

Implementing, Evaluating and Improving Residential Customer Engagement Strategies

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ABSTRACT

For many energy efficiency programs, one-size-fits-all program designs can be the simplest to create and implement, however these may not be an effective way of engaging with a diverse customer base. This paper will describe the strategies one organization has developed, implemented, and evaluated to ensure the residential customer experience is delivered efficiently, with the potential to maximize energy savings by establishing an ongoing relationship with customers. It also details the improvements made to programs that resulted from looking at program evaluations, customer feedback and cost.

Energy Trust of Oregon's Home Energy Review program has evolved significantly in recent years, including programmatic changes to lower costs, improve savings, and develop ongoing relationships with customers. Evaluation has played a critical role in this evolution, providing customer feedback through a quarterly survey called Fast Feedback, and rigorously monitoring the success of the programs through process and impact evaluations. Further changes to the HER process have led to an experimental study testing out different follow-up methods, which will provide critical information about which customer engagement strategies result in greater savings and customer satisfaction.

Introduction

Since inception, Energy Trust of Oregon has striven to continually improve program design to address challenges as they are identified; in recent years, this has been particularly true for customer engagement strategies.

This paper aims to answer two key questions:

1. How can we most effectively evaluate the success of our programs?
2. How can we use these results to inform new strategies to cost-effectively engage with customers to spur energy saving actions?

For many energy efficiency programs, one-size-fits-all program designs can be the simplest to create and implement, however these may not be an effective way of engaging with a diverse customer base. While there are many challenges in creating customizable engagement strategies and program offerings for customers, the potential reward of doing so is establishing relationships with customers which result in more comprehensive and longer-lasting energy saving actions.

This is possible through program design innovations, but careful thought must be put into the best way to analyze the impacts of these innovations. Through our interactions with customers, we hope to help them develop a comprehensive action plan to save energy in their home, and assist them in following through with that plan. With these goals in mind, Energy Trust has instituted multiple new customer engagement strategies over the course of the past two

years. These strategies, including successes and lessons learned, will be described throughout this paper, as well as plans to test further program innovations.

Evaluation

Energy Trust of Oregon is an independent non-profit organization dedicated to providing energy efficiency and renewable energy solutions to customers of our funding utilities. Our programs and offerings are funded by ratepayer dollars through a public purpose charge; therefore evaluation is an important component of our programs as a means of demonstrating the effectiveness of our investments. That being said, there can be a disconnect between program delivery and evaluation needs. Programs need to be flexible as new strategies and technologies emerge in the marketplace; but evaluation is essential to demonstrating the effectiveness of these innovations. Formal process and impact evaluations can be lengthy and costly, and programs often need to be nimble to respond to indicators before official results are in. This can be further exacerbated by the fact that evaluation can sometimes be an afterthought in program design, making it difficult to evaluate the effectiveness of programs due to lack of proper data collection or the inability to tease out impacts of specific measures.

Addressing these challenges. One way Energy Trust has addressed these challenges is to institute a formal Pilot Process, which is applied when testing new program designs or technologies. This process includes the development of an evaluation plan in the planning stages of these new initiatives, requiring staff to think critically about what the core goals are of the innovation and how to analyze whether those goals are met. This ensures that the proper data collection, reporting and time/resource needs are accounted for before the launch of a pilot.

Additionally, in 2009 Energy Trust launched a “Fast Feedback Pilot” which involved surveying a representative sample of customers shortly after participating in our programs to get timely feedback on their experience. The short phone survey consists of less than 10 questions about satisfaction with the participation experience, influences on decision making, use of tax credits, and suggestions for program improvements (for a Fast Feedback example survey, see Appendix 1). Fast Feedback was developed to acquire more accurate data on customer satisfaction and free-ridership rates,¹ as well as solicit suggestions for improvement from customers in a timely manner. After implementing Fast Feedback as a test for two programs in 2009 with high response rates, it was decided to expand to virtually all Energy Trust programs in 2010.²

Currently, approximately 250 residential customers are surveyed each month, enough to achieve a confidence level of 90% and 10% margin of error for each major measure type. Verbatim comments and suggestions for program improvements from respondents are shared with staff on a monthly basis for rapid diagnosis of potential problems; other results are reported quarterly to track satisfaction and free ridership over time.

