research/into/action inc

Final Report

Energy Trust Pilot Programs in Southwest Washington

Funded By:

EnergyTrust of Oregon

Prepared By:

research/into/action inc

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EXECUTIVE SUMMARY

This report documents a process evaluation of a pilot of Energy Trust of Oregon (Energy Trust) energy efficiency programs began in October 2009 in NW Natural's Southwest Washington (SW WA) service territory. The purpose of the evaluation was to document program progress, identify challenges and opportunities, and recommend courses of action to address challenges. Research Into Action, Inc. carried out interviews with program implementation staff and trade allies, and analyzed secondary sources (the U.S. Census and other online sources) and primary data – principally the results of ongoing brief satisfaction surveys of program participants and Energy Trust's *FastTrack* program participation database.

Interviews with program staff indicated that initial implementation of program activities had gone smoothly. The only problem reported was that there was too much internal work being done by the commercial program manager, precluding her from selling the program to trade allies and customers. However, staff solved this problem by shifting around job responsibilities, which allowed the program manager more time to do outreach and sales in SW WA.

The commercial and residential programs met savings goals over the first 15 months, but at the time this evaluation started in October 2010, only the commercial program was on target for 2010 goals, concerning staff that end-of-year goals for the pilot might not be met. However, there was a large infusion of projects completed in November and December, which contractors and program staff indicated was a result of the $1,500 federal tax credit expiring in December 2010. Customers were anxious to qualify for this incentive, so there was a lot of demand to complete projects before the end of the year.

Compared to Multnomah County, Clark County has a lower percentage of gas customers, newer housing stock, and relatively lower affluence. These differences suggest a lower ultimate potential for gas savings, even once the traditional program startup issues of program awareness and limited offerings are overcome. By contrast, a higher percentage of home ownership in Clark County should mitigate those other factors to some degree.

Variability in residential participation rates by area within Clark County is more affected by population density than the percentage of gas households or relative affluence, with participation in Vancouver and Camas much higher than in other parts of the county relative to the percentage of gas households in those areas. Thus, there appears to be untapped potential for additional residential savings outside of Vancouver and Camas. Data on the distribution of commercial projects and savings were insufficient to draw conclusions for that market.

Analyses of program participation data showed that most Energy Trust trade allies active in Southwest Washington are based in Oregon, but the Washington-based trade allies were relatively more active in that area. Analysis of participation data from October 2009 through

December 2010 indicate a linear upward trend in participation across that period, with the most active period for residential contractors being the last months of 2010.

Interviewed contractor types were representative of those listed in the program database, although building shell measures made up a relatively small percentage of residential measures.

All contacts were aware of Energy Trust and its programs, although about half had worked with Energy Trust for less than a year. Contractors reported a range of sources for information about Energy Trust programs, and most said they had sufficient information to inform Southwest Washington customers about Energy Trust incentives. Contractors also were aware of other energy efficiency incentives and tax credits, and considered themselves to be active in promoting energy efficiency.

Respondents were generally satisfied with their program involvement and did not indicate any substantial process-related obstacles to program involvement. Surveys of residential program customers in Southwest Washington generally found good program satisfaction, particularly regarding equipment performance, quality of installation, incentive turnaround time, and contractor cleanliness and punctuality.

By and large, contractors indicated that the energy efficiency needs of their Southwest Washington customers were similar to those of Oregon customers. They reported that their customers were receptive to energy efficiency projects, but that customers are largely unaware of the energy efficiency programs available to them.

Based on our findings, we offer the following recommendations:

- Adapt marketing messages and create Washington-specific marketing materials to educate consumers that the program is available to residents of Southwest Washington, as well as Oregon, and that newer housing stock can benefit from energy efficiency improvements.
- Increase marketing efforts in coordination with Clark County Public Utility District (PUD).
- Expand the number of Washington-based trade allies and work with existing Washington-based trade allies to promote greater penetration in that market.
- Carry out targeted marketing activities in the less densely populated, but relatively affluent, parts of Clark County and increase outreach to trade allies that serve those areas.
- Direct resources to assist building shell contractors in promoting their services, and to educate HVAC contractors to promote duct sealing, air sealing, insulation, and other building performance measures.
- Provide new contractors with extra training in completing program paperwork to ensure their first experience with the program is positive.

STAFF RESPONSE MEMO

Date: March 13, 2011

To: Board of Directors

From: Philipp Degens, Evaluation Project Manager
Scott Swearingen, NW Natural WA Pilot Manager

Subject: Staff response memo: 2009-2010 NW Natural Washington Process Evaluation

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The NW Natural Washington pilot successfully acquired first year gas savings of 120,000 therms. This was over the conservative goal (97,000 therms) and below the high goal (130,000 therms). Commercial sector projects were responsible for two-thirds of the pilot savings, which was slightly higher than expected.

The evaluation results indicate that with improved marketing and increased offerings the program should be able to replicate its success in subsequent years. Interviewed trade allies see few if any barriers to the pilot, and its mission of increasing energy efficiency aligns well with their marketing approaches. Increasing the number of local trade allies and assisting them to increase their program activity should be a central focus in both the commercial and residential sectors. The report shows that local residential trade allies performed more jobs and that a small number of trade allies in both the residential and commercial sector were responsible for the bulk of the pilot's savings.

1 INTRODUCTION

BACKGROUND

Energy Trust of Oregon (Energy Trust) began providing limited residential and commercial energy efficiency programs in NW Natural's Southwest Washington (SW WA) service territory on a pilot basis in October 2009. The residential program savings goal for October 2009 to December 2010 was 59,110 therms and the commercial savings goal was 86,500 therms. Both programs met their goals.

Energy Trust selected Research Into Action, Inc., to carry out a process evaluation of the program activity in SW WA in the fall of 2010. The evaluation methods consisted of analyzing secondary data and conducting interviews with program staff and trade allies to identify challenges and opportunities, and to recommend courses of action to address challenges.

PROGRAM DESCRIPTION

The Energy Trust pilot program offerings in SW WA do not represent the full range of program offerings available to Oregon customers. The pilot includes one commercial program – Existing Buildings – and three residential programs: Existing Single Family, Home Performance with ENERGY STAR®, and New Homes. Within these programs, there are additional limitations in the pilot's offerings. First, since the pilot extends only to NW Natural customers, incentives are provided for gas, but not electric, measures. Second, incentives are provided for prescriptive, but not custom, measures.

Residential gas customers in SW WA can receive incentives for gas equipment and services such as:

- Home performance enhancements – i.e., insulation and air sealing
- Home energy reviews – including direct install measures such as aerators and water saving showerheads
- Gas furnaces
- Tanked gas and tankless water heaters
- Direct-vent gas fireplaces
- Direct-vent gas unit heaters

Commercial gas customers in SW WA can receive incentives for gas equipment and services such as:

- Boilers
- Pipe insulation
- Steam traps
- Gas furnaces
- Insulation

The programs are implemented through program management contractors (PMCs): Conservation Services Group (CSG) for the existing homes programs; Portland Energy Conservation Inc. (PECI) for the new homes program; and Lockheed Martin for the commercial program.

The residential programs for existing homes largely rely on broad-based marketing efforts (e.g., advertising) and trade allies to sell the programs. Program staff work with trade allies and marketing staff to promote the programs in SW WA.

The commercial program functions differently. It relies heavily on Energy Trust management contractors to directly sell the program to customers. Commercial program staff report door-to-door sales and consistent contact with customers as the two primary strategies for selling the program. "You still need the push of a sales person visiting the participant" to ensure program participation. This type of direct contact with a homeowner is not feasible in the residential program due to the large number of participants needed to attain significant savings.

The above services will continue in SW WA on a pilot basis through 2011. At the time of this report's preparation, the Washington Utilities and Transportation Commission and NW Natural were in deliberation over extending the program into 2012, and determining whether Energy Trust will be the program administrator. If so, Energy Trust will review the progress of the program activities and determine whether to expand offerings to include additional measure incentives.

FEDERAL RESIDENTIAL TAX CREDITS

During the first year of the program, a federal tax credit of up to 30% of the cost of improvements or $1,500 has been available for energy efficiency improvements. The combined value of the Energy Trust incentives and the tax credit can significantly reduce the cost of such improvements. For example, a customer having 1,000 square feet of attic insulation installed for $750 could pay as little as $350 after Energy Trust incentives and tax credits.

The federal tax credit has been extended through 2011, although with some changes. The credit has been capped at 10% of the cost of improvements or $500, and credits for windows, water heaters, and home heating equipment are further limited. Moreover, the minimum efficiency levels required for some heating measures and appliances have been raised. It is possible, therefore, that the added incentive effect of the federal tax credit combined with the Energy Trust incentives will not be as great in 2011 as in 2010.

RESEARCH OBJECTIVES

Energy Trust funded this project to evaluate the pilot program to determine what savings are achievable and to identify barriers to program participation. Specifically, Energy Trust wanted to know why the program in SW WA did not receive the expected participation in the residential sector and to identify ways to increase participation among residential and commercial customers. Key research questions were:

- Do trade allies experience specific challenges to selling energy efficiency services and equipment in Washington?
- How do the needs for energy efficiency improvements of SW WA natural gas customers compare to those of Oregon natural gas customers?
- What obstacles, if any, do trade allies face in completing an Energy Trust incented project?
- Should Energy Trust undertake additional marketing efforts to promote the program?

2 METHODOLOGY

We used a variety of data sources to address our research objectives:

- Secondary sources – such as census and economic census data
- Energy Trust primary data – from ongoing brief program satisfaction and free-ridership surveys of SW WA program participants, the 2010 Trade Ally survey, and Energy Trust's *Fast Track* program participation database
- Interviews with program implementation staff
- Interviews with trade allies that primarily serve the SW WA market

SECONDARY DATA SOURCES

Data from the U.S. Census Bureau provided useful demographic, housing tenure, and heating fuel information about SW WA and how it compares to Energy Trust's traditional territory in Northwest Oregon. This helped us better understand the SW WA market in terms of housing age, how many households use natural gas, potential language barriers, and potential income constraints.

ENERGY TRUST REPORTS AND DATA

We analyzed prior Energy Trust reports and survey results to glean information about possible barriers to program participation in SW WA. The purpose was to identify any possible explanations as to why program uptake was not greater. In particular, we looked for indications that trade allies or customers expressed problems that would make them reluctant to sell or support the program. We also examined Energy Trust *Fast Track* data to identify possible trends in the types of measures installed, location of those measures, and type of contractors.

PROGRAM STAFF AND PMC FEEDBACK

In November 2010, we interviewed the SW WA program managers for the residential and commercial PMCs to help obtain an overview of possible barriers, opportunities, and challenges in rolling out the program, and to identify what they wanted to learn from our evaluation. We also spoke with Energy Trust's program manager for the SW WA pilot several times throughout the course of the evaluation and obtained information on various aspects of the pilot from other Energy Trust staff members.

We developed an interview guide (included in the Appendix) to address issues identified during meetings with Energy Trust program and evaluation staff and from our examination of the Energy Trust 2010 Trade Ally Survey. We focused on open-ended questions because we were most interested in gaining a deeper understanding of programmatic issues rather than quantifying responses. These interviews lasted approximately 50 minutes. We recorded the interviews and transcribed them for later qualitative analysis.

INTERVIEWS WITH TRADE ALLIES

We interviewed 11 trade allies identified as key actors in SW WA. As described in more detail below, we used two selection criteria, specifying a trade ally that: 1) was based in SW WA; or 2) that program implementation staff identified as a key contractor that should be doing more Energy Trust projects in that area. Three of the 11 trade allies met both criteria.

To identify potential respondents, we requested from Energy Trust a list of contractors that submitted projects for incentives. We received a list of 94 contractors that had completed 433 projects since program inception.

After conferring with program implementation staff, we chose to focus our interviews on the 15 active WA-based trade allies that had completed 166 projects in total. We did this for three reasons. First, we interviewed active trade allies because they are already engaged with Energy Trust, thus allowing us to focus on programmatic issues in SW WA. Second, implementation staff expressed a specific interest in getting WA-based trade allies to be more active. Third, one of the program goals is to create jobs in WA. We wanted to learn specifically what WA-based contractors had to say about the program that may be keeping them from selling additional measures and thus keeping them from expanding employment opportunities.

