



ENERGY TRUST OF OREGON
PERSONAL ENERGY REPORT
MARCH 2012 SURVEY REPORT

Final

Prepared for:
ENERGY TRUST OF OREGON

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1. EXECUTIVE SUMMARY

Energy Trust of Oregon (Energy Trust), in collaboration with NW Natural (NWN) and Portland General Electric (PGE), initiated OPOWER's Personal Energy Report (PER) on a pilot basis to 60,000 single-family households with service from both NWN and PGE. This report represents the third of three survey efforts designed to assess the value of the PER to participants and to provide process findings for the pilot:

- June 2011 Participant Survey (n=200)
- October 2011 Participant Survey (n=200)
- March 2012 Participant/Control Group Survey (n=500, 250 participant, 250 control)

The primary objective of this third survey was to provide a comparison between the energy saving and information seeking actions taken by participants in the pilot to the energy saving action taken by a control group. We also track changes in the last 14 months to actions by participants taken since receiving the reports.¹ We compare survey data collected in October and June to the data collected in March.² We also present a comparison between a participant and a control group in the March 2012 survey results. Key findings include:

- **The PER has a neutral effect on participant satisfaction with the collaborating utilities.** The majority of the control group (86%) and the majority of the participant group (86%) are satisfied with the services provided by NW Natural (as indicated by a 4-5 on a 5-point scale.) The majority of the control group (86%) and the majority of the participant group (91%) are also satisfied with the services provided by PGE (as indicated by a 4-5 on a 5-point scale), which does not represent a significant difference.
 - The October 2011 survey found that 60% of participants found the collaboration between ETO, NW Natural and PGE valuable.
- **Participants still favor the personal and neighbor comparisons in the PER, though the neighbor comparisons may be polarizing for some customers.** Consistent with findings of the June and October surveys, the participants surveyed in March rated “seeing how my energy consumption compares to my neighbors” (47%) and “Seeing how my current energy consumption compares to my energy consumption one year ago” (45%) as the most useful sections of the report. Only 18% said “Getting tips of how to save more energy in my home” was the most useful part of the report, while 9% said there were no useful parts of the report. However, neighbor comparisons are also a source of negative feedback – 11% of all negative inquiries to the hotline indicated that they did not like some element of the comparison.

¹ This effort does not track changes in the same group of participants over time. We surveyed three distinct groups of participants in the June 2011, October 2011 and March 2012 surveys.

² Energy Trust of Oregon Personal Energy Report. 3-Month Study. Final August 2011, henceforth referred to as the “June Report;” and Energy Trust of Oregon Personal Energy Report. October Survey Report, Final October 2011, henceforth referred to as the “October Report.”

- **Participants are reading and discussing the PER less than in previous months.** Over a third (36%) of the participants in the March 2012 survey reported that they read the report from cover to cover, significantly different from October (46%). A moderate percentage (10%) of the March survey respondents threw away or recycled the reports before reading them.³ The percentage of participants who discussed the report with others and saved it for reference decreased from 46% and 37% in June to 28% and 22% respectively in March.
- **The percentage of PER participants who report taking action as result of the report is increasing and overall reported action is greater than the control group.** As the total length of time over which participants have been receiving reports increases, the percentage of participants who are taking action to reduce their homes' energy consumption is increasing, from 29% in June to 44% in October to 68% of the March survey participants. The percentage of the March survey participants who took action since first receiving the report is greater than the percentage of the March survey control group who has taken action in the past year (68% compared to 50%).
 - **One quarter of PER participants state that they intend to use the report to reduce their energy use in the next year and just over one fifth state that they do not intend to use the report.** Over a quarter (28%) of participants indicated they would use the report to help reduce their energy use. Other participants indicated they would use the report to stay informed of changes in their energy use (20%), to track changes over time (15%), to help decide what to install in their homes (12%), and to help reduce bills (6%). Almost a quarter (22%) said they would not use the information contained in the report over the next year.
- **PER participants' information-seeking practices have increased over time; however, the data is inconclusive as to how this differs from the control group.** In the March survey, 37% of participants reported that they had sought out additional information, which is higher than the 16% of participants in October and 12% of participants in June. There were no differences between the March control group and the March participant group in terms of the percentage who sought out additional information (40% vs. 37%), indicating that this may be a seasonal effect. Additional longitudinal research is needed to confirm these trends by comparing participant and control group findings over time.
- **Participants report taking more conservation actions overall compared to the control group; however, control group customers indicate fewer, but more saving-intensive, actions.** Participants are more likely to have reported in March that they turned down their thermostat to save energy since receiving the reports (36%) than in October (20%) or June (19%). Participants are more likely to report in March than they installed efficient lighting (19%) than in October (9%). In addition, participants are more likely to have reported in March that they insulated their home since receiving the reports (14%) than in October (3%) or June (3%). A greater percentage of the control group reported in the March survey that they have installed new windows or doors (21%) than the participant group (11%).
- **Participants are intending to take fewer actions in the future, indicating than many may have already taken the actions they intend to take as a result of the PER.** Participants were slightly

³ The June and October surveys did not explicitly ask participants if they threw away or recycled the reports prior to reading, while the March survey did as can be seen in Figure 3 of the June 2011 Report, Figure 12 of the October 2011 Report and Figure 5 of the March 2012 Report

less likely to report that they had plans to take action in the future in March (35%) than in October (52%) or June (54%).

- **However, participants report planning more actions in the future than the control group.** Just over a quarter (27%) of the control group reported that they have plans to reduce their energy consumption in the future, a significantly smaller percentage than the 35% of the participant group.
- It is important to remember that the impact of the PER is expected to be small, with savings goals under 2%. There may be some small differences between the treatment and control group that are not observable with the relatively small sample size of this study. Furthermore, energy saving actions may continue to develop over a period of years.

1.1 **RECOMMENDATIONS**

Based on our findings from the March 2012 survey efforts, we offer the following recommendations to Energy Trust:

- **Identify mechanisms to push participants to continue to take and plan actions.** The survey data suggest that participants may have taken most of the actions they intend to take because of the PER. While participants' planned actions are greater than the control groups', the number of planned actions is waning over time. The PER should consider mechanisms to promote future action and to keep PER participants engaged and challenged.
- **Keep the information new to maintain high readership levels.** Over time, participant engagement with the report continues to drop. The program should provide customized, tailored information at the household level in the reports to provide an incentive for continued readership.
- **Provide more useful information and tips.** After receiving the report over a period of 14 months, a greater percentage of participants rated the personal comparison module (45%) and neighbor comparison module (47%) as useful, than the energy saving tips module (18%). The program should develop the energy saving tips module to be more useful to participants, possibly by providing a greater number of tips in each report as was requested by 10% of participants in the March survey.
- **Consider ways to encourage customers who are not using the report to opt out.** As there is a certain cost for each report that goes out, the program could benefit from encouraging participants who do not read the report or do not plan to use the report to opt out.

MEMO

Date: October 20, 2012
To: Board of Directors
From: Philipp Degens, Evaluation Manager
Kate Scott, Home Project Manager
Subject: Staff Response to Personal Energy Report March 2012 Survey Report

The Personal Energy Report (PER) pilot has given Energy Trust many insights into the value of providing such a service to its customers. PER savings have inched upward and, as of August 2012, are 1.96% of electric and 1.2% of gas consumption.

Energy Trust plans to continue this pilot for one additional year to study the persistence of savings. We will suspend sending the PER to half of the recipients and will continue to send the PER to the remaining recipients. This will allow Energy Trust to determine if savings persist after customers cease to receive a PER, and if savings gains continue to ramp for customers that will receive the PER for a third year. As savings are only recognized for each year that the customers receive the PER, the existence of savings that extend beyond this period could have significant impacts on the cost effectiveness of this service.

Significantly lower gas avoided costs have resulted in a challenging economic landscape and have made it less compelling to expand of this service to additional gas heated households. In the area of electrically heated households, Energy Trust may still pursue such a service.

In the future, if the PER is offered to a new set of customers, Energy Trust should consider targeting customers with higher levels of energy consumption, as well as providing customers a clear and easy method for opting out of the service. The former should increase the savings and make the PER service more cost effective, while the latter will ensure that the service is available to those that want it, reducing waste and increasing customer satisfaction.