¹ Free ridership rate refers to the percent of participants who would have taken the same action(s) in absence of the program incentive or information. Energy Trust is required to report energy savings net of free ridership.

² Detailed reports on Fast Feedback implementation and results can be found at http://energytrust.org/library/reports/100310_FastFeedback.pdf and http://energytrust.org/library/reports/101231_Fast_Feedback_Rollout.pdf. A summary report of 2011 Fast Feedback results is forthcoming on the Energy Trust web library at <http://energytrust.org/About/policy-and-reports/Reports.aspx>.

Fast Feedback has yielded many useful findings for the residential programs. For example:

1. When surveys began, Home Energy Review participant satisfaction with the instruction provided on applying for incentives was relatively low. In 2011, Energy Trust made changes to the packet of materials provided to Home Energy Review customers to prioritize energy-saving improvements (referred to as “measures”) and call out available incentives. These modifications resulted in an increase in satisfaction with information about applying for incentives from 67% in 2010 to 82% in 2011.
2. Results for respondents who received an incentive from Energy Trust show that satisfaction overall is most closely tied to incentive turnaround times (Table 1.). In seasons with high application volume, such as fall and winter, when programs have a tough time keeping up with incentive processing, customer satisfaction suffers noticeably. This suggests the need to more carefully plan for seasonal program resources to maintain excellent customer satisfaction throughout the year.

Table 1. Correlation between Overall Satisfaction and Program Elements³

| | Turnaround time to receive your incentive | Incentive application form | Ease of finding eligible products | Performance of new product or system | Comfort of home after work performed |
|--------------------------------|--|-----------------------------------|--|---|---|
| Correlation coefficient | 0.508 | 0.332 | 0.309 | 0.217 | 0.145 |
| N | 2459 | 2198 | 520 | 1152 | 1164 |

3. From respondents’ comments we have identified that while the option of completing the incentive application online works well for many participants, there is a significant segment of customers who find them extremely difficult to use; for every spontaneous positive comment received about the online application, there are approximately three spontaneous negative comments about it, indicating a transition to all-paperless incentive applications is still a ways off.

Fast Feedback continues to be a useful tool to gauge program success ahead of process and impact evaluation schedules and inform more accurate savings assumptions.

