



**AIR SOURCE HEAT PUMP MARKET  
TRANSFORMATION MODEL  
DEVELOPMENT AND MARKET  
RESEARCH**

**Submitted To:**

**Energy Trust of Oregon**

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# TABLE OF CONTENTS

<b>E</b>	<b>Executive Summary .....</b>	<b>2</b>
<b>1</b>	<b>Introduction .....</b>	<b>3</b>
	1.1 Objectives.....	3
	1.2 Report Organization.....	3
<b>2</b>	<b>Methods.....</b>	<b>4</b>
	2.1 Secondary Data Review.....	4
	2.2 Choosing a Region for Baseline Estimation.....	5
	2.3 Market Actor Interviews .....	8
<b>3</b>	<b>Findings and Results.....</b>	<b>10</b>
	3.1 Secondary Data Review Findings.....	10
	3.2 Oregon Market Penetration Findings.....	11
	3.3 Baseline Market Penetration Findings .....	12
	3.4 Combined Data Collection Results .....	13
	3.5 Findings from Other Planned Tasks .....	15
<b>4</b>	<b>Summary and Recommendations .....</b>	<b>16</b>
	4.1 Recommendations .....	16

## **Appendix A: Vendor Interview Summaries**

Oregon Distributor Interview Summary

Seattle City Light (Baseline Region) Interview Summary

## **Appendix B: List of Interviewees**

## **Appendix C: Interview Guides**

High Efficiency Air Source Heat Pump Interview Guide for Distributors

High Efficiency Air Source Heat Pump Baseline Interview Guide for Contractors and Installers in the Greater Seattle Region

# **E EXECUTIVE SUMMARY**

The heat pump market transformation model development and market research project focused on the high-efficiency, ducted, air source heat pump market in Oregon. The study was completed for the Energy Trust of Oregon (Energy Trust). The research consisted of two major objectives:

- Conduct secondary and primary research to estimate the high-efficiency market share of heat pumps in Oregon and to estimate a baseline from a reasonable comparison region; and
- Adapt the current market transformation model for gas furnaces to the heat pump market.

## **Conduct secondary and primary research**

The Team reviewed multiple secondary data sources including Energy Trust program participation data, Energy Trust trade ally surveys, and national sales data from AHRI. The Energy Trust trade ally surveys helped inform the market landscape for high-efficiency air source heat pumps in Oregon. The Energy Trust program participation data was used to estimate the total market that Energy Trust has reached via the heat pump program. Other data sources were compiled for use in the market transformation model.

The Team employed a method to assess market transformation using two markets: the market in a comparison region and the market in Oregon. These two markets were compared to evaluate if market transformation had occurred in Oregon. The comparison region is termed the baseline. The Team chose the region for baseline estimation based on multiple factors including the presence of a current heat pump program, the number of heating degree days, the number of cooling degree days, home heating fuel types, and the size of the areas in terms of number of customers. The Team chose Seattle City Light as the region for baseline estimation, after a thorough review process.

Publicly available data on market penetration of high-efficiency air source heat pump sales at the state and local level is limited. Therefore, the Team conducted primary research with distributors in Oregon to try to obtain the most accurate information regarding sales in the state. The Team also conducted interviews with installation contractors in the Seattle City Light region to estimate a reasonable baseline for Oregon. The result from these interview efforts was that between 2006 and 2009, the Team determined that there was no market transformation of the high-efficiency, ducted, air source heat pump market that could be attributed to Energy Trust.

## **Develop a heat pump market transformation model**

The results of the primary data collection did not find attributable market transformation to Energy Trust. Based on these results, the Team did not complete construction of a quantitative market transformation model.

# 1 INTRODUCTION

The Energy Trust of Oregon (Energy Trust) provides incentives for high-efficiency air source heat pumps to customers of Portland General Electric, Pacific Power, NW Natural, and Cascade Natural Gas. The air source heat pump program began in 2003. Since 2003, the efficiency of the units eligible for an incentive has changed from an HSPF of 8.2 / 8.5 (high efficiency / premium efficiency) to an HSPF of 8.8 / 9.0 (high efficiency 5 tons or greater / premium efficiency). The Energy Trust high-efficiency air source heat pump program aims to increase the market share of heat pumps *not only* through direct incentives, but also through a transformation of the market.

Market transformation projects are long-term in nature; there is often little market impact in the initial years and major market effects occurring many years after a program is launched. The development and launching of new products and services can be visualized as an “S” shaped diffusion curve. The research results for the air source heat pump program do not show any market transformation attributable to Energy Trust activities during the 2006-2009 time period. This is due in part to other market factors, like the federal tax credit, the market’s need for incentives, and the economic downturn. However, in the future, the program has the potential to accelerate market transformation.

## 1.1 Objectives

The research and analysis conducted for this project were structured to achieve the following objectives:

- Conduct secondary and primary research to estimate the high-efficiency market share of air source heat pumps in Oregon and to estimate a baseline from a reasonable comparison region;
- Adapt the current market transformation model developed for gas furnaces to the air source heat pump market.<sup>1</sup>

## 1.2 Report Organization

The report is organized in four sections with detailed supporting information located in appendices.

- Section 2 outlines the methodology used during the project.
- Section 3 details the findings and results from the project, including the secondary data review findings and the baseline and market penetration findings.
- Section 4 presents a summary and recommendations from the study.

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<sup>1</sup> This objective was not realized due to the lack of market transformation attributable to Energy Trust.

## 2 METHODS

The Team used a variety of methods to understand the high-efficiency, ducted, air source heat pump market, to estimate the high-efficiency market share of air source heat pumps in Oregon, and to estimate a reasonable baseline market share. The methods employed are described below.

### 2.1 Secondary Data Review

The Team reviewed existing data sources to facilitate the development of a more robust baseline and market penetration values and to better understand the air source heat pump market in Oregon. Each data source is listed along with a description of the source and its use.

- *Energy Trust of Oregon heat pump program participation data*<sup>2</sup> - Energy Trust provided the Team with the most recent Energy Trust program participation data. This data was used for the number of units in Oregon that are incented through the program.
- *Oregon Department of Energy tax credit data*<sup>3</sup> – Energy Trust provided the Team with the most recent tax credit data - the number of heat pumps that receive tax credits. Because the model development was not completed, this data was not directly used.
- *The 2005-2006 Home Energy Solutions Evaluations*<sup>4</sup> – Data from this study was not directly used in the model, but the study was used for background information on the Oregon air source heat pump environment.
- *The Energy Trust trade ally surveys from 2008 and 2009*<sup>5</sup> – These surveys provided information on the market penetration of high-efficiency air source heat pumps. The data from these surveys was used to compare to other data collection efforts.
- *Air Conditioning, Heating, and Refrigeration Institute (AHRI)*<sup>6</sup> – AHRI provides industry statistics on their website. These statistics include the shipment-weighted seasonal energy efficiency ratios of air source heat pumps from 1976 through 2003. Because the research focused on the 2006-2009 period, this data was not included. In addition, the AHRI data is on a national level, and thus provides no insights to the Oregon market.
- *CEE-AHRI Directory of Energy Efficient HVAC Equipment*<sup>7</sup> – The Team reviewed this database for an understanding of the types of air source heat pumps available and the ranges of HSPF and SEER for the available units.

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<sup>2</sup> Provided by Matt Braman at the Energy Trust of Oregon.

<sup>3</sup> Provided by Matt Braman at the Energy Trust of Oregon.

<sup>4</sup> Available at [www.energytrust.org](http://www.energytrust.org).

<sup>5</sup> Provided by Matt Braman at the Energy Trust.

<sup>6</sup> Available at [ari.org](http://ari.org).

<sup>7</sup> Directory of Energy Efficiency HVAC Equipment. <http://www.ceedirectory.org/> (accessed September 2009).

- *Energy Star data for any equipment efficiency sales data that may be available*<sup>8</sup> – The Team was able to find national and state wide Energy Star sales data for other residential equipment, such as Air Conditioners, Refrigerators, Dishwashers, Room Air Conditioners for 2005-2008.
- *Energy Star Non-AHRI Central Air Conditioner Equipment and Air Source Heat Pump (ASHP) Product List*<sup>9</sup> – The Team reviewed this data to understand the type of equipment available in national energy efficiency program. Reviewing data from July and October 2009, the Team noted general trends in efficiency levels.