2. STUDY INTRODUCTION AND DATA COLLECTION

This report details the findings from two primary efforts: (1) cross-participation analysis of PER participants in other Energy Trust programs, and (2) the third of three planned surveys conducted as part of the PER process evaluation, consisting of a telephone survey of 250 PER recipients and 250 non-participants. Energy Trust conducted the cross-participation analysis. The ODC evaluation team conducted the survey research.

2.1 CROSS-PARTICIPATION ANALYSIS

Energy Trust conducted an analysis of the OPOWER study participants to investigate whether Personal Energy Report (PER) recipients differed significantly from the control group in their participation in Energy Trust incentive programs. Of the 120,590 participants in the Opower study, 60,408 (50.1%) were PER recipients (Treatment group), whereas 60,182 (49.9%) were part of the control group who did not receive the PER. Only single family residential measures with an install date after January 31, 2011 were considered as part of the analysis.

2.2 SURVEY RESEARCH

Through this evaluation, our team conducted three telephone surveys to examine participant trends over time with respect to the PER content and to identify actions taken as a result of the report. Each survey is a random sample of participants and represents the population at a 90 ± 6 precision level⁴.

Table 1. Dates of Personal Energy Reports and Our Surveys

Date of PER	Date of Survey	Participant Survey n	Control Group Survey n	Process Report
January 2011	-	-		
May 2011	June 2011	200		Report #1
July 2011	-	-		-
August 2011	-	-		-
September 2011	October 2011	200		Report #2
November 2011	-	-		-
January 2012	March 2012	250	250	Report #3

⁴ This means we are 90% certain that the population values are within 6% of the survey sample values.

Our first study⁵ included an analysis of the coordination and implementation of the pilot and collected feedback directly from program participants. We continued collecting participant feedback on the PER as well as reported actions taken after 10 months of program treatment. The primary objective of the third survey, covered in this report, was to provide a comparison between the energy saving actions taken by participants and the control group. This effort also tracks changes in the last 14 months to actions reported by participants.⁶ We provide respondent characteristics in Appendix A and a copy of the survey instrument in Appendix B.

⁵ Energy Trust of Oregon Personal Energy Report. 3-Month Study. Final August 2011, henceforth referred to as the “June Report.”

⁶ This effort does not track changes in the same group of participants over time. We surveyed three distinct groups of participants in the June, October, and March surveys.

3. PILOT OVERVIEW

3.1 PILOT DESCRIPTION

Energy Trust initiated the OPOWER Pilot to provide participants with information about their household's energy consumption and to offer tips on how they can conserve energy to achieve energy savings.


The OPOWER Pilot randomly assigned 60,000 qualifying customers to a recipient (treatment) group and another 60,000 customers to a control group. The treatment group receives a PER, while the control group is retained for evaluation purposes as part of an experimental design for an impact evaluation.⁷

Participants receive a PER bi-monthly through the U.S. Mail. The PER consists of a one-page, double-sided report that details customers' energy consumption (electricity and natural gas) compared to their neighbors. To help participants conserve energy, the back of the report contains customized tips. Additionally, OPOWER maintains a website where participants can access an online version of their PER. The PER cover has the website address. See Figure 1 for a sample PER.

Due to some delays in implementation, the reports were not delivered as originally scheduled. In addition, OPOWER offered a free seventh report during the first year to help get the project back on schedule.

Although Energy Trust originally designed the pilot to last for one year, the Energy Trust board recently approved a contract extension to continue delivery of the reports for an additional year. The January 2012 PER was the final report of the first contract year. See Table 1 for a schedule of when reports were delivered in the first contract year. Energy Trust expects reports to go out on a regular bi-monthly schedule during contract year two.

Figure 1. Sample PER



ALEXANDER & DANIEL RILEY

Personal Energy Report

Report period: 09/22/10 - 11/18/10

We are pleased to provide this personalized report to help you save energy.

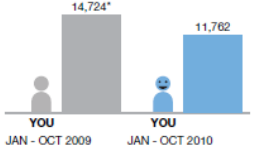
The purpose of this report is to:

- Provide information
- Help you track your progress
- Share energy efficiency tips

This information and more is available at www.energytrust.org/PersonalEnergyReport

Personal Comparison

How you're doing compared to last year:




So far this year, you used **20% LESS** energy than last year.
★ You're on pace to use less in 2010.

Looking for ways to save even more? Visit www.energytrust.org/PersonalEnergyReport

* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

Last 2 Months Neighbor Comparison

You used **15% MORE** energy than your efficient neighbors.



How you're doing:
Great 😊
▶ **GOOD** 😊
More than average

* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

Who are your Neighbors?

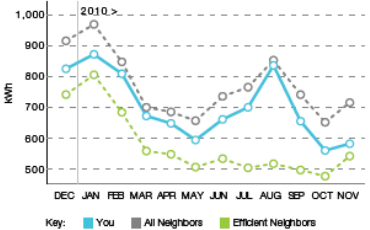
- All Neighbors**: Approximately 100 occupied nearby homes that are similar in size to yours (avg 1,819 sq ft) and have gas heat
- Efficient Neighbors**: The most efficient 20 percent from the "All Neighbors" group

Last 12 Months Neighbor Comparison

You used **15% MORE** energy than your efficient neighbors. This costs you about **\$200 EXTRA** per year.

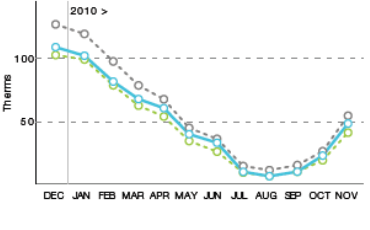
Electricity

22% more electricity than your efficient neighbors



Natural Gas

9% more natural gas than your efficient neighbors



Key: YOU (blue), All Neighbors (grey), Efficient Neighbors (green)

Quick Fix

Something you can do right now

- Reduce water heater temperature**
Lowering your water heater temperature from 140° to 120° can result in a 10% savings in hot water costs. This temperature will also help prevent scalding.

Check the owner's manual for safety instructions before making any changes to your water heater's settings.

After lowering the temperature on the water heater, use a thermometer to check the temperature of water flowing from your faucets.

SAVE UP TO \$40 PER YEAR

Smart Purchase

Save a lot by spending a little

- Insulate water heater pipes**
In a typical home, 9% of the energy used to heat water is lost in distribution. To save energy and money, add insulation to your water heater pipes.

Once your pipes are insulated, you can lower your water heater temperature to save energy. You also won't have to wait as long for hot water to reach the faucet or showerhead.

You can find foam pipe insulation at hardware stores and install it yourself in a few hours.

SAVE UP TO \$25 PER YEAR

Great Investment

A big idea for big savings


- Upgrade your water heater**
Water heating is typically one of the largest energy expenses in your home, after heating and cooling. It is likely cost effective to replace your water heater if it is more than 10 years old.

Look for a model with a high Energy Factor (EF) and choose the right size for your home. You'll save more with a smaller tank.

New gas water heaters with an EF of .62 or higher and electric water heaters with an EF of .93 or higher are eligible for cash incentives up to \$200. Learn more at the website below.

