 22) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (18 of 20) participants reported it was easy to find and select a contractor (Table 20). Participants most commonly found their contractor through word of mouth, the Energy Trust website, or another online source. About one-third (6 of 20) reported considering Energy Trust's list of approved trade allies. Of those who considered the list, about two-thirds (4 of 6) considered the star rating system. About half (9 of 19) of the participants got two to three contractor bids to do the work, and the others got just one bid (10 of 19). Sixteen participants reported that the contractor did at least some of the application paperwork.

⁸ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Table 20. Contractor Selection and Use

Response	Count	Response	Count
Ease of Finding and Selecting Contractor (n = 20)		Considered List of Approved Trade Allies (n = 20)	
Easy (4 or 5)	18 of 20	Yes	6 of 20
Not easy or difficult (3)	1 of 20	No	9 of 20
Difficult (1 or 2)	0 of 20	Was not aware of list	4 of 20
Don't know or no answer	1 of 20	Don't know or no answer	1 of 20
How Participant Found Contractor (n = 20) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 6)	
Word of mouth	5 of 20	Yes	4 of 20
Energy Trust website or service	4 of 20	No	1 of 20
Online (Yelp, Angie's List, etc.)	5 of 20	Was not aware of system	1 of 20
Retailer or manufacturer	0 of 20	Don't know or no answer	0 of 20
Govt./non-profit event or referral	0 of 20	Number of Contractor Bids (n = 19)	
Prior use or acquaintance	2 of 20	One bid	10 of 20
Advertisement	0 of 20	Two to three bids	9 of 20
Utility	0 of 20	More than three bids	0 of 20
Miscellaneous or don't know	4 of 20		

Participants most commonly paid for their insulation with cash or a credit card (Table 21).

Table 21. Payment Method (n = 20) (Multiple Responses Allowed)

Method	Count
Cash	11 of 20
Credit card	5 of 20
Loan	3 of 20
On-bill financing	0 of 20
Vendor financing	1 of 20
Non-Energy Trust incentives	1 of 20
Other	1 of 20
Don't know or no answer	0 of 20

Of all items assessed, the participant's contractor had the greatest influence on their purchase decision (Table 22).

Table 22. Influence Ratings

Influence Level	Energy Trust Incentive (n = 20)	Information from Energy Trust (n = 17)	Contractor (n = 20)
High	10 of 20	11 of 17	15 of 20
Medium	6 of 20	2 of 17	1 of 20
Low	4 of 20	4 of 17	4 of 20
Don't know or no answer	0 of 20	0 of 17	0 of 20

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Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 23).

Table 23. Actions Would Have Taken without Program Support (n = 20)

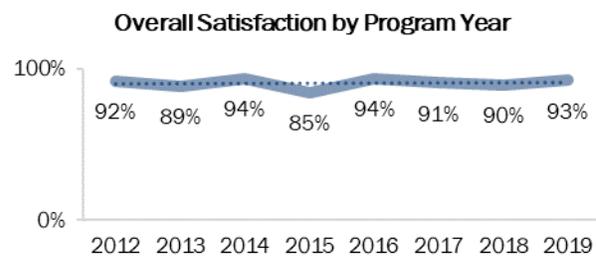
Action	Count
Would not have had the services or work performed	2 of 20
Would have postponed purchase and installation for a year or more	4 of 20
Would have purchased or installed a smaller amount or quantity	4 of 20
Would have made fewer energy efficient improvements	5 of 20
Would have done exactly the same thing	10 of 20

Floor Insulation

Consistent with previous years, floor insulation participants (n = 63) showed high levels of satisfaction with all facets of the experience except for the information received about the Energy Trust incentive from their contractor (Table 24).⁹

Table 24. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 63)	93%
Comfort of home after measure (n = 58)	98%
Incentive application form (n = 49)	87%
Time it took to receive incentive (n = 56)	84%
Contractor-related Experience	
Overall experience (n = 61)	90%
Quality of installation (n = 60)	92%
Information on Energy Trust incentive (n = 57)	77%
Communication (n = 60)	89%
Completion of incentive paperwork (n = 46)	92%



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About half of participants (53%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (74%) participants reported it was easy to find and select a contractor (Table 25). Participants most commonly found their contractor through word of mouth. Most (62%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, about one-third (37%) considered the star rating system. About half (50%) of participants got two to three contractor bids to do the work, and most of the others got just one bid (46% of all participants). A large majority (79%) reported that the contractor did at least some of the application paperwork.

⁹ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Table 25. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 60)		Considered List of Approved Trade Allies (n = 61)	
Easy (4 or 5)	74%	Yes	38%
Not easy or difficult (3)	19%	No	33%
Difficult (1 or 2)	5%	Was not aware of list	26%
Don't know or no answer	1%	Don't know or no answer	3%
How Participant Found Contractor (n = 61) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 22)	
Word of mouth	35%	Yes	8 of 22
Energy Trust website or service	14%	No	7 of 22
Online (Yelp, Angie's List, etc.)	26%	Was not aware of system	4 of 22
Retailer or manufacturer	2%	Don't know or no answer	3 of 22
Govt./non-profit event or referral	0%	Number of Contractor Bids (n = 60)	
Prior use or acquaintance	5%	Got one contractor bid	46%
Advertisement	9%	Got two to three bids	50%
Utility	2%	Got more than three bids	4%
Miscellaneous or don't know	6%		

Participants most commonly paid for their floor insulation with cash or a credit card (Table 26).

Table 26. Payment Method (n = 63) (Multiple Responses Allowed)

Method	Percent
Cash	64%
Credit card	27%
Loan	7%
On-bill financing	3%
Vendor financing	2%
Non-Energy Trust incentives	1%
Other	1%
Don't know or no answer	1%

Of all items assessed, the information from Energy Trust had the least influence on their purchase decision (Table 27).

Table 27. Influence Ratings

Influence Level	Energy Trust Incentive (n = 62)	Information from Energy Trust (n = 54)	Contractor (n = 60)
High	59%	43%	63%
Medium	17%	27%	17%
Low	24%	30%	16%
Don't know or no answer	1%	1%	3%

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Participants most commonly said that, without the program, they would have done exactly the same thing they did with the program (Table 28).

Table 28. Actions Would Have Taken without Program Support (n = 63)

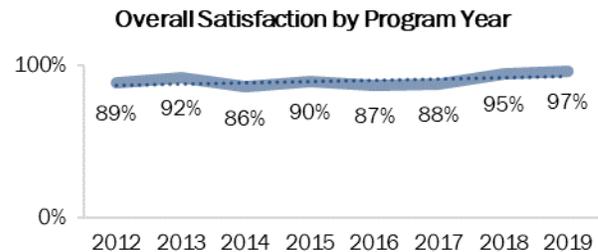
Action	Percent
Would not have had the services or work performed	13%
Would have postponed purchase and installation for a year or more	15%
Would have purchased or installed a smaller amount or quantity	13%
Would have made fewer energy efficient improvements	24%
Would have done exactly the same thing	40%

Ducted Heat Pump

Ducted heat pump participants (n = 84) showed high levels of satisfaction with all facets of the experience (Table 29), denoting an all-time high compared to previous years.¹⁰

Table 29. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 84)	97%
Comfort of home after measure (n = 79)	96%
Performance of new measure (n = 82)	97%
Incentive application form (n = 66)	89%
Time it took to receive incentive (n = 68)	88%
Information received (n = 38)	95%
Contractor-related Experience	
Overall experience (n = 84)	94%
Ease of selecting a contractor (n = 79)	91%
Quality of installation (n = 84)	92%
Information on Energy Trust incentive (n = 77)	87%
Communication (n = 82)	91%
Completion of incentive paperwork (n = 63)	94%



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About two-fifths of participants (44%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

¹⁰ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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About two-thirds (71%) of participants reported that their new heat pump replaced an operational heating system; 5% said the new heat pump did not replace any existing system (Table 22).

Table 30. Equipment Replaced by Ducted Heat Pump (n = 83)

Response	Percent
Replaced operational heating system	71%
Replaced non-operational heating system	23%
Did not replace another heating system	5%
Don't know or no answer	0%

Most (83%) participants reported it was easy to find and select a contractor (Table 31). Participants most commonly found their contractor through the Energy Trust website. Most (63%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, three-fourths (75%) considered the star rating system. About half (47%) of participants got two to three contractor bids to do the work and most of the others got a single bid (44% of all participants). Most (81%) reported that the contractor did at least some of the application paperwork.

Table 31. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 82)		Considered List of Approved Trade Allies (n = 82)	
Easy (4 or 5)	83%	Yes	37%
Not easy or difficult (3)	13%	No	35%
Difficult (1 or 2)	2%	Was not aware of list	28%
Don't know or no answer	2%	Don't know or no answer	1%
How Participant Found Contractor (n = 83) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 30)	
Word of mouth	17%	Yes	75%
Energy Trust website or service	28%	No	5%
Online (Yelp, Angie's List, etc.)	18%	Was not aware of system	18%
Retailer or manufacturer	4%	Don't know or no answer	2%
Govt./non-profit event or referral	0%	Number of Contractor Bids (n = 82)	
Prior use or acquaintance	6%	One bid	44%
Advertisement	9%	Two to three bids	47%
Utility	5%	More than three bids	9%
Miscellaneous or don't know	14%		

Participants most commonly paid for their ducted heart pump with cash or a credit card (Table 32).