## 2.2 Choosing a Region for Baseline Estimation

The Team’s process to choose a baseline for the ducted, air source heat pump market transformation study had three stages. First, a list of possible baseline regions was compiled during the project kick-off meeting at Energy Trust offices. Each utility service area or program area was compared based on the following factors:

- presence of a current heat pump program,
- the number of heating degree days, and
- the number of cooling degree days.

Based on this initial screening, two regions were considered for the next stage: Seattle City Light and Pacific County PUD. These regions were chosen because neither area has a ducted heat pump program, though both are participating in NEEA’s region-wide ductless heat pump pilot program. These areas also have similar heating and cooling needs as the Portland region.

Table 1 shows all regions reviewed and the data collected for each region. Note that heating degree day and cooling degree day data was not obtained for all regions.

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<sup>8</sup> Energy Star: Resources for Appliance Manufacturers and Retailers; Sales Data. [http://www.energystar.gov/index.cfm?c=manuf\\_res.pt\\_appliances](http://www.energystar.gov/index.cfm?c=manuf_res.pt_appliances).

<sup>9</sup> Energy Star Website. [http://www.energystar.gov/index.cfm?c=airsrc\\_heat.pr\\_as\\_heat\\_pumps](http://www.energystar.gov/index.cfm?c=airsrc_heat.pr_as_heat_pumps) (accessed September and October 2009).



**Table 1. Initial Screening for the Baseline Region**

Utility Service Area/Program Area	Presence of a Heat Pump Program	HDD (Base 65)	CDD (Base 50)	Recommended Baseline Region	Website
Energy Trust of Oregon	Yes	4,522 (Portland, OR)	2,517 (Portland, OR)		
Seattle City Light	Have a ductless heat pump pilot program, \$1,200	4,611 (Seattle, WA)	2,120 (Seattle, WA)	Possible	<a href="http://www.seattle.gov/light/">http://www.seattle.gov/light/</a>
Pacific County PUD	Ductless heat pump program, \$1,500	5,285 (Aberdeen, WA)	1,488 (Aberdeen, WA)	Possible	<a href="http://www.pacificpud.org/">http://www.pacificpud.org/</a>
Puget Sound Energy	Yes- \$200-\$350, 8.5 HSPF, 14 SEER to electric customers	5,655 (Olympia, WA)	1,558 (Olympia, WA)	No	<a href="http://www.pse.com">http://www.pse.com</a>
Snohomish County PUD	Yes-50% of project costs up to \$450. Have had heat pump programs on and off since the 1980s.	4,611 (Seattle, WA)	2,120 (Seattle, WA)	No	<a href="http://www.snopud.com/">http://www.snopud.com/</a>
Grays Harbor PUD	Yes, \$1,000			No	<a href="https://www.ghpud.org/">https://www.ghpud.org/</a>
Tacoma Public Utilities	Yes, \$400, 8.5 HSPF, 14 SEER			No	<a href="http://www.mytpu.org/">http://www.mytpu.org/</a>
BPA	Yes- for a while			No	<a href="http://www.bpa.gov/corporate/">http://www.bpa.gov/corporate/</a>
Clark County, WA	Yes			No	
Idaho	Idaho Power- Yes- \$200-\$1,000 Avista Utilities- Yes- \$400 Rocky Mountain Power- Yes- \$250- \$350			No	
BC Hydro				Not considered	<a href="http://www.bchydro.com/">http://www.bchydro.com/</a>
Northern California				Not considered	

Source: HDD/CDD: AHSRAE, “Energy Standard for Buildings Except Low-Rise Residential Buildings,” ANSI/AHSRAE/IESNA Standard 90.1-2004, Appendix D, Climatic Data. Heat Pump Programs from DSIRE and programs’ websites.

The next stage of the process was to compare the home heating fuel types and the size of the areas (in terms of number of customers) of the two possible baseline regions, Seattle City Light and Pacific County PUD, to the Energy Trust. The Team’s goal was to choose a baseline region with similar heating types to Energy Trust. Because of the range of competing options of home heating technologies, the baseline region needed to have a similar percentage of homes that heat their home with electricity and gas to the Energy Trust area. Table 2 compares the regions based on the percentage of homes with electric, gas, and other heat. Seattle City Light’s home heating fuel mix matches closely with the Energy Trust area. Because the Pacific County PUD region does not have natural gas heating, they are not an ideal baseline region. In addition, Seattle City Light has 387,715 residential and non-residential customers (in 2008) where Pacific County PUD has 16,926 customers (in 2007).<sup>10</sup> Based on this information, the Team chose Seattle City Light as the best comparable baseline region for the study.

**Table 2. Home Heating Fuel Types and Possible Baseline Regions**

Utility Service Area/Program Area	Percentage of Homes with Electric Heat	Percentage of Homes with Gas Heat	Other heating types
Energy Trust of Oregon-PacifiCorp	20%	53%	Wood: 22% Other (oil): 5%
Energy Trust of Oregon-Portland General Electric	32%	43%	Other: 25%
Seattle City Light	22%	58%	Hybrid: 2% Fuel oil: 16% Wood/pellets: 1%
Pacific County PUD	62%	0%	Wood: 22% Bottled, tank, or LP gas: 7% Fuel oil, kerosene, etc.: 6% Other fuel: 2%

Sources: Energy Trust of Oregon- PacifiCorp and Energy Trust of Oregon- Portland General Electric data provided by Matt Braman at Energy Trust of Oregon via telephone on August 5, 2009. Seattle City Light data provided by Mike Little, Glenn Atwood, and Debra Tachibana of Seattle City Light via email on August 3, 2009. Pacific County PUD data from City-Data.com for Pacific County, WA for houses and condos.

To better understand and use the results from interviews with installation contractors in the baseline region, the Team compiled some demographics for Portland, OR and Seattle, WA (see Table 3). These two areas are mostly similar in terms of median household income, home ownership rate, and education.

<sup>10</sup> Sources: Seattle City Light Size: 2008 Annual Report, Available at <http://www.seattle.gov/light/aboutus/AnnualReport/>. Pacific County PUD Size: 2007 Annual Report, Available at [http://www.pacificpud.org/annual\\_report.html](http://www.pacificpud.org/annual_report.html).

**Table 3. Demographic Comparison between Portland, OR and Seattle, WA**

Demographics	Portland, OR	Seattle, WA
Median Household Income, 1999	\$40,146	\$45,736
Home Ownership Rate, 2000	55.8%	48.4%
Bachelor's degree or higher, pct of persons age 25+, 2000	32.6%	47.2%

Source: US Census Bureau, QuickFacts. Available at <http://quickfacts.census.gov>.

## 2.3 Market Actor Interviews

The Team first reviewed whether it was possible to gather time series data on the Oregon market and the Seattle market that would provide tracking data on the sales of high-efficiency units. It was determined that such data were not available, and thus the Team collected the data through market interviews. The Team conducted two sets of interviews. The interviews were with air source heat pump installation contractors in the Seattle City Light region and with air source heat pump distributors in Oregon. The purpose of the interviews was to collect data that could help inform the baseline estimate and the high-efficiency air source heat pump penetration in Oregon. The Team chose to interview contractors in the Seattle City Light region, rather than distributors, due to the fact that the region is small and the Team wanted information only for that region, rather than Washington state, as a whole. The Team consulted with the program manager and evaluation manager at Energy Trust on interview instruments.

The list of contractors in the Seattle City Light region was initially comprised of the Northwest Energy Efficiency Alliance's (NEEA) list of ductless heat pump contractors in the Seattle metro region.<sup>11</sup> To ensure the Team did not only interview contractors from the list NEEA provided, a general search was conducted for heat pump contractors in the greater Seattle Metro Area using the CitySearch website.<sup>12</sup> There were 80 businesses in the results; however, the Team removed a few double entries and businesses that were listed as distributors or wholesale sellers of HVAC equipment. Duplicates between the two lists (NEEA and CitySearch) were highlighted in red and kept on both lists. Then, each entry was assigned a random number on both lists. After sorting these numbers, each final list was prepared, identifying the order in which businesses will be contacted: going from low to high random number and alternating between the two lists.

Energy Trust provided the Team with a list of distributors in Oregon. A summary of the number of interviews in each group is shown in Table 4.

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<sup>11</sup> Northwest Energy Efficiency Alliance. Ductless Heating and Cooling Systems. <http://www.goingductless.com/> (accessed September 2009).