SAVE UP TO \$30 PER YEAR

Turn over for savings →



www.energytrust.org/PersonalEnergyReport | 1-877-408-9624 | PersonalEnergyReport@energytrust.org

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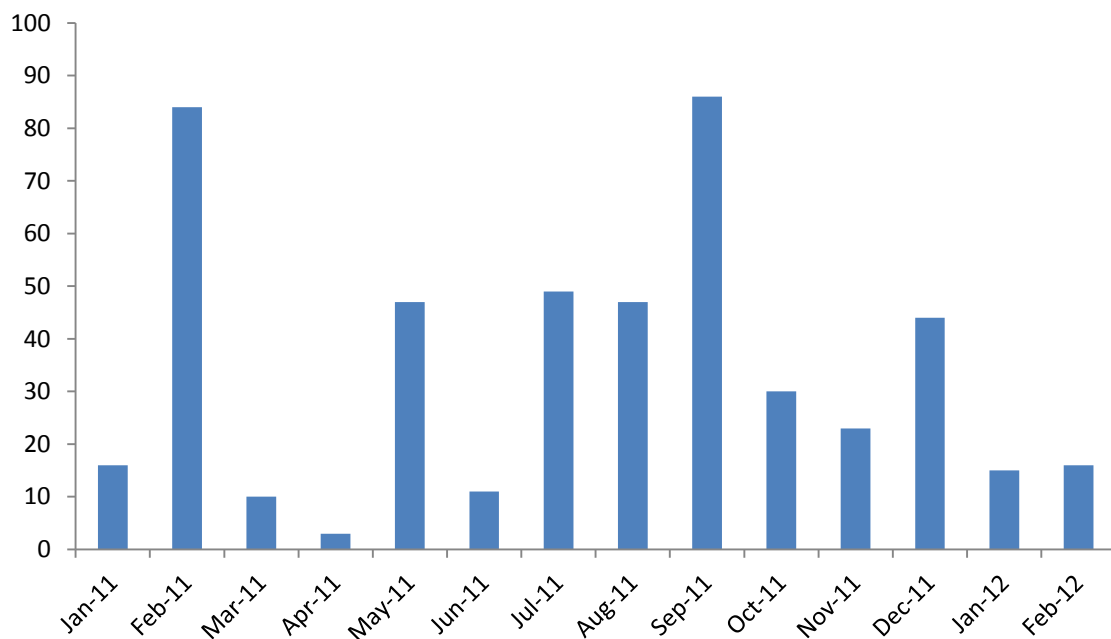
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4. PARTICIPANT OPT-OUTS

To accommodate participants' questions and concerns regarding the report, Energy Trust maintains a hotline to respond to participant questions, comments, complaints, or opt-out requests specifically around this pilot. The pilot is experiencing a moderate number of calls overall as compared to the total number of participants. There was a slightly higher volume of calls following the initial delivery of the report. There was a second period of higher call volume between from July until the end of the year, which may be explained by two factors. One is that participants received a report every month during this period, which they may have found to be too frequent. The other is that the Neighbor Rank Module appeared for the first time in this period and was cited as a source of participant complaints.

Figure 2. Participant Opt-Outs over Time



Overall, the program has a very low opt-out rate of 0.6%. Just under a third (29%) of the calls to the hotline are from participants who would like to opt out.

Aside from opting out, participating customers called the hotline to discuss their energy use (31%), to provide general feedback (15%), to update their participant profile or personal information (11%), and to report technical difficulties (4%). Ten percent of participants who called the hotline called with a complaint but did not opt-out of the program.

Table 2. Communication to the PER Hotline/Email

Reason for Call/Email (not mutually exclusive)		Jan. 24, 2011 – March 9, 2012	
		Number of Calls/Emails	Percentage of Total
Primary Reason	Conversations about energy use	473	31%
	Opt-outs*	447	29% (0.6% of treatment population)
	General feedback	226	15%
	Update profile/info	172	11%
	Complaint (but not opt-out)	160	10%
	Technical difficulties	59	4%
	Request to opt-in	4	0%
	Total calls	1541	100%

*Of the 447 participants who opted-out, 119 or 27% of the opt-outs were not upset.

5. RESULTS FROM PER PARTICIPANT FEEDBACK SURVEY

The Opinion Dynamics evaluation team designed the March survey to collect information on energy saving actions taken by participants and non-participants and to gain feedback on participants' reactions to the PERs sent by the collaboration. The goal of this survey was to determine if participants are taking more energy saving actions than a control group of customers who did not receive the PER and to compare customer feedback over time. Specifically, the March survey included the following research questions:

1. How satisfied are participants with PGE and NW Natural?
2. What are participants' impressions of the PER overall?
3. What do participants do with the PER?
4. What effect does the PER have on participants' likelihood to take action?

Many of the questions in the March survey are the same as in the previous two surveys to allow us to track any changes over time in terms of participant satisfaction with the pilot and the effect of the report on participant awareness, knowledge, and actions.

5.1 PER RECALL

Although the percentage of participants who recall the PER varies over time it is not consistently increasing or decreasing. As can be seen in Table 3, over 90% of participants recalled the PER in June 2011. In October 2011, this percentage dropped to 81%, but in March 2012 the recall rate rose to 87%. This may indicate that receiving reports over a longer period of time does not affect the likelihood of a participant reading and remembering the report.

Table 3. PER Recall Rates

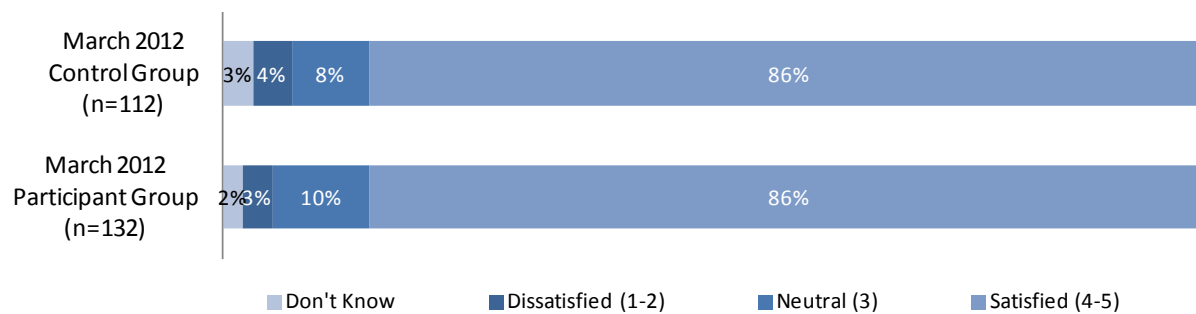
Survey	Number of completes	Number of participants who reported that they did not receive the PER	PER Recall rate ⁸
June 2011 Survey	205	17	92%
October 2011 Survey	200	46	81%
March 2012 Survey	250	36	87%

⁸ Recall Rates were determined using the disposition reports of the June 2011, October 2011 and March 2012 surveys. The phone numbers used to field these surveys were purchased from a third party to match a list of participant addresses provided by NW Natural and PGE. The accuracy of the sample may be lower than if a list of telephone numbers had been provided by the utilities. Therefore, the recall rates presented in the table should be considered minimum recall rates.

5.2 SATISFACTION WITH PGE AND NW NATURAL

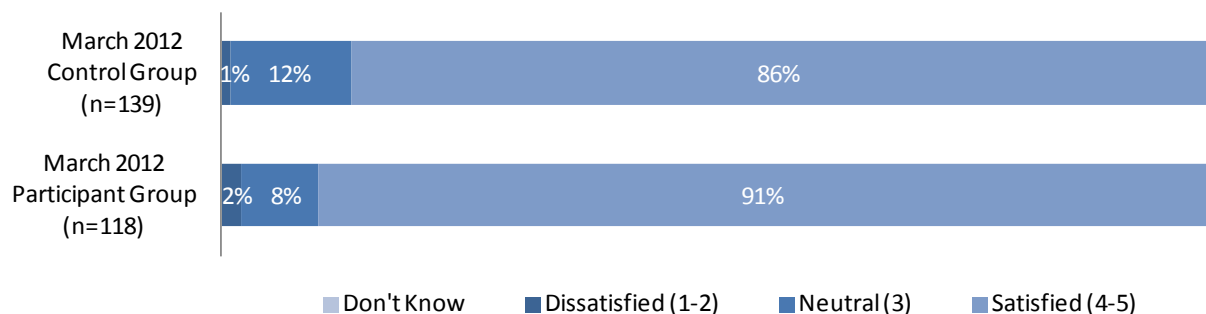
The PER report is having no overall effect on participant satisfaction with PGE and NW Natural. Satisfaction with both companies remains relatively high with treatment, with the majority of the control group (86%) and participants (86%) satisfied with the services provided by NW Natural (as indicated by a 4-5 on a 5-point scale.)

Figure 3. Satisfaction with NW Natural



Similarly, the majority of the control group (86%) and participants (91%) are also satisfied with the services provided by PGE (as indicated by a 4-5 on a 5-point scale.) For both utilities, these results do not represent statistically significant differences indicating that the PER pilot is having no effect on participant satisfaction with their utility.

Figure 4. Satisfaction with PGE



5.3 PARTICIPANT FEEDBACK

We asked participants “what part of the report was most useful.” Participants rated the neighbor comparison (47%) and personal comparisons (45%) as the most useful. Only 18% said “Getting tips on how to save more energy in my home” was the most useful part of the report and 9% said that there were no useful parts of the report. This is consistent with earlier surveys where modules comparing participants to themselves or to neighbors were reported by participants as being more useful than the energy saving tips.⁹

⁹ See ETO PER Pilot October Study, Table 5.