Table 32. Payment Method (n = 84) (Multiple Responses Allowed)

Method	Percent
Cash	61%
Credit card	25%
Loan	7%
On-bill financing	9%

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Method	Percent
Vendor financing	1%
Non-Energy Trust incentives	1%
Other	5%
Don't know or no answer	0%

Of all items assessed, the information from Energy Trust had the least influence on their purchase decision (Table 33).

Table 33. Influence Ratings

Influence Level	Energy Trust Incentive (n = 83)	Information from Energy Trust (n = 82)	Contractor (n = 83)
High	80%	71%	82%
Medium	9%	9%	6%
Low	11%	18%	12%
Don't know or no answer	1%	2%	0%

Participants were fairly split over what they would have done had the program not supported them (Table 34).

Table 34. Actions Would Have Taken without Program Support (n = 84)

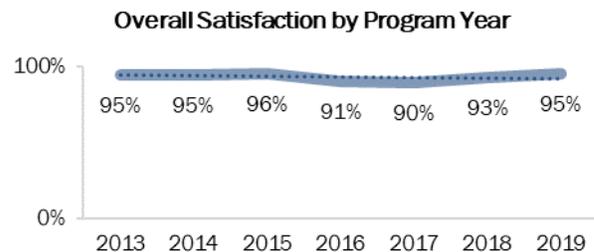
Action	Percent
Would not have purchased or installed the measure	22%
Would have postponed purchase and installation for a year or more	22%
Would have purchased or installed a less expensive alternative	27%
Would have purchased or installed a less energy efficient alternative	13%
Would have installed a different type of heating system	10%
Would have done exactly the same thing	26%

Ductless Heat Pump

Consistent with previous years, ductless heat pump participants (n = 99) showed high levels of satisfaction with all facets of the experience (Table 35).¹¹

Table 35. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 99)	95%
Comfort of home after measure (n = 95)	96%
Performance of new measure (n = 96)	96%
Incentive application form (n = 75)	96%
Time it took to receive incentive (n = 81)	94%
Contractor-related Experience	



¹¹ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Overall experience (n = 99)	93%
Quality of installation (n = 98)	94%
Information on Energy Trust incentive (n = 94)	87%
Communication (n = 96)	91%
Completion of incentive paperwork (n = 70)	97%

Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About half (52%) of participants reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (90%) participants reported it was easy to find and select a contractor (Table 36). Participants most commonly found their contractor through word of mouth. Most (66%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, over two-thirds (69%) considered the star rating system. About half (44%) of participants got two to three contractor bids to do the work, and most of the others got a single bid (49%). Most (76%) reported that the contractor did at least some of the application paperwork.

Table 36. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 97)		Considered List of Approved Trade Allies (n = 98)	
Easy (4 or 5)	90%	Yes	34%
Not easy or difficult (3)	8%	No	37%
Difficult (1 or 2)	0%	Was not aware of list	27%
Don't know or no answer	2%	Don't know or no answer	2%
How Participant Found Contractor (n = 99) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 31)	
Word of mouth	33%	Yes	69%
Energy Trust website or service	16%	No	10%
Online (Yelp, Angie's List, etc.)	10%	Was not aware of system	20%
Retailer or manufacturer	5%	Don't know or no answer	0%
Govt./non-profit event or referral	3%	Number of Contractor Bids (n = 97)	
Prior use or acquaintance	6%	One bid	49%
Advertisement	8%	Two to three bids	44%
Utility	8%	More than three bids	7%
Miscellaneous or don't know	12%		

Participants most commonly paid for their ductless heat pump with cash (Table 37).

Table 37. Payment Method (n = 99) Multiple Responses Allowed

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Method	Percent
Cash	52%
Credit card	25%
Loan	4%
On-bill financing	12%
Vendor financing	8%
Non-Energy Trust incentives	1%
Other	5%
Don't know or no answer	0%

Of all items assessed, the contractor had the greatest influence on their purchase decision (Table 38).

Table 38. Influence Ratings

Influence Level	Energy Trust Incentive (n = 99)	Information from Energy Trust (n = 95)	Contractor (n = 98)
High	69%	56%	85%
Medium	16%	13%	7%
Low	14%	22%	7%
Don't know or no answer	1%	10%	1%

Participants most commonly said that, without the program, they would have done exactly the same thing as they did through the program (Table 39).

Table 39. Actions Would Have Taken without Program Support (n = 98)

Action	Percent
Would not have purchased or installed the measure	13%
Would have postponed purchase and installation for a year or more	27%
Would have purchased or installed a less expensive alternative	18%
Would have purchased or installed a less energy efficient alternative	7%
Would have installed a different type of heating system	11%
Would have done exactly the same thing	36%

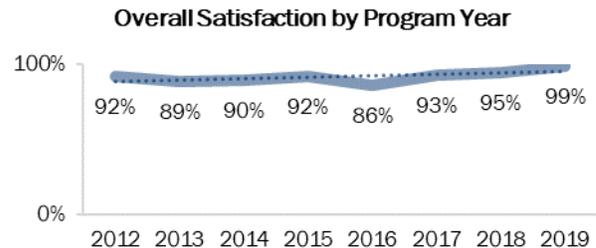
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Gas Fireplace

Gas fireplace participants (n = 89) showed high levels of satisfaction with all facets of the experience (Table 40), denoting an all-time high compared to previous years.¹²

Table 40. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 89)	99%
Comfort of home after measure (n = 83)	98%
Performance of new measure (n = 85)	100%
Ease of finding eligible products (n = 80)	98%
Incentive application form (n = 82)	88%
Time it took to receive incentive (n = 84)	92%
Information received (n = 38)	95%
Contractor-related Experience	
Overall experience (n = 89)	92%
Ease of selecting a contractor (n = 85)	91%
Quality of installation (n = 88)	94%
Information on Energy Trust incentive (n = 72)	82%
Communication (n = 88)	89%
Completion of incentive paperwork (n = 61)	94%



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

Less than half (44%) of participants reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

About two-thirds (69%) of participants reported that their gas fireplace replaced a wood burning fireplace or stove; 6% said it did not replace anything (Table 33).

Table 41. Equipment Replaced by Gas Fireplace (n = 90)

Response	Percent
Replaced wood burning fireplace or stove	69%
Replaced old gas fireplace unit	22%
Replaced old electric fireplace unit	1%
Did not replace anything	6%
Other	2%

Most (94%) participants reported it was easy to find and select a contractor (Table 42). Participants most commonly found their contractor through word of mouth or their utility. Most (60%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those

¹² Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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who *did* consider the list, about two-thirds (66%) considered the star rating system. About one-third (36%) of participants got two to three contractor bids to do the work, and most of the others got a single bid (60%). A majority (74%) reported that the contractor did at least some of the application paperwork.

Table 42. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 83)		Considered List of Approved Trade Allies (n = 87)	
Easy (4 or 5)	94%	Yes	40%
Not easy or difficult (3)	4%	No	34%
Difficult (1 or 2)	1%	Was not aware of list	22%
Don't know or no answer	1%	Don't know or no answer	4%
How Participant Found Contractor (n = 89) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 34)	
Word of mouth	22%	Yes	66%
Energy Trust website or service	9%	No	5%
Online (Yelp, Angie's List, etc.)	3%	Was not aware of system	27%
Retailer or manufacturer	11%	Don't know or no answer	2%
Govt./non-profit event or referral	0%	Number of Contractor Bids (n = 87)	
Prior use or acquaintance	8%	One bid	60%
Advertisement	12%	Two to three bids	36%
Utility	18%	More than three bids	4%
Miscellaneous or don't know	16%		

Participants most commonly paid for their gas fireplace with cash or a credit card (Table 43).

Table 43. Payment Method (n = 89) (Multiple Responses Allowed)

Method	Percent
Cash	54%
Credit card	47%
Loan	1%
On-bill financing	0%
Vendor financing	3%
Non-Energy Trust incentives	0%
Other	2%
Don't know or no answer	2%

Of all items assessed, the energy efficiency rating of the fireplace had the greatest influence on their purchase decision (Table 44), higher even than the appearance of the fireplace.

Table 44. Influence Ratings

Influence Level	Energy Trust Incentive (n = 89)	Info. and Materials from Energy Trust (n = 84)	Retail Salesperson (n = 87)	Participant's Contractor (n = 83)	Appearance of Gas Fireplace (n = 88)	Energy Efficiency Rating of Fireplace (n = 89)
High	44%	35%	75%	46%	82%	85%
Medium	23%	19%	7%	18%	6%	4%

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Influence Level	Energy Trust Incentive (n = 89)	Info. and Materials from Energy Trust (n = 84)	Retail Salesperson (n = 87)	Participant's Contractor (n = 83)	Appearance of Gas Fireplace (n = 88)	Energy Efficiency Rating of Fireplace (n = 89)
Low	31%	42%	18%	33%	13%	10%
Don't know or no answer	1%	4%	0%	4%	0%	1%

Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 45).