<sup>12</sup> CitySearch. Seattle, WA Metro. <http://seattle.citysearch.com/> (accessed August 2009).

**Table 4. Vendor Interview Counts**

Target Group	Population	Total Number of Interviews <sup>[1]</sup>
Installation Contractors in the Seattle City Light region	97 <sup>[2]</sup>	6
Distributors in Oregon	8	6

Source: Summit Blue Consulting.

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<sup>[1]</sup> The total number of interviews were based on the available budget, rather than confidence level/precision.

<sup>[2]</sup> Northwest Energy Efficiency Alliance’s (NEEA) list of ductless heat pump contractors in the Seattle metro region and CitySearch Website. Note that this value may not include all of the heat pump contractors in the Seattle region; however, the Team estimates that this value captures most of them.

# 3 FINDINGS AND RESULTS

## 3.1 Secondary Data Review Findings

Understanding the market in which the Energy Trust air source heat pump program operates is important to any market transformation effort. This section provides information collected during a secondary data review on the market context.

### Federal tax credits for air source heat pumps

The federal government offers tax credits for air source heat pumps installed in existing homes. The credits are effective January 1, 2009 through December 31, 2010. The requirements for the tax credit are shown in Table 5. The tax credit is equal to 30% of cost, up to \$1,500.<sup>13</sup>

**Table 5. Federal tax credit requirements for air source heat pumps**

Heat Pump Type	Effective Date	Standard (HSPF)	Standard (SEER)	Standard (EER)
Split system	January 1, 2009 - December 31, 2010	≥ 8.5	≥ 15	≥ 12.5
Packaged system	January 1, 2009 - December 31, 2010	≥ 8	≥ 14	≥ 12

Source: Federal Tax Credits for Energy Efficiency. Updated June 11, 2009.  
[www.energystar.gov/index.cfm?c=products.pr\\_tax\\_credits](http://www.energystar.gov/index.cfm?c=products.pr_tax_credits). (Accessed June 10, 2009).

### State tax credits for air source heat pumps in Oregon

The Oregon Department of Energy provides tax credits through the Residential Energy Tax Credit (RETC) program for air source heat pumps. The Oregon Department of Energy began offering tax credits for high-efficiency heat pumps in 2001. From 2001 through March 31, 2006, the HSPF requirement for the tax credit was a minimum of 8.5. Beginning April 1, 2006, heat pumps needed to have an HSPF of 9.0 to qualify for the tax credit. The April 1<sup>st</sup> rules also removed the SEER rating requirement and changed the EER minimum requirement from 11 to 12. The legislature has included a sunset date for the heat pump tax credit program—the taxpayer may not be allowed to receive the credit if filed after January 1, 2012.<sup>14</sup> The state tax credit ranges from \$300 to \$430 depending on the HSPF and EER levels of the installed unit.

A split-system, air source heat pump currently qualifies for a tax credit if it meets the following minimum requirements<sup>15</sup>:

1. Heating Season Performance Factor (HSPF) of 9.0 or higher

<sup>13</sup> \$1,500 is the maximum per homeowner for all improvements combined.

<sup>14</sup> Discussions with Oregon Department of Energy staff on September 15, 2009.

<sup>15</sup> Oregon Department of Energy- Conservation Division. Available at [www.oregon.gov](http://www.oregon.gov).

2. Energy Efficiency Ratio (EER) of 12 or higher
3. A technician certified by the Oregon Department of Energy must verify the performance of the system. Note that the system qualifies for an additional tax credit for the performance verification test.

## Energy Star air source heat pumps

Table 6 identifies the minimum energy efficiency criteria for air source heat pumps for the Energy Star program. The HSPF requirement for Energy Star products is less than the federal or state tax credit requirement.

**Table 6. Energy-Efficiency Criteria for ENERGY STAR Qualified Residential ASHPs and Central Air Conditioners**

Product Type	SEER	EER	HSPF (for heat pumps only)
Split Systems	> 13	> 11	> 8.0
Single Package Equipment (including gas/electric package units)	> 12	> 10.5	> 7.6

Source: Energy Star ASHP Partner Resources. Product Requirements.  
[http://www.energystar.gov/index.cfm?fuseaction=products\\_for\\_partners.showASHP](http://www.energystar.gov/index.cfm?fuseaction=products_for_partners.showASHP)

## Other market conditions

Portland General Electric has distributed stakeholder incentives for heat pumps. In addition, the Northwest Region has initiated a region-wide pilot ductless heat pump program. Seventy-three utilities and entities are participating in the pilot program, including the Energy Trust of Oregon.<sup>16</sup> Discussions with contractors and distributors of ducted heat pumps also revealed that the focus on ductless heat pumps has excited the market.

## 3.2 Oregon Market Penetration Findings

The Team established that there are eight major distributors in the population (Oregon). Summit Blue interviewed six of these distributors. The full results of the interviews are reported in Appendix A. This section provides the high-level findings.

The respondents of the interviews comprised about 80% of the sales in Oregon (self-reported and estimated). Table 7 shows the estimates of sales by HSPF category and year. Two of the respondents did not provide exact sales data; however, they characterized themselves as small, medium, or large. In order to calculate a weighted average (and not discount the response provided by these two companies), the Team estimated their sales based on this information.<sup>17</sup>

<sup>16</sup> Northwest Energy Efficiency Alliance. NW Ductless Heat Pump Project. <http://www.nwductless.com/> (accessed October 15, 2009).

<sup>17</sup> Summit Blue estimated the sales volume for two respondents that did not provide that information.

**Table 7. Oregon distributor interviews, weighted average of sales share by HSPF categories (6 respondents) with sales volume of 2 respondents estimated.**

HSPF	less than 8.0	8.0-8.4	8.5-8.9	9.0+	% high-efficiency (8.5 and above)
2006	52%	25%	16%	6%	22%
2007	49%	23%	21%	7 %	28%
2008	40%	26%	21%	13%	34%
2009 to date	32%	25%	21%	23%	44%

Source: Summit Blue Consulting interviews with distributors in Oregon.

The share of sales of units that are less than 8.0 HSPF has steadily decreased over the years; however, the greatest reduction happened from 2008 to 2009, from 40% to 32%. The sales of 8.0 to 8.4 units has held steady over the years, at around 25%. The sales share of units in the 8.5-8.9 HSPF category has increased from 16% to 21% from 2006 to 2009. Finally, sales share of units in the 9.0+ HSPF category has also steadily increased from 2006-2009.

When asked whether sales in the 8.5-8.9 HSPF category will increase, decrease or stay the same in 2009/2010, all six respondents said it will increase. The size of the increase was estimated between 5% and 80%. The same question was asked for the 9.0+ HSPF category. All but one respondent predicted an increase (between 5-20%). Tax credits and rebates were cited in both cases. One respondent predicts a decrease of 10%, because people can still receive a rebate with a slightly lower efficiency (and less expensive) unit.

### 3.3 Baseline Market Penetration Findings

After a detailed selection process, the Team chose the Seattle City Light region as a baseline region that is comparable to Oregon. Six interviews were completed with installation contractors in the Seattle City Light region. The full results of the interviews are reported in Appendix A. This section provides the high-level findings.

All respondents have been in the industry selling/installing heat pumps for over 10 years. Combined, the companies hold 80% of the Seattle City Light market share (self-reported values). The weighted average of sales by HSPF categories from 2006-2009 for the Seattle City Light region are show in table Table 8 below.

**Table 8. Baseline: Seattle City Light weighted average of sales share by HSPF categories (6 respondents)**

HSPF	less than 8.0	8.0-8.4	8.5-8.9	9.0+	% high-efficiency (8.5 and above)
2006	45%	19%	25%	11%	36%
2007	39%	11%	36%	14%	50%
2008	35%	15%	34%	17%	51%
2009 to date	31%	13%	26%	30%	56%

Source: Summit Blue Consulting interviews with contractors in the Seattle City Light region.

Contractors, similar to distributors, also predict an increase in sales of units in the 8.5-8.9 HSPF category (three respondents), while two respondents predict that these sales will stay the same, and one did not know. Four respondents predict that sales will increase in the 9.0+ HSPF category, while one believes it will stay the same and another thinks it will decrease.

### 3.4 Combined Data Collection Results

Table 9 identifies the estimated total heat pump sales and Energy Trust program participation from 2006-2009. The estimate of total market sales of heat pumps was based on interviews with distributors in Oregon. Therefore, these values have a range of uncertainty associated with them. While this table seems to indicate that program participation has dropped relative to total sales of heat pumps, it is important to remember that the data is only for a portion of 2009; therefore, data could potentially change in the last few months of the year.

