

Customer Engagement Experiment: Which Follow-Up Strategies Turn Home Energy Audits Into Energy Savings?

Kate Scott, Erika Kociolek and Sarah Castor, Energy Trust of Oregon

ABSTRACT

This paper summarizes results from the Customer Engagement Experiment, a randomized controlled trial conducted between March 2012 and March 2013 in collaboration with an energy efficiency organization and an academic institution. This experiment was designed to measure the effectiveness of different follow-up strategies on increasing the number and rate of energy efficiency improvements following a free in-home or phone-based energy audit (Home Energy Review, or HER). Customers receiving HERs between March and December 2012 were randomly selected into one of three groups: a control group and two distinct treatment groups. The treatment groups differed in terms of the frequency and type of follow-up with contacts after the HER, as well as incentive amounts. The primary research objectives of this experiment are to determine how varying follow-up approaches impact subsequent program participation, and which approaches are most effective. First, we describe the experimental design and sample characteristics. Then, we summarize the results of an analysis of follow-through: the proportion of customers that went on to install measures after the HER. We conclude with a discussion of programmatic implications based on these results, and the potential for energy efficiency organizations to leverage these learnings for their own follow-up strategies.

Acknowledgements

The Customer Engagement Experiment was made possible by extensive teamwork across multiple organizations. The authors would like to acknowledge Hunt Alcott from New York University, Michael Greenstone and KVS Vinay from Massachusetts Institute of Technology (MIT), as well as staff from Conservation Services Group and CLEAResult.

About the Collaborators

Energy Trust of Oregon is an independent nonprofit organization dedicated to helping utility customers of Portland General Electric, Pacific Power, NW Natural and Cascade Natural Gas benefit from saving energy and generating renewable energy through services and cash incentives.

On behalf of the MIT Energy Initiative, researchers Hunt Alcott, Michael Greenstone, and KVS Vinay approached Energy Trust to collaborate on an experiment to evaluate the impact of various strategies that aim to encourage customers to take energy-saving actions. MIT utilized a grant from the MacArthur Foundation to provide financial support for the implementation of the experiment, as well as additional financial incentives for a portion of Energy Trust customers.

The implementation of the experiment was conducted by Conservation Services Group, the Existing Homes Program Management Contractor (PMC) during the delivery phase of the experiment through March 31st, 2013. CLEAResult, the Existing Homes PMC as of January 1st,

2013, conducted the final administrative tasks associated with the conclusion of the experiment through the end of 2013.

Background

Since 2003, Home Energy Reviews (HERs) have been a staple of Energy Trust's program offerings for residential customers. An HER is comprised of an in-home audit conducted by an Energy Advisor with the homeowner; installation of instant-savings measures (ISMs) such as CFLs, low-flow showerheads and faucet aerators; and a leave-behind piece with recommendations for energy saving improvements. Beginning in 2011, Energy Trust also began offering a shortened version of an HER over the phone during which Energy Advisors would ask a targeted set of questions about the customer's home, discuss recommendations for saving energy, and conclude by sending the customer an Energy Saver Kit with the ISMs that would have been installed had the HER been in-home.

HERs are designed to be an entry-point for customers to engage in Energy Trust programs. Energy Trust has continually sought to learn about and refine the design of HERs to increase customer participation in other Energy Trust offerings. Historically, determining the most effective approaches has been challenging due to lack of data, and the comparison of different HER strategies has been primarily anecdotal. Internal analysis conducted in 2012 suggests that for HERs performed in 2011, about 13% of sites went on to participate in other Energy Trust programs within three months. For HERs delivered between 2003 and 2011, about 15% of sites participated in other Energy Trust programs in three months, 21% participated within six months, and 28% participated within one year. That analysis serves as a useful baseline for further evaluations of follow-through as HERs continue to evolve.