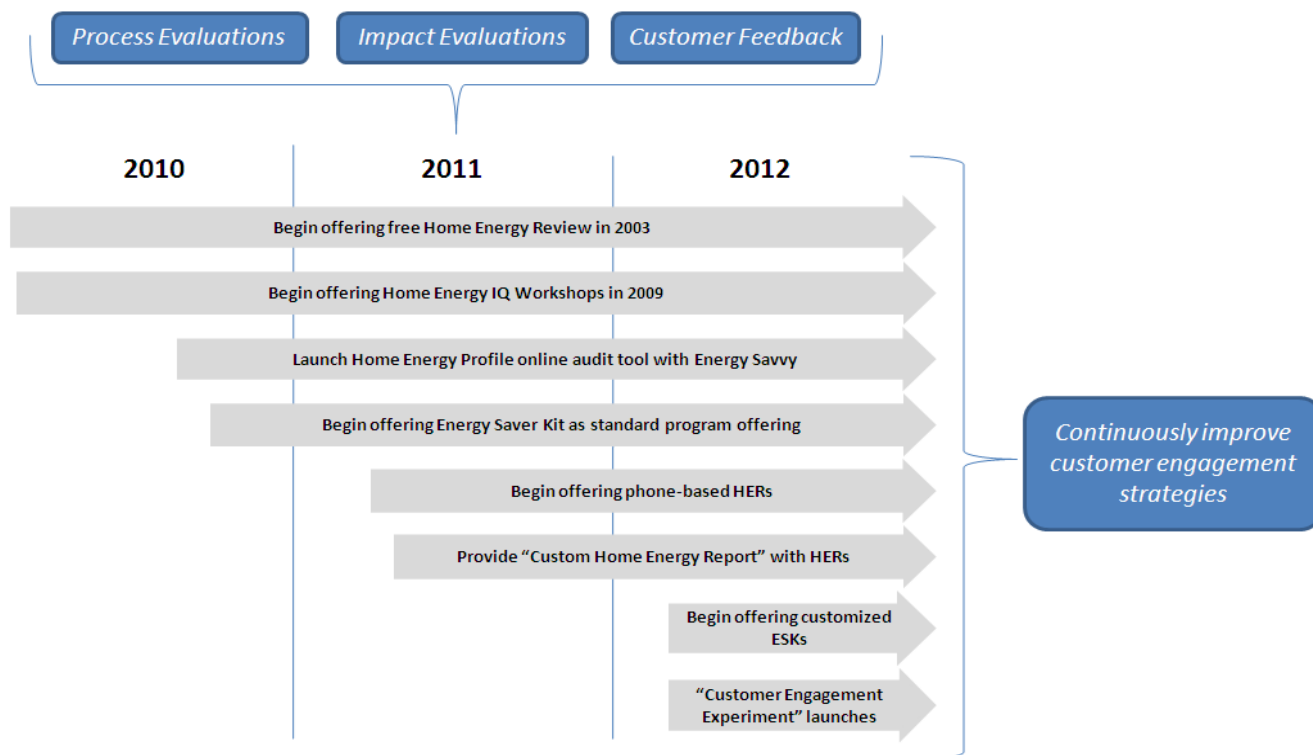
Evolution of Customer Engagement

Figure 1 illustrates the various strategies Energy Trust has undertaken in the past several years to improve customer experience. These include efforts to equip customers with an understanding of their homes’ energy use and offer customizable options for engaging with our programs. Process evaluations and impact evaluations are used to evaluate the extent to which a program has led to desired actions, and customer feedback is solicited through Fast Feedback

³ All correlations (Pearson) are significant at the 0.01 level (2-tailed). Not all questions are asked of all respondents; for example, "ease of finding eligible products" is only asked of respondents who purchased an appliance, while "comfort of home" is only asked of respondents who had weatherization performed. However, results hold when looking at each individual measure by itself.

and other methods to inform understanding of the customer experience. All of these evaluation strategies play a central role throughout program development, implementation and improvement. This paper will discuss in detail the evolution of customer engagement initiatives shown in Figure 1 and how evaluation has contributed to this evolution.

Figure 1. Customer Engagement Options Over Time



Historically, Energy Trust has focused on encouraging customers to receive a free Home Energy Review (HER) as a starting point for engaging with our programs. The HER involves an energy expert visiting a customer’s home and conducting a 1.5 hour visual assessment. During this walk through with the customer, reviewers identify opportunities to save energy in the home and install energy saving devices such as CFLs and low-flow water devices. After the HER, customers receive recommendations for energy saving improvements with information on incentives, and are directed to our trade ally contractors. While in-home HERs have provided value for many customers, they require significant resources to deliver. In driving all customers to receive an in-home HER, there is potential to be “up selling” a portion of customers who could be just as well served through lower-cost services. Some customers may simply be interested in receiving free energy saving devices such as CFLs and low-flow showerheads; Other customers may be ready to take action and just need some basic information.

Recent internal analysis of HER follow-through indicates that to date 47% of customers who received an HER between 2003-2011 have “followed through” by installing at least one measure for which Energy Trust offers incentives after the HER⁴ (see Table 2). Follow-through rates provide insight into the extent to which HERs correlate with the subsequent installation of

⁴ Note: this does not include CFLs, aerators or showerheads installed on the same day as the HER.

measures; of particular interest is how this has changed over time. Looking at follow-through rates two years after an HER, the largest proportion of sites (about 15% on average) subsequently installed at least one measure within 3 months of receiving an HER, indicating that this is a prime window of opportunity for encouraging customers to take action.

Table 2. Home Energy Review Follow Through by Year⁵

| Year | Total HERs | 3 Months Or Less | 3 Months to 6 Months | 6 Months to 1 Year | 1 Year to 2 Years | Total Within 2 Years |
|------|------------|------------------|----------------------|--------------------|-------------------|----------------------|
| 2003 | 2,103 | 9.20% | 6.30% | 4.20% | 4.60% | 24.30% |
| 2004 | 2,330 | 16.90% | 3.70% | 5.40% | 5.90% | 31.90% |
| 2005 | 2,806 | 17.50% | 5.00% | 6.00% | 6.50% | 35.00% |
| 2006 | 4,569 | 14.50% | 6.60% | 6.90% | 6.80% | 34.80% |
| 2007 | 5,253 | 13.90% | 6.20% | 6.70% | 9.30% | 36.10% |
| 2008 | 6,395 | 14.30% | 6.00% | 8.50% | 10.70% | 39.50% |
| 2009 | 9,314 | 16.20% | 6.00% | 7.50% | 9.50% | 39.20% |
| 2010 | 6,556 | 17.10% | 6.60% | 8.00% | - | - |
| 2011 | 2,916 | 13.60% | 4.30% | - | - | - |

