# 2020 Fast Feedback Survey
# End of Year Report

*Prepared for:*
*Energy Trust of Oregon*

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# Executive Summary

ADM Associates ("ADM") conducted the Energy Trust of Oregon 2020 Fast Feedback program participant survey from April 2020 to early February 2021, which included program participants from January through December 2020. This report summarizes the analysis conducted by ADM 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

The residential survey respondents generally well represented the Energy Trust participant base, with the following exceptions:[1] 1) homeowners represented a larger percentage of survey respondents than of Energy Trust participants; 2) people of color represented a somewhat larger share of survey respondents than of Energy Trust participants.

Results generally show high or moderately high satisfaction ratings across all facets of program experience for all measures. In nearly all cases, overall satisfaction remained consistent or showed a slight upward trend over time. Table ES-1 shows mean overall program satisfaction for each of two types of quota group.[2] "Exclusive" quota groups are based on state (Oregon or Washington) and, within Oregon, type of measure installed; each respondent appears in only one of these quota groups. "Cross-cutting" quota groups are based on features that may or may not apply to a project that are independent of the exclusive quota group; a respondent may appear in more than one of these quota groups.

The overall program influence on purchase decisions was moderately high to high for all quota groups.[3] Factors influencing the purchase decision varied somewhat by measure type, but a contractor was one of the most commonly identified influencers, followed by the measure's efficiency rating. The Energy Trust incentive, Energy Trust information or materials, and a salesperson or retailer were commonly identified influencers for certain measures.

Among participants who used a contractor, by far the most consistently identified way participants found that contractor was by word of mouth. Web searches, use of an online referral or rating service (e.g., Yelp or Angie's List), and contractor advertisements were also frequently identified for most quota groups.

[1] As compared with data from the 2019 Customer Insights Study (CIS). The CIS comparison group is only of "direct participants." That is, it excludes households that indirectly benefited from improvements to their homes not tied directly to their units (e.g., insulation and central hot water or heating), as a result of their landlords' program participation, as such participants are not represented in the Fast Feedback survey.

[2] For both residential and nonresidential surveys, satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied). "Don't know" and "no response" were excluded from the denominators for all analyses to be consistent with previous years.

[3] Influence was defined as a rating of 4 or 5 on a scale from 1 (did not have any influence) to 5 (had a great influence). "Don't know" and "no response" were excluded from the denominators for all analyses. For each respondent, "overall influence" rating was equal to the highest influence rating that respondent provided for all factors reflecting Energy Trust influence. See Section 3.2 for more details.

*Table ES-1: Summary of Residential Satisfaction*

| Quota Group | Number of Survey Respondents | Overall Satisfaction |
|---|---|---|
| Exclusive Quota Groups | | |
| Residential - Oregon | 883 | 94% |
| Smart Thermostats | 71 | 94% |
| Heat Pump Advanced Controls | 57 | 94% |
| Ceiling Insulation | 88 | 93% |
| Other Insulation | 88 | 89% |
| Ducted Heat Pumps | 81 | 97% |
| Ductless Heat Pumps | 96 | 95% |
| Central Air Conditioner | 66 | 92% |
| Windows | 90 | 94% |
| Gas Fireplaces | 86 | 97% |
| Gas Furnaces | 89 | 100% |
| Spa Covers | 71 | 89% |
| Residential - Washington | 169 | 96% |
| Residential Solar PV | 149 | 94% |
| Cross-Cutting Quota Groups | | |
| Moderate Income Track | 96 | 96% |
| Rental Properties | 76 | 100% |
| Fixed-Price Promotions | 73 | 96% |
| Instant Incentives | 322 | 96% |
| Pay for Performance Pilot | 102 | 92% |

## Nonresidential Survey Summary

Results generally show high satisfaction ratings across all facets of program experience for all quota groups. In nearly all cases, satisfaction with the overall program experience and with interactions with program representatives remained consistent or showed a slight upward trend over time. Respondents across all quota groups reported influence from multiple factors. Although some factors tended to have more influence on average than others, no single factor showed consistently greater influence across programs and quota groups than any other – that is, the most influential factor tended to be specific to the group in question.

Table ES-2 shows mean overall program satisfaction for each of quota group. Again, each respondent appears in only one “exclusive” quota group but may appear in multiple cross-cutting quota groups.

*Table ES-2: Summary of Nonresidential Satisfaction*

| Quota Group | Number of Survey Respondents | Overall Progam Satisfaction | Interaction with Program Representative |
|---|---|---|---|
| **Existing Buildings** | | | |
| Existing Buildings End-Use Quotas (Exclusive Quotas) | | | |
| Assembly/Religious | 40 | 100% | 97% |
| Auto Services | 56 | 96% | 100% |
| Education | 34 | 100% | 96% |
| Government | 51 | 100% | 100% |
| Grocery | 41 | 98% | 95% |
| Healthcare | 32 | 90% | 100% |
| Higher Education | 9 | 100% | 100% |
| Hospitality | 29 | 97% | 93% |
| Office | 66 | 98% | 100% |
| Other Commercial | 15 | 100% | 100% |
| Recreation | 38 | 94% | 97% |
| Restaurant | 76 | 99% | 100% |
| Retail | 71 | 100% | 100% |
| Warehouse | 53 | 98% | 98% |
| Washington | 13 | 100% | 100% |
| Commercial Solar | 14 | 92% | 75% |
| Existing Buildings Cross-Cutting Quotas | | | |
| Direct Install (DI) | 122 | 100% | 100% |
| Lighting (Non-DI) | 346 | 98% | 98% |
| BE TLED Giveaway | 93 | 99% | 99% |
| **Multifamily** | | | |
| Appliances | 22 | 100% | 100% |
| Direct Install | 25 | 100% | 100% |
| Hot Water | 7 | 86% | 86% |
| HVAC | 49 | 100% | 100% |
| Insulation and Windows | 48 | 98% | 100% |
| Lighting | 38 | 95% | 100% |
| Other Measures | 0 | n/a | n/a |
| Products | 3 | 100% | 100% |

Continued

*Table ES-2: Summary of Nonresidential Satisfaction (continued)*

| Quota Group | Number of Survey Respondents | Overall Progam Satisfaction | Interaction with Program Representative |
|---|---|---|---|
| **Production Efficiency** | | | |
| Production Efficiency End-Use Quotas (Exclusive Quotas) | | | |
| Agriculture | 50 | 98% | 94% |
| Compressed air | 3 | 100% | 67% |
| HVAC and controls | 22 | 95% | 100% |
| Lighting | 88 | 97% | 99% |
| Other industrial measures | 63 | 100% | 100% |
| Pumps and Motors | 35 | 100% | 97% |
| Refrigeration | 15 | 93% | 100% |
| Production Efficiency Cross-Cutting Quotas | | | |
| PE TLED giveaway | 11 | 100% | 100% |
| Custom projects | 28 | 100% | 96% |
| Standard projects | 160 | 98% | 98% |
| Agriculture sector | 123 | 98% | 97% |
| Food & beverage sector | 28 | 100% | 100% |
| High tech sector | 11 | 100% | 100% |
| Metals sector | 12 | 100% | 90% |
| Wood & paper sector | 21 | 100% | 100% |

The overall program influence on purchase decisions was high for all programs and program tracks. It was moderately high or high for all quota groups. The small sample sizes argue for using caution in interpreting findings at the individual quota group level. However, the Energy Trust incentive consistently appeared to have relatively high influence in several programs and tracks. Some other influencers stood out somewhat in particular tracks within particular programs but did not appear to have consistently high influence across programs and tracks.

# 1 Introduction

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

ADM Associates ("ADM") conducted the 2020 Energy Trust Energy Trust Fast Feedback program participant satisfaction survey from April 2020 into February 2021. In 2020, Energy Trust set a goal achieving 10% relative precision at 90% confidence (90/10 precision) for satisfaction and influence results at the program level on a quarterly basis and for individual quota groups on an annual basis.

Quota groups are defined somewhat differently for the residential and nonresidential surveys. The residential survey has two types of quota groups. The first is based primarily on the type of measure the participant installed, but also includes a quota group for all residential participants from Washington. We refer to these as the "exclusive" quota groups. The second type of residential quota group is based on features that may or may not apply to a project that are independent of the type of measure or location of the participant. We refer to these as "cross-cutting" quota groups. The quota groups are shown in Table 1-1.

*Table 1-1: Residential Survey Quota Groups*

| Exclusive Quota Groups | | Cross-Cutting Quota Groups |
|---|---|---|
| Smart Thermostats | Windows | Moderate Income Track |
| Heat Pump Advanced Controls | Gas Fireplaces | Rental Properties |
| Ceiling Insulation | Gas Furnaces | Fixed-Price Promotions |
| Other Insulation | Spa Covers | Instant Incentives |
| Ducted Heat Pumps | Residential Solar PV | Pay for Performance Pilot |
| Ductless Heat Pumps | Residential Washington | |
| Central Air Conditioner | | |

Thus, for example, a residential participant may have received an instant incentive for any of the measure types.

The nonresidential survey also has separate sets of quota groups for each of the three programs (Existing Buildings, Production Efficiency, Multifamily). Existing Buildings and Production Efficiency have both exclusive quota groups and cross-cutting quota groups, while Multifamily has only exclusive quota groups.

For Existing Buildings, the exclusive quota groups are based primarily on building end-use or business type but also include quotas for participants from Washington and those with commercial solar projects. The three Existing Buildings cross-cutting quota groups are related to measure implementation or a combination of measure type (lighting) and implementation.

For Production Efficiency and Multifamily, the exclusive quota groups are based primarily on application end-use or measure type. The eight Production Efficiency cross-cutting quota are related to project track, market sub-sector, or a combination of measure type (lighting) and implementation. Table 1-2 shows the nonresidential survey quota groups.

*Table 1-2: Nonresidential Survey Quota Groups*

| Program | Exclusive Quota Groups | | Cross-Cutting Quota Groups | |
|---|---|---|---|---|
| Existing Buildings | Assembly/Religious<br>Auto Services<br>Education<br>Government<br>Grocery<br>Healthcare<br>Higher Education<br>Hospitality | Office<br>Other Commercial<br>Recreation<br>Restaurant<br>Retail<br>Warehouse<br>Commercial Solar<br>Washington | Direct Install (DI)<br>Non-DI Lighting<br>TLED Giveaway | |
| Production Efficiency | Agriculture<br>Compressed Air<br>HVAC and Controls<br>Lighting | Other Industrial Measures<br>Pumps and Motors<br>Refrigeration | TLED Giveaway<br>Standard Projects<br>Custom Projects<br>Agriculture Sector | Food & Beverage Sector<br>High Tech Sector<br>Metals Sector<br>Wood & Paper Sector |
| Existing Multifamily | Appliances<br>Direct Install<br>Hot Water<br>HVAC | Insulation and Windows<br>Lighting<br>Other Measures<br>Products | None | |

This report describes the Fast Feedback survey methods and the results for each quota group. The remainder of this report is divided into the following sections.

Section Two provides a brief explanation the survey's implementation, information on contact information availability, a summary of survey responses by sector and group, and a description of how ADM weighted the combined data to control for possible mode and sampling effects.

Sections Three and Four 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 quota groups.

Finally, Section Four presents our conclusions from the Fast Feedback data collection.

# 2 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.

## 2.1 Sample Development

Each month, Energy Trust Evaluation staff provided ADM with a dataset of recent survey-eligible residential and non-residential participants. ADM carried out similar data cleaning and sampling procedures for both the residential and nonresidential data sets. ADM used an Excel workbook tool that cleaned and deduplicated data sets and then used a weighted randomization process to select participants for the sample. The workbook tool accomplished this while keeping the original data set received from Energy Trust intact, rather than deleting records or splitting files, which may introduce error.

The tool first flagged as ineligible for selection any records identified as "do not contact" or as having been surveyed recently (defined as in the past year for residential records and in the past six months for nonresidential records).

The tool then identified the first record in the data set for each unique participant, where "unique participant" is anyone that does not match another record on the unique Contact ID or Project ID fields or on any combination of name and any phone number or email address.[4]

For each unique participant with more than one project or measure represented in the data set, the tool then aggregated all quota-related information to the first record, with separate fields representing separate projects or measures.

For each unique, eligible participant with multiple projects or measures, the workbook used a weighted random algorithm to select one project or measure to represent that participant. The weight was based on that project or measure type's frequency among the unique, eligible participants as a ratio to the target number of completions for that type. Thus, those quota groups that appeared least frequently relative to the target number of completions had the highest weights. The weight was multiplied by a random number to create a weighted random number. Thus, across multiple participants with two or more measures or projects, the measures or projects with greater weight are selected more frequently than those with smaller weights; but for a given participant with two or more measures or projects, a measure or project with a lower weight could be selected instead if it was assigned a higher random number prior to the weighting.

Once a project or measure was selected for each unique, eligible participant, the workbook used a separate weighted random algorithm to select participants to generate a sample composed of project and measure types in rough proportion to the desired composition of the survey completions. Based on prior

[4] Some email addresses are not unique to an individual. For example, some companies may have an "info" or "sales" email address that may be accessed or used by multiple individuals.

Fast Feedback survey results, we sampled at an approximately 5:1 ratio for residential customers and a 4:1 ratio for nonresidential customers.

## 2.2 Survey Fielding

ADM administered the residential survey first on the web, with follow-up phone calls to non-respondents. At the beginning of the monthly survey, ADM 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 $10 gift card for completing the survey. ADM 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 after 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.

ADM 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.

## 2.3 Availability of Contact Information

Table 2-1 shows the percentages of all residential and nonresidential program participants with phone and email contact information. In the residential sector participants were somewhat more likely to have email than phone information, but in the nonresidential sector, they were more likely to have phone information. All participants had at least some type of contact information.

*Table 2-1. Availability of Contact Information by Sector and Type*

| Type of Information | Residential Sector (*n* =25,875) | Nonresidential Sector (*n* = 5,812) |
|---|---|---|
| Phone | 80% | 100% |
| Email | 90% | 92% |
| Both | 70% | 92% |
| Either | 100% | 100% |

## 2.4 Number of Respondents

Table 2-2 shows response rate information. Recall that the recruitment approach was: 1) send email recruitments to all sampled customers with available email addresses; 2) make phone call to all email nonresponders with available phone numbers; and 3) make phone calls to all sampled customers with available phone numbers but no available email addresses. The email recruitments produced a 15% response rate. The phone follow-ups to email nonresponders had a 33% response rate, which resulted in an overall response rate of 21% for the participants initially contacted by email. Phone attempts with participants with no available email information produced a 36% response rate. The overall residential

survey response rate, across all attempt modes, was 22%.[5] Of those survey completions with respondents with available email addresses, 69% were completed by web and 31% by phone.

*Table 2-2. Residential Survey Response Rate by Recruitment Mode*

| Recruitment Mode | Number Attempted | Number Responses | Response Rate |
|---|---|---|---|
| Email | 5,061 | 748 | 15% |
| Phone, after email nonresponse | 1,028 | 336 | 33% |
| Email and phone | 5,061 | 1,084 | 21% |
| Phone only[1] | 327 | 117 | 36% |
| All phone recruitment[2] | 1,355 | 453 | 33% |
| Overall | 5,388 | 1,201 | 22% |

[1]No email address available.
[2]"Phone – email nonrespondents" plus "Phone only."

The response rate for phone attempts with email respondents (33%) did not differ significantly from that for phone only (36%; $z = -1.03$, $p > 0.30$). Thus, unless there is some difference among participants, related to that availability of an email address, that would affect likelihood of a phone response, it does not appear that emailing customers before calling them affects the phone response rate.

Table 2-3 shows the total number of residential survey responses by quota group. ADM completed the survey with 1,201 residential respondents. Residential responses met or exceeded all quotas except for Heat Pump Advanced Controls and Residential Solar PV. ADM made multiple contact attempts with all available participants in these quota groups.

*Table 2-3. Number of Residential Responses by Mode and Quota Group*

| Measure Group | Total | % Web | % Phone | 12-Month Quota |
|---|---|---|---|---|
| Oregon Incentives (Exclusive Quotas) | | | | |
| Smart Thermostats | 71 | 82% | 18% | 68 |
| Heat Pump Advanced Controls | 57 | 30% | 70% | 64 |
| Ceiling Insulation | 88 | 63% | 38% | 64 |
| Other Insulation | 88 | 65% | 35% | 60 |
| Ducted Heat Pumps | 81 | 43% | 57% | 64 |
| Ductless Heat Pumps | 96 | 49% | 51% | 68 |
| Central Air Conditioner | 66 | 59% | 41% | 64 |
| Windows | 90 | 69% | 31% | 68 |
| Gas Fireplaces | 86 | 64% | 36% | 68 |
| Gas Furnaces | 89 | 40% | 60% | 68 |

[5] It is difficult to know exactly how to compare this year's overall rate to that for 2019. The residential survey appeared to follow the same recruitment method. The 2019 end of year report identifies an overall response rate of 30%, with 21% for web and 23% for phone. The 2019 phone response rate appears to include phone-only participants as well as those advanced to phone recruitment after not responding to the web survey. Thus, the 2019 survey appears to have obtained a better response to the web recruitment but ours obtained better a response rate to the phone recruitments.

| Measure Group | Total | % Web | % Phone | 12-Month Quota |
|---|---|---|---|---|
| Spa Covers | 71 | 72% | 28% | 60 |
| Subtotal: Oregon Incentives | 883 | 58% | 42% | 716 |
| Residential WA & Solar PV (Exclusive Quotas) | | | | |
| Residential - Washington | 169 | 71% | 29% | 164 |
| Residential Solar PV | 149 | 78% | 22% | 168 |
| Cross-Cutting Quotas | | | | |
| Moderate Income Track | 96 | 35% | 65% | 68 |
| Rental Properties | 76 | 40% | 50% | 60 |
| Fixed-Price Promotions | 73 | 35% | 53% | 60 |
| Instant Incentives | 322 | 147% | 56% | 68 |
| Pay for Performance Pilot | 102 | 44% | 59% | 100 |
| Oregon Total | 1,032 | 61% | 39% | 740 |
| Program Total[1] | 1,201 | 62% | 38% | 1,048 |

[1] The Program Total includes both Oregon and Washington. The Moderate Income Track applies to both Oregon and Washington projects, while the other cross-cutting quotas apply only to Oregon projects.

ADM obtained an overall response rate of 39% for the nonresidential survey. However, the response rate varied considerably by program. We obtained a 60% response rate for Existing Buildings, 25% for Production Efficiency, and 14% for Multifamily.

Table 2-4 shows the number of nonresidential survey responses by quota group. The survey fell short of about two-thirds of the exclusive quotas for Existing Buildings, about three-quarters of those for Production Efficiency, and all Multifamily quotas despite ADM's having made multiple contact attempts with all available participants in these quota groups.