Customer Engagement Experiment

Objectives

In 2011, follow-up communication after an HER consisted of an email two weeks post-HER, thanking the customer for participating and encouraging them to contact a contractor. In 2012, Energy Trust launched an engagement strategy intended to increase participation post-HER through increased and personalized follow-up with customers after their HER. The hypothesis was that by creating a relationship with customers through frequent and personalized communications, customers would feel that they had a resource to guide them towards the best options for their home and would therefore be more likely to install measures. Customers received several communications via phone and email from their Energy Advisor, asking them if they had taken action or had any questions they wanted to discuss.

Due to the increased resources required to deliver this new engagement strategy, the Existing Homes program saw value in analyzing the effectiveness in increasing program participation compared to the less resource intensive tactics used the prior year. Historically, evaluating the success of engagement strategies has been difficult due to lack of data and challenges in applying experimental design. However, the Customer Engagement Experiment offered the unique opportunity to obtain quantitative data on the impacts of different strategies, specifically, the enhanced engagement strategy outlined above, as well as offering additional financial incentives, which were provided by MIT.

With this goal in mind, the Customer Engagement Experiment was designed to answer the following questions: What are the effects of the enhanced engagement strategy or additional incentives on program participation? If either of these treatments are found to be effective at increasing participation, is it feasible to offer the treatment in the future? This paper seeks to determine if engagement or additional incentives impact program participation, and summarize program perspectives based on the results of the Customer Engagement Experiment.

Experimental Design

The experiment ran from March through December 2012, during which eligible customers who received an in-home or phone-based Home Energy Review were randomly sorted into one of three treatment groups: a control group, a customer engagement group, and a financial incentives group. All eligible customers who requested an HER during this timeframe were randomly sorted into an experimental group at the time of scheduling, and had no awareness of the experiment. Customers excluded from sample included those in Cascade Natural Gas (CNG) territory due to savings risks if one or more treatments proved ineffective, and customers in Clackamas County, where additional bonuses for a wide range of energy efficiency improvements were already available through the county for the duration of the experiment.

Group 1: Control. Customers in this group received follow-up that closely mirrored the 2011 protocol, which included a personalized thank you email within two weeks of the HER, and a follow-up phone call from their Energy Adviser at 90 days (this was not part of the 2011 protocol, however, it was added to match the 90-day touch points delivered to customers in groups 2 and 3). The control group served as the baseline for comparing the effectiveness of the methods tested in groups 2 and 3.

Group 2: Customer engagement. Energy Advisors provided this group multiple personalized e-mails and phone calls, which comprised the enhanced 2012 follow-up strategy intended to influence action or provide additional services that may lead to customer action.

Group 3: Financial incentives. The financial treatment group mirrored the control group, receiving a personalized thank you email within two weeks of receiving a review and a phone call from their Energy Advisor at 90 days. At the time of the 90-day phone call they were also notified of a limited time offer to receive additional incentives from MIT Energy Initiative. However, if customers had already scheduled or completed work, no offer was made to limit free ridership. Additionally, if customers did not have recommendations for measures that qualified for the additional incentives, the offer was not made.¹ If a customer could not be reached on the first attempt, the customer received a second phone call (both with voicemails), followed by a letter (at 100 days post-review). The financial offer was stated both in the phone call or second

¹ Note that for customers in the financial group who did not receive the offer (170, compared to 330 that did receive the offer out of 500 in the financial group overall) Energy Trust has information from customer service representative reports about why customers did not receive the offer for 87% of them (148). Most reported that they were already doing projects (62). 54 had no recommendations for qualifying measures (which, interestingly, contradicts the data we have on recommendations provided to customers), 20 were not interested, 7 were in rental units, and 5 had invalid or missing information.

voicemail and the letter. Customers in the financial group were eligible for incentives in addition to Energy Trust’s standard incentive offerings for select targeted measures. Table 1 summarizes Energy Trust existing incentive amounts in column 3, and MIT additional incentives in column 4. To receive the additional incentives, customers must have installed these measures within 90 days of the offer (i.e., 180 days after the Home Energy Review).