Table 45. Actions Would Have Taken without Program Support (n = 89)

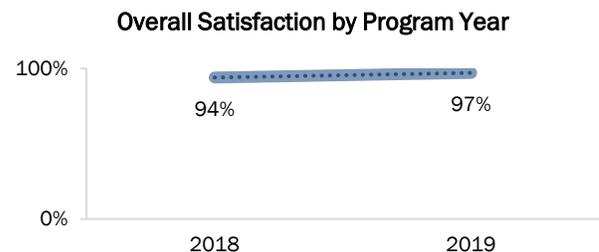
Action	Percent
Would not have purchased or installed the measure	4%
Would have postponed purchase and installation for a year or more	21%
Would have purchased or installed a less expensive alternative	10%
Would have purchased or installed a less energy efficient alternative	7%
Would have installed a different type of heating system	3%
Would have done exactly the same thing	63%

Gas Furnace

Similar to 2018, gas furnace participants (n = 164) showed high levels of satisfaction with all facets of the experience (Table 46).¹³

Table 46. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 163)	97%
Comfort of home after measure (n = 162)	97%
Performance of new measure (n = 161)	98%
Incentive application form (n = 118)	96%
Time it took to receive incentive (n = 117)	86%
Information received (n = 54)	96%
Contractor-related Experience	
Overall experience (n = 162)	96%
Ease of selecting a contractor (n = 154)	96%
Quality of installation (n = 163)	97%
Information on Energy Trust incentive (n = 143)	93%
Communication (n = 160)	93%
Completion of incentive paperwork (n = 117)	96%



Note: Don't know and no response excluded from analysis. Note that assessment of gas furnaces began in 2018. The dotted line in figure represents trend in overall satisfaction over time.

¹³ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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About one-third of participants (34%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

About half (48%) participants reported that their old heating system was still operating when they replaced it with the gas furnace; 1% said the new gas furnace did not replace any existing system (Table 47).

Table 47. Equipment Replaced by Gas Furnace (n = 165)

Response	Percent
Replaced operational heating system	48%
Replaced non-operational heating system	50%
Did not replace another heating system	1%
Don't know or no answer	1%

Most (82%) participants reported it was easy to find and select a contractor (Table 48). Participants most commonly found their contractor through word of mouth or online. Most (63%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, over half (60%) considered the star rating system. About half (46%) of participants got two to three contractor bids to do the work, and most of the others got a single bid (40%). A large majority (85%) reported that the contractor did at least some of the application paperwork.

Table 48. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 164)		Considered List of Approved Trade Allies (n = 164)	
Easy (4 or 5)	82%	Yes	37%
Not easy or difficult (3)	14%	No	37%
Difficult (1 or 2)	1%	Was not aware of list	22%
Don't know or no answer	3%	Don't know or no answer	4%
How Participant Found Contractor (n = 163) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 54)	
Word of mouth	24%	Yes	60%
Energy Trust website or service	13%	No	14%
Online (Yelp, Angie's List, etc.)	19%	Was not aware of system	20%
Retailer or manufacturer	3%	Don't know or no answer	6%
Govt./non-profit event or referral	0%	Number of Contractor Bids (n = 161)	
Prior use or acquaintance	13%	One bid	40%
Advertisement	8%	Two to three bids	46%
Utility	4%	More than three bids	13%
Miscellaneous or don't know	17%		

Participants most commonly paid for their gas furnace with cash or a credit card (Table 49).

Table 49. Payment Method (n = 164) (Multiple Responses Allowed)

Method	Percent
Cash	46%
Credit card	34%

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Method	Percent
Loan	14%
On-bill financing	15%
Vendor financing	7%
Non-Energy Trust incentives	0%
Other	4%
Don't know or no answer	2%

Of all items assessed, the participant's contractor had the greatest influence on their purchase decision (Table 50).

Table 50. Influence Ratings

Influence Level	Energy Trust Incentive (n = 161)	Information from Energy Trust (n = 142)	Contractor (n = 164)
High	53%	52%	76%
Medium	23%	19%	10%
Low	22%	21%	11%
Don't know or no answer	2%	8%	3%

Participants most commonly said that, without the program, they would have done exactly the same thing as they did through the program (Table 51).

Table 51. Actions Would Have Taken without Program Support (n = 156)

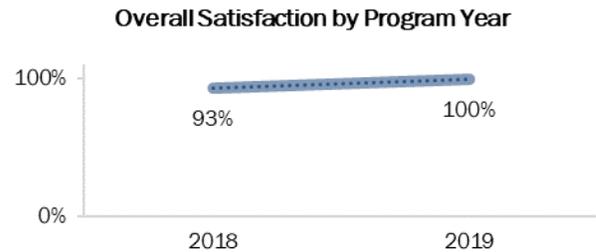
Action	Percent
Would not have purchased or installed the measure	1%
Would have postponed purchase and installation for a year or more	14%
Would have purchased or installed a less expensive alternative	26%
Would have purchased or installed a less energy efficient alternative	22%
Would have installed a different type of heating system	5%
Would have done exactly the same thing	45%

Boiler

Consistent with 2018, boiler participants (n = 6) showed high levels of satisfaction with all facets of the experience (Table 52).¹⁴

Table 52. Satisfaction with Program and Contractor Experience

Program Element	Count
Program-related Experience	
Overall experience (n = 6)	6 of 6
Comfort of home after measure (n = 5)	5 of 5
Performance of new measure (n = 6)	6 of 6
Ease of finding eligible products (n = 5)	4 of 5
Incentive application form (n = 4)	3 of 4
Time it took to receive incentive (n = 4)	4 of 4
Contractor-related Experience	
Overall experience (n = 6)	6 of 6
Ease of selecting a contractor (n = 6)	6 of 6
Information on Energy Trust incentive (n = 6)	4 of 6
Communication (n = 6)	6 of 6
Completion of incentive paperwork (n = 5)	5 of 6



Note: Don't know and no response excluded from analysis. Note that assessment of gas boilers began in 2018. The dotted line in figure represents trend in overall satisfaction over time.

None of the six boiler participants reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Half (3 of 6) of the participants reported that their old heating system was still operating when they replaced it with the new boiler; all new boilers replaced an existing system (Table 45).

Table 53. Equipment Replaced by Boiler (n = 6)

Response	Count
Replaced operational heating system	3 of 6
Replaced non-operational heating system	3 of 6
Did not replace another heating system	0 of 6
Don't know or no answer	0 of 6

All participants reported it was easy to find and select a contractor (Table 54). Participants found their contractor through word of mouth, online, or from a prior relationship. Most (5 of 6) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. The one who *did* consider the list was not aware of the star rating system. All but one reported that the contractor did at least some of the application paperwork.

¹⁴ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Table 54. Contractor Selection and Use

Response	Count	Response	Count
Ease of Finding and Selecting Contractor (n = 6)		Considered List of Approved Trade Allies (n = 6)	
Easy (4 or 5)	6 of 6	Yes	1 of 6
Not easy or difficult (3)	0 of 6	No	3 of 6
Difficult (1 or 2)	0 of 6	Was not aware of list	2 of 6
Don't know or no answer	0 of 6	Don't know or no answer	0 of 6
How Participant Found Contractor (n = 6) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 1)	
Word of mouth	2 of 6	Yes	0 of 1
Energy Trust website or service	0 of 6	No	0 of 1
Online (Yelp, Angie's List, etc.)	2 of 6	Was not aware of system	0 of 1
Retailer or manufacturer	0 of 6	Don't know or no answer	1 of 1
Govt./non-profit event or referral	0 of 6	Number of Contractor Bids	
Prior use or acquaintance	2 of 6	Boiler participants were not asked the number of contractors they received bids from.	
Advertisement	0 of 6		
Utility	0 of 6		
Miscellaneous or don't know	0 of 6		

Participants most commonly paid for their boiler with cash (Table 55).

Table 55. Payment Method (n = 6) (Multiple Responses Allowed)

Method	Count
Cash	4 of 6
Credit card	2 of 6
Loan	0 of 6
On-bill financing	0 of 6
Vendor financing	0 of 6
Non-Energy Trust incentives	0 of 6
Other	0 of 6
Don't know or no answer	0 of 6

Of all items assessed, the participant's contractor had the greatest influence on their purchase decision (Table 56).

Table 56. Influence Ratings

Influence Level	Energy Trust Incentive (n = 6)	Information from Energy Trust (n = 5)	Contractor (n = 6)
High	1 of 6	1 of 5	5 of 6
Medium	0 of 6	1 of 5	0 of 6
Low	5 of 6	3 of 5	1 of 6
Don't know or no answer	0 of 6	0 of 5	0 of 6

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Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 57).

