

Fast Feedback Results: 2016 Annual Report

Prepared for:



May, 2017



Executive Summary

Overview of Fast Feedback

- Fast Feedback is a short phone survey of a sample of recent program participants to assess satisfaction, understand customer decision making, and gather suggestions for program and process improvements. The survey is generally 10 questions or less and is customized for each program or measure of interest. The average duration of surveys in 2016 was 6.9 minutes for Residential participants, and 5.6 minutes for Commercial and Industrial participants.
- Fast Feedback is divided into two separate surveys: 1) Commercial and Industrial and 2) Residential.
- There are quarterly quotas for each program or measure group of interest with sample sizes based on the project volume expected in that quarter. We attempt to survey enough participants to achieve 90% confidence and 10% precision each quarter. Calls are made each month to randomly selected participants whose incentive check was processed in the previous month and who have not been surveyed in the previous year for residential customers or in the previous six months for commercial and industrial customers. Satisfaction results are summarized and distributed quarterly to program staff. There is at least one opportunity in each survey for the respondent to give open-ended feedback that is recorded verbatim, and this feedback is anonymously provided to program staff on a monthly basis (not included in this report).
- A total of 2,716 participants (578 Commercial and Industrial, 2,138 Residential) that completed projects between January and December 2016 were surveyed between August 2016 and February 2017. While the intent is to survey customers about a month after they receive their incentive check, the 2016 surveys got off to a late start, and each monthly wave was attempted immediately after the preceding wave concluded. The May and June surveys were conducted concurrently, as were the July through December surveys.
- There were no major changes to Fast Feedback surveys in 2016. The only changes were adding or deleting questions, making minor wording changes to existing questions, and changing which measures or programs were asked certain questions to reflect program implementation.
- Appendix A contains information pertaining to free ridership. Appendix B contains information about which measures are included and excluded from Fast Feedback surveys.
- Satisfaction and influence throughout this report are calculated as the percentage of respondents providing a rating a of 4 or 5 out of 5, excluding “don’t know” responses.

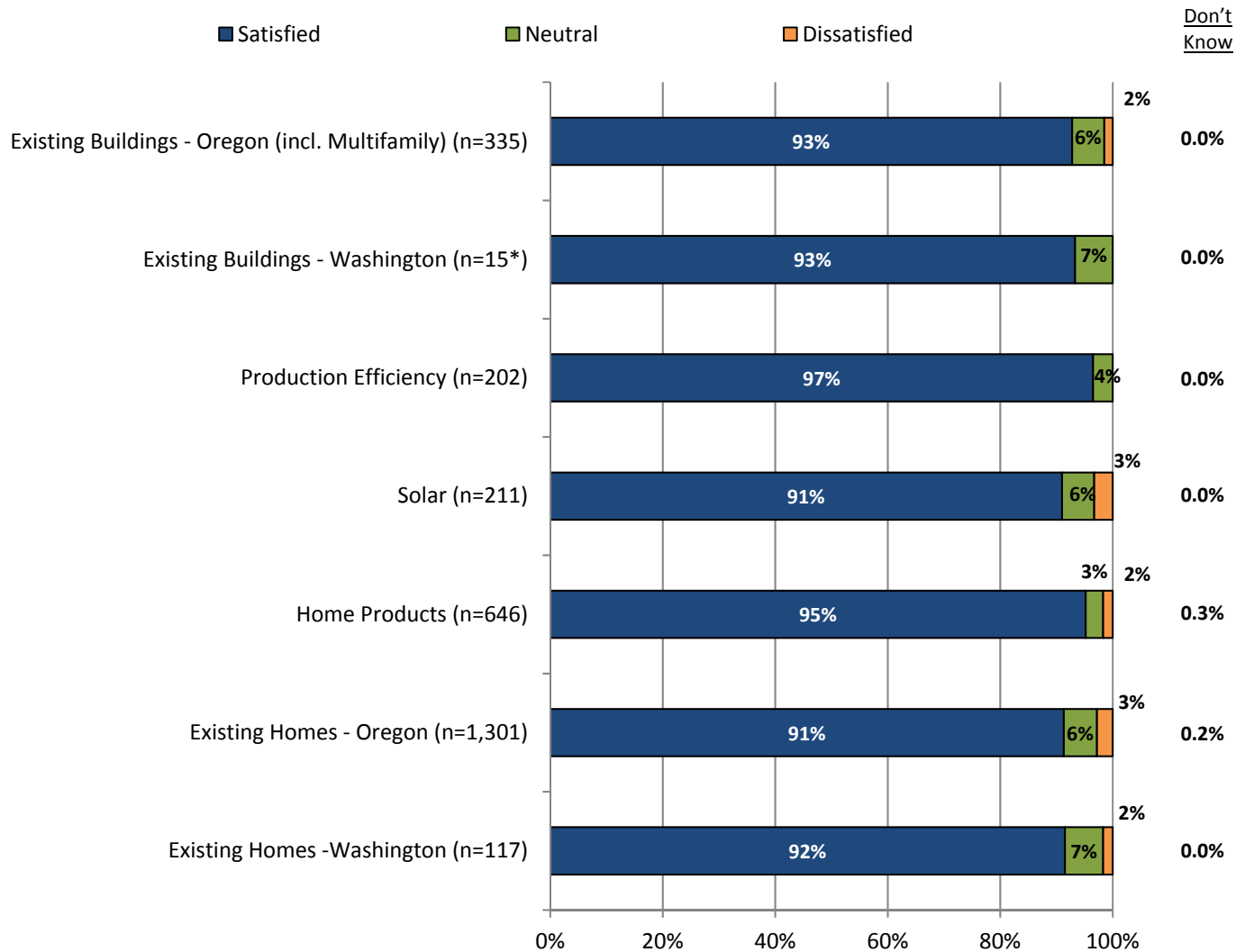
History of Fast Feedback

- Fast Feedback began as a pilot in mid-2009 for participants in the Existing Buildings and Production Efficiency programs, and was extended to most Energy Trust programs in the second quarter of 2010. A report on methods and results of the initial rollout is available on the Energy Trust website (https://energytrust.org/wp-content/uploads/2016/12/101231_Fast_Feedback_Rollout.pdf); Fast Feedback continues to follow the general methods cited in that report.
- From Q2 2011 to Q4 2012, survey calls were made by Gilmore Research Group. As of Q1 2013, Abt SRBI has been making Fast Feedback survey calls.

Summary of Results

- For residential, commercial, and industrial participants, satisfaction with the overall experience with Energy Trust was high, ranging from a high of 97 percent for Production Efficiency to 91 percent for Solar and Existing Homes Oregon.

Overall Satisfaction by Program



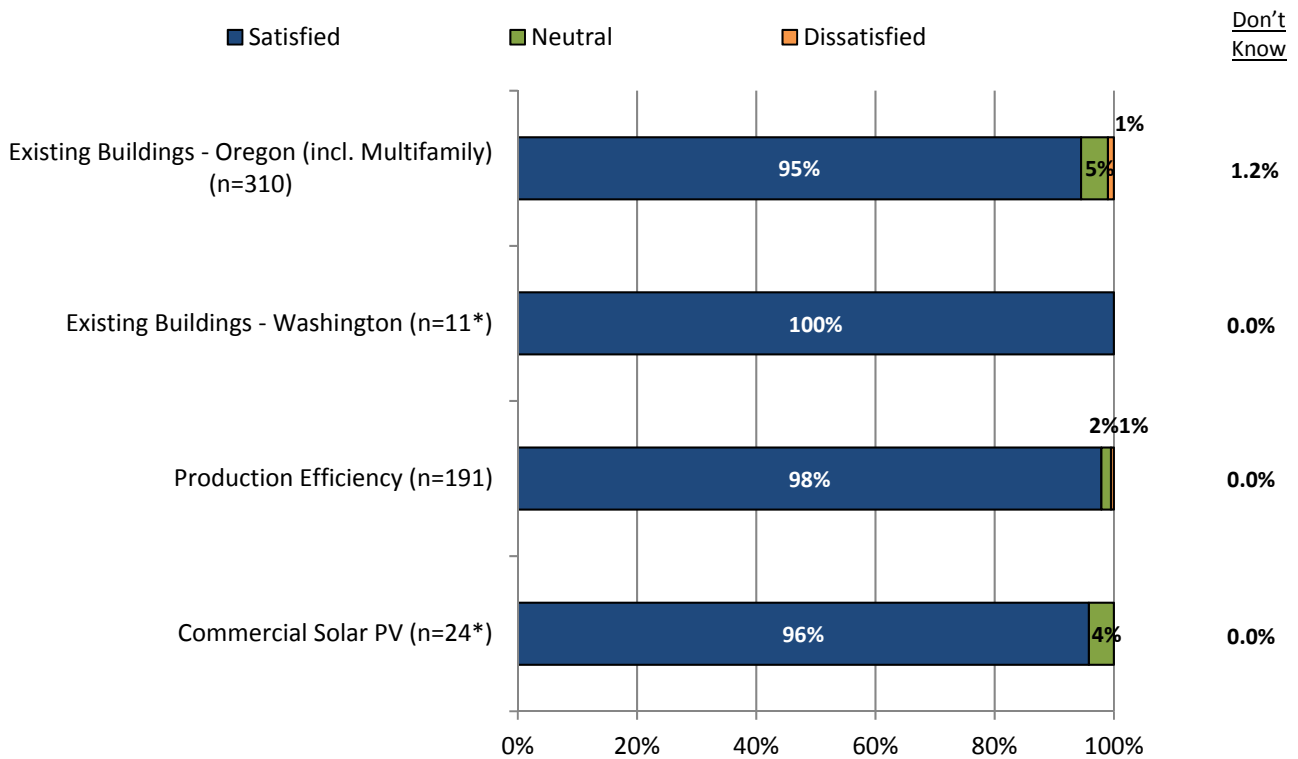
(*caution: small sample size)

- Of the factors that influenced program participation (which was asked of nearly all customer groups), the Incentive was cited as the most influential factor for Existing Buildings Oregon, Existing Buildings Washington, Production Efficiency, Commercial Solar, and Home Products. Information and Materials from Energy Trust were cited as most influential factors for Multifamily program participants. The Contractor was the most influential factor for Residential Solar, Existing Homes Oregon and Existing Homes Washington groups.

Summary of Results

- Satisfaction with program representatives is only asked of commercial and industrial customers. Net satisfaction (“Very Satisfied” and “Satisfied”) was high, ranging from 100 percent for Existing Buildings Washington to 95 percent for Existing Buildings Oregon and Multifamily.

Satisfaction with Program Representative by Program



(*caution: small sample size)

Summary of Results

Program	Respondents	Percent Satisfied	Free Ridership	
Commercial and Industrial				
			Electric	Gas
Existing Buildings - Oregon	190	93%	26%^{1,2,3}	23%^{1,2,3}
Existing Buildings - Custom	35	91%	26% ^{2,3}	14% ^{2,3}
Existing Buildings - Lighting	82	90%	25% ^{2,3}	--
Existing Buildings - Standard	73	96%	36% ^{2,3}	33% ^{2,3}
Existing Buildings - Washington	15	93%	†	†
Production Efficiency - Oregon	202	97%	11%^{1,3}	16%^{2,3}
Production Efficiency - Custom	48	100%	10% ³	--
Production Efficiency - Lighting	72	96%	10% ³	--
Production Efficiency - Standard	82	95%	16% ³	--
Multifamily	145	93%	17% ³	22% ^{2,3}
Solar				
Commercial Solar PV	25	96%		†
Residential Solar PV	186	90%		†
Home Products				
Home Products	646	95%		--
Clothes Washers	221	95%		42% ³
Refrigerator Recycling	245	97%		32%
Clothes Washer Recycling	180	94%		31%
Existing Homes				
Existing Homes - Oregon	1,301	91%		--
Ceiling Insulation	126	93%		41%
Heat Pumps (incl. DHPs)	244	89%		34% ³
Other Insulation (floor, wall)	115	92%		36%
Gas Tank Water Heaters	52	96%		41% ³
Windows	224	92%		39% ³
Gas Furnaces (WA only)	66	91%		†
Gas Fireplaces	209	92%		39% ³
Heat Pump Water Heaters	70	89%		26%
Home Performance*	7	100%		27%
Smart Thermostats	189	91%		43%
Existing Homes - Washington	117	92%		†

NOTE: Please see Appendix A for more information about how free ridership numbers are calculated from survey responses. In 2016, minor changes were made to the wording and structure of the survey questions that free ridership is based on. If a respondent indicated that they would have changed something about their project in the absence of Energy Trust programs, they were not also asked if they would have done exactly the same thing, as was done in the past. Non-residential free ridership rates are savings weighted, meaning that each project's influence on free ridership is directly proportional to its share of savings in the sample.

* Very small sample size. Interpret results with caution.

† Free ridership is not computed for WA participants or for solar PV projects, so they are excluded here.

1 These program level free ridership rates are computed as the savings-weighted averages of the track level results.

2 Multiple years of survey data were aggregated together to compute free ridership for these non-residential programs and tracks because at least one sub-quota within the program had a sample size below 30. Additional years of data were added until 30 or more survey responses were achieved in every sub-quota.

3 There was a slight change to the free ridership calculation methodology for these categories for 2016. This change better accounts for the incremental nature of efficiency in these measure and program categories and caused a minor reduction in the free ridership rates.

Summary of Results

- Existing Homes and Solar participants were asked about satisfaction with their contractors; 90 percent of Existing Homes Oregon respondents were satisfied with their contractor overall, followed by 89 percent and 92 percent for Solar PV System and Existing Homes Washington respondents, respectively. Satisfaction with the quality of installation work was also very high at 93, 96, and 95 percent for Existing Homes Oregon, Solar PV System, and Existing Homes Washington respondents, respectively. Roughly 34 percent of Existing Homes participants considered Energy Trust’s list of approved trade allies when selecting their contractor; 30 percent of Existing Homes Washington respondents had considered the list.

Measure	Percent satisfied with contractor	Percent satisfied with quality of installation work	Percent who considered trade ally list
Existing Homes - Oregon	89%	93%	34%
Ceiling Insulation	90%	93%	44%
Heat Pumps (incl. DHPs)	93%	94%	38%
Floor Insulation	94%	97%	46%
Wall Insulation	76%	82%	40%
Water Heater	87%	90%	30%
Windows	87%	93%	25%
Solar PV System	89%	96%	N/A
Gas Furnaces (WA only)	93%	94%	33%
Gas Fireplaces	90%	93%	36%
Heat Pump Water Heater	88%	90%	49%
Home Performance	100%	100%	43%
Smart Thermostat	91%	90%	12%
Existing Homes - Washington	92%	95%	30%

Table of Contents

	<u>Page</u>
Executive Summary	1
Summary of Results	2
Commercial and Industrial Summary	7
Existing Buildings	8
– Existing Buildings – Oregon	8
– Existing Buildings – Washington	10
Production Efficiency	12
Multifamily	14
Solar Summary	16
– Commercial Solar PV	17
– Residential Solar PV System	19
Home Products Summary	22
– Clothes Washers	23
– Refrigerator Recycling	25
– Clothes Washer Recycling	27
Existing Homes Summary	29
– Ceiling Insulation	30
– Heat Pumps	33
– Floor Insulation	36
– Wall Insulation	39
– Water Heaters	42
– Windows	45
– Home Performance	48
– Gas Furnaces	51
– Gas Fireplaces	54
– Ductless Heat Pumps	57
– Heat Pump Water Heaters	60
– Smart Thermostats	63
– Existing Homes - Washington	65
Appendix A – Free Ridership Calculations	69
Appendix B – Measures Included in Fast Feedback	74

Commercial and Industrial Summary

- Satisfaction of commercial and industrial respondents ranged from 97 percent to 92 percent.
- Overall satisfaction for the interaction with the program representative was high. All eleven Existing Buildings Washington respondents rated their satisfaction a 4 or 5 out a five, and 96 percent of the Commercial Solar PV System respondents did so as well. Satisfaction for this measure was lowest for Existing Buildings – Oregon (91%).
- Free ridership rates were down across the board for the commercial and industrial programs in 2016.

Program	Completed Surveys	Percent Satisfied	Free Ridership (savings weighted)	
			Electric	Gas
Existing Buildings - Oregon	190	93%	26% ^{1,2}	23% ^{1,2}
Existing Buildings - Washington	15	93%	†	†
Production Efficiency	202	97%	11% ¹	16% ²
Multifamily	145	93%	17%	22% ²

NOTE: Please see Appendix A for more information about how free ridership numbers are calculated from survey responses. In 2016, minor changes were made to the wording and structure of the survey questions that free ridership is based on. If a respondent indicated that they would have changed something about their project in the absence of Energy Trust programs, they were not also asked if they would have done exactly the same thing, as was done in the past. There was a slight change to the non-residential free ridership calculation methodology for 2016. This change better accounts for the incremental nature of efficiency in these programs and caused a minor reduction in the free ridership rates. Non-residential free ridership rates are savings weighted, meaning that each project’s influence on free ridership is directly proportional to its share of savings in the sample.

† Free ridership is not computed for WA participants, so they are excluded here.

1 These program level free ridership rates are computed as the savings-weighted averages of the track level results.

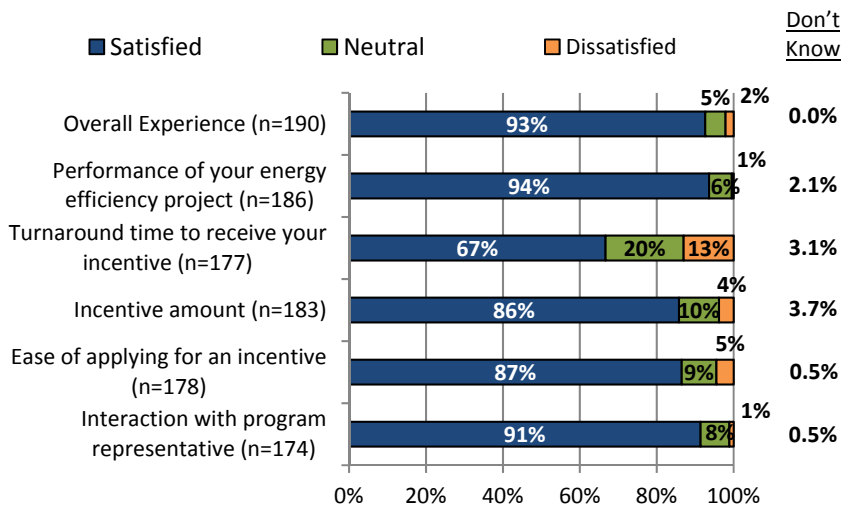
2 Multiple years of survey data were aggregated together to compute free ridership for these non-residential programs because at least one sub-quota within the program had a sample size below 30. Additional years of data were added until 30 or more survey responses were achieved in every sub-quota.