As noted above, for an additional 90 days after the HERs, follow-up treatments were delivered to conclude the treatment period. Final follow-up treatments were completed by March 31st, 2013. Following this final communication point, those who received the financial offer had an additional 90 days to install eligible measures for the additional incentives. The final day to install measures to receive the additional incentives was July 1st, 2013. Customers then had 90 days to submit paperwork for Energy Trust incentives. The final date for applications to come in to be eligible for additional incentives was October 1st, 2013. However, note that Energy Trust sometimes grants exceptions for late paperwork, so some customers may have been granted additional incentives past October 1st.

Table 1. Measures eligible for additional incentives

| Category | Measure | Current Incentive (\$) | With Match (up to 75% of cost of measure) |
|------------|---|------------------------|---|
| Insulation | Attic/ceiling | 0.25/sqft | 0.50/sqft |
| | Wall, floor, rim joist, or kneewall | 0.30/sqft | 0.60/sqft |
| | Boiler pipe insulation | 0.50/sqft | 1.00/sqft |
| Windows | 0.25 U value or less | 3.50/sqft | 7.00/sqft |
| | 0.26-0.30 U value | 2.25/sqft | 4.50/sqft |
| Heating | Heat pump replacement (based on size) | 450 | 900 |
| | Heat pump upgrade (based on size) | 250 | 500 |
| | PTCS/CheckMe! | 150 per test | 300 per test |
| | Ductless heat pump | 800 | 1,600 |
| | Direct vent gas unit heater | 100 | 200 |
| | Direct vent gas fireplace (based on efficiency) | 200, 250 | 400, 500 |
| | Gas boiler | 200 | 400 |

It is worth noting that the customer engagement group was deliberately larger than the other two groups. We hypothesized that this treatment would result in increased installation of measures by HER participants; therefore, funneling a large number of customers into the other two groups could potentially compromise the program’s ability to meet savings goals. Due to these concerns, the original ratio of group distributions was 25% in the control group, 50% in the customer engagement group, and 25% in the financial group. Partway through the experiment, we adjusted the desired proportion of HERs in the three groups to ensure more HERs were sorted into the control and financial groups to achieve a distribution of 30%, 40%, and 30%, respectively. This was done in response to lower than expected HER requests during the period of the experiment to account for concerns regarding adequate sample size for the control and financial groups. We achieved a final sample size of 1,758, with 27% in the control group, 45% in the customer engagement group, and 28% in the financial group.

Results

The results outlined in this paper include analysis of post-HER program participation by customers included in the experiment sample. An additional component of the evaluation was a survey of customers in the experiment, which was delivered between six and nine months after HERs took place. The survey asked about customer satisfaction with the HER and follow-up, as well as self-reported information on actions taken or planned since the HER. While the survey results are not included in this paper due to length constraints, we do highlight some findings that are relevant to certain program recommendations in the below sections.²

We found that 330, or two-thirds, of the financial group received the financial offer. In our analysis, we have separated out customers in the financial group that received the offer (financial – offer) from those that did not (financial – no offer). By separating the financial group this way we now have a check on the results since the “financial – no offer” group should be fairly similar to the control group, as they received the same limited follow-up post-HER. We present results for this group separately to verify that this is the case.

Findings – Validity

It is important to validate randomization by looking at characteristics of the treatment groups to ensure they are similar. We looked at home characteristics to help us assess the validity of the results. Key experimental outcomes are likely influenced by home characteristics. For example, customers in newer homes may install fewer measures that qualify for incentives because their homes may already be efficient, and homes that are larger may have higher usage, and therefore, have more opportunities to save. As shown in Table 2 below, we compare various home characteristics by group.³ Using analysis of variance (ANOVA), we examined average square footage and age of home. A significant F-value of 4.47 indicates that the average age of home is not the same across all groups.