In addition to the 15 active WA-based trade allies, we asked program implementation staff to suggest contractors they believed could do more projects in SW WA. They identified nine contractors, of which three were active WA-based trade allies and four were OR-based trade allies. The remaining two are commercial contractors for which we did not have any data about the number of projects they had completed. The result was a list of 21 potential respondents.

We developed an interview guide by examining the Energy Trust 2010 Trade Ally Survey and by identifying key issues through interviews and meetings with Energy Trust program staff, evaluation staff, and implementation contractors. Our in-depth interviews with program implementation staff and later input solicited from those staff further shaped and refined the interview guide. The interviews addressed topics such as communications between Energy Trust and program implementation firms, differences between the programs in SW WA and Oregon, marketing efforts underway in SW WA, and trade ally outreach. We used both open and close-ended questions, but focused on open-ended questions because we were most interested in gaining a deeper understanding of programmatic issues rather than quantifying responses . (The interview guide is included in the Appendix).

We conducted all interviews by telephone with the contact name provided by Energy Trust unless that first contact suggested we speak with someone else in the company. In three cases, the initial contact directed us to someone else. The caller explained the purpose of the survey and identified himself as a contractor hired by Energy Trust to conduct the interviews. The interviews were conducted between December 7 and 17, 2010. The interviews lasted approximately 20 to 25 minutes. We recorded and transcribed all interviews, and then coded the open-ended responses into categories for later analysis.

3 PROGRAM STAFF FEEDBACK

We obtained feedback from Energy Trust's program manager for the SW WA pilot and the SW WA program managers for the residential and commercial PMCs on communication between Energy Staff and the PMCs, and on implementation and administration issues, including possible barriers, opportunities, and challenges in rolling out the program.

COMMUNICATION

Energy Trust and PMC contacts reported good communication and internal processes among the staff working on the NW Natural program. All key PMC program and Energy Trust staffs meet monthly. The monthly meeting engages all relevant marketing, program, and administrative staff of both Energy Trust and the appropriate PMCs that are involved with the SW WA program. The meetings consist of program updates, topics for the monthly report, challenges, successes, and discussion of any trends the program is experiencing, such as lower- or higher-than-expected participation rates. Additionally, Energy Trust conducts biweekly meetings with each PMC program manager.

Initially, the PMC program manager for the commercial programs handled day-to-day communication and data requests from Energy Trust. As the program grew, however, it became necessary in the fall of 2010 to shift responsibility for day-to-day communication and data requests to another manager at the PMC to allow the program manager more time to engage customers and contractors in the field. Neither the Energy Trust contact nor the PMC contact indicated that this shift in responsibilities adversely affected program-related communications.

The staffs of the residential and commercial PMCs do not communicate through regularly scheduled, formal meetings, but each program refers potential leads to one another. For instance, if the commercial program manager is working with a contractor that does both commercial and residential work, the commercial program manager will help that contractor make connections with the residential program.

IMPLEMENTATION AND ADMINISTRATION

Commercial Program

Discussion with the PMC contact for the commercial program revealed that much of the program activity in that market was driven by personal outreach efforts by program staff, including door-to-door cold calling. Of the 34 commercial projects done in SW WA, all but two or three were

driven by door-to-door sales. This finding is consistent with the reports obtained in the 2010 process evaluation of the full Existing Buildings program,[1] which indicated a greater reliance on direct outreach to end-use customers than previously had been the case.

The PMC contact for the commercial programs reported that the program met its savings goals in large part because of the face-to-face interactions with customers and contractors. Conversely, trade allies and contractors are not responsible for a large part of projects or savings. Trade allies were responsible for only two to three projects, and even those projects required program staff to assist the customer and/or contractor with paperwork and questions about how to get the project approved by Energy Trust.

Residential Programs

The PMC contact for the residential programs reported that they were aware of potential barriers going into launching a program in SW WA. Such barriers included the small percentage of gas households in SW WA, the relatively young age of the housing stock, and overcoming the lack of awareness of Energy Trust by both WA-based contractors and customers.

The PMC adopted several strategies to overcome these obstacles, such as using the contractor lists developed by Clark County, Skamania County, and Klickitat Public Utility Districts (PUDs) to reach out to contractors in SW WA. By engaging contractors that "already bought into the concept [of energy efficiency programs]" PMC staff were able to recruit new Energy Trust trade allies from those lists. PMC staff also received a list of contractors from the Washington State Bureau of Labor and Industries, but reported they had very little luck recruiting trade allies from this list. "Calling down the utility list[s] was the most fruitful thing we did [in terms of recruiting trade allies]."

[1] *Process Evaluation – 2009 Existing Buildings Program* (2010). Prepared for Energy Trust of Oregon by Research Into Action, Inc. Available on the Energy Trust website: *http://energytrust.org/Existing_Buildings_2009-2010_Process_Evaluation_Final_Report.pdf.*

4 ANALYSES OF SECONDARY DATA AND PROGRAM DATABASE

This section presents the results of our secondary data analysis, drawing from U.S. census data, other online sources, and Energy Trust's *FastTrack* program database.

THE SOUTHWEST WASHINGTON RESIDENTIAL MARKET

Energy Trust had not served states outside of Oregon until this pilot project in Southwest Washington. To highlight characteristics of the SW WA market that may affect Energy Trust programs, we compared Clark County, the primary SW WA county being served by the Energy Trust pilot, with Multnomah County, Clark's nearest Oregon neighbor and the county representing the highest proportion of Energy Trust projects.

Clark and Multnomah County differ in a variety of characteristics. Clark County is about half the size of Multnomah County, has relatively more homeowners, fewer gas customers, and newer housing stock. In addition, Clark County has a higher unemployment rate and lower percentage of residents at the lowest income level (Table 4.1). Below, we consider the possible impacts of these factors.

Table 4.1: County Characteristics [1]

Characteristics	Multnomah County		Clark County	
	Number	Percent	Number	Percent
Households				
Total households	290,080	—	151,312	—
Tenure				
Own	164,750	57%	104,020	69%
Rent	125,330	43%	47,292	31%
Annual Income				
$0 to $19,999	56,207	19%	19,627	13%
$20,000 to $49,999	90,992	31%	44,072	29%
$50,000 to $74,999	55,259	19%	32,786	22%
$75,000 to $99,999	33,963	12%	21,917	14%
$100,000 to $149,999	32,231	11%	22,008	15%
$150,000 or more	21,428	7%	10,902	7%

Continued

Characteristics	Multnomah County		Clark County	
	Number	Percent	Number	Percent
Fuel Type				
Gas	143,761	50%	47,730	32%
Electric	112,644	39%	91,916	61%
Era of House Construction				
Before 1960	140,068	48%	20,378	13%
1960 to 1989	91,726	32%	61,931	41%
1990 or later	58,286	20%	69,003	46%
Unemployment Rate				
Unemployment	—	10.6% [2]	—	13.1% [3]

[1] Except where noted all data in this table is from the US Census Bureau's American Community Survey 2005-2009 Data. *http://www.census.gov/acs/www/*. Accessed on December 15, 2010.

[2] Oregon Employment Department, *Quality Information, Informed Choices*. Seasonally Adjusted Unemployment Rate. http://www.qualityinfo.org/olmisj/OlmisZine. Accessed on December 21, 2010.

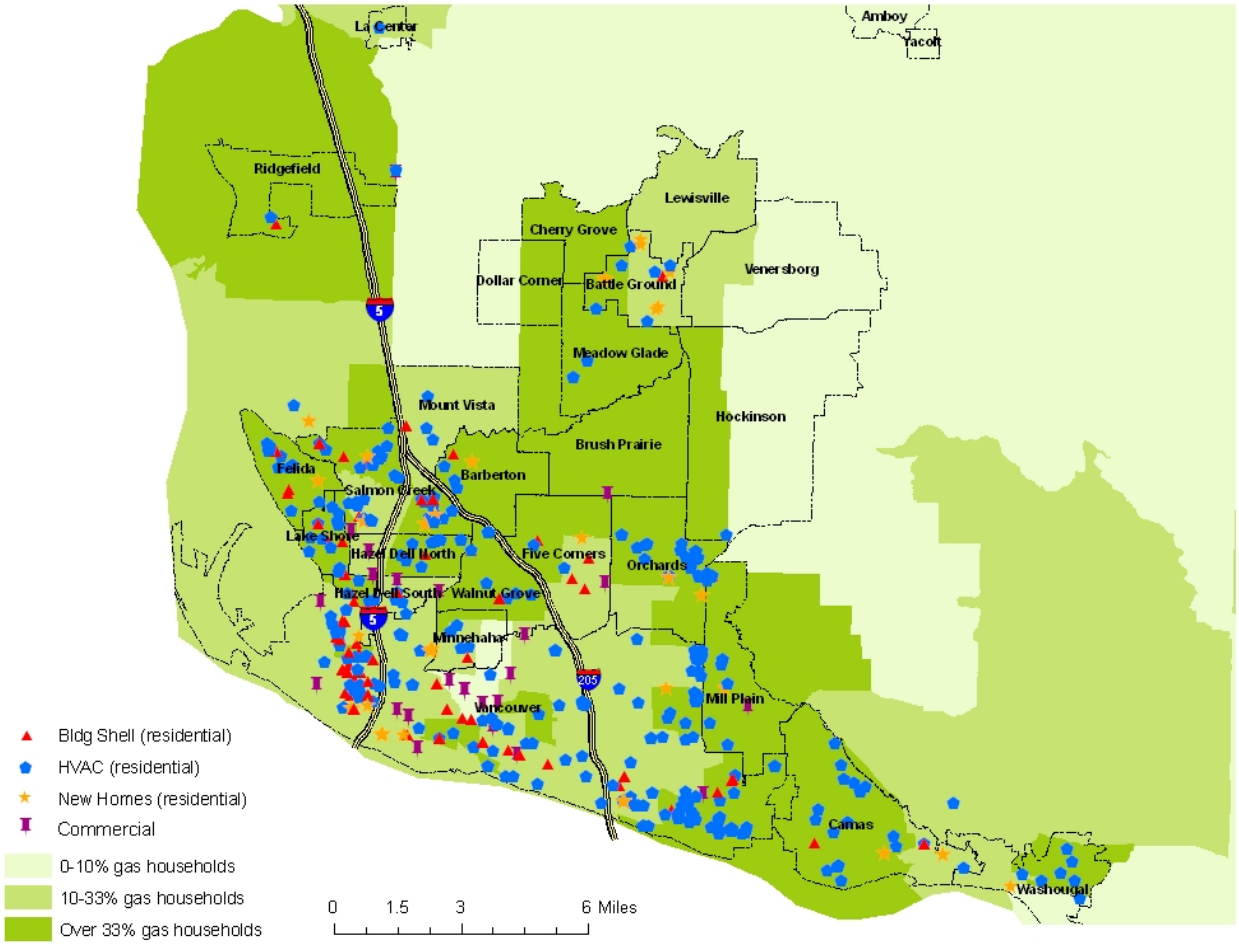
[3] State of Washington. Unemployment Rates by County. Data.Washington . *http://data.wa.gov/Economics/unemployment-rates-by-county/xf5e-wa7k*. Accessed on December 21, 2010

Fuel Type

As Table 4.1 indicates, one in three households in Clark County has natural gas. Thus, for every three people Energy Trust reaches through such mass advertising channels as TV and newspapers, only one person is eligible to participate in the program. By contrast, more than 80% of Oregon residents are eligible for Energy Trust programs and 100% of gas and electric customers are eligible in Multnomah County.

A map of Clark County households with gas service shows that gas customers in Clark County are concentrated in downtown Vancouver, along the west side of I-5, and close to the I-5 and I-205 connection (Figure 4.1). The highest concentrations of gas customers, as indicated by the darkest shading, are located along the eastern and northern boundaries of the city, including Camas, Orchards, and Brush Prairie. Concentrating marketing and outreach efforts in the areas with more gas households may therefore yield increased program participation.