Existing Buildings – Oregon

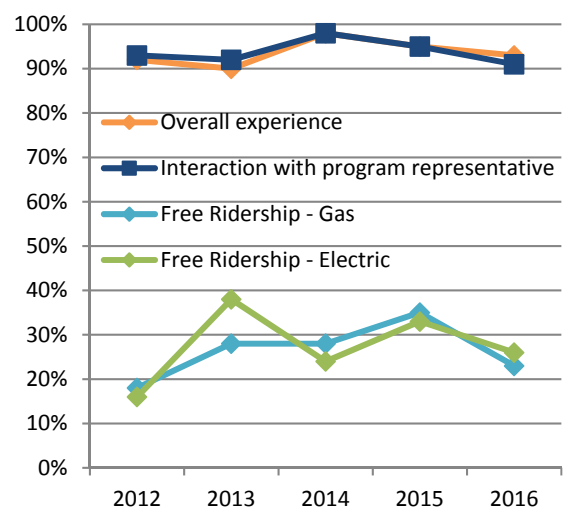
- Ninety-three percent of Existing Buildings Oregon respondents rated their overall satisfaction with Energy Trust a 4 or 5 out of 5. Satisfaction was lowest for the turnaround time to receive the incentive (67 percent). The Existing Buildings Custom, Lighting, and Standard groups each received overall satisfaction ratings of 91%, 90%, and 96% respectively.
- Twenty-four percent of respondents said they received Energy Trust funded services. Ninety-four percent of those respondents were satisfied with the services, rating them 4 or 5 out of 5.
- Forty-eight percent of respondents would have done a less energy efficient project if Energy Trust incentives or information were not available; 32 percent would have done exactly the same project. Free ridership was 26 percent for electric and 23 percent for gas projects.
- The Energy Trust-funded technical services had the greatest influence on the decision to incorporate energy efficient features into the project (80 percent rating 4 or 5 out of 5), followed by the incentive (78 percent rating 4 or 5 out of 5).

Participant Satisfaction

Satisfaction with Program Elements



Satisfaction and Free Ridership Over Time (Annual)

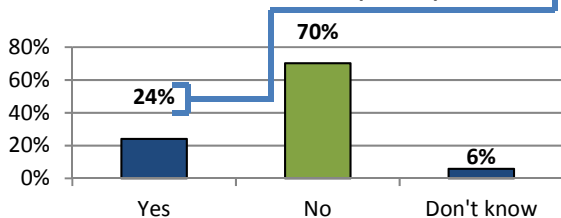


Survey question:

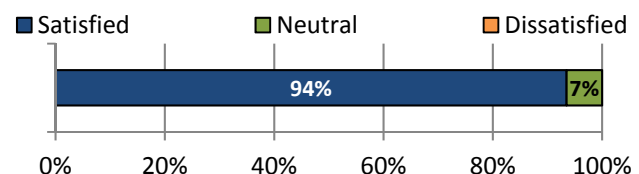
- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Energy Trust-funded Technical Services

Did you receive Energy Trust-funded technical services? (n=191)



Satisfaction with technical services (n=46)

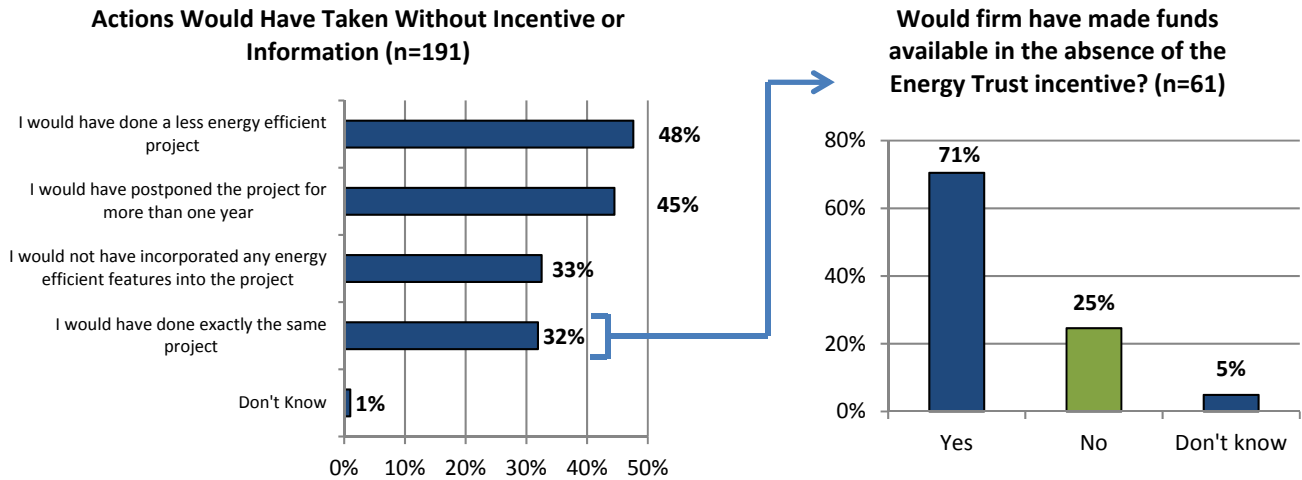


Survey questions:

- Q2E. Did you receive Energy Trust-funded technical services?
- Q2F. Please rate your satisfaction with the quality of the technical services on a scale of 1 to 5, where 1 means not at all satisfied and 5 means very satisfied.

Existing Buildings – Oregon

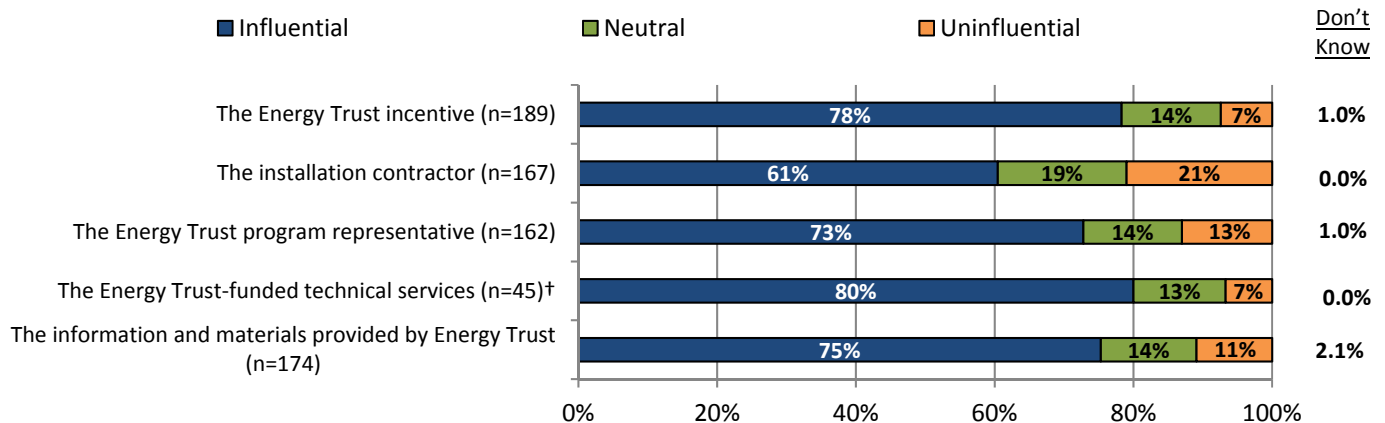
Impact of Incentives and Information



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? *(Multiple responses possible)*
- Q4. In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of the Energy Efficient features of the project?

Influences on Decision to Incorporate Energy Efficient Features in Project



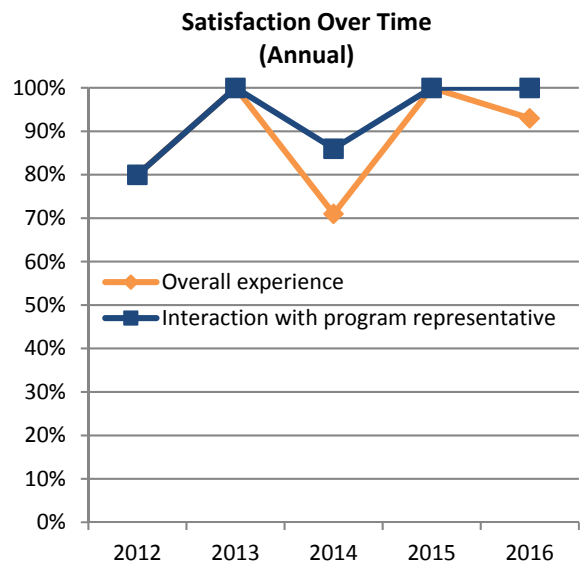
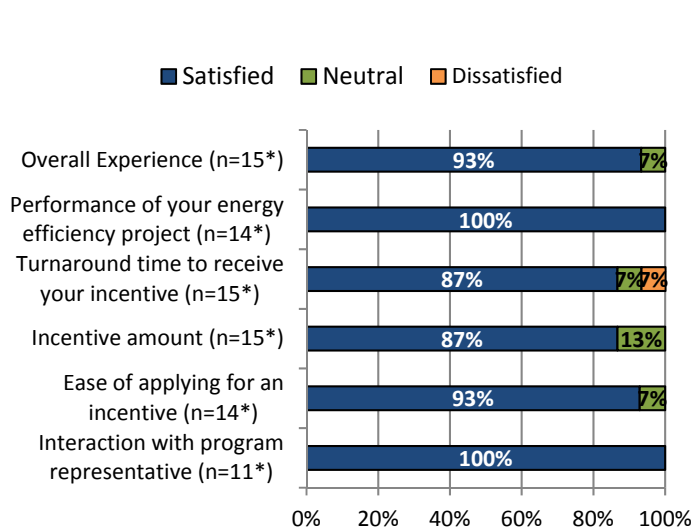
Survey questions:

- Q5. How influential were the following elements on your decision to incorporate energy efficient features in your project? *(† Only asked of those that reported receiving technical services)*

Existing Buildings – Washington

- Ninety-three percent of Existing Buildings Washington respondents rated their overall satisfaction with Energy Trust a 4 or 5 out of 5. Satisfaction was lowest for both the amount of the incentive and the turnaround time to receive the incentive (87 percent).
- One respondent said they received Energy Trust-funded services. That respondent was satisfied with the services, rating it a 4 out of 5.
- Fifty-three percent of respondents would have done exactly the same project if Energy Trust incentives or information were not available; 27 percent would have not incorporated energy efficient features into the project. Free ridership is not calculated for Washington participants.
- The incentive had a great influence on the decision to incorporate energy efficient features into the project (80 percent rating 4 or 5 out of 5). The one respondent who received technical services said it was influential on their decision.

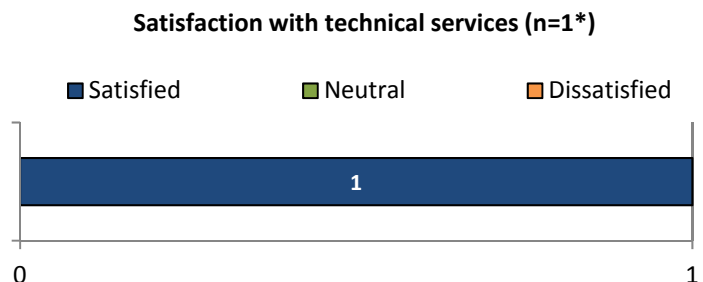
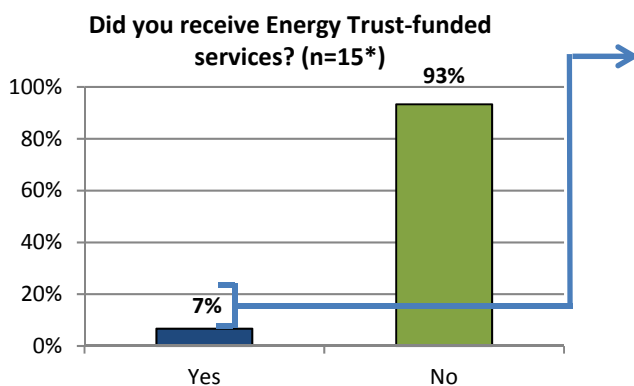
Participant Satisfaction



Survey Question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied. (*caution: small sample size)

Energy Trust-funded Technical Services

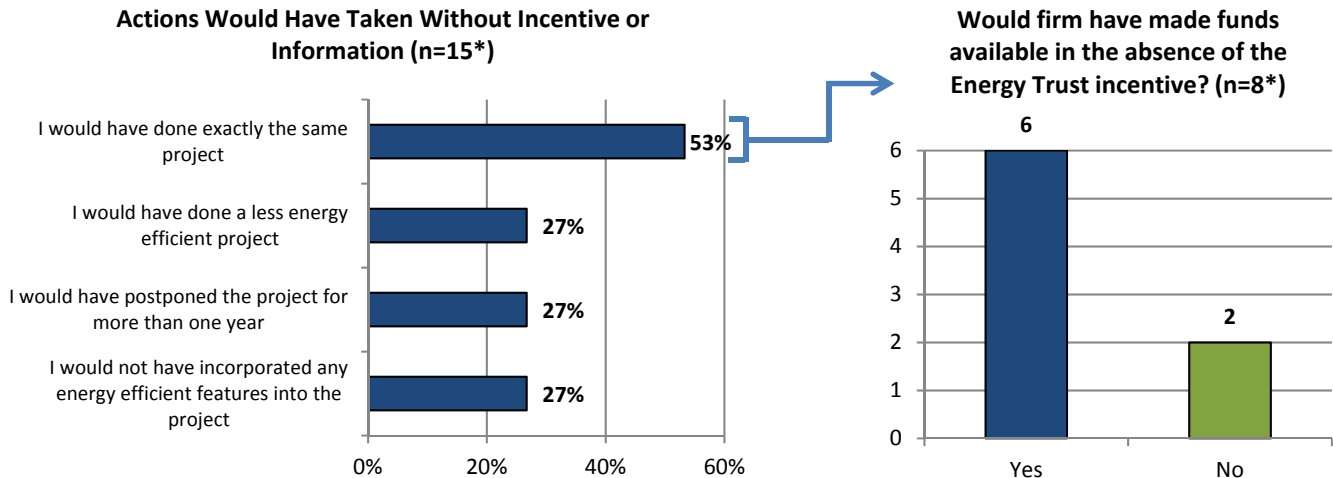


Survey questions:

- Q2E. Did you receive Energy Trust-funded technical services? (*caution: small sample size)
- Q2F. Please rate your satisfaction with the quality of the technical services on a scale of 1 to 5, where 1 means not at all satisfied and 5 means very satisfied. (*caution: small sample size)

Existing Buildings – Washington

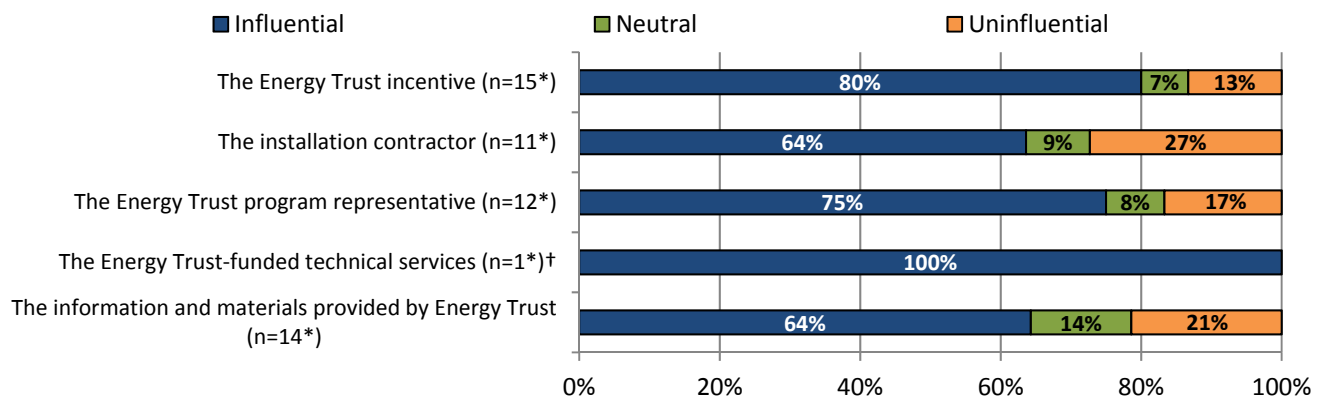
Impact of Incentives and Information



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? (**caution: small sample size*) (Multiple responses possible)
- Q4. In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of the Energy Efficient features of the project? (**caution: small sample size*)

Influences on Decision to Incorporate Energy Efficient Features in Project



Survey question:

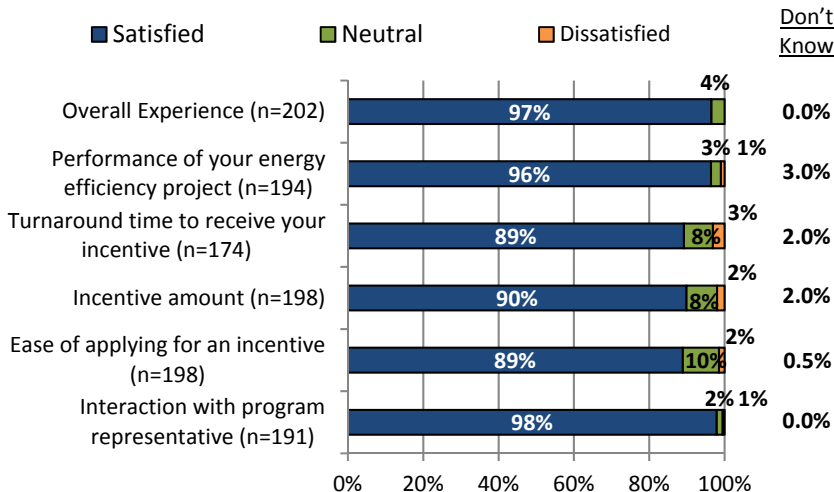
- Q5. How influential were the following elements on your decision to incorporate energy efficient features in your project? (**caution: small sample size*) († Only asked of those that reported receiving technical services)

Production Efficiency

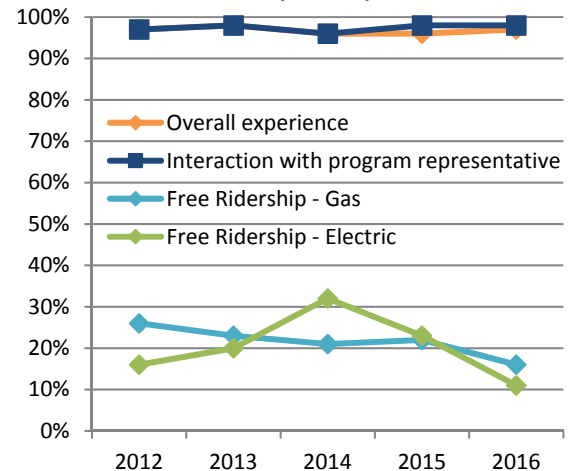
- Ninety-seven percent of Production Efficiency respondents rated their overall satisfaction with Energy Trust a 4 or 5 out of 5. Satisfaction was lowest for the ease of applying for an incentive and the turnaround time to receive the incentive (89 percent). The Production Efficiency Custom, Lighting, and Standard groups each received overall satisfaction ratings of 100%, 96%, and 95% respectively.
- Forty-one percent of respondents said they received Energy Trust funded services. Ninety-four percent of them were satisfied with the services, rating them 4 or 5 out of 5.
- Fifty-four percent of respondents would have done a less energy efficient project if Energy Trust incentives or information were not available; 20 percent would have done exactly the same project. Free ridership was 11 percent for electric and 16 percent for gas projects.
- The Energy Trust-funded technical services had the greatest influence on the decision to incorporate energy efficient features into the project (88 percent rating 4 or 5 out of 5), followed by the Energy Trust incentive (83 percent rating 4 or 5 out of 5).

