2018 Customer Insights Survey

Final Report

March 29, 2019

Prepared by

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Energy Trust of Oregon

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Executive Summary

Since 2002, Energy Trust of Oregon (Energy Trust) has offered information, services, and cash incentives to help homeowners, renters, and businesses use less energy and generate clean, renewable power. Energy Trust conducted its first annual non-multifamily residential Customer Insights survey research in 2016, in order to conduct annual surveys that track trends over time and explore specific topics of interest each year. Energy Trust conducted a second annual survey in 2017. This report presents the results of the 2018 survey and compares them, when possible, to prior survey results. The objectives of this research were to:

1. Describe the demographic makeup of Energy Trust participants, as well as non-participants.
2. Assess customer awareness of and familiarity with Energy Trust.
3. Explore the customer journey of making home improvements.
4. Assess customer values related to energy use and environmental concerns.
5. Assess energy conservation behaviors.

Since this is only year three of the survey, changes in results between 2016 and 2018 should not be interpreted as reliable trends even when significant. In addition, changes in sampling and the question set made some longitudinal comparisons unreliable. As certain survey items become standardized and are employed in precisely the same manner in coming years, trends will become more apparent.

Sample Frame, Approach, and Weighting

In collaboration with Energy Trust, Research Into Action developed the 2018 survey instrument and sampling frame, and engaged Discovery Research to field the 10-minute telephone survey in the fall of 2018 through early 2019. The survey targeted non-multifamily residential participants and non-participants in Energy Trust's service territory.[1] Discovery Research completed surveys with 458 participants and 342 non-participants. At a 95% confidence level, the overall sample sizes carry a +/- 4.6% margin of error for participants and +/- 5.3% for non-participants. Before analyzing the data, Research Into Action applied weights to ensure that the sample was proportional to geographic distributions of participants and non-participants.

[1] For each survey, the participant contact list included all contactable, non-multifamily, residential customers who participated in one of the following residential programs in the prior year: weatherization, HVAC, water heat, or energy saver kits. The non-participant contact list included all non-multifamily, residential utility customer addresses within Energy Trust service territories that had not participated in an Energy Trust program in the last five years. Infogroup matched the non-participating addresses to phone numbers through a directory service to develop the final non-participant contact list. Note that Energy Trust does not know with certainty whether a non-participant site address is multifamily or not, but made every attempt to remove multifamily sites based on addresses with unit and apartment numbers, etc.

Key Findings from the 2018 Survey

Respondent Demographics

- **Participants:** Participant respondents were similar to overall Oregon census statistics in terms of race/ethnicity and housing type. However, they overrepresented homeowners, multi-person households, highly educated persons, and moderate- to high-income households. Respondents tended to be white, college-educated, Portland-area homeowners, over the age of 60, with middle- to higher-income households and no children living at home.
- **Non-Participants:** Non-participant respondents exhibited similar demographic profiles as participant respondents, except non-participants tend to be a bit younger and are less likely to own a home or live in the Portland metro. Despite more renters among non-participants than participants, non-participant respondents also had greater rates of homeownership than found in the Oregon census.

Customer Awareness

- **Awareness of Energy Trust's Incentive Opportunities:** In 2018, and consistent with other years, significantly more participants (55%) than non-participants (12%) named Energy Trust as an organization that offers incentives to save energy (unaided). While participants report stronger familiarity with Energy Trust's rebates and services than non-participants, participants most commonly said they only "know a little" about what Energy Trust offers.
- **Sources of Energy Trust Awareness:** In 2018, participants most often heard about Energy Trust via their utility (44%), while the non-participants who had heard about Energy Trust in the last year most commonly cited an advertisement (33%) as the source.
- **Spreading the Word:** Nearly half (47%) of participants said they have talked with people outside their homes about their participation in an Energy Trust program.

Home Improvements

- **Primary Motivations for Home Improvements:** Both participants (56%) and non-participants (59%) cited an *immediate need for improvement or repair* as the most common motivation for their most recent home improvement project. This reason was especially prominent for HVAC, appliance, water heat, and roof improvement projects. Participants were significantly more likely to cite *saving energy and money* as a motivation compared to non-participants (39% vs. 25%) and were significantly less likely to cite *improving the value of the home* (13% vs. 20%) as motivations for their home improvement projects.
- **Use of Contractors:** Respondents most often hired contractors to do their non-appliance projects, but participants were significantly more likely than non-participants to do so (82% vs. 68%). Similarly, participants were significantly more likely than non-participants to report researching contractors prior to conducting their most recent home improvement project (61% vs. 41%) or using contractors as a source of information for the project (37% vs. 21%).

- **DIY:** Non-participants were twice as likely as participants to undertake do-it-yourself (DIY) home improvement projects (30% vs. 15%).

Energy-Related Attitudes & Behaviors

- **Values Related to Energy Use and the Environment:** Regardless of participation status, many respondents strongly agree their household energy use impacts the environment and that they are concerned about it. Respondents had moderately strong agreement that it was their responsibility to conserve energy and that the electrical grid is a shared resource that everyone is responsible for preserving. Ultimately, the results reveal that respondents place greater importance on environmental preservation and energy conservation than on purchasing new convenient technologies.

- **Energy Conservation Behaviors:** Nearly all (99%) respondents reported at least one energy saving behavior in 2018, with *turning off lights when not needed* being the most commonly reported behavior (96% of participants and non-participants). *Cleaned or replaced HVAC filters* was the second most mentioned conservation behavior (94% of participants, 88% of non-participants; a significant difference). *Shortened showers to cut hot water costs* was the least cited conservation behavior (50% of participants, 57% of non-participants; a significant difference).

- **Conversations about Energy Use:** Most respondents reported not commonly talking about home energy use with people outside of their household. Both participants (55%) and non-participants (63%) typically said they "rarely" or "never" have these types of conversations, though such conversations were significantly less likely for non-participants. While respondents with an educational attainment of high school or less reported having significantly *fewer* conversations about home energy use than those with greater educational attainment, respondents with household incomes of $100,000 or more reported having significantly *more* conversations about home energy use than those with comparatively lower household incomes.

Minority vs. Non-Minority Respondents

- **Overall:** Although few minorities completed the survey, minority sample sizes (as a percent of total sample) mirror Oregon's non-white population. Other than demographics, few differences surfaced between minority and non-minority respondents. Significant differences are as follows.

- **Demographics:**

  - *Among participants,* minority households are more likely than non-minority households to reside in the Portland Metro area and less likely to live in the Willamette Valley and North Coast regions, be middle aged, have children living at home, and have a college degree.

  - *Among non-participants*, minority households are more likely than non-minority households to live in the Portland Metro, be younger, have a lower income, be living in a four-person household, and have less educational attainment.

- **Home Improvements**: Non-Minority participants were more likely than minority participants to research rebates on recently completed home improvement projects.

- **Values Related to Energy Use and the Environment:** Minority participants demonstrated greater eagerness to buy new products and technologies than non-minority participants.
- **Energy Conservation Behaviors:** Non-participant minority households were less likely than non-participant non-minority households to report cutting down on the time they spend in the shower.
- **Conversations about Energy Use:** Participant minority respondents tended to talk about energy use with people outside of their household more frequently than non-minority participant respondents.

Conclusions & Recommendations

General Conclusions & Recommendations

Conclusion 1: Increasing awareness of Energy Trust is key to engaging with non-participants. Low awareness and familiarity with Energy Trust programs impedes non-participant engagement. Non-participants value energy conservation at similar levels as participants yet complete significantly fewer home energy projects and are significantly more likely to say they don't know where to start when it comes to undertaking energy saving projects.

- **Recommendation:** Consider further investments in general awareness-building strategies such as advertising and promotions and, if undertaken, explore how these strategies affect survey responses.
- **Recommendation:** Explore new and more rigorous strategies to re-engage customers who have received an incentive, through gathering feedback, reinforcing project benefits, and providing information on other resources and services. Strategies may involve personalizing their experience through customized communications, behavioral retargeting in online advertising,[2] and/or greater investments in outreach.

Conclusion 2: Meeting customers at their time of need is critical for many efficiency improvements. Both participants and non-participants cited an *immediate need for improvement or repair* as the most common motivation for their most recent home improvement project. This reason was especially prominent for HVAC, appliance, water heat, and roof improvement projects.

- **Recommendation:** Continue to explore ways to increase Energy Trust's ability to connect and serve customers when they have an immediate need for an energy-related home improvement or repair.

[2] Behavioral retargeting is a form of advertising that enables advertisers to target different customers based on their previous online behaviors or actions by embedding cookies in a user's browser. This includes dynamic (or personalized) retargeting, in which online advertisers may dynamically promote specific products based on the specific web pages that a user visited on their website (a tactic commonly used by online retailers).

Conclusion 3: While energy bills are not a pressing financial concern for most participants and non-participants, they still care about being responsible energy users. The desire to be a responsible energy user is rooted in pro-environmental preservation attitudes and transcends participation status. When asked to rate how much they agreed with several value statements, "I sometimes worry whether there is enough money to pay my energy bill" was the lowest rated value statement; pro-technology value statements received similarly low levels of affirmation. Instead, respondents gave the most weight to value statements that promoted *responsible energy use* and *environmental preservation*, and gave their highest agreement ratings to value statements that acknowledged the link between the two.

- **Recommendation:** Ensure that the environmental and grid benefits of energy conservation and renewables are positioned prominently in Energy Trust's residential marketing and outreach. For example, acknowledge how participation in an Energy Trust program enables households to directly do their part to help the planet and preserve the grid.

Conclusion 4: Non-participants are less reliant on contractors for home improvement projects. Non-participants reported hiring contractors less frequently for their home improvement projects compared to participants, opting to more often complete projects on their own. They were also less likely to search for contractors before completing a project and were more likely to teach themselves how to do the improvement ahead of time. Compared to participants, non-participants depend more on friends or family for obtaining information on home improvements and are less likely to use contractors as a source for this information.