Table 4. Most Useful Aspects of Report (Multiple Response)

Over the past year, what part of the report was most useful to you?	March 2012 Survey Participants (n=250)
Seeing how my energy consumption compares to my neighbors.	47%
Seeing how my current energy consumption compares to my energy consumption one year ago.	45%
Getting tips on how to save more energy in my home.	18%
Report was not useful	9%
Other	3%
Don't Know/Refused	8%

Just 16% of participants said that nothing needed to be added to the PER to make it more useful, indicating that these participants are satisfied with the report in its current form or that they don't think they would find it useful, no matter what. Few participants had suggestions for how to make the report more useful, but those who did wanted more tips for lowering usage (10%), more specific information (8%), to be able to compare bills and rates (6%), more detail (3%), or more accurate neighbor comparisons (3%).

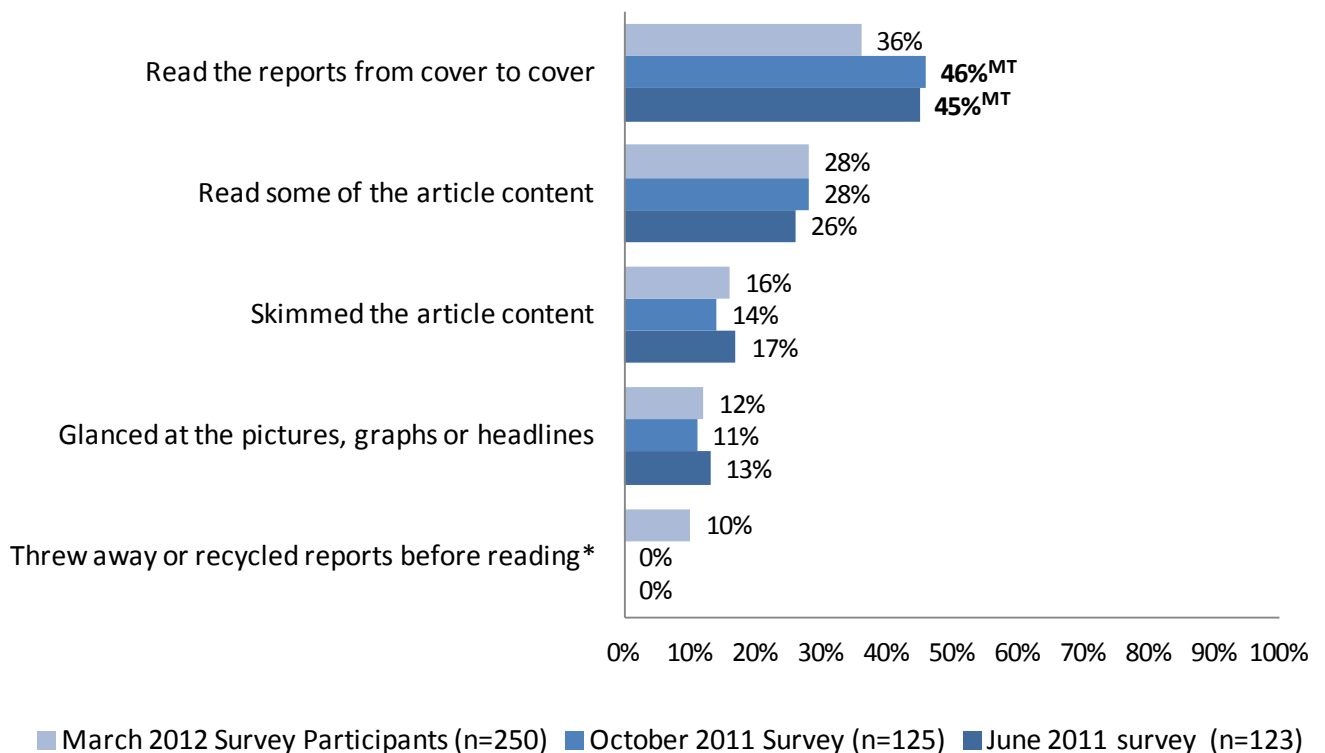
Table 5. Suggestions to Make PER More Useful (Multiple Response)

What information could be added to the PER to make it more useful?	March 2012 Survey Participants (n=250)
Nothing	16%
Offer more tips for lowering usage	10%
More specific information	8%
Compare bills/rates	6%
Don't generate reports/Reports are not useful	5%
More detail	3%
More accurate neighbor comparisons	3%
Don't Know	53%

5.4 WHAT DO PARTICIPANTS DO WITH THE PER?

Overall, participants report reading the PER in less detail than in the past. Over a third (36%) of the participants in the March survey reported that they read the report from cover to cover. This is significantly lower than the June and October survey, where cover-to-cover readership was consistent at 46%, indicating that participants are reading the report less thoroughly than in previous months. Less than one third of the participants in the March survey read some of the article content (28%) or glanced at the pictures, while 16% skimmed the article content and 12% glanced at the pictures, graphs, or headlines. A percentage (10%) of the March survey respondents threw away or recycled the reports before reading them.¹⁰

Figure 5. Participant Interaction with PER



Note: Original question is multiple response. Data are presented here by individual participants' highest level of interaction.

* Only March participants were asked explicitly if they threw away or recycled reports before reading.

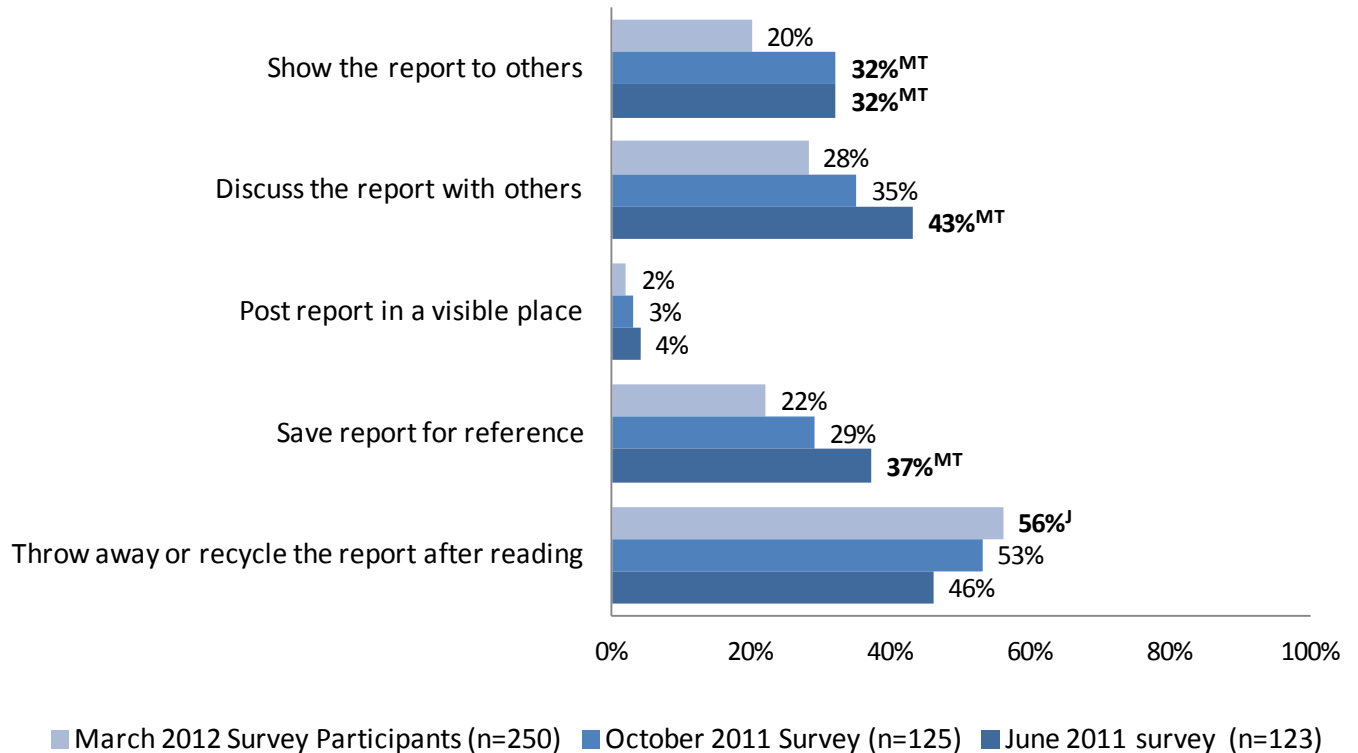
^{MT} Percentage is significantly higher than March participant respondents at a 90% confidence level.