Participant Satisfaction

Satisfaction with Program Elements



Satisfaction and Free Ridership Over Time (Annual)

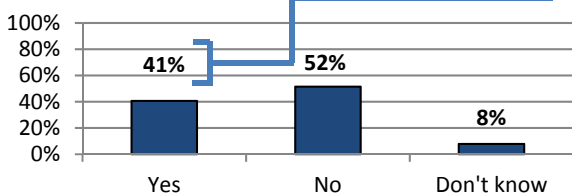


Survey question:

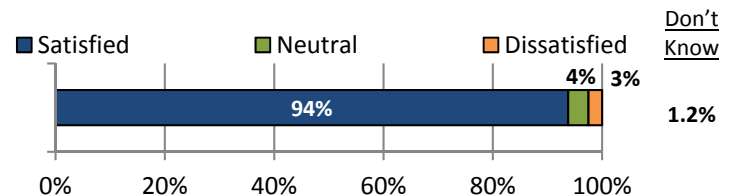
- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Energy Trust-funded Technical Services

Did you receive Energy Trust-funded services? (n=202)



Satisfaction with technical services (n=81)



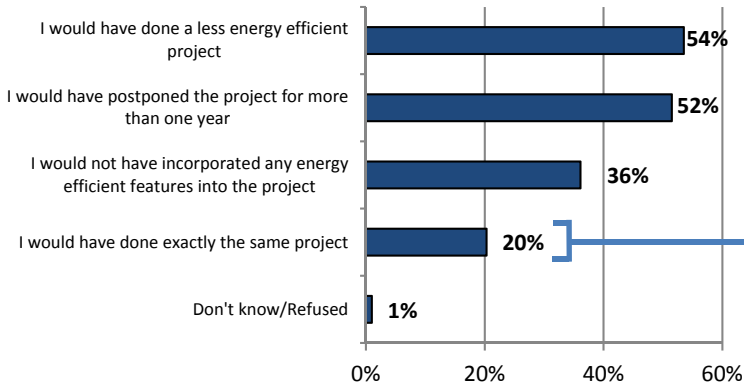
Survey questions:

- Q2E. Did you receive Energy Trust-funded technical services?
- Q2F. Please rate your satisfaction with the quality of the technical services on a scale of 1 to 5, where 1 means not at all satisfied and 5 means very satisfied.

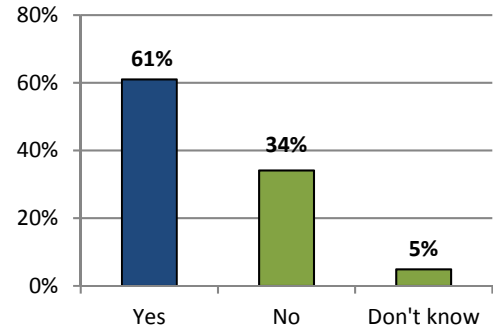
Production Efficiency

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=202)



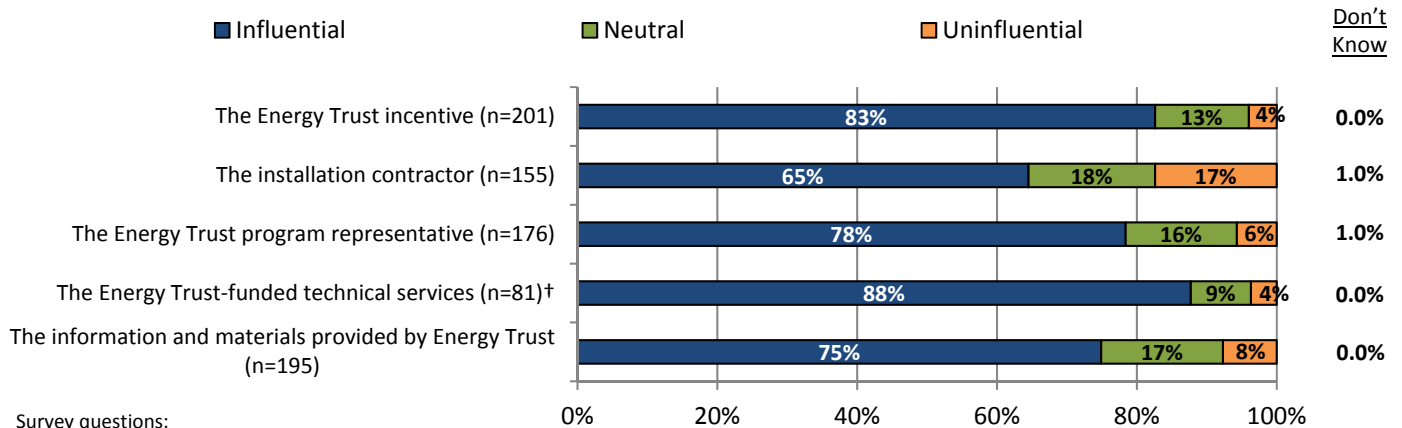
Would firm have made funds available in the absence of the Energy Trust incentive? (n=41)



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? (*Multiple responses possible*)
- Q4. In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of the Energy Efficient features of the project?

Influences on Decision to Incorporate Energy Efficient Features in Project

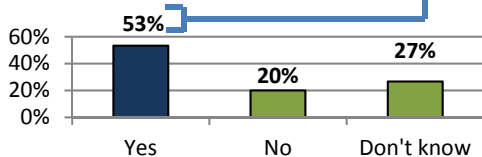


Survey questions:

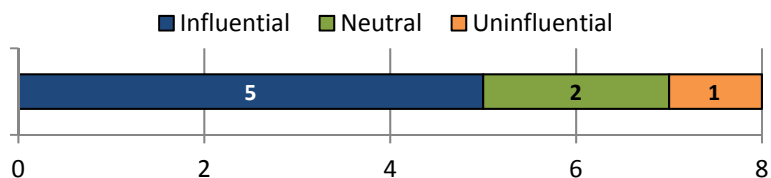
- Q5. How influential were the following elements on your decision to incorporate energy efficient features in your project? (*† Only asked of those that reported receiving technical services*)

Bonus Incentive

Do you recall receiving a bonus incentive for your project? (n=15*)



Influence of Bonus Incentive (n=8*)



Survey questions:

(These questions are only asked of respondents that received a bonus incentive)

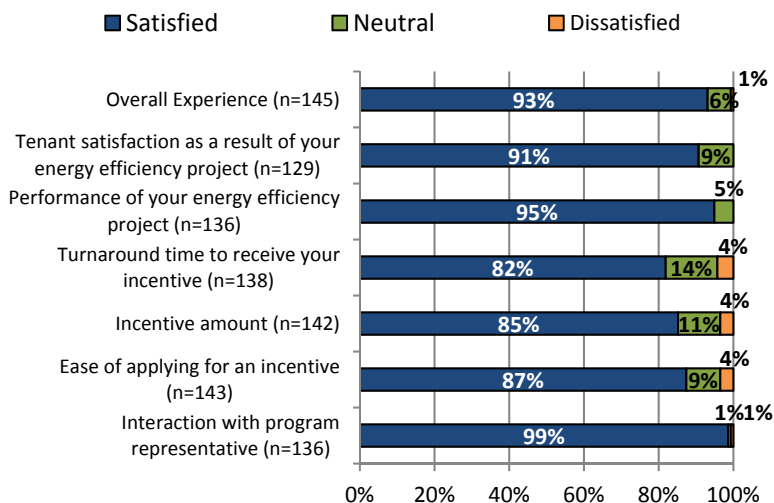
- Q11F. Do you recall receiving a bonus incentive for your project? (**caution: small sample size*)
- Q11G. How influential was the bonus incentive on your decision to incorporate energy efficient features in your project? (**caution: small sample size*)

Multifamily

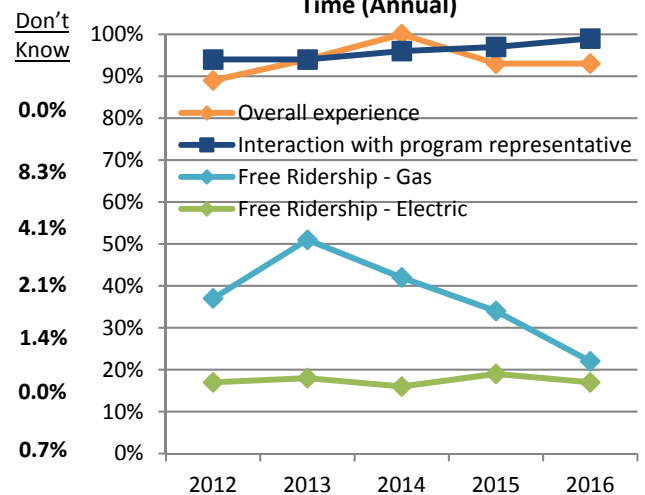
- Ninety-three percent of Multifamily respondents rated their overall satisfaction with Energy Trust a 4 or 5 out of 5. Satisfaction was lowest for the amount of the incentive and the turnaround time to receive the incentive (both 85 percent).
- Fifty-three percent of respondents said they received an Energy trust walk-through survey of their property, 90% of those respondents rated their overall satisfaction a 4 or 5 out of 5.
- Twenty-one percent of respondents reported receiving Energy Trust-funded technical services, 87% of those respondents rated their overall satisfaction a 4 or 5 out of 5.
- Forty-three percent of respondents would have done a less energy efficient project if Energy Trust incentives or information were not available; 26 percent would not have incorporated any energy efficient features into the project. Free ridership was 17 percent for electric and 22 percent for gas.
- The incentive and information/materials provided by Energy Trust both had the greatest influence on the decision to incorporate energy efficient features into the project (76 percent rating 4 or 5 out of 5).

Participant Satisfaction

Satisfaction with Program Elements



Satisfaction and Free Ridership Over Time (Annual)

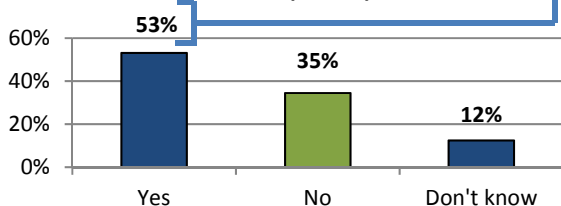


Survey question:

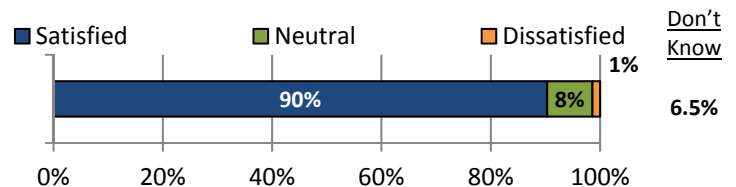
- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Energy Trust Walk Through Survey

Did you receive a walk-through survey of your property performed by Energy Trust? (n=145)



Satisfaction with walk-through survey (n=72)

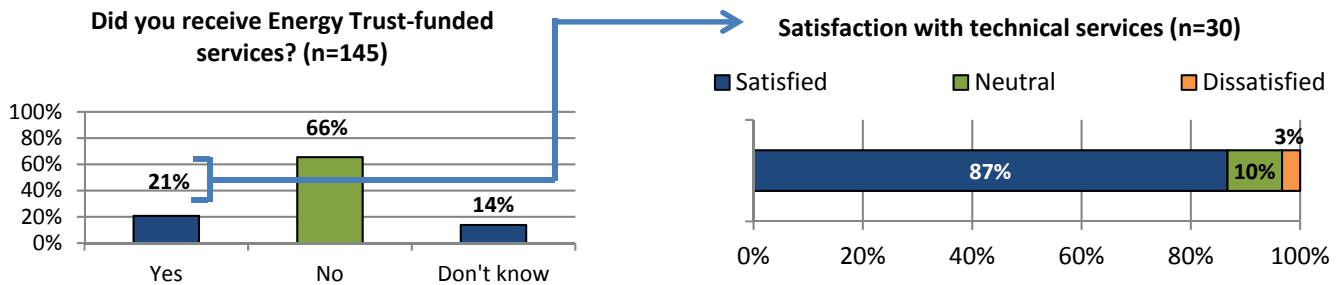


Survey questions:

- Q2B. Did you receive a walk-through survey of your property performed by Energy Trust?
- Q2D. Please rate your satisfaction with the quality of the walk-through survey on a scale of 1 to 5, where 1 means not at all satisfied and 5 means very satisfied.

Multifamily

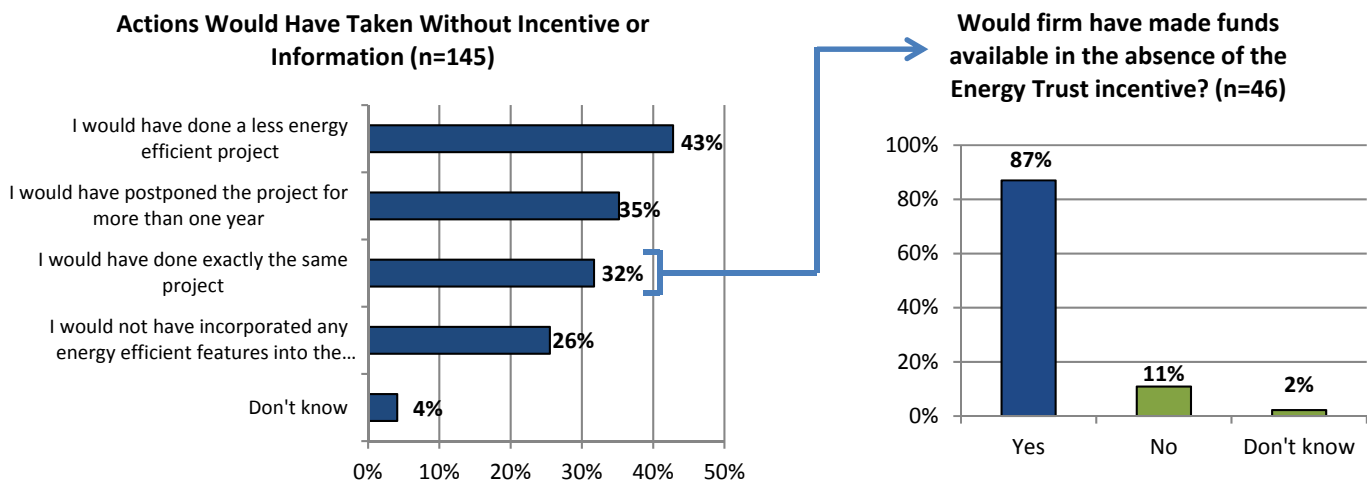
Energy Trust-funded Technical Services



Survey questions:

- Q2E. Did you receive Energy Trust-funded technical services?
- Q2F. Please rate your satisfaction with the quality of the technical services on a scale of 1 to 5, where 1 means not at all satisfied and 5 means very satisfied.

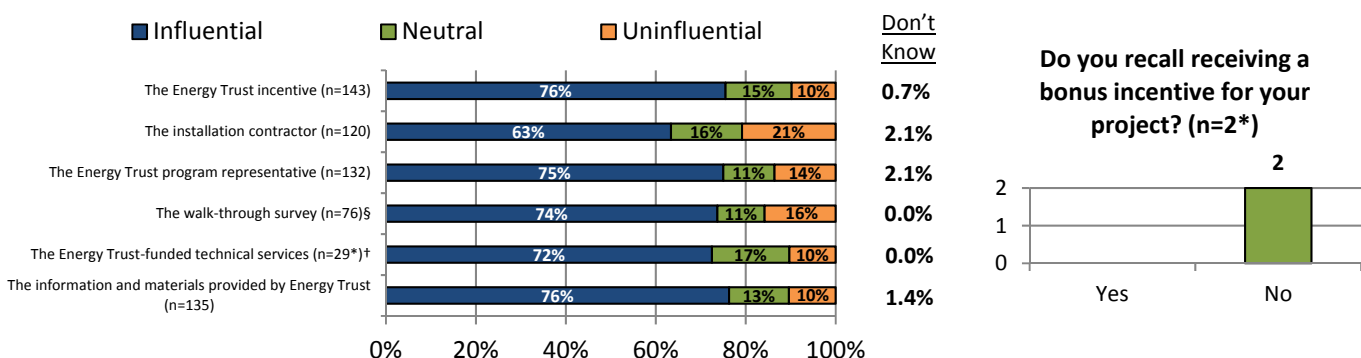
Impact of Incentives and Information



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? (*Multiple responses possible*)
- Q4. In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of the Energy Efficient features of the project?

Influences on Decision to Incorporate Energy Efficient Features in Project



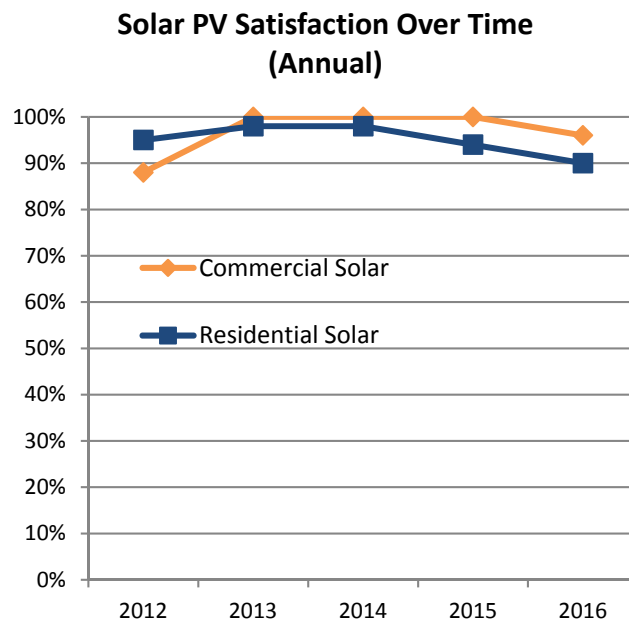
Survey questions:

- Q5. How influential were the following elements on your decision to incorporate energy efficient features in your project? (**caution: small sample size*) (*† Only asked of those that reported receiving technical services*) (*§ Only asked of those who received a walk through survey*)
- Q11F. Do you recall receiving a bonus incentive for your project? (**caution: very small sample size*)

Solar PV Summary

- Satisfaction of Commercial Solar PV respondents was 96 percent.
- On the residential side, 90 percent of Solar PV respondents were satisfied.
- All but one Commercial Solar PV respondent was satisfied with the program representative (one respondent was “neutral”).

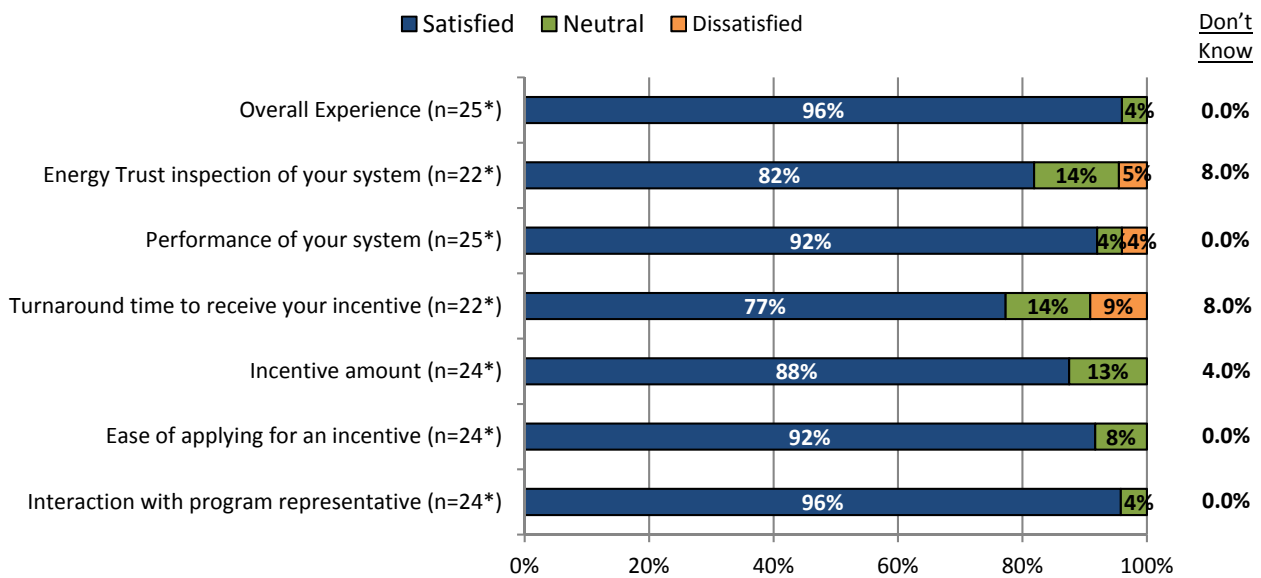
Program	Completed Surveys	Percent Satisfied
Commercial Solar PV	25	96%
Residential Solar PV	186	90%



Commercial Solar PV System

- Ninety-six percent of Commercial Solar PV System respondents rated their overall satisfaction with Energy Trust a 4 or 5 out of 5.
- Sixty-eight percent of respondents would have postponed the project for more than a year if Energy Trust incentives or information were not available; 12 percent would have installed exactly the same system.
- The incentive had the greatest influence on the decision to incorporate energy efficient features into the project (88 percent rating 4 or 5 out of 5), followed by the installation contractor (71 percent rating 4 or 5 out of 5).