Figure 4.1: Energy Trust Participants in Clark County, Washington



Note: We were unable to map about 10% of participant addresses due to insufficient address information, and we excluded all direct install measures completed by program management contractors CSG and PECI.

Age of Housing Stock

In addition to differences in number of gas households, Clark County also has a higher percentage of new housing compared to Multnomah County. Almost half of all homes in Clark County were built since 1990, compared to only 20% of homes in Multnomah County. At least one of the interviewed trade allies said that the energy efficiency needs are about the same for Oregon and SW WA housing stock, despite the age differences. However, the relative newness of homes in Clark County could create the perception among homeowners that their homes have limited energy efficiency opportunities.

Economic Factors

Economic differences also exist between Clark and Multnomah County, most notably in terms of percent of low-income households and unemployment. Thirteen percent of Clark County households earn less than $20,000 per year, compared to 19% in Multnomah County, and unemployment is 13.1%, compared to 10.6% in Multnomah County.

Assuming the percentage of two-income households in Clark County is similar to the national figure of 42%,[2] and assuming that the unemployment rate is independent of the number of income earners in a household, we can calculate the percentage of households in each county with no unemployed breadwinners, at least one unemployed breadwinner, at least one employed breadwinner, and all breadwinners unemployed. The results of these calculations are shown in Table 4.2.

Table 4.2: Estimated Household Employment Percentages for Clark and Multnomah Counties

Category	Clark County	Multnomah County
No unemployed breadwinner	82.1%	85.4%
At least one unemployed breadwinner	17.9%	14.6%
At least one employed breadwinner	91.7%	93.4%
All breadwinners unemployed	8.3%	6.6%

Home Ownership

In contrast to the potential impact of differences in fuel type, age of housing stock, and economic factors, the fact of a higher percentage of homeownership in Clark County than Multnomah County should create greater relative potential for residential program penetration in Clark County. We know from program staff reports and secondary sources that it is very difficult to get landlords to make energy efficiency improvements.[3]

Differences between the two counties in the percentage of renters living in detached single-family houses could potentially affect this difference, as improvements to such properties made by the owners would be done under Energy Trust's residential programs. A higher percentage of renters live in detached single-family houses in Clark County (29%) than in Multnomah County

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2 US Census Bureau (2001). "Historical Income Tables - Income Equality." Archived data displayed at: *http://en.wikipedia.org/wiki/Household_income_in_the_United_States#cite_note-US_Census_Bureau._.282001.29._Historical_Income_Tables_-_Income_Equality.-27.* Retrieved December 28, 2010.

3 Rounick, Gustav (2010). *Energy Efficiency in Multifamily Properties: Drivers and Policies*. Dept of Real Estate and Construction Management, Master of Science Thesis no. 500. *http://www.kth.se/polopoly_fs/1.57364!16.pdf*

(22%).[4] Applying these percentages to the percentages of renters and adding the products to the percentages of owners shows that 78% of households in Clark County and 66% of those in Multnomah County either own their home or live in a detached single-family rental. The 12% difference is the same as the difference in home ownership rates between the counties.

Potential Participation Base

The combination of relatively few gas households, a relatively young housing stock, and high unemployment in SW WA could limit the potential for participation in Energy Trust residential programs. A way to look at the potential impact of these variables is by examining the ratios, comparing Clark County to Multnomah County with respect to each variable. Note that the following analyses refer to estimates, some of which are based on assumptions (which are stated), and that they do not take into consideration possible interactions among the variables discussed or with other variables that are not discussed. Therefore, these analyses are meant to be suggestive, possibly to direct further inquiry, but are not meant to be conclusive and should be interpreted with caution.

Dividing the percentage of gas households in Clark County (32%) with the corresponding percentage in Multnomah County (50%) produces a ratio of .64. Absent any other differences between the two counties, we might then expect the Clark County participation rate to be about 64% of that of Multnomah County.

The ratio of percentage of older houses (pre-1990) in Clark County versus Multnomah County is 54% to 80%, or .68. To know exactly how this would affect the relative percentage of participating households, we would have to know exactly how the age of the house affects participation. An analysis of participation rates by age of household was outside the scope of this evaluation. However, previous research has found higher participation in residential energy efficiency programs by owners of older homes.[5] We can construct estimates of the effect under various assumptions of the relative participation rates of older and newer houses. With an overall program participation of 4%,[6] Table 4.3 shows what the participation rates would be for older and newer houses under three hypothetical situations – older homes participating at twice the rate as newer homes, a 50% higher rate, and a 25% higher rate.

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4 US Census Bureau. *American Fact Finder, American Community Survey, 2005-2009*. *www.census.gov.* Accessed on Jan. 5, 2011.

5 *Community-Based Social Marketing to Inform Homeowner Participation in California Energy-Efficiency Home Improvement Programs: Research Report and Recommendations*. Prepared for Build it Green by Action Research, Inc., July 26, 2010. Accessed at *http://www.builditgreen.org/_files/DevCom/Greenpost/CBSM_Report.pdf on February 2, 1011*.

6 Calculated from *FastTrack* data.

Table 4.3: Participation Rates for Older and Newer Houses, Based on Hypothetical Ratios

Hypothetical Ratio of Participation Rates for Old to New Houses	Resulting Participation Rate (Based on Overall 4% Rate)		Resulting Hypothetical Overall Participation Rate for Clark County
	Older Houses	Newer Houses	
2 : 1	4.4%	2.2%	3.4%
1.5 : 1	4.3%	2.9%	3.7%
1.25 : 1	4.2%	3.3%	3.8%

If the percentages shown in Table 4.3 are applied to the relative percentages of older and new houses in Clark County, the expected overall participation rate for gas households – again, absent other information – would range from about 3.4% to about 3.8%. Those rates would be about 85% to 95% of the Multnomah County participation rate. Note that, if the actual ratio of older and new home participation rates is outside the range shown in the table, the results would be different.

The ratio of percentage of households with no unemployed breadwinner in Clark County to the corresponding percentage in Multnomah County is 82% to 85%, or .96, while the ratio for households with at least one employed breadwinner is .98. Again, knowing how this ratio would affect the relative level of program participation between the two counties would require knowing how having one or more unemployed breadwinners affects participation. Any effort to estimate this effect in this report would entail speculation, but this may be a potential future research issue.

Finally, the ratio relating to the percentage owning a detached single-family household is 1.21. This one difference between the two counties would point to *greater* participation in Clark County than in Multnomah County, if no other factors were involved.

Again, we cannot determine what any summative or interactive effects of any of the above factors might be. In general, however, the above analyses suggest that the potential base for participation in Clark County may be lower than for Multnomah County, and so program goals and expectations should be set accordingly. This is not to say, however, that program participation cannot be expanded beyond the current levels, as the following section indicates.

Variability in Participation within Clark County

It is also possible to analyze, to some degree, the variability in participation rates within Clark County as a function of demographic factors. Figure 4.1, above, shows the location of Energy Trust participants in Clark County. Program participation falls heavily in the populated areas of Vancouver and Camas. Other areas have relatively high percentages of gas households, but relatively limited participation.

Distribution of participation is not simply a function of the number of gas households. This is seen most clearly in Table 4.4.

Table 4.4: Participation and Demographics by Area

City	Vancouver	Camas	Other High Gas[1]	Other	Total
Total therm savings	55,278	4,506	8,211	751	**68,746**
Percent of total therm savings	80%	7%	12%	1%	**100%**
Total number of measures	1,738	162	185	14	**2,099**
Percent of total measures	83%	8%	9%	1%	**100%**
Average therm savings per measure	**32**	**28**	**44**	**54**	**33**
Population	165,809	12,534	87,126	166,533	**432,002**
Median household income [2,3]	$41,618	$60,187	$52,376	$52,125	**$48,376**
Percent of households with gas	27%	55%	44%	30%	**32%**
Percent of total gas population [4]	34%	5%	29%	33%	**100%**
Ratio of percent savings to percent gas population	**2.36**	**1.31**	**0.41**	**0.03**	**1.00**

[1] Cities or towns with high percentage of gas households: Barberton, Battle Ground, Brush Prairie, Cherry Grove, Felida, Lake Shore, Meadow Glade, Mill Plain, Orchards, Ridgefield, Walnut Grove, and Washougal.

[2] Calculated as the average of the median household incomes for the cities and towns in this category, weighted by relative population.

[3] Mean income for the *Other* areas was interpolated from the median incomes of Vancouver, Camas, Other High Gas, and the Total. The average median income of Vancouver, Camas, Other High Gas, and Other, weighted by the relative populations, equals the median income for Clark County.

[4] The number of households with gas divided by the total number of Clark County households with gas.

The percentage of total residential program savings that Vancouver accounts for is more than twice its share of the total Clark County gas household population. Camas's share of savings is about one-third higher than its share of the gas household population. By contrast, other cities and towns with high percentages of gas households, together making up about one-fifth of the Clark County population and 29% of its gas household population, are underrepresented in the program. The share of program savings of these combined cities and towns represent is about two-fifths of their share of the gas households.

When the rest of Clark County is examined, the ratio is even lower. Although these are the areas with the lowest percentages of gas households, the average percentage of gas households in the outlying areas is about equal to that of Vancouver as is their combined population. Yet, together, they had about 1% of the program savings, even though they represent about one-third of all Clark County gas households.

Note that relative affluence appears to be unrelated to program success within a given area. The median household income for Vancouver is well below that of the other areas. The important variables appear to be proximity to Vancouver and, not surprisingly, the percentage of households with gas.

THE SOUTHWEST WASHINGTON COMMERCIAL MARKET

Based on the 2007 U.S. Economic Census, the distribution of businesses by type in Clark County is similar to that in Multnomah County (Table 4.5).

Table 4.5: County Business Characteristics

Business Type	Multnomah County		Clark County	
	Number	Percent	Number	Percent
Professional, scientific, and technical services	3,361	19%	1,070	17%
Retail trade	2,945	16%	1,036	17%
Health care and social assistance	2,601	14%	933	15%
Accommodation and food services	2,472	14%	701	11%
Other services (except public administration)	1,726	10%	635	10%
Administrative & support and waste management & remediation services	1,190	7%	565	9%
Real estate and rental & leasing	1,491	8%	509	8%
Manufacturing	1,153	6%	457	7%
Information	519	3%	157	3%
Arts, entertainment, and recreation	348	2%	125	2%
Educational services	231	1%	81	1%
Total	**18,037**	**100%**	**6,269**	**100%**

Data in this table are from the US Census Bureau's 2007 Economic Census Data. Accessed on January 21, 2011. *http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ECN&_submenuId=datasets_4&_lang=en&_ts=.*

Analysis of NW Natural account data shows there are 5,467 commercial accounts in Clark County, 84% of which are in Vancouver. This is consistent with Vancouver's 86% share of the total Clark County commercial therm usage in 2009. However, Vancouver's share of the total program-related therm savings was 66%, about three-quarters of what it would be if it were on par with total therm usage.

Note that this comparison is based on a relatively limited number of projects and installed measures (Vancouver had 46 of 51 measures installed through the program). Also, the above does not take into consideration the possible variation in the types and sizes of commercial businesses that may vary among localities within Clark County.