In addition to lower readership, participants report sharing the report or saving the report at lower levels than in the June and October reports. Over half (56%) of the March survey respondents threw away or recycled the report after reading it, an increase over time from 46% in June. Other actions taken are also decreasing over time, including discussing it with others (down to 28% from 43% in

¹⁰ The June and October surveys did not explicitly ask participants if they threw away or recycled the reports before reading, while the March survey did.

June), saving it (22% from 37% in June), showing it to others (20% down from 32% in June and October).

Figure 6. Participant Response to PER (Multiple Response)



^{MT} Percentage is significantly higher than March participant respondents at a 90% confidence level.

^J Percentage is significantly higher than June participant respondents at a 90% confidence level.

Although participants are not reading the report as thoroughly or sharing it as often, participants continue to initiate energy saving actions after receiving the report. When asked how they might use the information contained in the reports over the next year, over a quarter (28%) said they would use it to help reduce their energy use. Other ways the participants plan to use the report over the next year include staying informed of changes in their energy use (20%), to track changes over time (15%), and to help decide what to install in their homes (12%). Almost a quarter (22%) said they would not use the information contained in the report over the next year.

Table 6. How Participants Will Use Information Contained in Reports (Multiple Response)

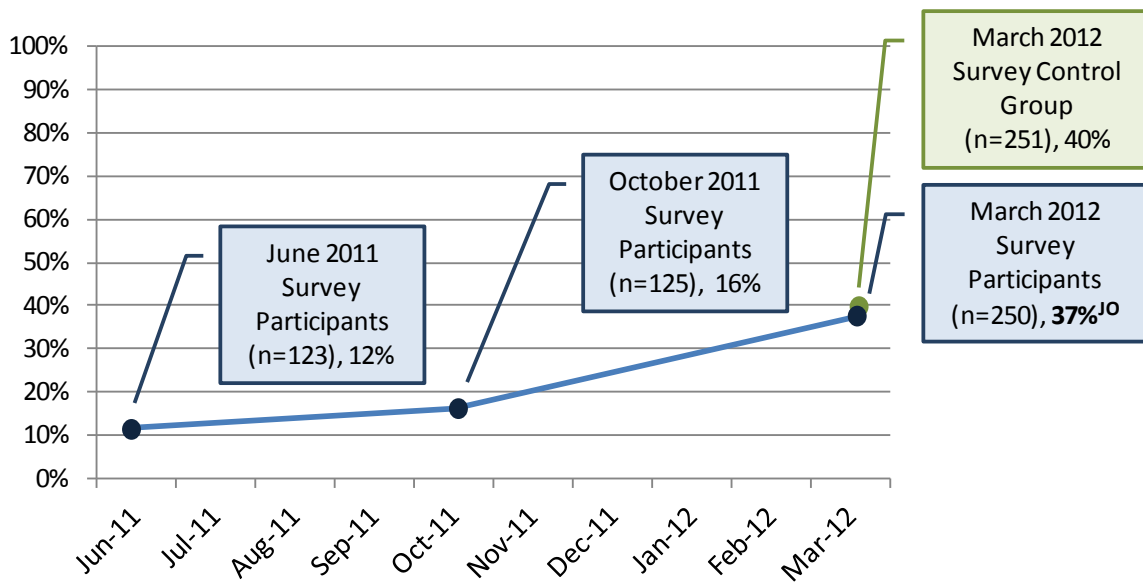
How might you use the information contained in the reports over the next year?	March 2012 Survey Participants (n=250)
Help to reduce energy use	28%
Will not use	22%
Stay informed of my energy use	20%
Track changes over time	15%
Help decide what to install in my home	12%
Help reduce bills	6%
Discuss with family members	4%
As a general reference	2%
Don't Know	12%

5.5 WHAT EFFECT HAS THE PER HAD ON PARTICIPANTS' ACTIONS?

As part of our survey efforts, the Opinion Dynamics team measured whether or not participants continued to take action over time. Overall, the percentage of participants who report that they have sought out additional information on how to conserve energy in their home has steadily increased since receiving the report from 12% in June to 37% in March.

While this represents a measurable increase over time when looking at the participant group alone, our survey suggests that the change may be a result of seasonal effects. When comparing our March findings to the control group, there were no differences between the March control group and the March participant group regarding the percentage who sought out additional information (40% vs. 37%). This suggests that the trend observed over time may be the result of other market effects. To confirm whether this trend is report- or market-based, future research efforts should be conducted comparing pilot participants to the control group over multiple time periods.

Figure 7. Information Seeking



^JPercentage is significantly higher than June participant respondents at a 90% confidence level.

^OPercentage is significantly higher than October participant respondents at a 90% confidence level.

When seeking out additional information, over half (51%) of the March participants visited a website other than Energy Trust’s website. This represents an increase over the 28% of October survey participants who did so. In our March survey, participants also turned to their utility company (34%), the newspaper (18%), and Energy Trust of Oregon’s website (14%) for more sources of information.

There were few key differences between the March participants and the control groups, with the exception that control group customers were more likely to look to bill inserts as a source of information (27%), while March participants were more likely to look to other websites (51%) or the newspaper (18%).¹¹

¹¹ Other websites refers to websites other than utility company websites or the website of Energy Trust of Oregon.

Table 7. Information Sources (Multiple Response)

What sources did you use to find more information on saving energy in your home?	June 2011 Survey Participants (n=24)	October 2011 Survey Participants (n=32)	March 2012 Survey Participants (n=93)	March 2012 Survey Control Group (n=101)
Website – other	46%	28%	51% (O)	43%
Utility Company (website, newsletter, etc.)	17%	28%	34%	43%
Newspaper	8%	22%	18% (MC)	10%
Website – Energy Trust of Oregon	8%	9%	14%	19%
Bill insert	8%	19%	13%	27% (MT)
Word of mouth	13%	22%	10%	7%
Television	8%	16%	9%	4%
Community Events	8%	0%	9% (MC)	2%
Home Improvement Stores	4%	0%	8%	4%
Contractors	8%	13%	6%	3%
Magazine	0%	22% (J,MT)	4%	8%
Radio	4%	3%	3%	2%
Books	0%	3%	0%	3%

^{MT} Percentage is significantly higher than March participant respondents at a 90% confidence level.

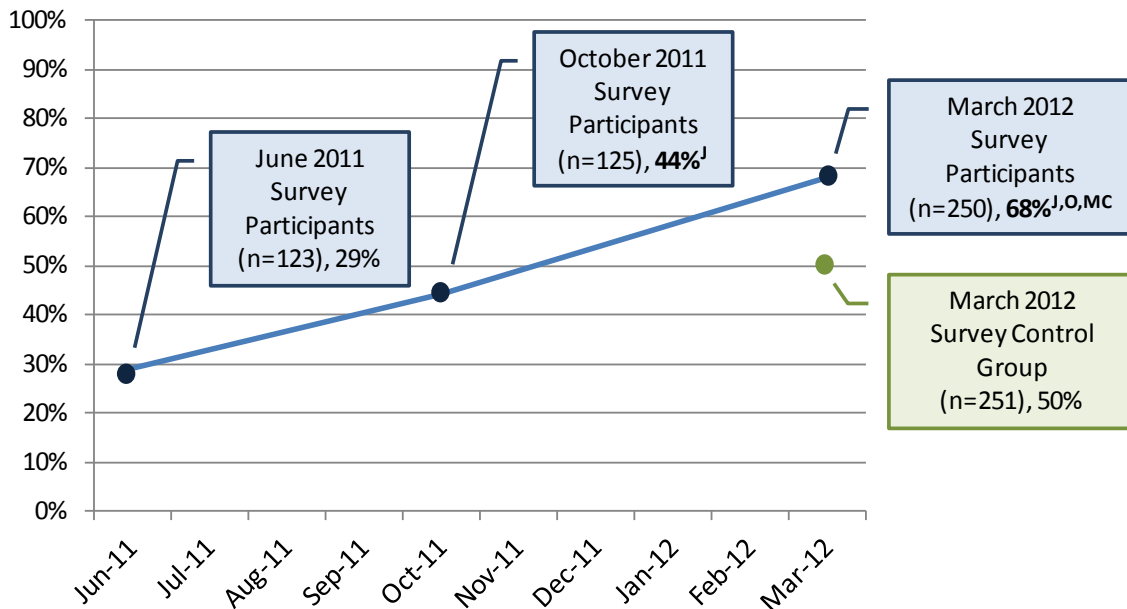
^{MC} Percentage is significantly higher than March control group respondents at a 90% confidence level.