Drawing on process evaluation, impact evaluation, and customer feedback, Energy Trust changed the Home Energy Review process in 2011 with the goals of improving savings through increased follow-through rates, as well as customer satisfaction. These improvements, discussed below, incorporate online and phone engagement options and represent a more customized approach to customer engagement.

The Home Energy Profile

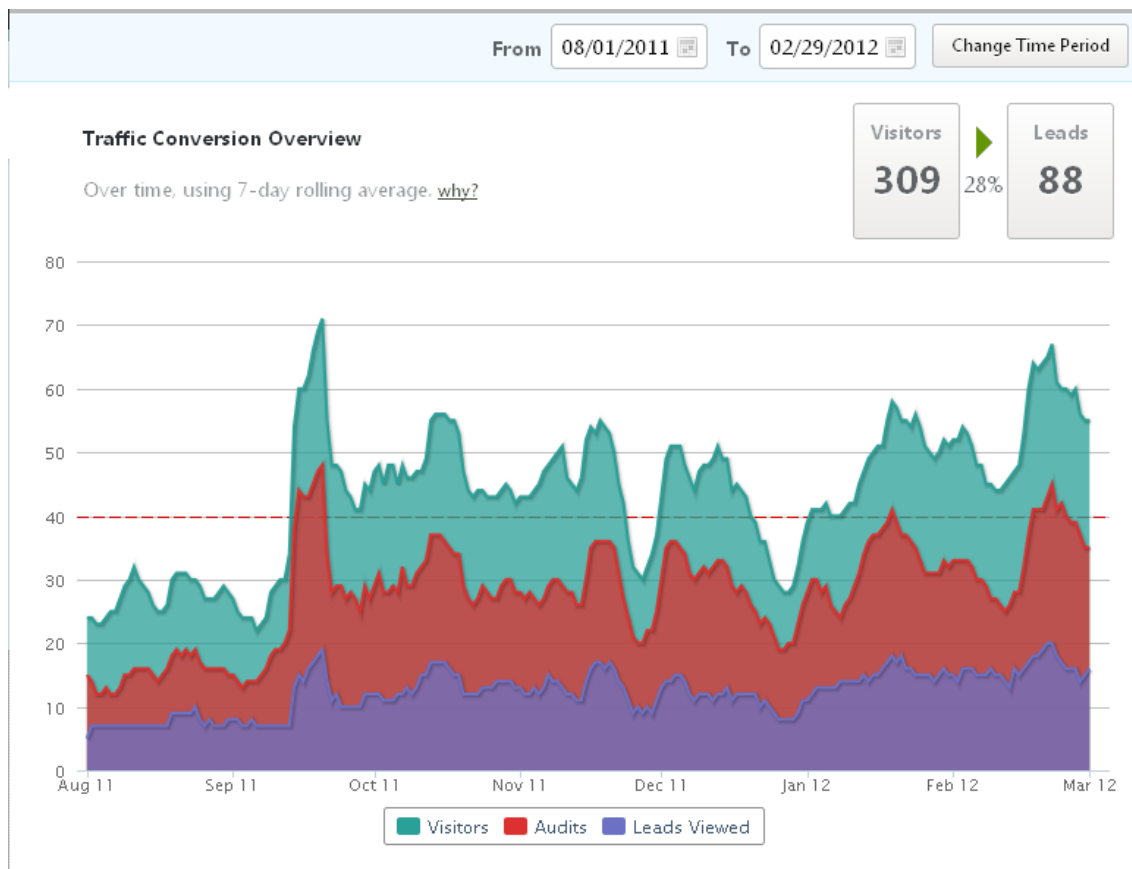
As part of this new process, Energy Trust now offers an online audit tool through Seattle-based company EnergySavvy to serve as a funnel into Energy Trust programs. This tool asks a set of simple questions about a customer’s home, such as square footage, year built, levels of insulation, window types, age and type of heating system, water heating type, and appliance and lighting information. Based on customer responses, the tool generates a Home Energy Profile and Customized Action Plan with recommendations for their home.⁶ Customers are then prompted to provide their email address to have their results emailed to them. After completing the audit, customers are encouraged to provide their contact information to be contacted by an Energy Advisor (EA) who will discuss their results with them. If customers provide a phone number, an EA will call within 48 hours to have a more in-depth conversation about ways they can save energy.