**Table 9. Estimated total heat pump sales and number of high-efficiency heat pumps that received an incentive through Energy Trust**

	Estimate of Total Market Sales of Heat Pumps	Energy Trust Program Participants	% of Total Sales that are in the Energy Trust program
2006	15,000	986	7%
2007	15,600	1,199	8%
2008	13,900	1,713	12%
2009	13,600	1,090	8%

Sources: Summit Blue Consulting interviews with distributors in Oregon and estimates where data values were not given (heat pump sales scaled based on reported market share) and Energy Trust heat pump program participation data.

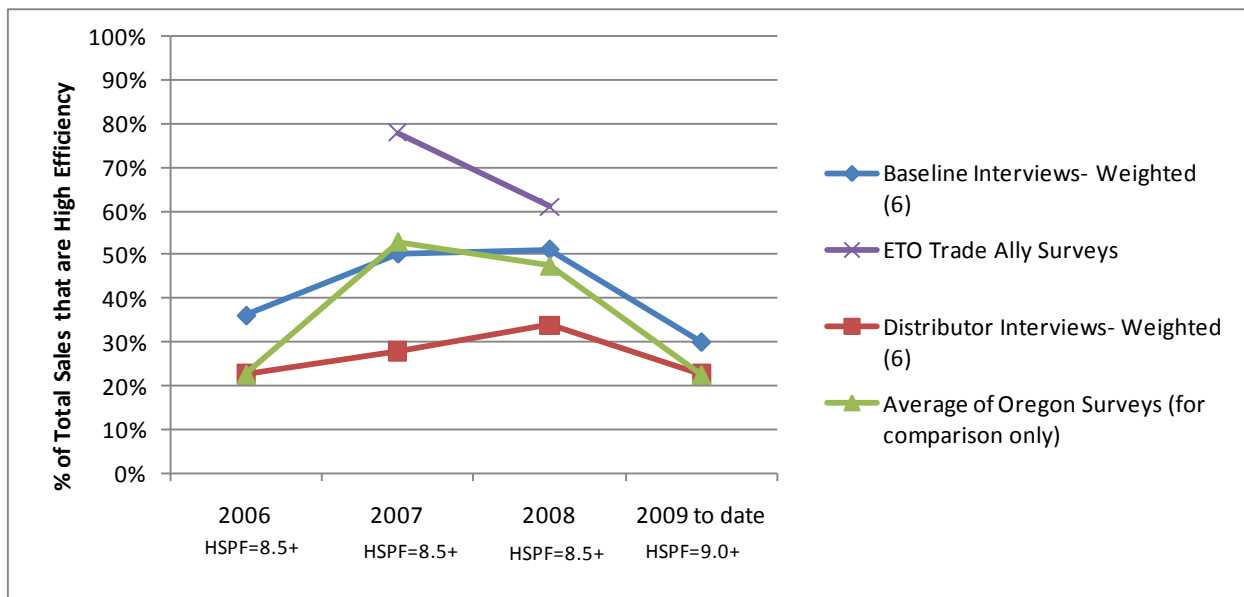
Figure 1 and Figure 2 identify the percent of total sales that are high-efficiency by survey type and date. The results in Figure 1 assume that the definition of “high efficiency” changes from an HSPF of 8.5 and above in 2006-2008 to an HSPF of 9.0 and above in 2009 to date. This definition matches the requirements of the Energy Trust program. The results in Figure 2 keep the definition of “high efficiency” constant at an HSPF of 8.5 and above.

The lines in the figures represent:

- Baseline Interviews- Weighted (6): The Team completed these interviews, and the line shows a weighted average of responses.
- ETO (Energy Trust) Trade Ally Surveys: Energy Trust completed these surveys and the line shows the weighted average of responses.
- Distributor Interviews- Weighted (6): The Team completed these interviews and the line shows a weighted average of responses.
- Average of Oregon Surveys: This line is for comparison only and is an average of the “Energy Trust Trade Ally Surveys” and the “Distributor Interviews- Weighted.”

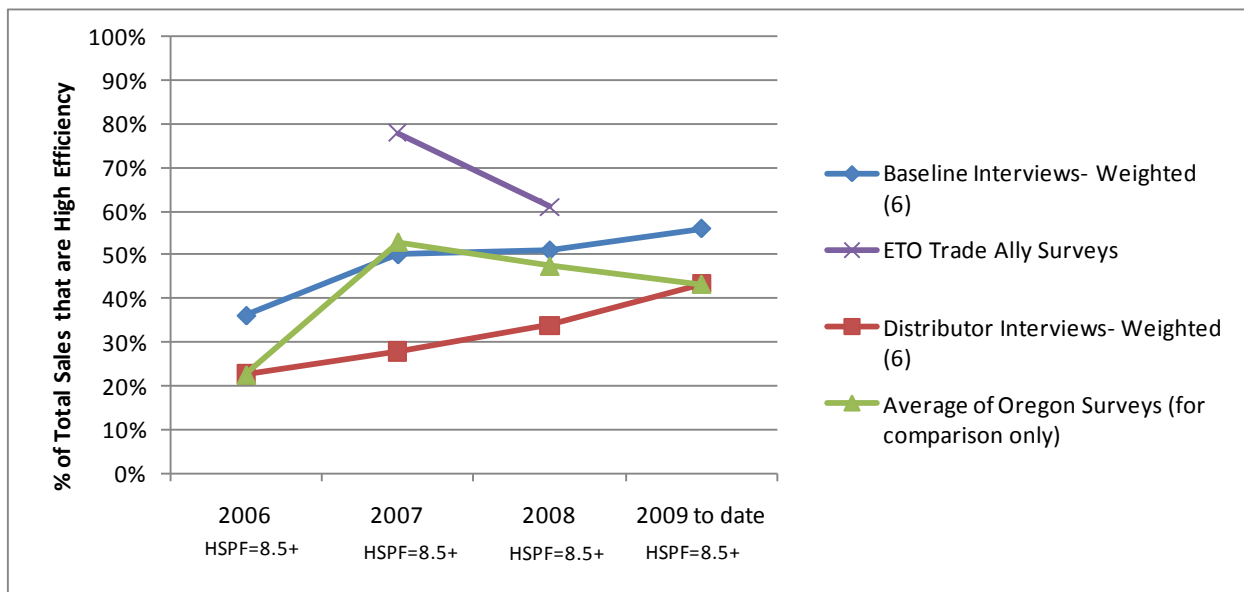


**Figure 1. Percent of total sales that are high-efficiency by survey type and year<sup>18</sup>**



Source: Summit Blue Consulting interviews with contractors in the Seattle City Light region; Summit Blue Consulting interviews with distributors in Oregon, and Energy Trust of Oregon Trade Ally Surveys completed in 2008 and 2009.

**Figure 2. Percent of total sales that are high-efficiency by survey type and year**



Source: Summit Blue Consulting interviews with contractors in the Seattle City Light region; Summit Blue Consulting interviews with distributors in Oregon, and Energy Trust of Oregon Trade Ally Surveys completed in 2008 and 2009.

According to both distributor and baseline interviews, high-efficiency sales followed a similar rate of increase between 2006 and 2009, when assuming a constant definition of “high efficiency” at an HSPF of

<sup>18</sup> The definition of “high efficiency” in this chart changes from an HSPF of 8.5 and above in 2006-2008 to an HSPF of 9.0 and above in 2009 to date. This definition matches the requirements of the Energy Trust program.

8.5 and above (Figure 2). As the graph clearly elucidates, the high-efficiency sales share in the Seattle City Light area has been higher than in the Energy Trust area (based on the market actor interviews).

The Energy Trust trade ally survey was completed in 2008 and 2009, and it identifies data for 2007 and 2008. The percent of total sales that are high-efficiency have decreased from 80% to 60% over that period. Since the recent economic troubles, it is safe to assume that the decrease in high-efficiency sales have continued through 2009. However, without actual data for 2009, it is difficult to estimate.

When distributors were asked about how influential incentives are on the efficiency level of the heat pump that customers ask for, half stated it was very influential, while the other half said it was somewhat influential. When asked whether the Energy Trust incentive has influenced their stocking practices, two respondents said very influential, two said somewhat influential, while three said not at all influential. Therefore, while incentives help sell more high-efficiency units, it is estimated that market transformation did not take place; without the cash incentive, high-efficiency heat pump sales would drop. Furthermore, distributors noted that some customers purchase only as high-efficiency unit as is required for the incentive; they would not go up to a higher efficiency unit.