- **Recommendation:** Consider offering additional DIY rebate opportunities to encourage participation from the pool of current non-participants that prefer to complete projects on their own. Providing more opportunities for DIY projects may lead to greater Energy Trust program participation and possibly spillover.

- **Recommendation:** Continue using DIY Energy Saver Kits to encourage first time participation.

Considerations for Research Design and Methodology

Conclusion 5: The unaided awareness methodology used in the 2018 study may have produced a more accurate estimate of participant awareness than prior years. Although non-participants exhibited similar levels of unaided awareness as the 2017 study, 2018 unaided participant awareness nearly doubled from 2017. This difference is likely due to variances in survey methodologies, and as discussed in the report, the 2018 finding likely represents a more accurate estimate of participant awareness.

- **Recommendation:** Mimic the 2018 awareness methodology in future Customer Insights surveys, so participant awareness can be more accurately tracked and compared over time.

Conclusion 6: The methodology used in the 2018 study is an insufficient mechanism to comprehensively study minority households. Racial and ethnic minorities responded to the survey at rates mirroring Oregon's census demographics. Despite strong efforts to oversample these groups, the approach used did not yield enough non-white respondents to generate strong insights into Oregon's minority populations.

〉 **Recommendation:** Alter the 2019 methodology to gain deeper and more reliable insights into non-white Oregonians.

- *Quantitative solutions:* Establish a minority respondent quota of at least 70 per participation-status group. To achieve this, double or triple the high diversity oversample quotas (compared to the 2018 sample). Note that a non-white sample of 70 respondents will be insufficient for gaining deep insights into specific minority communities. If sub-group (e.g., African American, Hispanic, etc.) insights are desired, target at least 50 respondents per racial/ethnic group per participation-status group (and adjust high diversity oversamples accordingly).
- *Qualitative solutions:* Conduct focus groups or in-depth interviews to better understand the nuanced needs and values of Oregon's racial and ethnic minority groups.

MEMO

Date: October 17, 2019
To: Board of Directors
From: Shelly Carlton, Senior Marketing Manager
Sarah Castor, Sr. Evaluation Project Manager
Dan Rubado, Evaluation Project Manager
Subject: Staff Response to the 2018 Customer Insights Study

The study was designed to create a robust mix of questions to assess energy awareness, attitudes and practices and track changes in the coming years, with questions that can be measured over time or adapted to changing needs to inform communications, marketing, and outreach. For the most part, the findings aligned with staff expectations and were consistent with previous years. Participant respondents tended to be white, college-educated, Portland-area homeowners, over the age of 60, in middle- to higher-income households. However, many of the demographic differences observed between participants and non-participants were slight and not statistically significant.

Non-participant respondents were relatively unaware of Energy Trust and its services compared to participants. Energy Trust has been trying to make inroads with new audiences through its Diversity, Equity, and Inclusion efforts and targeted marketing campaigns. In addition, non-participants tend to be less reliant on contractors when undertaking home improvement projects, and so would benefit from additional incentives for DIY projects. Although some of Energy Trust's residential measures do require a contractor to install them, many of the measures introduced in recent years, like smart thermostats, clothes washers, and dryers, do not require a contractor.

For many respondents, utility bill costs were not a major issue, but respondents across the board expressed concern about the environmental impact of their household energy use. Energy Trust may increase its emphasis on the environmental benefits of saving energy in marketing and outreach materials for certain channels and communities.

Although the study intended to reach a large number of households of color, the oversampling strategy was ineffective in yielding deep learnings about these communities. Based on this experience, Energy Trust is designing a new Customer Insights Study to be fielded in early 2020 that has a more robust sample design and utilizes multiple modes for inviting and recording responses to the survey. The purpose is to yield a larger sample of low-income respondents and households of color, so that Energy Trust can gain more insight on the needs of these communities and current barriers to participation. It will serve as a demographic baseline to describe the characteristics of participant and non-participant households, and it will be instructive for reaching diverse communities. In addition, the new study will test the assumptions of Energy Trust's 2018 Diversity, Equity, and Inclusion Data and Baseline Analysis[3] and independently assess the equity of Energy Trust's residential program portfolio.

[3] Energy Trust of Oregon. 2018 Diversity, Equity and Inclusion Data and Baseline Analysis. Published December 26, 2018. Available at: *https://www.energytrust.org/documents/energy-trust-of-oregon-2018-diversity-equity-and-inclusion-data-and-baseline-analysis/*

1. Introduction

Background

Since 2002, Energy Trust of Oregon (Energy Trust) has offered information, services, and cash incentives to help homeowners, renters, and businesses use less energy and generate clean, renewable power. Energy Trust launched its first annual Customer Insights survey in 2016 to inform marketing and service efforts. The 2016 survey serves as the baseline against which Energy Trust will track future survey efforts.

This report captures the methods and results of the 2018 Customer Insights survey and, when possible, compares them to the previous survey results. Please note that, since this is only year three of the survey, changes in results between 2016 and 2018 do not necessarily represent strong trends, even when significant. In addition, changes in sampling and the question set made comparison of some questions unreliable.

The objectives of this Customer Insights study are to:

1. Describe the demographic makeup of Energy Trust participants, as well as non-participants.
2. Assess customer awareness of and familiarity with Energy Trust.
3. Explore the customer journey of making home improvements.
4. Assess customer values related to energy use and environmental concerns.
5. Assess energy conservation behaviors.

2. Technical Approach & Methodology

This chapter describes the technical approach and methods used to design and conduct this research.

Instrument Design

Research Into Action used the 2017 Customer Insights survey as the basis for the 2018 instrument. The revisions since the original 2016 instrument have been significant and are summarized below. It is hoped that the 2018 instrument stabilized key tracking metrics while at the same time added questions of specific relevance to Energy Trust.

- **2017:** Added eight new questions; dropped 10 questions from the 2016 instrument; revised the phrasing of eight questions from the 2016 instrument; and changed response options in eight questions from the 2016 instrument.
- **2018:** Added 16 new questions; dropped 17 questions from the 2017 instrument; revised the phrasing of two questions from the 2017 instrument; and changed response options in two questions from the 2017 instrument.

Sampling

The 2016, 2017, and 2018 surveys targeted residential participants and non-participants in Energy Trust's service territory who reside in non-multifamily homes. Eligible households included customers of PGE, Pacific Power, NW Natural Gas, Cascade Natural Gas, and Avista. Energy Trust developed separate lists of the participants and non-participants by pulling contacts from its database, using these criteria:

- **Participants:** The participant contact list included all contactable, non-multifamily, residential households who participated in one of the following residential programs in 2017: weatherization, HVAC, water heat, or energy saver kits.
- **Non-participants:** The non-participant contact list was composed of all non-multifamily, residential utility customer addresses within Energy Trust service territories that had not participated in any Energy Trust program offerings in the past five years. Research Into Action contracted InfoGroup USA, a nationally recognized firm offering phone append and marketing list services, to match non-participating addresses to phone numbers to develop the final non-participant contact list.[4]

Research Into Action designed the sample using a region-based quota sampling approach (see "Target" columns in Table 2-1). Research Into Action developed additional participant and nonparticipant quotas (70 surveys per sample group) with households across 36 census tracts that Energy Trust identified as

[4] Note that Energy Trust does not know with certainty whether a non-participant site address is multifamily or not, but made every attempt to remove multifamily sites based on addresses with unit and apartment numbers, etc.

disproportionately diverse compared to the rest of Oregon (i.e., "High Diversity").[5] Research Into Action designed the quotas so that the overall sample would be representative in terms of distribution of customers throughout the regions, except true proportional region quotas that would result in less than 70 were increased to 70 (and the difference was subtracted from the Portland Metro quotas, as it had the largest population and quota) so that the sample would achieve higher confidence and precision for those regions. Even after adding additional records to the sample frame, most quotas were not met, which was a function of lower than anticipated response rates.

Ultimately, Energy Trust and Research Into Action agreed to accept a minimum of 52 (instead of 70) for each quota, which carries a +/- 15% margin of error at a 90% confidence level for a quota with 52 respondents. Using this plan, Discovery Research (a survey research firm specializing in phone surveys) completed surveys with 458 participants and 342 non-participants. This overall sample size carries a +/- 4.6% margin of error for participants and +/- 5.3% for non-participants

Table 2-1: Sampling Approach

	Participants			Non-Participants		
	Target	Completed	Response Rate	Target	Completed	Response Rate
Portland Metro	204	190	6%	189	92	3%
Willamette Valley / North Coast	86	74	7%	101	71	6%
Southern Oregon / South Coast	70	54	9%	70	69	9%
East of the Cascades	70	68	17%	70	57	4%
High Diversity Oversample	70	72	10%	70	53	2%
Total	**500**	**458**	**8%**	**500**	**342**	**4%**

Table Notes

Please note the following conventions used for the tables in this report:

- Due to rounding errors, totals may sum to more or less than 100%.
- Multiple response items, which allowed respondents to give more than one answer, may total over 100%.
- Shaded grey cells in the tables denote statistically significant differences ($p < .05$ or better) between participants (P) and non-participants (NP) in a given survey year.

[5] The 36 High Diversity census tracts were more rural and had higher proportions of non-white and low-income residents than other Oregon census tracts.