ANALYSES OF ENERGY TRUST *FASTTRACK* PROGRAM DATA

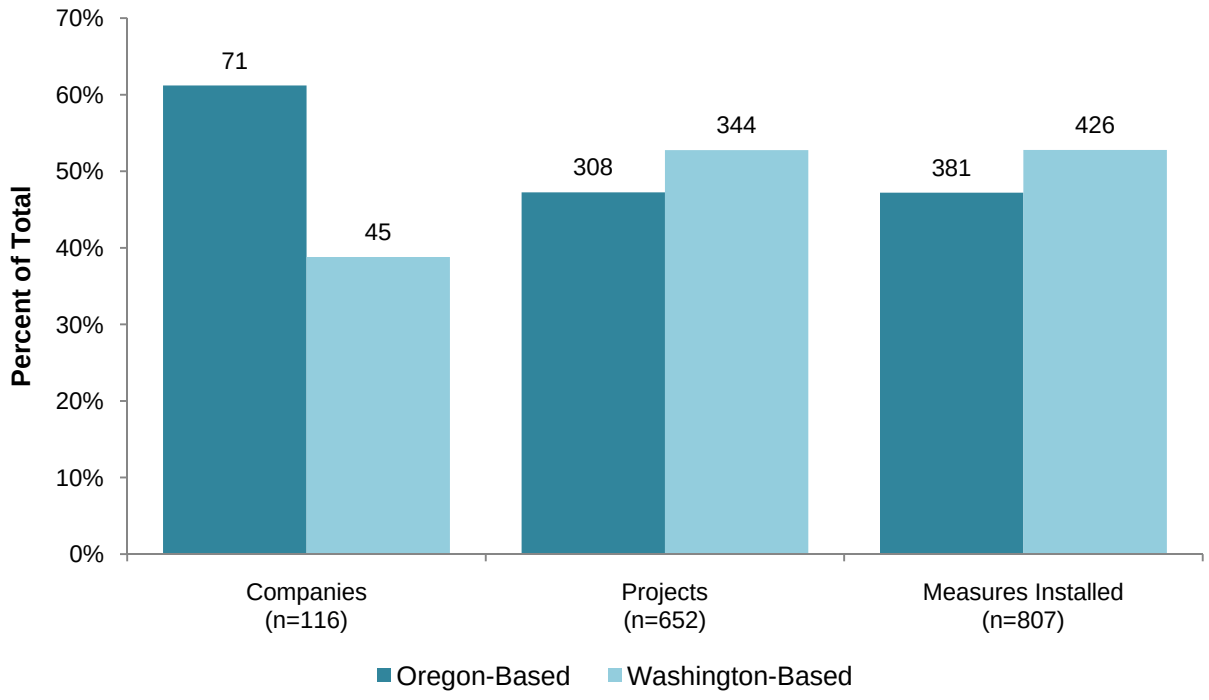
Characterization of Program Contractors

We also examined program records from Energy Trust's *FastTrack* database to develop a characterization of the contractors that installed measures under both the residential and commercial programs.

Residential Trends

In the first fifteen months of the program, 115 contractors from Oregon and Washington carried out 652 residential projects, installing 807 measures across SW WA that resulted in more than 62,000 therms saved.[7] More contractors were from Oregon than Washington – 61% of all contractors were Oregon-based – but Washington contractors installed slightly more projects and measures (Figure 4.2).

Figure 4.2: Trade Allies Completing Residential Energy Trust Projects



Note: Incentives provided for measures installed by the PMC are excluded from this analysis.

[7] These figures do not include 17 projects for which we were unable to identify a contractor's state. These projects accounted for 1,466 therms saved.

Considering only the contractors that installed measures in SW WA, those based in Washington installed nearly eight residential projects and ten measures each, on average; by contrast, their Oregon-based counterparts installed an average of five residential projects and about six measures each.

We characterized participating contractors listed in the program database based on the predominant types of projects undertaken. Contractors largely fell into one of three types:

- HVAC contractor
- Building shell contractor
- New home builder

HVAC contractors completed the bulk of the projects, installing more than half of all measures and savings (Table 4.6). The other contractor types installed fewer measures and gained proportionally less savings.

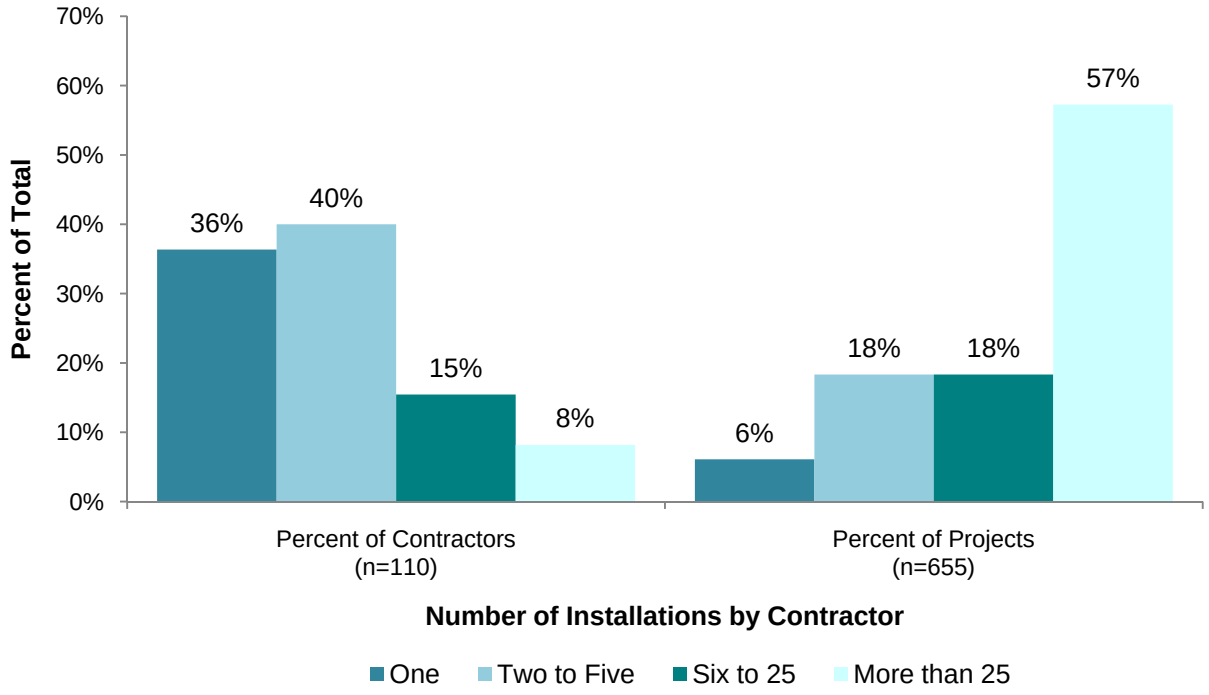
Table 4.6: Number of Residential Measures Installed and Therm Savings by Contractor Type

Contractor Type	Measures Installed		Therms Saved	
	Total	Percent	Total	Percent
HVAC	478	58%	29,030	46%
Building shell	211	25%	15,100	24%
New homes	112	14%	8,788	14%
Plumbing	22	3%	9,950	15%
Other	12	1%	417	1%
Total	**835**	**100%**	**62,925**	**100%**

Note: Totals exclude incentives provided by the PMC, but include projects for which no contractor was identified. These figures are slightly higher than the program savings goals because we were interested in all savings and measures that involved any contractors other than PMC staff.

As seen in Figure 4.3, the number of projects installed per contractor was highly skewed: 36% of the contractors installed only one project and about 40% installed 2 to 5 projects, but only 15% of contractors installed 6 to 25 projects and only 8% installed more than 25. However, the few contractors who did install multiple projects accounted for a disproportionate number of the total: while those who installed only one project accounted for 6% of all projects, those who installed more than 25 accounted for nearly three-fifths of the total.

Figure 4.3: Number of Installations per Contractor by Percent of Total



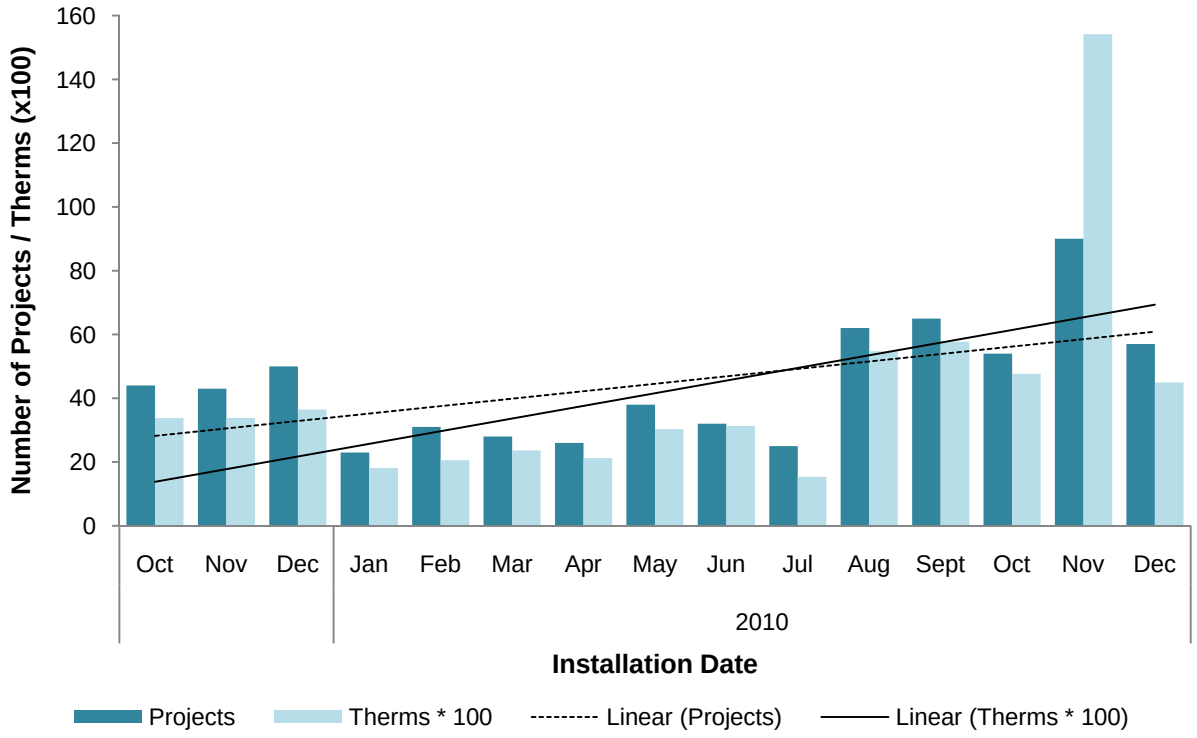
Program rollout in October 2009 coincided with the beginning of the heating season, the busy season for HVAC contractors. This may have affected 2009 program participation because HVAC contractors, which carried out 88% of all SW WA trade ally projects, may not have been fully aware of the program when it began and when the opportunity to sell the program was greatest. The PMC was aware of this fact:

- *"We would have been more successful if the program started in July and we could have gotten logistical and administrative details figured out and gotten word to contractors before heating season… that would have made a huge difference."*

To address this proposition, we examined the number of contractor-installed projects[8] and the number of measures ,and total therm savings resulting from those projects across the period from October 2009 through December 2010. As Figure 4.4 shows, this analysis supports the above proposition. In fact, the most active period for residential contractors doing retrofit projects was August through November 2010. Moreover, more than twice the fourth-quarter savings were realized in 2010, compared to 2009.

[8] That is, we excluded the appliance rebates process by the program implementer. We also excluded projects from the New Homes Program, as that program was not rolled out in SW WA until July 2010.