*Table 2-4. Number of Nonresidential Responses by Quota Group*

| Measure Group | Total | 12-Month Quota |
|---|---|---|
| **Existing Buildings** | | |
| Existing Buildings End-Use Quotas (Exclusive Quotas) | | |
| Assembly/Religious | 40 | 48 |
| Auto Services | 56 | 56 |
| Education | 34 | 52 |
| Government | 51 | 56 |
| Grocery | 41 | 52 |
| Healthcare | 32 | 40 |
| Higher Education | 9 | 28 |
| Hospitality | 29 | 48 |
| Office | 66 | 60 |
| Other Commercial | 15 | 20 |
| Recreation | 38 | 44 |
| Restaurant | 76 | 60 |
| Retail | 71 | 60 |
| Warehouse | 53 | 56 |

| Measure Group | Total | 12-Month Quota |
|---|---|---|
| Subtotal: End-Use Quotas | 611 | 680 |
| Existing Buildings WA & Commercial Solar (Exclusive Quotas) | | |
| Existing Buildings - Washington | 13 | 20 |
| Commercial Solar | 14 | 32 |
| Existing Buildings Cross-Cutting Quotas | | |
| Direct Install (DI) | 122 | 60 |
| Lighting (Non-DI) | 346 | 68 |
| TLED Giveaway | 93 | 60 |
| Total: Existing Buildings | 638 | 792 |
| **Production Efficiency** | | |
| Production Efficiency End-Use Quotas (Exclusive Quotas) | | |
| Agriculture | 50 | 52 |
| Compressed air | 3 | 40 |
| HVAC and controls | 22 | 24 |
| Lighting | 88 | 60 |
| Other industrial measures | 63 | 56 |
| Pumps and Motors | 35 | 44 |
| Refrigeration | 15 | 32 |
| Subtotal: End-Use Quotas | 276 | 308 |
| Production Efficiency Cross-Cutting Quotas | | |
| TLED giveaway | 11 | 40 |
| Custom projects | 28 | 52 |
| Standard projects | 160 | 64 |
| Agriculture sector | 123 | 60 |
| Food & beverage sector | 28 | 44 |
| High tech sector | 11 | 24 |
| Metals sector | 12 | 40 |
| Wood & paper sector | 21 | 40 |
| Total: Production Efficiency | 276 | 404 |
| **Multifamily** | | |
| Appliances | 22 | 60 |
| Direct Install | 25 | 64 |
| Hot Water | 7 | 56 |
| HVAC | 49 | 64 |
| Insulation and Windows | 48 | 60 |
| Lighting | 38 | 60 |
| Other Measures | 0 | 20 |
| Products | 3 | 60 |
| Total: Multifamily | 192 | 444 |

For Existing Buildings and Production Efficiency, the primary reason for falling short of quotas was lack of sample because of low program participation. For the Multifamily Program, two additional factors played a role. First, it was much more challenging to reach a participant – the percentage of contact attempts

that resulted in no answer and no voice mail was much higher than for the other programs (Table 2-5). Second, once we reached someone, we were much more likely to be told that the contact of record was not available or that the project information we provided was insufficiently detailed.

*Table 2-5: Contact Dispositions by Program*

| Disposition | Count | Existing Buildings | Production Efficiency | Multifamily |
|---|---|---|---|---|
| Completed | 807 | 55% | 55% | 28% |
| No answer, no voice mail | 390 | 21% | 20% | 33% |
| Willing, but unable | 130 | 4% | 4% | 13% |
| No available contact | 68 | 4% | 2% | 7% |
| Insufficient project information | 62 | 0% | 2% | 6% |
| Refusal | 92 | 4% | 8% | 5% |
| Requested survey by email | 44 | 3% | 1% | 4% |

## 2.5 Language of Survey and Language Barriers

All surveys were offered in English and Spanish. One residential survey and six nonresidential surveys were completed in Spanish; all others were completed surveys in English. In addition to the one residential survey completion in Spanish, there were three instances in which someone started the survey in Spanish but did not complete it. Two of those instances were web surveys and one was a phone survey. The partial Spanish phone survey was done by a fluent Spanish speaker and did not represent a language barrier. There were no cases in which someone started the nonresidential in Spanish but did not complete it.

We encountered no instances of language barriers in the residential sector or nonresidential sector.

## 2.6 Creation and Application of Data Weights

ADM applied three types of weights to survey data:

- For both the residential and nonresidential surveys, in any analyses performed across quota groups, we applied quota group weights is to ensure that program-level results are representative of the respective participant populations. This is necessary because – in both the residential and nonresidential sectors – attaining the completion quotas for the various quota groups results in overall samples that are not representative of the project population as a whole.
- For just the residential survey, we applied survey mode weights is to control for any possible survey mode effects that might arise from differences in the likelihood that a residential participant would complete the phone or web survey as a result of the different recruitment methods.

For each quota group, ADM created a Quota Group weight that was equal to that group's share of the program population divided by that group's share of the survey completions for that program, or:

(Equation 1)

$$\frac{\textit{Quota group \% of population}}{\textit{Quota group \% of survey completions}}$$

This assigns greater weight to observations for which the completions under-represent the population, and less weight to observations for which the completions over-represent the population.

Some analyses were performed just on respondents within a given cross-cutting quota group. Such participants were not distributed uniformly across the various measure-level, or exclusive, quota groups. Therefore, for those analyses, we calculated and applied a separate set of Quota Group weights for each cross-cutting quota group.

Survey results are reported separately for each program. Therefore, we calculated Quota Group weights separately for each program in both the residential and nonresidential sectors. In the residential sector, Oregon Incentives, Existing Buildings - Washington, and Residential Solar PV are considered separate programs for the purpose of creating weights. Thus, the weights for the various quota groups within Oregon Incentives are based on the distribution of the sample and the population across jut those groups. Since Existing Buildings - Washington and Residential Solar PV each have only one quota group, the Quota Group weight for each of those is by definition 1.0.

In the nonresidential sector, we calculated Quota Group weights separately for Existing Buildings - Oregon, Existing Buildings - Washington, Commercial Solar, Production Efficiency, and Multifamily. Again, as Existing Buildings – Washington and Commercial Solar each have only one quota group, the Quota Group weight for each of those is by definition 1.0.

For the residential survey, ADM created Mode weights based on both the mode of recruitment and the mode of survey completion. Recall that participants with available email contact information were in an email-first-then phone (“email-phone”) recruitment condition. Participants with no available contact information were in a phone-only recruitment condition. The two recruitment modes did not correspond to two separate modes of survey completion: someone in the phone-only recruitment condition could complete the survey only by phone, but someone in the email-phone condition could complete the survey by phone or email.

The above arrangement complicates the creation of the weights. If it were simply a matter of weighting by recruitment mode, then the weight would be equal to the overall survey response rate divided by the response rate for that recruitment mode, or:

(Equation 2)

$$\frac{\textit{Overall response rate}}{\textit{Recruitment mode response rate}}$$

This assigns greater weight to observations recruited through the mode with the lower response rate (in this case, phone-only), and less weight to those recruited through the mode with the greater response rate (in this case, email-phone).

This, however, does not completely control for mode differences, as it would assign the same weight to all individuals in the email-phone recruitment condition regardless of whether they completed the survey by phone or web. We therefore calculated a second weight to adjust for the respective probabilities of

completing the phone or web survey, given the email-phone recruitment. For each survey completion mode, we calculated the weight as:

(Equation 3)

$$\frac{\textit{Overall email-phone response rate / 2}}{\textit{Percentage of completions from email-phone recruitment}}$$

The overall response rate divided by two represents the mean response rate for each mode, where the denominator is all completions from the email-phone recruitment condition. We then multiplied this second weight by the overall recruitment mode weight (Equation 2) to generate a final Mode weight for each survey completion mode in the email-phone recruitment condition. For respondents in the phone-only recruitment condition, the Mode weight was equal to the recruitment mode weight (Equation 2).

ADM weighted each residential survey response with the product of the Quota Group weight and the Mode weight. ADM weighted nonresidential survey responses only by the Quota Group weight.

Unless otherwise specified, all residential and nonresidential results reported below are based on analyses with weighted data.

# 3 Residential Survey Results

The following subsections provide information on the demographics and program experience of residential survey participants.

## 3.1 Residential Demographics

Residential respondents were largely the occupants of the property where the participation occurred, nearly all of whom were the owners (Table 3-1).[6] The majority of those who were not occupants were the landlord.

*Table 3-1: Occupancy of Home Where Participation Occurred, Residential Respondents*

| Response | Residential Oregon | Residential Washington | Residential Solar | Oregon (US Census)[1] | Customer Insights Survey[2] |
|---|---|---|---|---|---|
| **Occupancy** | | | | | |
| | (n = 883) | (n = 169) | (n = 149) | n/a | (n = 3,707) |
| Occupant | 92% | 99% | 96% | 92% | 98% |
| Not occupant | 8% | <1% | 3% | 8% | 2% |
| Refused | 0% | <1% | <1% | n/a | 0% |
| **Ownership (Occupants)** | | | | | |
| | (n = 772) | (n = 166) | (n = 144) | n/a | (n = 3,640) |
| Rent | 2% | 1% | 0% | 38% | 10% |
| Own | 97% | 98% | 99% | 62% | 90% |
| Other | 1% | 1% | 1% | n/a | 0% |
| **Relationship to Premise (Non-Occupants)** | | | | | |
| | (n = 89) | (n = 2) | (n = 4) | n/a[3] | n/a[3] |
| Landlord | 69% | 0% | 0% | n/a | n/a |
| Property manager | 17% | 0% | 0% | | |
| Other[4] | 13% | 100% | 100% | | |

[1] Percentages based on US Census Tables DP04 (Occupancy) and B25003 (Ownership). For Occupancy, we divided the number of occupied housing units by the total number of housing units in Energy Trust's Oregon territory.
[2] Counts of respondents are unweighted, but percentages are based on weighted data. Excludes "indirect participants" – i.e., renters who indirectly benefited from improvements to their buildings not tied directly to their units (e.g., insulation and central hot water or heating), as a result of their landlords' program participation, as they are not represented in the Fast Feedback survey.
[3] No comparable data are available.
[4] In most cases the respondent was a non-occupant owner, was in the process of selling the home, or recently had sold it.

[6] We exclude "don't know" and "refused" from the denominator for all residential characteristics percentages to facilitate comparison with Census data.

The distribution of self-identified race and ethnicity was similar across the three programs and the various quota groups, with between two-thirds and three-quarters of respondents reporting White or Caucasian race (Table 3-2 through Table 3-6). Reported income level was skewed toward higher incomes. The most commonly reported age bracket was 45 to 54 years old and the most commonly reported size of household was two individuals.

*Table 3-2: Demographics of Residential Respondents[1]*

| Demographic Characteristic | Residential Oregon (n = 883) | Residential Washington (n = 169) | Residential Solar (n = 149) | Oregon (US Census)[2] | Customer Insights Survey (n = 3,707)[3] |
|---|---|---|---|---|---|
| Race/Ethnicity[4] | | | | | |
| Asian only | 6% | 9% | 4% | 5% | 6% |
| Black only | 0% | 2% | 1% | 2% | 1% |
| Hispanic/Latino, any race | 8% | 3% | 6% | 13% | 5% |
| Native American only | 1% | 0% | 2% | 1% | 1% |
| Other only | 6% | 9% | 8% | 0% | 1% |
| Two or more | 2% | 1% | 1% | 4% | 3% |
| Persons of color - total | 24% | 24% | 22% | 25% | 17% |
| White only | 76% | 76% | 78% | 75% | 83% |
| Income | | | | | |
| Under $30k | 5% | 2% | 4% | 24% | 9% |
| $30k to under $50k | 14% | 5% | 10% | 18% | 9% |
| $50k to under $70k | 16% | 14% | 15% | 15% | 14% |
| $70k to under $100k | 20% | 25% | 23% | 17% | 20% |
| $100k to under $200k | 35% | 37% | 38% | 20% | 37% |
| $200k+ | 10% | 16% | 10% | 6% | 10% |
| Age (Years) | | | | | |
| Less than 18 | 0% | 0% | 0% | 20% | Not asked |
| 18 to 24 | 0% | 0% | 1% | | |
| 25 to 34 | 14% | 10% | 6% | | |
| 35 to 44 | 25% | 19% | 27% | 17% | |
| 45 to 54 | 13% | 15% | 16% | 18% | |
| 55 to 64 | 23% | 18% | 12% | 19% | |
| 65 or older | 25% | 38% | 38% | 26% | |

Continued on next page.

| Demographic Characteristic | Residential Oregon (n = 883) | Residential Washington (n = 169) | Residential Solar (n = 149) | Oregon (US Census)[2] | Customer Insights Survey (n = 3,707)[3] |
|---|---|---|---|---|---|
| Household Size (Number of People in Household) | | | | | |
| One | 11% | 11% | 7% | 28% | 14% |
| Two | 39% | 41% | 51% | 37% | 44% |
| Three | 17% | 15% | 13% | 15% | 17% |
| Four | 16% | 17% | 17% | 12% | 15% |
| Five | 7% | 7% | 5% | 5% | 6% |
| Six or more | 3% | 3% | 4% | 3% | 3% |

[1] The denominators of all percentages exclude survey respondents who refused to answer that question.

[2] For race and ethnicity, we used the 2018 ACS 1-Year Estimates-Public Use Microdata Sample (PUMS), cross-tabulating race and Hispanic/Latino ethnicity to produce categories comparable to the Census data. We used ACS tables S1901 for income, S2502 for age, and B25009 for household size. Two Census income brackets – $25,000 to $34,999 and $50,000 to $74,999 – overlap the Fast Feedback brackets. We allocated shares of the percentages within those brackets proportionally to the Fast Feedback brackets. For example, the $25,000 to $34,999 bracket contains 10% of the population; we allocated 5% to the "Under $30k" bracket and 5% to the "30k to under $50k" bracket.

[3]Excludes "indirect participants" – i.e., renters who indirectly benefited from improvements to their buildings not tied directly to their units (e.g., insulation and central hot water or heating), as a result of their landlords' program participation, as they are not represented in the Fast Feedback survey.

[4] Native American includes Alaska Native, and Asian includes Asian Indian, Hawaiian, and Other Pacific Islanders.

*Table 3-3: Race or Ethnicity by Residential Quota Group*

| Quota Group | Asian Only | Black Only | Hispanic/ Latino, Any Race | Native American Only | Other Only | Two or More | Persons of Color - Total | White Only |
|---|---|---|---|---|---|---|---|---|
| Oregon Incentives (Exclusive Quotas) | | | | | | | | |
| Smart Thermostats (n = 71) | 10% | 0% | 13% | 1% | 5% | 2% | 32% | 68% |
| Heat Pump Advanced Controls (n = 57) | 0% | 0% | 6% | 0% | 4% | 7% | 16% | 84% |
| Ceiling Insulation (n = 88) | 3% | 1% | 3% | 1% | 10% | 1% | 19% | 81% |
| Other Insulation (n = 88) | 3% | 0% | 5% | 0% | 10% | 1% | 19% | 81% |
| Ducted Heat Pumps (n = 81) | 0% | 0% | 3% | 1% | 8% | 0% | 12% | 88% |
| Ductless Heat Pumps (n = 96) | 1% | 0% | 5% | 2% | 9% | 2% | 18% | 82% |
| Central Air Conditioner (n = 66) | 2% | 4% | 7% | 0% | 8% | 1% | 22% | 78% |
| Windows (n = 90) | 3% | 0% | 5% | 0% | 3% | 3% | 13% | 87% |
| Gas Fireplaces (n = 86) | 3% | 1% | 2% | 0% | 14% | 3% | 22% | 78% |
| Gas Furnaces (n = 89) | 7% | 2% | 8% | 0% | 15% | 3% | 34% | 66% |
| Spa Covers (n = 71) | 0% | 0% | 3% | 0% | 3% | 1% | 6% | 94% |
| Residential WA & Solar PV (Exclusive Quotas) | | | | | | | | |
| Residential - Washington (n = 169) | 9% | 2% | 3% | 0% | 9% | 1% | 24% | 76% |
| Residential Solar PV (n = 149) | 4% | 1% | 6% | 2% | 8% | 1% | 22% | 78% |
| Cross-Cutting Quotas | | | | | | | | |
| Moderate Income Track (n = 96) | 5% | 2% | 2% | 0% | 10% | 2% | 22% | 78% |
| Rental Properties (n = 76) | 2% | 0% | 8% | 0% | 15% | 0% | 25% | 75% |
| Fixed-Price Promotions (n = 73) | 0% | 0% | 4% | 3% | 9% | 0% | 17% | 83% |
| Instant Incentives (n = 322) | 1% | 1% | 7% | 1% | 9% | 2% | 21% | 79% |
| Pay for Performance Pilot (n = 102) | 2% | 0% | 3% | 1% | 10% | 0% | 16% | 84% |
| Oregon Population | | | | | | | | |
| US Census | 5% | 2% | 13% | 1% | 0% | 4% | 25% | 75% |
| Customer Insights Study (n = 3,707) | 6% | 1% | 5% | 1% | 1% | 3% | 17% | 83% |

*Table 3-4: Income by Residential Quota Group*

| Quota Group | Under $30k | $30k to <$50k | $50k to <$70k | $70k to <$100k | $100k to <$200k | At Least $200k |
|---|---|---|---|---|---|---|
| Oregon Incentives (Exclusive Quotas) | | | | | | |
| Smart Thermostats (n = 71) | 1% | 13% | 13% | 18% | 37% | 14% |
| Heat Pump Advanced Controls (n = 57) | 1% | 7% | 44% | 19% | 17% | 5% |
| Ceiling Insulation (n = 88) | 3% | 12% | 17% | 25% | 37% | 5% |
| Other Insulation (n = 88) | 7% | 13% | 18% | 24% | 26% | 8% |
| Ducted Heat Pumps (n = 81) | 17% | 17% | 20% | 28% | 9% | 0% |
| Ductless Heat Pumps (n = 96) | 22% | 21% | 13% | 17% | 16% | 2% |
| Central Air Conditioner (n = 66) | 3% | 14% | 11% | 24% | 32% | 4% |
| Windows (n = 90) | 1% | 9% | 17% | 21% | 40% | 8% |
| Gas Fireplaces (n = 86) | 2% | 11% | 9% | 25% | 35% | 7% |
| Gas Furnaces (n = 89) | 23% | 28% | 19% | 8% | 15% | 0% |
| Spa Covers (n = 71) | 0% | 1% | 13% | 12% | 54% | 9% |
| Residential WA & Solar PV (Exclusive Quotas) | | | | | | |
| Residential - Washington (n = 169) | 2% | 5% | 13% | 24% | 35% | 16% |
| Residential Solar PV (n = 149) | 4% | 9% | 15% | 23% | 38% | 10% |
| Cross-Cutting Quotas | | | | | | |
| Moderate Income Track (n = 96) | 25% | 35% | 21% | 9% | 8% | 0% |
| Rental Properties (n = 76) | 4% | 14% | 14% | 21% | 29% | 9% |
| Fixed-Price Promotions (n = 73) | 27% | 21% | 19% | 13% | 10% | 0% |
| Instant Incentives (n = 322) | 11% | 11% | 19% | 23% | 24% | 4% |
| Pay for Performance Pilot (n = 102) | 7% | 14% | 16% | 25% | 27% | 5% |
| Oregon Population | | | | | | |
| US Census | 24% | 18% | 15% | 17% | 20% | 6% |
| Customer Insights Study (n = 3,707) | 9% | 9% | 14% | 20% | 30% | 10% |

*Table 3-5: Age (Years) by Residential Quota Group*

| Quota Group | Less than18 | 18 to 24 | 25 to 34 | 35 to 44 | 45 to 54 | 55 to 64 | At Least 65 |
|---|---|---|---|---|---|---|---|
| Oregon Incentives (Exclusive Quotas) | | | | | | | |
| Smart Thermostats (n = 71) | 0% | 0% | 0% | 51% | 8% | 23% | 7% |
| Heat Pump Advanced Controls (n = 57) | 0% | 0% | 0% | 12% | 9% | 11% | 51% |
| Ceiling Insulation (n = 88) | 0% | 0% | 0% | 36% | 19% | 9% | 18% |
| Other Insulation (n = 88) | 0% | 0% | 0% | 32% | 8% | 16% | 29% |
| Ducted Heat Pumps (n = 81) | 0% | 0% | 0% | 15% | 14% | 25% | 33% |
| Ductless Heat Pumps (n = 96) | 0% | 0% | 0% | 16% | 17% | 25% | 37% |
| Central Air Conditioner (n = 66) | 0% | 0% | 0% | 20% | 14% | 17% | 42% |
| Windows (n = 90) | 0% | 0% | 0% | 28% | 15% | 17% | 35% |
| Gas Fireplaces (n = 86) | 0% | 0% | 0% | 20% | 8% | 11% | 48% |
| Gas Furnaces (n = 89) | 0% | 0% | 0% | 11% | 18% | 17% | 38% |
| Spa Covers (n = 71) | 0% | 0% | 0% | 6% | 25% | 30% | 29% |
| Residential WA & Solar PV (Exclusive Quotas) | | | | | | | |
| Residential - Washington (n = 169) | 0% | 0% | 0% | 27% | 14% | 17% | 35% |
| Residential Solar PV (n = 149) | 0% | 0% | 0% | 33% | 15% | 11% | 37% |
| Cross-Cutting Quotas | | | | | | | |
| Moderate Income Track (n = 96) | 0% | 0% | 0% | 18% | 14% | 17% | 37% |
| Rental Properties (n = 76) | 0% | 0% | 0% | 14% | 20% | 23% | 31% |
| Fixed-Price Promotions (n = 73) | 0% | 0% | 0% | 11% | 15% | 30% | 31% |
| Instant Incentives (n = 322) | 0% | 0% | 0% | 18% | 15% | 21% | 34% |
| Pay for Performance Pilot (n = 102) | 0% | 0% | 0% | 30% | 14% | 23% | 20% |
| Oregon Population | | | | | | | |
| US Census | 20% | | | 17% | 18% | 19% | 26% |
| Customer Insights Study (n = 7,257) | n/a – not asked | | | | | | |