3. Customer Profile

Summary of Key Findings

The results reveal statistically significant demographic and household differences between participants and non-participants that are consistent across 2016, 2017, and 2018.[6]

Detailed Findings

Table 3-1 compares respondent demographics and household characteristics by participation status and, for 2018, with U.S. Census data from the American Community Survey.[7]

Results show several statistically significant differences between participant and non-participant households in the 2018 study. Participants, compared to non-participants, were more likely to:

- Live in the Portland Metro region
- Own their homes
- Live in single-family detached homes
- Have natural gas in their homes
- Have Portland General Electric as their electricity service provider (while non-participants more often received electricity from Pacific Power or another utility)

Results also show that renters, lower income, lesser educated, and one-person households are somewhat underrepresented in the 2018 survey.[8]

6 The weighting techniques applied to both samples yielded comparable demographic profiles across the three years, as shown in Table 3-1.

7 As discussed in the methodology (Section 2), the study's population is all the non-multifamily occupied housing units in Energy Trust service territory. However, U.S. Census data by housing type are available only for select variables, which include region, homeownership, age of householder, household income, and race.

8 The low levels of representation for these groups is to be expected among participant households, as they represent demographic groups with historically lower levels of participation. However, underrepresentation among non-participants reflects broader contemporary trends in market research; these are groups that tend to respond to telephone surveys at lower rates.

Table 3-1: Demographic and Household Characteristics

		2016		2017		2018		All Oregonians (U.S. Census)
		P (n=510)	NP (n=451)	P (n=488)	NP (n=500)	P (n=458)	NP (n=342)	
Energy Trust regions	Portland Metro	46%	45%	46%	44%	53%	44%	-
	East of the Cascades	19%	19%	21%	18%	7%	8%	
	Willamette Valley / North Coast	28%	29%	26%	31%	18%	20%	
	High Diversity	-	-	-	-	13%	14%	
	Southern Oregon / Southern Coast	7%	7%	7%	7%	10%	14%	
Homeownership	Renter	14%	21%	20%	28%	4%	17%	38%
	Owner	86%	79%	80%	72%	96%	83%	62%
Home type	Single Family Detached	-	-	-	-	89%	81%	83%
	Single Family Attached	-	-	-	-	5%	7%	6%
	Apartment/Mobile Home/Other	-	-	-	-	6%	12%	11%
Age of respondent	18 to 39	22%	20%	20%	6%	11%	13%	*
	40 to 59	39%	34%	31%	26%	33%	40%	
	60 and older	39%	47%	50%	67%	56%	46%	
Household income in 2018	Less than $50,000	24%	31%	31%	40%	31%	37%	45%
	$50,000 to under $100,000	48%	40%	37%	40%	38%	32%	31%
	$100,000 or more	28%	28%	32%	20%	31%	31%	24%
Race	White only	88%	84%	91%	83%	90%	85%	85%
	Hispanic only	3%	3%	5%	7%	2%	3%	15%
	Black only	0%	1%	0%	1%	0%	1%	
	Asian only	2%	4%	1%	1%	4%	3%	
	Native only	1%	2%	1%	2%	0%	2%	
	Other only	3%	2%	0%	1%	2%	3%	
	Multi-racial	3%	5%	2%	5%	2%	3%	

		2016		2017		2018		All Oregonians (U.S. Census)
		P (n=510)	NP (n=451)	P (n=488)	NP (n=500)	P (n=458)	NP (n=342)	
Household size	1	16%	20%	19%	28%	17%	19%	28%
	2	43%	39%	39%	37%	47%	44%	37%
	3	14%	16%	15%	17%	15%	17%	15%
	4 or more	27%	26%	28%	13%	20%	21%	21%
Child presence at home	No child	67%	67%	64%	76%	75%	75%	71%
	With child(ren)	33%	33%	36%	24%	25%	25%	29%
Education level	Up to high school	12%	17%	13%	21%	15%	21%	34%
	Some college	26%	28%	29%	30%	50%	40%	36%
	College degree	41%	36%	37%	31%	14%	17%	19%
	Graduate / Professional degree	21%	19%	21%	17%	21%	22%	11%
Natural gas provider	NW Natural	49%	63%	48%	55%	65%	50%	-
	Cascade Natural	14%	8%	4%	8%	3%	6%	
	Avista	3%	7%	3%	9%	5%	10%	
	Other	5%	2%	3%	3%	2%	0%	
	No natural gas	30%	20%	41%	25%	25%	34%	
Electricity provider	Portland General Electric	57%	45%	56%	50%	73%	48%	-
	Pacific Power	41%	45%	39%	30%	25%	38%	
	Other utility	2%	11%	5%	20%	2%	12%	

* Survey answer choices did not overlap with census age groupings, disallowing comparisons.

4. Customer Awareness

The survey examined unaided customer awareness of organizations that offer incentives for saving energy or adopting renewable energy sources. It also focused on how familiar households are with Energy Trust (using an aided format) and their sources of awareness. Finally, the survey delves into whether participants communicate with others outside of their homes about their Energy Trust experience.

Detailed Findings

Unaided Awareness of Efficiency Incentive Opportunities

The survey explored unaided customer awareness of organizations that offer incentives to save energy or to use renewable energy.

In 2018, participants were nearly twice as likely as non-participants (68% vs. 36%) to be aware of any organization that offers rebates for home energy improvements and were nearly five times more likely to cite Energy Trust as one of those organizations (55% vs. 12%; Table 4-1). Between 2017 and 2018, unaided awareness of rebates from Energy Trust increased substantially from 23% to 55% for participants, but were fairly constant for non-participants (8% to 12%). The increase in awareness for participants should be interpreted with caution due to differences in wording between the two survey instruments.[9] Similar to previous years, non-participants in 2018 most often cited their electric or gas utilities as offering incentives.

[9] There were several differences between 2017 and 2018 surveys regarding unaided Energy Trust awareness. 1) In 2017, the unaided awareness question was two-part (first, respondents had to answer "yes" when asked if they knew of any organizations that offered incentives, after which the survey asked them to name specific organizations). In 2018, respondents did not have to answer a "Yes/No" question first. Instead, they provided specific organizations in a single question. 2) 2017 used the word "incentives" in the question, while 2018 used the word "rebates." 3) The 2018 survey introduction indicated the survey was being conducted on behalf of Energy Trust (although interviewers did not reveal that Energy Trust offers rebates or incentives), while the 2017 study did not reference Energy Trust as a sponsor. While the first two reasons are likely relevant to differences between 2017 and 2018 participant estimates, it is also possible that referencing Energy Trust in the introduction induced more participant respondents to mention Energy Trust when asked which rebate-offering organizations they knew of, but since interviewers did not further explain what Energy Trust offers, Research Into Action contends that any effect this may have had on survey responses results in a more accurate estimation of levels of Energy Trust awareness.

Table 4-1: Unaided Awareness of Organizations that Offer Incentives to Save Energy or Use Renewable Energy (Multiple Responses Allowed)

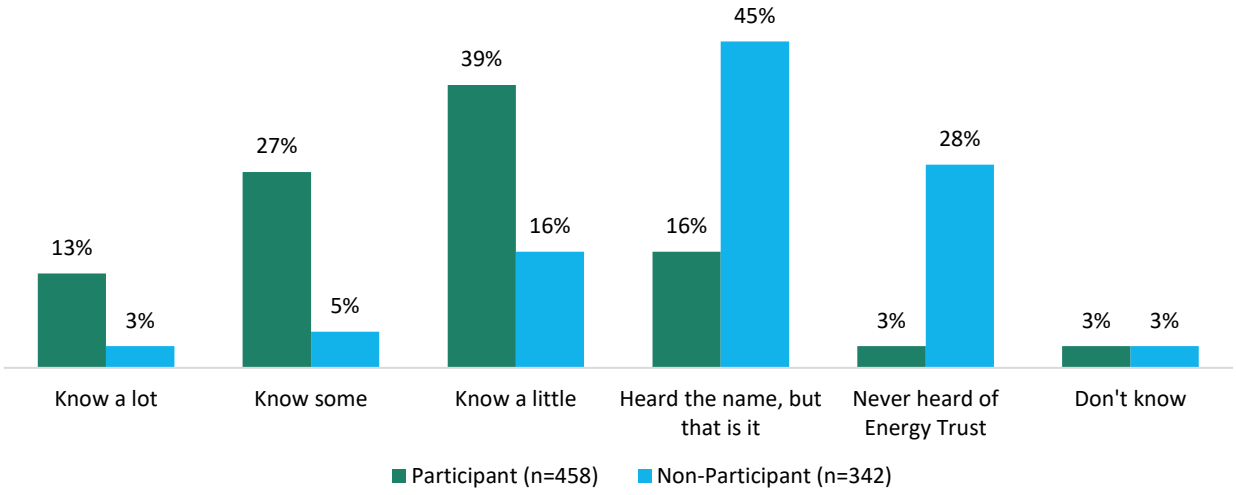
Awareness of Organizations Offering Rebates*	2016		2017		2018	
	P (n=514)	NP (n=449)	P (n=488)	NP (n=500)	P (n=458)	NP (n=342)
Aware of ANY organization	63%	48%	60%	41%	68%	36%
Energy Trust of Oregon	22%	5%	23%	8%	55%	12%
Utility**	43%	41%	37%	33%	31%	26%
Oregon state government or Oregon Department of Energy	2%	1%	3%	1%	2%	2%
City or County government	0%	0%	2%	2%	1%	2%
Contractors	0%	0%	5%	1%	1%	1%
Energy Star	1%	1%	1%	2%	1%	1%
Other	10%	11%	5%	5%	3%	4%

* Refused, Don't know, and Not applicable responses are not displayed in the table above.
** Collapsed all utility responses to a single category in order to compare responses from 2016, 2017, and 2018 evaluations.