Table 57. Actions Would Have Taken without Program Support (n = 6)

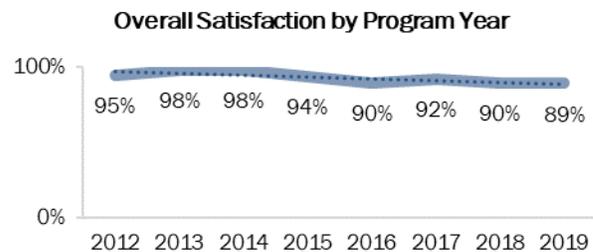
Action	Count
Would not have purchased or installed the measure	0 of 6
Would have postponed purchase and installation for a year or more	0 of 6
Would have purchased or installed a less expensive alternative	1 of 6
Would have purchased or installed a less energy efficient alternative	1 of 6
Would have installed a different type of heating system	0 of 6
Would have done exactly the same thing	4 of 6

Residential Solar PV

Consistent with previous years, residential solar participants (n = 80) showed high levels of satisfaction with all facets of the experience (Table 58).¹⁵

Table 58. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 79)	89%
Performance of new measure (n = 80)	97%
Energy Trust’s inspection (n = 68)	96%
Contractor-related Experience	
Overall experience (n = 80)	87%
Quality of installation (n = 79)	93%
Information on Energy Trust incentive (n = 78)	87%
Communication (n = 80)	90%



Note: Don’t know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About half of participants (47%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (84%) participants reported it was easy to find and select a contractor (Table 59). Participants often found their contractor through word of mouth. Most (70%) *did not* report considering Energy Trust’s list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, about one-third (34%) considered the star rating system. About half (47%) of participants got two to three contractor bids to do the work and about half (47%) got a single bid.

Table 59. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 76)		Considered List of Approved Trade Allies (n = 76)	

¹⁵ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Response	Percent
Easy (4 or 5)	84%
Not easy or difficult (3)	11%
Difficult (1 or 2)	4%
Don't know or no answer	1%
How Participant Found Contractor (n = 80) (Multiple Responses Allowed)	
Word of mouth	22%
Energy Trust website or service	15%
Online (Yelp, Angie's List, etc.)	18%
Retailer or manufacturer	1%
Govt./non-profit event or referral	9%
Prior use or acquaintance	3%
Advertisement	8%
Utility	1%
Miscellaneous or don't know	24%

Response	Percent
Yes	30%
No	35%
Was not aware of list	31%
Don't know or no answer	3%
If Considered List: Considered Star Rating System (n = 23)	
Yes	8 of 23
No	6 of 23
Was not aware of system	7 of 23
Don't know or no answer	2 of 23
Number of Contractor Bids (n = 79)	
Got one contractor bid	47%
Got two to three bids	47%
Got more than three bids	6%

Participants most commonly paid for their solar PV system with cash or on-bill financing (Table 60).

Table 60. Payment Method (n = 80) (Multiple Responses Allowed)

Method	Percent
Cash	53%
Credit card	9%
Loan	28%
On-bill financing	8%
Vendor financing	15%
Non-Energy Trust incentives	10%
Other	4%
Don't know or no answer	0%

Of all items assessed, the contractor and the Energy Trust incentive had the greatest influence on their purchase decision (Table 61).

Table 61. Influence Ratings

Influence Level	Energy Trust Incentive (n = 80)	Information and Materials from Energy Trust (n = 70)	Contractor (n = 79)	Information from a Solar Workshop (n = 36)
High	69%	39%	73%	42%
Medium	18%	31%	11%	6%
Low	11%	26%	15%	46%
Don't know or no answer	2%	4%	0%	6%

Participants were fairly split as to what they would have done if they had not received assistance from the program (Table 62).

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Table 62. Actions Would Have Taken without Program Support (n = 80)

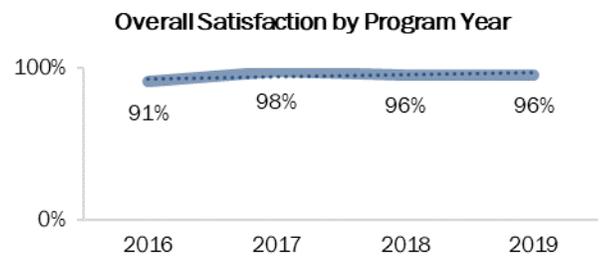
Action	Percent
Would not have purchased or installed the system	31%
Would have postponed purchase and installation for a year or more	18%
Would have purchased or installed a smaller amount or quantity	12%
Would have done exactly the same thing	31%

Smart Thermostat

Consistent with previous years, smart thermostat participants (n = 196) exhibited high levels of satisfaction with most facets of the experience (Table 63).¹⁶

Table 63. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent/Count
Program-related Experience	
Overall experience (n = 196)	96%
Comfort of home after measure (n = 194)	96%
Performance of new measure (n = 193)	96%
Ease of finding eligible products (n = 181)	92%
Incentive application form (n = 186)	92%
Time it took to receive incentive (n = 178)	84%
Information received (n = 104)	94%
Contractor-related Experience	
Overall experience (n = 13)	12 of 13
Ease of selecting a contractor (n = 18)	17 of 18
Quality of installation (n = 15)	13 of 15
Information on Energy Trust incentive (n = 22)	19 of 22
Communication (n = 12)	11 of 12
Completion of incentive paperwork (n = 4)	3 of 4



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

About (53%) half of participants reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

¹⁶ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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About half of participants (45%) reported considering other types of thermostats, most commonly Ecobee and Nest thermostats (Table 64). Participants cited favorable product reviews, features, compatibility, and the Energy Trust incentive as the most common reasons why they selected their thermostat over similar products (Table 65).

Table 64. Other Thermostats Considered (n = 196) (Multiple Responses Allowed)

Type	Percent
None	36%
Ecobee	27%
Nest	25%
Honeywell	7%
Other	2%
Don't know	19%

Table 65. Reasons for Selecting Thermostat Over Similar Products (n = 196) (Multiple Responses Allowed)

Reason	Percent
Favorable product reviews	42%
Features	36%
Compatibility with other smart home devices	33%
Energy Trust incentive	32%
Appearance	25%
Recommended by a friend or family member	20%
Compatibility with heating/cooling system	19%
Lower price	13%
Saves more energy	11%
Advertisements or marketing materials	2%
Energy Trust information or materials	2%
Other	8%
Don't know	<1%

All but seven participants reported that their smart thermostat was currently installed, demonstrating an installation rate of 97% (Table 66). Of the seven participants lacking a currently installed smart thermostat, four reported having not yet installed the thermostat and three reported having removed the thermostat.¹⁷ Among the three participants who removed the thermostat, two reported incompatibility issues with their heating or cooling system and one said they moved out of their home.

Table 66. Smart Thermostat Installation Status (n = 203)

Response	Percent
Installed	97%
Not installed yet	2%
Uninstalled	1%
Total	100%

Ten of the 13 participants that used a contractor to install their smart thermostat reported it was easy to find and select a contractor (Table 67).¹⁸ Participants most commonly found their contractor through miscellaneous sources or did not recall the source. Most (86%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, all considered the star rating system. Four participants who used a contractor reported that the contractor did at least some of the application paperwork.

¹⁷ Note that participants who did not have the smart thermostat installed were terminated from the survey.

¹⁸ Many smart thermostat participants were not flagged as "self install" in the Energy Trust database and were asked about their interactions with their contractor. Most of these respondents selected "not applicable" to the contractor questions, suggesting that they did not hire a contractor to install the measure and were thus misclassified in the program database. The research team excluded "not applicable" responses from contractor related questions.

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Table 67. Contractor Selection and Use

Response	Count	Response	Count
Ease of Finding and Selecting Contractor (n = 13)		Considered List of Approved Trade Allies (n = 57)	
Easy (4 or 5)	10 of 13	Yes	14%
Not easy or difficult (3)	3 of 13	No	47%
Difficult (1 or 2)	0 of 13	Was not aware of list	35%
Don't know or no answer	0 of 13	Don't know or no answer	4%
How Participant Found Contractor (n = 18) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 8)	
Word of mouth	5 of 18	Yes	4 of 8
Energy Trust website or service	0 of 18	No	4 of 8
Online (Yelp, Angie's List, etc.)	2 of 18	Was not aware of system	0 of 8
Retailer or manufacturer	1 of 18	Don't know or no answer	0 of 8
Govt./non-profit event or referral	0 of 18	Number of Contractor Bids	
Prior use or acquaintance	1 of 18	None of the surveyed thermostat participants reported the number of contractors they received bids from.	
Advertisement	0 of 18		
Utility	0 of 18		
Miscellaneous or don't know	9 of 18		

Participants most commonly paid for their thermostat with a credit card (Table 68).

Table 68. Payment Method (n = 196) (Multiple Responses Allowed)

Method	Percent
Cash	18%
Credit card	76%
Loan	0%
On-bill financing	0%
Vendor financing	2%
Non-Energy Trust incentives	0%
Other	1%
Don't know or no answer	2%

Of all items assessed, the Energy Trust incentive had the greatest influence on their purchase decision (Table 69).

Table 69. Influence Ratings

Influence Level	Energy Trust Incentive (n = 193)	Information from Energy Trust (n = 179)	Retail Salesperson (n = 133)	Contractor (n = 31)
High	61%	45%	16%	28%
Medium	17%	25%	8%	3%
Low	22%	28%	74%	65%
Don't know or no answer	0%	2%	2%	3%

Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 70).