*Table 3-6: Household Size (Number of Members) by Residential Quota Group*

| Quota Group | One | Two | Three | Four | Five | At Least Six |
|---|---|---|---|---|---|---|
| Oregon Incentives (Exclusive Quotas) | | | | | | |
| Smart Thermostats (n = 71) | 6% | 42% | 19% | 21% | 8% | 4% |
| Heat Pump Advanced Controls (n = 57) | 23% | 42% | 8% | 25% | 2% | 0% |
| Ceiling Insulation (n = 88) | 16% | 45% | 21% | 13% | 2% | 2% |
| Other Insulation (n = 88) | 8% | 51% | 23% | 14% | 1% | 4% |
| Ducted Heat Pumps (n = 81) | 19% | 41% | 15% | 15% | 8% | 2% |
| Ductless Heat Pumps (n = 96) | 26% | 38% | 20% | 6% | 8% | 3% |
| Central Air Conditioner (n = 66) | 15% | 32% | 25% | 18% | 8% | 4% |
| Windows (n = 90) | 15% | 45% | 18% | 13% | 9% | 0% |
| Gas Fireplaces (n = 86) | 12% | 56% | 12% | 13% | 5% | 2% |
| Gas Furnaces (n = 89) | 25% | 31% | 17% | 11% | 8% | 8% |
| Spa Covers (n = 71) | 2% | 51% | 19% | 23% | 4% | 1% |
| Residential WA & Solar PV (Exclusive Quotas) | | | | | | |
| Residential - Washington (n = 169) | 12% | 43% | 16% | 18% | 7% | 4% |
| Residential Solar PV (n = 149) | 8% | 52% | 14% | 17% | 5% | 4% |
| Cross-Cutting Quotas | | | | | | |
| Moderate Income Track (n = 96) | 26% | 39% | 14% | 10% | 8% | 4% |
| Rental Properties (n = 76) | 18% | 22% | 26% | 13% | 12% | 9% |
| Fixed-Price Promotions (n = 73) | 25% | 40% | 15% | 12% | 6% | 1% |
| Instant Incentives (n = 322) | 18% | 36% | 19% | 14% | 7% | 5% |
| Pay for Performance Pilot (n = 102) | 16% | 39% | 14% | 18% | 8% | 4% |
| Oregon Population | | | | | | |
| US Census | 28% | 37% | 15% | 12% | 5% | 3% |
| Customer Insights Study (n = 3,707) | 14% | 44% | 17% | 15% | 6% | 3% |

## 3.2 Residential Program Experience by Quota Group

Results generally show high overall program satisfaction and moderate to high overall program influence (Table 3-7).[7,8]

*Table 3-7: Key Satisfaction and Program Influence Ratings, by Quota Group*

| Quota Group | Satisfied with Overall Experience | | Overall Program Influence | |
|---|---|---|---|---|
| | n | % | n | % |
| Oregon Incentives (Exclusive Quotas) | | | | |
| Smart Thermostats | 71 | 94% | n/a | n/a |
| Heat Pump Advanced Controls | 57 | 94% | 57 | 92% |
| Ceiling Insulation | 88 | 93% | 88 | 93% |
| Other Insulation | 88 | 89% | 88 | 99% |
| Ducted Heat Pump | 81 | 97% | 81 | 96% |
| Ductless Heat Pump | 96 | 95% | 96 | 99% |
| Central Air Conditioner | 66 | 92% | 66 | 93% |
| Windows | 90 | 94% | 90 | 94% |
| Gas Fireplaces | 86 | 97% | 86 | 97% |
| Gas Furnaces | 89 | 100% | 89 | 94% |
| Spa Covers | 71 | 89% | n/a | n/a |
| Residential WA & Solar PV (Exclusive Quotas) | | | | |
| Residential Solar PV | 149 | 94% | 148 | 94% |
| Residential - Washington | 169 | 96% | 109 | 96% |
| Oregon Residential - Combined | 1,201 | 94% | 998 | 95% |
| Cross-Cutting Quotas | | | | |
| Moderate Income Track | 96 | 96% | 96 | 93% |
| Fixed-Price Promotions | 73 | 96% | 73 | 97% |
| Instant Incentives | 322 | 96% | 320 | 96% |
| Pay for Performance | 102 | 92% | 102 | 97% |
| Rental Properties | 76 | 93% | 76 | 100% |

[7] Satisfaction was defined as a rating of 4 or 5 on a scale from 1 (not at all satisfied) to 5 (very satisfied). "Don't know" and "no response" were excluded from the denominators for all analyses to be consistent with previous years.

[8] Influence was defined as a rating of 4 or 5 on a scale from 1 (did not have any influence) to 5 (had a great influence). "High" influence = a rating of 4 or 5; "Medium" influence = a rating of 3; "Low" influence = a rating of 1 or 2. "Don't know" and "no response" were excluded from the denominators for all analyses. For each respondent, we calculated an "overall influence" rating that was equal to the highest influence rating that respondent provided for any of the following rated influence factors: the Energy Trust incentive, information and materials received from Energy Trust, the salesperson or retailer, the respondent's contractor, information receive from a solar workshop. It did not include the influence of the equipment's efficiency rating.

The following subsections show results for key survey variables, separately for each quota group as well as for the participants comprising the cross-cutting quotas (moderate income track, fixed-price promotions, instant incentives, pay for performance).

Results generally show high or moderately high satisfaction ratings across all facets of program experience for all measures. In nearly all cases, overall satisfaction remained consistent or showed a slight upward trend over time.

The factor having the greatest influence on the purchase decision varied somewhat by measure type, but contractors and the measure's efficiency rating (where applicable) were the things that were most consistently identified as having high influence. The Energy Trust incentive and/or information or materials from Energy Trust were commonly identified influencers for insulation, heat pumps, heat pump advanced controls, gas furnaces, and solar PV. A salesperson or retailer was commonly identified for heat pump advanced controls and gas fireplaces.

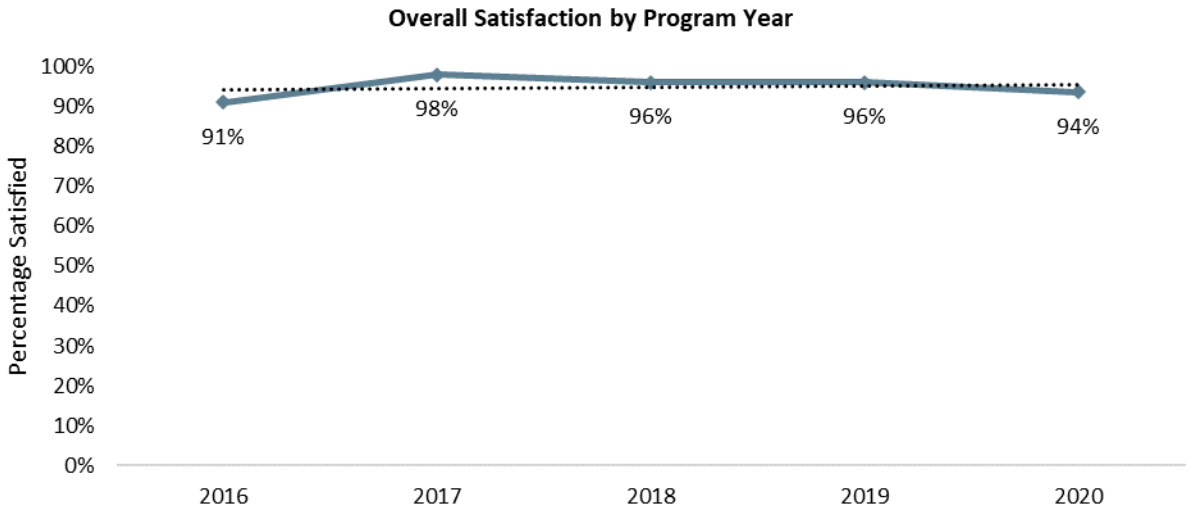
Word of mouth was by far the most consistently identified way that participants found a contractor. It was the most commonly mentioned item for nearly every quota group. Web searches, use of an online referral or rating service (e.g., Yelp or Angie's List), and contractor advertisements were also frequently identified for most quota groups.

### 3.2.1 Smart Thermostats

Smart thermostat participants (*n* = 71) showed high levels of satisfaction with all facets of the experience; overall satisfaction is consistent with that in previous years (Table 3-8 and accompanying chart).

*Table 3-8: Satisfaction Ratings: Smart Thermostat*

| Satisfaction | Percent |
|---|---|
| Overall experience (n = 71) | 94% |
| Performance of new measure (n = 71) | 96% |
| Comfort of home after new measure (n = 71) | 96% |
| Incentive application form (n = 69) | 95% |
| Time it took to receive incentive (n = 69) | 90% |




The overall program influence on participant purchase decisions was high (100%). The Energy Trust incentive was the most influential factor (Table 3-9).[9]

*Table 3-9: Influence Ratings: Smart Thermostats*

| Influence Level | Overall Influence (n = 25) | Energy Trust Incentive (n = 25) | Energy Trust Information or Materials (n = 14) | Salesperson or Retailer (n = 11) |
|---|---|---|---|---|
| High | 100% | 100% | 46% | 21% |
| Medium | 0% | 0% | 17% | 0% |
| Low | 0% | 0% | 25% | 28% |
| Don't know/no answer | 0% | 0% | 12% | 52% |

None of the smart thermostat participants used a contractor to install their thermostat.

### 3.2.2 Heat Pump Advanced Controls

This is the first year in which this measure has been included in the Fast Feedback survey. Participants (*n* = 57) showed high levels of satisfaction with all facets of the experience (Table 3-10).

[9] An error in the definition of the question logic for the influence question resulted in the exclusion of smart thermostat participants from that question for the first six months of the year. We corrected this error, and this report includes information on influence ratings for this measure for the last six months of the year.

*Table 3-10: Satisfaction Ratings: Heat Pump Advanced Controls*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 57) | 94% |
| Performance of new measure (n = 57) | 88% |
| Comfort of home after new measure (n = 57) | 96% |
| Incentive application form (n = 27) | 92% |
| Time it took to receive incentive (n = 27) | 86% |
| Contractor Satisfaction | |
| Overall experience (n = 57) | 92% |
| Quality of installation work (n = 57) | 95% |
| Information about incentives (n = 38) | 98% |
| Communication (n = 57) | 92% |
| Assistance with application (n = 27) | 97% |

The overall program influence on participant purchase decisions was moderately high (75%). Contractors and the Energy Trust incentive were the most influential factors, followed by a salesperson or retailer (Table 3-11). Of the 11 respondents who reported that they or a household member visited the Energy Trust website or spoke with an Energy Trust representative about the measure, about one-quarter were not able to provide a rating on the influence of the information provided.

*Table 3-11: Influence Ratings: Heat Pump Advanced Controls*

| Influence Level | Overall Influence (n = 57) | Energy Trust Incentive (n = 37) | Energy Trust Information or Materials (n = 11) | Salesperson or Retailer (n = 51) | Contractor (n = 49) |
|---|---|---|---|---|---|
| High | 75% | 63% | 48% | 59% | 64% |
| Medium | 16% | 8% | 11% | 14% | 15% |
| Low | 9% | 28% | 16% | 19% | 19% |
| Don't know/no answer | 0% | 2% | 26% | 7% | 1% |

Respondents most commonly found their contractor through word of mouth, followed by a contractor's advertisement (Table 3-12).

*Table 3-12: Where Respondent Found the Contractor: Heat Pump Advanced Controls*

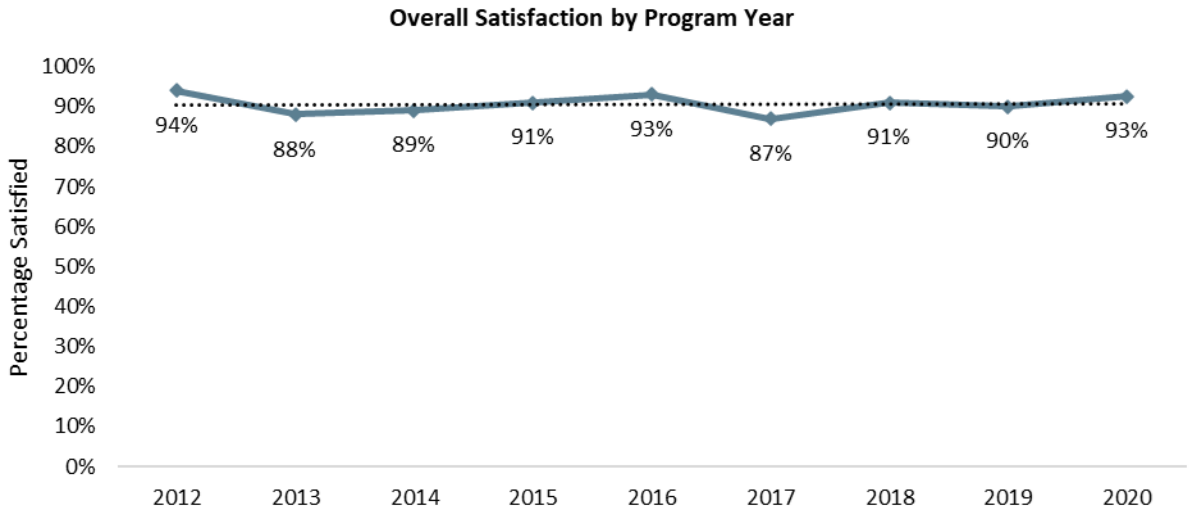
| Contractor Source (n = 57) | Percent |
|---|---|
| Word of mouth | 40% |
| Online service | 4% |
| Web search | 9% |
| Advertisement | 15% |
| Energy Trust website | 0% |
| Energy Trust referral | 3% |
| Not applicable | 12% |
| Don't know | 1% |
| Prefer not to answer | 3% |

### 3.2.3 Ceiling Insulation

Ceiling insulation participants (*n* = 88) showed high levels of satisfaction with all facets of the experience; overall satisfaction is consistent with that in previous years (Table 3-13 and accompanying chart).

*Table 3-13: Satisfaction Ratings: Ceiling Insulation*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 88) | 93% |
| Performance of new measure (n = 88) | 89% |
| Comfort of home after new measure (n = 88) | 89% |
| Incentive application form (n = 68) | 98% |
| Time it took to receive incentive (n = 68) | 82% |
| Contractor Satisfaction | |
| Overall experience (n = 88) | 93% |
| Quality of installation work (n = 88) | 96% |
| Information about incentives (n = 87) | 92% |
| Communication (n = 88) | 89% |
| Assistance with application (n = 68) | 96% |




The overall program influence on participant purchase decisions was moderately high (78%). The most influential factors were a contractor and the Energy Trust incentive (Table 3-14). Of respondents who reported that they or a household member visited the Energy Trust website or spoke with an Energy Trust representative about the measure, about one-quarter were not able to provide a rating on the influence of the information provided.

*Table 3-14: Influence Ratings: Ceiling Insulation*

| Influence Level | Overall Influence (n = 86) | Energy Trust Incentive (n = 84) | Energy Trust Information or Materials (n = 34) | Contractor (n = 75) |
|---|---|---|---|---|
| High | 78% | 57% | 39% | 63% |
| Medium | 13% | 22% | 10% | 14% |
| Low | 9% | 19% | 24% | 14% |
| Don't know/no answer | 0% | 2% | 27% | 10% |

The most commonly reported ways that these respondents found their contractor was via word of mouth or a web search, followed by use of an online referral or rating service (e.g. Yelp; Table 3-15).

*Table 3-15: Where Respondent Found the Contractor: Ceiling Insulation*

| Contractor Source (n = 88) | Percent |
|---|---|
| Word of mouth | 33% |
| Online service | 16% |
| Web search | 30% |
| Advertisement | 2% |
| Energy Trust website | 8% |
| Energy Trust referral | 5% |
| Not applicable | 10% |
| Don't know | 4% |
| Prefer not to answer | 0% |

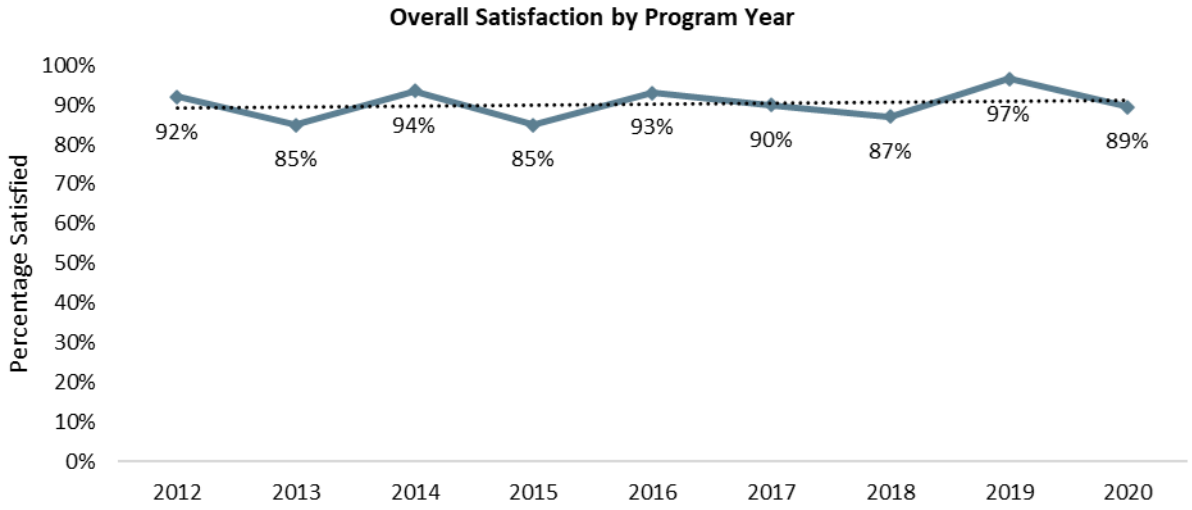
### 3.2.4 Other Insulation

Other insulation participants (*n* = 88) showed high levels of satisfaction with all facets of the experience; overall satisfaction has remained generally consistent over time (Table 3-16 and accompanying chart).[10]

*Table 3-16: Satisfaction Ratings: Other Insulation*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 88) | 89% |
| Performance of new measure (n = 88) | 93% |
| Comfort of home after new measure (n = 88) | 93% |
| Incentive application form (n = 64) | 89% |
| Time it took to receive incentive (n = 64) | 75% |
| Contractor Satisfaction | |
| Overall experience (n = 88) | 99% |
| Quality of installation work (n = 88) | 96% |
| Information about incentives (n = 83) | 96% |
| Communication (n = 88) | 95% |
| Assistance with application (n = 64) | 85% |

[10] "Other insulation" consists of wall insulation and floor insulation. In previous years, the survey assessed satisfaction for each of these separately. To provide a point of comparison for this year, we took the mean of the overall satisfaction ratings for wall insulation and floor insulation for the previous years.