Familiarity with Energy Trust of Oregon

The 2018 survey included a new question to assess aided awareness of Energy Trust by asking respondents how familiar they were with Energy Trust's rebates and services (Figure 4-1). Analysis reveals that participants are significantly more familiar with Energy Trust than non-participants. As expected, very few participant respondents reported never hearing of Energy Trust, and less than a quarter reported that they had only heard the name. Non-participants on the other hand were about nine times more likely to say they had never heard of Energy Trust, and almost half of non-participant households indicated their familiarity was limited to only having heard the name "Energy Trust of Oregon." Over three-quarters of participant households reported knowing at least something about Energy Trust's rebates and services, with participants most commonly indicating they knew "a little."

Figure 4-1: Familiarity with Energy Trust of Oregon's Rebates and Services



Note: The distribution of answers is significantly different between participants and non-participants. Mann-Whitney U used for significance testing.

How Customers Hear about Energy Trust

As seen in Table 4-2, 2018 participants most often reported they had seen or heard about Energy Trust from a utility (44%), an advertisement (30%), or a contractor, supplier, vendor, or retailer (28%). Non-participants most often reported hearing about Energy Trust from an advertisement (33%), through word of mouth (21%), or from a contractor, supplier, vendor, or retailer (18%).

Statistical testing between participant and non-participant households show that participants learned about Energy Trust more often from their utility, or from a contractor or retailer. Conversely, a higher percentage of non-participant households learned about Energy Trust by word of mouth.

Table 4-2: Sources of Awareness of Energy Trust (Multiple Responses Allowed)

Sources of Awareness of Energy Trust	2016		2017		2018	
	P (n=104)	NP (n=25)	P (n=111)	NP (n=34)	P (n=350)	NP (n=152)
Utility	14%	29%	18%	11%	44%	17%
An advertisement	25%	23%	25%	20%	30%	33%
Contractor, supplier, vendor, or retailer*	6%	2%	18%	26%	28%	18%
Word of mouth	10%	20%	10%	9%	9%	21%
Community-based or other organization	N/A	N/A	0%	1%	3%	7%
Social media	7%	7%	6%	10%	3%	5%
News story	0%	2%	6%	3%	3%	6%
Sporting event/sports team	N/A	N/A	0%	1%	0%	0%

Sources of Awareness of Energy Trust	2016		2017		2018	
	P (n=104)	NP (n=25)	P (n=111)	NP (n=34)	P (n=350)	NP (n=152)
Online**	N/A	N/A	8%	19%	3%	1%
At work**	N/A	N/A	N/A	N/A	2%	1%
Energy Trust programs**	N/A	N/A	13%	5%	0%	2%
Other	39%	31%	9%	3%	4%	3%

* Collapsed retailer and contractor responses into a single item in order to compare with 2016 and 2017 evaluation.
** For 2017 and 2018, Research Into Action, as per best practices, reduced the large percent of "Other" responses by coding them into existing or new categories. The N/A designation in the 2016 and 2017 results indicates new response categories emerged in either 2017 or 2018 through recoding.
Note: Not applicable, Don't know, and Refused responses from 2018 were not included in the table in order to compare with 2016 and 2017 evaluation.

The survey also asked participant households if they have ever communicated with others (outside of those living in their home) about their participation in an Energy Trust program. Results show that about half of participant respondents communicated with others outside of their home about Energy Trust.

5. Home Improvement Customer Journey

The survey explored the home improvement customer journey, including assessing what home improvements were made within the last five years. The survey also looked into how frequently contractors are used for home improvement projects and how households research information before carrying out improvements.

Detailed Findings

Reported Home Improvements

Research Into Action asked participant and non-participant respondents if they had completed a home improvement within the last five years.[10] As seen in Table 5-1, most participants (80%) said they completed a project in last five years, compared to only about half (48%) of non-participants (a statistically significant difference). It is unclear if this finding reflects self-selection bias present in Energy Trust participation (i.e., participants represent a segment of the Oregon population that are particularly active in conducting home improvement projects) or if greater rates of home improvements among participants is simply a function of survey sampling bias (i.e., other than Energy Saver Kit participants, all participant records had confirmed home improvement projects in the previous year).

Table 5-1 also displays the specific home improvements made by participants and non-participants in the last five years. Over seventy percent of participant households made some sort of energy-related upgrade in their home, in contrast with non-participants who reported making energy-related improvements in only 36% of cases (a statistically significant difference). Participants completed an average of 1.2 energy-related home improvements, whereas non-participants averaged 0.6 energy-related home improvements (a statistically significant difference).

Participants and non-participants who made improvements typically said they carried out a HVAC project or purchased a new appliance. Conversely, few participants or non-participants reported completing solar or air sealing projects**.** Statistical testing reveals that participant households are significantly more likely to complete most specific types of energy-related projects.

[10] Note that the question did not specify whether reported home improvements occurred at the home respondents were currently living in.

Table 5-1: Home Improvements Completed in Last Five Years (Multiple Responses Allowed)

Home Improvements in Last Five Years	Participant (n=458)	Non-Participant (n=342)
Any home improvement	80%	48%
Energy-related improvement	71%	36%
Heating or air conditioning	39%	16%
New appliance	26%	16%
Windows	23%	6%
Insulation	14%	7%
Water heating	12%	7%
Solar	4%	2%
Air sealing	1%	1%
Remodel or addition	16%	15%
Roof project	9%	6%
Other	4%	3%
Don't know	0%	0%

The majority of participant and non-participant households who completed a home improvement said they hired a licensed contractor for their most recent one, although participants were significantly more likely to do so (Table 5-2).[11] Non-participants, on the other hand, were significantly more likely to do the project on their own or with the help of friends and family.

Table 5-2: Use of Contractor for Recent Home Improvement Project

Used Contractor for Most Recent Home Improvements	Participant (n=327)	Non-Participant (n=137)
Hired a licensed contractor	82%	68%
Did the project yourself or with friends and family	15%	30%
Other	3%	1%
Do not know	0%	0%

[11] Respondents that only completed an appliance project were not asked if they hired a contractor.

Researching Home Improvements

The survey asked respondents whether they conducted any research about their most recent home improvement before starting it. Most participants (88%) and non-participants (75%) said they did at least some sort of research before completing their last home improvement, although participants were significantly more likely to report doing so (Table 5-3). Specific types of research also differed by participation status, with significantly more participants than non-participants indicating they searched for contractors or investigated rebates. However, participants were significantly less likely than non-participants to say that they learned how to do the improvement before moving forward with the project.

Table 5-3: Pre-Home Improvement Research (Multiple Responses Allowed)

Researched Before Conducting Home Improvements	Participant (n=364)	Non-Participant (n=159)
Conducted research	88%	75%
Searched for contractors	61%	41%
Looked up product options	55%	50%
Investigated rebates	38%	11%
Learned how to do the improvement	3%	7%
Other	4%	0%
No – did not do any research	12%	22%
Don't know	0%	3%
Refused	0%	1%

Table 5-4 shows the reported sources of information used for a recent home improvement. Both participants and non-participants most commonly relied on Google searches. However, participants were significantly more likely than non-participants to seek information from contractors or the Energy Trust website and were significantly less likely to consult friends or family about their recent home improvements.

Table 5-4: Sources of Information Used for Most Recent Home Improvements (Multiple Responses Allowed)

Sources of Information for Most Recent Home Improvements	Participant (n=364)	Non-Participant (n=159)
Google search	53%	46%
Contractors	37%	21%
Home improvement store	24%	28%
Friends or family	21%	29%

Sources of Information for Most Recent Home Improvements	Participant (n=364)	Non-Participant (n=159)
Energy Trust website	19%	2%
YouTube	5%	4%
My utility	2%	2%
Events or workshops	2%	2%
Angie's List	0%	1%
Other	12%	7%
Don't know	3%	8%
Refused	0%	2%

Motivations for Home Improvements

The survey also asked respondents why they undertook their most recent home improvement project. As seen in Table 5-5, most participant and non-participant households in 2018 made improvements in their home because of an immediate need. Saving energy and money was also a fairly common motivating factor, however, participants were significantly more likely than non-participants to list this as a reason. Non-participants were more motivated by increasing the value of their home compared to participant households (a statistically significant difference).

Table 5-5: Household Motivations for Recent Home Improvements (Multiple Responses Allowed)

Motivations for Recent Home Improvements*	2017		2018	
	P (n=427)	NP (n=363)	P (n=363)	NP (n=157)
Immediate need for an improvement or repair	26%	34%	56%	58%
Saving energy and money	24%	20%	39%	25%
Increasing comfort for me/my family	24%	20%	16%	18%
Improving the value of the home	13%	14%	13%	20%
Already planning a remodel	9%	6%	7%	4%
Helping the environment	2%	3%	4%	2%
Other	1%	3%	7%	2%

* The 2017 survey formatted this question as single-response, therefore the total percentages sum to 100%. For the 2018 evaluation, the question allowed multiple responses therefore percentages may not add up to 100%. Refused and don't know responses are excluded from the analysis in 2018.

Additional analysis shown in Figure 5-1 reveals that motivation varies by measure type. Over three-quarters of households who reported either installing a water heater, fixing their roof, or purchasing a new appliance said that the immediate need for improvement or repair was a motivating factor for the

recent home improvement. On the other hand, households who installed solar reported saving energy and money as their primary motivation. Both the immediate need for improvement/repair and saving energy/money were fairly similarly important to those who installed either HVAC, insulation, or windows.

Figure 5-1: Motivations for Recent Home Improvements, by Project Type (Multiple Responses Allowed)

Motivations	HVAC (n=154)	New Appliance (n=113)	Windows (n=62)	Insulation (n=41)	Water Heater (n=39)	Solar (n=15)	Remodel/ Addition (n=75)	Roof (n=37)
Immediate need for an improvement or repair	58%	75%	51%	44%	84%	0%	35%	78%
Saving energy and money	40%	32%	57%	63%	25%	93%	11%	11%
Increasing comfort for me\my family	16%	7%	29%	24%	1%	17%	34%	6%
Improving the value of the home	9%	15%	24%	11%	5%	3%	33%	18%
Already planning a remodel	1%	8%	7%	1%	0%	0%	20%	12%
Helping the environment	3%	2%	2%	12%	0%	33%	1%	0%
Other	2%	4%	2%	5%	8%	9%	10%	5%

Note: Due to small sample sizes, air sealing and "other" projects are not displayed.