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Table 70. Actions Would Have Taken without Program Support (n = 196)

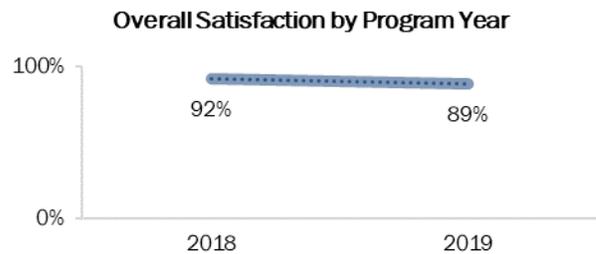
Action	Percent
Would not have purchased or installed the measure	21%
Would have postponed purchase and installation for a year or more	24%
Would have purchased or installed a less expensive alternative	15%
Would have purchased or installed a less energy efficient alternative	0%
Would have purchased and installed a different thermostat model	7%
Would have done exactly the same thing	38%

Spa Cover

Like in 2018, spa cover participants (n = 80) showed high levels of satisfaction with all facets of the experience (Table 71).¹⁹

Table 71. Satisfaction with Program and Contractor Experience

Satisfaction Item	Pct./Ct.
Program-related Experience	
Overall experience (n = 79)	89%
Performance of new measure (n = 79)	98%
Ease of finding eligible products (n = 73)	92%
Incentive application form (n = 79)	92%
Time it took to receive incentive (n = 76)	83%
Information received (n = 28)	27 of 28
Contractor-related Experience	
Overall experience (n = 35)	86%
Ease of selecting a contractor (n = 37)	97%
Quality of installation (n = 31)	94%
Information on Energy Trust incentive (n = 38)	92%
Communication (n = 35)	85%
Completion of incentive paperwork (n = 17)	16 of 17



Note: Don't know and no response excluded from analysis. Note that assessment of spa covers began in 2018. The dotted line in figure represents trend in overall satisfaction over time.

About one-third of participants (36%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

¹⁹ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Most (91%) participants reported it was easy to find and select a contractor (Table 72).²⁰ Participants most commonly found their contractor through a retailer or manufacturer. Most (88%) *did not* report considering Energy Trust’s list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, over two-thirds (69%) considered the star rating system. About two-fifths (43%) reported that the contractor did at least some of the application paperwork.

Table 72. Contractor Selection and Use

Response	Count	Response	Count
Ease of Finding and Selecting Contractor (n= 31)		Considered List of Approved Trade Allies (n = 48)	
Easy (4 or 5)	91%	Yes	12%
Not easy or difficult (3)	9%	No	54%
Difficult (1 or 2)	0%	Was not aware of list	34%
Don’t know or no answer	0%	Don’t know or no answer	0%
How Participant Found Contractor (n = 36) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 6)	
Word of mouth	17%	Yes	4 of 6
Energy Trust website or service	14%	No	1 of 6
Online (Yelp, Angie’s List, etc.)	14%	Was not aware of system	1 of 6
Retailer or manufacturer	23%	Don’t know or no answer	0 of 6
Govt./non-profit event or referral	0%	Number of Contractor Bids	
Prior use or acquaintance	9%	None of the surveyed spa cover participants reported the number of contractors they received bids from.	
Advertisement	6%		
Utility	3%		
Miscellaneous or don’t know	14%		

Participants most commonly paid for their spa cover with a credit card (Table 73).

Table 73. Payment Method (n = 80) (Multiple Responses Allowed)

Method	Percent
Cash	34%
Credit card	63%
Loan	0%
On-bill financing	0%
Vendor financing	0%
Non-Energy Trust incentives	0%
Other	3%
Don’t know or no answer	0%

²⁰ Many spa cover participants were not flagged as “self install” in the Energy Trust database and were asked about their interactions with their contractor. Most of these respondents selected “not applicable” to the contractor questions, suggesting that they did not hire a contractor to install the measure and were thus misclassified in the program database. The research team excluded “not applicable” responses from contractor related questions.

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Of all items assessed, the Energy Trust incentive had the greatest influence on their purchase decision (Table 74).

Table 74. Influence Ratings

Influence Level	Energy Trust Incentive (n = 80)	Information and Materials from Energy Trust (n = 70)	Retail Salesperson (n = 79)	Contractor (n = 33)
High	81%	54%	68%	49%
Medium	11%	19%	9%	12%
Low	9%	23%	22%	39%
Don't know or no answer	0%	4%	1%	0%

Participants most commonly said that, without the program, they would have purchased or installed a less expensive alternative spa cover (Table 75).

Table 75. Actions Would Have Taken without Program Support (n = 80)

Action	Count
Would not have purchased or installed the measure	4%
Would have postponed purchase and installation for a year or more	13%
Would have purchased or installed a less expensive alternative	45%
Would have purchased or installed a less energy efficient alternative	25%
Would have done exactly the same thing	24%

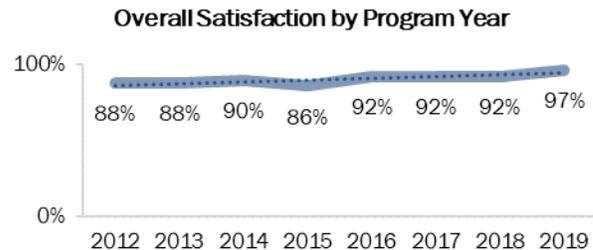
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Windows

Windows participants (n = 112) showed high levels of satisfaction with all facets of the experience (Table 76), denoting an all-time high compared to previous years.²¹

Table 76. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 112)	97%
Comfort of home after measure (n = 109)	98%
Incentive application form (n = 104)	86%
Time it took to receive incentive (n = 104)	88%
Information received (n = 44)	96%
Contractor-related Experience	
Overall Experience (n = 112)	90%
Ease of selecting a contractor (n = 102)	88%
Quality of Installation (n = 112)	94%
Information on Energy Trust Incentive (n = 112)	91%
Communication (n = 111)	89%
Completion of Incentive Paperwork (n = 86)	94%



Note: Don't know and no response excluded from analysis. Note that dotted line in figure represents trend in overall satisfaction over time.

Two-fifths of participants (40%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (85%) participants reported it was easy to find and select a contractor (Table 77). Participants most commonly found their contractor through word of mouth or an advertisement. Most (86%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, nearly all (89%) considered the star rating system. About half (44%) of participants got two to three contractor bids to do the work and most others got a single bid (46%). A large majority (80%) reported that the contractor did at least some of the application paperwork.

Table 77. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 109)		Considered List of Approved Trade Allies (n = 111)	
Easy (4 or 5)	85%	Yes	14%
Not easy or difficult (3)	11%	No	49%
Difficult (1 or 2)	3%	Was not aware of list	36%
Don't know or no answer	0%	Don't know or no answer	2%

²¹ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Response	Percent
How Participant Found Contractor (n = 112) (Multiple Responses Allowed)	
Word of mouth	25%
Energy Trust website or service	3%
Online (Yelp, Angie's List, etc.)	17%
Retailer or manufacturer	4%
Govt./non-profit event or referral	2%
Prior use or acquaintance	7%
Advertisement	22%
Utility	4%
Miscellaneous or don't know	16%

Response	Percent
If Considered List: Considered Star Rating System (n = 16)	
Yes	14 of 16
No	0 of 16
Was not aware of system	2 of 16
Don't know or no answer	0 of 16
Number of Contractor Bids (n=111)	
One bid	46%
Two to three bids	44%
More than three bids	10%

Participants most commonly paid for their windows with cash (Table 78).

Table 78. Payment Method (n = 112) (Multiple Responses Allowed)

Method	Percent
Cash	51%
Credit card	28%
Loan	7%
On-bill financing	2%
Vendor financing	12%
Non-Energy Trust incentives	0%
Other	3%
Don't know or no answer	0%

Of all items assessed, the participant's contractor had the greatest influence on their purchase decision (Table 79).

Table 79. Influence Ratings

Influence Level	Energy Trust Incentive (n = 112)	Information and Materials from Energy Trust (n = 96)	Contractor (n = 111)
High	42%	38%	65%
Medium	22%	22%	10%
Low	36%	38%	25%
Don't know or no answer	0%	2%	0%

Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 80).

Table 80. Actions Would Have Taken without Program Support (n = 112)

Action	Count
Would not have had the services or work performed	1%
Would have postponed purchase and installation for a year or more	11%
Would have purchased or installed a less expensive alternative	11%

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Action	Count
Would have purchased or installed a smaller amount or quantity	4%
Would have purchased or installed a less energy efficient alternative	7%
Would have made fewer energy efficient improvements	7%
Would have done exactly the same thing	63%

Residential Washington

Consistent with 2018, Residential Washington participants (n = 80) installed a variety of gas measures (Table 82) and showed high levels of satisfaction with all facets of the program experience (Table 81).²²

Table 81. Satisfaction with Program and Contractor Experience

Satisfaction Item	Pct./Ct.
Program-related Experience	
Overall experience (n = 80)	100%
Comfort of home after measure (n = 78)	97%
Performance of new measure (n = 56)	96%
Ease of finding eligible products (n = 97)	97%
Incentive application form (n = 73)	98%
Time it took to receive incentive (n = 74)	94%
Information received (n = 26)	23 of 26
Contractor-related Experience	
Overall experience (n = 57)	95%
Ease of selecting a contractor (n = 53)	94%
Quality of installation (n = 57)	96%
Information on Energy Trust incentive (n = 53)	93%
Communication (n = 56)	91%
Completion of incentive paperwork (n = 44)	95%

Overall Satisfaction by Program Year

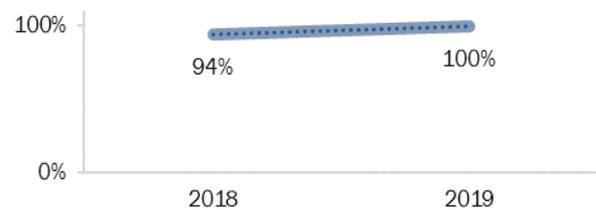


Table 82. Measures Installed by Residential Washington Participants (n = 80)

Measure	Count	Percent
Thermostat	26	33%
Gas Furnace	23	29%
Windows	22	28%
Gas Fireplace	9	11%
Residential Washington Total	80	100%

Note: Don't know and no response excluded from analysis.