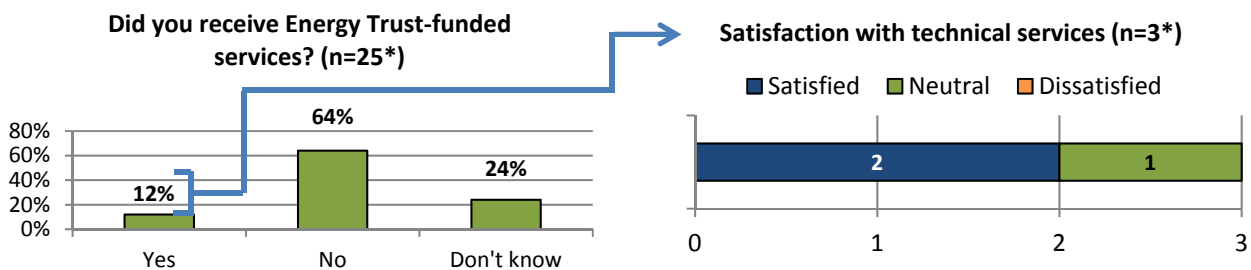
Participant Satisfaction



Survey Question:

- Q1. Thinking of your new solar PV system, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied. (*caution: small sample size)

Energy Trust-funded Technical Services and Tax Credit

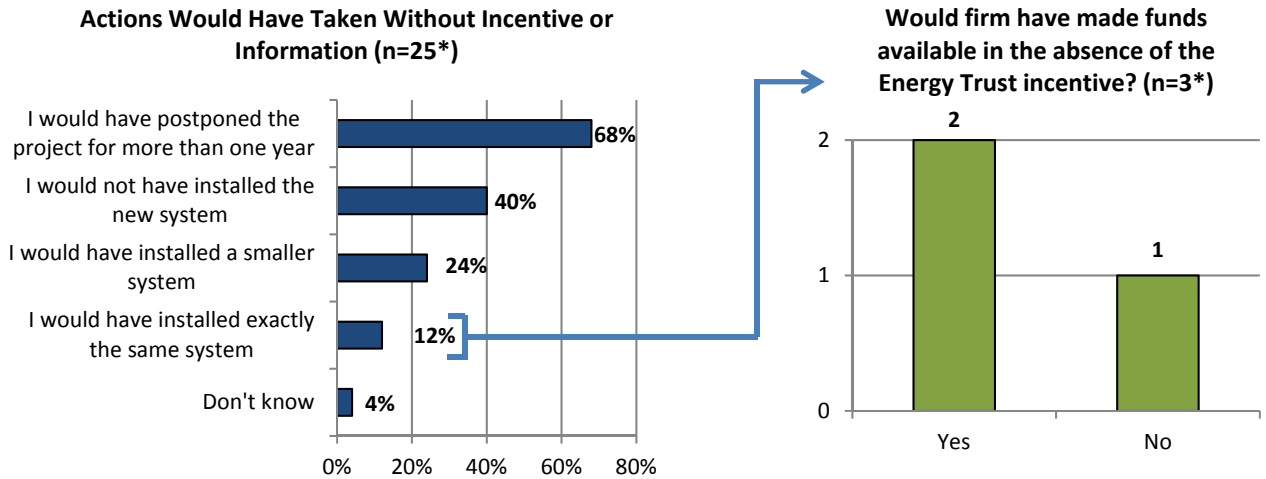


Survey questions:

- Q2E. Did you receive Energy Trust-funded technical services? (*caution: small sample size)
- Q2F. Please rate your satisfaction with the quality of the technical services on a scale of 1 to 5, where 1 means not at all satisfied and 5 means very satisfied. (*caution: small sample size)

Commercial Solar PV System

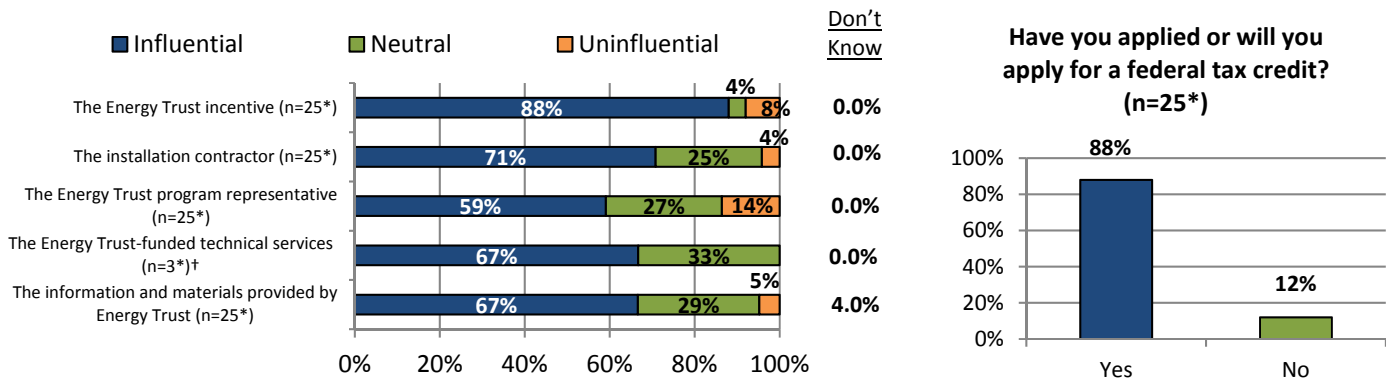
Impact of Incentives and Information



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? (*caution: very sample size) (Multiple responses possible)
- Q4. In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of the Energy Efficient features of the system? (*caution: small sample size)

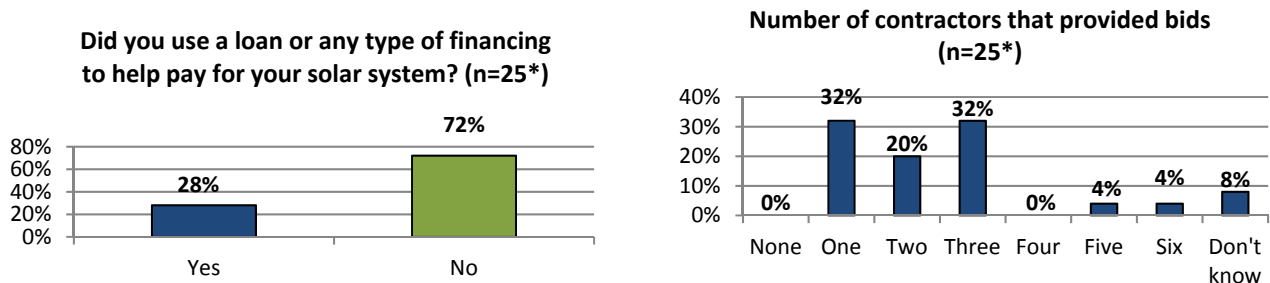
Influences on Decision to Install Solar PV System



Survey questions:

- Q5. How influential were the following elements on your decision to install solar? (*caution: small sample size)
- Q6. Have you applied or will you apply for a federal tax credit for the system you installed? (*caution: small sample size)

Funding and Number of Bids



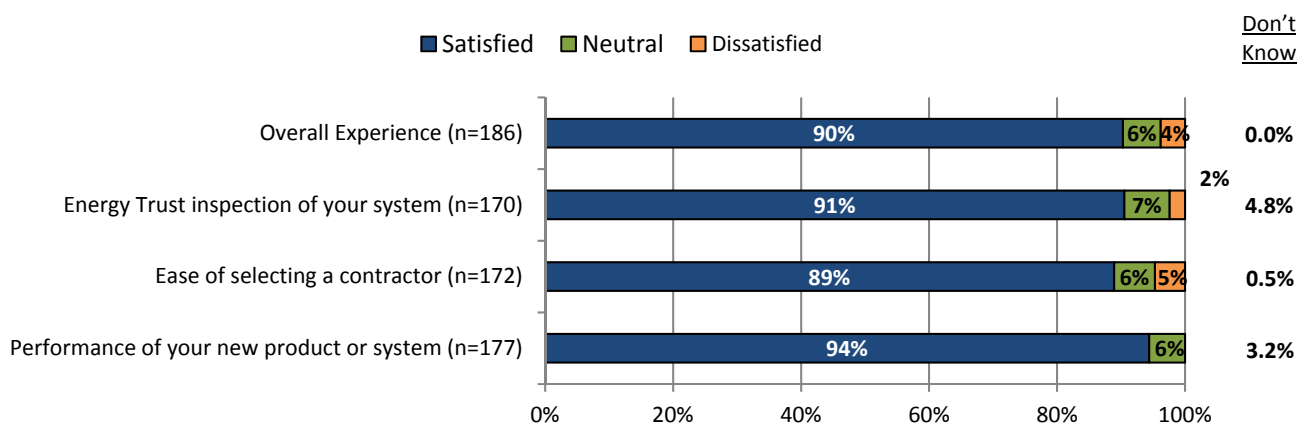
Survey questions:

- Q11A. Did you use a loan or any type of financing to help pay for your solar system? (*caution: small sample size)
- Q11E. How many contractors did you get a bid from before deciding to move forward with your project? (*caution: small sample size)

Residential Solar PV System

- Ninety percent of Residential Solar PV System respondents rated their overall satisfaction a 4 or 5 out of 5, and 94 percent were satisfied with the performance of the new system.
- Under half of respondents (43 percent) had visited the Energy Trust website, talked or emailed with a representative, or received printed materials before having their system installed.
- Thirty-six percent of respondents would have installed the same system without Energy Trust incentives and information; 35 percent would not have installed the system; 35 percent would have postponed installation.
- The contractor was the most influential element on the decision to install the system followed by the Energy Trust incentive.
- Eighty-nine percent of respondents rated their overall satisfaction with their contractor a 4 or 5 out of 5 and 96 percent were satisfied with the quality of installation work.
- Sixty-two percent of respondents paid for their system with cash, while 20 percent used a loan.

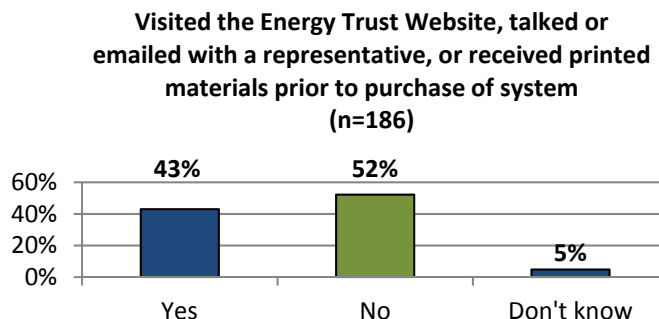
Participant Satisfaction



Survey Question:

- Q1. Thinking of your new solar PV system, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Discount and Interactions With Energy Trust Prior to Purchasing System



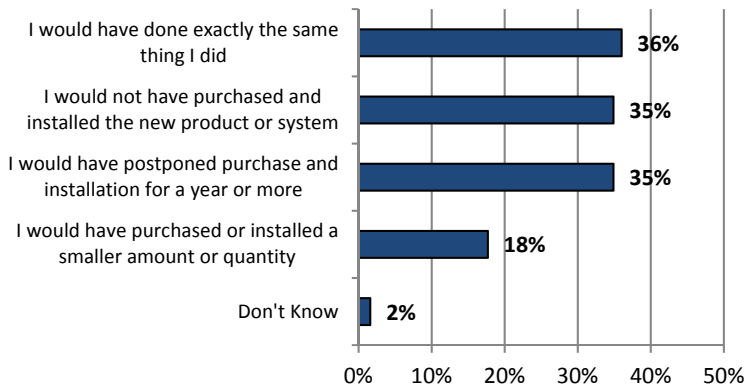
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you purchased your system?

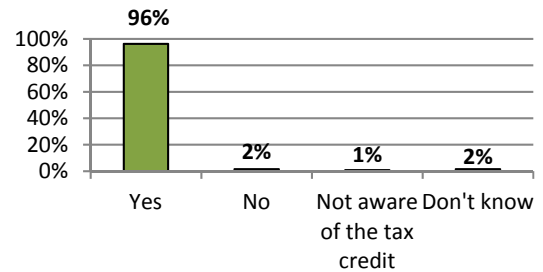
Residential Solar PV System

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=186)



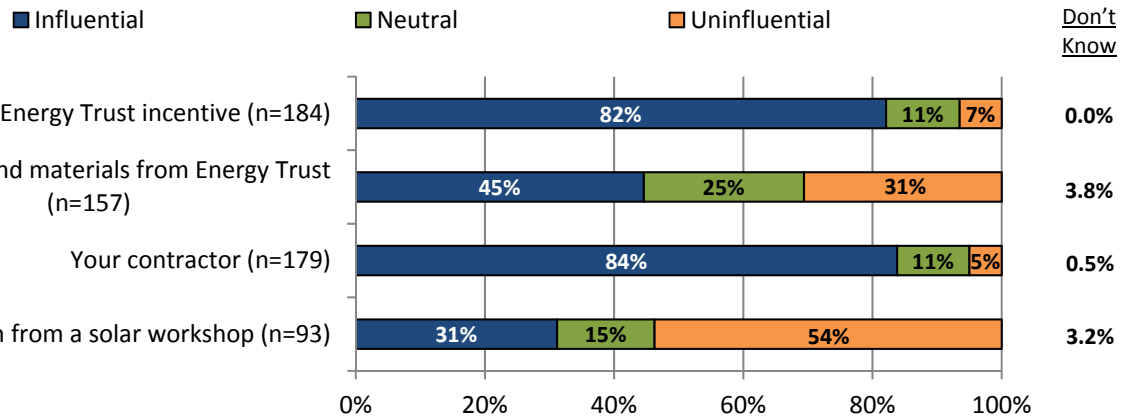
Have you applied or will you apply for the applicable Oregon state residential energy tax credit? (n=133)



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? (Multiple responses possible)
- Q6. Have you applied or will you apply for the applicable Oregon state residential energy tax credit?

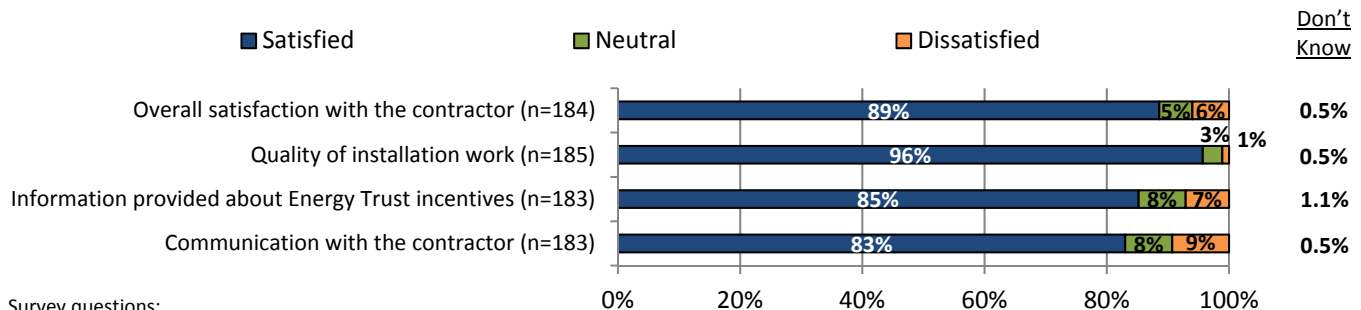
Influences on Decision to Install Solar PV System



Survey questions:

- Q4A. How influential were the following elements on your decision to purchase your system?

Satisfaction with Contractor



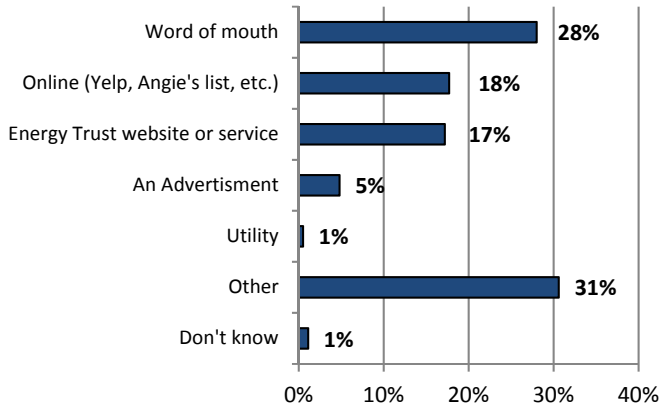
Survey questions:

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (Only asked of respondents who used a contractor to have work performed)

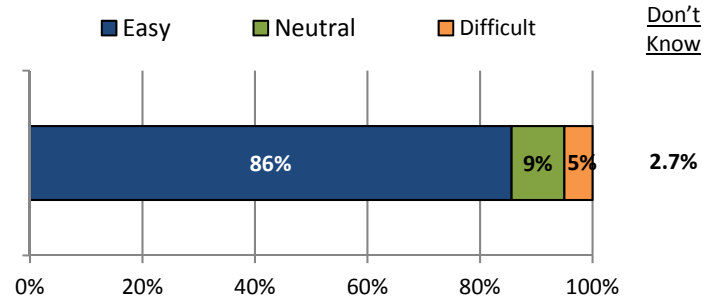
Residential Solar PV System

Finding a Contractor

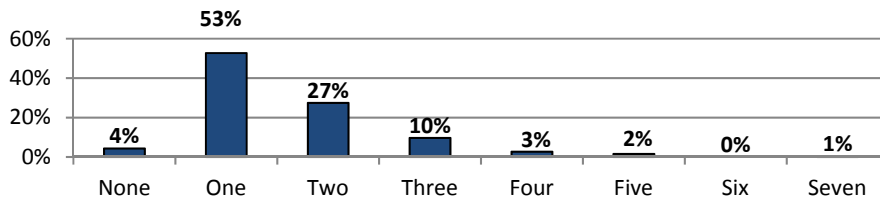
How did you find your contractor? (n=186)



Difficulty of finding and selecting contractor (n=180)



Number of contractors that provided bids (n=186)

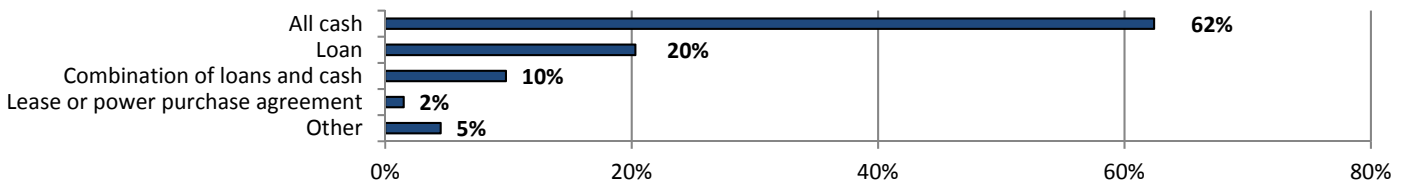


Survey questions:

- Q12Q. How did you find your contractor? (Multiple responses possible)
- Q12R. How easy or difficult was the process of finding and selecting your contractor, using a 5-point scale?
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project? (Only asked of respondents who used a contractor to have work performed)

Funding for New System

How system was paid for (n=133)



Survey questions:

- Q13. How did you pay for your system? (Only asked of Solar PV System respondents)

Home Products Summary

- Satisfaction for all three home product measures was high, ranging from 97 percent to 93 percent.