Figure 4.4: Contractor-Installed Residential Energy Trust Projects in SW WA in 2009 and 2010



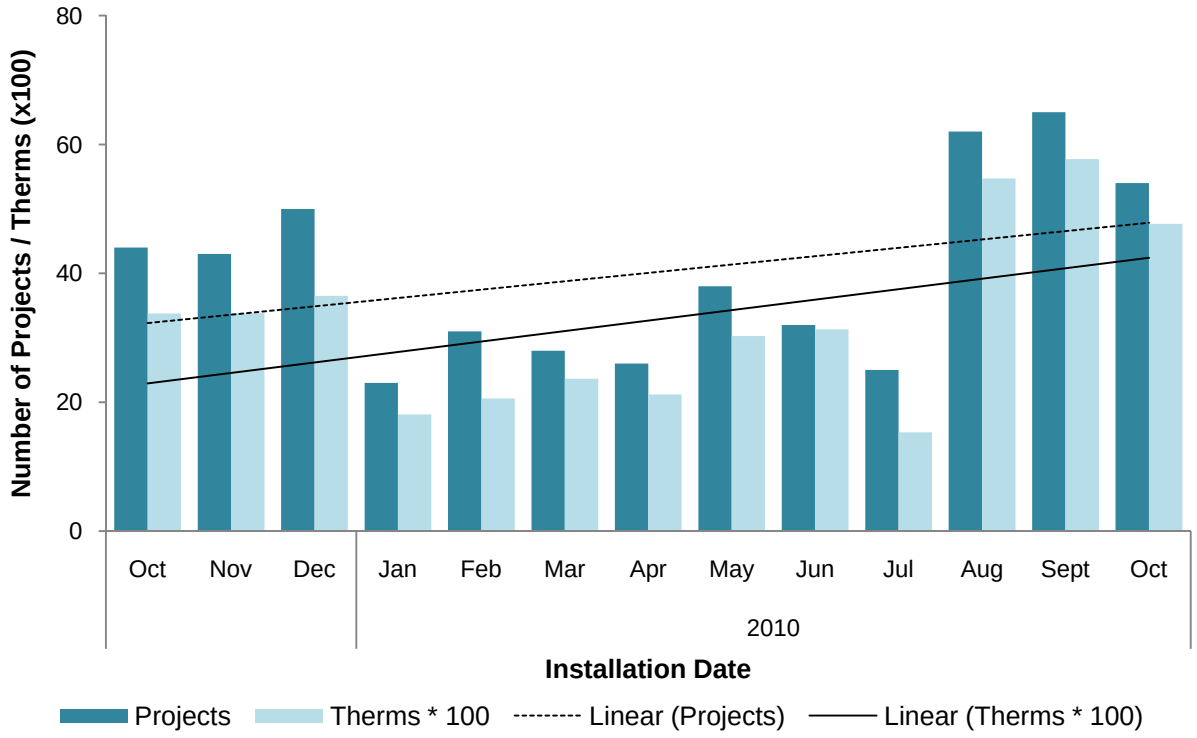
Note: Savings from direct install program management contractors are excluded from this analysis.

According to *FastTrack*, 25% of all contractor-installed projects for 2010 were installed in November, producing 36% of all therms savings for contractor-installed projects. With the large number of November installations, the data show a clear upward trend in savings and participation across the pilot period to date.

Our interviews with trade ally respondents suggest a possible interpretation for the large number of projects installed late in 2010. According to several trade allies, there was a great deal of residential energy efficiency work happening in the last quarter because the $1,500 federal tax credit expired on December 31, 2010. Customers were doing efficiency upgrades in order to receive the tax credit. One trade ally even refused to be interviewed in December because her workload was too high. She attributed her large workload to the expiring federal tax credit. The tax credit may have also driven Energy Trust program participation.

Nevertheless, Figure 4.5 shows that, even without the November projects, contractor-installed residential projects showed a linear increase from October 2009 to October 2010.

Figure 4.5: Contractor-Installed Residential Energy Trust Projects in SW WA in 2009 and 2010



Note: Savings from direct install program management contractors are excluded from this analysis.

Commercial Trends

In the first fifteen months of the program, at least 10 contractors[9] from Oregon and Washington carried out 32 commercial projects across SW WA, installing 51 measures that resulted in more than 92,000 therms saved. We characterized commercial contractors listed in the program database based on the predominant types of projects undertaken. Contractors largely fell into one of five types:

- HVAC contractor
- Building shell contractor
- Plumbing contractor
- Steam contractor
- Other

[9] *FastTrack* does not report contractor names for 36 of the 51 measures installed.

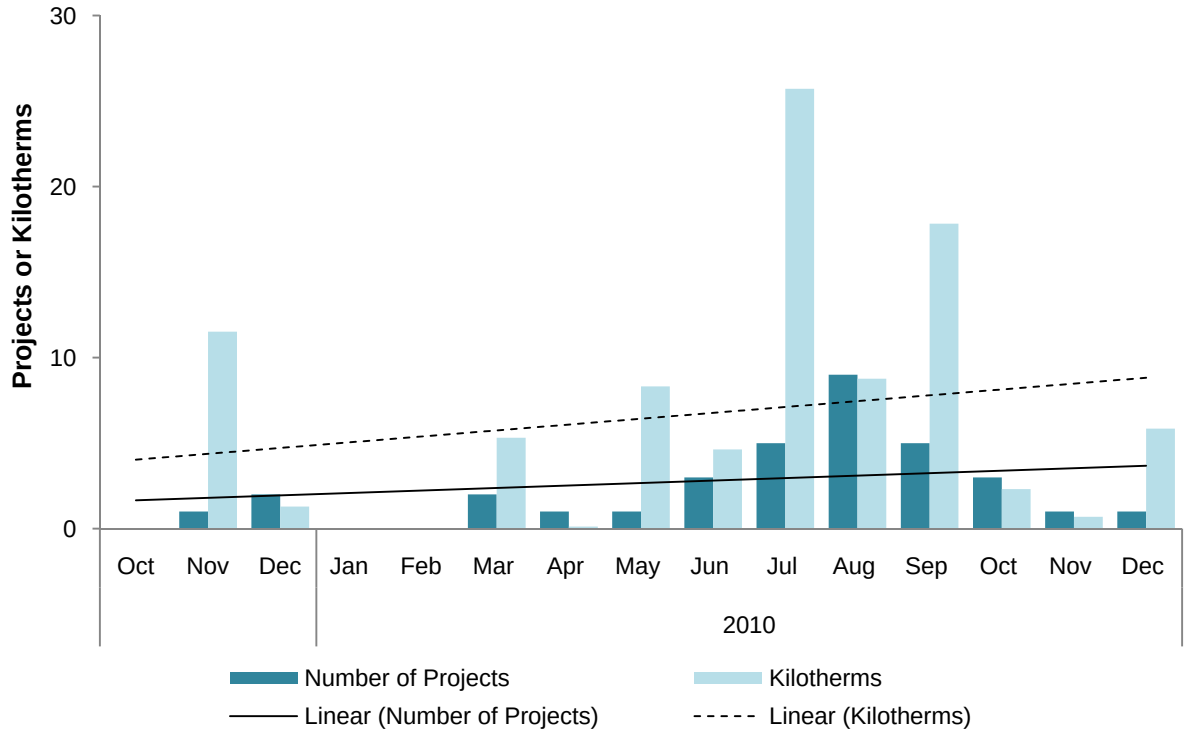
Building shell contractors completed one-third of all projects but their work resulted in almost half the savings (Table 4.7).

Table 4.7: Number of Commercial Measures Installed and Therms Savings by Contractor Type

Contractor Type	Measures Installed		Therms Saved	
	Total	Percent	Total	Percent
HVAC	19	37%	29,289	32%
Building shell	16	31%	45,671	49%
Plumbing	5	10%	10,749	12%
Steam	5	10%	3,403	4%
Other	6	12%	3,251	4%
TOTAL	**51**	**100%**	**92,263**	**100%**

The commercial program has seen an upward trend in projects and therms savings over the last 15 months (Figure 4.6).

Figure 4.6: Contractor-Installed Commercial Energy Trust Projects in SW WA in 2009 and 2010



Note: The number of therms saved was divided by 1,000 to allow projects and savings to be shown on the same scale.

Program participation and therm savings are somewhat sporadic in the commercial program. For instance, there were no projects submitted in January or February 2010, while over one-third of all commercial program savings were delivered in July 2010 from six projects.

Analysis of *FastTrack* data from the NW Natural program in SW WA shows upward trends in both program participation and therm savings. To explore why program participation is increasing and what can be done to further push program participation, we interviewed trade allies about their work in SW WA and asked them to identify any possible obstacles to program participation. We summarize these results in the next section, *Trade Ally Interviews and Participant Survey Data*.

5 TRADE ALLY INTERVIEWS AND PARTICIPANT SURVEY DATA

This section presents the results of the interviews we conducted with SW WA-based trade allies and the information garnered from program satisfaction and free-ridership surveys of SW WA program participants.

TRADE ALLY INTERVIEWS

Following a summary of call dispositions, the interview results are categorized by themes identified in the course of our data analysis.

Call Dispositions

As described above, we developed a list of 21 potential respondents. We first identified 15 contractors listed in program files as being active SW WA-based trade allies. In addition, PMC staff identified 9 contractors that they believed should be more active in that area. Three of the trade allies were on both lists. Of those 21 trade allies, 11 specialized in HVAC, 8 did building shell work, and the other 2 did specialized work in the commercial and industrial markets.

The final dispositions of all contact attempts by contractor type are presented in Table 5.1. Energy Trust tasked us with interviewing 10 trade allies and ultimately we completed 11 interviews. Two of the completed interviews were with SW WA firms that work solely on commercial projects.

Table 5.1: Disposition Report

Disposition	Total	
	Contacts	Percent
Eligible		
Completed	11	52%
Refused	1	5%
Quota met before reached	7	33%
Subtotal	**19**	**90%**
Ineligible or Unknown Eligibility		
Out of business in SW WA	1	5%
Disconnected number	1	5%
Subtotal	**2**	**10%**
Total	**21**	**100%**

We were unable to determine the eligibility of one potential respondent because the telephone number was disconnected, and we deemed another company ineligible because it recently stopped doing business in SW WA to concentrate its efforts in other areas of Washington.

Respondents by Type and Projects Completed

Four of the eleven interview respondents represented HVAC firms that completed 52 projects. Five represented building shell contractors (insulation installation, building performance contractor, windows installation) that completed 18 projects (Table 5.2). The other two contractors did specialized commercial and industrial work. The distribution of measures installed by the various contractor types is consistent with what we found in the *FastTrack* database.

Table 5.2: Respondents by Completed Energy Trust Jobs

Contractor Type	Contractors		Completed Projects	
	Number	Percent	Number	Percent
Building Shell	5	45%	18	25%
HVAC	4	36%	52	75%
Other (C&I only)	2	18%	Unknown	Unknown
Total	**11**	**100%**	**70**	**100%**

Seven of the elevewn respondents stated that over 80% of their work was residential. One trade ally indicated his company did about 70% residential and 30% commercial work, and another estimated his company did about 50% residential and 50% commercial work.[10] The remaining two respondents were contractors catering exclusively to commercial/industrial/institutional customers.

SW WA trade allies suggested they primarily serve Washington and do only occasional projects in Oregon. Of the four respondents that estimated how much work they do in each state, all stated they do at least 70% of their work in Washington, with one suggesting 100% of his work is conducted in Washington. The work that these contractors do in Oregon tends to come from referrals, not because they market or advertise in Oregon.

[10] This respondent, however, was able to answer only questions about the residential side of the business because that was the area of his greatest familiarity.

Contractor Experience with Energy Trust

We asked the interviewed contractors about their awareness of Energy Trust and its programs, their interactions with Energy Trust, including how they obtain information about Energy Trust programs, and their satisfaction with Energy Trust.

Awareness of Energy Trust

All of the eleven contractors we spoke with were familiar with Energy Trust and its programs in SW WA. However, five of those contractors said they had worked with Energy Trust for less than one year, two of whom indicated they became familiar with the Energy Trust programs only in the last two to three months. This suggests that at least some SW WA trade allies may not have been selling the program for its entire duration.

Other evidence suggests that contractor awareness of Energy Trust programs is not a current problem. Contacts from the program implementation contractor reported that they have not recently come in contact with any contractor or trade ally that was not aware that Energy Trust was operating in SW WA for gas customers.

We examined whether duration of experience with Energy Trust was related to any other interview responses. With such a small sample, it is risky to draw conclusions about subgroup differences. In fact, we did not observe any large or striking differences in responses related to duration of experience.

Interactions with Program or Implementer Staff

When we asked how they obtained information about Energy Trust and its programs, the interviewed contractors identified a range of sources. Eight of the eleven respondents referred to personal contact with program or implementer staff. Of those eight respondents, two were unable to name the program contact. One other person later named a program contact, but did not indicate that person was a source of program information.

Five respondents mentioned the Energy Trust website, and four each mentioned webinars and emails or newsletters. Three respondents reported that they had attended Energy Trust roundtables or trade ally meetings; two others said that they had been invited to roundtables, but had been too busy to attend.