About one-third of participants (30%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Of the 28 participants who installed a gas furnace, more than two-thirds (70%) said the furnace replaced an operational heating system (Table 83).

Table 83. Equipment Replaced by Gas Furnace (n = 28)

Response	Percent
Replaced operational heating system	20 of 28
Replaced non-operational heating system	8 of 28
Did not replace another heating system	0 of 20
Don't know or no answer	0 of 20

²² Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Of the nine participants who installed a gas fireplace, seven said they replace a wood burning fireplace or stove and the rest said they replaced an old gas fireplace unit (Table 84).

Table 84. Equipment Replaced by Gas Fireplace (n = 9)

Response	Count
Replaced wood burning fireplace or stove	7 of 9
Replaced old gas fireplace unit	2 of 9
Replaced old electric fireplace unit	0 of 9
Did not replace anything	0 of 9
Other	0 of 9

Most (87%) participants reported it was easy to find and select a contractor (Table 85). Participants most commonly found their contractor online or through word of mouth. Most (63%) *did not* report considering Energy Trust’s list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, about one-third (31%) considered the star rating system. About half (49%) of participants got two to three contractor bids to do the work and most others got a single bid (41%). Over two-thirds (68%) reported that the contractor did at least some of the application paperwork.

Table 85. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 54)		Considered List of Approved Trade Allies (n = 63)	
Easy (4 or 5)	87%	Yes	26%
Not easy or difficult (3)	10%	No	33%
Difficult (1 or 2)	3%	Was not aware of list	28%
Don't know or no answer	0%	Don't know or no answer	2%
How Participant Found Contractor (n = 58) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 18)	
Word of mouth	20%	Yes	6 of 18
Energy Trust website or service	2%	No	5 of 18
Online (Yelp, Angie’s List, etc.)	24%	Was not aware of system	6 of 18
Retailer or manufacturer	7%	Don't know or no answer	1 of 18
Govt./non-profit event or referral	3%	Number of Contractor Bids (n = 54)	
Prior use or acquaintance	13%	One bid	41%
Advertisement	5%	Two to three bids	49%
Utility	9%	More than three bids	10%
Miscellaneous or don't know	16%		

Participants most commonly paid for their equipment with cash or a credit card (Table 86).

Table 86. Payment Method (n = 80) (Multiple Responses Allowed)

Method	Percent
Cash	43%
Credit card	46%
Loan	4%
On-bill financing	2%

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Method	Percent
Vendor financing	7%
Non-Energy Trust incentives	0%
Other	1%
Don't know or no answer	0%

Of all items assessed and across all measures, contractors had the greatest influence on Residential Washington participant purchasing decisions (Table 87). For those that received gas fireplace incentives, the appearance and energy efficiency rating of their fireplace were particularly influential.

Table 87. Influence Ratings

Influence Level	Energy Trust Incentive (n = 79)	Information and Materials from Energy Trust (n = 69)	Retail Salesperson (n = 28)	Contractor (n = 59)	Appearance of Gas Fireplace (n = 9)	Energy Efficiency Rating of Fireplace (n = 9)
High	44%	34%	12 of 28	68%	5 of 9	6 of 9
Medium	19%	23%	3 of 28	13%	2 of 9	1 of 9
Low	35%	42%	12 of 28	19%	2 of 9	2 of 9
Don't know or no answer	0%	0%	0 of 28	0%	0 of 9	0 of 9

Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 88).

Table 88. Actions Would Have Taken without Program Support (n = 77)

Action	Count
Would not have purchased or installed the measure	4%
Would not have had the services or work performed	0%
Would have postponed purchase and installation for a year or more	17%
Would have purchased or installed a less expensive alternative	9%
Would have purchased or installed a smaller amount or quantity	2%
Would have purchased or installed a less energy efficient alternative	4%
Would have made fewer energy efficient improvements	2%
Would have installed a different type of heating system	2%
Would have done exactly the same thing	60%

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Moderate Income Track

Moderate income track participants (n = 75) installed a variety of measures (Table 90) and showed high levels of satisfaction with all facets of the experience except for the time it took to receive the incentive (Table 89).²³

Table 89. Satisfaction with Program and Contractor Experience

Satisfaction Item	Percent
Program-related Experience	
Overall experience (n = 74)	98%
Comfort of home after measure (n = 73)	95%
Performance of new measure (n = 64)	100%
Incentive application form (n = 47)	98%
Time it took to receive incentive (n = 42)	87%
Information received (n = 31)	99%
Contractor-related Experience	
Overall experience (n = 73)	98%
Ease of selecting a contractor (n = 69)	99%
Quality of installation (n = 74)	96%
Information on Energy Trust incentive (n = 63)	90%
Communication (n = 73)	95%
Completion of incentive paperwork (n = 52)	97%

Overall Satisfaction by Program Year

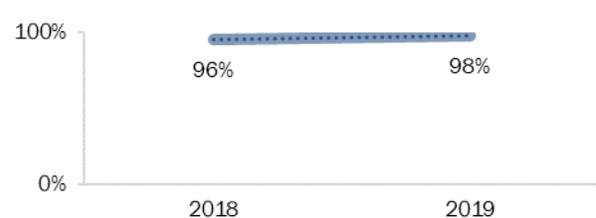


Table 90. Measures Installed by Moderate Income Track Participants (n = 75)

Measure	Count	Percent
Gas Furnace	51	68%
Ductless Heat Pump	9	12%
Ceiling Insulation	7	9%
Heat Pump	5	7%
Floor Insulation	2	3%
Wall Insulation	1	1%
All Measures	75	100%

Note: Don't know and no response excluded from analysis.

Half of the participants who installed a gas furnace and four-fifths of those who installed a heat pump said the new heating system replaced an operational one (Table 91).

Table 91. Equipment Replaced by Gas Fireplace and Heat Pump

Response	Percent, Gas Furnace (n = 50)	Count, Heat Pump (n = 5)
Replaced operational heating system	50%	4 of 5
Replaced non-operational heating system	44%	1 of 5
Did not replace another heating system	3%	0 of 5
Don't know or no answer	3%	0 of 5

About half of participants (46%) reported having obtained some sort of information from Energy Trust before taking the incented energy efficiency action.

Most (86%) participants reported it was easy to find and select a contractor (Table 92). Participants most commonly found their contractor online or via word of mouth. Most (67%) *did not* report considering Energy Trust's list of approved trade allies, in large measure because they were not aware of the list. Of those who *did* consider the list, three-quarters considered the star rating system. About two-fifths (41%) of participants

²³ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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got two to three contractor bids to do the work, and most others got a single bid (47%). About three-quarters (79%) reported that the contractor did at least some of the application paperwork.

Table 92. Contractor Selection and Use

Response	Percent	Response	Percent
Ease of Finding and Selecting Contractor (n = 75)		Considered List of Approved Trade Allies (n = 74)	
Easy (4 or 5)	86%	Yes	33%
Not easy or difficult (3)	10%	No	38%
Difficult (1 or 2)	0%	Was not aware of list	24%
Don't know or no answer	5%	Don't know or no answer	5%
How Participant Found Contractor (n = 74) (Multiple Responses Allowed)		If Considered List: Considered Star Rating System (n = 20)	
Word of mouth	18%	Yes	15 of 20
Energy Trust website or service	17%	No	4 of 20
Online (Yelp, Angie's List, etc.)	18%	Was not aware of system	0 of 20
Retailer or manufacturer	3%	Don't know or no answer	1 of 20
Govt./non-profit event or referral	2%	Number of Contractor Bids (n = 72)	
Prior use or acquaintance	10%	One bid	47%
Advertisement	13%	Two to three bids	41%
Utility	5%	More than three bids	13%
Miscellaneous or don't know	15%		

Participants most commonly paid for their equipment with cash or a credit card, although financing was more common than in other residential groups (Table 93).

Table 93. Payment Method (n = 75) (Multiple Responses Allowed)

Method	Percent
Cash	55%
Credit card	19%
Loan	17%
On-bill financing	8%
Vendor financing	3%
Non-Energy Trust incentives	0%
Other	6%
Don't know or no answer	2%

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Of all items assessed, a retail salesperson had the greatest influence on their purchase decision (Table 94).