Program	Completed Surveys	Percent Satisfied	Free Ridership
Clothes Washers	221	95%	42% ¹
Refrigerator Recycling	245	97%	32%
Clothes Washer Recycling	180	93%	31%

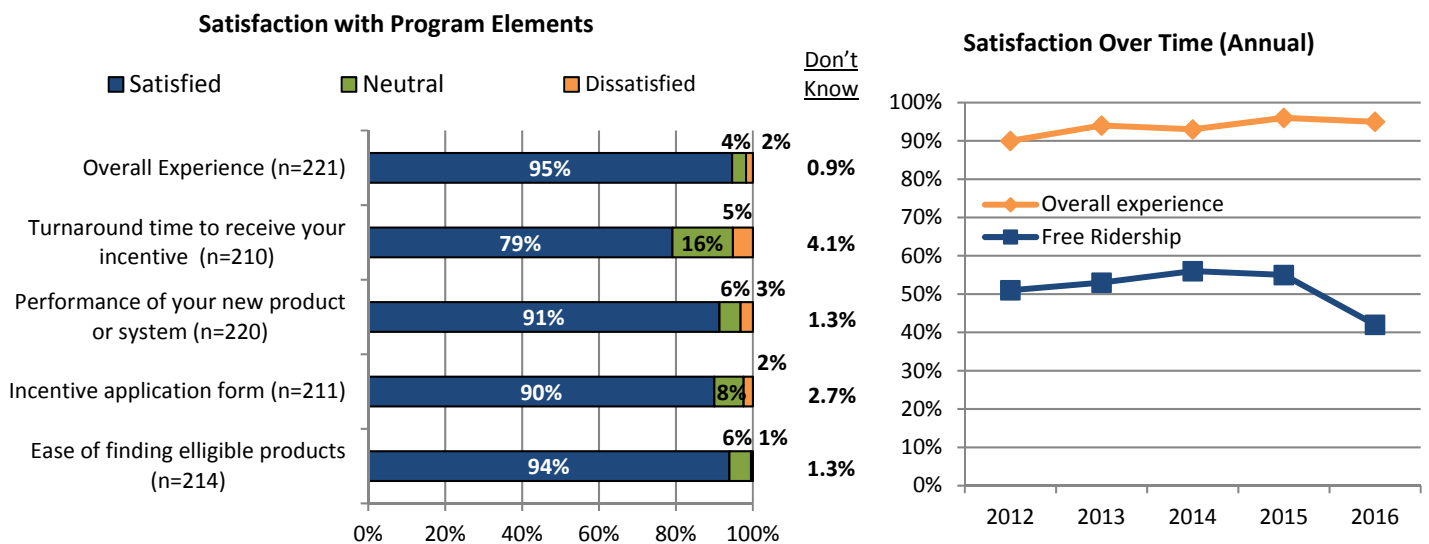
NOTE: Please see Appendix A for more information about how free ridership numbers are calculated from survey responses. In 2016, minor changes were made to the wording and structure of the survey questions that free ridership is based on. If a respondent indicated that they would have changed something about their project in the absence of Energy Trust programs, they were not also asked if they would have done exactly the same thing, as was done in the past.

¹ There was a slight change to the free ridership calculation methodology for this measure for 2016. This change better accounts for the incremental nature of efficiency in this measure category and caused a minor reduction in the free ridership rate.

Clothes Washers

- Ninety-five percent of Clothes Washers respondents rated their overall satisfaction a 4 or 5 out of 5. Satisfaction with turnaround time to receive incentive received the lowest rating (79 percent).
- Twenty-four percent of respondents had used the Energy Trust website, talked or emailed with a representative, or received printed materials before purchasing their unit.
- Sixty-one percent of respondents would have bought the same unit in the absence of Energy Trust incentives and information. The biggest influence on the purchase decision was the salesperson (60 percent), followed by the Energy Trust incentive (56 percent). Free ridership was 42 percent.

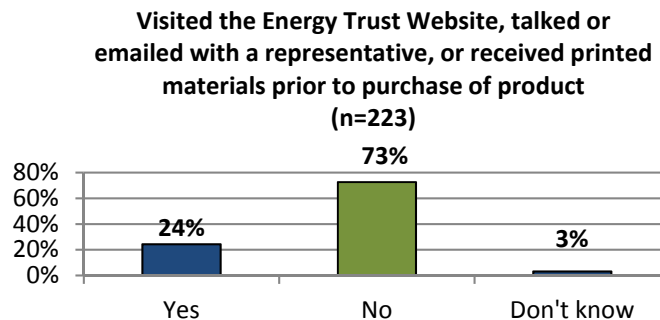
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Purchasing Product



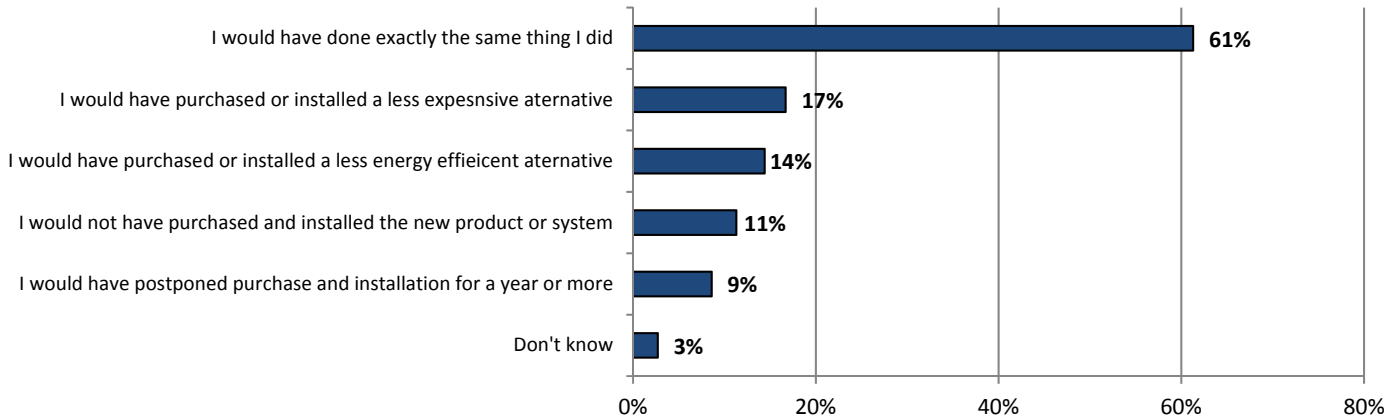
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you purchased your product?

Clothes Washers

Impact of Incentives and Information

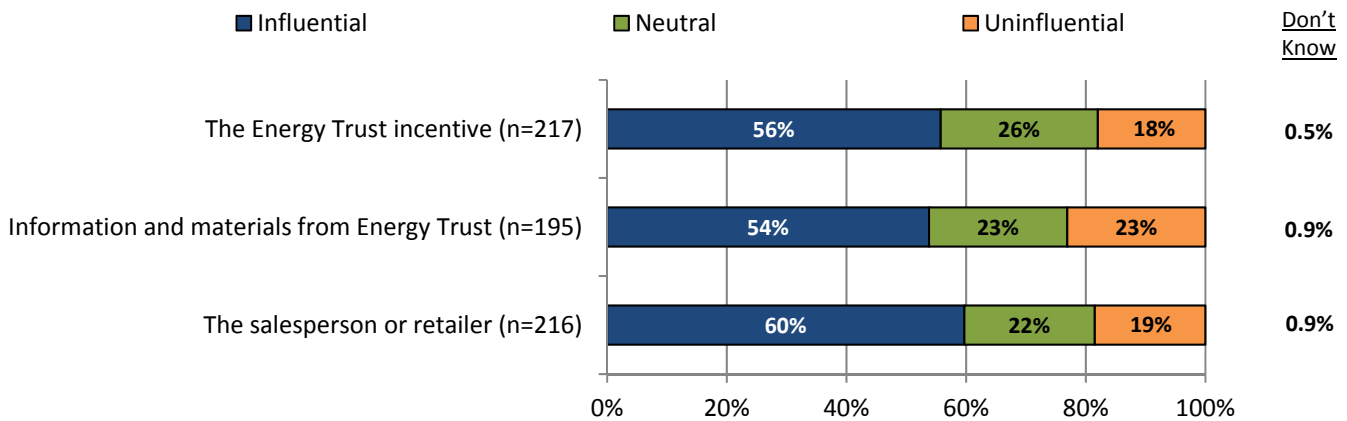
Actions Would Have Taken Without Incentive or Information (n=222)



Survey questions:

- Q3. Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available? (Multiple responses possible)

Influences on Decision to Purchase Product

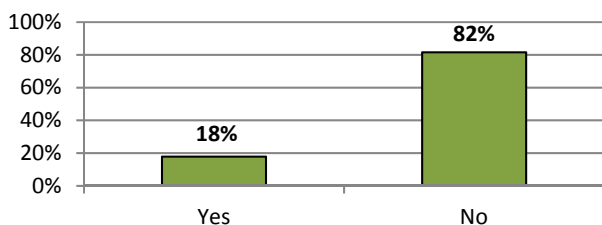


Survey questions:

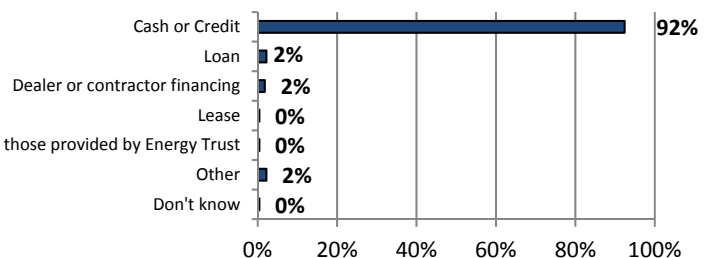
- Q4A. How influential were the following elements on your decision to purchase your product?

Funding for Product

Did you use financing to pay for your new product? (n=223)



How it was paid for (n=223)



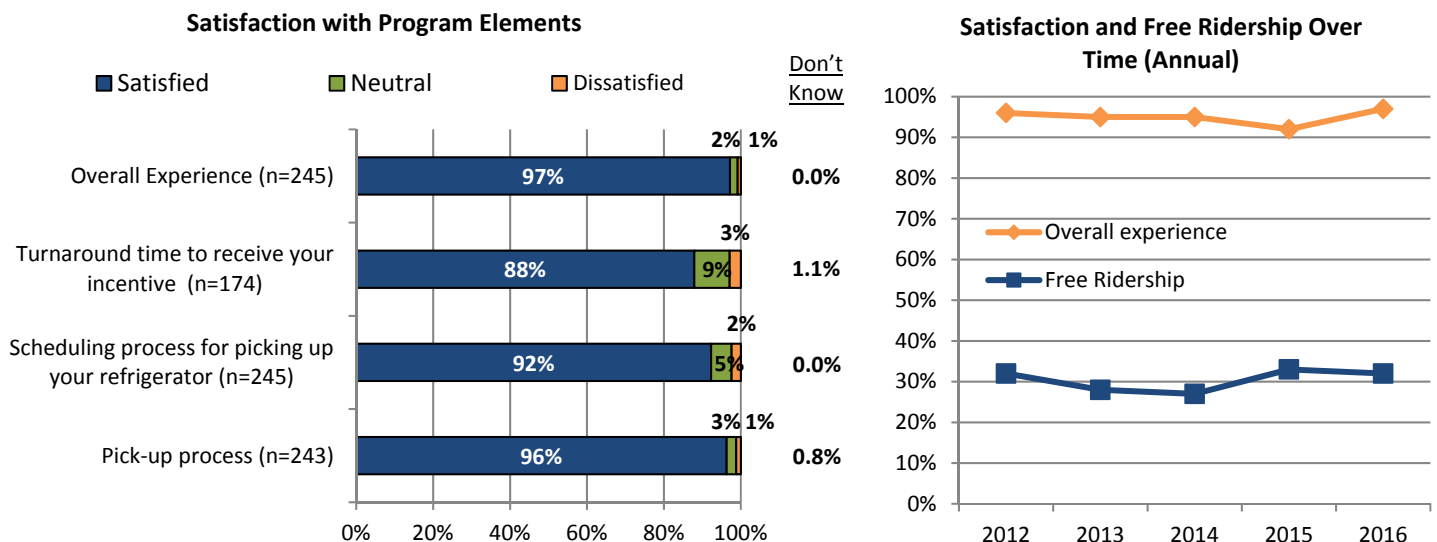
Survey Question:

- Q12V. Did you use financing to pay for your new product?
- Q12W. How did you pay for it? (Multiple responses possible)

Refrigerator Recycling

- Ninety-seven percent of Refrigerator Recycling respondents rated their overall satisfaction a 4 or 5 out of 5. Ninety-six percent were satisfied with the pick-up process and 92 percent were satisfied with the scheduling process.
- Thirty percent of respondents would have taken the unit to a recycling center without the incentive. Free ridership was 32 percent.
- Seventy-five percent of respondents indicated that they were replacing the old unit; the majority of those were replacing with a new unit.

Participant Satisfaction

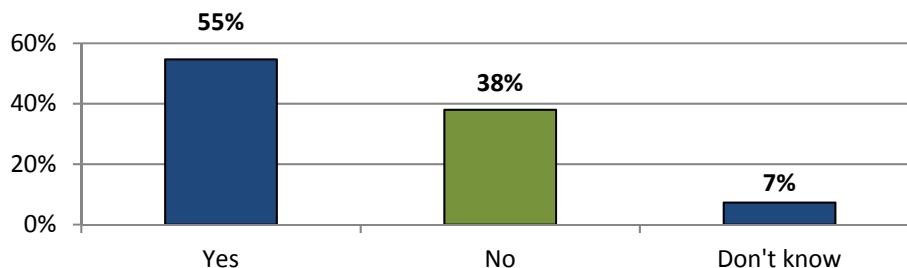


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Recycling

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to recycling appliance (n=245)



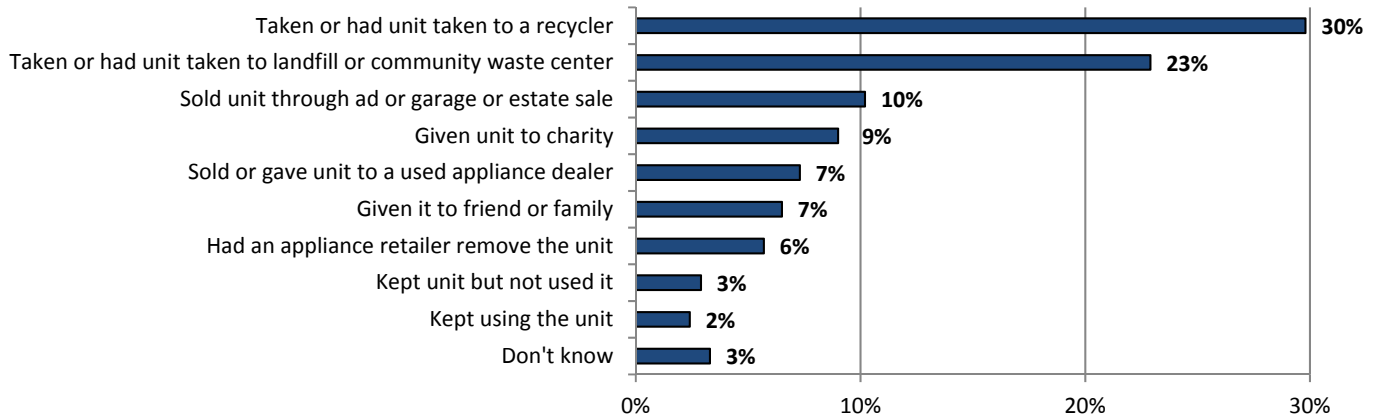
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you recycled your appliance?

Refrigerator Recycling

Impact of Incentives and Information

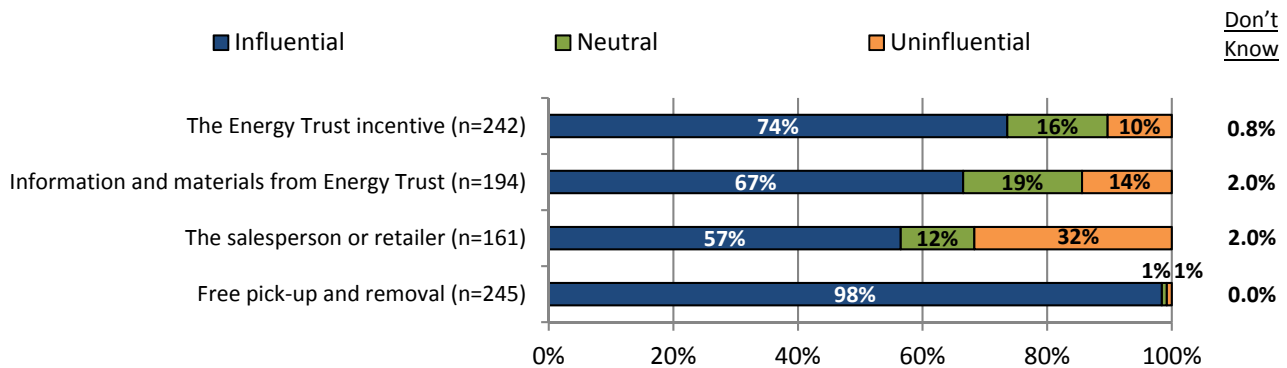
Actions Would Have Taken Without Recycling Incentive or Information (n=245)



Survey questions:

- Q3B. Which of the following statements describe the actions you would have taken had the Energy Trust refrigerator recycling incentive and information not been available? (Multiple responses possible)

Influences on Decision to Recycle Appliance

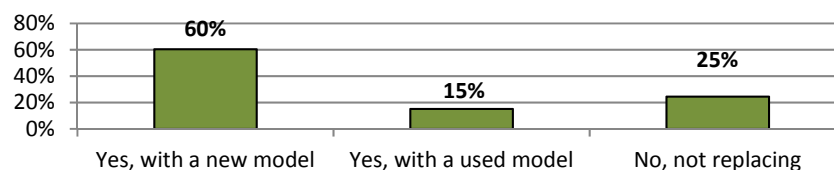


Survey questions:

- Q4A. How influential were the following elements on your decision to recycle your appliances?