One distributor noted that while some outreach elements of the Energy Trust program (outside of incentives) “bring them [customers] to the table, but the incentive gets them to buy”. The federal tax credit has been noted by distributors as being important and overshadowing the Energy Trust incentive because it may be larger amount and better known. They claim that if the incentive would go away, contractors would likely market lower HSPF heat pumps. These results indicate that some distributor and contractor practices, with regard to high-efficiency air source heat pumps, may be starting to change, but without the incentive, the market is not ready to stand on its own.

### **3.5 Findings from Other Planned Tasks**

The Team did not complete the “Reviewing Federal Code Changes” or the “Developing the Model” tasks based on discussions with Energy Trust and the results of the baseline and market penetration findings.

# 4 SUMMARY AND RECOMMENDATIONS

The Team's research and analysis during the course of this effort led to the following key findings:

- Baseline high-efficiency air source heat pump sales remain difficult to estimate due to the lack of data available. Availability of AHRI data in the future could alleviate this concern by assuming the baseline in Oregon is equal to the sales in a similar state with no program, but AHRI is intransigent regarding the sharing of data with non-members.
- The sales share of high-efficiency air source heat pumps (HSPF of 8.5+) has increased from 2006 to 2009 in both the baseline region (Seattle City Light) and in Energy Trust territory.
- The results show that market transformation has not taken place in the Energy Trust territory.
  - Distributors claim that contractors have not bought into the practice of selling what is “green”; only about 5% truly changed their attitudes. Without the Energy Trust incentive, contractors would go back to selling what they can sell the most of (lower efficiency units that are cheaper).
  - Rebates drives demand; information gets customers to the “table,” but the incentives sell the high-efficiency units.
  - The federal tax credit has overshadowed the Energy Trust incentive because the federal tax credit is considerable in magnitude, it is better known, and it has less stringent requirements.
- The share of sales of heat pumps with an HSPF of 8.5 or higher in Oregon is estimated at 22% in 2006 and 44% in 2009. Therefore, the market for high-efficiency heat pumps has grown.

## 4.1 Recommendations

The Team has compiled a list of recommendations for Energy Trust based on the study findings.

- Energy Trust should continue its work with other entities to push more stringent national standards for heat pumps. Code and standard changes constitute one of the most cost effective means of achieving efficiency goals on a large scale.
- Energy Trust should consider working through Energy Star, DOE, CEE, or other sources to convince AHRI to provide “clean” data (data that does not name individual brands or distributors) to states and other entities that need to perform evaluation of energy efficiency efforts.
- Energy Trust should update this assessment of the air source heat pump market every other year.

## APPENDIX A: VENDOR INTERVIEW SUMMARIES

Summit Blue Consulting (the Team) completed interviews with vendors in two areas: Oregon and the Seattle City Light region. In this section, the Team presents the results of the interviews.

### Oregon Distributor Interview Summary

The Team interviewed six distributors in Oregon in September 2009. These companies represent about 80% of sales (self-reported and estimated) in Oregon. The goal of the interviews was two-fold: (1) to estimate the total volume (number of heat pumps) sold in the Oregon market by year and (2) to estimate the efficiency of the heat pumps sold in the Oregon market.

#### Estimated Number of Heat Pumps Sold in the Oregon Market

Table A-1 shows the estimated total number of heat pumps sold into the Oregon market from 2006-2009, to date. Two of the respondents did not provide exact sales data, therefore, the Team estimated their sales numbers based on their categorization as a small, medium, or large company. The total number of heat pumps has ranged from about 13,900 units to 15,600 units per year.<sup>19</sup>

**Table A-1. Estimated number of heat pumps sold in the Oregon market 2006-2009, to date**

Year	Estimate of Total Market Sales of Heat Pumps
2006	15,000
2007	15,600
2008	13,900
2009, to date	13,600

Sources: Summit Blue Consulting interviews with distributors in Oregon and estimates where data values were not given (heat pump sales scaled based on reported market share)

#### Percent of units in each efficiency category

Table A-2 below shows the estimate of units in each efficiency category for 2006-2009, to date. The percent of total sales that are high-efficiency (HSPF of 8.5 and above) has increased every year, from 2006 to 2009. The team chose to use the weighted responses so that responses from companies with higher sales are reflected in our estimates of efficiency categories. For example, while the percentage of sales of high-efficiency units (units that are 8.5 HSPF or over) have increased according to weighted and un-weighted averages, in the un-weighted average, the sales share is 60% in 2009; however, in the weighted average, sales share is only at 44% (as shown in Table A-2).

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<sup>19</sup> The 2009 data is not included here because it is a partial year's data.

**Table A-2. Distributor Interviews - Weighted responses (6)**

<b>HSPF</b>	<b>less than 8.0</b>	<b>8.0-8.4</b>	<b>8.5-8.9</b>	<b>9.0+</b>	<b>% high-efficiency (HSPF of 8.5 and above)</b>
<b>2006</b>	52%	25%	16%	6%	22%
<b>2007</b>	49%	23%	21%	7%	28%
<b>2008</b>	40%	26%	21%	13%	34%
<b>2009 to date</b>	32%	25%	21%	23%	44%

Source: Summit Blue Consulting interviews with distributors in Oregon.

The Team asked respondents at what HSPF level they consider a heat pump high efficiency. One respondent noted 8.5 HSPF and higher, two said an HSPF of 9.0 and higher, and one did not respond. One respondent listed 9.0/9.5. Thus, the majority of distributors consider a 9.0+ HSPF unit as high efficiency.

### **Sales expectations of high-efficiency units in 2009-2010**

When asked whether sales of 8.5-8.9 HSPF unit sales will increase, decrease, or stay the same in 2009-2010, all respondents thought they would increase by varying amounts (5% to 80%). The reasons respondents noted for expecting an increase in sales are: state and federal rebates, federal tax credits, energy tax credit, manufacturer's rebates, ARRA funding, and desire for efficiency.

When asked whether sales of 9.0 or greater HSPF units will increase, decrease, or stay the same, most respondents thought that they would increase by varying amounts (5% to 20%), a smaller range than the 8.5-8.9 HSPF category. One respondent noted that sales will likely decrease by 10%. The respondent thinks the 9.0+ market will decrease because people can still get a tax credit with lower efficiency; the respondents expects increases due to state and federal rebates, ARRA funding, energy tax credits, public more aware of energy efficiency, and change in attitude and energy costs.

### **Influence of the Energy Trust incentives on the increase in high-efficiency heat pump sales in Oregon**

Four of the respondents stated that the influence of the Energy Trust incentives on the increase in the high-efficiency heat pump sales in Oregon is very influential; two respondents felt that the Energy Trust incentives are somewhat influential. Comments included that not all dealers are enrolled in the program, the Energy Trust does a great job in raising awareness about heat pumps, distributors see more business in the areas with an incentive, and that there needs to be more marketing about the available incentives to homeowners and contractors.

### **Influence of the \$200-300 installation incentive on the efficiency level of the heat pump that customers ask for/ultimately purchase**

Half of the respondents noted that the installation incentive is very influential on the efficiency level of the heat pump that customers ask for/ultimately purchase; half of the respondents noted that the installation incentive is somewhat influential. Comments included the rebates are a big impact and

contractors would likely see an impact if they went away; in this economy customers need financial assistance. Others are not sure how many customers the promotion of the rebates reaches and that the incentive does help educate customers.

### **Affect of Energy Trust incentive on stocking practices**

Distributors responded that the Energy Trust incentive was very influential (2 respondents), somewhat influential (2 respondents), and not at all influential (3 respondents) on their stocking practices. Reasons cited for the influence include the fact that there is a correlation but stocking is completed without knowing about Energy Trust offerings and that they have increased inventory levels on high-efficiency heat pumps. In addition, one distributor noted that the incentives have a huge impact and another noted that they do not have a large impact. Therefore, it appears that distributors are divided on this issue.

### **Information distributors have seen/read on high-efficiency heat pumps from Energy Trust**

Distributors noted seeing/reading information on high-efficiency heat pumps from Energy Trust via the webpage, meeting with Energy Trust, and via email. Others noted that they have not seen or read anything from Energy Trust on high-efficiency heat pumps.