Table 94. Influence Ratings

Influence Level	Energy Trust Incentive (n = 74)	Information and Materials from Energy Trust (n = 60)	Contractor (n = 75)
High	69%	61%	78%
Medium	10%	18%	7%
Low	16%	14%	14%
Don't know or no answer	0%	0%	0%

Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 95).

Table 95. Actions Would Have Taken without Program Support (n = 75)

Action	Count
Would not have purchased or installed the measure	9%
Would not have had the services or work performed	2%
Would have postponed purchase and installation for a year or more	17%
Would have purchased or installed a less expensive alternative	21%
Would have purchased or installed a smaller amount or quantity	3%
Would have purchased or installed a less energy efficient alternative	17%
Would have made fewer energy efficient improvements	5%
Would have installed a different type of heating system	2%
Would have done exactly the same thing	32%

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Nonresidential Combined Survey Results

Analysis of the survey results revealed details about participants’ experiences. Some key high-level findings are:

The Energy Trust incentive was the most consistently highly rated influencer, followed by information received from Energy Trust.

Nonresidential participants generally showed high levels of satisfaction with their program experience, including their experience with the program representative, with levels generally consistent with those observed in prior years. Satisfaction levels varied somewhat among quota groups.

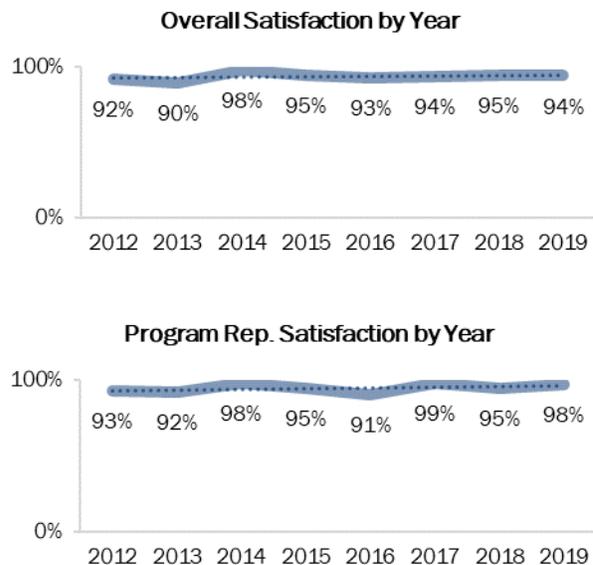
The following subsections show responses by quota group. Any reported difference between quota groups implies the difference was statistically significant by chi-square, at $p \leq .05$.²⁴

Existing Buildings - Oregon

Consistent with previous years, Existing Buildings participants (n = 90) showed high levels of satisfaction with all facets of the experience (Table 96).²⁵

Table 96. Satisfaction by Program Element

Program Element	Pct./Ct.
Program Level Satisfaction, By Program Element	
Overall experience (n = 89)	94%
Performance of new measure (n = 81)	98%
Interaction with program rep. (n = 80)	98%
Ease of applying for the incentive (n = 62)	89%
Incentive amount (n = 65)	97%
Time to receive incentive (n = 64)	86%
The scheduling process for services (n = 20)	18 o 20
Technical services (n = 18)	17 of 18
Overall Experience, by Program Track	
Custom (n = 10)	8 of 10
Lighting (n = 29)	28 of 29
Standard (n = 30)	93%
Direct Install (n = 20)	18 of 20
Interaction with Program Rep., by Program Track	
Custom (n = 10)	10 of 10
Lighting (n = 25)	25 of 25
Standard (n = 28)	28 of 28
Direct Install (n = 18)	16 of 18



Note: “Don’t know” and “no response” excluded from analysis. Dotted line in figure represents trend in overall satisfaction over time.

²⁴ The research team does not report on differences involving measure group samples of less than 15 because of low precision in those cases.

²⁵ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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All but one participant indicated they received some type of information or materials from Energy Trust. Fewer (21%) received technical services, such as a technical study. Of all items assessed, no or low-cost services and technical services had the greatest influence on their equipment upgrade decision (Table 97).

Table 97. Influence Ratings

Influence Level	Energy Trust Incentive (n = 70)	No-cost / Low-cost Services (n = 20)	Installation Contractor (n = 70)	Energy Trust Rep. (n = 86)	Technical Services (n = 19)	Information and materials from Energy Trust (n = 89)
High	86%	20 of 20	66%	73%	17 of 20	78%
Medium	11%	0 of 20	10%	13%	1 of 20	13%
Low	3%	0 of 20	23%	10%	0%	6%
Don't know or no answer	0%	0 of 20	1%	3%	1 of 20	3%

Nearly half (47%) participants said that, without the program, they would have postponed the project for a year or more or would not have made any energy efficiency improvements. Fewer said they would have taken some action that saved less energy, most commonly making fewer energy efficient improvements (Table 98).

Table 98. Actions Would Have Taken without Program Support (n = 90)

Action	Percent
Would not have taken energy saving action	47%
Would have postponed project for a year or more	39%
Would not have made any energy efficiency improvements	8%
Would have taken action that saved less energy	32%
Would have made fewer energy efficient improvements	30%
Would have made improvements that were less energy efficient	4%
Would have done exactly the same project and firm would have paid the full cost ^a	17%

^a Percentage is based on those who affirmed that their firm would have made the funds available.

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Existing Buildings - Washington

Consistent with previous years, Existing Buildings Washington participants (n = 9) showed high levels of satisfaction with all facets of the experience (Table 99).²⁶

Table 99. Satisfaction by Program Element

Program Element	Count
Overall experience (n = 9)	9 of 9
Performance of new measure (n = 9)	9 of 9
Interaction with program rep. (n = 8)	8 of 8
Ease of applying for the incentive (n = 9)	9 of 9
Incentive amount (n = 9)	9 of 9
Time to receive incentive (n = 8)	6 of 8
Technical services (n = 1)	1 of 1



All 9 participants indicated they received some type of information or materials from Energy Trust. One received technical services, such as a technical study. Of all items assessed, the Energy Trust incentive had the greatest influence on their equipment upgrade decision (Table 100).

Table 100. Influence Ratings

Influence Level	Energy Trust Incentive (n = 9)	Installation Contractor (n = 8)	Energy Trust Representative (n = 8)	Technical Services (n = 1)	Information and materials from Energy Trust (n = 9)
High	7 of 9	5 of 9	5 of 9	1 of 1	6 of 9
Medium	2 of 9	1 of 9	1 of 9	0 of 1	2 of 9
Low	0 of 9	2 of 9	2 of 9	0 of 1	1 of 9
Don't know or no answer	0 of 9	0 of 9	0 of 9	0 of 1	0 of 9

Participants were fairly split as to what they would have done if they had not received program assistance (Table 101).

Table 101. Actions Would Have Taken without Program Support (n = 9)

Action	Count
Would not have taken energy saving action	4 of 9
Would have postponed project for a year or more	4 of 9
Would not have made any energy efficiency improvements	0 of 9
Would have taken action that saved less energy	3 of 9

²⁶ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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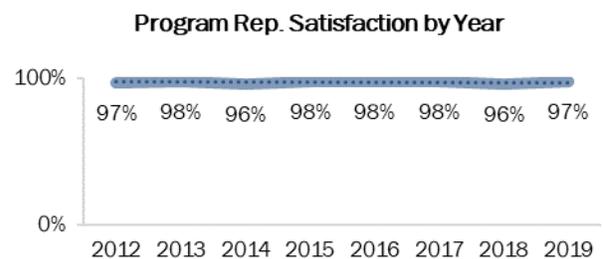
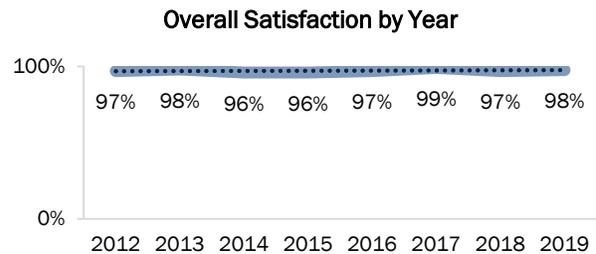
Action	Count
Would have made fewer energy efficient improvements	3 of 9
Would have made improvements that were less energy efficient	1 of 9
Would have done exactly the same project and firm would have paid the full cost	2 of 9

Production Efficiency

Consistent with previous years, Production Efficiency participants (n = 80) showed high levels of satisfaction with all facets of the experience (Table 102).²⁷

Table 102. Satisfaction by Program Element

Program Element	Pct./Ct.
Program Level Satisfaction, By Program Element	
Overall experience (n = 80)	98%
Performance of new measure (n = 72)	100%
Interaction with program rep. (n = 77)	97%
Ease of applying for the incentive (n = 77)	94%
Incentive amount (n = 78)	90%
Time to receive incentive (n = 75)	85%
Technical services (n = 34)	100%
Overall Experience, by Program Track	
Custom (n = 20)	19 of 20
Lighting (n = 30)	97%
Standard (n = 30)	100%
Interaction with Program Rep., by Program Track	
Custom (n = 19)	19 of 19
Lighting (n = 29)	27 of 29
Standard (n = 29)	29 of 29



Note: Don't know" and "no response" excluded from analysis. Dotted line in figure represents trend in overall satisfaction over time.