Replacing the Refrigerator

Are you replacing, or have you replaced the refrigerator that was recycled? (n=245)



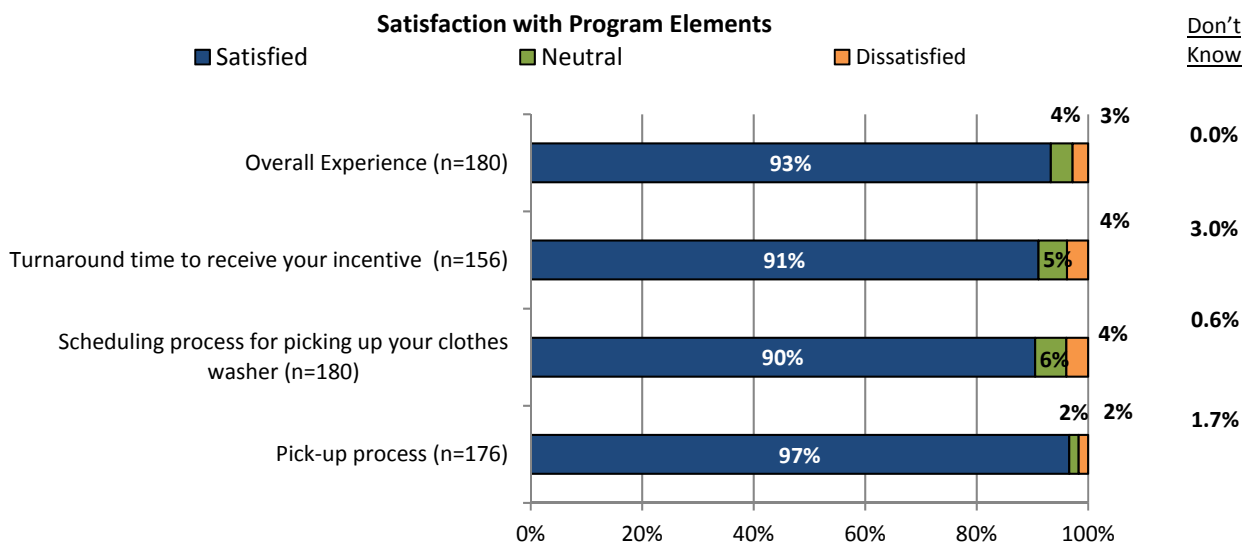
Survey questions:

- Q11. Are you replacing, or have you replaced the refrigerator that was recycled?

Clothes Washer Recycling

- 2016 was the first year that Energy Trust offered clothes washer recycling.
- Ninety-three percent of Cloths Washer Recycling respondents rated their overall satisfaction a 4 or 5 out of 5. Ninety-seven percent were satisfied with the pick-up process and 90 percent were satisfied with the scheduling process.
- Twenty-seven percent of respondents would have taken the unit to a recycling center without the incentive. Free ridership was 31 percent.
- Ninety-four percent of respondents indicated that they were replacing the old unit; the majority of those were replacing with a new unit.

Participant Satisfaction

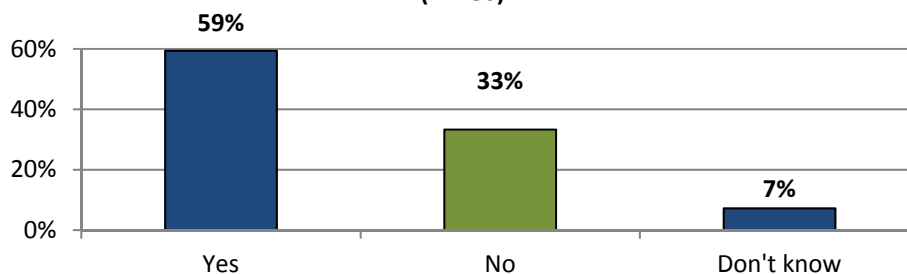


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Recycling

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to recycling appliance (n=180)



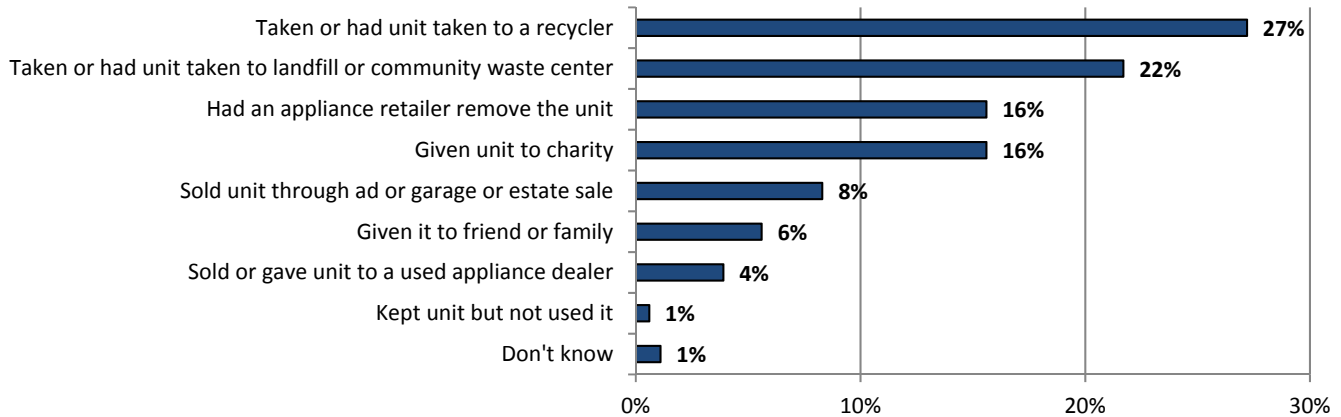
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you recycled your appliance?

Clothes Washer Recycling

Impact of Incentives and Information

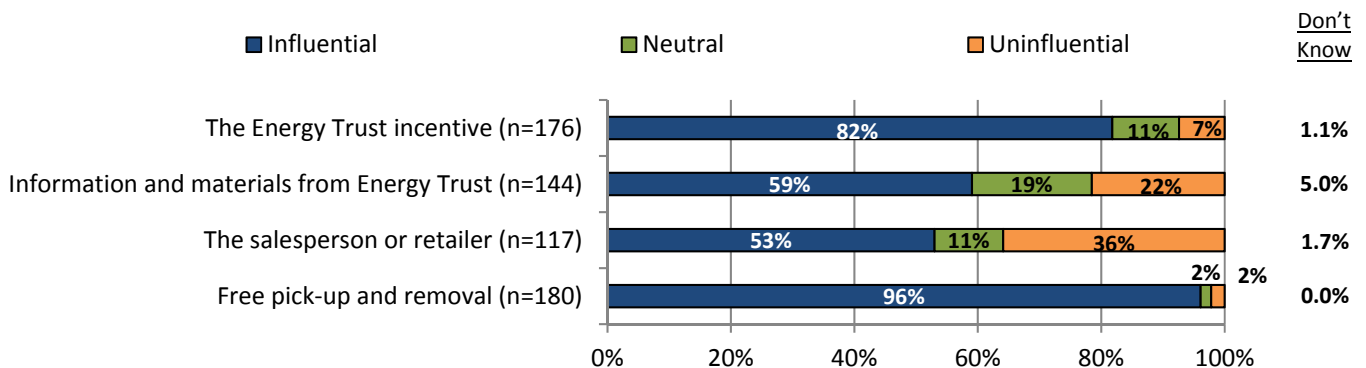
Actions Would Have Taken Without Recycling Incentive or Information (n=180)



Survey questions:

- Q3B. Which of the following statements describe the actions you would have taken had the Energy Trust clothes washer recycling incentive and information not been available? (Multiple responses possible)

Influences on Decision to Recycle Appliance

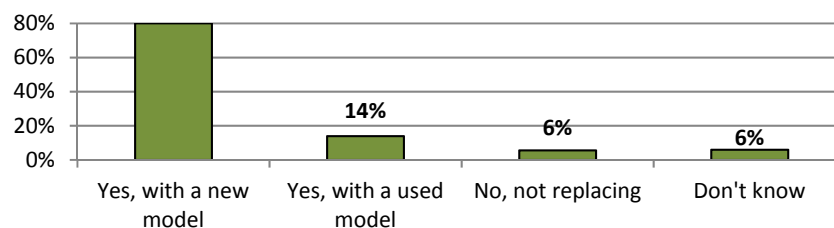


Survey questions:

- Q4A. How influential were the following elements on your decision to recycle your appliance?

Replacing the Clothes Washer

Are you replacing, or have you replaced the clothes washer that was recycled? (n=180)



Survey questions:

- Q11. Are you replacing, or have you replaced the clothes washer that was recycled?

Existing Homes Summary

- Overall satisfaction with Existing Homes Oregon measures varied from a high of 96 percent (Wall Insulation, and Water Heater) to 89 percent for Heat Pumps, Windows, with an overall average of 91 percent. Overall satisfaction for Existing Homes Washington was 92 percent.

Survey Group	Oregon Surveys Completed	Washington Surveys Completed	Percent Satisfied	Free Ridership
Ceiling Insulation	126	2	93%	41%
Floor Insulation	77	0	94%	36%
Wall Insulation	38	1	92%	
Heat Pumps (excl. DHPs)	117	0	87%	37% ¹
Ductless Heat Pumps	127	0	91%	31%
Gas Tank Water Heaters	52	3	96%	41% ¹
Heat Pump Water Heater	70	0	89%	26%
<i>Home Performance*</i>	7	0	100%	27%
Windows	224	28	92%	39% ¹
Gas Furnaces (WA only)	67	67	91%	†
Gas Fireplaces	209	13	93%	39% ¹
Smart Thermostats	189	4	91%	43%
Existing Homes - Washington**	-	117	92%	†

* Very small sample size, interpret with caution.

** There are no measure-level quotas for Existing Homes - Washington.

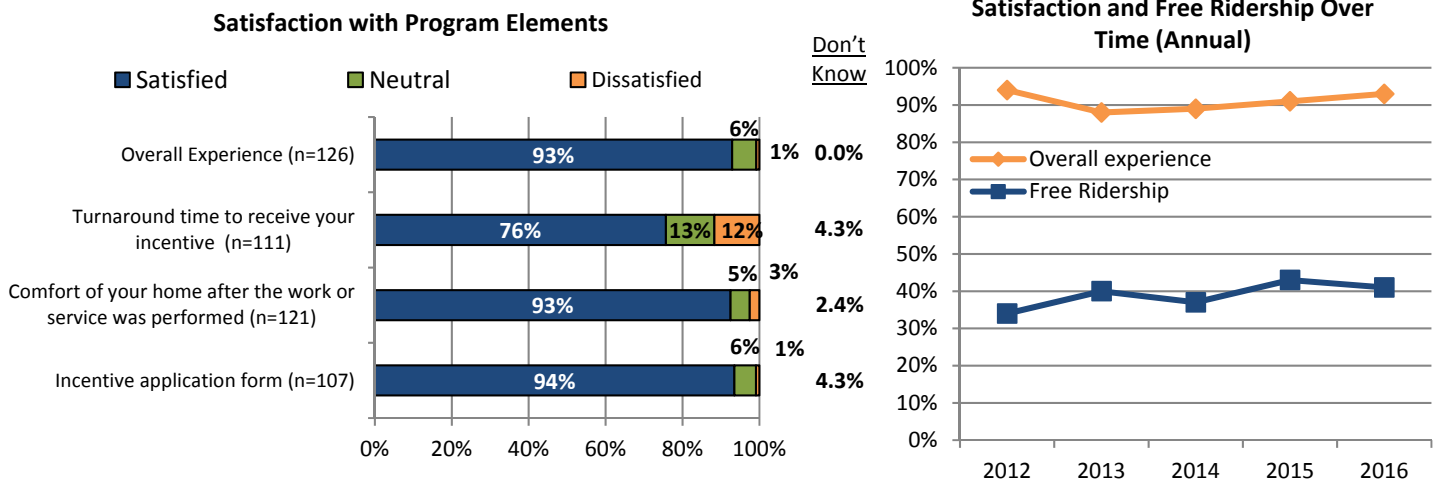
† Free ridership is not computed for WA participants, so they are excluded here.

¹ There was a slight change to the free ridership calculation methodology for these measure categories for 2016. This change caused a small reduction to the free ridership rates for these measures.

Ceiling Insulation

- Ninety-three percent of Ceiling Insulation respondents rated their overall satisfaction a 4 or 5 out of 5. Satisfaction was lowest with the turnaround time to receive the incentive (76 percent), but satisfaction with comfort of the home was high (rated 4 or 5 by 93 percent of respondents).
- Fifty-five percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before installing insulation.
- Sixty-two percent would have installed insulation without Energy Trust incentives and information, while 23 percent would have postponed the insulation for at least a year and 14 percent would not have had home weatherization or improvements performed. Free ridership was 41 percent.
- The contractor was the most influential element on the decision to have ceiling insulation installed (rated 4 or 5 by 73 percent of respondents), followed by the incentive (66 percent).
- Ninety percent of respondents were satisfied with their contractor; 42 percent consulted the approved trade ally list when choosing their contractor.

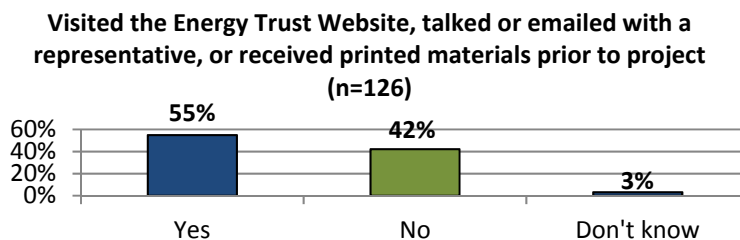
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Project



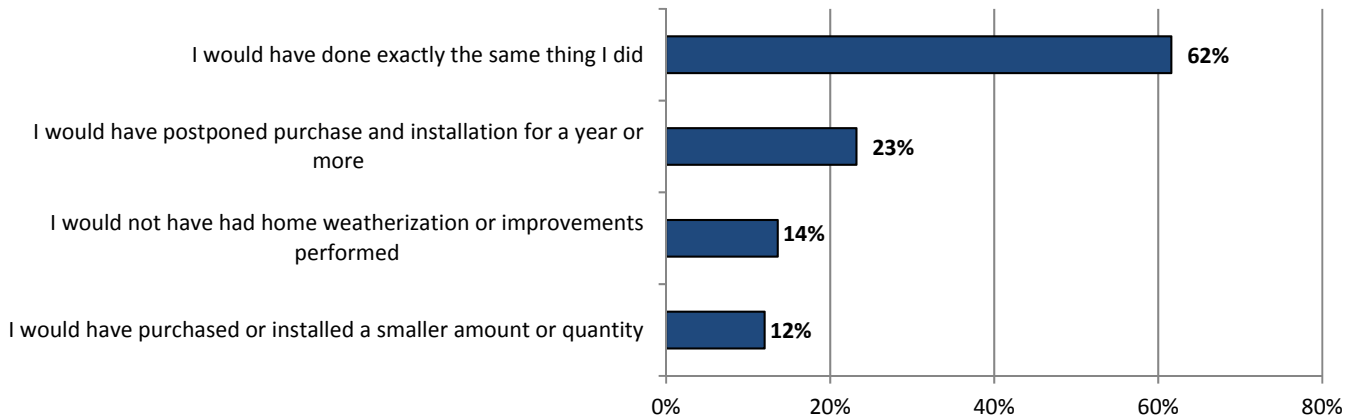
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Ceiling Insulation

Impact of Incentives and Information

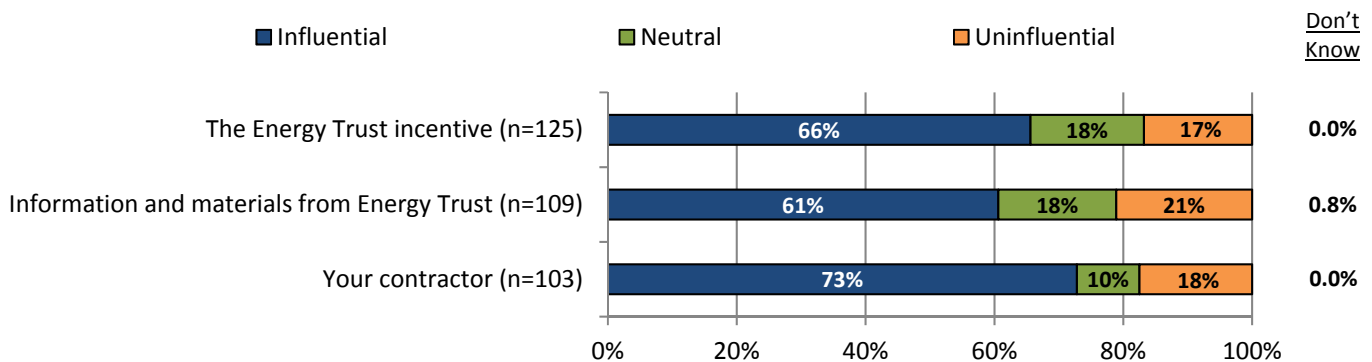
Actions Would Have Taken Without Incentive or Information (n=125)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

Influences on Decision to Have Services or Work Performed

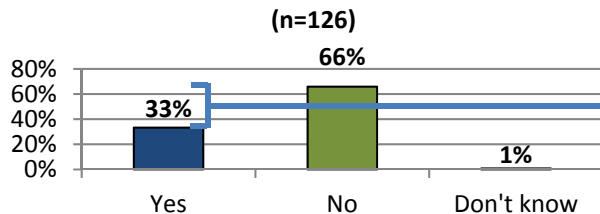


Survey questions:

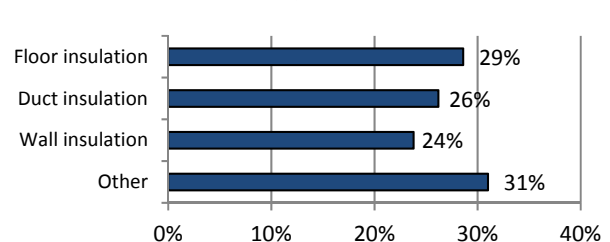
- Q4A. How influential were the following elements on your decision to have services or work performed?

Additional Energy-Saving Improvements

Did you make any additional energy-saving improvements as part of your ceiling insulation project? (n=126)



Improvements done as a part of ceiling insulation project (n=42)

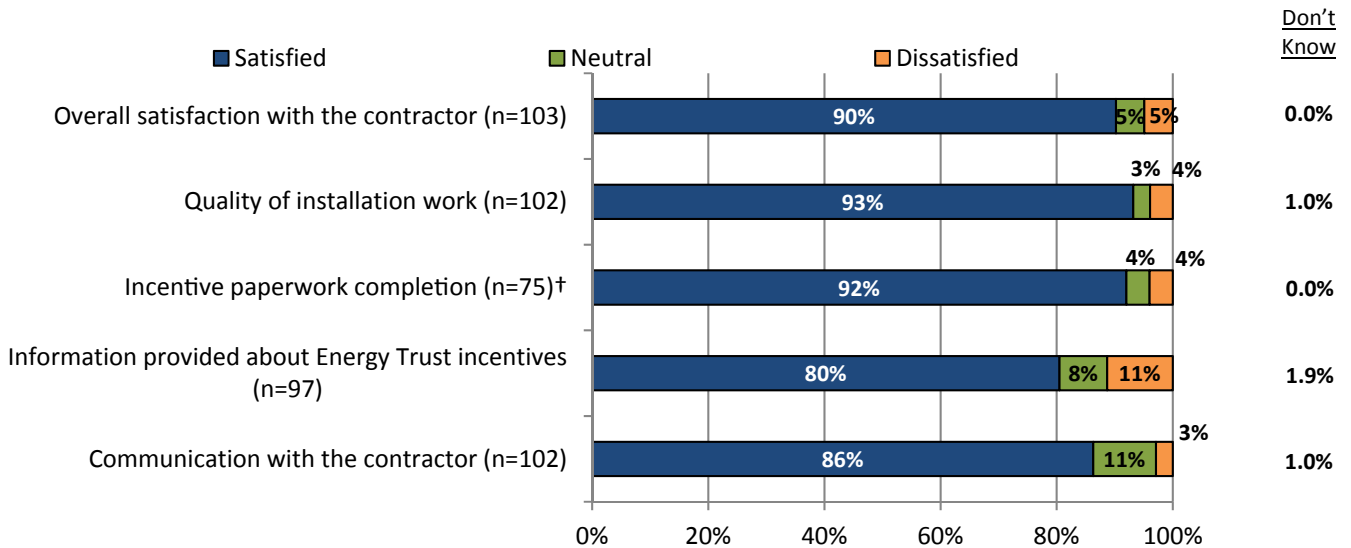


Survey Question:

- Q5H. Did you make any additional energy-saving improvements as a part of your ceiling insulation project?
- Q5I. Please tell me if you did any of these improvements as a part of your ceiling insulation project. (Multiple responses possible.) (Only asked of those who said they made additional energy-saving improvements.)