6. Energy-Related Attitudes & Behaviors

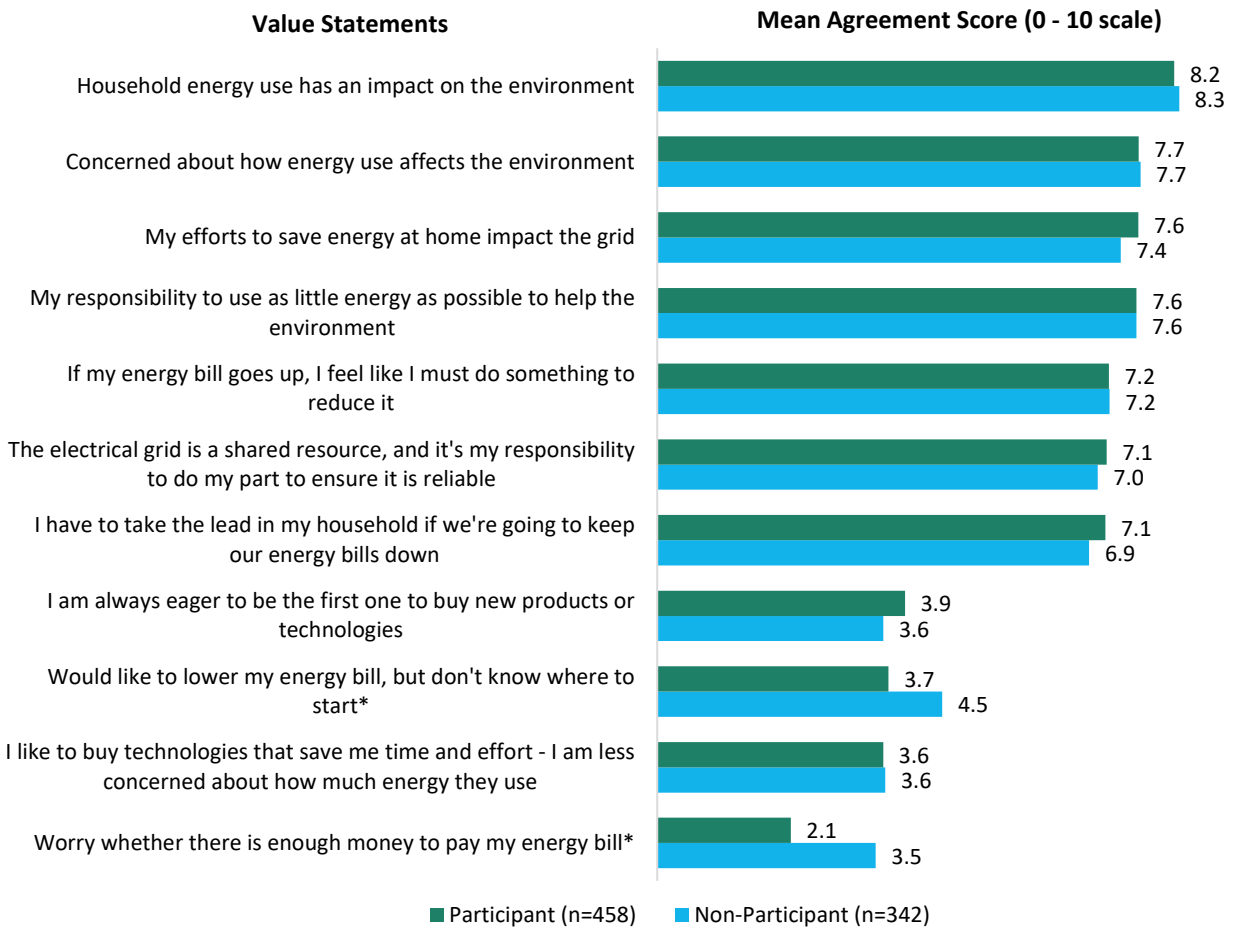
The 2018 Customer Insight survey included multiple questions related energy-related attitudes and behaviors.

Detailed Findings

Customer Values: Energy Use and the Environment

Figure 6-1 shows a series of value statements where respondents rated their agreement with each item using a scale of 0 ("Not at all agree") to 10 ("Completely agree"). As seen in Figure 6-1, participants and non-participants alike demonstrated considerable concern for the environment and rated pro-conservation/environment values are significantly more important than technology-centered values. Further, respondents placed considerable importance on the value of the grid, reporting strong agreement that their energy saving actions can impact the grid and that the grid is a shared resource that everyone must do their part to preserve. The results reveal that most respondents do not worry about their ability to afford their energy bills, nor do they struggle to figure out how to lower their energy bills. Although both of these findings hold true for both participants and non-participants, non-participants rated significantly higher agreement with "I sometimes worry whether there is enough money to pay my energy bill" and "I would like to lower my energy bill, but don't know where to start," suggesting that participation in an Energy Trust program is a key pathway to alleviating energy affordability concerns.

Figure 6-1: Customer Values on Energy Use and the Environment



* Denote statistically significant differences ($p < .05$ or better) between participants and non-participants.

Energy Conservation Behaviors

The survey investigated the different actions respondents took in the last year to reduce energy usage in their home. As seen in Table 6-1, nearly all participants and non-participants (99%) reported taking at least one action in their home. Participant and non-participant households reported the same three most common behaviors and in an identical order: turning off the lights, cleaning or replacing HVAC filters, and using the energy-saving drying option on the dishwasher or air-drying dishes.

Participant households were significantly more likely than non-participant households to report cleaning/replacing HVAC filters or using an energy-saving dish drying method in their home. Non-participants, on the other hand, were significantly more likely to report taking shorter showers than participants.

Table 6-1: Household Actions Taken to Reduce Home Energy Usage Over the Last Year (Multiple Responses Allowed)

Actions Taken to Reduce Energy Usage	Participant (n=454)	Non-Participant (n=339)
Reported Taking Any Action	99%	99%
Turned off lights when not needed	96%	97%
Cleaned or replaced filters regularly to help heaters and air conditioners work efficiently	94%	88%
Used the energy-saver drying option on your dishwasher or let dishes air dry	71%	64%
Unplugged battery chargers when not in use	66%	66%
Used ceiling fans to push hot air down in winter and circulate air in summer	66%	67%
Shortened showers to cut hot water costs	50%	57%

Conversations about Energy

The survey also asked respondents if they had ever talked about home energy use with friends, coworkers, or family (outside of those living in their home).

The results reveal that respondents infrequently speak about home energy use with people outside of their household, with most participants and non-participants indicating they have such conversations "sometimes" or "rarely" (Table 6-2). However, participants tend to talk about home energy use more often than their non-participant counterparts.

Table 6-2: Communication with Others About Home Energy Usage

Communication About Home Energy Usage	Participants (n=458)	Non-Participant (n=342)
Frequently	9%	11%
Sometimes	35%	25%
Rarely	37%	39%
Never	17%	24%
Don't know / Refused	1%	1%

Note: The distribution of answers is significantly different between participants and non-participants. Mann-Whitney U used for significance testing.

Additional analysis revealed certain demographic trends related to frequency of home energy use conversations. Specifically, respondents with an educational attainment of high school or less reported having significantly *fewer* conversations about home energy use than those with greater educational

attainment. Additionally, respondents with household incomes of $100,000 or more reported having significantly *more* conversations about home energy use than those with comparatively lower household incomes.

7. Analysis of Minority & Non-Minority Respondents

This chapter presents key similarities and differences between 2018 minority and non-minority households to better understand the make-up of these audiences and their responses to various survey questions.[12] This first section offers a brief discussion of questions with no significant differences, and the second section addresses findings with statistical significance. Despite oversampling high diversity census tracts, there are a limited number of minority households for this comparison. This is to be expected since Oregon's non-white population is so small.

Questions with No Significant Differences

Many questions showed no significant differences between minority and non-minority households, including:

- Home ownership, home type, and electricity provider
- Familiarity with Energy Trust of Oregon
- Home improvements in the last five years
- Use of a contractor for most recent home improvement project

Questions with Significant Differences

Demographics

Table 7-1 compares demographic information between minority and non-minority households for each participation group.

Among participants, minority households are significantly more likely than non-minority households to reside in the Portland Metro area and are significantly less likely to live in the Willamette Valley and North Coast regions. Further, these minority households are statistically more likely than non-minority households to be middle aged (40 to 59 years), have children living at home, and have a college degree.

Among non-participants, minority households are also significantly more likely than non-minority households to live in Portland Metro. However, unlike the participant group, non-participant minorities are statistically more likely than non-minority groups to be younger, have a lower income, be living in a four-person household, and have a high-school-only level of education.

[12] Minority respondents are defined as those who reported any of the following racial/ethnic identities: (1) Latino, Hispanic, or Mexican, (2) Black or African American, (3) Asian or Pacific Islander, (4) Native American, or (5) Middle Eastern or North African.