The eight contractors who reported obtaining information through personal contact were equally split between those with less than one year of experience with Energy Trust and those with more experience. Not surprisingly, only one of the five with less than one year of experience reported obtaining information via webinars, compared to three of the six more experienced contractors. Overall, however, the two groups did not appear to differ in the number of sources mentioned.

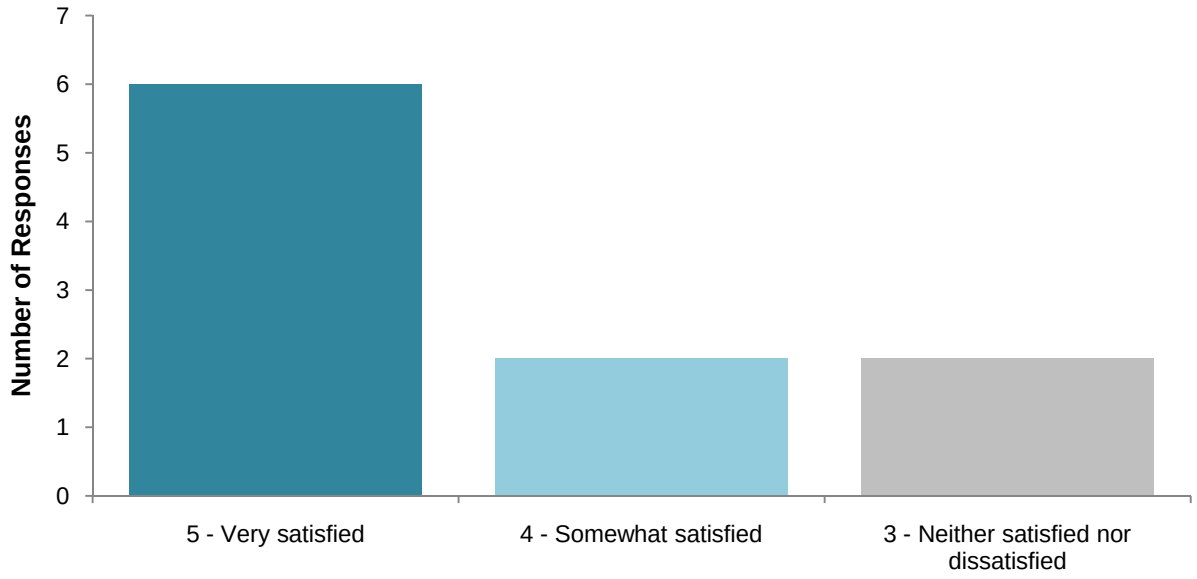
Nine of the eleven contractors said they had sufficient information to inform SW WA customers about Energy Trust incentives. Of the other two, one did not indicate a specific need for more

information – that respondent indicated his company was on a learning curve: "The more we do, the more comfortable we will become with the process and the options." The other respondent said it would be helpful to have more brochures or other tools to use in sales calls – that opinion was shared by one of the contractors who said that he otherwise had the information needed.

Satisfaction with Energy Trust

Respondents were generally satisfied with their program involvement and did not indicate any substantial obstacles to program involvement in terms of program processes and experience with Energy Trust. On a scale of one-to-five, with "5" being very satisfied, respondents were generally satisfied with Energy Trust. No respondent provided a rating of less than "3" (Figure 5.1).

Figure 5.1: Trade Ally Satisfaction with Energy Trust



Both respondents that rated Energy Trust as a "3" on the satisfaction scale did so primarily because of their dissatisfaction with project inspections. One trade ally wants to be present for inspections to better understand any problems that may arise. The other respondent claimed to like the program, but was dissatisfied with an inspection of his subcontractor's duct sealing. The inspector claimed there should have been mastic applied to all duct joints when the respondent thought the inspector should have conducted a duct-blaster test to determine the quality of the duct-sealing job. This respondent was not going to offer duct-sealing services in the future because of the complication he had with this one duct-sealing inspection.

Two respondents specifically mentioned issues related to Energy Trust paperwork and billings. One commercial trade ally noted a billing problem between a customer and Energy Trust that took almost six months to resolve, and a residential trade ally found the Energy Trust paperwork confusing to navigate. However, the commercial respondent still claimed to be very satisfied with Energy Trust overall, and the residential respondent believed some of his paperwork problems pertained to his lack of familiarity with the program and expected future projects to go smoother.

Contractor Activity

We asked contractors several questions to gain an understanding of how actively they promote energy efficiency among their SW WA customers. We asked about their promotion of energy efficiency in general to SW WA customers and of Energy Trust incentives and federal tax credits in particular, as well as their awareness and promotion of Clark County PUD incentives. Responses indicated that these contractors largely had a high degree of awareness of available programs and considered themselves active in promoting energy efficiency.

Promotion of Energy Efficiency

We asked the contractors to indicate, using a five-point scale from *Never* to *Always*, how frequently they try to sell the most energy-efficient system or equipment to their SW WA gas customers. All eleven contractors said that they always try to sell the most energy-efficient system or equipment to their SW WA gas customers. However, five of these contractors provide building shell improvement services, such as insulation and home energy audits, which are inherently energy efficiency services.

When we asked what they did to promote greater use of energy-efficient equipment or renewable technologies by SW WA customers, seven mentioned specific types of energy-efficient equipment – high-efficiency furnaces or heat pumps (four responses), shell measures (three responses), and high-efficiency or tankless water heaters (two responses). Three contractors mentioned the types of promotion they carried out, including ads in phonebooks and newspapers, mailers, and appearances at the annual *Clark County Home and Garden Show*, builder promotions, real estate groups, and senior groups. Notably, one contractor in particular sent a direct mailing to 300 recipients, which resulted in two to three jobs. That contractor plans to market the Home Performance Program in both Oregon and Washington.

Inclusion of Energy Trust Incentives and Federal Tax Credits

Somewhat fewer of the contractors – eight of eleven – said they always include Energy Trust incentives in their sales pitch to SW WA customers. All of these eight contractors were among those who said they had sufficient information to inform their SW WA customers about Energy Trust incentives. On the five-point scale, one contractor each gave responses of “2” and “3” and one did not give a response. The latter said his company was “brand new” to the program (the

implication being that they had not yet included Energy Trust incentives). Of the other two, one indicated that his company tells clients about the incentives, but that business was slow.

Finally, seven of the eleven contractors said they always include federal tax credits in their sales pitch. One other contractor said he does not have to push the tax credit because awareness is already high. One contractor (who never includes federal tax credits in their promotion of the program) was under the impression that the federal tax credits were no longer available. Two contractors did not respond to this question.

Awareness and Promotion of Clark County PUD Incentives

Ten of the eleven interviewed contractors were aware of Clark County PUD incentives. Of those ten, seven described actively promoting those incentives. Four specifically said they were listed as trade allies and three others simply said they tell customers about program incentives. One said that his company had sent a direct mailing to potential customers when it had become an approved Clark County PUD contractor.

Of the three contractors who did not describe specific promotion of Clark County incentives, two were either currently involved in Clark County's Performance Tested Comfort Systems (PTCS) program (offered through the Bonneville Power Administration) or were working toward PTCS certification. Those two contractors' comments did not suggest awareness of any Clark County PUD programs other than PTCS. One contractor said they were not on the list of approved contractors because "they want some extra insurance we don't have."

Experience with Energy Trust Incentive Applications

All but one of the interviewed contractors said they had done at least one SW WA project for which an application was submitted for an Energy Trust incentive. All ten of those contractors had assisted in completing the application.

Nine contractors reported having had some difficulty with program paperwork or other application process issues for SW WA customers. Some comments were similar to those commonly reported for similar programs, such as that the paperwork could be "burdensome" or "cumbersome." Other comments were more specific, including problems with (one comment each):

- Which application to use
- Clarity on what qualifies for an incentive
- Inability to separate the price of two pieces of equipment on the same form
- Inability of a customer to find the correct incentive amount on the form
- Duct sealing specifications that are different from what the contractor is used to

➡ Slow payment of the incentive

None of the contractors indicated that any of the above was a serious obstacle to program success.

Five of the contractors reported that they had at some point contacted program staff for assistance with applications, four of whom said they had received the assistance they asked for. One contractor had a question about financing and had not yet received a response, but did not indicate that this was a problem.

Of the interviewed contractors who had completed Energy Trust applications, none indicated there were any substantive differences between the Oregon and Washington versions of the application forms, suggesting that the level of difficulty in completing application forms would be similar in both areas.

Experience with SW WA Customers

Customer Attitudes about Energy Efficiency

The scope of this project did not include directly assessing Energy Trust SW WA program participants' attitudes toward energy efficiency. To gain an understanding of contractors' perceptions of customer attitudes, we asked the respondents which of four statements described the SW WA gas customers that had applied for Energy Trust incentives. Table 5.3 shows their responses.

Table 5.3: Perceptions of SW WA Gas Customers' Interest in Energy Efficiency (Multiple Responses Allowed)

Statement	Responses
Customers are receptive to energy efficiency projects once they learn about it	9
Customers were unaware of energy efficiency incentives for gas projects prior to the project	4
Customers were price conscious and only wanted the cheapest equipment	1
Customers were uninterested in energy efficiency incentives for gas projects prior to the project	0

Nine of the eleven contractors indicated that their customers were receptive to energy efficiency projects, but four said that customers were unaware that incentives were available before they undertook the project. In open-ended comments, all eleven respondents indicated their SW WA customers are largely unaware of the energy efficiency programs available to them. Two respondents suggested that about half of their customers did not know they qualified for incentives, although one of those respondents did think customers were slowly becoming more aware of available programs. Another respondent suggested that customers were largely aware of the federal tax credits available, but were mostly unaware of the incentives from Energy Trust.

Additionally, four respondents suggested that even if SW WA customers heard of Energy Trust of Oregon, they think the program only applies to Oregon because of the name. Only one reported that customers only wanted the cheapest equipment and none reported lack of customer interest.

Customer Interests

We also asked contractors how the Energy Trust projects they had done for SW WA customers differed from those they had done for Oregon customers. Two contractors noted that window replacements are more expensive in Oregon than in Washington – one of those stated that for that reason, SW WA customers are more interested in windows, while the other indicated that customers are interested in the same thing in both states. One other contractor said that there were fewer opportunities, overall, in Washington than in Oregon. No other differences were noted.

Other Potential Obstacles to Program Participation

In response to open-ended questions, only one contractor identified any potential reasons for slow residential program participation beyond those mentioned above. One – the desire to conserve money in the current poor economy – has been a commonly reported obstacle in recent evaluations. The contractor also believed that two other factors – relatively mild weather and a recent reduction in gas prices – have reduced customers' perceived need for weatherization and related energy savings.

Comments from one respondent suggested that some local government agencies' lack of experience with Energy Trust incentives may make it difficult to carry out the interdepartmental coordination necessary to implement large-scale projects. That contractor's experience with Oregon communities showed that their longer experience with Energy Trust better enabled them to implement similar projects. Although PMC staff for the commercial sector programs indicated that those programs were meeting their savings goals, this contractor's observations may suggest that Energy Trust could possibly increase savings further through more proactive involvement with local governments in SW WA.

Contractors' Suggestions for Program Improvement

Throughout the interviews, respondents provided suggestions for how Energy Trust could improve program participation among their customers. Results are presented here.

As mentioned previously, all trade allies indicated that customer awareness of energy efficiency incentive programs in SW WA is low. According to two trade allies, approximately half of gas customers were unaware that they qualify for Energy Trust incentives. Trade ally respondents suggested a variety of ways to overcome that lack of awareness (Table 5.4).

Table 5.4: Suggestions from Trade Allies to Improve Customer Awareness of Program

Suggestions for Increasing Customer Awareness	Responses
Reach out to SW WA organizations	7
Coordinate efforts more closely with other utilities	5
Focus Energy Trust advertising in neighborhoods with the largest natural gas use	4
Drop "of Oregon" from the Energy Trust name	4
Increase traditional advertising (TV, newspapers)	3
Provide resources and tools to trade allies	3
Provide more information about project financing options	3
Provide bill inserts about program in NW natural bills	2
Provide coop assistance specific to marketing Energy Trust in SW WA	1
Have program staff visit small town newspapers and get an article in the paper	1
Target landlords	1
Increase incentive amounts	1

Some of the suggestions provided are self-explanatory such as dropping the "of Oregon" from the Energy Trust name so as not to confuse SW WA residents. However, other suggestions require more information.