### **Contact with Energy Trust regarding high-efficiency heat pumps**

Most of the distributors mentioned having some degree of contact with Energy Trust regarding high-efficiency heat pumps. Some responded having contact in the past or through indirect channels. Others noted that they have a high degree of contact with Energy Trust. As for other questions, the responses range widely.

## **Seattle City Light (Baseline Region) Interview Summary**

The Team interviewed a number of contractors from the Seattle area in an attempt to establish a baseline for high-efficiency heat pump sales, i.e., where the Oregon market would have been without Energy Trust intervention. This section provides a summary of responses from contractors who sell/install heat pumps in the Greater Seattle Metro Area, providing insight into high-efficiency heat pump sales. The purpose of this effort is to use the Seattle area as control/baseline region to help inform where the heat pump market would be in Oregon absent a program. During the interview process, some respondents also provided anecdotal comments on the market.

### **Survey Respondents' Background and Distribution**

Summit Blue conducted six interviews with installation contractors in the Greater Seattle Metro Area of Washington who install heat pumps to customers with Seattle City Light service. All companies have been in the industry selling and/or installing heat pumps for over 10 years, with the majority at around 20 years.

Respondents are comprised of two company owners, two managers, a vice president, and an equipment coordinator. All contractors sell/install air source, ducted, split system heat pumps in existing, single family applications. Per their own evaluation of their market share of heat pump sales in the Greater Seattle area, the respondents together stated that they hold 80% of the market share.

## Number of units in each efficiency category

In order to estimate what the market would have been like in Oregon without the Energy Trust incentives and information on air source heat pumps, the Team asked the contractors to estimate the percent of units sold in each efficiency category for 2006-2009, to date. The percent of total sales that are high-efficiency (HSPF of 8.5 and above) has increased every year, from 2006 to 2009.

**Table A-3. Distribution of units in each HSPF category in 2006 -2009, to date**

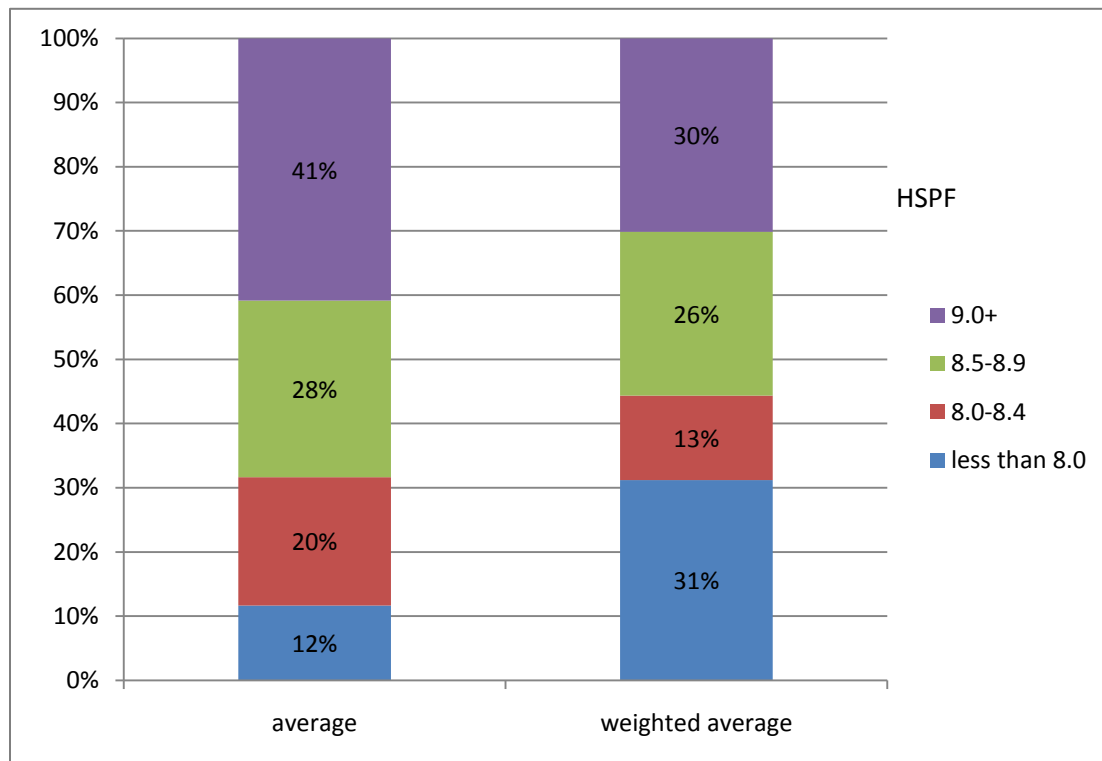
HSPF	less than 8.0	8.0-8.4	8.5-8.9	9.0+	% high-efficiency (8.5 and above)
<b>2006</b>	45%	19%	25%	11%	36%
<b>2007</b>	39%	11%	36%	14%	50%
<b>2008</b>	35%	15%	34%	17%	51%
<b>2009 to date</b>	31%	13%	26%	30%	56%

Source: Summit Blue Consulting interviews with contractors in the Seattle City Light region

In the industry, there is no general agreement of what HSPF level is considered high-efficiency for air source heat pumps. Therefore, in the survey, we have asked respondents above what level their company considers a unit high efficiency. Out of the six respondents, three consider a unit with 8.5 or higher HSPF high efficiency, while respondent two draws this line at 9.0 and up, and the final respondent at 9.5 HSPF.

Based on the distribution of sales of units sold in each HSPF category by the six companies, the raw average was calculated. (See Figure A-1) More than two thirds of the units sold in 2009 (to date) are 8.5 and above HSPF. Furthermore, 41% of units are in the 9.0 and above HSPF category. However, this methodology treats all six companies' sales as equal. Since two of the companies' sales were a magnitude larger than the other four companies, to get a more accurate picture, a weighted average was calculated based on the number of units sold by each company in each HSPF category. Figure A-1 elucidates how the average differs between these two methods. While the majority of sales are still in the top two HSPF categories (56% are 8.5 and above HSPF), only 30% were sold in the 9.0 and above category, while 31% of units were sold as less than 8.0 HSPF. This difference between the two averages indicates that the bigger companies sold more below 8.0 HSPF units and less 9.0 and above HSPF units.

**Figure A-1. Average vs. weighted average of total units sold by the six companies by HSPF category in 2009 (to date)**



Source: Summit Blue Consulting interviews with contractors in the Seattle City Light region

### Sales expectations of high-efficiency units in 2009-2010

When asked whether sales of 8.5-8.9 HSPF unit sales will increase, decrease, or stay the same in 2009-2010, two respondents stated that they will stay the same and three respondents noted that they will increase by 20%, 50%, and 75-80%, and one did not know. One reason was mentioned for sales staying the same: there are limitations with the equipment. The reasons respondents noted for expecting an increase in sales are: federal tax credit, Seattle’s environmentally conscious population, consumers’ higher awareness, unit costs are plateauing, and energy savings are greater with higher efficiency units (rising energy costs).

When asked whether sales of 9.0 or greater HSPF unit sales will increase, decrease, or stay the same, four respondents reported that they will increase by 10%, 50%, 100%, and don’t know. One noted it will stay the same and one respondent said it will decrease. The reason for the decrease was the economy; the respondent expects demand to grow when gas prices go back up and when everyone will be going green. Reasons for the increase in 9.0 unit sales were the same as for 8.5-8.9 HSPF units. The respondent who predicted a 100% increase noted that they have recently purchased software to show customers the value of investment and savings with a high-efficiency heat pump.

### Factors influencing companies’ sales of high-efficiency heat pumps

Respondents were asked to rate factors influencing their companies’ sales of high-efficiency units. Four respondents rated manufacturers’ information least important, while two rated it as most important (two of the smaller companies). Thus, for smaller companies, this factor is very important in increasing their



high-efficiency unit sales. Distributors were rated by three respondents as a somewhat important and by the other three respondents as a least important. This factor is not very important for respondents. Customer demand was rated as most important by three respondents, somewhat important by two respondents, and least important by one respondent. For the second largest company, this was the most important factor. Finally, respondents also provided other factors that are important in their opinions: efficiency and sound, cost of equipment, tax credits and utility rebates were all listed as most important; salesmen pitching heat pumps to customers was listed as a somewhat important; and customer referrals and contractor margin were listed but not rated. Overall, customer demand received the highest ratings and seems the most important to the respondents.