To assess whether electric and gas space and water heat are related to treatment group, we use the chi-square test of significance (using Fisher’s exact test in situations with small sample sizes). We found significant differences for both water heating variables, indicating there is a relationship between water heating fuel and treatment group, although when we use the financial – combined group in lieu of the two separate financial groups, the chi-square test indicates there is no relationship. We also use the chi-square test to assess whether there are differences in the percentage of participants that installed measures before their HER and the percentage of homes in the Portland Metro area, but did not find a relationship between either of these variables and treatment group.

² For a more in-depth report of preliminary results from this customer survey, refer to the paper “What Motivates Action on Energy Efficiency?” <http://www.iepec.org/conf-docs/conf-by-year/2013-Chicago/080.pdf#page=1>.

³ Throughout the Results section, we looked at results using both three groups (control, customer engagement, and financial) and four groups (control, customer engagement, financial – no offer, and financial – offer).

Table 2. Home characteristics by group

| | Control | Customer Engagement | Financial – No Offer | Financial – Offer | Financial – Combined |
|---------------------------------|---------|---------------------|----------------------|-------------------|----------------------|
| Number of HERs | 467 | 791 | 170 | 330 | 500 |
| Average square footage | 1,974 | 1,927 | 2,055 | 2,003 | 2,021 |
| Average age of home* | 47 | 48 | 43 | 52 | 49 |
| Percentage gas space heat | 55% | 59% | 62% | 56% | 58% |
| Percentage electric space heat | 45% | 41% | 38% | 43% | 41% |
| Percentage gas water heat* | 47% | 49% | 53% | 39% | 44% |
| Percentage electric water heat* | 52% | 51% | 47% | 61% | 56% |
| Percentage prior participants | 43% | 44% | 42% | 45% | 44% |
| Percentage in Portland Metro | 50% | 51% | 44% | 52% | 49% |

Note: Asterisk (*) indicates statistically significant.

Table 3. Recommendations provided, by group

| | Control | Customer Engagement | Financial – No Offer | Financial – Offer | Financial – Combined |
|---|---------|---------------------|----------------------|-------------------|----------------------|
| Percentage with recommendation | 96% | 97% | 97% | 98% | 98% |
| Percent with recommendation for measure eligible for additional incentives* | 51% | 56% | 40% | 58% | 52% |
| Air sealing | 92% | 91% | 90% | 93% | 92% |
| Attic insulation* | 6% | 8% | 0.6% | 10% | 7% |
| Duct insulation | 11% | 13% | 8% | 14% | 12% |
| Duct sealing* | 50% | 49% | 55% | 42% | 47% |
| Electric water heater | 28% | 31% | 28% | 29% | 29% |
| Gas furnace | 14% | 16% | 18% | 12% | 14% |
| Floor insulation* | 7% | 6% | 0.6% | 10% | 7% |
| Heat pump replacement | 8% | 7% | 7% | 7% | 7% |
| Wall insulation* | 3% | 4% | 0.6% | 6% | 4% |
| Windows | 38% | 40% | 33% | 43% | 40% |

Notes: Asterisk (*) indicates statistically significant. Attic, duct, wall, and floor insulation, heat pump replacement, and windows measures are measures for which financial group HERs could receive additional incentives. We exclude results for blower door test, duct blaster test, and gas water heater recommendations. There were only three, two, and one HERs, respectively, that received these recommendations. We used Fisher’s exact test for attic insulation, floor insulation, and wall insulation due to small samples.

Table 3 shows the percentage of customers that received at least one recommendation from their Energy Advisor, and, for those customers that received at least one recommendation, the percentage of customers with one or more recommendations for a measure eligible for additional incentives, and the percentage of customers that had these specific recommendations. There seems to be a relationship between the presence of a recommendation for various types of insulation and treatment group, although it is worth noting that these results were significant only when we broke out the financial group.