Table 7-1: Demographic and Household Characteristics, by Minority Status

		Participants		Non-Participants	
		Minority (n=36)	Non-Minority (n=383)	Minority (n=34)	Non-Minority (n=278)
Energy Trust regions	Portland Metro	69%	50%	63%	42%
	East of the Cascades	7%	7%	4%	9%
	Willamette Valley / North Coast	6%	19%	13%	22%
	High Diversity	13%	14%	5%	14%
	Southern Oregon / Southern Coast	5%	11%	16%	13%
Homeownership	Renter	6%	4%	19%	17%
	Owner	94%	96%	81%	83%
Home type	Single Family Detached	90%	89%	82%	80%
	Single Family Attached	7%	4%	3%	7%
	Apartment / Mobile Home / Other	3%	6%	14%	13%
Age of respondent	18 to 39	13%	11%	27%	12%
	40 to 59	52%	32%	37%	42%
	60 and older	35%	57%	36%	45%
Household income in 2018	Less than $50,000	16%	32%	59%	34%
	$50,000 to under $100,000	52%	38%	19%	35%
	$100,000 or more	32%	30%	23%	30%
Household size	1	2%	19%	8%	19%
	2	44%	47%	40%	45%
	3	13%	16%	13%	17%
	4	17%	12%	22%	9%
	5 or more	24%	7%	17%	10%
Child presence at home	No child	58%	77%	62%	76%
	With child(ren)	42%	23%	38%	24%
Education level	Up to high school	16%	16%	51%	18%
	Some college	42%	52%	38%	41%
	College degree	25%	13%	6%	19%
	Graduate / Professional degree	17%	20%	4%	23%

		Participants		Non-Participants	
		Minority (n=36)	Non-Minority (n=383)	Minority (n=34)	Non-Minority (n=278)
Natural gas provider	NW Natural	83%	63%	45%	50%
	Cascade Natural	0%	4%	5%	5%
	Avista	1%	5%	9%	11%
	Other	0%	2%	0%	0%
	No natural gas	16%	26%	41%	34%
Electricity provider	Portland General Electric	75%	73%	45%	50%
	Pacific Power	24%	25%	50%	38%
	Other utility	1%	2%	5%	12%

Additional analysis reveals that participants in high diversity areas are demographically different from participants residing in less diverse areas (Table 7-2). Compared to participants from less diverse areas, participants in high diversity areas have lower rates of homeownership, lower incomes, and less educational attainment. Interestingly, participants from high diversity census tracts had racial characteristics similar to those from less diverse areas.

Table 7-2: Selected Demographic and Household Characteristics, by High Diversity Sample Status

		Participants	
		High Diversity Sample (n=72)	Non-High Diversity Sample (n=386)
Homeownership	Renter	11%	3%
	Owner	89%	97%
Home type	Single Family Detached	72%	91%
	Single Family Attached	11%	4%
	Apartment / Mobile Home / Other	17%	5%
Age of respondent	18 to 39	9%	12%
	40 to 59	43%	32%
	60 and older	48%	57%
Household income in 2018	Less than $50,000	41%	30%
	$50,000 to under $100,000	57%	36%
	$100,000 or more	2%	34%

		Participants	
		High Diversity Sample (n=72)	Non-High Diversity Sample (n=386)
Race	White only	92%	89%
	Hispanic only	6%	2%
	Black only	1%	0%
	Asian only	1%	4%
	Native only	0%	<1%
	Other only	0%	2%
	Multi-racial	0%	2%
Household size	1	22%	17%
	2	39%	48%
	3	21%	15%
	4	13%	12%
	5 or more	6%	8%
Child presence at home	No child	72%	76%
	With child(ren)	28%	24%
Education level	Up to high school	29%	14%
	Some college	67%	48%
	College degree	3%	15%
	Graduate / Professional degree	2%	23%

Customer Awareness, Recall, and Actions

Table 7-3 reveals only two statistically significant differences between minority and non-minority households related to their awareness of organizations that offer rebates for home energy upgrades. Among non-participants, minority households more often reported learning about rebate opportunities from NW Natural or Pacific Power utilities than non-minority households (a statistically significant difference).

Table 7-3: Unaided Awareness of Organizations that Offer Incentives to Save Energy or Use Renewable Energy, by Minority Status (Multiple Responses Allowed)

Awareness of Organizations Offering Rebates	Participants		Non-Participants	
	Minority (n=36)	Non-Minority (n=383)	Minority (n=34)	Non-Minority (n=278)
Aware of ANY organization	67%	68%	43%	33%
Energy Trust of Oregon	52%	56%	12%	11%
PGE or Portland General Electric	21%	17%	6%	9%
NW Natural	11%	10%	13%	4%
Pacific Power	3%	4%	12%	4%
Oregon state government or Oregon Department of Energy	3%	2%	4%	2%
My utility	0%	1%	6%	4%
Avista	0%	0%	3%	3%
Cascade Natural Gas	0%	0%	0%	1%
Energy Star	0%	1%	0%	1%
Contractors	0%	1%	0%	1%
City or county government	0%	1%	2%	2%
Other	6%	2%	2%	4%

Among participants, significantly more minority respondents reported learning about Energy Trust of Oregon through a retailer compared to non-minority respondents (Table 7-4).

Table 7-4: Sources of Awareness of Energy Trust, by Minority Status (Multiple Responses Allowed)

Sources of Awareness of Energy Trust	Participants	
	Minority (n=34)	Non-Minority (n=359)
Utility	36%	36%
Retailer	28%	14%
An advertisement	19%	24%
Contractor	11%	9%
Word of mouth	7%	7%
Social media	4%	2%
Online	3%	2%
At work	2%	1%

Sources of Awareness of Energy Trust	Participants	
	Minority (n=34)	Non-Minority (n=359)
Sporting event\sports team	0%	0%
Community-based or other organization	0%	3%
News story	0%	3%
Energy Trust programs	0%	0%
Other	4%	3%
Not applicable (Did not hear about Energy Trust in last 12 months)	1%	5%
Don't know	12%	14%

Note: Non-participant comparisons are excluded due to low sample sizes for non-participant minority households that answered the question. Note that no significant differences were observed for non-participants on this question.

Home Improvement Customer Journey

Among non-participants, minority respondents are significantly more motivated than non-minority respondents to do home improvements due to immediate needs for improvement or repair (Table 7-5). On the other hand, minority households' projects were significantly less motivated by saving energy and money compared to non-minority respondents. Due to the small non-participant minority sample size, interpret these results with caution.

Table 7-5: Household Motivations for Recent Home Improvements, by Minority Status (Multiple Responses Allowed)

Motivations for Recent Home Improvements	Participants		Non-Participants	
	Minority (n=32)	Non-Minority (n=307)	Minority (n=15)	Non-Minority (n=128)
Immediate need for an improvement or repair	62%	56%	84%	55%
Saving energy and money	40%	40%	4%	27%
Already planning a remodel	11%	7%	0%	5%
Improving the value of the home	10%	13%	12%	23%
Increasing comfort for me\my family	10%	17%	12%	19%
Helping the environment	3%	3%	0%	2%
Other	8%	6%	0%	3%
Don't know	0%	0%	0%	1%

Among participants, minority respondents are significantly less likely than non-minority respondents to say they researched and investigated rebates before starting their home improvement (Table 7-6).

Table 7-6: Pre-Home Improvement Research, by Minority Status (Multiple Responses Allowed)

Researched Before Conducting Home Improvements	Participants	
	Minority (n=32)	Non-Minority (n=307)
Conducted research	90%	87%
Searched for contractors	59%	60%
Looked up product options	41%	55%
Investigated rebates	21%	39%
Learned how to do the improvement	2%	3%
Other	6%	4%
No – did not do any research	9%	13%
Don't know	1%	0%

Note: Non-participant comparisons are excluded due to low sample sizes for non-participant minority households that answered the question. Note that no significant differences were observed for non-participants on this question.

Among non-participants, minority respondents relied more heavily on home improvement stores for information about their more recent home improvements than non-minority respondents (Table 7-7). Due to the small non-participant minority sample size, interpret these results with caution.

Table 7-7: Sources of Information Used for Most Recent Home Improvements, by Minority Status (Multiple Responses Allowed)

Sources of Information for Most Recent Home Improvements	Participants		Non-Participants	
	Minority (n=32)	Non-Minority (n=307)	Minority (n=15)	Non-Minority (n=128)
Google search	66%	52%	51%	45%
Contractors	43%	37%	12%	23%
Friends or family	21%	19%	22%	32%
Home improvement stores	21%	25%	49%	24%
Energy Trust website	11%	20%	0%	2%
YouTube	7%	6%	0%	3%
Angie's List	0%	0%	0%	1%
Events or workshops	0%	2%	0%	3%
My utility	0%	2%	0%	2%
Other	15%	12%	5%	6%
Don't know	4%	3%	8%	7%
Refused	0%	0%	7%	1%

Customer Values: Energy Use and the Environment

Minority status was not a strong differentiator on values related to the energy use and the environment. As seen in Table 7-8, only one significant difference was observed: among participants, minority respondents were statistically more likely than non-minority respondents to agree with following statement: "I am always eager to be the first one to buy new products or technologies."

Table 7-8: Customer Values on Energy Use and the Environment, by Minority Status

Value Statement (0 to 10 scale)	Participants		Non-Participants	
	Minority (n=36)	Non-Minority (n=382)	Minority (n=34)	Non-Minority (n=278)
Household energy use has an impact on the environment	8.5	8.2	8.8	8.3
Concerned about how energy use affects the environment	8.3	7.6	8.3	7.7
My responsibility to use as little energy as possible to help the environment	8.3	7.6	8.0	7.7
If my energy bill goes up, I feel like I must do something to reduce it	7.8	7.1	7.7	7.3
I have to take the lead in my household if we're going to keep our energy bills down	7.5	7.1	7.2	6.9
The electrical grid is a shared resource, and it's my responsibility to do my part to ensure it is reliable	7.4	7.1	7.4	7.2
My efforts to save energy at home impact the grid	7.3	7.6	7.3	7.4
I am always eager to be the first one to buy new products or technologies	5.0	3.9	4.3	3.6
Would like to lower my energy bill, but don't know where to start	4.2	3.7	4.5	4.7
I like to buy technologies that save me time and effort - I am less concerned about how much energy they use	3.7	3.5	3.6	3.6
Worry whether there is enough money to pay my energy bill	2.5	2.1	3.9	3.4

As seen in Table 7-9, almost all minority and non-minority households took some action to reduce energy use in their home and reported most specific actions at similar rates. One noticeable difference is that, among non-participants, minority respondents were statistically less likely than non-minority respondents to say they cut down on the time they spend in the shower.