The overall program influence on participant purchase decisions was moderately high. The most influential factors were the Energy Trust incentive and contractors, followed by information or materials from Energy Trust (Table 3-17). Of respondents who reported that they or a household member visited the Energy Trust website or spoke with an Energy Trust representative about the measure, about one-fifth were not able to provide a rating on the influence of the information provided.

*Table 3-17: Influence Ratings: Other Insulation*

| Influence Level | Overall Influence (n = 87) | Energy Trust Incentive (n = 80) | Energy Trust Information or Materials (n = 40) | Contractor (n = 65) |
|---|---|---|---|---|
| High | 70% | 54% | 34% | 51% |
| Medium | 4% | 14% | 10% | 6% |
| Low | 26% | 27% | 36% | 33% |
| Don't know/no answer | 1% | 5% | 20% | 10% |

Respondents most commonly reported finding their contractor through word of mouth, followed by a web search and the Energy Trust website (Table 3-18).

*Table 3-18: Where Respondent Found the Contractor: Other Insulation*

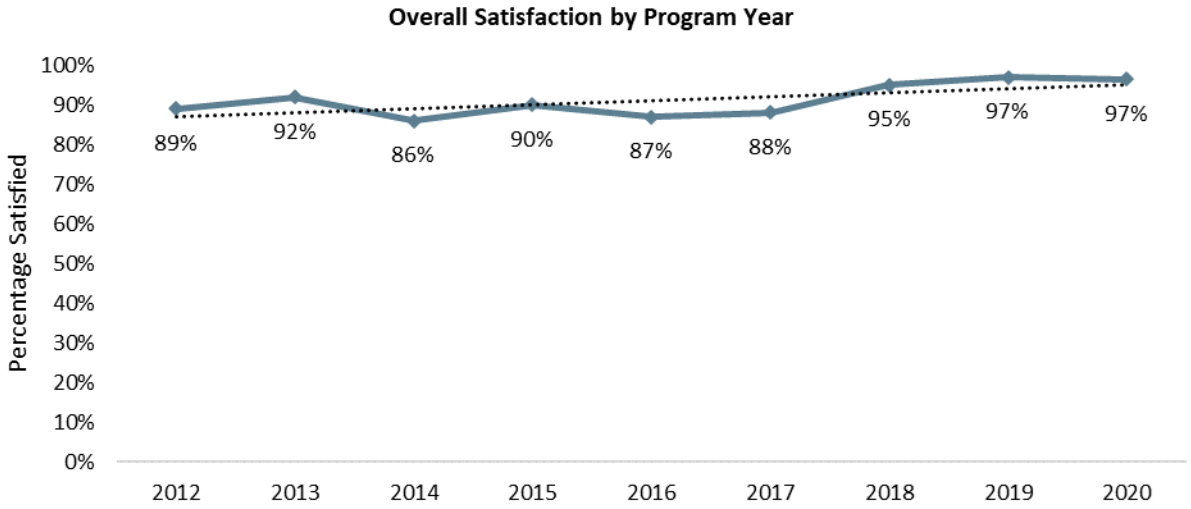
| Contractor Source (n = 88) | Percent |
|---|---|
| Word of mouth | 30% |
| Online service | 11% |
| Web search | 15% |
| Advertisement | 4% |
| Energy Trust website | 8% |
| Energy Trust referral | 8% |
| Not applicable | 10% |
| Don't know | 6% |
| Prefer not to answer | 0% |

### 3.2.5 Ducted Heat Pump

Ducted heat pump participants (*n* = 81) showed high levels of satisfaction with all facets of the experience; overall satisfaction shows a slight upward trend over time (Table 3-19 and accompanying chart).

*Table 3-19: Satisfaction Ratings: Ducted Heat Pump*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 81) | 97% |
| Performance of new measure (n = 81) | 99% |
| Comfort of home after new measure (n = 81) | 100% |
| Incentive application form (n = 17) | 100% |
| Time it took to receive incentive (n = 17) | 100% |
| Contractor Satisfaction | |
| Overall experience (n = 81) | 96% |
| Quality of installation work (n = 81) | 98% |
| Information about incentives (n = 73) | 96% |
| Communication (n = 81) | 98% |
| Assistance with application (n = 17) | 93% |




The overall program influence on participant purchase decisions was high. The Energy Trust incentive showed the greatest influence, but Energy Trust information and materials, contractors, and the heat pump's efficiency rating also showed moderately high influence (Table 3-20).

*Table 3-20: Influence Ratings: Ducted Heat Pump*

| Influence Level | Overall Influence (n = 76) | Energy Trust Incentive (n = 72) | Energy Trust Information or Materials (n = 33) | Contractor (n = 69) | Energy Efficiency Rating (n = 71) |
|---|---|---|---|---|---|
| High | 84% | 84% | 73% | 76% | 81% |
| Medium | 5% | 6% | 5% | 5% | 4% |
| Low | 6% | 7% | 3% | 14% | 4% |
| Don't know/no answer | 6% | 2% | 19% | 4% | 10% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by the contractor's advertisement and a web search (Table 3-21).

*Table 3-21: Where Respondent Found the Contractor: Ducted Heat Pump*

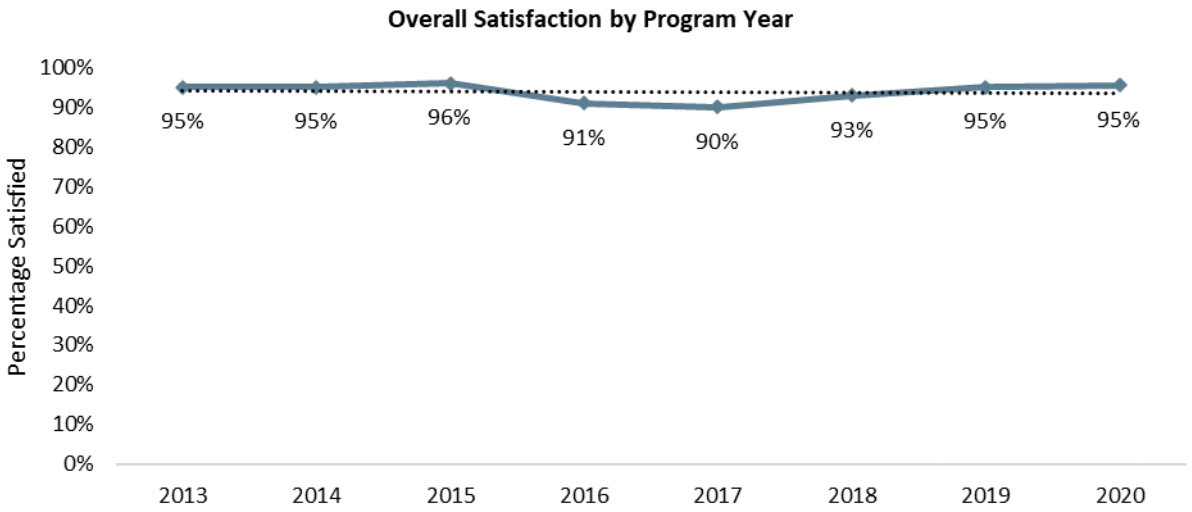
| Contractor Source (n = 81) | Percent |
|---|---|
| Word of mouth | 33% |
| Online service | 3% |
| Web search | 15% |
| Advertisement | 23% |
| Energy Trust website | 3% |
| Energy Trust referral | 3% |
| Not applicable | 10% |
| Don't know | 4% |
| Prefer not to answer | 0% |

### 3.2.6 Ductless Heat Pump

Ductless heat pump participants (*n* = 96) showed high levels of satisfaction with all facets of the experience; overall satisfaction was consistent with previous years (Table 3-22 and accompanying chart).

*Table 3-22: Satisfaction Ratings: Ductless Heat Pump*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 96) | 95% |
| Performance of new measure (n = 96) | 95% |
| Comfort of home after new measure (n = 96) | 97% |
| Incentive application form (n = 38) | 92% |
| Time it took to receive incentive (n = 38) | 91% |
| Contractor Satisfaction | |
| Overall experience (n = 96) | 99% |
| Quality of installation work (n = 96) | 97% |
| Information about incentives (n = 86) | 97% |
| Communication (n = 96) | 98% |
| Assistance with application (n = 38) | 100% |




The overall program influence on participant purchase decisions was high. The heat pump's efficiency rating and a contractor showed the greatest influence, with the Energy Trust incentive and information or materials received from Energy Trust also having moderately high influence (Table 3-23).

*Table 3-23: Influence Ratings: Ductless Heat Pump*

| Influence Level | Overall Influence (n = 95) | Energy Trust Incentive (n = 83) | Energy Trust Information or Materials (n = 32) | Contractor (n = 90) | Energy Efficiency Rating (n = 88) |
|---|---|---|---|---|---|
| High | 85% | 68% | 68% | 76% | 75% |
| Medium | 7% | 11% | 4% | 7% | 4% |
| Low | 8% | 19% | 8% | 15% | 15% |
| Don't know/no answer | 0% | 3% | 20% | 2% | 5% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by a web search and contractor advertisement (Table 3-24).

*Table 3-24: Where Respondent Found the Contractor: Ductless Heat Pump*

| Contractor Source (n = 96) | Percent |
|---|---|
| Word of mouth | 44% |
| Online service | 8% |
| Web search | 20% |
| Advertisement | 15% |
| Energy Trust website | 4% |
| Energy Trust referral | 5% |
| Not applicable | 4% |
| Don't know | 5% |
| Prefer not to answer | 1% |

### 3.2.7 Central Air Conditioner

This was the first program year for central air conditioners. Participants with this measure (*n* = 66) showed high levels of satisfaction with all facets of the experience (Table 3-25).

*Table 3-25: Satisfaction Ratings: Central Air Conditioner*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 66) | 92% |
| Performance of new measure (n = 66) | 92% |
| Comfort of home after new measure (n = 66) | 91% |
| Incentive application form (n = 31) | 92% |
| Time it took to receive incentive (n = 31) | 95% |

| Satisfaction | Percent |
|---|---|
| Contractor Satisfaction | |
| Overall experience (n = 66) | 93% |
| Quality of installation work (n = 66) | 93% |
| Information about incentives (n = 63) | 76% |
| Communication (n = 66) | 93% |
| Assistance with application (n = 31) | 80% |

The overall program influence on participant purchase decisions was moderately high. Contractors and the air conditioner's energy efficiency rating showed the greatest influence, followed by information or materials received from Energy Trust (Table 3-26).

*Table 3-26: Influence Ratings: Central Air Conditioner*

| Influence Level | Overall Influence (n = 66) | Energy Trust Incentive (n = 60) | Energy Trust Information or Materials (n = 13) | Contractor (n = 59) | Energy Efficiency Rating (n = 63) |
|---|---|---|---|---|---|
| High | 74% | 47% | 48% | 63% | 69% |
| Medium | 9% | 11% | 4% | 14% | 9% |
| Low | 17% | 36% | 25% | 23% | 18% |
| Don't know/no answer | 0% | 5% | 24% | 0% | 3% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by a web search (Table 3-27).

*Table 3-27: Where Respondent Found the Contractor: Central Air Conditioner*

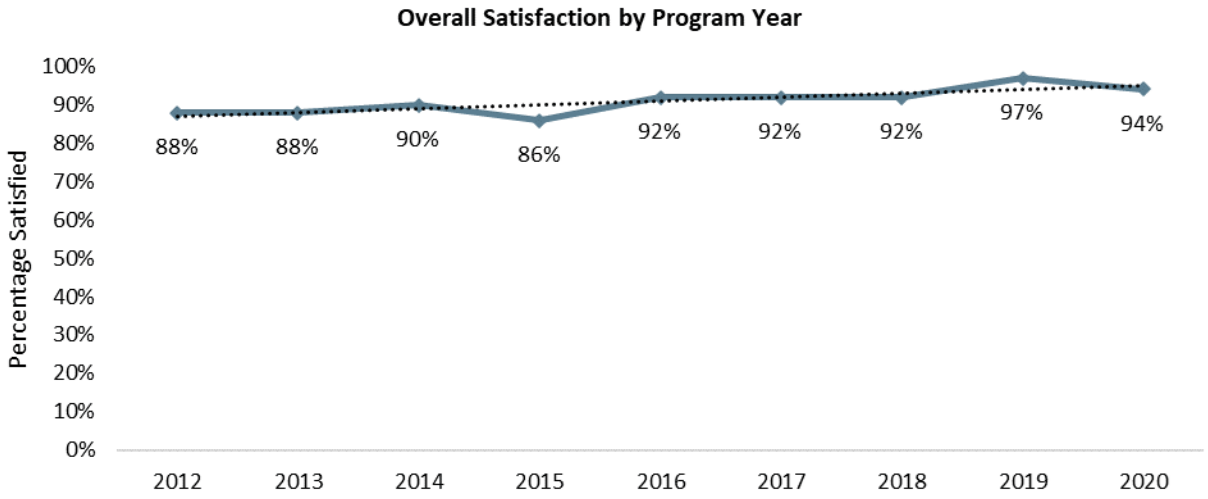
| Contractor Source (n = 66) | Percent |
|---|---|
| Word of mouth | 38% |
| Online service | 8% |
| Web search | 22% |
| Advertisement | 2% |
| Energy Trust website | 6% |
| Energy Trust referral | 1% |
| Not applicable | 17% |
| Don't know | 3% |
| Prefer not to answer | 0% |

### 3.2.8 Windows

Windows participants (*n* = 90) showed high levels of satisfaction with all facets of the experience; overall satisfaction shows a slight upward trend over time (Table 3-28 and accompanying chart).

*Table 3-28: Satisfaction Ratings: Windows*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 90) | 94% |
| Performance of new measure (n = 90) | 99% |
| Comfort of home after new measure (n = 90) | 98% |
| Incentive application form (n = 72) | 94% |
| Time it took to receive incentive (n = 72) | 90% |
| Contractor Satisfaction | |
| Overall experience (n = 90) | 94% |
| Quality of installation work (n = 90) | 94% |
| Information about incentives (n = 87) | 90% |
| Communication (n = 90) | 94% |
| Assistance with application (n = 72) | 95% |




The overall program influence on participant purchase decisions was moderate. The windows' energy efficiency rating by far showed the greatest influence, with other factors showing moderate influence levels (Table 3-29).

*Table 3-29: Influence Ratings: Windows*

| Influence Level | Overall Influence (n = 88) | Energy Trust Incentive (n = 80) | Energy Trust Information or Materials (n = 27) | Contractor (n = 77) | Energy Efficiency Rating (n = 86) |
|---|---|---|---|---|---|
| High | 56% | 40% | 39% | 51% | 77% |
| Medium | 13% | 15% | 8% | 9% | 3% |
| Low | 31% | 40% | 25% | 36% | 17% |
| Don't know/no answer | 1% | 5% | 28% | 5% | 2% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by a web search and the contractor's advertising (Table 3-30).

*Table 3-30: Where Respondent Found the Contractor: Windows*

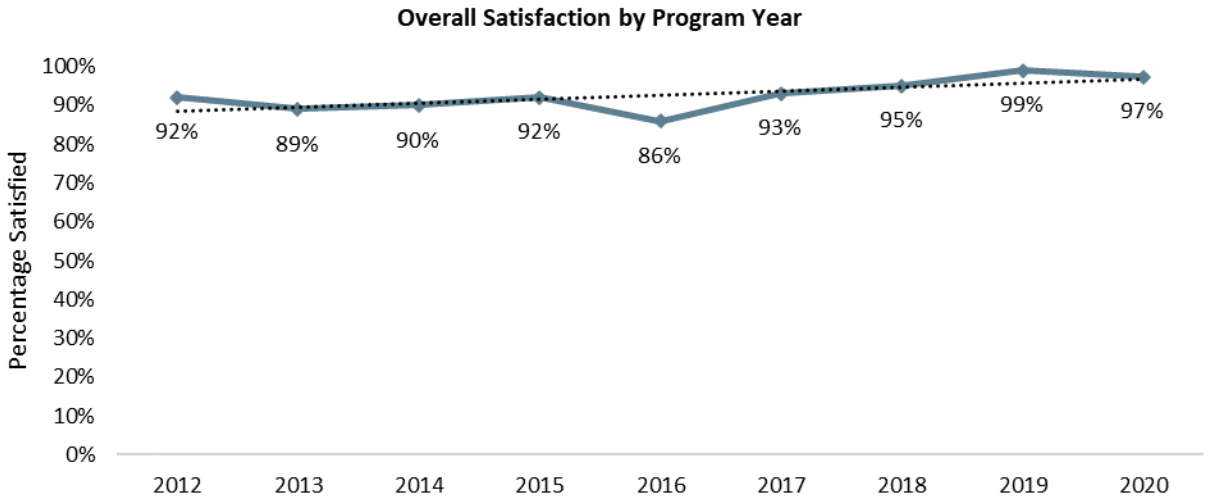
| Contractor Source (n = 90) | Percent |
|---|---|
| Word of mouth | 37% |
| Online service | 13% |
| Web search | 25% |
| Advertisement | 18% |
| Energy Trust website | 5% |
| Energy Trust referral | 2% |
| Not applicable | 3% |
| Don't know | 2% |
| Prefer not to answer | 0% |

### 3.2.9 Gas Fireplaces

Gas fireplace participants (*n* = 86) showed high levels of satisfaction with all facets of the experience; overall satisfaction shows a slight upward trend over time (Table 3-31 and accompanying chart).

*Table 3-31: Satisfaction Ratings: Gas Fireplaces*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 86) | 97% |
| Performance of new measure (n = 86) | 97% |
| Comfort of home after new measure (n = 86) | 98% |
| Incentive application form (n = 83) | 97% |
| Time it took to receive incentive (n = 83) | 88% |
| Contractor Satisfaction | |
| Overall experience (n = 86) | 97% |
| Quality of installation work (n = 86) | 94% |
| Information about incentives (n = 85) | 91% |
| Communication (n = 86) | 94% |
| Assistance with application (n = 83) | 86% |




The overall program influence on participant purchase decisions was high. The fireplace's energy efficiency rating showed the greatest influence, followed closely by a salesperson or retailer, but Energy Trust information or materials and a contractor also had moderate influence (Table 3-32).

*Table 3-32: Influence Ratings: Gas Fireplaces*

| Influence Level | Overall Influence (n = 86) | Energy Trust Incentive (n = 83) | Energy Trust Information or Materials (n = 26) | Salesperson or Retailer (n = 82) | Contractor (n = 78) | Energy Efficiency Rating (n = 84) |
|---|---|---|---|---|---|---|
| High | 80% | 45% | 49% | 66% | 58% | 73% |
| Medium | 13% | 14% | 7% | 12% | 5% | 10% |
| Low | 7% | 38% | 13% | 17% | 30% | 14% |
| Don't know/no answ. | 0% | 3% | 31% | 6% | 7% | 2% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by an Energy Trust referral and use of an online referral or rating service (Table 3-33).