There are some additional key variables we should examine to assess validity, including HER type (phone-based or in-home), the Energy Advisor assigned to the HER, and recommendations made post-HER to assess whether the groups differ on these variables. Overall, in-home HERs comprised 83% of all HERs in the experiment, and phone HERs were

17%. We used the chi-square test to assess whether differences in the number of phone and in-home HERs are related to treatment group. No significant differences were found, indicating there is not a relationship between type of HER and treatment.

Table 4. HER type, by group

| HER Type | Control | Customer Engagement | Financial – No Offer | Financial – Offer | Financial – Combined |
|----------|-----------|---------------------|----------------------|-------------------|----------------------|
| Phone | 74 | 138 | 23 | 61 | 84 |
| In-Home | 393 | 653 | 147 | 269 | 416 |
| Total | 468 (27%) | 791 (45%) | 170 (10%) | 330 (19%) | 500 (28%) |

Energy Advisors were assigned to all HERs in the experiment (without respect to treatment group), and, for the most part, were customers’ primary point of contact. We hypothesize that the Energy Advisor could be an important predictor of follow-through, particularly for HERs in the customer engagement group, so we want to look at whether assignment to Energy Advisor is related to treatment. As shown in Table 5, eight of fifteen Energy Advisors were responsible for 1,693, or 96% of Home Energy Reviews. We use the chi-square test to assess whether treatment group is related to Energy Advisor assignment. The large chi-square statistic and highly significant p-value ($p = 0.003$) indicates there is a relationship between treatment group and Energy Advisor assignment, despite the random assignment of Energy Advisors with respect to treatment group.

Table 5. Energy Advisor, by group

| Energy Advisor | N | Control | Customer Engagement | Financial – No Offer | Financial – Offer | Financial – Combined |
|----------------|-------|---------|---------------------|----------------------|-------------------|----------------------|
| 2 | 136 | 31% | 43% | 10% | 16% | 26% |
| 4 | 194 | 22% | 48% | 8% | 22% | 29% |
| 5 | 245 | 36% | 38% | 8% | 19% | 27% |
| 7 | 115 | 15% | 58% | 8% | 19% | 27% |
| 8 | 229 | 29% | 42% | 10% | 19% | 30% |
| 11 | 183 | 32% | 44% | 10% | 15% | 25% |
| 12 | 395 | 23% | 48% | 12% | 16% | 28% |
| 14 | 196 | 23% | 42% | 9% | 27% | 35% |
| All Others | 65 | 28% | 48% | 8% | 17% | 25% |
| Total | 1,758 | 27% | 45% | 10% | 19% | 28% |

Note: The 65 HERs in the “All Others” row were delivered by seven different advisors.

Results: Participation

A key outcome of interest is “follow-through,” or the implementation of one or more incentivized energy efficiency measures in a home any time after the date of the HER. In this context, follow-through rate is defined as the number of customers that installed a measure after the HER divided by the total number of HERs performed. “Measure” excludes instant savings measures installed during HERs or kits containing CFLs, showerheads, and aerators. We hypothesize that follow-through for control and financial groups will be fairly similar, as at 90 days, financial offers are just beginning to go out, and that follow-through for the customer engagement group may be higher than that of the control and financial groups. After 90 days, we

would expect to see higher follow-through for both treatment groups relative to the control group.

Table 6 below shows follow-through 3 months, 6 months, and “to date,” post-HER, which varies between roughly 11 months and 24 months depending on when the HER was performed. We see that 90 days post-HER, follow-through is 12% overall; lowest for customers in the financial offer group (10%) and highest for customers in the control group (14%). Using the chi-square test, we find that follow-through at three months is not related to treatment. Six months after the HER, we see that the percentage of HERs that installed a measure has jumped from 10% to 24% for the financial offer group, while other groups are 17% or 19%. This suggests that the financial offer entices more people to install a measure within 6 months. The chi-square test suggests a relationship between follow-through at six months and treatment ($p = 0.052$).