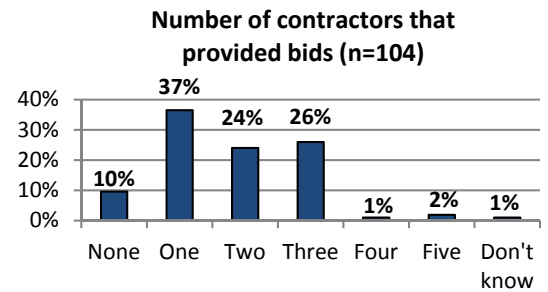
Ceiling Insulation

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=104)	
Yes	42.3%
No	54.8%
Don't know	2.9%

Did your contractor complete some or all of the incentive paperwork for you? (n=95)	
Yes	80.0%
No	16.8%
Don't know	3.2%



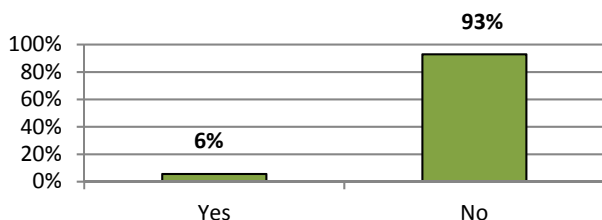
Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

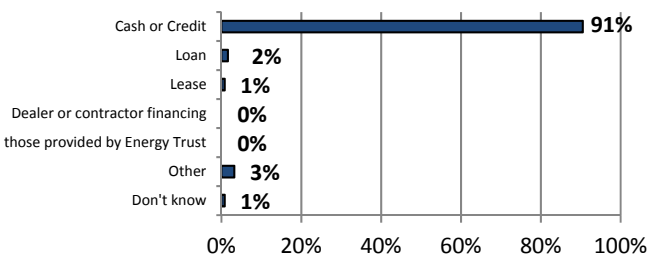
- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (*† Only asked of those who had a contractor complete their paperwork*)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=126)



How it was paid for (n=126)



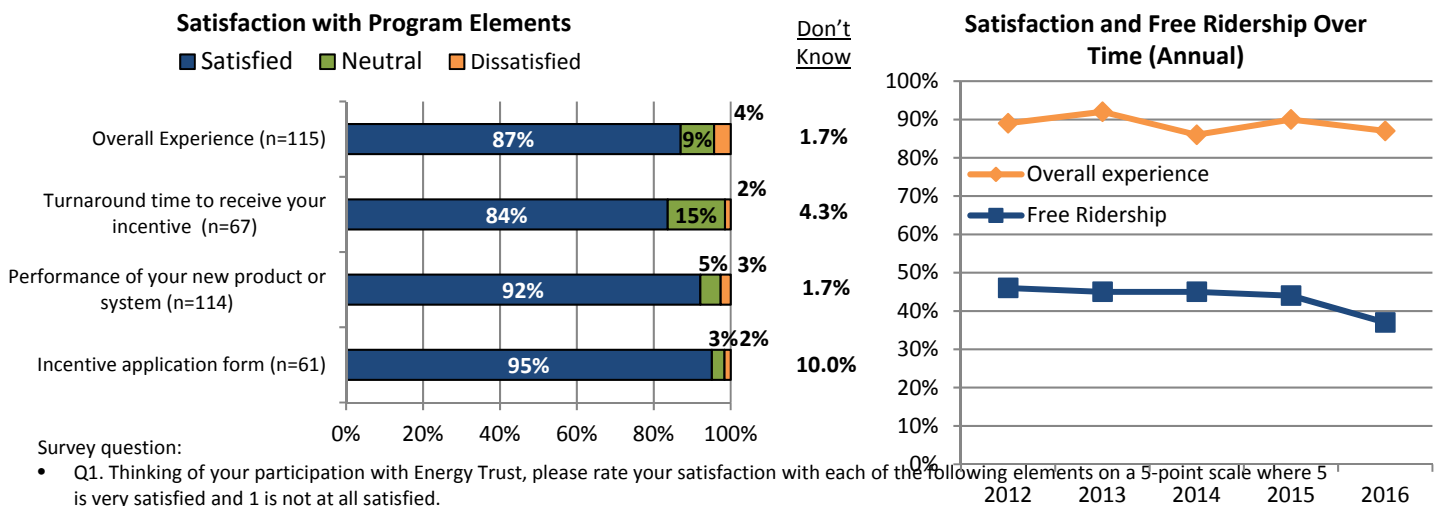
Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (*Multiple responses possible*)

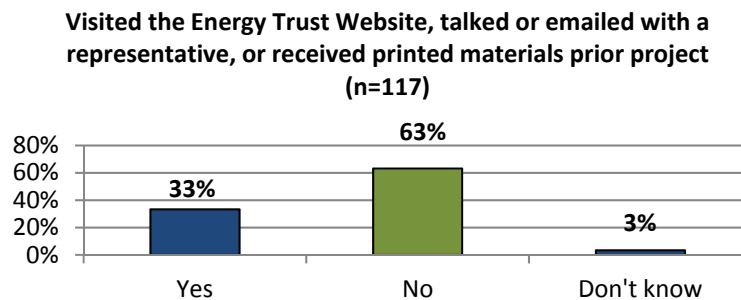
Heat Pumps (excluding DHPs)

- The heat pump measure category includes both upgrades to more efficient ducted heat pumps and replacements of electric resistance forced air furnaces with ducted heat pumps. Ductless heat pumps are excluded.
- Eighty-seven percent of Heat Pump respondents rated their overall satisfaction a 4 or 5 out of 5.
- Thirty-three percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before installing their heat pump.
- Fifty-two percent of respondents would have installed the same heat pump in absence of Energy Trust incentive and information; 24 percent would have purchased a less expensive alternative and 17 percent would have purchased a less energy efficient alternative. Free ridership was 37 percent.
- The contractor had the most influence on the decision to install the heat pump (80 percent rating 4 or 5 out of 5), followed by the Energy Trust incentive (61 percent).
- Most respondents have applied (or will apply) for the state tax credit (82 percent).
- Ninety-one percent of respondents were satisfied with their contractor; 35 percent considered the approved trade ally list when choosing their contractor.

Participant Satisfaction



Interactions With Energy Trust Prior to Project



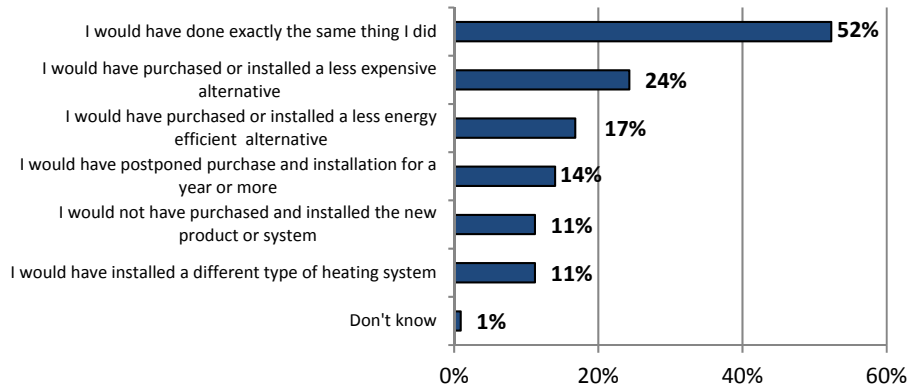
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Heat Pumps (excluding DHPs)

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=107)

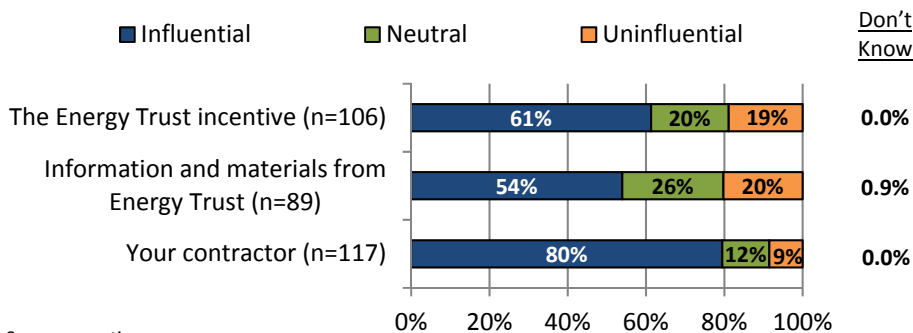


Was your old heat pump operating when you replaced it with the new equipment? (n=75)	
Yes	46.7%
No	52.0%
Don't know	1.3%

Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)
- Q3D. Was your old heat pump operating when you replaced it with the new equipment? (Only asked of respondents who reported replacing their existing heat pump)

Influences on Decision to Have Services or Work Performed



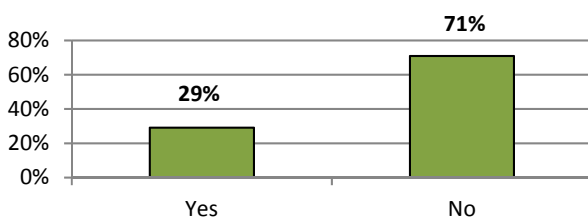
Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed?
- Q6. Have you applied or will you apply for the applicable Oregon state residential energy tax credit?

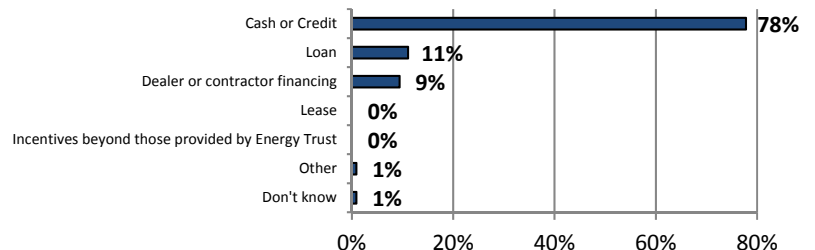
Have you applied or will you apply for the applicable Oregon state residential energy tax credit? (n=117)	
Yes	82.1%
No	4.3%
Not aware of the tax credit	2.6%
Does not apply	1.7%
Don't know	9.4%

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=117)



How it was paid for (n=63)

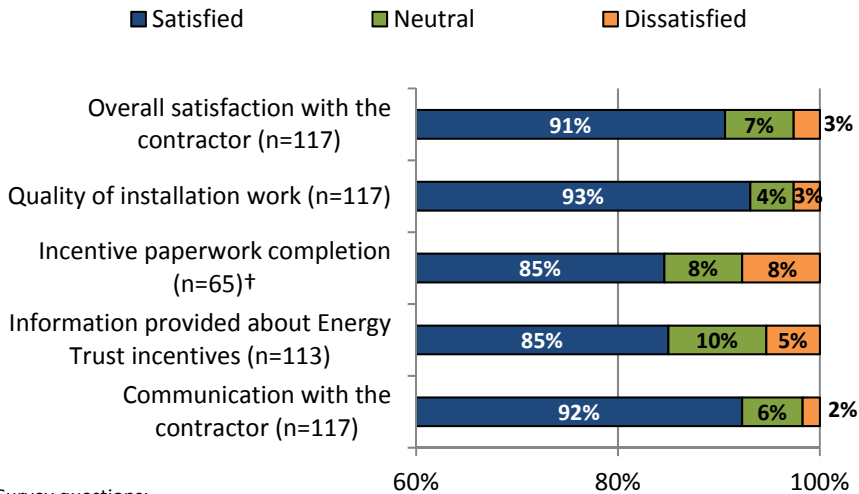


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (Multiple responses possible)

Heat Pumps (excluding DHPs)

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=117)

Yes	35.0%
No	63.2%
Don't know	1.7%

Did your contractor complete some or all of the incentive paperwork for you? (n=70)

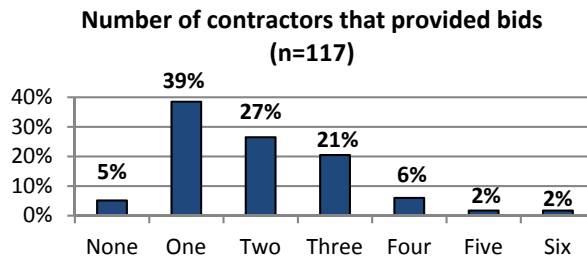
Yes	92.9%
No	7.1%

Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?

Number of Contractors Who Gave Bid

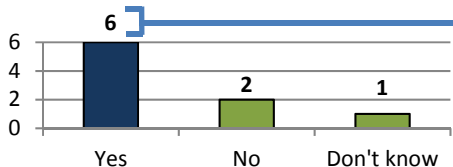


Survey questions:

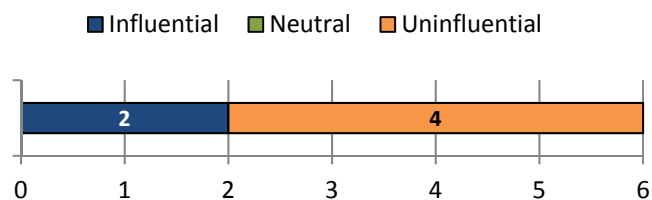
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Bonus Incentive

Do you recall receiving a bonus incentive for your project? (n=9*)



Influence of Bonus Incentive (n=6*)



Survey questions:

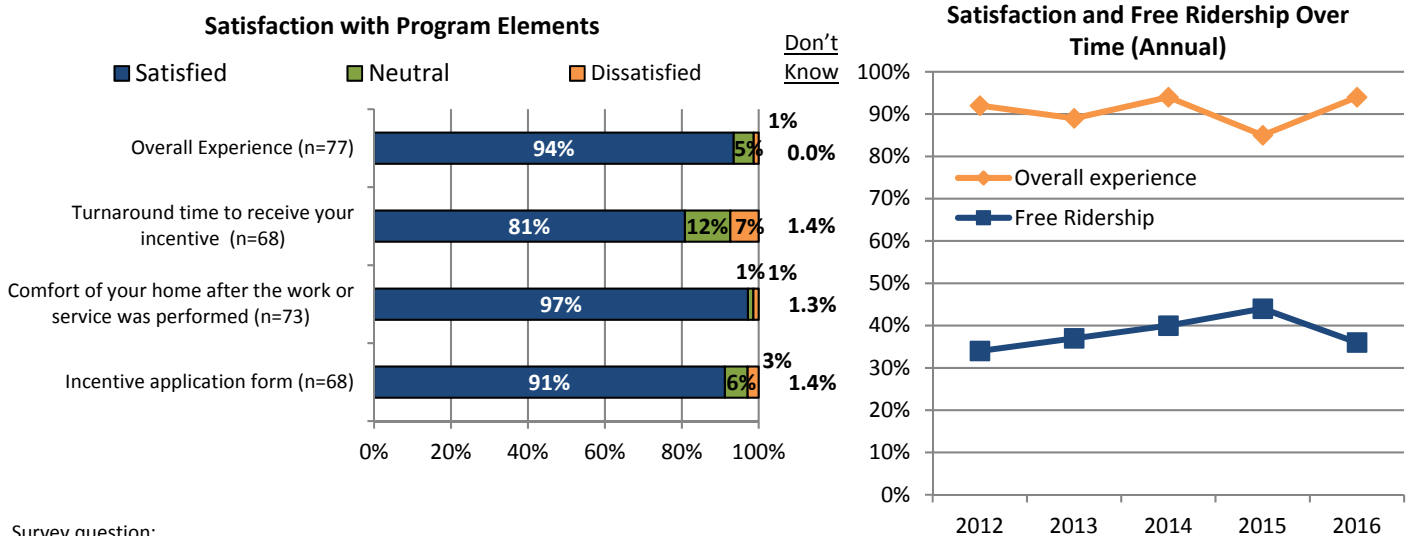
(These questions are only asked of respondents that received a bonus incentive)

- Q13NewB. Do you recall receiving a bonus incentive for your project? (*caution: small sample size)
- Q13NewI. How influential was the bonus incentive on your decision to move forward with your project? Please answer using a 5 point scale where 5 means it had a great influence and 1 means it did not have any influence. (*caution: small sample size)

Floor Insulation

- Ninety-four percent of Floor Insulation respondents rated their overall satisfaction a 4 or 5 out of 5.
- Fifty-seven percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before having insulation installed.
- Fifty-one percent would have installed insulation without Energy Trust incentives and information; twenty-nine percent would have postponed installation for at least a year. Free ridership was 36 percent.
- The contractor was most influential in the decision to have floor insulation installed (rated a 4 or 5 by 80 percent of respondents), followed by the Energy Trust incentive (70 percent).
- Ninety-four percent of respondents were satisfied with their contractor; forty-six percent considered the approved trade ally list when choosing their contractor.

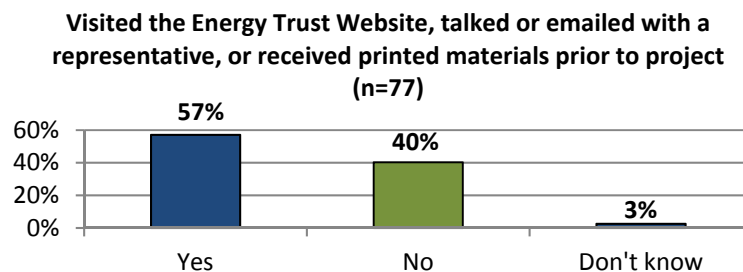
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.
- NOTE: Floor insulation was not a separate program track in 2015.

Interactions With Energy Trust Prior to Project



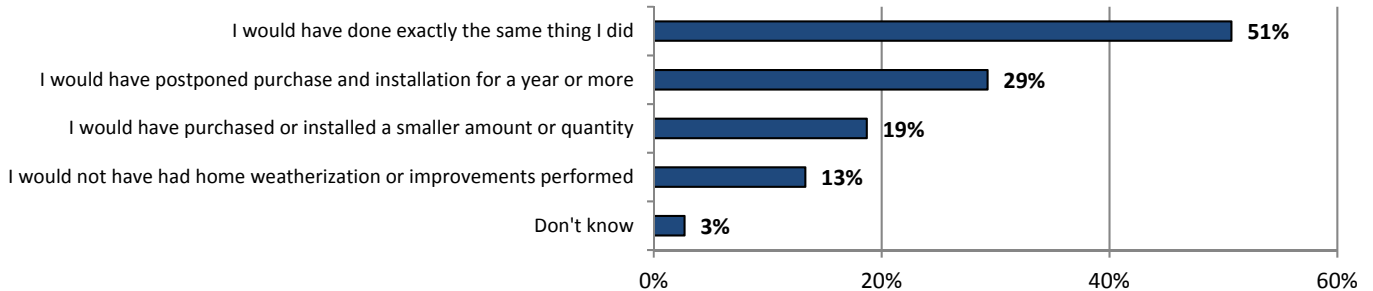
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before had services or work performed?