⁵ Timeframe is determined by calculating the number of days that have elapsed between the most recent HER and the first measure installed after an HER. Follow-through rate for each time period is then calculated by dividing the total number of sites that have installed at least one measure after an HER in that time period by the total number of sites that received an HER in each calendar year.

⁶ For customers who call directly into the program, call center staff can walk them through these questions and create a Home Energy Profile over the phone.

So far, web analytics illustrate a high number of customers visiting and completing the audit. As Figure 2 illustrates below, in the second half of 2011, 76% of visitors began an audit, and 92% of these completed the audit. However, the number of customers requesting further information is relatively low; on average, about 30% of completed audits click through to the “get started” page (classified as “Leads Viewed” in Figure 2), which then prompts them to provide contact information and submit a request to be contacted by an Energy Advisor—in November and December, under 20% of customers requested this follow up Strategies to motivate more customers to request follow-up are being considered to increase the value of this tool, such as A/B testing of different messaging on the results page.

Figure 2. Web Analytics for Home Energy Profile Tool

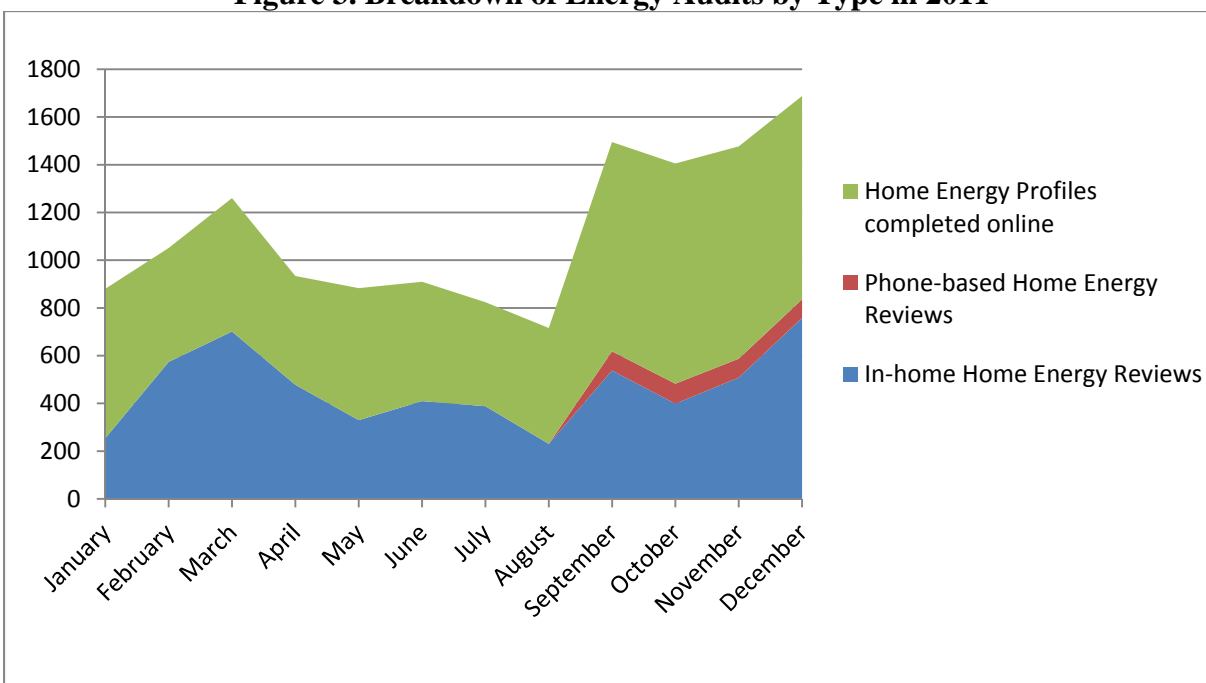


Phone-Based Home Energy Reviews

Once a customer is connected to an EA, the advisor conducts a phone-based audit, reviewing results from the customer's profile and assessing opportunities for energy savings in the home. During this phone call, the advisor asks open-ended questions to gauge what the customer is interested in, and provides information on relevant services and offerings. For some customers, this phone-based HER sufficiently guides them towards their desired next steps. However, for some customers the EA may identify that the customer would further benefit from an in-home HER,⁷ and will schedule a visit to go to that customer's home.

Figure 3 below illustrates the increased emphasis on online and phone-based audits over the course of 2011. Volume of online and phone audits has steadily increased since the offerings began, and is anticipated to continue to grow in 2012.

Figure 3. Breakdown of Energy Audits by Type in 2011



Additionally, Energy Trust has improved our Energy Saver Kit (ESK) offering, free kits containing energy saving devices which can be requested online or over the phone. Q1 of 2012, the program launched a “Build Your Own Kit” tool which allows customers to customize the contents of their kit. Prior to this time, each kits had a standard set of components and previous evaluation had shown that the installation rate for components was only about 50%, because often a customer would want only the CFLs or the showerhead, but not both.⁸ Through asking the customer about what devices are needed in their home and providing them the option to de-

⁷ This can be for a variety of reasons; for example, the EA may determine through conversation that the home is complex, the customer needs additional hand-holding, or the customer simply would prefer an in-home visit.