Most (81%) of participants indicated they received some type of information or materials from Energy Trust. Fewer (43%) received technical services, such as a technical study. Of all items assessed, the Energy Trust incentive had the greatest influence on their equipment upgrade decision, followed closely by technical services (Table 103).

²⁷ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Table 103. Influence Ratings

Influence Level	Energy Trust Incentive (n = 79)	Installation Contractor (n = 66)	Energy Trust Representative (n = 75)	Technical Services (n = 34)	Information and materials from Energy Trust (n = 73)
High	77%	41%	64%	74%	67%
Medium	16%	29%	19%	12%	16%
Low	5%	27%	16%	12%	15%
Don't know or no answer	1%	3%	1%	3%	1%

Participants were fairly split as to what they would have done if they had not received program assistance (Table 104).

Table 104. Actions Would Have Taken without Program Support (n = 80)

Action	Percent
Would not have taken energy saving action	39%
Would have postponed project for a year or more	36%
Would not have made any energy efficiency improvements	3%
Would have taken action that saved less energy	29%
Would have made fewer energy efficient improvements	23%
Would have made improvements that were less energy efficient	8%
Would have done exactly the same project and firm would have paid the full cost ^a	29%

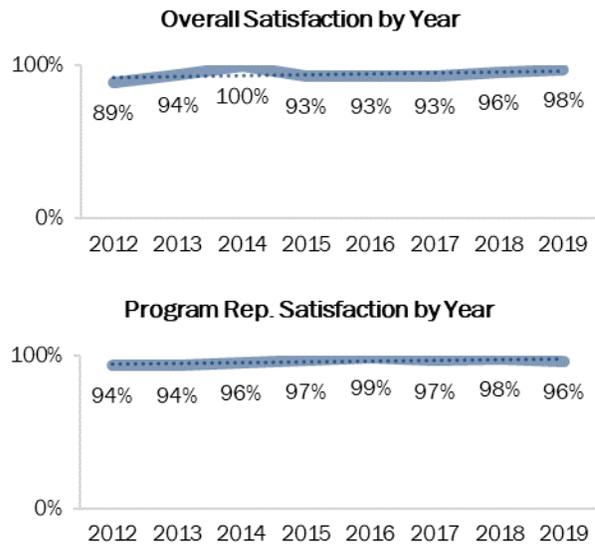
^a Percentage is based on those who affirmed that their firm would have made the funds available.

Existing Multifamily

Consistent with previous years, Existing Multifamily participants (n = 89) showed high levels of satisfaction with all facets of the experience (Table 105).²⁸

Table 105. Satisfaction by Program Element^a

Program Element	Pct./Ct.
Program Level Satisfaction, By Program Element	
Overall experience (n = 87)	98%
Performance of new measure (n = 67)	96%
Interaction with program rep. (n = 81)	96%
Ease of applying for the incentive (n = 55)	87%
Incentive amount (n = 57)	91%
Time to receive incentive (n = 53)	92%
The scheduling process for services (n = 29)	27 of 29
Tenant responses (n = 55)	89%
Walk-through survey (n = 28)	28 of 28
Technical services (n = 3)	19 of 19
Overall Experience, by Program Track	
Incentives (n = 58)	97%
Direct Install (n = 29)	29 of 29
Interaction with Program Rep., by Program Track	
Incentives (n = 52)	94%
Direct Install (n = 29)	29 of 29



Note: "Don't know" and "no response" excluded from analysis. Dotted line in figure represents trend in overall satisfaction over time.

Ten of the 89 participants reported residing in the building where the project was completed. Among the ten who reported residing in the building, five reported high levels of satisfaction with the comfort of the home resulting from the project. The remaining participants provided a "not applicable" (3 of 10) or "don't know" response (2 of 10).

²⁸ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

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Nearly all (92%) participants indicated they received some type of information or materials from Energy Trust. A small minority (3%) received technical services, such as a technical study. Of all items assessed, receiving no or low-cost services had the greatest influence on their equipment upgrade decision (Table 106).

Table 106. Influence Ratings

Influence Level	Energy Trust Incentive (n = 55)	No-cost / Low-cost Services (n = 29)	Energy Trust Representative (n = 79)	Walk-through Survey (n = 30)	Technical Services (n = 3)	Information and materials from Energy Trust (n = 82)
High	62%	26 of 29	61%	70%	2 of 3	70%
Medium	16%	2 of 29	10%	13%	1 of 3	11%
Low	22%	0 of 29	25%	7%	0 of 3	16%
Don't know or no answer	0%	1 of 29	4%	10%	0 of 3	4%

Participants most commonly said that, without the program, they would have done exactly the same thing they did through the program (Table 107).

Table 107. Actions Would Have Taken without Program Support (n = 89)

Action	Percent
Would not have taken energy saving action	22%
Would have postponed project for a year or more	16%
Would not have made any energy efficiency improvements	7%
Would have taken action that saved less energy	29%
Would have made fewer energy efficient improvements	26%
Would have made improvements that were less energy efficient	3%
Would have done exactly the same project ^a	46%

^a Note that due to a survey programming error, Existing Multifamily respondents who indicated they “would have done exactly the same project” were not asked the follow-up question if their firm would have made the funds available. The research team, however, was able to interpolate that an estimated 37% of all surveyed Existing Multifamily participants would have indicated that they would have made funds available to cover the entire cost of the energy efficiency improvements of the project. The research team calculated this estimate by multiplying the percentage of 2018 Existing Multifamily participants who indicated their firm would have made funds available (80% of those who said they “would have done exactly the same project”) by the percentage of 2019 Existing Multifamily participants (46%) who said they “would have done exactly the same project.”

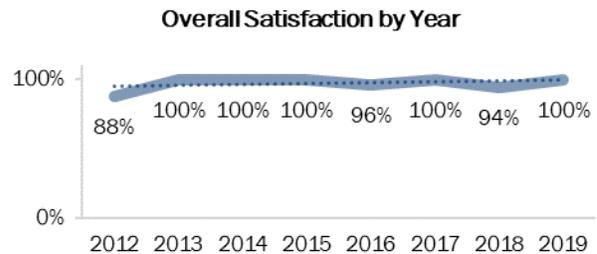
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Commercial Solar

Consistent with previous years, Commercial Solar participants (n = 14) showed high levels of satisfaction with all facets of the experience (Table 108).²⁹

Table 108. Satisfaction by Program Element

Program Element	Count
Overall experience (n = 14)	14 of 14
Performance of new measure (n = 11)	11 of 11
Interaction with program rep. (n = 11)	11 of 11
Ease of applying for the incentive (n = 7)	7 of 7
Incentive amount (n = 13)	11 of 13
Time to receive incentive (n = 11)	7 of 11
Energy Trust's inspection (n = 10)	10 of 10



Of all items assessed, the Energy Trust incentive had the greatest influence on their equipment upgrade (Table 109).

Table 109. Influence Ratings

Influence Level	Energy Trust Incentive (n = 14)	Installation Contractor (n = 12)	Energy Trust Representative (n = 12)	Information and materials from Energy Trust (n = 12)
High	12 of 14	9 of 14	5 of 14	6 of 14
Medium	2 of 14	0 of 14	4 of 14	5 of 14
Low	0 of 14	3 of 14	2 of 14	1 of 14
Don't know or no answer	0 of 14	0 of 14	1 of 14	0 of 14

Participants typically said that, without the program, they would either not have taken any energy saving action (most frequently reporting they would not have installed a solar PV system) or that they would have installed the exact same system (Table 110).

Table 110. Actions Would Have Taken without Program Support (n = 14)

Action	Count
Would not have taken energy saving action	7 of 14
Would not have installed the system	2 of 14
Would have postponed project for a year or more	5 of 14
Would have installed a smaller system	1 of 14
Would have installed exactly the same system and firm would have paid the full cost ^a	6 of 14

^a And who affirmed that their firm would have made the funds available.

Of the 14 surveyed Commercial Solar participants, ten reported they had applied for the Federal Tax Credit and two reported they had used financing to purchase their system. Two had received bids from a single contractor, nine had received bids from two to four contractors, and one received bids from six contractors.

²⁹ Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied).

Conclusions

The research team's findings led to the following conclusions regarding the Fast Feedback survey results.

Conclusion 1: Both residential and nonresidential participants are highly satisfied with Energy Trust overall, and nonresidential participants are similarly highly satisfied with their program representative.

Conclusion 2: Although still reasonably high, satisfaction with the information their contractor provided them regarding Energy Trust incentives was consistently the least satisfied item among residential participants.

Conclusion 3: Although still reasonably high, satisfaction with incentive turnaround time was consistently the least satisfied item among nonresidential participants.

Conclusion 4: Although many residential participants are unaware of Energy Trust's approved trade ally list, this lack of awareness does not seem to impede ease of finding a contractor.

Conclusion 5: In line with Energy Trust's DEI (diversity, equity, and inclusion) initiatives, Energy Trust may have room for improving participation among non-white Oregonians (particularly among Hispanic populations), as non-white Oregonians are disproportionately underrepresented in most surveyed residential quota groups.

Conclusion 6: The current method for collecting Fast Feedback surveys is successfully garnering sufficient participant responses while also balancing survey administration costs.

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