Finally, looking at follow-through to date, about 30% of customers in the control, customer engagement, and financial offer groups followed-through to date; this is fairly consistent with internal analysis of follow-through two years post-HER for HERs performed in 2003-2009 that varied between 24% and 39% depending on the year of the HER.

Customers in the financial group who did not receive the financial offer had a lower (23%) follow-through rate than the other three groups. There does not appear to be a relationship between follow-through to date and this treatment group, based on the chi-square test. This may be due to the type of participants in the financial group. The financial offer was not made to customers that did not have recommendations for qualifying measures, who were not interested, to customers that were renting, or to customers already doing projects. We have some data suggesting there is a mix of customers that already took action and those that are unlikely to (due to lack of opportunities, lack of interest, or lack of ability to do a project); we do not look into differences in follow-through between customers that fall into these various bins in the financial group in this paper. Additionally, although the percentage of participants that installed measures in the financial group was higher at 6 months, this trend did not continue, suggesting that while the higher incentive motivated customers to install a measure sooner, it does not boost the number of people that eventually participate post-HER.

Table 6. Follow-through rates, by group

| Period Post-HER | Control | Customer Engagement | Financial – No Offer | Financial – Offer | Financial – Combined |
|-----------------|---------|---------------------|----------------------|-------------------|----------------------|
| 3 Months | 14% | 11% | 11% | 10% | 10% |
| 6 Months* | 19% | 17% | 17% | 24% | 22% |
| To Date | 30% | 29% | 23% | 30% | 28% |

Note: Asterisk (*) indicates statistically significant.

We can look at follow-through on other key dimensions, such as HER type, previous participation, and Energy Advisor to see if there are any trends in follow-through. As shown in Table 7, HER type does not appear to impact follow-through (and the chi-square test confirms this). However, previous participation, as shown in Table 8, appears to have some influence on follow-through to date, which is confirmed by the chi-square test ($p = 0.019$).

Table 7. Follow-through rates, by HER type

| Period Post-HER | In-Home HER (n = 1,462) | Phone HER (n = 296) |
|-----------------|----------------------------|------------------------|
| 3 Months | 12% | 12% |
| 6 Months | 19% | 18% |
| To Date | 29% | 29% |

Table 8. Follow-through rates, by previous participation

| Period Post-HER | Previous Participant (n = 765) | No Previous Participation (n = 993) |
|-----------------|-----------------------------------|--|
| 3 Months | 12% | 12% |
| 6 Months | 20% | 19% |
| To Date* | 31% | 26% |

Note: Asterisk (*) indicates statistically significant.

As shown in Table 9, follow-through rates for Energy Advisors range quite a bit, and it does appear that some Energy Advisors are more effective at encouraging follow-through. The chi-square test indicates there is a relationship between follow-through three and six months post-HER and Energy Advisor ($p = 0.034$ and $p = 0.053$, respectively). It is worth noting that Energy Advisor 4 did not work on any HERs in the last two months of the experiment, November and December 2012; the high follow-through rate (34%) may be due to the relatively longer amount of time that has elapsed for this advisor's HERs. That Energy Advisors have an impact on follow-through is an interesting finding, but unfortunately, it may not be actionable for the program as we did not document or investigate differences in Energy Advisor approach to HERs or collect information from customers about the influence of their Energy Advisor on their decision to move forward with projects.

Table 9. Follow-through rates, by Energy Advisor

| Period Post-HER | Energy Advisor | | | | | | | | |
|-----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-------------------------|
| | 2 (n = 136) | 4 (n = 194) | 5 (n = 245) | 7 (n = 115) | 8 (n = 229) | 11 (n = 183) | 12 (n = 395) | 14 (n = 196) | All Others (n = 65)* |
| 3 Months* | 11% | 9% | 14% | 12% | 7% | 9% | 15% | 11% | 18% |
| 6 Months* | 18% | 19% | 24% | 17% | 14% | 13% | 22% | 19% | 23% |
| To Date | 25% | 34% | 31% | 28% | 24% | 23% | 30% | 31% | 28% |

Note: The 65 HERs were delivered by seven different advisors. Asterisk (*) indicates statistically significant.