For instance, seven respondents suggested specific organizations that Energy Trust staff should reach out to in SW WA to help promote the program. The list of organizations suggested is as follows.

- Chambers of Commerce (White Salmon, North Bonneville, Vancouver)
- Lower Columbia Alliance for Living Sustainability (LOCALS)
- Clark County Heating and Cooling Association
- Clark County Builders Association (three mentions)
- Clark County Contractors Board
- Columbia River Economic Development Council (CREDC)
- Technical Association of the Pulp and Paper Industry (TAPPI) – Commercial only

Five respondents indicated working more closely with the Clark PUD and NW Natural. One of those respondents thought it would be helpful if Clark PUD incentives and Energy Trust incentives were displayed in one place so SW WA customers could see all available incentives, regardless of whether they are electric or gas customers. Another respondent indicated that incentive programs from Clark PUD, Clark County, and Energy Trust have helped expand his

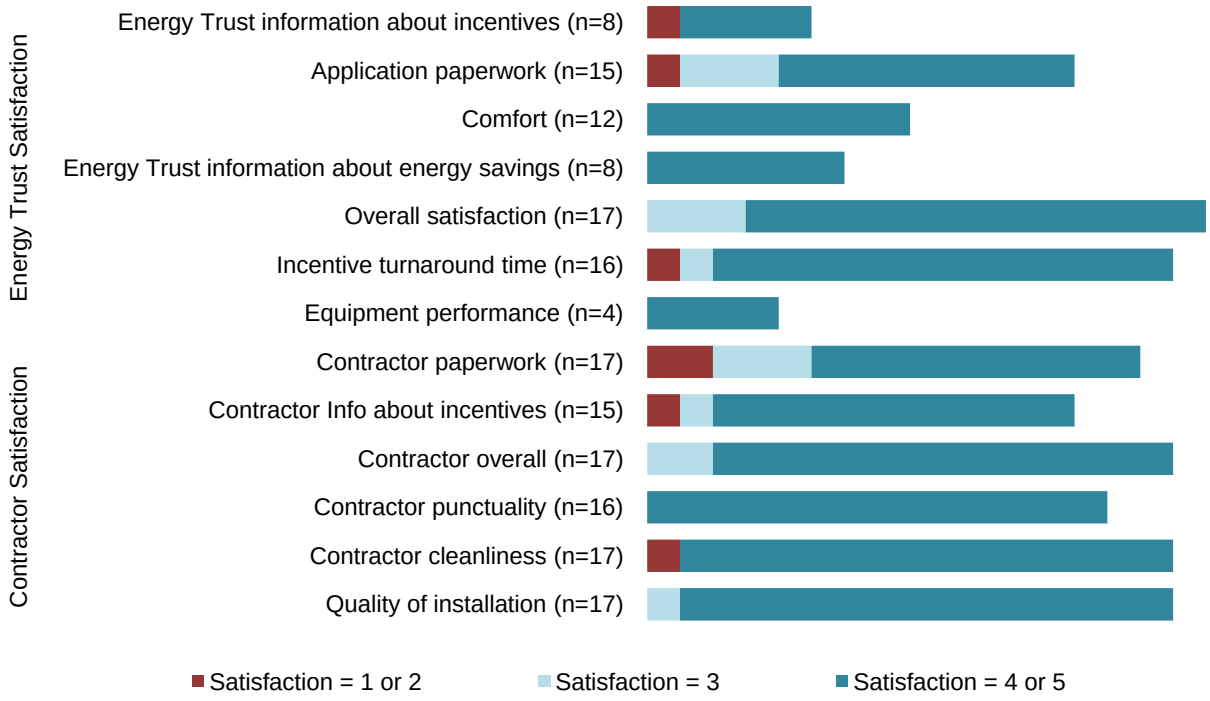
business. This respondent was under the impression that Clark PUD efficiency programs might be eliminated soon, which would adversely affect his business. A third respondent thought that combining Energy Trust and Clark PUD incentives could synergistically increase participation. This respondent believed that combining programs would create more exposure for efficiency in general in SW WA, leading to more projects.

Four trade allies suggested Energy Trust should identify neighborhoods with the highest percentage of gas households and conduct local advertising in those neighborhoods. One of these respondents suggested flyers and placards in stores adjacent to these neighborhoods, and another respondent thought focusing advertising in downtown Vancouver would help increase program uptake.

PROGRAM PARTICIPANT SURVEY

NW Natural customers were asked about their satisfaction with Energy Trust and their contractors in brief customer feedback telephone surveys conducted within six weeks after project completion. Survey respondents were asked to rate their satisfaction about things such as the paperwork process, quality of the installation, and information they received from Energy Trust. Results from 17 survey contacts made between June 2010 and September 2010 are shown in Figure 5.2.

Figure 5.2: Customer Satisfaction with Energy Trust and Contractors



Results show generally good program satisfaction as defined by a rating of '4' or '5' on a five-point satisfaction scale. Respondents were most satisfied with equipment performance, followed by quality of installation, contractor cleanliness, incentive turnaround time, and contractor punctuality. For several items, a relatively large percentage of respondents did not give a satisfaction rating. For some cases – such as Energy Trust information about incentives and about energy savings – this appeared to be largely because of confusion about the question's meaning. In the case of home comfort after the equipment was installed, it is possible that the equipment was too new for some respondents to rate the comfort. When the *Don't Know* responses are excluded from the denominator for these items, satisfaction levels increase to 80%, 100%, and 89%, respectively. Respondents were least satisfied with the application paperwork and the contractor's completion of paperwork.

6 CONCLUSIONS AND RECOMMENDATIONS

Over the first fifteen months of the program, both the commercial and residential programs achieved their savings goals. However, we found opportunities for the program to increase its reach in SW WA.

Program penetration was particularly low, relative to the share of gas households, in the least densely populated areas of Clark County, despite a greater relative affluence in those areas and a total gas household base equal to that of Vancouver. Interviewed trade allies showed high levels of program awareness, reported active promotion of energy efficiency, and cited no major obstacles to program penetration other than low customer awareness of Energy Trust programs. However, five of the eleven trade allies we spoke with had been aware of Energy Trust for less than a year.

Commercial program data indicate the pilot has expanded its reach since its inception. Interviews with program staff and commercial trade allies suggest the program is not facing any noticeable obstacles. The two commercial trade allies we interviewed report being satisfied with the program and interested in selling it to future customers in SW WA. Moreover, the implementation contractor has reorganized staffing assignments to allow program staff more time to perform outreach to businesses in 2011 than was possible in 2010.

Our findings suggest the following conclusions and recommendations for future program directions.

- **Conclusion:** Even though the residential programs met savings goals, perceptions that Energy Trust programs are for Oregon residents only and that the relatively newer housing stock is already energy-efficient may have kept the program from exceeding goals.
  - **Recommendation:** Create Washington-specific marketing materials to educate consumers that the program is available to residents of Southwest Washington, as well as Oregon.
  - **Recommendation:** Adapt marketing messages to educate consumers that newer housing stock is not necessarily energy-efficient.
  - **Recommendation:** Expand coordination of marketing efforts with Clark County PUD.
- **Conclusion:** Program participation in the least densely populated, but relatively affluent, parts of Clark County is low relative to those areas' share of gas households. Although it is likely that much of the housing stock in these areas is new, the ratio of very new to older housing stock may not entirely explain the relatively low program participation.

Recent regionally conducted research suggests that targeting energy efficiency messages to the various residential market segments could improve program uptake[11] and that affluent individuals with pro-conservation attitudes show higher rates of participation in energy efficiency programs, relative to awareness levels, than do other groups.[12]

- **Recommendation:** Investigate the feasibility of carrying out targeted marketing activities in low participation areas and of seeking earned media about the Energy Trust program in news outlets that serve those areas.
- **Recommendation:** Identify and recruit trade allies that serve under represented areas and work with them to identify opportunities for increased participation among their residential customers.

➡ **Conclusion:** Washington-based trade allies are more successful than Oregon-based trade allies at installing projects in Southwest Washington. This may simply reflect their greater proximity to potential customers, but it may also indicate a better understanding by those trade allies of the Southwest Washington market, greater customer trust in local contractors, or some other factors.

- **Recommendation:** The program implementer should expand its work with Washington-based trade allies to promote greater penetration in that market. Energy Trust may wish to carry out additional research to investigate any possible advantages that Washington-based trade allies enjoy that may provide useful information to Oregon-based trade allies wishing to do business in that area.

➡ **Conclusion:** Building shell measures appear to be under-represented in the projects undertaken.

- **Recommendation:** Direct resources to assisting building shell contractors to promote their services. Educate HVAC contractors to promote duct sealing, air sealing, insulation, and other building performance measures.

➡ **Conclusion:** More SW WA-based contractors are needed to promote the residential program.

- **Recommendation:** Recruit and train more Washington-based contractors, particularly in the residential market.
- **Recommendation:** Provide additional training on Energy Trust paperwork to new Washington-based contractors to ensure their first experience with the program is positive.

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11 Thompson, K. (2010). "BPA NW Residential Segmentation." Presented at Efficiency Connections Northwest, Seattle, Washington, December 2, 2010.

12 Hopkins, W. (2010). "Residential Market Segmentation." Presented at Efficiency Connections Northwest, Seattle, Washington, December 2, 2010.

➡ **Conclusion:** Trade allies report being confused by paperwork, particularly during their first application.

- **Recommendation:** Train any new contractors in SW WA-specific paperwork to limit any sense of confusion by contractors.

A APPENDIX: INTERVIEW GUIDES

INTERVIEW GUIDE FOR PROGRAM IMPLEMENTATION STAFF

Name _____

Organization _____

Title _____

Interviewer _____

Date _____

Scheduling Script

Hi, this is _____ from Research Into Action. As you probably know, Energy Trust hired us to evaluate the Northwest Natural Gas program in SW WA. As part of this evaluation, we're speaking to program staff to get a deeper understanding of how the program currently works.

This interview should take about 45-60 minutes. Please suggest a time we can speak.

Interview Script

1. To begin, what are your title and role with the Energy Trust / NW Natural SW WA program?

Okay. Before we get into details about program activities in SW WA, I have just a few questions about communication.

Communications

2. First, I'd like to get a description of program communications within CSG/LM relating to program activities in NW Natural WA territory:

    a. Who else besides you is involved with the NW Natural – SW WA program at CSG/LM?

    b. What have you talked about relating to program activity in NW Natural WA territory?

    c. Is communication among those persons adequate? If not, how not?

3. How about communications with Energy Trust:

    a. Do you communicate directly with anyone at Energy Trust regarding NW Natural SW WA programs? If so, who?

    b. What have you talked about relating to program activity in NW Natural territory?

    c. Is communication adequate between you, your organization, and Energy Trust?

Program

4. How do the Energy Trust programs offered in WA differ from those offered in OR? [Probe for differences across the range of residential or commercial programs that the PMC implements for Energy Trust]

    a. What effect do you thing those differences have on uptake in WA?

5. Please explain how program expansion into Washington was communicated to trade allies.

6. How did you market the program to trade allies that work in SW WA?

    a. How did this differ, if at all, from the way you market the program in other parts of Energy Trust territory?

    b. Was there a concerted effort to reach WA-based trade allies?

        i. If so, who were they?

        ii. If not, why not?

    c. Are there any SW WA-based trade allies you would like to see participate?

        i. Can you please name 3-4 allies you would like to see participate?

        ii. Why would you like to see these allies participate?

    d. How about OR-based trade allies that do a lot of work in WA – did you attempt to identify and reach them?

        i. If so, who were they?

        ii. If not, why not?

    e. Other than the above, what TAs have you focused your outreach on?

    f. Who did you contact at the trade allies? (Owners, managers, others)

    g. What resources and/or materials did you provide to trade allies? (Can you please send me copies of any documents you have?)

h. Were there any TAs that you wanted to work on the program that did not or seemed not to be reaching their potential? If so, have you asked them why they are not participating or not making EE sales? What did they say?