*Table 3-33: Where Respondent Found the Contractor: Gas Fireplaces*

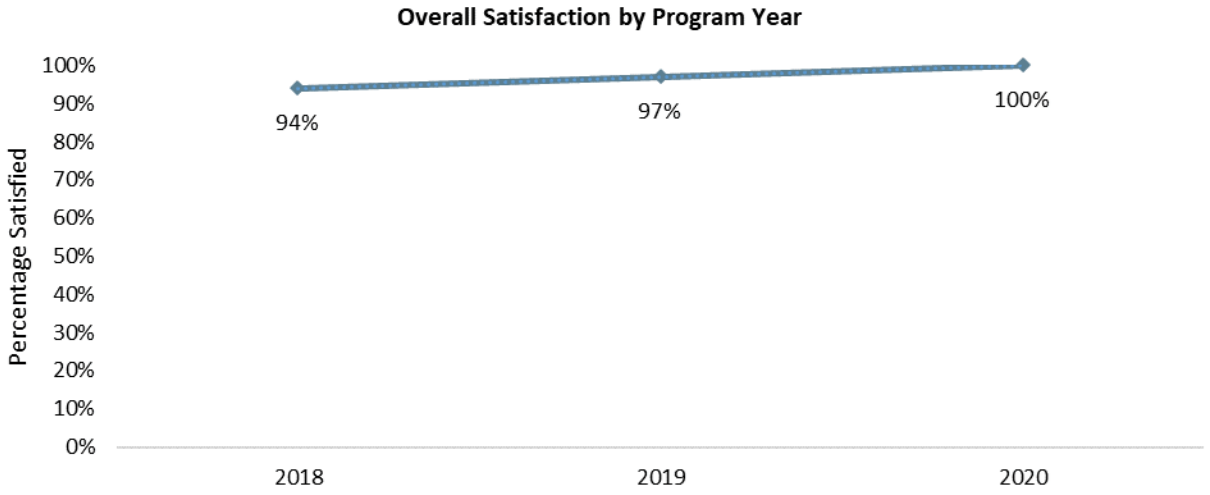
| Contractor Source (n = 86) | Percent |
|---|---|
| Word of mouth | 38% |
| Online service | 16% |
| Web search | 8% |
| Advertisement | 3% |
| Energy Trust website | 5% |
| Energy Trust referral | 19% |
| Not applicable | 12% |
| Don't know | 3% |
| Prefer not to answer | 0% |

### 3.2.10 Gas Furnaces

Gas furnace participants (*n* = 89) showed high levels of satisfaction with all facets of the experience; overall satisfaction shows a slight upward trend over time (Table 3-34 and accompanying chart).

*Table 3-34: Satisfaction Ratings: Gas Furnaces*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 89) | 100% |
| Performance of new measure (n = 89) | 95% |
| Comfort of home after new measure (n = 89) | 94% |
| Incentive application form (n = 54) | 100% |
| Time it took to receive incentive (n = 54) | 97% |
| Contractor Satisfaction | |
| Overall experience (n = 89) | 94% |
| Quality of installation work (n = 89) | 93% |
| Information about incentives (n = 79) | 96% |
| Communication (n = 89) | 96% |
| Assistance with application (n = 54) | 94% |




The overall program influence on participant purchase decisions was high. Contractors showed the greatest influence, followed by the furnace's efficiency rating; the Energy Trust incentive and information or materials from Energy Trust also showed moderate influence (Table 3-35).

*Table 3-35: Influence Ratings: Gas Furnaces*

| Influence Level | Overall Influence (n = 86) | Energy Trust Incentive (n = 72) | Energy Trust Information or Materials (n = 20) | Contractor (n = 76) | Energy Efficiency Rating (n = 77) |
|---|---|---|---|---|---|
| High | 86% | 62% | 54% | 82% | 76% |
| Medium | 1% | 15% | 7% | 3% | 5% |
| Low | 10% | 12% | 4% | 10% | 8% |
| Don't know/no answer | 2% | 11% | 34% | 5% | 10% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed (remotely) by the contractor's advertisement (Table 3-36).

*Table 3-36: Where Respondent Found the Contractor: Gas Furnaces*

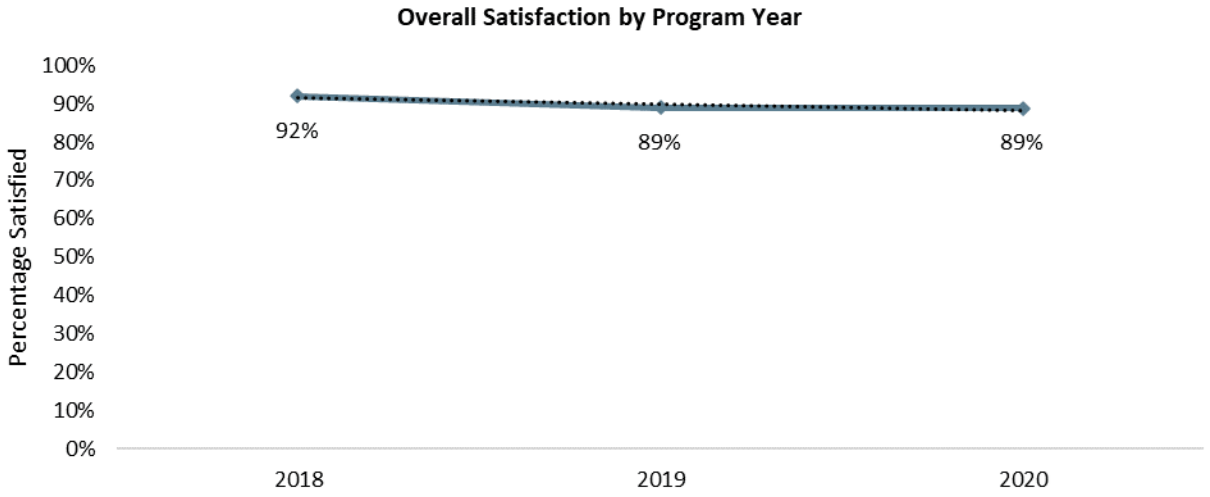
| Contractor Source (n = 89) | Percent |
|---|---|
| Word of mouth | 38% |
| Online service | 5% |
| Web search | 10% |
| Advertisement | 16% |
| Energy Trust website | 10% |
| Energy Trust referral | 9% |
| Not applicable | 6% |
| Don't know | 7% |
| Prefer not to answer | 0% |

### 3.2.11 Spa Covers

Spa cover participants (*n* = 71) showed moderately high to high levels of satisfaction with all facets of the experience; overall satisfaction shows a slight *downward* trend over time (Table 3-37 and accompanying chart). None of these participants used a contractor to install their spa cover.[11]

*Table 3-37: Satisfaction Ratings: Spa Covers*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 71) | 89% |
| Performance of new measure (n = 71) | 98% |
| Incentive application form (n = 71) | 85% |
| Time it took to receive incentive (n = 71) | 81% |



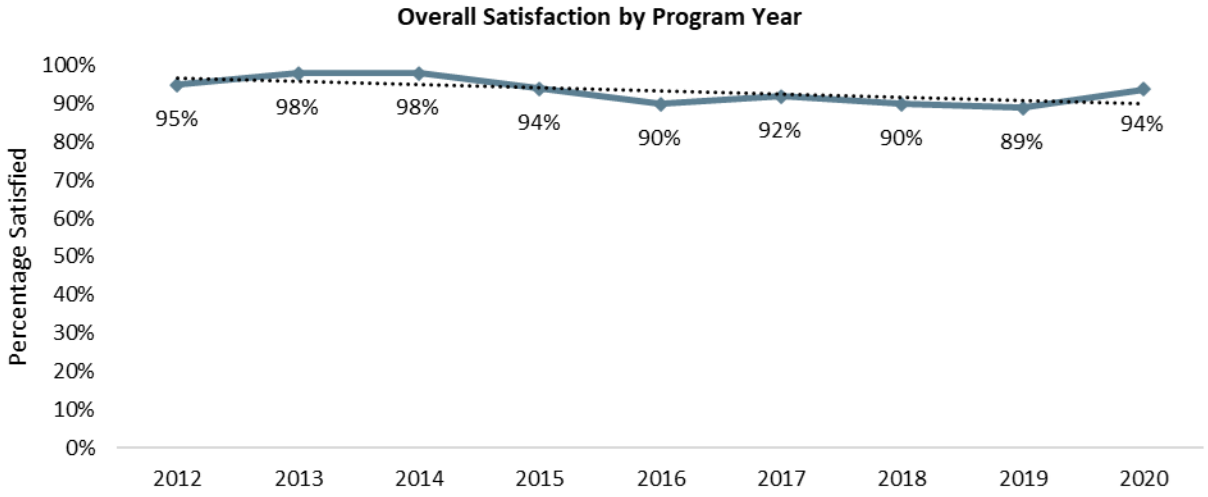

### 3.2.12 Residential Solar PV

Residential solar PV participants (*n* = 149) showed high levels of satisfaction with all facets of the experience; overall satisfaction is consistent with that in previous years (Table 3-38 and accompanying chart).

[11] An error in the definition of the question logic for the influence question resulted in the exclusion of spa cover participants from this question. We have corrected this error, and the year-end report will include information on influence ratings for this measure.

*Table 3-38: Satisfaction Ratings: Residential Solar PV*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 149) | 94% |
| Performance of new measure (n = 149) | 94% |
| Contractor Satisfaction | |
| Overall experience (n = 148) | 94% |
| Quality of installation work (n = 148) | 98% |
| Information about incentives (n = 148) | 92% |
| Communication (n = 148) | 83% |




The overall program influence on participant purchase decisions was high. Contractors showed the greatest influence, followed by the Energy Trust incentive (Table 3-39).

*Table 3-39: Influence Ratings: Residential Solar PV*

| Influence Level | Overall Influence (n = 145) | Energy Trust Incentive (n = 138) | Energy Trust Information or Materials (n = 76) | Contractor (n = 124) | Information from Solar Workshop (n = 50) |
|---|---|---|---|---|---|
| High | 85% | 65% | 56% | 74% | 17% |
| Medium | 8% | 16% | 17% | 6% | 6% |
| Low | 6% | 10% | 12% | 16% | 9% |
| Don't know/no answer | 2% | 8% | 15% | 3% | 68% |

Respondents most commonly found the contractor from contractor advertising and word of mouth, followed by a web search (Table 3-40).

*Table 3-40: Where Respondent Found the Contractor: Residential Solar PV*

| Contractor Source (n = 148) | Percent |
|---|---|
| Word of mouth | 23% |
| Online service | 9% |
| Web search | 18% |
| Advertisement | 24% |
| Energy Trust website | 6% |
| Energy Trust referral | 7% |
| Not applicable | 3% |
| Don't know | 9% |
| Prefer not to answer | 0% |

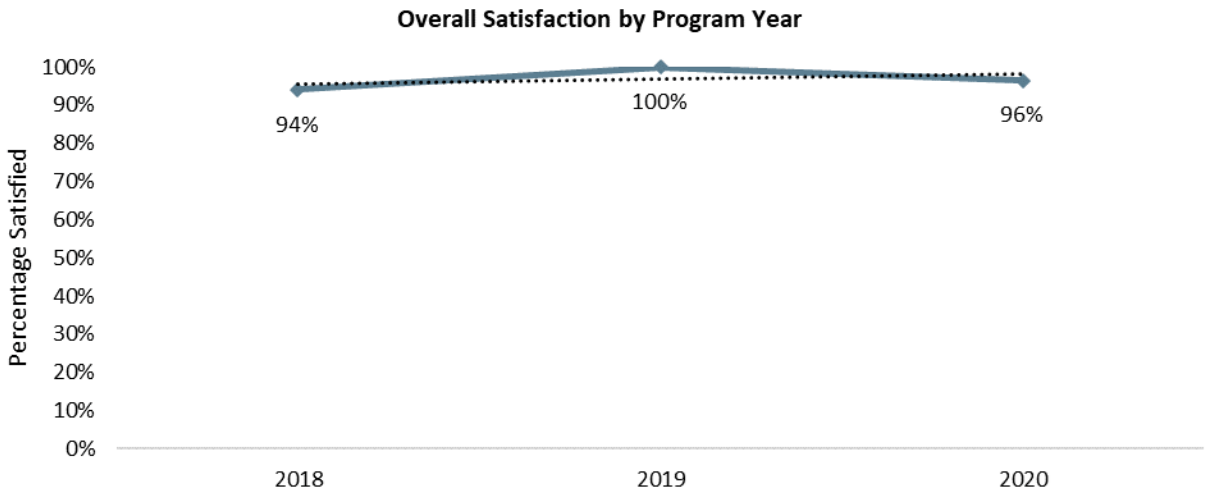
### 3.2.13 Residential - Washington

Residential Washington participants (*n* = 169) installed five types of measures, the most common of which were smart thermostats (*n* = 60) and gas furnaces (*n* = 62). Fewer installed windows (*n* = 27), gas fireplaces (*n* = 15), and ceiling insulation (*n* = 5).

These participants showed high levels of satisfaction with all facets of the experience; overall experience shows a slight upward trend over time (Table 3-41 and accompanying chart).

*Table 3-41: Satisfaction Ratings: Residential - Washington*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 169) | 96% |
| Performance of new measure (n = 169) | 100% |
| Comfort of home after new measure (n = 169) | 99% |
| Incentive application form (n = 136) | 95% |
| Time it took to receive incentive (n = 136) | 90% |
| Contractor Satisfaction | |
| Overall experience (n = 109) | 96% |
| Quality of installation work (n = 109) | 95% |
| Information about incentives (n = 99) | 89% |
| Communication (n = 109) | 96% |
| Assistance with application (n = 76) | 92% |




The overall program influence on participant purchase decisions was high. The measure's energy efficiency rating showed the greatest influence, followed by a contractor (Table 3-42).

*Table 3-42: Influence Ratings: Residential - Washington*

| Influence Level | Overall Influence (n = 118) | Energy Trust Incentive (n = 107) | Energy Trust Information or Materials (n = 25) | Salesperson or Retailer (n = 20) | Contractor (n = 106) | Energy Efficiency Rating (n = 102) |
|---|---|---|---|---|---|---|
| High | 80% | 54% | 29% | 40% | 74% | 84% |
| Medium | 4% | 13% | 12% | 10% | 4% | 4% |
| Low | 14% | 32% | 25% | 34% | 19% | 11% |
| Don't know/no answ. | 1% | 1% | 34% | 16% | 3% | 2% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by an online referral or rating service and a web search (Table 3-43).

*Table 3-43: Where Respondent Found the Contractor: Residential - Washington*

| Contractor Source (n = 109) | Percent |
|---|---|
| Word of mouth | 36% |
| Online service | 13% |
| Web search | 24% |
| Advertisement | 10% |
| Energy Trust website | 6% |
| Energy Trust referral | 6% |
| Not applicable | 10% |
| Don't know | 3% |
| Prefer not to answer | 0% |

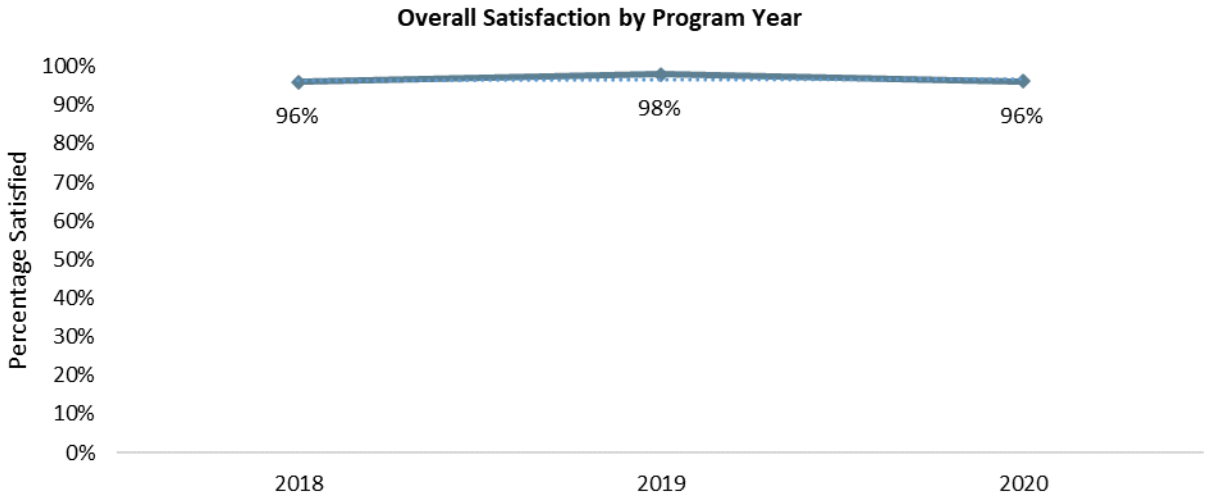
### 3.2.14 Moderate Income Track

Moderate Income Track participants (*n* = 96) installed five types of measures, the most common of which were gas furnaces (*n* = 54) and ductless heat pumps (*n* = 20). Fewer installed ducted heat pumps (*n* = 10), ceiling insulation (*n* = 7), and other insulation (*n* = 5).

These participants showed high levels of satisfaction with all facets of the experience; overall satisfaction shows a slight upward trend over time (Table 3-44 and accompanying chart).

*Table 3-44: Satisfaction Ratings: Moderate Income Track*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 96) | 96% |
| Performance of new measure (n = 96) | 91% |
| Comfort of home after new measure (n = 96) | 90% |
| Incentive application form (n = 96) | 98% |
| Time it took to receive incentive (n = 96) | 96% |
| Contractor Satisfaction | |
| Overall experience (n = 96) | 93% |
| Quality of installation work (n = 96) | 94% |
| Information about incentives (n = 96) | 95% |
| Communication (n = 96) | 95% |
| Assistance with application (n = 96) | 97% |




The overall program influence on participant purchase decisions was high. A contractor showed the greatest influence, followed closely by the measure's energy efficiency rating; Energy Trust information and materials and the Energy Trust incentive also showed moderate levels of influence (Table 3-45).

*Table 3-45: Influence Ratings: Moderate Income Track*

| Influence Level | Overall Influence (n = 95) | Energy Trust Incentive (n = 85) | Energy Trust Information or Materials (n = 32) | Contractor (n = 85) | Energy Efficiency Rating (n = 76) |
|---|---|---|---|---|---|
| High | 82% | 57% | 60% | 78% | 73% |
| Medium | 5% | 11% | 6% | 5% | 7% |
| Low | 12% | 16% | 16% | 11% | 12% |
| Don't know/no answer | 2% | 16% | 18% | 6% | 8% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by a contractor's advertisement (Table 3-46).

*Table 3-46: Where Respondent Found the Contractor: Moderate Income Track*

| Contractor Source (n = 96) | Percent |
|---|---|
| Word of mouth | 38% |
| Online service | 10% |
| Web search | 14% |
| Advertisement | 17% |
| Energy Trust website | 6% |
| Energy Trust referral | 6% |
| Not applicable | 3% |
| Don't know | 7% |
| Prefer not to answer | 0% |

### 3.2.15 Fixed-Price Promotions

Fixed Price Promotions participants (*n* = 73) installed either ducted (*n* = 57) or ductless heat pumps (*n* = 16). These participants showed high levels of satisfaction with all facets of the experience (Table 3-47).[12]

*Table 3-47: Satisfaction Ratings: Fixed Price Promotions*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 73) | 96% |
| Performance of new measure (n = 73) | 99% |
| Comfort of home after new measure (n = 73) | 99% |
| Incentive application form (n = 1) | 100% |
| Time it took to receive incentive (n = 1) | 100% |

[12] Satisfaction was not previously reported for this group; therefore, we cannot show a trend over time.

| Satisfaction | Percent |
|---|---|
| Contractor Satisfaction | |
| Overall experience (n = 73) | 97% |
| Quality of installation work (n = 73) | 98% |
| Information about incentives (n = 66) | 97% |
| Communication (n = 73) | 98% |

The overall program influence on participant purchase decisions was high. The Energy Trust incentive showed the greatest influence on participant purchase decisions,[13] followed by measure's energy efficiency rating and the Energy Trust information and materials (Table 3-48).

*Table 3-48: Influence Ratings: Fixed Price Promotions*

| Influence Level | Overall Influence (n = 68) | Energy Trust Incentive (n = 66) | Energy Trust Information or Materials (n = 33) | Contractor (n = 63) | Energy Efficiency Rating (n = 67) |
|---|---|---|---|---|---|
| High | 89% | 94% | 76% | 73% | 81% |
| Medium | 0% | 0% | 2% | 4% | 4% |
| Low | 5% | 6% | 4% | 16% | 11% |
| Don't know/no answer | 6% | 0% | 19% | 7% | 4% |

Respondents most commonly reported finding the contractor through contractor advertisements, followed by word of mouth (Table 3-49).