### **Percent of customers who ask for a high HSPF heat pump**

Respondents were also questioned on what percent of their customers ask for 8.5-8.9 HSPF units vs. 9.0 and above HSPF units specifically.

One respondent stated that 10% ask for 8.5-8.9 HSPF and 25% ask for 9.0 and above HSPF units, while another listed 20% and 20%, respectively. Two respondents listed a couple percent for each of these categories, and two respondents stated that no one asks for these HSPF units. One respondent stated the use of HSPF is not prevalent amongst customers.

### **Contractor installations outside of Seattle City Light territory**

Two respondents said that they do not install heat pumps in other service territories other than Seattle City Light. Some of the other territories mentioned were PSE, Snohomish PUD, Tacoma, and all of Washington. When asked if some territories provide incentives the following responses were given: PSE, Tacoma, and Snohomish.

### **Influence of incentives offered in other regions**

Respondents were asked how influential they think incentives are in other regions on the efficiency of the heat pump customers ask for. Only three respondents answered this question, with two respondents noting that they are somewhat influential and one stating that they are very influential. One respondent anecdotally mentioned that people with heat pumps do research and see other options. While they have a good awareness of efficiency, they do not know why they cost so much up front. Thus, incentives are useful, but there should also be information and education about savings that go along with a high-efficiency heat pump.

### **Summary**

This analysis is based on a sample of small to large contractors who do business in greater Seattle Metro Area. Questions were asked to identify changes in high-efficiency unit sales from a temporal perspective (changes in 2006-2009) and what could be affecting changes in sales. The purpose of this research is to use the Seattle area as control/baseline region to help inform where the heat pump market would be in Oregon absent a program.

Along with a general increase in sales, sales of high-efficiency units in both the 8.5-8.9 and the 9.0 and above HSPF categories have increased substantially since 2006. Respondents noted that customer demand is very important in their sales of high-efficiency units and that they expect a further increase in high-efficiency unit sales for 2009-2010.

## **APPENDIX B: LIST OF INTERVIEWEES**

### **Oregon:**

- Geary Pacific
- Slakey Brothers
- Johnstone Supply
- Gensco
- Mar-Hy Distributors
- Johnson Air Products

### **Seattle City Light Region:**

- Evergreen Refrigeration, LLC
- Ballard Natural Gas Service
- MJA Mechanical
- Bel Red Heating and AC
- Roscoe Energy System
- Cardinal Heating and AC

## **APPENDIX C: INTERVIEW GUIDES**

High Efficiency Air Source Heat Pump Interview Guide for Distributors

High Efficiency Air Source Heat Pump Baseline Interview Guide for Contractors and Installers in the Greater Seattle Region

**High Efficiency Air Source Heat Pump Interview Guide For  
Distributors  
(Energy Trust of Oregon Market Transformation Assessment)**

<b>Contact Name:</b>	
<b>Company Name:</b>	
<b>Company Phone:</b>	
<b>Company Address:</b>	
<b>Today's Date &amp; Time:</b>	
<b>Scheduled Date &amp; Time:</b>	
<b>Interviewer:</b>	
<b>Notes:</b>	

**INTRODUCTION**

*[WHEN CALLING THE COMPANY PHONE NUMBER]*

Hello, I'm with Summit Blue Consulting calling on behalf of Energy Trust of Oregon. We are an independent program evaluator conducting a study to find out about sales of high efficiency air source heat pumps and the importance of incentives for high-efficiency heat pump sales. Who would be the best person to speak with that knows about the sales of high efficiency heat pumps over the past several years?

*[ONCE THE OTHER APPROPRIATE CONTACT IS ON THE LINE]*

Hello, my name is [INSERT NAME] with Summit Blue Consulting and I am calling you on behalf of Energy Trust of Oregon. We're an independent program evaluator conducting a study to understand the sales of high efficiency air source heat pumps in the Northwest and to determine what effect incentives have on consumer purchases of high-efficiency heat pumps. Would you be the best person to speak to regarding this?

I'd like to ask you some questions about your sales of high-efficiency heat pumps and the demand that you're hearing from contractors/installers and their customers for these products. All information that you provide will be aggregated for statistical purposes and your comments will remain anonymous. Your response would help our efforts tremendously. Summit Blue Consulting will compensate you \$50 (for a completed interview) for your time and consideration. The questions should take 10-15 minutes – is this a good time to speak, or would you rather schedule an appointment?

- *[If an appointment, record the date/time of scheduled appointment in the box above, and thank the respondent]*
  - *[If now, skip down to Screening questions]*
  - *[If no, attempt to convert the person into a respondent. If they will not participate in the phone survey, thank the participant and terminate the phone call. Briefly describe why they wouldn't participate below]*
- 
- 

### SCREENING

1. What is your name and position within your company?

---

2. This survey is focused on air source, ducted, split system heat pumps. Does your firm sell this type of heat pump in Oregon?

- a. Yes *[continue with survey]*
- b. No *[thank and terminate the survey]*

3. What level of efficiency (HSPF) would you consider high efficiency?

---

### MAIN INTERVIEW QUESTIONS

I have some questions about the sales and efficiency levels of heat pumps, focusing on the single family, existing building market. Would you prefer to answer those questions now or complete a set of tables sent via email or fax?

*[If prefer to answer now, proceed to questions 4-7]*

*[If prefer to complete the tables, ask for the email or fax number \_\_\_\_\_ and proceed to question 8]*

*[ENCOURAGE THEM TO ESTIMATE IF THEY DO NOT HAVE EXACT NUMBERS]*

**[Note for the interviewer: We care about split, not packaged systems, so make sure this is clear while asking the remainder of the questions.]**

4. Approximately how many total split system residential heat pumps did your company sell in 2006-2009? (Please complete the table below.)

	2006	2007	2008	2009 to date
<b>Total residential heat pump sales (#)</b>				
<b>Percent of total to single family, existing buildings (%), if known</b>				

5. Do you know approximately what percent of the heat pump market share in Oregon your company serves? \_\_\_\_\_
- a. Would you consider your company Small, Medium or Large? [Provide these responses if interviewee is really unsure.]

6. What percentage of units sold were in each efficiency category in **2006? 2007? 2008? 2009? Please answer for single family, existing homes, split system ONLY. If this data is unavailable, please complete for all systems and home types.** (Please complete the table below.) [OR email for specific numbers]

Efficiency Category	2006	2007	2008	2009
<b>Less than HSPF 8.0:</b>				
<b>HSPF 8.0-8.4:</b>				
<b>HSPF 8.5 to 8.9:</b>				
<b>HSPF 9.0 or higher:</b>				

7. Is the table above for single family, existing homes? \_\_\_\_\_
- a. If NO, please describe what type of homes the table above covers \_\_\_\_\_
  - b. If NO, do you think the efficiency levels sold vary by building type (single family, multifamily, manufactured home) and construction (existing vs. new)? How?  
\_\_\_\_\_
8. Do you expect sales of heat pumps with **8.5-8.9 HSPF** to increase, decrease, or stay the same **in 2009/2010**?
- a. Increase – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
  - b. Decrease – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
  - c. Stay the same
9. Do you expect sales of heat pumps with **9.0 HSPF or greater HSPF** to increase, decrease, or stay the same **in 2009/2010**?
- a. Increase – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
  - b. Decrease – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
  - c. Stay the same
10. **[If respondent answered “increase” to Q8 or Q9]** How influential are the Energy Trust of Oregon incentives on the increase in high efficiency heat pump sales in Oregon?
- a. Very influential- Please explain
  - b. Somewhat influential- Please explain
  - c. Not at all influential- Please explain
  - d. Refused
  - e. Don't know

11. How influential do you think the \$200-300 installation incentive is on the efficiency level of the heat pumps *that customers ask for/ultimately purchase?* (READ RESPONSES)

- a. Very influential- Please explain
- b. Somewhat influential- Please explain
- c. Not at all influential- Please explain
- d. Refused
- e. Don't know

12. How does the presence of the Energy Trust of Oregon incentive affect your stocking practices? (READ RESPONSES)

- a. Very influential – Please explain
- b. Somewhat influential- Please explain
- c. Not at all influential- Please explain
- d. Refused
- e. Don't know

13. What information have you seen/read on high efficiency heat pumps from the Energy Trust of Oregon? (open-ended)

14. Do you or have you had contact with the Energy Trust of Oregon regarding high efficiency heat pumps? (open-ended)

**Interviewer:** “Please provide your contact information so that we can mail you the \$50 compensation check for your time and input in this survey.” [if they have provided enough complete information]

**INCENTIVE/COMPENSATION INFORMATION**

Name \_\_\_\_\_

Street Address \_\_\_\_\_

City/State \_\_\_\_\_

Zip Code \_\_\_\_\_

Email Address \_\_\_\_\_

Thank you for your time and have a wonderful day!