^J Percentage is significantly higher than June respondents at a 90% confidence level.

^O Percentage is significantly higher than October respondents at a 90% confidence level.

Participants are continuing to take action over time. As the total length of time over which participants have been receiving reports increases, the percentage of participants who report taking action to reduce their homes' energy use is increasing. Sixty-eight percent of participants in March indicate that they have taken action since receiving the reports, a significant increase from those participants surveyed in June (29%) and October (44%). Notably, this finding also represents a statistically significant increase over the control group; just 50% of control group members surveyed reported that they have taken action in the past year to reduce their energy use.

Figure 8. Percentage of Respondents who Took Action in Past Year



^{MC} Percentage is significantly higher than March control group respondents at a 90% confidence level.

^J Percentage is significantly higher than June respondents at a 90% confidence level.

^O Percentage is significantly higher than October respondents at a 90% confidence level.

The actions most reported by participants in the March survey include turning down the thermostat (36%), turning off the lights (27%), installing efficient lighting (19%) and insulating their home (14%).

In addition, our survey shows that the frequencies of specific self-reported actions are persisting over time. Participants are more likely to have reported in March that they turned down their thermostat to save energy since receiving the reports (36%) than in October (20%) or June (19%). Participants are more likely to report in March than they installed efficient lighting (19%) than in October (9%). In addition, participants are more likely to have reported in March that they insulated their home since receiving the reports (14%) than in October (3%) or June (3%). Notably, a greater percentage of the control group reported in the March survey that they have installed new windows or doors (21%) than the participant group (11%).

Table 8. Actions taken in past year/since receiving report (Multiple Response)

	June 2011 Survey Participants (n=123)	October 2011 Survey Participants (n=125)	March 2012 Survey Participants (n=250)	March 2012 Survey Control Group (n=251)
Turn down thermostat	19%	20%	36% (J,O)	32%
Turn off lights	17%	24%	27%	21%
Efficient lighting/CFLs	12%	9%	19%(O)	17%
Insulate home	3%	3%	14% (J,O)	14%
Windows/doors	7%	6%	11%	21% (MT)*

Results from PER Participant Feedback Survey

	June 2011 Survey Participants (n=123)	October 2011 Survey Participants (n=125)	March 2012 Survey Participants (n=250)	March 2012 Survey Control Group (n=251)
Unplug appliances	14%	22% (MT)	11% (MC)	2%
Furnace	3%	6%	9%(J)	13%
Use less hot water	12%	10%	7%	5%
Replace water heater	5%	1%	5%(O)	4%
Replace refrigerator	3%	3%	5%	2%
Other energy efficient appliance	5%	1%	5%(O)	3%
Use appliances less	3%	3%	4%	2%
Install programmable thermostat	3%	2%	3%	2%
Properly seal ducts	2%	1%	3%	2%
Sealing air leaks around doors and windows	2%	3%	3%	1%
Use less energy in general	10% (MT)	7%	2%	2%
Replace clothes washer	2%	6%	2%	6%
Weather stripping	3%	2%	2%	3%
Conduct energy audit	0%	1%	2%	6%
Turn off AC when not home	2%	6%(MT)	1%	1%
Turn off heat when not home	2%	7%(MT)	1%	0%

^{MT} Percentage is significantly higher than March participant respondents at a 90% confidence level.

^{MC} Percentage is significantly higher than March control group respondents at a 90% confidence level.

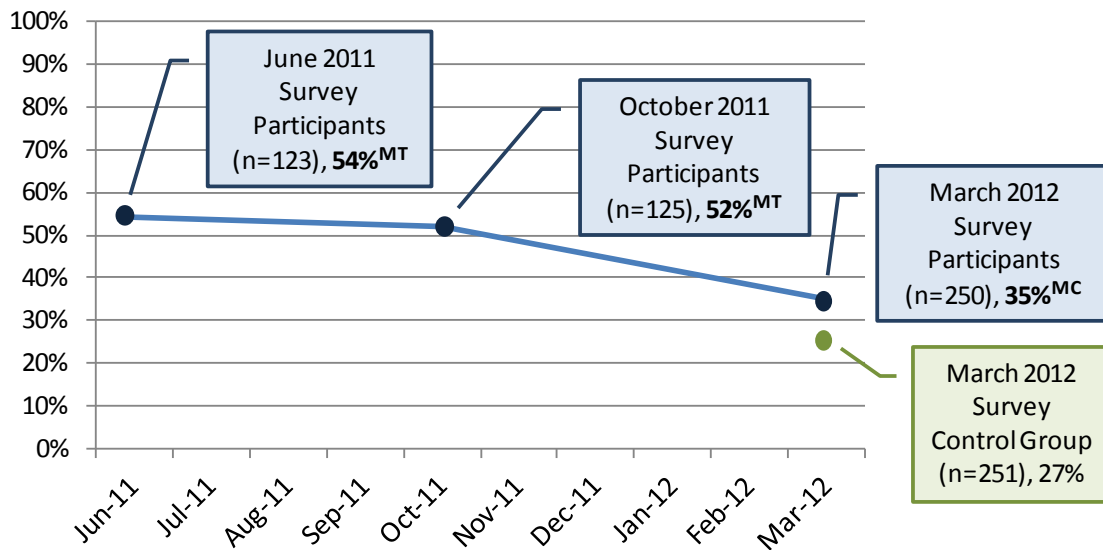
^J Percentage is significantly higher than June respondents at a 90% confidence level.

^O Percentage is significantly higher than October respondents at a 90% confidence level.

* The percentage of the control group that reported that they installed new windows and doors in the past year (21%) is much higher than we would expect. Further research is needed to understand this finding.

Participants overall are planning to take more action than the control group, with just over a quarter (27%) of the control group indicating that they have plans to reduce their energy consumption in the future. However, this indicates a decrease in self-reported planned actions over time, with 35% of participants indicating that they plan to take action in the future compared to 52% in October and 54% in June. This trend may indicate that participants have taken most of the actions they plan to take within the first year. While overall planned actions have decreased, participants reported planning more specific conservation actions in the future, such as turning down the thermostat (18%) and turning off the lights (10%), than in previous months.

Figure 9. Percentage of Respondents Who Plan to Take Action in the Future



^{MT} Percentage is significantly higher than March participant respondents at a 90% confidence level.

^{MC} Percentage is significantly higher than March control group respondents at a 90% confidence level.

Table 9. Actions Respondents Plan to Take (Multiple Response)

	June 2011 Survey Participants (n=123)	October 2011 Survey Participants (n=125)	March 2012 Survey Participants (n=250)	March 2012 Survey Control Group (n=251)
Windows/doors	17%	17%	20%	28%
Insulation	22%	18%	20%	26%
Turn down thermostat	4%	3%	18%(J,O)	10%
Turn off lights	2%	1%	10%(J,O)	6%
Other energy efficient appliance	4%	8%	7%	3%
Unplug appliances	2%	3%	7%	1%
Refrigerator	5%	4%	5%	7%
Energy Audit	4%	6%	5%	3%
Install renewables	9%	8%	5%	7%
Efficient lighting/CFLs	2%	8%(J)	3%	6%
Furnace	5%	9%	3%	6%
Water heater	6%	5%	3%	4%
Use less hot water	3%	1%	3%	0%
Weather stripping	1%	2%	2%	3%
Properly seal ducts	2%	2%	2%	0%
Install window insulation film	0%	4%	2%	0%
Use less energy in general	7%(MT)	6%	1%	4%
Use ceiling fans instead of AC	0%	4%	1%	1%
Sealing air leaks around doors and windows	4%	4%	0%	1%

^{MT} Percentage is significantly higher than March participant respondents at a 90% confidence level.