Table 7-9: Household Actions Taken to Reduce Home Energy Usage, by Minority Status (Multiple Responses Allowed)

Actions Taken to Reduce Energy Usage	Participants		Non-Participants	
	Minority (n=36)	Non-Minority (n=382)	Minority (n=34)	Non-Minority (n=278)
Reported taking any action	100%	99.7%	100%	99.7%
Turned off lights when not needed	97%	97%	96%	98%
Cleaned or replaced filters regularly to help heaters and air conditioners work efficiently	95%	94%	88%	89%
Used the energy-saver drying option on your dishwasher or let dishes air dry	77%	71%	61%	67%
Unplugged battery chargers when not in use	69%	66%	62%	68%
Used ceiling fans to push hot air down in winter and circulate air in summer	60%	68%	68%	68%
Shortened showers to cut hot water costs	48%	48%	39%	60%

Conversations about Energy

Among participants, minority respondents tended to talk about energy use with people outside of their household significantly more frequently than non-minority respondents (Table 7-10). Non-participants, on the other hand, reported speaking about energy use at similar rates regardless of minority status.

Table 7-10: Communication with Others About Home Energy Usage, by Minority Status

Communication About Home Energy Usage	Participants		Non-Participants	
	Minority (n=36)	Non-Minority (n=381)	Minority (n=34)	Non-Minority (n=278)
Frequently	19%	8%	4%	12%
Sometimes	43%	36%	34%	25%
Rarely	19%	39%	46%	39%
Never	19%	17%	16%	24%
Don't know / Refused	0%	1%	0%	0%

Note: Shading demonstrates that the distribution of answers is significantly different between participant minority and participant non-minority respondents. Mann-Whitney U used for significance testing.

8. Conclusions & Recommendations

General Conclusions & Recommendations

Conclusion 1: Increasing awareness of Energy Trust is key to engaging with non-participants. Low awareness and familiarity with Energy Trust programs impedes non-participant engagement. Non-participants value energy conservation at similar levels as participants yet complete significantly fewer home energy projects and are significantly more likely to say they don't know where to start when it comes to undertaking energy saving projects.

- **Recommendation:** Consider further investments in general awareness-building strategies such as advertising and promotions and, if undertaken, explore how these strategies affect survey responses.
- **Recommendation:** Explore new and more rigorous strategies to re-engage customers who have received an incentive, through gathering feedback, reinforcing project benefits, and providing information on other resources and services. Strategies may involve personalizing their experience through customized communications, behavioral retargeting in online advertising,[13] and/or greater investments in outreach.

Conclusion 2: Meeting customers at their time of need is critical for many efficiency improvements. Both participants and non-participants cited an *immediate need for improvement or repair* as the most common motivation for their most recent home improvement project. This reason was especially prominent for HVAC, appliance, water heat, and roof improvement projects.

- **Recommendation:** Continue to explore ways to increase Energy Trust's ability to connect and serve customers when they have an immediate need for an energy-related home improvement or repair.

Conclusion 3: While energy bills are not a pressing financial concern for most participants and non-participants, they still care about being responsible energy users. The desire to be a responsible energy user is rooted in pro-environmental preservation attitudes and transcends participation status. When asked to rate how much they agreed with several value statements, "I sometimes worry whether there is enough money to pay my energy bill" was the lowest rated value statement; pro-technology value statements received similarly low levels of affirmation. Instead, respondents gave the most weight to value statements that promoted *responsible energy use* and *environmental preservation*, and gave their highest agreement ratings to value statements that acknowledged the link between the two.

- **Recommendation:** Ensure that the environmental and grid benefits of energy conservation and renewables are positioned prominently in Energy Trust's residential marketing and outreach.

[13] Behavioral retargeting is a form of advertising that enables advertisers to target different customers based on their previous online behaviors or actions by embedding cookies in a user's browser. This includes dynamic (or personalized) retargeting, in which online advertisers may dynamically promote specific products based on the specific web pages that a user visited on their website (a tactic commonly used by online retailers).

For example, acknowledge how participation in an Energy Trust program enables households to directly do their part to help the planet and preserve the grid.

Conclusion 4: Non-participants are less reliant on contractors for home improvement projects. Non-participants reported hiring contractors less frequently for their home improvement projects compared to participants, opting to more often complete projects on their own. They were also less likely to search for contractors before completing a project and were more likely to teach themselves how to do the improvement ahead of time. Compared to participants, non-participants depend more on friends or family for obtaining information on home improvements and are less likely to use contractors as a source for this information.

- **Recommendation:** Consider offering additional DIY rebate opportunities to encourage participation from the pool of current non-participants that prefer to complete projects on their own. Providing more opportunities for DIY projects may lead to greater Energy Trust program participation and possibly spillover.
- **Recommendation:** Continue using DIY Energy Saver Kits to encourage first time participation.

Considerations for Research Design and Methodology

Conclusion 5: The unaided awareness methodology used in the 2018 study may have produced a more accurate estimate of participant awareness than prior years. Although non-participants exhibited similar levels of unaided awareness as the 2017 study, 2018 unaided participant awareness nearly doubled from 2017. This difference is likely due to variances in survey methodologies, and as discussed in the report, the 2018 finding likely represents a more accurate estimate of participant awareness.

- **Recommendation:** Mimic the 2018 awareness methodology in future Customer Insights surveys, so participant awareness can be more accurately tracked and compared over time.

Conclusion 6: The methodology used in the 2018 study is an insufficient mechanism to comprehensively study minority households. Racial and ethnic minorities responded to the survey at rates mirroring Oregon's census demographics. Despite strong efforts to oversample these groups, the approach used did not yield enough non-white respondents to generate strong insights into Oregon's minority populations.

- **Recommendation:** Alter the 2019 methodology to gain deeper and more reliable insights into non-white Oregonians.
  - *Quantitative solutions:* Establish a minority respondent quota of at least 70 per participation-status group. To achieve this, double or triple the high diversity oversample quotas (compared to the 2018 sample). Note that a non-white sample of 70 respondents will be insufficient for gaining deep insights into specific minority communities. If sub-group (e.g., African American, Hispanic, etc.) insights are desired, target at least 50 respondents per racial/ethnic group per participation-status group (and adjust high diversity oversamples accordingly).
  - *Qualitative solutions:* Conduct focus groups or in-depth interviews to better understand the nuanced needs and values of Oregon's racial and ethnic minority groups.

Appendix A. 2018 Customer Insights Survey Instrument

Introduction

Hello, my name is _____and I'm calling from Discovery Research, on behalf of Energy Trust of Oregon. We are conducting a brief research study about how Oregonians use energy and would like to include your opinion.

Screening

[ASK ALL]

S1. I'd like to speak with a person who is involved in deciding or managing how you use energy in your home. This includes things like buying new lights or appliances, adjusting the thermostat, or paying the energy bills. Would that be you? [SINGLE RESPONSE]

1. Yes
2. No, respondent available [RESTATE INTRODUCTION, AND SKIP TO Q2]
3. No, respondent currently not available [CALLBACK]
4. No, refused [TERMINATE]

[ASK ALL]

S2. In what year were you born? [RECORD NUMERIC RESPONSE]

1. [RECORD YEAR]
98. Don't know
99. Refused

[IF S2>2001, TERMINATE]

[ASK ALL]

S3. Do you rent or own your home? [SINGLE RESPONSE]

1. Rent
2. Own
3. Occupies home without payment of rent [TERMINATE]
4. Don't know [do not read, TERMINATE]
5. Refused [do not read, TERMINATE]

[ASK IF S3=1]

S4. Have you ever previously owned a home?

1. Yes
2. No
98. Don't know [TERMINATE]
99. Refused [TERMINATE]

[ASK IF S3=1]

S5. Are you planning to buy a home in the next three years?

1. Yes
2. No
98. Don't know
99. Refused

[ASK ALL]

S6. Do you live in a single family detached home, an apartment, a duplex, or something else? [SINGLE RESPONSE]

1. Single family detached
2. Single family attached home (row house, duplex, triplex, quadplex, etc.)
3. Apartment
4. Mobile home
5. Other (please specify)
98. Don't know
99. Refused

Survey

[ASK ALL]

Q1. What is the name of your electric utility? [SINGLE RESPONSE]

1. PGE, or Portland General Electric
2. Pacific Power, PacifiCorp, or Pacific Power or Pacific Power & Light (PP&L)
3. Other, please specify: [*Open-ended response*]

[*Do not read*:]

98. Don't know
99. Refused

[ASK IF Q1 DOES NOT EQUAL 3, 98, OR 99]

Q2. Is your household on an equal pay program for your electric bill, where you pay the same amount each month regardless of how much electricity you used that month? [RECORD NUMERIC RESPONSE]

1. Yes – on equal pay
2. No – not on equal pay

[*Do not read*:]

98. Don't know
99. Refused

[ASK ALL]

Q3. What is the name of your natural gas utility? [SINGLE RESPONSE]

1. Northwest Natural
2. Cascade Natural Gas
3. Avista
4. Other, please specify: [OPEN-ENDED RESPONSE]
5. Don’t use natural gas

[*Do not read*:]

98. Don't know
99. Refused

[IF Q1 DOES NOT EQUAL 1 OR 2, AND, Q3 DOES NOT EQUAL 1, 2 OR 3, THEN TERMINATE]

[ASK IF Q3 DOES NOT EQUAL 5, 98, OR 99]