⁸ For a full report on the installation rate findings, see the Home Energy Solutions 2007-2008 Program Process Evaluation at http://energytrust.org/library/reports/ETO_HES_Process_and_Impact_Report_Volume_2.pdf

select items, the Build Your Own Kit approach should reduce the number of ISMs that are sent out but not installed and increase the realized energy savings per kit.⁹

Home Energy IQ

In 2009, Energy Trust began delivering another option to serve as a funnel into residential programs called “Home Energy IQ” (HEIQ). These educational workshops are aimed at providing customers with a basic understanding of building science and energy efficiency principles, and encouraging them to take energy saving actions in their homes. After receiving this basic education, customers are encouraged to take the next step by receiving a Home Energy Review, or participating in other programs. As of June 2011, Energy Trust had delivered 55 workshops to over 1,000 customers.

A 2011 report detailing the impact of HEIQ found that not only did these workshops serve as a new entry point for customers to engage with Energy Trust and our programs, but attendees were likely to take more actions than program participants who had not attended HEIQ. Nearly 50% of attendees went on to install an energy saving measure within 60 days of a workshop; these were primarily low-cost and no-cost actions such as installing CFLs, low-flow water devices, or products. Forty-one percent of workshop attendees received a free Energy Saver Kit (ESK). Of this group, 31% percent went on to install another measure—15% more than homes who received ESKs but did not attend an HEIQ event. Of HEIQ participants, 15% went on to receive an HER. It was found that these customers were more likely to install energy saving measures than HER participants who did not attend an HEIQ workshop (installation rates of 32% and 24%, respectively). Total savings attributed to HEIQ participants can be seen below in Table 3. HEIQ remains an outreach and engagement strategy in 2012.

Table 3. Estimated Program Savings from HEIQ Attendees^{10, 11}

| Year | Total Savings | | Single Family Savings | | Products Savings | |
|--------------|---------------|-------------|-----------------------|-------------|------------------|-----------|
| | kWh | Therms | kWh | Therms | kWh | Therms |
| 2009 | 46632 | 207 | 13722 | 207 | 32910 | 0 |
| 2010 | 302138 | 3547 | 234125 | 3502 | 68013 | 44 |
| 2011 | 29280 | 518 | 26863 | 518 | 2417 | 0 |
| Total | 378050 | 4271 | 274710 | 4226 | 103340 | 44 |

Home Energy Review Follow-Up

Starting in 2011, after receiving an HER, either phone-based or in-home, all customers receive a “Custom Home Energy Report” containing the information and recommendations discussed during the HER. Starting in 2012, customers also receive a contractor referral sheet with the contact information for 3-5 contractors who can do the work for the recommendations. Contractors are recommended based on location, customer service history, and area of expertise. The new contractor referral process was developed in response to the potential gap between

⁹ For example, the assumed installation rate for aerators increased from 53% to 65%, and from 59% to 75% for showerheads, based on results from evaluation of the standard kits (see previous footnote) where customers said they did not install the aerators or showerheads because they did not need or want them.