**High Efficiency Air Source Heat Pump Baseline Interview Guide**  
**For Contractors and Installers in the Greater Seattle Region**  
**(Energy Trust of Oregon Market Transformation Assessment)**

<b>Contact Name:</b>	
<b>Company Name:</b>	
<b>Company Phone:</b>	
<b>Company Address:</b>	
<b>Today's Date &amp; Time:</b>	
<b>Scheduled Date &amp; Time:</b>	
<b>Interviewer:</b>	
<b>Notes:</b>	

**INTRODUCTION**

*[WHEN CALLING THE COMPANY PHONE NUMBER]*

Hello, I'm with Summit Blue Consulting calling on behalf of Energy Trust of Oregon. We are an independent program evaluator conducting a study to find out about sales of high efficiency air source heat pumps and the importance of incentives for high-efficiency heat pumps to your company and its customers. Who would be the best person to speak with that knows about the sales of high efficiency heat pumps over the past several years?

*[ONCE THE OTHER APPROPRIATE CONTACT IS ON THE LINE]*

Hello, my name is Timea Zentai with Summit Blue Consulting and I am calling you on behalf of Energy Trust of Oregon. We're an independent program evaluator conducting a study to understand the sales of high efficiency air source heat pumps in the Northwest and to determine what effect incentives would have on consumer purchases of high-efficiency heat pumps. Would you be the best person to speak to regarding this?

I'd like to ask you some questions about your sales of high-efficiency heat pumps and the demand that you're hearing from customers for these products. All information that you provide will be aggregated for statistical purposes and your comments will remain anonymous. Your response would help our efforts tremendously. Summit Blue Consulting will compensate you \$50 (for a completed interview) for your time and consideration. The questions should take 10-15 minutes – is this a good time to speak, or would you rather schedule an appointment?

- *[If an appointment, record the date/time of scheduled appointment in the box above, and thank the respondent]*
  - *[If now, skip down to Screening questions]*
  - *[If no, attempt to convert the person into a respondent. If they will not participate in the phone survey, thank the participant and terminate the phone call. Briefly describe why they wouldn't participate below]*
- 
- 

**SCREENING**

15. What is your name and position within your company?

---

16. Does your company sell and/or install air source heat pumps?

- a. Yes     *[continue with survey]*
- b. No     *[thank and terminate the survey]*

17. How long has your company been in the industry selling and/or installing heat pumps?

---

18. This survey is focused on air source, ducted, split system heat pumps in existing, single family, residential applications. We are interested in information on heat pumps installed only in the Greater Seattle area to customers with Seattle City Light service. Does your firm install this type of heat pump in the Seattle area?

- a. Yes     *[continue with survey]*
- b. No     *[thank and terminate the survey]*

19. What level of efficiency (HSPF) do you consider high efficiency for these types of heat pumps?

---

**MAIN INTERVIEW QUESTIONS**

20. Do you know approximately what percent of the heat pump market share in the Greater Seattle area your company serves? \_\_\_\_\_

- a. Would you consider your company Small, Medium or Large? [Provide these responses if interviewee is really unsure.]

I have some questions about the installation and efficiency levels of heat pumps, focusing on the single family, existing building market. Would you prefer to answer those questions now or complete a set of tables sent via email or fax?

[If prefer to answer now, proceed to questions 7-9]

[If prefer to complete the tables, ask for the email or fax number \_\_\_\_\_ and proceed to question 10]

[ENCOURAGE THEM TO ESTIMATE IF THEY DO NOT HAVE EXACT NUMBERS]

21. Approximately how many total residential ducted heat pump installations did your company complete in 2006-2009 in the Greater Seattle area? (Please complete the table below.)

	2006	2007	2008	2009 to date
<b>Total residential heat pump installations (#)</b>				
<b>Percent of total in existing, single family buildings (%)</b>				

22. What percent of units sold were in each efficiency category in **2006? 2007? 2008? 2009?** Please answer for single family, existing homes, split system in the Greater Seattle area ONLY. If this data is unavailable, please complete for all systems. (Please complete the table below.) [OR email for specific numbers]

Efficiency Category	2006	2007	2008	2009 to date
<b>Less than HSPF 8.0:</b>				
<b>HSPF 8.0-8.4:</b>				
<b>HSPF 8.5 to 8.9:</b>				
<b>HSPF 9.0 or higher:</b>				

23. Is the table above for single family, existing homes? \_\_\_\_\_
- a. If NO, please describe what type of homes the table above covers \_\_\_\_\_
  - b. If NO, do you think the efficiency levels sold vary by building type (single family, multifamily, manufactured home) and construction (existing vs. new)?  
\_\_\_\_\_
24. [ASK ONLY IF WE DO NOT HAVE COMPLETE ANSWERS TO Q8] Over the past few years, how have sales/installation of heat pumps with **8.5-8.9 HSPF** rating or higher changed? Would you say ...*(READ)*
- a. They have gone up by more than 10 percent. How much? \_\_\_\_\_
  - b. They have declined by more than 10 percent. How much? \_\_\_\_\_
  - c. They have not changed by 10 percent or more over the past few years
  - d. Refused
  - e. Don't Know
25. [ASK ONLY IF WE DO NOT HAVE COMPLETE ANSWERS TO Q8] Over the past few years, how have sales/installation of heat pumps with **9.0 and higher HSPF** rating or higher changed? Would you say ...*(READ)*
- f. They have gone up by more than 10 percent. How much? \_\_\_\_\_
  - g. They have declined by more than 10 percent. How much? \_\_\_\_\_
  - h. They have not changed by 10 percent or more over the past few years
  - i. Refused
  - j. Don't Know
26. Do you expect sales of heat pumps with **8.5-8.9 HSPF** to increase, decrease, or stay the same *in 2009/2010?*
- d. Increase – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
  - e. Decrease – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
  - f. Stay the same
27. Do you expect sales of heat pumps with **9.0 HSPF or greater HSPF** to increase, decrease, or stay the same *in 2009/2010?*
- g. Increase – by how much? \_\_\_\_\_ Why? \_\_\_\_\_

- h. Decrease – by how much? \_\_\_\_\_ Why? \_\_\_\_\_
- i. Stay the same

**Note to Interviewer:** The State of Washington does not offer any Tax Credits or rebates for high efficiency heat pumps.

28. Which of the following factors have the most influence on your company's sales of high efficiency heat pumps? Please rank the following 1-3. (READ)

- a. Manufacturers rep or info
- b. Distributors
- c. Customer demand
- d. Other \_\_\_\_\_
- e. Refused
- f. Don't Know

29. What percent of your customers ask specifically for heat pumps with an **HSPF of 8.5-8.9?**

- a. \_\_\_\_\_
- b. Refused
- c. Don't know

30. What percent of your customers ask specifically for heat pumps with an **HSPF of 9.0 or higher?**

- a. \_\_\_\_\_
- b. Refused
- c. Don't know

31. Do you install heat pumps in regions other than the Greater Seattle area/Seattle City Light area?

- a. Yes
- b. No
- c. If yes, which regions? \_\_\_\_\_
- d. If yes, which of these regions offers incentives for the installation of high efficiency heat pumps? \_\_\_\_\_

32. [If answered 17d] How influential do you think the incentive offered in those regions is on the efficiency level of the heat pump *that customers ask for/ultimately purchase* in those regions? Would you say...(READ)

- a. Very influential
- b. Somewhat influential
- c. Not at all influential
- d. Refused
- e. Don't know

**Interviewer:** "Please provide your contact information so that we can mail you the \$50 compensation check for your time and input in this survey."

**INCENTIVE/COMPENSATION INFORMATION**

Name \_\_\_\_\_

Street Address \_\_\_\_\_

City/State \_\_\_\_\_

Zip Code \_\_\_\_\_

Email Address \_\_\_\_\_

Thank you for your time and have a wonderful day!

For interviewer: The Seattle City Light Service Area Map