We now look at follow-through for *eligible* measures, that is, the select weatherization and measures outlined in Table 1 for which customers in the financial group could receive additional financial incentives. If the offer of additional incentives does impact follow-through, we would expect to see a higher number of customers in the financial - offer group install

eligible measures. Table 10 shows the percentage of customers in each group that installed eligible measures out of the total number that followed-through. Sixty-nine percent of customers in the financial – offer group that followed through installed one or more eligible measures. This percent is higher than the other two treatment groups, although just four percentage points higher than the financial – no offer and customer engagement groups. The chi-square test does not indicate that there is a relationship between installation of one or more eligible measures and treatment group.

Table 10. Installation of eligible measures, by group

| Group | Number that Followed-Through | Number that Installed One or More Eligible Measures |
|----------------------|------------------------------|---|
| Control | 145 | 89 (61%) |
| Customer Engagement | 236 | 154 (65%) |
| Financial – No Offer | 40 | 26 (65%) |
| Financial – Offer | 100 | 69 (69%) |
| Financial - Combined | 140 | 95 (68%) |

Table 11 below shows the number of customers that installed eligible measures and the percentage of those customers that installed various eligible measures. We can see that most customers that installed eligible measures installed insulation and windows. The chi-square test did not indicate any relationships between treatment and eligible measures installed (although gas fireplaces had a marginally significant p-value, $p = 0.08$).

Table 11. Percent of customers that installed eligible measures, by type and group

| Measure | Control (n = 89) | Customer Engagement (n = 154) | Financial – No Offer (n = 26) | Financial – Offer (n = 69) | Financial – Combined (n = 95) |
|--|---------------------|-------------------------------------|-------------------------------------|----------------------------------|-------------------------------------|
| Attic / ceiling insulation | 51% | 46% | 50% | 49% | 49% |
| Wall, floor, rim joist, or kneewall insulation | 49% | 47% | 58% | 48% | 51% |
| Boiler pipe insulation | - | - | - | - | - |
| Windows | 29% | 25% | 23% | 19% | 20% |
| Heat pump upgrade | 1% | 4% | 4% | 6% | 5% |
| Heat pump replacement | 2% | 4% | 4% | 3% | 3% |
| Heat pump commissioning | 1% | 4% | 8% | 6% | 6% |
| Ductless heat pump | 9% | 12% | 12% | 7% | 8% |
| Direct vent gas unit heater | - | - | - | - | - |
| Direct vent gas fireplace | 7% | 7% | - | 14% | 11% |
| Gas boiler | - | - | - | - | - |

Although 68 customers in the financial offer group followed-through with eligible measures, only thirty-six (53%) actually received additional incentives through MIT for 81 measures. The majority (83%) of these 36 HERs were in-home HERs, and 64% had previously participated with Energy Trust. To provide some context for the impact of these measures, Table 12 summarizes the average installation cost, savings, and incentives for HERs that followed through, along with the standard error of the mean.

Table 12. Average project cost, savings, incentives, and number of measures, by group

| Metric | Control (n = 145) | Customer Engagement (n = 236) | Financial – No Offer (n = 40) | Financial – Offer (n = 100) | Financial – Combined (n = 140) |
|------------------------|----------------------|-------------------------------------|-------------------------------------|-----------------------------------|--------------------------------------|
| Installation cost (\$) | \$4,506 (\$452) | \$5,032 (\$908) | \$5,264 (\$1,009) | \$3,663 (\$474) | \$4,120 (\$447) |
| Savings (kWh) | 1,019 (143) | 1,065 (368) | 1,178 (261) | 981 (164) | 1,037 (138) |
| Savings (Therms) | 58 (7) | 56 (6) | 51 (13) | 53 (8) | 53 (7) |
| Incentives (\$) | \$666 (\$64) | \$661 (\$352) | \$881 (\$201) | \$570* (\$56) | \$659* (\$71) |
| Number of measures | 2 (0.13) | 2.2 (0.10) | 2.1 (0.2) | 2 (0.14) | 2 (0.11) |

Note: If we include the additional financial incentives here, average incentives jumps to \$775 (standard error = \$82) for the financial – offer group and \$806 (standard error = \$82) for the financial – combined group.