*Table 3-49: Where Respondent Found the Contractor: Fixed Price Promotions*

| Contractor Source (n = 73) | Percent |
|---|---|
| Word of mouth | 21% |
| Online service | 2% |
| Web search | 15% |
| Advertisement | 31% |
| Energy Trust website | 3% |
| Energy Trust referral | 6% |
| Not applicable | 13% |
| Don't know | 4% |
| Prefer not to answer | 0% |

[13] The overall influence rating was brought down somewhat, relative to the rating for the Energy Trust incentive because the former score, like those for contractors and the efficiency score, included ratings by four respondents who did not provide ratings for the incentive and who did not indicate high influence for any other factor.

### 3.2.16 Instant Incentives

Instant Incentives participants (*n* = 322) installed 10 types of measures, the most common of which were gas furnaces (*n* = 68) ducted heat pumps (*n* = 65), and ductless heat pumps (*n* = 58). Fewer installed air conditioners (*n* = 35), smart thermostats (*n* = 32), windows (*n* = 18), ceiling insulation (*n* = 24), other insulation (*n* = 19), and gas fireplaces (*n* = 3).

These participants showed high levels of satisfaction with all facets of the experience (Table 3-50).[14]

*Table 3-50: Satisfaction Ratings: Instant Incentives*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 322) | 96% |
| Performance of new measure (n = 322) | 97% |
| Comfort of home after new measure (n = 322) | 98% |
| Incentive application form (n = 0) | n/a |
| Time it took to receive incentive (n = 0) | n/a |
| Contractor Satisfaction | |
| Overall experience (n = 320) | 97% |
| Quality of installation work (n = 320) | 97% |
| Information about incentives (n = 250) | 95% |
| Communication (n = 320) | 96% |

The overall program influence on participant purchase decisions was moderately high. The equipment efficiency ratings showed the greatest influence, followed by a contractor, the Energy Trust incentive, and the Energy Trust information or materials (Table 3-51).

*Table 3-51: Influence Ratings: Instant Incentives*

| Influence Level | Overall Influence (n = 307) | Energy Trust Incentive (n = 241) | Energy Trust Information or Materials (n = 85) | Salesperson or Retailer (n = 29) | Contractor (n = 282) |
|---|---|---|---|---|---|
| High | 78% | 68% | 62% | 70% | 71% |
| Medium | 6% | 11% | 5% | 6% | 7% |
| Low | 13% | 19% | 12% | 16% | 19% |
| Don't know/no answer | 2% | 2% | 20% | 8% | 3% |

Word of mouth was most commonly reported as where the respondent found the contractor (Table 3-52).

[14] Satisfaction was not previously reported for this group; therefore, we cannot show a trend over time.

*Table 3-52: Where Respondent Found the Contractor: Instant Incentives*

| Contractor Source (n = 320) | Percent |
|---|---|
| Word of mouth | 42% |
| Online service | 5% |
| Web search | 17% |
| Advertisement | 13% |
| Energy Trust website | 6% |
| Energy Trust referral | 5% |
| Not applicable | 9% |
| Don't know | 4% |
| Prefer not to answer | 1% |

### 3.2.17 Pay for Performance

Pay for Performance participants (*n* = 102) installed nine types of measures, the most common of which were ceiling insulation (*n* = 29) and other insulation (*n* = 22). Fewer installed ducted heat pumps (*n* = 16), windows (*n* = 15), ductless heat pumps (*n* = 12), gas furnaces (*n* = 3), and smart thermostats (*n* = 4).

These participants showed high levels of satisfaction with all facets of the experience (Table 3-53).[15]

*Table 3-53: Satisfaction Ratings: Pay for Performance*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 102) | 92% |
| Performance of new measure (n = 102) | 92% |
| Comfort of home after new measure (n = 102) | 92% |
| Incentive application form (n = 38) | 93% |
| Time it took to receive incentive (n = 38) | 78% |
| Contractor Satisfaction | |
| Overall experience (n = 102) | 97% |
| Quality of installation work (n = 102) | 95% |
| Information about incentives (n = 94) | 94% |
| Communication (n = 102) | 92% |
| Assistance with application (n = 38) | 98% |

The overall program influence on participant purchase decisions was moderately high. The equipment's efficiency rating showed the greatest influence, followed closely by salespersons or retailers and contractors; the Energy Trust incentive and Energy Trust information or materials showed moderate influence as well (Table 3-54).

[15] Satisfaction was not previously reported for this group; therefore, we cannot show a trend over time.

*Table 3-54: Influence Ratings: Pay for Performance*

| Influence Level | Overall Influence (n = 98) | Energy Trust Incentive (n = 87) | Energy Trust Information or Materials (n = 35) | Salesperson or Retailer (n = 4) | Contractor (n = 90) | Energy Efficiency Rating (n = 40) |
|---|---|---|---|---|---|---|
| High | 72% | 56% | 53% | 71% | 70% | 73% |
| Medium | 8% | 16% | 4% | 29% | 6% | 5% |
| Low | 18% | 21% | 22% | 0% | 21% | 9% |
| Don't know/no ans. | 2% | 7% | 21% | 0% | 3% | 13% |

Word of mouth was most commonly reported as where the respondent found the contractor, followed by a web search and the contractor's advertisement (Table 3-55).

*Table 3-55: Where Respondent Found the Contractor: Pay for Performance*

| Contractor Source (n = 102) | Percent |
|---|---|
| Word of mouth | 45% |
| Online service | 3% |
| Web search | 26% |
| Advertisement | 13% |
| Energy Trust website | 5% |
| Energy Trust referral | 4% |
| Not applicable | 6% |
| Don't know | 2% |
| Prefer not to answer | 0% |

### 3.2.18 Rental Properties

Rental Properties participants (*n* = 76) installed five types of measures, the most common of which were gas furnaces (*n* = 35) and ductless heat pumps (*n* = 20). Fewer respondents installed ducted heat pump (*n* = 10), ceiling insulation (*n* = 9), and other insulation (*n* = 5).

These participants showed high levels of satisfaction with all facets of the experience (Table 3-56).[16]

*Table 3-56: Satisfaction Ratings: Rental Properties*

| Satisfaction | Percent |
|---|---|
| Measure Satisfaction | |
| Overall experience (n = 76) | 100% |
| Performance of new measure (n = 76) | 100% |
| Comfort of home after new measure (n = 76) | 100% |

[16] Satisfaction was not previously reported for this group; therefore, we cannot show a trend over time.

| Satisfaction | Percent |
|---|---|
| Incentive application form (n = 16) | 100% |
| Time it took to receive incentive (n = 16) | 100% |
| Contractor Satisfaction | |
| Overall experience (n = 76) | 100% |
| Quality of installation work (n = 76) | 100% |
| Information about incentives (n = 63) | 99% |
| Communication (n = 76) | 99% |
| Assistance with application (n = 16) | 100% |

The overall program influence on participant purchase decisions was high. The measure's energy efficiency rating showed the greatest influence, followed by the Energy Trust incentive and contractors; Energy Trust information or materials showed moderate influence (Table 3-57).

*Table 3-57: Influence Ratings: Rental Properties*

| Influence Level | Overall Influence (n = 74) | Energy Trust Incentive (n = 62) | Energy Trust Information or Materials (n = 21) | Contractor (n = 65) | Energy Efficiency Rating (n = 48) |
|---|---|---|---|---|---|
| High | 86% | 78% | 48% | 76% | 82% |
| Medium | 2% | 11% | 4% | 7% | 4% |
| Low | 11% | 11% | 19% | 15% | 7% |
| Don't know/no answer | 1% | 0% | 28% | 3% | 8% |

Word of mouth was most commonly reported as how the respondent found the contractor, followed by a web search (Table 3-58).

*Table 3-58: Where Respondent Found the Contractor: Rental Properties*

| Contractor Source (n = 76) | Percent |
|---|---|
| Word of mouth | 47% |
| Online service | 4% |
| Web search | 9% |
| Advertisement | 8% |
| Energy Trust website | 13% |
| Energy Trust referral | 8% |
| Not applicable | 10% |
| Don't know | 5% |
| Prefer not to answer | 0% |

# 4 Nonresidential Survey Results

The following subsections provide information on the firmographics, demographics, and program experience of nonresidential survey participants. All results are shown separately for Existing Buildings - Oregon, Existing Buildings - Washington, Commercial Solar, Multifamily, and Production Efficiency participants. Some program experience results are additionally broken out further.

Recall from Section 2.4 that there were only 13 Existing Buildings - Washington and 14 Commercial Solar respondents. This is too few to provide precise results. Therefore, while we show responses for these respondents, our discussion of results focuses on the Existing Buildings - Oregon, Multifamily, and Production Efficiency groups, which had sufficient respondents for precise results.

## 4.1 Nonresidential Firmographics and Demographics

Respondents most commonly reported that their firm or organization owns the property or properties that participated in the respective program – except that Existing Buildings participants from Washington most commonly reported they lease the property (Table 4-1).

*Table 4-1: Participating Firm or Organization's Ownership of Participating Property or Properties (Existing Buildings, Commercial Solar, and Production Efficiency Only)*

| Response | Existing Buildings - Oregon (n = 610) | Existing Buildings - Washington (n = 13) | Commercial Solar (n = 14) | Production Efficiency (n = 272) |
|---|---|---|---|---|
| Owns | 57% | 31% | 57% | 63% |
| Leases | 34% | 46% | 7% | 27% |
| Other | 2% | 8% | 0% | 1% |
| Don't know | 2% | 8% | 0% | 2% |
| No response | 6% | 8% | 36% | 6% |

About two-thirds of those who reported leasing the participating property said their firm or organization had authority to make any type of upgrade decision (Table 4-2).[17]

[17] This was somewhat more common for Production Efficiency than for Existing Buildings, but the difference did not quite achieve statistical significance ($z = 1.75$, $.05 < p < .10$).

*Table 4-2: Participating Firm or Organization's Authority for Upgrade Decisions (Existing Buildings and Production Efficiency Participants Who Reported Leasing Building Only)*

| Level of Authority for Upgrades | Existing Buildings - Oregon (n = 194) | Existing Buildings - Washington (n = 6) | Commercial Solar (n = 1) | Production Efficiency (n = 73) |
|---|---|---|---|---|
| Any type of upgrade | 58% | 67% | 100% | 69% |
| Only some types of upgrades | 38% | 33% | 0% | 30% |
| No authority for upgrade decisions | 0% | 0% | 0% | 0% |
| Don't know | 0% | 0% | 0% | 0% |
| No response | 0% | 0% | 0% | 0% |

Participants in all programs reported a range of company sizes, in terms of number of employees, but skewed somewhat toward fewer employees (Table 4-3).

*Table 4-3: Number of Oregon Employees*

| Response | Existing Buildings - Oregon (n = 610) | Existing Buildings - Washington (n = 13) | Commercial Solar (n = 14) | Multifamily (n = 174) | Production Efficiency (n = 272) |
|---|---|---|---|---|---|
| 1 to 5 | 24% | 23% | 43% | 24% | 19% |
| 6 to 9 | 12% | 15% | 0% | 5% | 9% |
| 10 to 19 | 17% | 23% | 7% | 16% | 12% |
| 20 to 99 | 16% | 15% | 14% | 14% | 27% |
| 100 to 499 | 9% | 0% | 0% | 13% | 16% |
| 500 or more | 7% | 0% | 0% | 2% | 5% |
| Don't know | 9% | 15% | 0% | 26% | 5% |
| No response | 2% | 8% | 36% | 1% | 6% |

About half the respondents were an owner or someone in an executive or decision-making role, while about one-quarter were a manager of some sort (Table 4-4). The percentage of owners/executives was somewhat higher for Existing Buildings and Production Efficiency respondents than for Multifamily respondents.[18]

[18] The differences for both Existing Buildings vs. Multifamily and Production Efficiency vs. Multifamily were statistically significant.

*Table 4-4: Respondent's Position in Firm or Organization*

| Response[1] | Existing Buildings - Oregon (n = 610) | Existing Buildings - Washington (n = 13) | Commercial Solar (n = 14) | Multifamily (n = 174) | Production Efficiency (n = 272) |
|---|---|---|---|---|---|
| Owner | 37% | 38% | 57% | 19% | 38% |
| Executive or decision-maker | 10% | 15% | 7% | 14% | 10% |
| Manager | 25% | 23% | 0% | 45% | 28% |
| Employee | 6% | 15% | 0% | 8% | 7% |
| Other | 18% | 0% | 0% | 13% | 11% |
| Don't know | 1% | 0% | 0% | 0% | 1% |
| No response | 3% | 8% | 36% | 0% | 6% |

[1] This table shows the response options provided in the survey. About one-fifth of responses selected "Other." We recoded most of those into one of the other categories. We coded any response with *owner* (e.g., owner/manager) as *Owner*; any with *officer*, *director*, or similar indication, as *Executive or decision-maker*, any response with *manager* (including *property manager*), *lead*, or *supervisor* as *Manager*; and any job title that did not indicate any of these as *employee*. The few remaining "other" responses either were unclear or did not have enough detail to re-categorize.

The survey asked respondents who were the owner of the participating firm or a resident of a participating multifamily property to identify their race or ethnicity. About three-quarters of respondents identified themselves as White or Caucasian (Table 4-5). Most of the remainders either said they were Hispanic/Latino/Spanish or Asian/Asian Indian or did not identify their race or ethnicity.

*Table 4-5: Respondent Race or Ethnicity (Business Owners and Multifamily Residents Only)*

| Race/Ethnicity[1] | Existing Buildings - Oregon (n = 184) | Existing Buildings - Washington (n = 4) | Commercial Solar (n = 7) | Multifamily - Landlords[2] (n = 47) | Production Efficiency (n = 76) |
|---|---|---|---|---|---|
| Asian only | 12% | 25% | 0% | 0% | 4% |
| Black only | 1% | 0% | 0% | 0% | 0% |
| Hispanic/Latino, any race | 12% | 0% | 14% | 17% | 1% |
| Native American only | 0% | 0% | 0% | 0% | 0% |
| Other only | 2% | 0% | 0% | 0% | 0% |
| Two or more | 1% | 0% | 0% | 0% | 1% |
| White only | 72% | 75% | 86% | 83% | 94% |

[1] Native American includes Alaska Native, and Asian includes Asian Indian, Hawaiian, and Other Pacific Islanders.

[2] In addition, 10 Multifamily respondents reported that they were residents of the property in question, rather than the property manager or landlord. Of those 10 respondents, nine identified as white and the other refused to identify race.

Existing Buildings participants identified themselves as Asian more frequently than did Production Efficiency or Multifamily participants. They also identified themselves as Hispanic/Latino more frequently than did Production Efficiency respondents.[19]

[19] All differences were statistically significant.

## 4.2 Nonresidential Program Experience by Program Track and Quota Group

The following subsections show results for key survey variables by program track and quota group. Results generally show high satisfaction ratings across all facets of program experience for all quota groups. In nearly all cases, satisfaction with the overall program experience and with interactions with program representatives remained consistent or showed a slight upward trend over time.

Respondents across all quota groups reported influence from multiple factors, with no single factor showing consistently greater influence than any other.

### 4.2.1 Existing Buildings - Oregon

Existing Buildings - Oregon participants (*n* = 611) showed high levels of satisfaction and reported moderately high to high overall program influence across quota groups (Table 4-6). The small sample sizes for specific quota groups, particularly for some groups, argue against comparing the groups on the three metrics.

*Table 4-6: Key Satisfaction and Influence Metrics by Quota Group: Existing Buildings - Oregon*

| Quota Group | Satisfaction Metric | | Overall Influence Metric |
|---|---|---|---|
| | Overall Experience with Energy Trust | Interaction with Energy Trust Representative | |
| Existing Buildings - Oregon Overall (n = 611) | 98% | 99% | 94% |
| End-Use Quotas (Exclusive Quotas) | | | |
| Assembly/Religious (n = 40) | 100% | 97% | 87% |
| Auto Services (n = 56) | 96% | 100% | 95% |
| Education (n = 34) | 100% | 96% | 97% |
| Government (n = 51) | 100% | 100% | 94% |
| Grocery (n = 41) | 98% | 95% | 95% |
| Healthcare (n = 32) | 90% | 100% | 90% |
| Higher Education (n = 9) | 100% | 100% | 78% |
| Hospitality (n = 29) | 97% | 93% | 96% |
| Office (n = 66) | 98% | 100% | 94% |
| Other Commercial (n = 15) | 100% | 100% | 100% |
| Recreation (n = 38) | 94% | 97% | 97% |
| Restaurant (n = 76) | 99% | 100% | 93% |
| Retail (n = 71) | 100% | 100% | 96% |
| Warehouse (n = 53) | 98% | 98% | 96% |
| Cross-Cutting Quotas | | | |
| Direct Install (DI) (n = 122) | 100% | 100% | 96% |
| Lighting (Non-DI) (n = 346) | 98% | 98% | 94% |
| BE TLED Giveaway (n = 93) | 99% | 99% | 93% |

Looking at Existing Buildings - Oregon as a group, participants showed high levels of satisfaction with all facets of the experience (Table 4-7).

*Table 4-7: Satisfaction by Program Element: Existing Buildings - Oregon*

| Program Element | Percent |
|---|---|
| Program-Level Satisfaction by Program Element | |
| Overall experience with Energy Trust (n = 611) | 98% |
| Interaction with Energy Trust representative (n = 611) | 99% |
| Incentive application process (n = 611) | 97% |
| Information and materials from Energy Trust (n = 611) | 97% |
| Site assessment or walk-through survey (n = 107) | 99% |
| Energy Trust-funded technical services (n = 345) | 97% |
| The scheduling process to receive services (n = 123) | 97% |
| Turnaround time to receive your incentive (n = 487) | 93% |
| Performance of the measure (n = 611) | 98% |
| The vendor or installation contractor, if applicable (n = 611) | 98% |
| Overall Experience by Program Track | |
| Custom (n = 8) | 100% |
| Lighting (n = 470) | 99% |
| Standard (n = 62) | 95% |
| Direct Install (n = 71) | 100% |
| Interaction with Program Representative by Program Track | |
| Custom (n = 8) | 100% |
| Lighting (n = 470) | 99% |
| Standard (n = 62) | 97% |
| Direct Install (n = 71) | 100% |

Satisfaction with the overall program experience and with interactions with program representatives show slight upward trends over time.

*Time Trend in Key Satisfaction Indicators: Existing Buildings - Oregon*

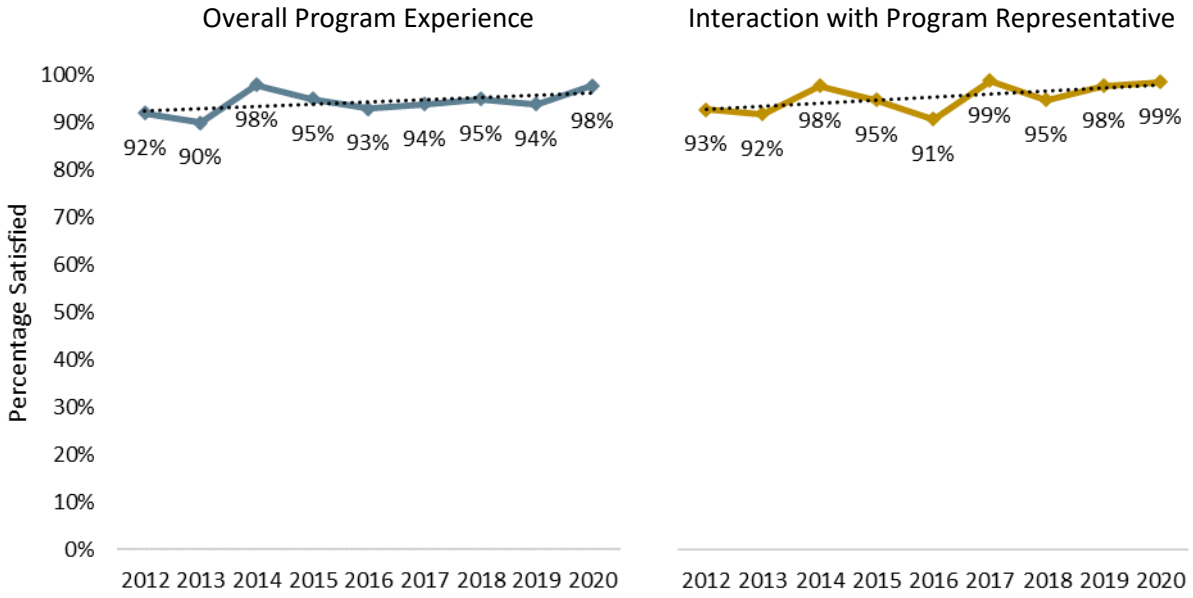



Table 4-8 shows reported influence from multiple factors, broken out by quota group.[20] The Energy Trust incentive and the fact that services were provided at low or no cost both had relatively high overall influence, while Energy Trust information and materials and site assessments/walk-throughs had relatively less influence.