Q4. Is your household on an equal pay program for your natural gas bill, where you pay the same amount each month regardless of how much gas you used that month? [RECORD NUMERIC RESPONSE]

1. Yes – on equal pay
2. No – not on equal pay

[*Do not read*:]

98. Don't know
99. Refused

[ASK ALL]

Q5. Do you know of any organizations in your area that offer rebates to help you save energy or use renewable energy at home? If so, which ones? [MULTIPLE RESPONSE; DO NOT READ]

1. Energy Trust of Oregon
2. My utility
3. PGE or Portland General Electric
4. Pacific Power or Pacific Power & Light (PP&L) or PacifiCorp
5. Avista
6. Northwest Natural

7. Cascade Natural Gas
8. Energy Star
9. Contractors
10. Oregon state government or Oregon Department of Energy
11. City or County government
12. Other, please specify: [OPEN-ENDED RESPONSE]
98. No/Don't know [EXCLUSIVE]
99. Refused [EXCLUSIVE]

[ASK ALL]

Q6. We're curious to know how familiar you are with Energy Trust of Oregon. [READ IF Q5<>1: It is an organization that offers rebates and information to help Oregonians save energy or use renewable energy at home.] Would you say… [SINGLE RESPONSE]

1. [DISPLAY IF Q5<>1] Before today, I'd never heard of Energy Trust
2. I've heard the name "Energy Trust of Oregon," but that's about it
3. I know a little about the rebates and services that Energy Trust offers
4. I know some about the rebates and services that Energy Trust offers, or
5. I know a lot about the rebates and services Energy Trust offers

[*Do not read*:]

98. Don't know
99. Refused

[ASK IF Q5=1 OR Q6=2-5]

Q7. How, if at all, did you see or hear about Energy Trust of Oregon in the last twelve months? [*Interviewer: Do not read. Probe to code*.] [MULTIPLE RESPONSE]

[MULTIPLE RESPONSE]

1. An advertisement
2. From your utility
3. From a contractor
4. From a retailer
5. Through a sporting event/sports team
6. Through a community-based or other organization
7. Through social media, like Facebook or Twitter
8. Through a news story
9. Or, through word of mouth

[*Do not read*:]

96. Other, please specify: [OPEN-ENDED RESPONSE]
97. Not applicable (Did not hear about Energy Trust in past 12 months) [EXCLUSIVE]
98. Don't know [EXCLUSIVE]
99. Refused [EXCLUSIVE]

[ASK ALL]

Q8. Now can you tell me if you've made any major home improvements in the last five years? This could include installing a new heating or cooling system, remodeling a kitchen or bathroom, adding insulation to your attic, purchasing a major appliance, or other major home repairs. [SINGLE RESPONSE]

1. Yes
2. No

[*Do not read*:]

98. Don't know
99. Refused

[ASK IF Q8=1]

Q9. What type of work did you do? [*Interviewer: Do not read, probe to code*] [MULTIPLE RESPONSE]

1. Heating or air conditioning project
2. Insulation project
3. Air sealing project
4. Remodel or addition
5. Solar project
6. Water heating project
7. Windows project
8. Roof project
9. Purchased a new appliance
10. Other, please specify: [OPEN-ENDED RESPONSE]

98. Don't know [EXCLUSIVE]
99. Refused [EXCLUSIVE]

[ASK IF MULTIPLE ITEMS (1-10) SELECTED IN Q9]

Q10. Which one of those home improvements that you just mentioned was the most recent one? [*Interviewer: Do not read, probe to code*] [MULTIPLE RESPONSE]

1. Heating or air conditioning project
2. Insulation project
3. Air sealing project
4. Remodel or addition
5. Solar project
6. Water heating project
7. Windows project
8. Roof project
9. Purchased a new appliance
10. Other, please specify: [OPEN-ENDED RESPONSE]

98. Don't know
99. Refused

[ASK IF Q8=1 AND Q9<>ONLY 9 OR Q10<>9, 98, 99]

Q11. Thinking of the most recent major improvement you made, did you hire a licensed contractor to do the work, do the project yourself or with the help of friends and family, or do something else? [SINGLE RESPONSE]

1. Hired a licensed contractor
2. Did the project yourself or with friends and family
3. Other, please specify: [OPEN-ENDED RESPONSE]

[*Do not read*:]

98. Don't know
99. Refused

[ASK IF Q8=1]

Q12. What was your primary motivation for making your most recent major home improvement? [*Interviewer: Do not read, probe to code, accept multiple*] [MULTIPLE RESPONSE]

1. Immediate need for an improvement or repair
2. Already planning a remodel
3. Saving energy and money
4. Improving the value of the home
5. Helping the environment
6. Increasing comfort for me/my family

96. Other, please specify: [OPEN-ENDED RESPONSE]
98. Don't know
99. Refused

[ASK IF Q8=1]

Q13. Did you do any research before making your most recent major home improvement? This could include searching for contractors, looking up product options, investigating rebates, or learning how to do the improvement yourself. [IF NEEDED: WHAT DID YOU RESEARCH? PROBE TO CODE, MULTIPLE ALLOWED]

1. No – did not do any research
2. Yes – searched for contractors
3. Yes – looked up product options
4. Yes – investigated rebates
5. Yes – learned how to do the improvement yourself
6. Yes – other (specify)

98. Don't know
99. Refused

[ASK IF Q8=1]

Q14. What sources did you use to find information for your most recent major home improvement? [*Interviewer: Do not read items, probe to code, accept multiple. If respondent says "the internet" probe for specific websites*] [MULTIPLE RESPONSE]

1. Contractors
2. Google search
3. YouTube
4. Energy Trust website
5. Angie's List
6. Friends or family
7. Events or workshops
8. My utility
9. Home improvement stores (like Home Depot or Lowes)
96. Other, please specify: [OPEN-ENDED RESPONSE]
98. Don't know
99. Refused

[ASK IF PARTICIPANT SAMPLE]

Q15. Records show you participated in an Energy Trust program last year. Outside of those living in your household, did you talk to friends, family, or coworkers about your participation in the Energy Trust program?

1. Yes
2. No
97. Not applicable – I do not recall participating in an Energy Trust program
98. Don't know

[ASK ALL]

Q16. Outside of those living in your household, how often do you talk about home energy use with friends, family, or coworkers? Would you say…

1. Never
2. Rarely
3. Sometimes
4. Frequently

[*Do not read*:]

98. Don't know
99. Refused

[ASK ALL]

Q17. Now we'd like to ask your personal opinions about energy. Please use a scale of 0 to 10 where 0 means Not at all agree, and 10 means Completely agree, to tell me how much you agree with each of the following statements.

[RANDOMIZE] Item	0 - Not at all agree, 10 - Completely agree, DK
I sometimes worry whether there is enough money to pay my energy bill.	
I would like to lower my energy bill, but don't know where to start	
I am very concerned about how energy use affects the environment.	
It is my responsibility to use as little energy as possible to help the environment.	
If my energy bill goes up, I feel like I must do something to reduce it.	
I have to take the lead in my household if we're going to keep our energy bills down.	
Household energy use has an impact on the environment.	
My efforts to save energy at home impact the grid	
The electrical grid is a shared resource, and it's my responsibility to do my part to ensure it is reliable	
I am always eager to be the first one to buy new products or technologies.	
I like to buy technologies that save me time and effort - I am less concerned about how much energy they use.	

[ASK ALL]

Q18. Since January of this year, have you… [INTERVIEWER READS EACH ITEM, THEN READS]

	Yes	No	Don't know
Turned off lights when not needed			
Unplugged battery chargers when not in use			
Cleaned or replaced filters regularly to help heaters and air conditioners work efficiently			
Used ceiling fans to push hot air down in winter and circulate air in summer			
Used the energy-saver drying option on your dishwasher or let dishes air dry			
Shortened showers to cut hot water costs			

Demographics

I have just a few more questions about you and your household.

[ASK ALL]

Q19. How many people 18 years and older, including yourself, live in your home full time?

1. Response Text [FORCE NUMERIC RESPONSE]

[*Do not read*:]

99. Refused

[ASK ALL]

Q20. How many children under the age of 18 live in your home full time?

1. Response Text [FORCE NUMERIC RESPONSE]

[*Do not read*:]

99. Refused

[ASK ALL]

Q21. How would you describe your race or ethnicity? [*Interviewer: Do not read*] [MULTIPLE RESPONSE]

1. White or Caucasian
2. Latino, Hispanic or Mexican
3. Black or African American
4. Asian or Pacific Islander
5. Native American
6. Middle Eastern or North African
7. Other, please specify: [OPEN-ENDED RESPONSE]

[*Do not read*:]

98. Don't know
99. Refused

[ASK ALL]

Q22. What languages are commonly spoken in your household? [*Interviewer: Do not read*] [MULTIPLE RESPONSE]

1. English
2. Spanish
3. Chinese - Mandarin
4. Chinese - Cantonese
5. Japanese
6. Korean
7. Filipino
8. Hmong
9. Vietnamese

10. Other, please specify: [OPEN-ENDED RESPONSE]
98. Don't know
99. Refused

[ASK ALL]

Q23. What is the highest level of education you have completed so far? [*Interviewer: Do not read*] [SINGLE RESPONSE]

1. Some high school
2. High School graduate or equivalent
3. Trade or technical school
4. Some college
5. Associate's degree
6. Undergraduate college degree
7. Some graduate school
8. Graduate or professional degree

[*Do not read*:]
98. Don't know
99. Refused

[ASK ALL]

Q24. Which of the following ranges describes your 2017 total household income before taxes? [SINGLE RESPONSE]

1. Less than $35,000
2. $35,000 to under $50,000
3. $50,000 to under $75,000
4. $75,000 to under $100,000
5. $100,000 or more

[*Do not read*:]
98. Don't know
99. Refused