Program Recommendations

Based on the results discussed above, there are four main insights that may be valuable in informing energy efficiency customer engagement tactics and program design.

Program Insight 1

While the percentage of customers that participate post-HER does not vary by group, additional financial incentives do seem to be effective in driving action sooner. However, additional incentives do not appear to increase the overall proportion of customers that ultimately participate (Table 6). Providing additional incentives for a limited time may be a valuable strategy for programs that encounter the need for increased project volume in a short amount of time, such as when trying to meet year-end savings goals. Additional incentives could be applied to all measures or target high-priority measures.

Program Insight 2

Phone-based HERs result in the same level of follow-through as in-home HERs (Table 7). This supports a conclusion that program delivery costs could be lowered through offering phone-based audits as an alternative to in-home audits without having a negative impact on program participation. This may be particularly applicable to organizations that already offer phone-based audits and who may want to consider increasing their emphasis to customers. Programs which do not offer phone-based HERs would also need to factor in the cost of developing and launching such audits. However, it is worth noting that results from a survey of 382 customers participating in the experiment found that customers receiving phone-based HERs were less satisfied overall than those that got in-home HERs (63% compared to 88%). It is also important to note that customers chose the type of HER they received, so the satisfaction numbers should be interpreted with caution. Programs need to consider these and other factors if they choose to explore phone-based HERs.

Program Insight 3

Customers who had participated in Energy Trust programs prior to an HER were more likely to install additional measures afterwards (Table 8). Although HERs have traditionally been a gateway to other measures, this suggests that past program participants could be targeted to receive an HER, as they are more likely to participate afterwards.

Program Insight 4

Levels of follow-through were impacted by which Energy Advisor delivered the HER (Table 9). This suggests that programs may want to consider investments in training opportunities for efficiency program representatives who interact with customers as a driver towards increased program participation. One unknown factor is which type of training would affect this influence; for example, if the impacts were from customer service skills or technical expertise. Programs would have to determine which types of trainings they deem most valuable. Additional research could be conducted to determine specific characteristics of Energy Advisors that customers valued most and monitoring Energy Advisor approaches to HERs more closely.

Conclusion

The Customer Engagement Experiment has yielded valuable results for informing Energy Trust's customer engagement tactics on an ongoing basis, not only in follow-up communications with customers after participating in our programs, but in overall program design. Energy Trust has had success in applying Program Insight 1 by offering limited-time bonuses on multiple occasions to meet near-term savings goals. In line with Program Insight 2, Energy Trust is currently exploring low-cost methods of communication after program participation to encourage repeat participation and maintaining an ongoing relationship, such as automated email follow-ups. Energy Trust is also moving towards a decreased emphasis on phone-based HERs. Efforts regarding Program Insight 3 include targeted follow-ups to past participants thanking them for participating and encouraging them to take specific further actions based on the types of measures they have already installed. For example, customers who have received a free Energy Saver Kit may be encouraged to purchase ENERGY STAR® appliances as their next step, while customers who received an incentive for an efficient heating system may receive a different message encouraging them to insulate their homes. Lastly, Program Insight 4 is also being applied more broadly through an increased emphasis on training for all call center representatives. A call quality monitoring component has also been implemented to ensure a consistent and positive experience when interacting with Energy Trust. Energy Trust will continue to develop metrics for evaluating the effectiveness of customer engagement and marketing efforts to inform the continued evolution of these strategies.