Comparisons across quota groups and across influencers are challenging. Part of this is because many of the sample sizes are small, but it also is largely because the same influencers do not apply to all quota groups. This makes it difficult to assess whether, for example, site assessments have a low mean influence percentage because this item does not apply to the hospitality quota group, which on average provided high influence ratings, or whether the hospitality group provided high average influence ratings because that group did not rate the influence of site assessments – or both.

It may still be possible to determine whether some factors are relatively more important influencers for some groups than others. ADM conducted analyses to identify the influence factors that had higher-than-expected influence ratings for each quota group.[21] This analysis identified influence ratings for four quota groups that appeared to be higher than expected:

[20] Influence was defined as a rating of 4 or 5 on a scale from 1 (did not have any influence) to 5 (had a great influence). "Don't know" and "no response" were excluded from the denominators for all analyses to be consistent with previous years. As with the residential survey, we calculated an "overall influence" rating for each respondent that was equal to the highest influence rating that respondent provided for any rated influence factor.

[21] The method is explained briefly in the table note to Table 4-8 and in greater detail in the Appendix.

*Table 4-8: Influencers by Quota Group: Existing Buildings – Oregon*[1]

| Quota Group | Energy Trust Incentive | | Information and Materials | | Services Provided at No/Low Cost | | Energy Trust Program Represent-ative | | Site Assessment or Walk-Through Survey | | Energy Trust-Funded Technical Services | | Vendor or Installation Contractor | | Weighted Mean %, All Influence Factors |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | n | % | |
| Assembly/Religious | 40 | 85% | 40 | 66% | 10 | 80% | 40 | 70% | 10 | 60% | 25 | 76% | 40 | 60% | 70.9% |
| Auto Services | 56 | 88% | 56 | 63% | 22 | 95% | 56 | 70% | 20 | 65% | 36 | 77% | 56 | 69% | 74.2% |
| Education | 34 | 85% | 34 | 48% | 4 | 100% | 34 | 71% | 4 | 100% | 22 | 78% | 34 | 70% | 71.3% |
| Government | 51 | 79% | 51 | 65% | 4 | 100% | 51 | 74% | 4 | 100% | 29 | 67% | 51 | 75% | 73.4% |
| Grocery | 41 | 95% | 41 | 78% | 7 | 100% | 41 | 66% | 6 | 80% | 23 | 76% | 41 | 79% | 79.8% |
| Healthcare | 32 | 80% | 32 | 61% | 7 | 83% | 32 | 64% | 6 | 67% | 20 | 73% | 32 | 62% | 68.2% |
| Higher Education | 9 | 75% | 9 | 63% | 0 | n/a | 9 | 50% | 0 | n/a | 7 | 67% | 9 | 29% | 56.3% |
| Hospitality | 29 | 89% | 29 | 88% | 1 | 100% | 29 | 85% | 0 | n/a | 20 | 94% | 29 | 88% | 88.5% |
| Office | 66 | 81% | 66 | 62% | 9 | 89% | 66 | 66% | 8 | 63% | 35 | 70% | 66 | 74% | 71.0% |
| Other Commercial | 15 | 92% | 15 | 62% | 2 | 100% | 15 | 60% | 1 | 100% | 7 | 60% | 15 | 67% | 70.5% |
| Recreation | 38 | 94% | 38 | 75% | 10 | 100% | 38 | 82% | 8 | 63% | 20 | 71% | 38 | 70% | 79.6% |
| Restaurant | 76 | 86% | 76 | 78% | 8 | 67% | 76 | 75% | 5 | 50% | 41 | 64% | 76 | 76% | 76.4% |
| Retail | 71 | 94% | 71 | 74% | 32 | 90% | 71 | 80% | 28 | 74% | 36 | 67% | 71 | 78% | 80.3% |
| Warehouse | 53 | 92% | 53 | 76% | 7 | 83% | 53 | 78% | 7 | 50% | 24 | 83% | 53 | 86% | 82.1% |
| Total/Wtd. Mean | 611 | 87.3% | 611 | 69.5% | 123 | 90.0% | 611 | 72.8% | 107 | 68.8% | 345 | 73.1% | 611 | 73.5% | 75.8% |
| Direct Install (DI) | 122 | 93% | 122 | 70% | 119 | 89% | 122 | 76% | 107 | 69% | 83 | 73% | 122 | 71% | 77.6% |
| Non-DI Lighting | 346 | 85% | 346 | 67% | 1 | n/a | 346 | 69% | 0 | n/a | 179 | 69% | 346 | 76% | 73.6% |
| TLED Giveaway | 53 | 94% | 53 | 85% | 0 | n/a | 53 | 87% | 0 | n/a | 22 | 76% | 53 | 90% | 87.8% |

[1] Shaded cells indicate influence percentages that exceeded what would be expected from the mean influence percentage for that quota group and influence factor. The method is described in detail in the Appendix. In brief, the percentage exceeded expectation if the ratio between that percentage and that factor's mean percentage, *across quota groups*, was at least one standard deviation higher than the mean of the ratios similarly calculated *across influence factors* for that quota group. For example, Energy Trust information and materials had 78% influence on the Restaurant group, and the mean percentage for that factor was 69.5%, for a ratio of 1.12, which was more than one standard deviation above the mean ratio (0.93) for all influence factors similarly calculated across the Restaurant group.

- The 77% influence that funded technical services had in the Auto Services quota group is relatively high, given the 74% mean influence rating for that group and the 72% mean influence rating for that factor.
- The 74% vendor/contractor influence for the Office quota group is relatively high, given the 71% mean influence rating for that group and the 74% mean influence rating for that factor.
- The 82% influence for Energy Trust program representative in the Recreation quota group is relatively high, given the 80% mean influence rating for that group and the 72% mean influence rating for that factor.
- The 78% influence for Energy Trust information and materials in the Restaurant quota group is relatively high, given the 77% mean influence rating for that group and the 69% mean influence rating for that factor.

It does not seem obvious that the vendor/contractor influence rating for the Office group is higher than expected. That influence rating is only slightly higher than the mean for that quota group and is slightly lower than the mean, across groups, for that influence factor. This serves to underscore the fact that this analysis assesses whether the influence rating in question departs from what would be expected based on the entire profile for a given quota group relative to other groups and the entire profile for a given influence factor. Note that for the Office group, nearly all the influence ratings fall below the mean for the respective influence factors. This is reflected in the fact that the mean influence rating for this group (71%) is lower than the mean across all groups (76%). Based on this, and the facts that the mean vendor/contractor influence rating is slightly lower than the overall average, we would expect a relatively low vendor/contractor influence rating for the Office group. However, the influence rating of 74% in that group is higher than more other quota groups (eight) that it is lower than (six). Thus, the influence rating is relatively high for that influence factor, all things considered.

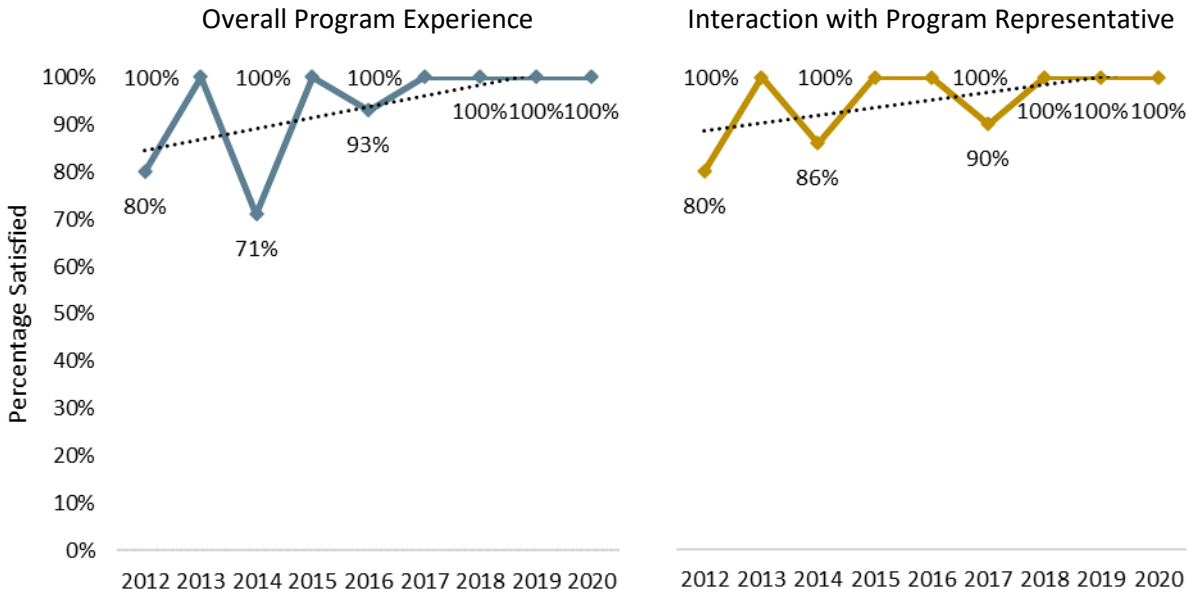
### 4.2.2 Existing Buildings - Washington

Existing Buildings - Washington participants (*n* = 13) showed high satisfaction with key program elements and reported moderately high overall program influence; the very small sample size argues for caution in generalizing these findings or comparing satisfaction levels with previous years (Table 4-9 and accompanying charts).

*Table 4-9: Key Satisfaction and Influence Metrics by Quota Group: Existing Buildings - Washington*

| Quota Group | Satisfaction Metric | | Overall Influence Metric |
|---|---|---|---|
| | Overall Experience with Energy Trust | Interaction with Energy Trust Representative | |
| Existing Buildings - Washington (n = 13) | 100% | 100% | 91% |

*Time Trend in Key Satisfaction Indicators: Existing Buildings - Washington*




These participants showed high levels of satisfaction with most facets of the experience; again, the very small sample size argues for caution in generalizing results or comparing across items (Table 4-10).

*Table 4-10: Satisfaction by Program Element: Existing Buildings - Washington*

| Program Element | Percent |
|---|---|
| Overall experience with Energy Trust (n = 13) | 100% |
| Interaction with Energy Trust representative (n = 13) | 100% |
| Incentive application process (n = 13) | 100% |
| Information and materials from Energy Trust (n = 13) | 85% |
| Turnaround time to receive your incentive (n = 13) | 100% |
| Performance of the measure (n = 13) | 91% |

| Program Element | Percent |
|---|---|
| The vendor or installation contractor, if applicable (n = 13) | 100% |

Respondents reported influence from multiple factors (Table 4-11). The very small sample size argues for caution in comparing the levels of influence among items.

*Table 4-11: Influencers: Existing Buildings - Washington*

| Influencer | Percent |
|---|---|
| The Energy Trust Incentive (n = 13) | 64% |
| Information and materials from Energy Trust (n = 13) | 55% |
| The Energy Trust program representative (n = 13) | 50% |
| Energy Trust-funded technical services (n = 5) | 25% |
| The vendor or installation contractor, if applicable (n = 13) | 71% |

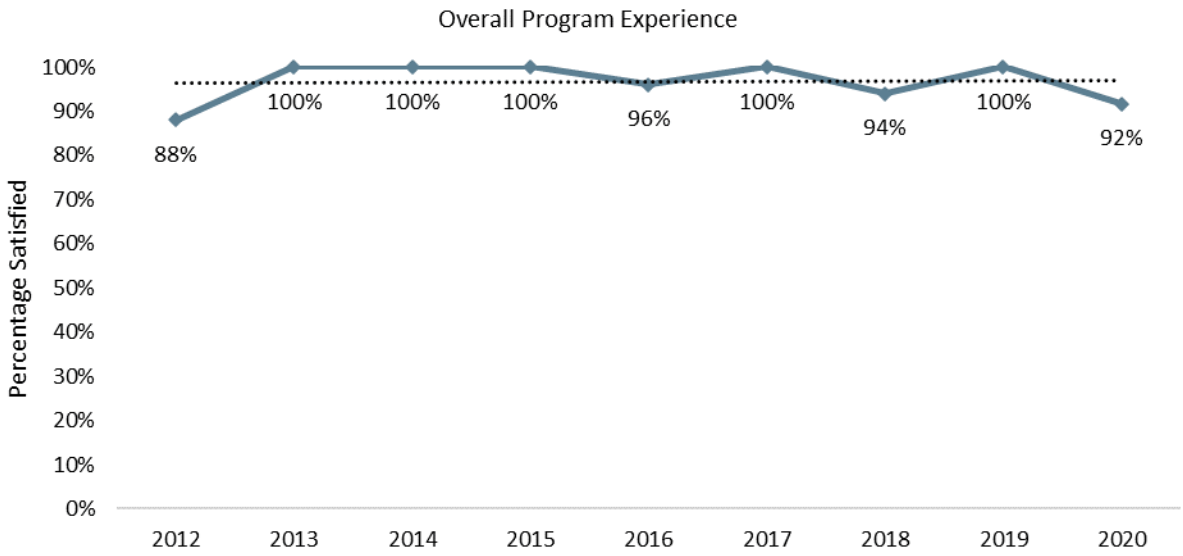
### 4.2.3 Commercial Solar

Commercial Solar participants (*n* = 14) showed moderately high to high satisfaction with key program elements and reported high overall program influence; the very small sample size argues for caution in generalizing these findings or comparing satisfaction levels with previous years (Table 4-12 and accompanying chart).

*Table 4-12: Key Satisfaction and Influence Metrics by Quota Group: Existing Buildings - Washington*

| Quota Group | Satisfaction Metric | | Overall Influence Metric |
|---|---|---|---|
| | Overall Experience with Energy Trust | Interaction with Energy Trust Representative | |
| Commercial Solar PV (n = 14) | 92% | 75% | 86% |

*Time Trend in Key Satisfaction Indicators: Commercial Solar PV*




These participants showed high levels of satisfaction with all facets of the experience; again, the very small sample size argues for caution in generalizing results or comparing across items (Table 4-13).

*Table 4-13: Satisfaction by Program Element: Commercial Solar*

| Program Element | Percent |
|---|---|
| Overall experience with Energy Trust (n = 14) | 92% |
| Interaction with Energy Trust representative (n = 14) | 75% |
| Incentive application process (n = 14) | 92% |
| Information and materials from Energy Trust (n = 14) | 91% |
| Energy Trust-funded technical services (n = 8) | 100% |
| Performance of the measure (n = 14) | 83% |
| The vendor or installation contractor, if applicable (n = 14) | 85% |

Respondents reported influence from multiple factors (Table 4-14). The very small sample size argues for caution in comparing the levels of influence among items.

*Table 4-14: Influencers: Commercial Solar*

| Influencer | Percent |
|---|---|
| The Energy Trust Incentive (n = 14) | 79% |
| Information and materials from Energy Trust (n = 14) | 83% |
| The Energy Trust program representative (n = 14) | 67% |
| Energy Trust-funded technical services (n = 8) | 100% |
| The vendor or installation contractor, if applicable (n = 14) | 86% |

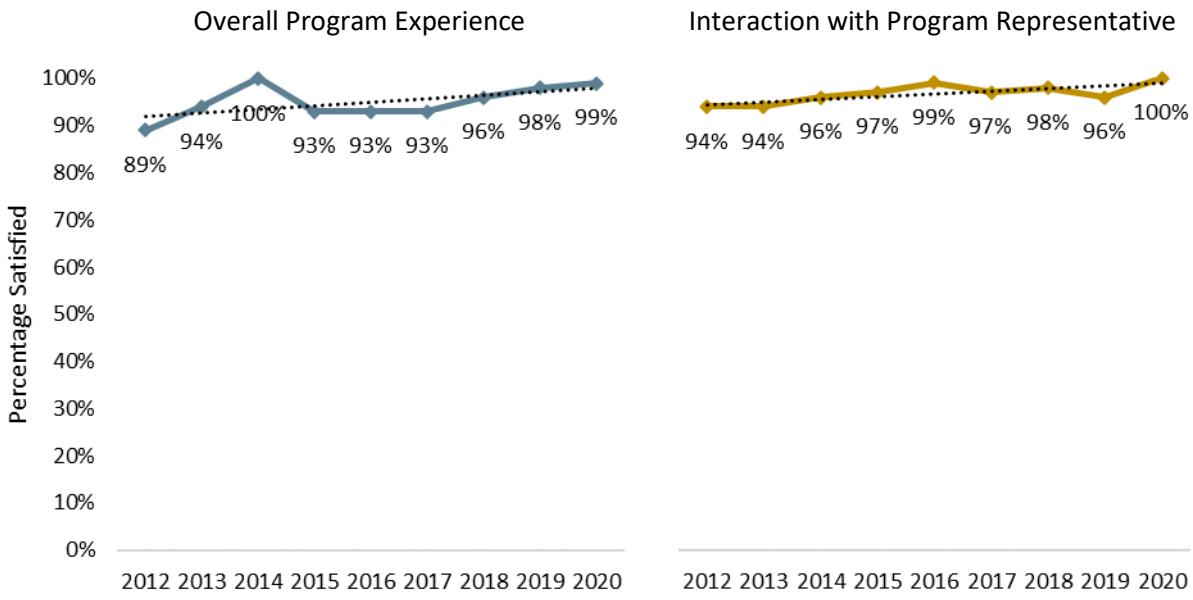
### 4.2.4 Multifamily

Multifamily participants (*n* = 192) showed high satisfaction with key program elements and reported moderately high to high overall program influence across quota groups; satisfaction with the overall program experience and with interactions with program representatives have shown slight upward trends time (Table 4-15 and accompanying charts).

*Table 4-15: Key Satisfaction and Influence Metrics by Quota Group: Multifamily*

| Quota Group | Satisfaction Metric | | Overall Influence Metric |
|---|---|---|---|
| | Overall Experience with Energy Trust | Interaction with Energy Trust Representative | |
| Multifamily Overall (n = 192) | 99% | 100% | 82% |
| Appliances (n = 22) | 100% | 100% | 75% |
| Direct Install (n = 25) | 100% | 100% | 100% |
| Hot Water (n = 7) | 86% | 86% | 83% |
| HVAC (n = 49) | 100% | 100% | 79% |
| Insulation and Windows (n = 48) | 98% | 100% | 83% |
| Lighting (n = 38) | 95% | 100% | 92% |

*Time Trend in Key Satisfaction Indicators: Multifamily*




Looking at Multifamily participants as a group, they showed high levels of satisfaction with all facets of the experience (Table 4-16).