^J Percentage is significantly higher than June respondents at a 90% confidence level.

^O Percentage is significantly higher than October respondents at a 90% confidence level.

5.6 VERIFIED PARTICIPATION IN OTHER PROGRAMS

Energy Trust conducted an analysis of the rate of treatment and control group household participation in other Energy Trust incentive programs. Approximately 1.4% more treatment households participated in incentive programs than control group households, representing an 8% lift in the participation rates. Of the 60,408 PER recipients, 11,334 or 18.8% participated in Energy Trust incentive programs. Of the 60,182 control group members, 10,492 or 17.4% participated in incentive programs. The treatment group also installed a greater number of measures per household on average than the control group (1.58 vs. 1.48). However, there were no significant differences in the total amount of incentives or energy savings between the two groups, which indicate that the treatment group as a whole installed a measure mix with slightly lower average savings per measure.

Table 10. Energy Trust Cross Participation Analysis

	Control Group	Treatment Group	Total
Number of OPOWER study participants	60,182	60,408	120,590
Number of study participants who participated in other Energy Trust programs *	10,492	11,334	21,826
Cross-participation percentage	17.4%	18.8%	18.1%
Average Number of Measures *	1.48	1.58	1.53
Average Value of Incentives	\$205.42	\$200.75	\$203.00
Average Electricity Savings	278.1 kW	283 kW	280.61 kW
Average Gas Savings	9.4 therms	9.5 therms	9.49 therms

* Indicates significance difference between the two groups at a 90% confidence level.

The findings of the Energy Trust study are consistent with the actions that the treatment and control group reported taking in this survey, which indicates that in comparison to the control group, the treatment group may be taking many small-saving actions compared to the control group that may be taking fewer, more energy-impactful actions.

This finding is also consistent with the findings of other studies comparing the measures installed by OPower report recipients to the measures installed by a control group. A 2001 report, Massachusetts Cross-Cutting Behavioral Program Evaluation, looked at gas electric customers who were receiving OPOWER reports and found that participation increased in both groups.¹² Approximately 0.35% more electric pilot treatment households than control households participated in another energy efficiency program within a year of receiving their first report, representing a 9.2% lift in the participation rate, while 0.64% more of the gas pilot treatment households participated in another energy efficiency program, representing a 20.0% lift in participation. However in the electric pilot, there was no significant difference in the average annual savings per household; both the treatment and the control group saved 1.61% of their average annual consumption based on deemed savings. There

¹² Massachusetts Cross-Cutting Behavioral Program Evaluation. Opinion Dynamics and Navigant Consulting. Final June 2011.

was a small difference between the average annual savings of the gas pilot treatment group (0.81% of average annual consumption) and gas pilot control group (0.77% of average annual consumption).

6. RECOMMENDATIONS

Based on our findings from the March 2012 survey efforts, we offer the following recommendations to Energy Trust:

- **Identify mechanisms to push participants to continue to take and plan actions.** The survey data suggest that participants may have taken most of the actions they intend to take because of the PER. While participants' planned actions are greater than the control groups', the number of planned actions is waning over time. The PER should consider mechanisms to promote future action and to keep PER participants engaged and challenged.
- **Keep the information new to maintain high readership levels.** Over time, participant engagement with the report continues to drop. The program should provide customized, tailored information at the household level in the reports to provide an incentive for continued readership.
- **Provide more useful information and tips.** After receiving the report over a period of 14 months, a greater percentage of participants rated the personal comparison module (45%) and neighbor comparison module (47%) as useful, than the energy saving tips module (18%). The program should develop the energy saving tips module to be more useful to participants, possibly by providing a greater number of tips in each report as was requested by 10% of participants in the March survey.
- **Consider ways to encourage customers who are not using the report to opt out.** As there is a certain cost for each report that goes out, the program could benefit from encouraging participants who do not read the report or do not plan to use the report to opt out.

APPENDIX A. DEMOGRAPHICS

The participant and control groups in the March survey were similar in terms of their house type, age, home owner status and primary fuel sources. There were a few differences between the two groups in terms on income – the participant group was slightly more likely to have an annual income of \$10,000 to \$29,999 (9% vs. 4%), while the annual income of the control group was more likely to fall between \$70,000 and \$89,999.

Table 11. Demographics and Household Characteristics - March

House type	Participant	Control
Single-Family detached home	89%	91%
Single-Family attached home	7%	6%
Duplex, triplex, four-plex	2%	1%
Apartment or Condominium	0%	2%

Age	Participant	Control
24 years or younger	0%	2%
25-34 years	4%	2%
35-44 years	9%	10%
45-54 years	17%	18%
55-64 years	22%	27%
65 years and over	42%	38%
Don't Know/Refused	5%	4%

Homeownership	Participant	Control
Own/buying	95%	93%
Rent/lease	3%	5%
Don't Know/Refused	2%	1%

Primary Fuel Source	Participant	Control
Natural Gas	91%	90%
Electric	8%	8%
Wood	0%	2%

Income	Participant	Control
Less than \$10,000	1%	1%
\$10,000-\$29,999	9% (MC)	4%
\$30,000-\$49,999	12%	11%
\$50,000-\$69,999	11%	11%
\$70,000-\$89,999	7%	12% (MT)
\$90,000-\$109,999	9%	12%
\$110,000-\$149,999	7%	10%
\$150,000-\$199,999	1%	1%
\$200,000 or more	7%	5%
Don't Know/Refused	36%	33%

MC Percentage is significantly higher than March control group respondents at a 95% confidence level.

MT Percentage is significantly higher than March participant respondents at a 95% confidence level.

Table 12. Demographics and Household Characteristics – October

House type	
Single-Family detached home	93%
Single-Family attached home	4%
Duplex, triplex, four-plex	1%
Manufactured or Mobile Home	1%
Age	
25-34 years	2%
35-44 years	7%
45-54 years	17%
55-64 years	38%
65 years and over	38%
Homeownership	
Own/buying	98%
Rent/lease	3%

Primary Fuel Source	
Natural Gas	89%
Electric	6%
Wood	3%
Income	
Less than \$10,000	1%
\$10,000-\$29,999	5%
\$30,000-\$49,999	14%
\$50,000-\$69,999	17%
\$70,000-\$89,999	10%
\$90,000-\$109,999	11%
\$110,000-\$149,999	8%
\$150,000-\$199,999	3%
\$200,000 or more	4%
Don't Know/Refused	29%

Table 13. Demographics and Household Characteristics - June

Primary Fuel Source	
Natural Gas	99%
Wood	2%
Age	
25-24 years	3%
35-44 years	17%
45-54 years	20%
55-64 years	27%
65 years and over	35%
Homeownership	
Own/buying	98%
Rent/lease	3%

House type	
Single-Family detached home	91%
Single-Family attached home	7%
Duplex, triplex, four-plex	2%
Income	
\$10,000-\$29,999	8%
\$30,000-\$49,999	13%
\$50,000-\$69,999	18%
\$70,000-\$89,999	15%
\$90,000-\$109,999	12%
\$110,000-\$149,999	8%
\$150,000-\$199,999	4%
\$200,000 or more	5%
Don't Know/Refused	20%

APPENDIX B. MARCH PARTICIPANT AND NON-PARTICIPANT SURVEY



Energy Trust of Oregon OPower Personal Energy Report Participant Phone Survey

March 16, 2012

This is a telephone survey that will go to 500 customers, including 250 randomly selected customers who received Personal Energy Reports (PERs) from Energy Trust of Oregon and 250 customers who did not receive the PERs (control group). The goal of the survey is to understand, through a comparison of the treatment and control groups, the effect the PER had on any actions they may have taken to save energy in their homes and their satisfaction with PGE and NWN. This is a follow-up to the participant survey that was fielded in June 2011 and the participant survey that was fielded in October 2011.

Introduction [PARTICIPANTS]

Hello, my name is _____, calling from Opinion Dynamics Corporation on behalf of Northwest Natural, Portland General Electric and Energy Trust of Oregon. We are conducting a survey for Energy Trust regarding a Personal Energy Report. Your answers will be completely confidential and we are not selling anything. This survey should only take 10-15 minutes of your time. Your feedback is very important and we appreciate your time. For quality purposes, this call may be monitored or recorded.