¹⁰ Savings in Table 3 are the estimated (deemed) savings of measures which HEIQ participants installed after attending an HEIQ workshop, as determined by cross-referencing attendee lists with program participation data.

¹¹ Savings in Table 3 are through June, 2011.

customers being directed to the list of trade allies and actually selecting contractors to contact for bids. The trade ally list is extensive (over 650 in the Existing Homes program) and could result in “choice overload,” leading to a drop off of customers taking action. By directly providing the contact information of a small number of contractors, Energy Trust anticipates that customers will be more likely to take the next step in contacting contractors to receive bids.

The Next Step: Integrating Customer Engagement Strategies and Evaluation

Ongoing evaluation of program offerings enables program administrators to effectively monitor and improve programs on an ongoing basis. To build on the findings discussed in this paper, in 2012 Energy Trust will be testing various follow-up methods with customers after receiving an HER to determine what motivates customers to take energy saving actions. The test will use experimental design to randomly assign a treatment methodology to each customer. One group will receive minimal follow-up consistent with the approach used throughout 2011, to serve as a “control” or baseline group. A second group will receive increased communications via phone and email, in an attempt to build a 1:1 relationship between the customer and an Energy Advisor. A third group will receive increased financial incentives, funded by the Massachusetts Institute of Technology (MIT) Energy Initiative. The total number of customers included in this experiment is slated to be 4,800-6,000, depending on HER volume between March and September of 2012. While the experiment is designed to monitor customer follow-through over the course of multiple years, since the emphasis is on actions taken within ninety days, findings will be available relatively quickly after fielding.

This experiment will demonstrate which is more effective—a personal relationship, or financial incentives—in motivating customers to take action, and inform program and engagement strategies for coming years. The findings will be a significant component in designing future evolutions to Home Energy Reviews and other program offerings, by providing a clearer understanding of the role of follow up in program participation and energy efficiency investments.

With so many strategies at play in engaging our customer base, careful evaluation design is critical to ensuring the ability to evaluate their effectiveness. These strategies have sought to address the challenge of meeting customer’s individual needs and wants, but programs need to ensure that the time and effort invested in each customer is an effective use of resources. Throughout 2012 and beyond, programs will continue to monitor HER follow-through rates closely. While evaluation is a critical component of this, programs also need to proactively seek to innovate and find new ways to stay relevant in their markets. Through Fast Feedback and customer input, programs will strive to incorporate suggestions for improvement, while facilitating comprehensive and accurate formal evaluations to analyze programs in more detail. Through these mechanisms we are able to report to stakeholders with confidence on savings results and cost-effectiveness.

Appendix 1: Residential Fast Feedback survey (example for weatherization measure)

1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5 point scale where 5 is very satisfied and 1 is not at all satisfied.
 - Incentive application
 - Turnaround time to receive your incentive
 - Comfort of home after weatherization performed
 - Overall experience
2. Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?
3. Which of the following statements best describe the actions you would have taken had Energy Trust incentives and information not been available?
 - I would not have had home weatherization or improvements performed
 - I would have postponed purchase and installation more than one year
 - I would have purchased or installed a smaller amount or quantity
 - I would have done exactly the same thing I did
 - Don't know
4. How influential were the following elements on your decision to purchase your product or system or have services or work performed? Please use a 5-point scale where 5 is extremely influential and 1 is not at all influential.
 - Energy Trust incentive
 - Information provided by Energy Trust
 - Contractor
5. Have you applied or will you apply for the applicable federal tax credit?
6. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied.
 - Quality of installation work
 - Incentive paperwork completion
 - Information provided about Energy Trust incentives
 - Overall satisfaction with the contractor
7. Did you consider Energy Trust's list of approved trade allies when selecting your contractor?
8. Do you have any other feedback about your experience with Energy Trust or suggestions on how to improve our services?