*Table 4-16: Satisfaction by Program Element: Multifamily*

| Program Element | Percent |
|---|---|
| Program Level Satisfaction by Program Element | |
| Overall experience with Energy Trust (n = 192) | 99% |
| Interaction with Energy Trust representative (n = 192) | 100% |
| Incentive application process (n = 167) | 98% |
| Information and materials from Energy Trust (n = 192) | 98% |
| Site assessment or walk-through survey (n = 85) | 99% |
| Energy Trust-funded technical services (n = 65) | 99% |
| Turnaround time to receive your incentive (n = 165) | 97% |
| Performance of the measure (n = 192) | 98% |
| The vendor or installation contractor, if applicable (n = 167) | 98% |
| Overall Experience by Program Track | |
| Custom (n = 1) | 100% |
| Lighting (n = 119) | 98% |
| Standard (n = 65) | 100% |
| Direct Install (n = 7) | 100% |
| Interaction with Program Representative by Program Track | |
| Custom (n = 1) | 100% |
| Lighting (n = 119) | 100% |
| Standard (n = 65) | 100% |
| Direct Install (n = 7) | 100% |

Table 4-17 shows reported influence from multiple factors, broken out by quota group. No single item was consistently more influential than any other across the groups. As for Existing Buildings – Oregon, ADM identified the influence factors that had higher-than-expected influence ratings for each quota group:[22]

- The 74% influence for the Energy Trust incentive in the Insulation and Windows quota group is relatively high, given the 63% mean influence rating for that group and the 72% mean influence rating for that factor.

[22] See note to Table 4-8 for an explanation of the method.

*Table 4-17: Influencers by Quota Groups: Multifamily*[1]

| Quota Group | Energy Trust Incentive | | Information and Materials | | Energy Trust Program Representative | | Site Assessment or Walk-Through Survey | | Energy Trust-Funded Technical Services | | Vendor or Installation Contractor | | Weighted Mean %, All Influence Factors |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | n | % | |
| Appliances | 22 | 70% | 22 | 60% | 22 | 68% | 10 | 56% | 10 | 63% | 22 | 67% | 64.9% |
| Direct Install | 0 | n/a | 25 | 91% | 25 | 96% | 15 | 100% | 4 | 100% | 0 | n/a | 95.3% |
| Hot Water | 7 | 60% | 7 | 60% | 7 | 80% | 3 | 100% | 5 | 75% | 7 | 67% | 70.6% |
| HVAC | 49 | 69% | 49 | 64% | 49 | 66% | 14 | 85% | 12 | 50% | 49 | 59% | 65.0% |
| Insulation and Windows | 48 | 74% | 48 | 60% | 48 | 55% | 20 | 68% | 14 | 69% | 48 | 58% | 63.1% |
| Lighting | 38 | 78% | 38 | 78% | 38 | 82% | 21 | 84% | 18 | 78% | 38 | 78% | 79.5% |
| Other Measures | 0 | n/a | 0 | n/a | 0 | n/a | 0 | n/a | 0 | n/a | 0 | n/a | n/a |
| Products | 3 | 67% | 3 | 67% | 3 | 67% | 2 | 50% | 2 | 50% | 3 | 50% | 59.4% |
| Total/Weighted Mean | 160 | 72.7% | 160 | 66.0% | 160 | 66.9% | 67 | 74.3% | 56 | 66.0% | 160 | 64.2% | 67.9% |

[1]Shaded cells indicate influence percentages that are higher than expected, given the mean influence rating for that quota group and influence factor. The method for identifying higher-than-expected percentages is explained in the note to Table 4-8.

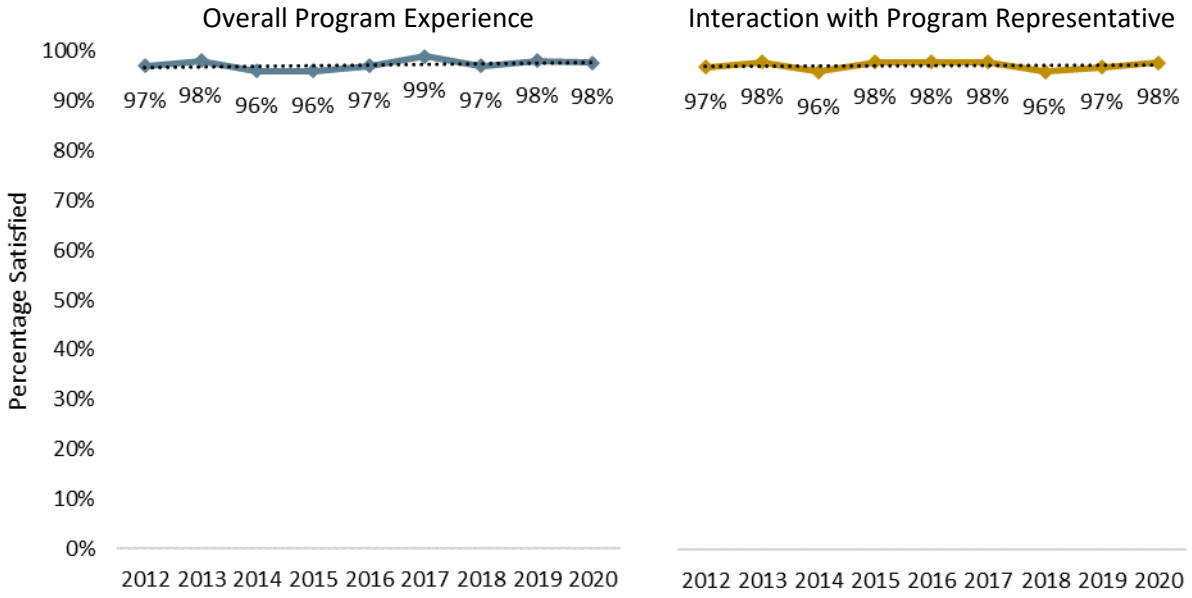
### 4.2.5 Production Efficiency

Production Efficiency participants (*n* = 276) showed high satisfaction with key program elements and reported moderately high to high overall program influence across quota groups; satisfaction with the overall program experience and with interactions with program representatives are consistent with those in previous years (Table 4-18 and accompanying charts).

*Table 4-18: Key Satisfaction and Influence Metrics by Quota Group: Production Efficiency*

| Quota Group | Satisfaction Metric | | Overall Influence Metric |
|---|---|---|---|
| | Overall Experience with Energy Trust | Interaction with Energy Trust Representative | |
| End-Use Quotas (Exclusive Quotas) | | | |
| Production Efficiency Overall (n = 276) | 98% | 98% | 92% |
| Agriculture (n = 50) | 98% | 94% | 83% |
| Compressed air (n = 3) | 100% | 67% | 100% |
| HVAC and controls (n = 22) | 95% | 100% | 90% |
| Lighting (n = 88) | 97% | 99% | 94% |
| Other industrial measures (n = 63) | 100% | 100% | 95% |
| Pumps and Motors (n = 35) | 100% | 97% | 88% |
| Cross-Cutting Quotas | | | |
| PE TLED giveaway (n = 11) | 100% | 100% | 89% |
| Custom projects (n = 28) | 100% | 96% | 100% |
| Standard projects (n = 160) | 98% | 98% | 89% |
| Agriculture sector (n = 123) | 98% | 97% | 89% |
| Food & beverage sector (n = 28) | 100% | 100% | 97% |
| High tech sector (n = 11) | 100% | 100% | 89% |
| Metals sector (n = 12) | 100% | 90% | 93% |
| Wood & paper sector (n = 21) | 100% | 100% | 100% |

*Time Trend in Key Satisfaction Indicators: Production Efficiency*




Looking at Production Efficiency participants as a group, they showed high levels of satisfaction with all facets of the experience (Table 4-19).

*Table 4-19: Satisfaction by Program Element: Production Efficiency*

| Program Element | Percent |
|---|---|
| Program Level Satisfaction by Program Element | |
| Overall experience with Energy Trust (n = 276) | 98% |
| Interaction with Energy Trust representative (n = 276) | 98% |
| Incentive application process (n = 276) | 95% |
| Information and materials from Energy Trust (n = 276) | 96% |
| Energy Trust-funded technical services (n = 133) | 99% |
| Turnaround time to receive your incentive (n = 272) | 90% |
| Performance of the measure (n = 276) | 98% |
| The vendor or installation contractor, if applicable (n = 276) | 97% |
| Overall Experience by Program Track | |
| Custom (n = 11) | 100% |
| Lighting (n = 201) | 97% |
| Standard (n = 29) | 100% |
| Small Industrial (n = 35) | 100% |
| Interaction with Program Representative by Program Track | |
| Custom (n = 11) | 100% |
| Lighting (n = 201) | 97% |
| Standard (n = 29) | 100% |
| Small Industrial (n = 35) | 100% |

Table 4-20 shows reported influence from multiple factors, broken out by quota group. No single item was consistently more influential than any other across the groups. As for Existing Buildings – Oregon and Multifamily, ADM identified the influence factors that had higher-than-expected influence ratings for each quota group:[23]

- The 83% influence for vendors in the Lighting quota group is relatively high, given the 78% mean influence rating for that group and the 71% mean influence rating for that factor.
- The Energy Trust Program representative's 82% influence in the Other Industrial Measures quota group is relatively high, given the 80% mean influence rating for that group and the 71% mean influence rating for that factor.
- The 76% influence for the Energy Trust incentive in the Pumps and Motors quota group is relatively high, given the 63% mean influence rating for that group and the 82% mean influence rating for that factor.
- The 71% influence for the Energy Trust information and materials in the Standard Projects cross-cutting quota group is relatively high, given the 73% mean influence rating for that group and the 71% mean influence rating for that factor.
- The 72% influence for the Energy Trust information and materials in the Agriculture Sector cross-cutting quota group is relatively high, given the 72% mean influence rating for that group and the 71% mean influence rating for that factor.

As was the case with the vendor/contractor influence in the Existing Buildings - OR Office quota group, it seems counter-intuitive that the influence ratings in the last two of the above items are higher than expected. Again, it is important to keep in mind that this analysis assesses whether the influence rating in question departs from what would be expected based on the entire profile for a given quota group relative to other groups. Even in the above instances, the influence ratings is relatively high, all things considered.

[23] See note to Table 4-8 for an explanation of the method.

*Table 4-20: Influencers by Quota Group: Production Efficiency*[1]

| Quota Group | Energy Trust Incentive | | Information and materials | | Energy Trust program representative | | Energy Trust-funded technical services | | Vendor or installation contractor | | Weighted Mean %, All Influence Factors |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | n | % | n | % | n | % | n | % | n | % | |
| Agriculture | 50 | 77% | 50 | 71% | 50 | 70% | 9 | 63% | 50 | 63% | 70.0% |
| Compressed Air | 3 | 67% | 3 | 67% | 3 | 67% | 2 | 100% | 3 | 33% | 64.3% |
| HVAC and Controls | 22 | 76% | 22 | 67% | 22 | 67% | 10 | 78% | 22 | 67% | 69.9% |
| Lighting | 88 | 88% | 88 | 71% | 88 | 72% | 46 | 74% | 88 | 83% | 77.9% |
| Other Industrial Measures | 63 | 84% | 63 | 76% | 63 | 82% | 36 | 83% | 63 | 74% | 79.6% |
| Pumps and Motors | 35 | 76% | 35 | 62% | 35 | 53% | 22 | 67% | 35 | 58% | 62.9% |
| Refrigeration | 15 | 80% | 15 | 69% | 15 | 82% | 8 | 75% | 15 | 87% | 78.9% |
| Total/Weighted Mean | 236 | 82.9% | 236 | 71.2% | 236 | 71.5% | 113 | 74.4% | 236 | 72.5% | 74.5% |
| TLED Giveaway | 5 | 100% | 5 | 80% | 5 | 75% | 1 | 100% | 5 | 100% | 89.3% |
| Custom Projects | 28 | 81% | 28 | 70% | 28 | 74% | 21 | 86% | 28 | 61% | 74.1% |
| Standard Projects | 160 | 79% | 160 | 71% | 160 | 71% | 66 | 73% | 160 | 69% | 72.5% |
| Agriculture Sector | 123 | 80% | 123 | 72% | 123 | 69% | 51 | 72% | 123 | 69% | 72.5% |
| Food & Beverage Sector | 28 | 94% | 28 | 67% | 28 | 68% | 15 | 73% | 28 | 79% | 76.4% |
| High Tech Sector | 11 | 67% | 11 | 67% | 11 | 86% | 7 | 100% | 11 | 67% | 75.8% |
| Metals Sector | 12 | 93% | 12 | 61% | 12 | 65% | 7 | 84% | 12 | 80% | 76.0% |
| Wood & Paper Sector | 21 | 90% | 21 | 80% | 21 | 71% | 15 | 68% | 21 | 72% | 76.9% |

[1]Shaded cells indicate influence percentages that are higher than expected, given the mean influence rating for that quota group and influence factor. The method for identifying higher-than-expected percentages is explained in the note to Table 4-8.

# 5 Summary and Conclusions

Both residential and nonresidential participants were generally satisfied with their program experience, but particularly, nonresidential ones. In nearly all cases, overall program satisfaction remained consistent or showed a slight upward trend over time. These findings indicate that Energy Trust continues to do a good job administering and managing its programs.

Factors influencing the purchase decisions in the residential sector varied somewhat by measure type. In general, contractors (or, for retail products, salespersons) and efficiency ratings are important influencers across measure types. The importance of contractors is well known from multiple years of evaluation, and it points to the value of maintaining strong and consistent outreach to contractors, including through the trade ally network as well as other means. The consistent importance of efficiency ratings confirms that at least some customers pay attention to those ratings and points to the value of continuing to push for clear efficiency labeling on products. It also indicates that trade allies should market products using those ratings.

In the residential sector, the Energy Trust incentive and Energy Trust information or materials were commonly identified influencers for certain measures. The incentive was often mentioned as an influencer for heat pumps (ducted and ductless), ceiling insulation, furnaces, and solar PV. This could suggest at least two interpretations: 1) these are measures that respondents recognize as valuable but still feel that the energy savings alone may not offset the upfront cost; and 2) contractors may be using the incentive as a selling point for these measures.

Energy Trust information or materials were commonly mentioned with regard to heat pumps and fireplaces. This may suggest that customers may not find other information on these measures sufficiently enlightening to inform their decision – or, at least, not as valuable as the Energy Trust information. It also may be possible that contractors use Energy Trust information to market these measures.

Among participants who used a contractor, by far the most consistently identified way participants found that contractor was by word of mouth. Web searches, use of an online referral or rating service (e.g., Yelp or Angie's List), and contractor advertisements were also frequently identified for most quota groups. The problem with "word of mouth" is that it does not tell us how the respondent's source originally learned about the contractor. Most likely, it was from one of the other common sources. However, it might be valuable to investigate whether certain sources are more likely than others to generate word of mouth.

The nonresidential results generally show high satisfaction ratings across all facets of program experience for all quota groups. In nearly all cases, satisfaction with the overall program experience and with interactions with program representatives remained consistent or showed a slight upward trend over time.

Respondents across all quota groups reported influence from multiple factors, with no single factor showing consistently greater influence than any other across quota groups within a program.

# 6 Appendix: Assessing High-than-Expected Influence

We assessed whether each factor's influence on each quota group exceeded what would be expected from the mean influence of that factor and the mean influence operating on that quota group. The method is as follows:

- We first calculated the ratio between a given factor's influence on a given quota group and that factor's mean influence rating *across quota groups*.
- We then assessed whether that ratio was at least one standard deviation above the mean of the ratios similarly calculated across all influence factors for that quota group.
- All mean influence ratings across quota groups were weighted by the number of observations for a given influence rating and quota group.
- We excluded influence ratings associated with a sample size of less than 30.

For example, Energy Trust information and materials had 78% influence on the Restaurant quota group, compared to a mean influence of 69.5% across quota groups (Table 6-1). The ratio of these two influence percentages was 1.12. Thus, the influence of information and materials on the Restaurant groups was somewhat higher than its average influence across quota groups.

*Table 6-1: Influencers by Quota Group: Existing Buildings – Oregon (Partial Table)*

| Quota Group | Information and Materials | |
|---|---|---|
| | n | % |
| Assembly/Religious | 40 | 66% |
| Auto Services | 56 | 63% |
| Education | 34 | 48% |
| Government | 51 | 65% |
| Grocery | 41 | 78% |
| Healthcare | 32 | 61% |
| Higher Education | 9 | 63% |
| Hospitality | 29 | 88% |
| Office | 66 | 62% |
| Other Commercial | 15 | 62% |
| Recreation | 38 | 75% |
| Restaurant | 76 | 78% |
| Retail | 71 | 74% |
| Warehouse | 53 | 76% |
| Total/Wtd. Mean | 611 | 69.5% |
| | | .78 / .695 = 1.12 |

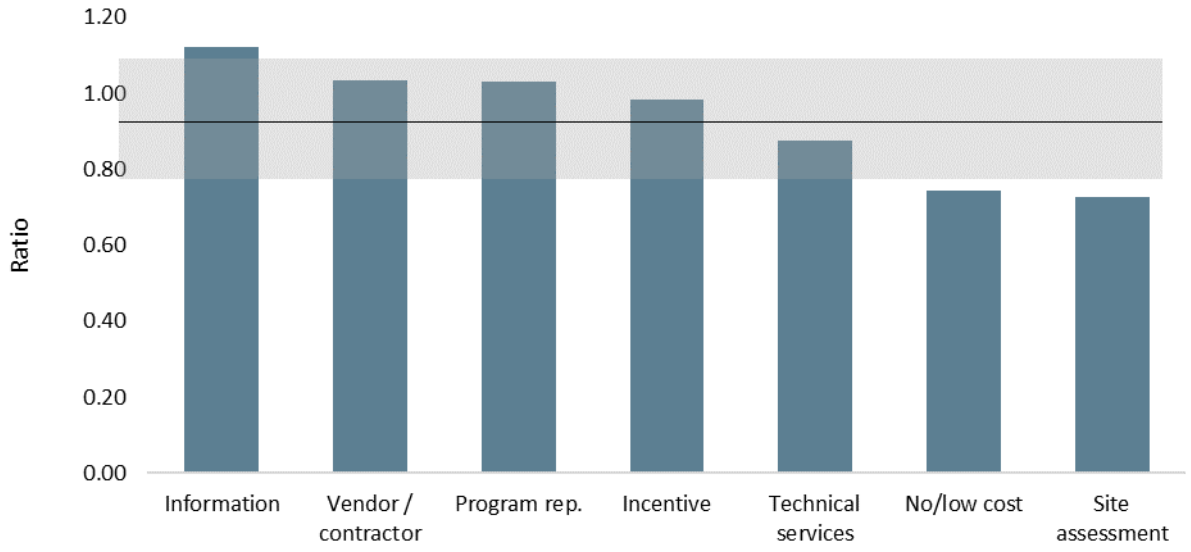
When the comparable ratio was calculated *across all influence factors* for the Restaurant quota group, the mean was 0.93 (Table 6-2). Thus, on average, a given factor' influence on the Restaurant group was slightly lower than its average influence across groups. The standard deviation of the ratios across all influence factors for the Restaurant quota group was 0.15. Thus, for the Restaurant group, the information and materials influence ratio (1.12) exceeded the average influence ratio (0.93) by more than one standard deviation.

*Table 6-2: Influencers: Existing Buildings-Restaurant*

| Quota Group | Energy Trust Incentive | Inform-ation and Materials | Services Provided at No/Low Cost | Energy Trust Program Repres-entative | Site Assess-ment or Walk-Through Survey | Energy Trust-Funded Technical Services | Vendor or Install-ation Contract-or | Mean / Standard Deviat-ion |
|---|---|---|---|---|---|---|---|---|
| Restaurant | 86% | 78% | 67% | 75% | 50% | 64% | 76% | |
| Wtd. Mean | 87.3% | 69.5% | 90.0% | 72.8% | 68.8% | 73.1% | 73.5% | |
| Ratio | 0.99 | 1.12 | 0.74 | 1.03 | 0.73 | 0.88 | 1.03 | 0.93/0.15 |

Figure 6-1 graphically illustrates the above.

*Figure 6-1: Ratio of Restaurant Influence Percentage to Weighted Mean Influence Percentage Across Quota Groups: All Influence Factors*[1]




[1]The horizontal black line represents the mean ratio of 0.93. The grey shaded area represents one standard deviation (0.15) above and below the mean.