Northwest Natural, Portland General Electric and Energy Trust began sending Personal Energy Reports to customers in your area earlier this year. The Personal Energy Report is a one page, double-sided report sent by mail, separate from your gas or electric bill. It compares your energy use to your neighbors' and provides tips for saving energy and reducing your bill.

Do you recall receiving the Personal Energy Report?

Are you the person in your household who is most familiar with the energy report?

(CONTINUE WITH CORRECT CONTACT)

Introduction [CONTROL GROUP]

Hello, my name is _____, calling from Opinion Dynamics Corporation on behalf of Northwest Natural, Portland General Electric and Energy Trust of Oregon. We are conducting a survey regarding your home's energy consumption. Your answers will be completely confidential and we are not selling anything. This survey should only take 10 minutes of your time. Your feedback is very important and we appreciate your time. For quality purposes, this call may be monitored or recorded.

Are you the person in your household who is most familiar with your home's energy consumption?

(CONTINUE WITH CORRECT CONTACT)

SCREENERS [ASK PARTICIPANTS AND CONTROL GROUP]

First, I have a few questions about your household.

SC1. Do you own or rent your home?

1. (Own)
2. (Rent)
8. (Don't Know)
9. (Refused)

SC2. What is your age?

1. (24 yrs or younger)
2. (25 to 34 yrs)
3. (35 to 44 yrs)
4. (45 to 54 yrs)
5. (55 to 64 yrs)
6. (65 years and over)
98. (Don't Know)
99. (Refused)

SC3. What is the primary fuel you use to heat your home?

01. (Natural gas)
02. (Bottled, tank or LP gas) [THANK AND TERMINATE]
03. (Electric)
04. (Oil, kerosene) [THANK AND TERMINATE]
05. (Coal (coke)) [THANK AND TERMINATE]
06. (Wood)
07. (Solar)
00. (Other, specify: [OPEN END])
96. (No fuel)
98. (Don't know)
99. (Refused)

"Thank you for your responses. Now we are going to begin the main survey."

MAIN QUESTIONNAIRE

Customer Satisfaction [PARTICIPANTS AND CONTROL GROUP]

(CREATE VERSION. VERSION 1 GETS VC2 VERSION 2 GETS NVC3)

VC2. On a scale from 1 to 5 where 1 is very dissatisfied and 5 is very satisfied, how satisfied are you with the services you receive from your electric company? [RECORD NUMBER; 8=Don't know; 9=Refused]

NVC3. On a scale from 1 to 5 where 1 is very dissatisfied and 5 is very satisfied, how satisfied are you with the services you receive from your natural gas company? [RECORD NUMBER; 8=Don't know; 9=Refused]

Readership Frequency [PARTICIPANTS ONLY]

RS3. Thinking of all the reports you have received, in general, what have you done with them? Did you... [MULTIPLE RESPONSE]

- 01. Glance at the pictures, graphs, or headlines
- 02. Skim the article content
- 03. Read some of the article content
- 04. Read the reports from cover to cover
- 05. Threw away or recycled before reading
- 00. (Other [Specify])
- 98. (Don't Know)
- 99. (Refused)

RS4. After reviewing the last report that you received, did you... [MULTIPLE RESPONSE]

- 01. Show report to others
- 02. Discuss report with others
- 03. Post report in a visible place
- 04. Save report for reference
- 05. Throw away or recycle the report
- 00. (Other – Specify)
- 98. (Don't Know)
- 99. (Refused)

RS5. Over the past year, what part of the report was most useful to you? [MULTIPLE RESPONSE]

- 01. Seeing how my energy consumption compares to my neighbors. (Last month neighbor comparison, Last 12 months neighbor comparison, Neighbor Rank Module)
- 02. Seeing how my current energy consumption compares to my energy consumption one year ago. (Personal Comparison)
- 03. Getting tips on how to save more energy in my home . (Action Steps Module, Holiday Themed Tip Box)
- 00. (Other – Specify)
- 98. (Don't Know)
- 99. (Refused)

RS7. How might you use the information contained in the reports over the next year? [MULTIPLE RESPONSE]

- 01. (Discuss with family members or members of the household)
- 02. (Discuss with others generally)
- 03. (Track changes over time)
- 04. (Stay informed of my energy use)
- 05. (Help to reduce energy use)
- 06. (Will not use)
- 00. (Other) [SPECIFY]
- 98. Don't Know
- 99. Refused

RS8. What information could be added to the PER to make it more useful? [MULTIPLE RESPONSE]

- 01. (More specific information)
- 02. (More tips)
- 03. (More detail)

- 04. (Less detail)
- 05. (Receive report more frequently)
- 06. (Receive report less frequently)
- 07. (Receive report in another format – online, etc.)
- 00. (Other) [SPECIFY]
- 98. Don't Know
- 99. Refused

Energy Saving Actions [ASK BOTH PARTICIPANTS AND CONTROL GROUP]

A10. Did you or anyone in your household take any actions to reduce your home's energy use in the past year?

- 1. Yes
- 2. No
- 8. (Don't Know)
- 9. (Refused)

[ASK A11 IF A10=1]

A11. What did you do?

- 01. (Windows or doors)
- 02. (Energy efficient lighting/CFLs)
- 03. (Furnace)
- 04. (Insulation)
- 05. (Turn down thermostat)
- 06. (Turn off lights)
- 07. (Energy audit)
- 08. (Water heater)
- 09. (Refrigerator)
- 10. (Unplug appliances)
- 00. (Other) [SPECIFY]
- 98. Don't know
- 99. Refused

A12. Do you have plans to take any actions to reduce your home's energy use in the next year?

- 1. Yes
- 2. No
- 8. (Don't Know)
- 9. (Refused)

[ASK A12b IF A12=1]

A12b. What do you plan to do?

- 01. (Windows or doors)
- 02. (Energy efficient lighting/CFLs)
- 03. (Furnace)
- 04. (Insulation)
- 05. (Turn down thermostat)
- 06. (Turn off lights)
- 07. (Energy audit)
- 08. (Water heater)
- 09. (Refrigerator)

- 10. (Unplug appliances)
- 00. (Other) [SPECIFY]
- 98. Don't know
- 99. Refused

A13. In the past year, have you or anyone else in your household looked for information on ways to save energy in your home?

- 1. Yes
- 2. No
- 8. (Don't Know)
- 9. (Refused)

[ASK A15 IF A13=1]

A15. What sources do you go to for this information?

- 1. (Newspaper)
- 2. (Radio)
- 3. (TV)
- 4. (Utility website)
- 5. (Energy trust website)
- 6. (Other websites)
- 7. (Friends, family, coworkers)
- 8. (Contractors)
- 9. (Home improvement stores)
- 10. (Magazines)
- 11. (Books)
- 12. (Utility newsletters)
- 13. (Bill Inserts)
- 14. (Community Events)
- 00. (Other) [SPECIFY]
- 98. (Don't know)
- 99. (Refused)

Demographics [ASK PARTICIPANTS AND CONTROL GROUP]

D2. How many people live in your home? [RECORD NUMBER; 98=Don't Know; 99=Refused]

D3. What type of home is your primary residence?

- 1. Single-Family detached home
- 2. Single-Family attached home (such as a townhouse)
- 3. Duplex, triplex or four-plex
- 4. Apartment or Condominium, 5-units or more
- 5. Manufactured or Mobile Home
- 00. Other (specify)
- 98. (Don't Know)
- 99. (Refused)

D4. What is your household's total annual income before taxes?

- 1. Less than \$10,000
- 2. \$10,000 - \$29,999
- 3. \$30,000 - \$49,999
- 4. \$50,000 - \$69,999

5. \$70,000 - \$89,999
6. \$90,000 - \$109,999
7. \$110,000 - \$149,999
8. \$150,000 - \$199,999
9. \$200,000 or more
98. (Don't Know)
99. (Refused)

On behalf of Opinion Dynamics, Energy Trust, Northwest Natural and Portland General Electric, thank you for your time and cooperation. Your answers have been extremely valuable. Have a good day/evening.

D5. RECORD GENDER BY OBSERVATION:

1. MALE
2. FEMALE