7. When planning to market the program in SW WA how did you decide on what approach to take?

   a. Was it based on your experience marketing the program in Oregon?

   b. In your experience, what has been the best way to market a new program in a new region?

   c. Does this vary by segment (residential, commercial, multifamily)? How?

8. Are you collaborating with Clark County PUD? How is that working out? What could improve?

9. Does your amount of reliance on trade allies to market the program differ by program? If so, how?

10. Are trade allies doing a better job of marketing some programs than others? Explain.

11. In your view, is there anything you need from Energy Trust that would help you to market the program more effectively within your market segments? What would that be? Please provide examples.

12. What kinds of feedback did you receive from trade allies that received your marketing materials?

    a. Positive or negative?

13. What feedback have you received from trade allies that have participated in the program?

    a. Are they telling you their customers are not interested?

    b. Are they actively promoting the program? If not, why not?

14. What are your TA contacts telling you about what it takes to get a business in this segment interested in the program? What does and doesn't appeal to them about the program?

15. Are there any specific Energy Trust trade allies that you think should be particularly active in promoting Energy Trust programs in SW WA? Which ones?

16. Are there trade associations or other groups you think it would be helpful to partner with to promote this program in SW WA?

    a. Have you reached out to these organizations? How? What was the response?

17. What tools or resources do you think would be useful to expand the program in Washington?

    a. What information do you need to encourage uptake?

CSG Only

18. We understand that ~240 home energy reviews have been done in SW WA.

    a. What kind of feedback, if any, have you gotten from the homeowners through the staffing performing the reviews?

    b. Are there significant savings to be taken at these homes?

    c. How does the rate of program participation after an HER (20 of 240) compare to Energy Trust Oregon service territory?

I would like to ask two wrap-up questions.

19. Why do you think program uptake is lower than anticipated in SW WA?

    a. Were certain assumptions such as housing age not considered?

    b. Is the branding of the program wrong (Energy Trust of Oregon makes potential customers think program is not relevant to Washington)

    c. Something else?

20. What should we ask trade allies serving the SW WA market in order to better understand why program uptake has been lower than anticipated?

That is all my questions. Thank you for your time.

INTERVIEW GUIDE FOR TRADE ALLIES

Respondent Information

Name _____

Organization _____

Segment _____

Interviewer _____

Date _____

Services offered to residential and/or non-residential customers in SW WA (from list)

Residential	*Nonresidential*
() Insulation	() Insulation
() HVAC	() HVAC
() Windows	() Windows
() General construction/remodeling	() General construction/remodeling
() Other – specify: ___	() Other – specify: ___

Identifying Appropriate Contact and Scheduling Interview

Hi, my name is __. I'm calling on behalf of Energy Trust of Oregon, a nonprofit organization that uses funds from utilities such as Northwest Natural Gas to support investments in energy efficiency and renewable energy. Energy Trust has hired my company to contact their main trade allies that work in Southwest Washington.

Can you tell me who would be the most appropriate person to speak to about at your organization?

_____

What would be a good time to contact that person? _____

WHEN THE APPROPRIATE CONTACT IS REACHED, SAY FOLLOWING:

Hi, my name is __. I'm calling on behalf of Energy Trust of Oregon, a nonprofit organization that uses funds from utilities to support investments in energy efficiency and renewable energy.

To help achieve this goal, Energy Trust has hired my company to contact the main trade allies in SW WA to learn more about trade ally activity and understand how the Energy Trust could expand its program in SW WA. Specifically, we would like to learn the following 1) How do we engage/market better to Washington customers? 2) Are there any nuances in SW WA we should be aware of when designing Energy Trust programs there? 3) How can we get homeowners to participate in programs more?

ANSWER ANY QUESTIONS ABOUT ENERGY TRUST – REFER TO WEBSITE: WWW.ENERGYTRUST.ORG

Do you have time right now to answer a few questions or can you suggest a time I could speak with you?

[IF NEEDED: The interview should take about 10 - 20 minutes. Topics include your company's activities in SW Washington, the energy efficiency-related needs and interests of the residential customers your company serves and any related trends you're aware of within that segment, anything you think might prevent residential customers from participating in Energy Trust's program, and any recommendations you have about marketing to residential customers.*]*

IF YES, CONTINUE

IF NO, TRY TO RESCHEDULE

Role and Responsibilities

1. First, can you tell me your title?

2. What is your role in the organization?

3. Are you familiar with the Energy Trust of Oregon's incentive program for NW Natural customers in SW Washington?

    a. Yes
    b. No

    [IF NOT FAMILIAR WITH INVOLVEMENT WITH NW NATURAL – WA CUSTOMERS, ASK WHO WOULD BE THE CORRECT CONTACT, THEN THANK AND TERMINATE. CONTACT THE NAMED PERSON AND START OVER. OTHERWISE TERMINATE CALL.]

Energy Trust and SW WA Program Familiarity

4. For all your work in SW WA, do you primarily provide services to residential or commercial customers?

   () Residential

   () Commercial

   () Both (true 50-50)

THE REST OF THE QUESTIONS WILL PERTAIN TO THE WORK YOU DO IN THE [FILL IN ANSWER TO Q4 HERE] SECTOR

5. How much of your company's [residential OR non-residential] work (in terms of overall revenue) is conducted in SW WA?

Residential	*Nonresidential*
() Less than 20%	() Less than 20%
() 21-40%	() 21-40%
() 41-60%	() 41-60%
() 61-80	() 61-80
() 81-100%	() 81-100%

6. Are there any specific challenges to selling energy efficiency services and equipment in Washington? [PROBE: Is there a lack of awareness to energy efficiency, resistance, something else?]

7. How do the needs for energy efficiency improvements of SW WA natural gas customers compare to those of Oregon natural gas customers? ___

8. [Probe: For example, do they have less, more, or about the same need as Oregon customers?

9. On a scale of one to five with 1 as never and 5 as always, how often do you try to sell the most energy efficient system or equipment to your gas customers in SW WA? [If insulation: how often do you try to sell the maximum quantity possible?]

   a. 1- never
   b. 2
   c. 3
   d. 4
   e. 5- always

   [IF NOT ALWAYS:] In those situations when you do not try to sell the most efficient system, why is that? ___

10. Are you aware of Clark County PUD's incentives for energy efficiency improvements?

    [IF YES:] How actively do you market Clark County PUD programs? ___

    [IF NOT AWARE:] Contact Clark County PUD at www.clarkpublicutilities.com or 1-800-562-1736.

11. How long have you worked with Energy Trust of Oregon?

    a. Less than 1 year
    b. More than 1 year

[IF Q11 = a. "Less than 1 year" then ask Q12, otherwise go to Q13]

12. I'd like to know about your familiarity with Energy Trust of Oregon. Would you say that:

    () You heard of Energy Trust but were not very familiar with what it does
    () You knew something about what Energy Trust does
    () You were already quite familiar with Energy Trust
    Additional comments: _____

[IF NOT AT ALL FAMILIAR, SKIP FOLLOWING QUESTION]

13. Where have you received your information about Energy Trust? ___

14. [*Probe: website, brochures, communication with ETO, LM, or CSG staff*]

15. Do you feel like you have the information you need to tell customers about Energy Trust incentives in SW WA? ___

[IF RELEVANT, PROBE FOR DIFFERENCES BETWEEN RESIDENTIAL AND NON-RESIDENTIAL CUSTOMERS]

[IF NO:] What information do you need? ___

[PROBE: DO YOU NEED GENERAL INFORMATION, SPECIFIC FORMS FOR WA CUSTOMERS, LISTS OF WHAT QUALIFIES FOR INCENTIVES, A REPRESENTATIVE TO CONTACT YOU?]

16. On a scale of one to five, how often do you include Energy Trust incentives in your sales pitch, with 1 being never, and 5 being always?

a. 1 – never
b. 2
c. 3
d. 4
e. 5 – always

Please elaborate: _____

17. On a scale of one to five, how often do you include the federal tax credits ($1,500) in your sales pitch, with 1 being never, and 5 being always?

a. 1 – never
b. 2
c. 3
d. 4
e. 5 – always

Please elaborate: _____

18. What does your company do, if anything, to promote greater use of energy efficient equipment or renewable technologies by your SW WA customers? ___

[PROBE FOR DETAILS – HOW, HOW OFTEN, WHEN, ETC. IF RELEVANT, PROBE FOR DIFFERENCES BETWEEN RESIDENTIAL AND NON-RESIDENTIAL CUSTOMERS.]

[IF YES:] How do they respond to your efforts?

[IF NOTHING MENTIONED:] Why is that?

19. Have you done work for any SW WA [residential OR nonresidential] customers for which an application for incentives was submitted to Energy Trust? ___

    a. Yes
    b. No

[IF Q19=YES PROCEED TO Q20. IF Q19=NO, PROCEED TO Q26]

Trade Allies that Conducted ETO Projects in SW WA

20. For the projects that had an application for incentives submitted, what obstacles, if any, did you or the project face? [Probe: Was the customer resistant to energy efficiency programs, was the paperwork cumbersome, something else?]

21. Which of the following statements describes the SW WA gas customers that applied for Energy Trust incentives? [Choose all that apply]

    a. Customers were uninterested in energy efficiency incentives for gas projects prior to the project
    b. Customers were unaware of energy efficiency incentives for gas projects prior to the project
    c. Customers were price conscious and only wanted the cheapest equipment
    d. Customers are receptive to energy efficiency projects once they learn about it

22. Who have you interacted with at Energy Trust, if anyone, regarding your Energy Trust related work in SW WA?

    a. Probe for name and title: ___

23. On a scale of one to five with 1 being not at all satisfied and 5 being very satisfied, how satisfied would you say you have been in your interactions with Energy Trust program representatives? Would you say:

    a. 1 – Not at all satisfied
    b. 2
    c. 3
    d. 4
    e. 5 – Very satisfied

24. Have you been involved in completing Energy Trust paperwork for your customer's incentives? ___

    a. Yes
    b. No

    [IF NO, SKIP TO Q25; IF YES:]

    How did the paperwork process compare to the paperwork you do for your Oregon customers that apply for ETO incentives? ___

    [Probe: Was it more involved, less involved, or about the same? If relevant, probe for differences between residential and non-residential customers]

    Have you ever sought information or assistance from Energy Trust program representatives? ___

        [IF NO, SKIP TO Q25; IF YES:]

        What information or assistance were you looking for? ___

        Were you generally able to get the information or assistance you were looking for? ___

        [*If relevant, probe for differences between residential and non-residential customers*]

        [IF NO:]

        What additional assistance would have been helpful? ___

25. How do the Energy Trust projects you have done for SW WA customers differ from those you have done for Oregon customers? ___

    [Probes: Are homeowners interested in replacing HVAC more than insulation because houses are newer and already have insulation. If relevant, probe for differences between residential and non-residential customers.]

Trade Allies That Are Aware of ETO in SW WA but Did Not Conduct ETO Projects in SW WA

26. What have you and your staff done, if anything, to try to convince SW WA customers to participate in ETO projects that would qualify for incentives? ___

    [Probe for details – how, how often, when, etc. If relevant, probe for differences between residential and non-residential customers.]

[IF ACTIONS MENTIONED:]

What has been the reaction from customers? ___

Is it difficult to explain that Energy Trust of Oregon incentives apply to people in WA too? ___

What are the challenges for promoting this program in SW WA?

27. What else, if anything, has made it difficult for you to promote Energy Trust programs in SW WA? ___

Conclusion

28. What might Energy Trust do to increase program participation among your customers and potential customers in SW WA? ___

What would be the most effective way for Energy Trust to inform businesses in your industry about its programs in SW WA? ___

How might marketing and outreach be targeted to different types of customers? ___

Are there certain organizations ETO should work with in SW WA to better market the ETO programs? ___

29. That's all the questions I have. Is there anything you'd like to mention, including any suggestions for Energy Trust? ___