Floor Insulation

Impact of Incentives and Information

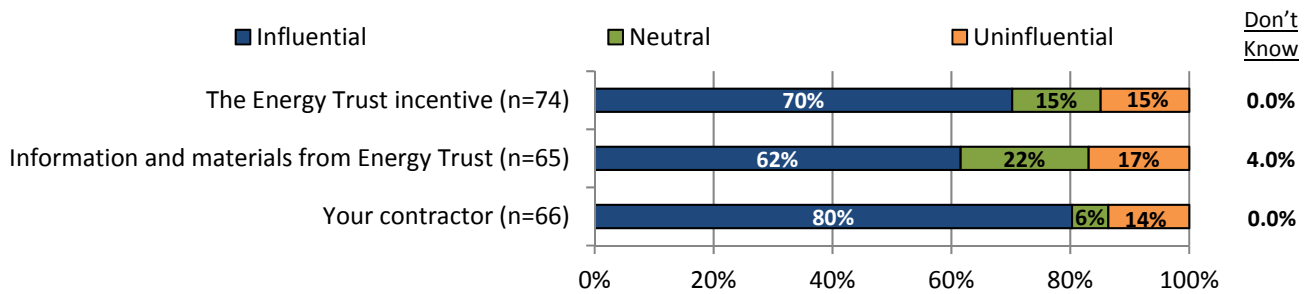
Actions Would Have Taken Without Incentive or Information (n=75)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

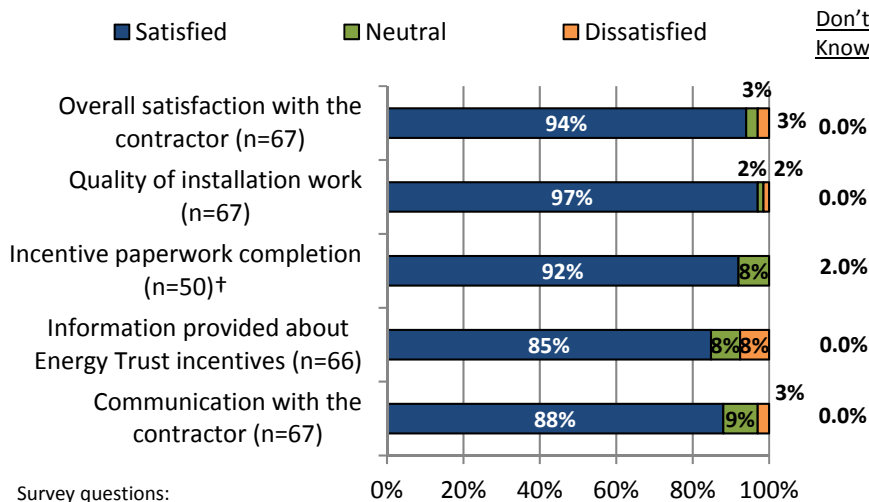
Influences on Decision to Have Services or Work Performed



Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed?

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=67)

Yes	46.3%
No	53.7%

Did your contractor complete some or all of the incentive paperwork for you? (n=60)

Yes	85.0%
No	15.0%

Survey questions:

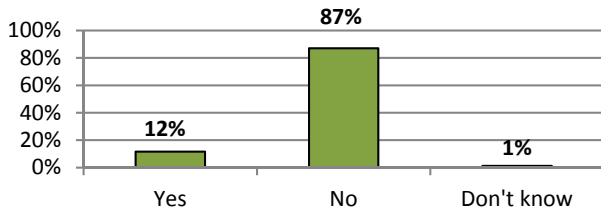
(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?

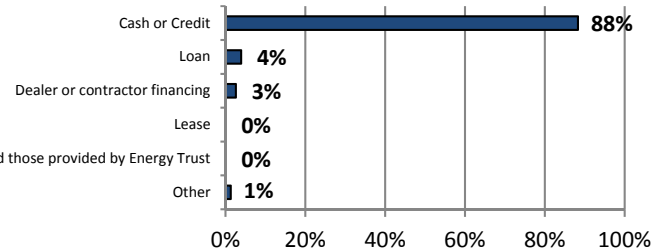
Floor Insulation

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=77)



How it was paid for (n=77)

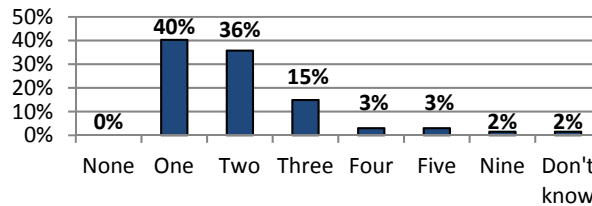


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (*Multiple responses possible*)

Number of Contractor Who Gave Bid

Number of contractors that provided bids (n=67)

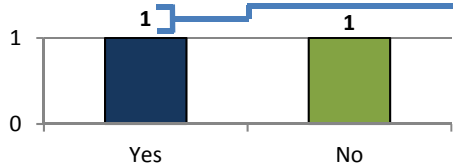


Survey questions:

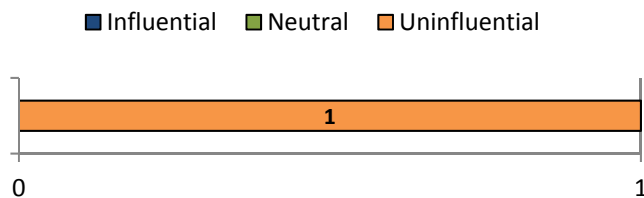
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Bonus Incentive

Do you recall receiving a bonus incentive for your project? (n=2*)



Influence of Bonus Incentive (n=1*)



Survey questions:

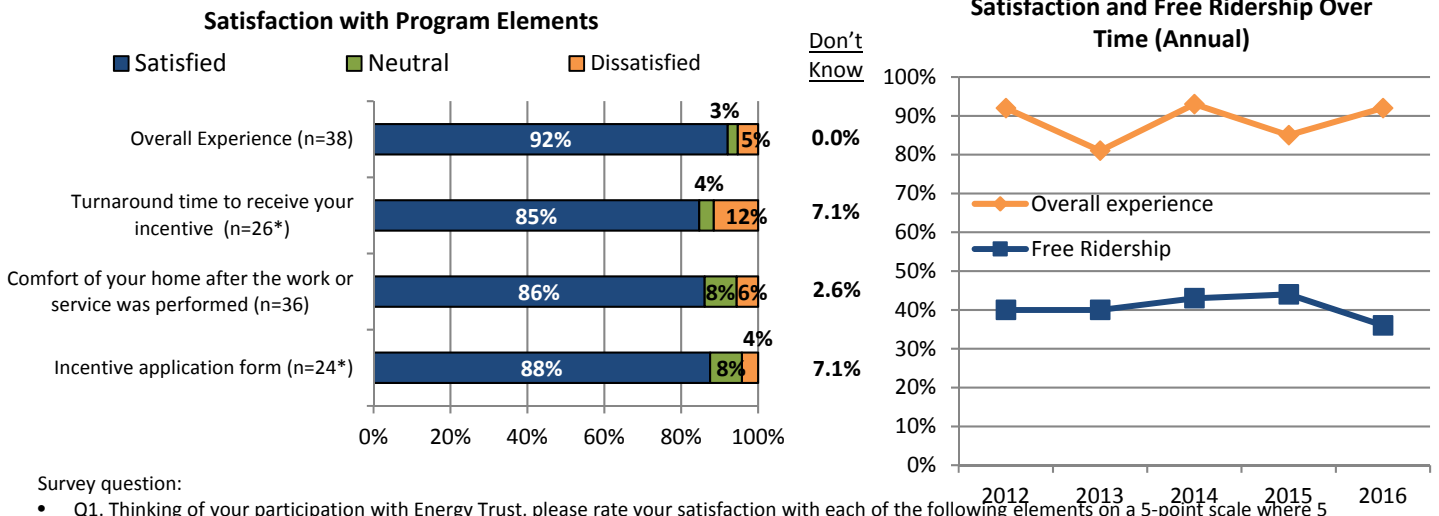
(These questions are only asked of respondents that received a bonus incentive)

- Q13NewB. Do you recall receiving a bonus incentive for your project? (**caution: small sample size*)
- Q13NewI. How influential was the bonus incentive on your decision to move forward with your project? Please answer using a 5 point scale where 5 means it had a great influence and 1 means it did not have any influence. (**caution: small sample size*)

Wall Insulation

- Ninety-two percent of Wall Insulation respondents rated their overall satisfaction a 4 or 5 out of 5. Satisfaction with the comfort of the home was 86 percent among those who could give a rating.
- Fifty-eight percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before having insulation installed.
- Fifty-four percent reported that they would have installed insulation without the incentive and information; 34 percent would have postponed installation for a year or more. Free ridership was 36 percent.
- The Energy Trust incentive was most influential in the decision to have wall insulation installed (57 percent rating a 4 or 5).
- Seventy-six percent of respondents were satisfied with their contractor; 37 percent considered the approved trade ally list when choosing their contractor.

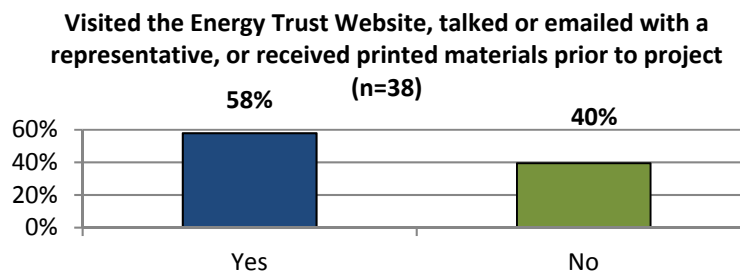
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied. (*caution: small sample size)
- NOTE: Wall insulation was not a separate program track in 2015.

Interactions With Energy Trust Prior to Project



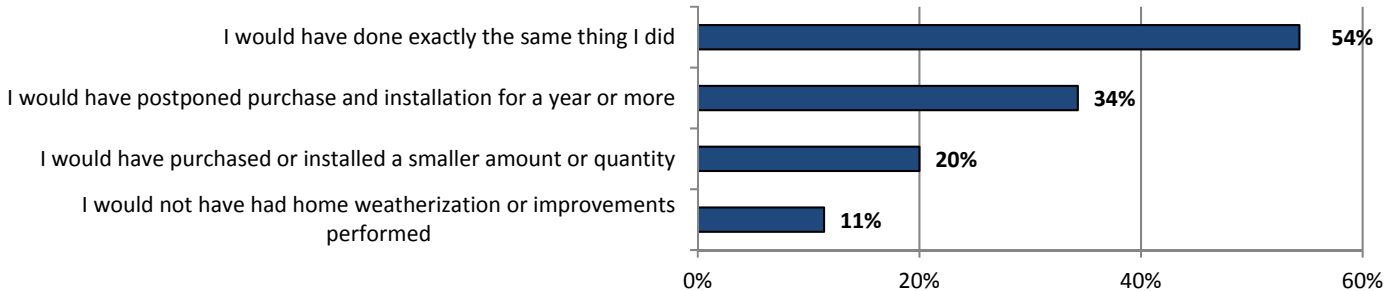
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had services or work performed?

Wall Insulation

Impact of Incentives and Information

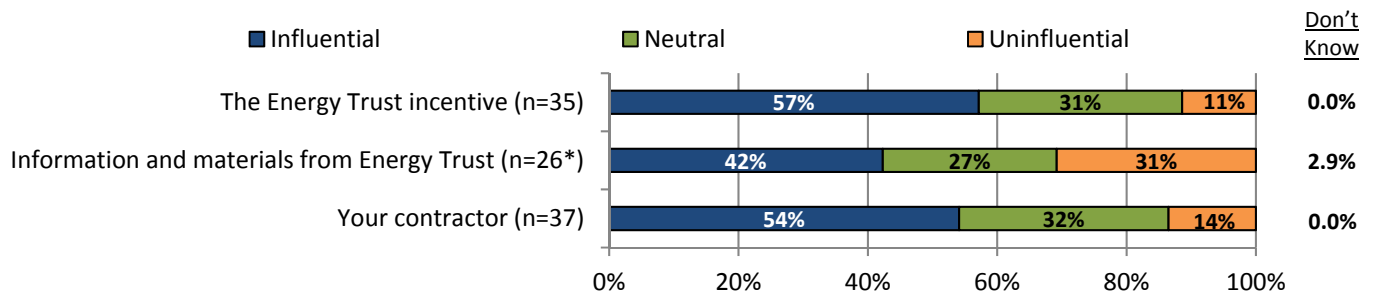
Actions Would Have Taken Without Incentive or Information (n=35)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

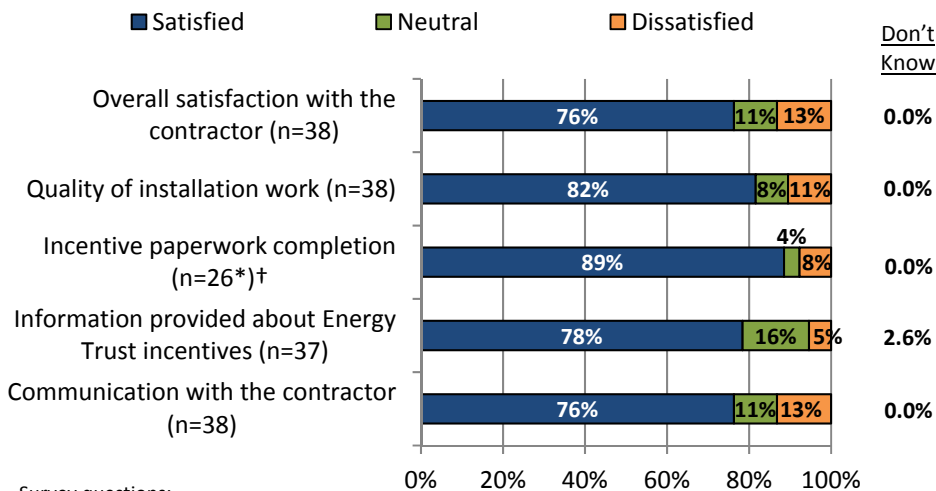
Influences on Decision to Have Services or Work Performed



Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed? (*caution: small sample size)

Satisfaction With Contractor



Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (*caution: small sample size) († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you? (*caution: small sample size)

Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=38)

Yes	36.8%
No	55.3%
Don't know	7.9%

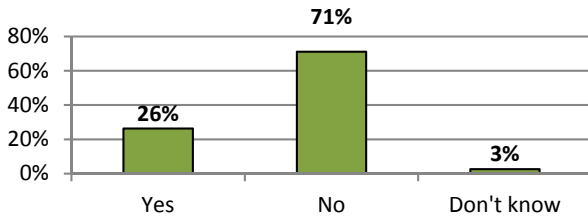
Did your contractor complete some or all of the incentive paperwork for you? (n=28*)

Yes	92.9%
No	7.1%

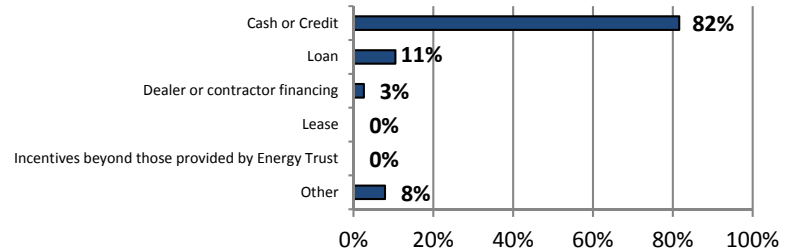
Wall Insulation

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=38)



How it was paid for (n=38)

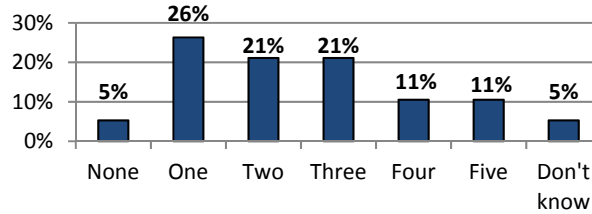


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (*Multiple responses possible*)

Number of Contractors Who Gave Bid

Number of contractors that provided bids (n=38)

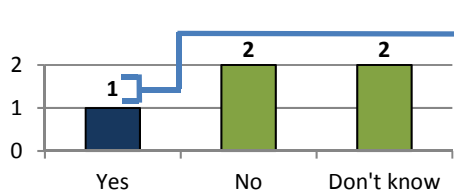


Survey questions:

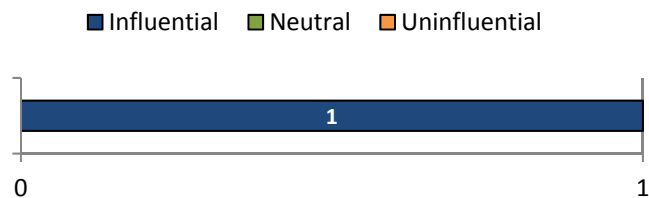
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Bonus Incentive

Do you recall receiving a bonus incentive for your project? (n=5*)



Influence of Bonus Incentive (n=1*)



Survey questions:

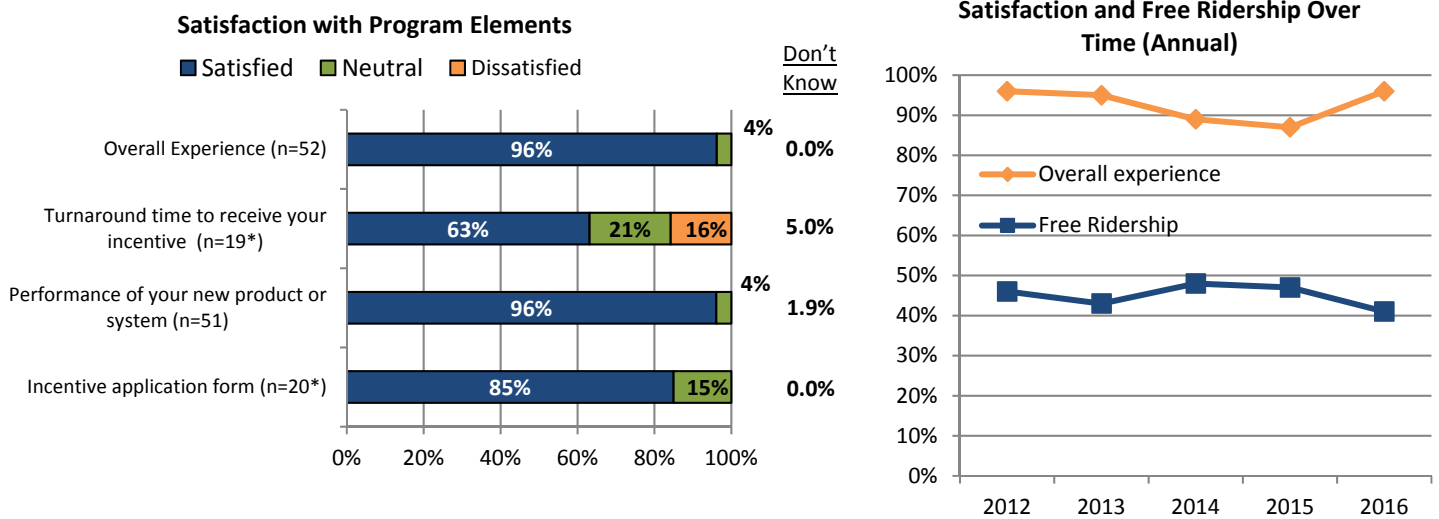
(These questions are only asked of respondents that received a bonus incentive)

- Q13NewB. Do you recall receiving a bonus incentive for your project? (**caution: small sample size*)
- Q13NewI. How influential was the bonus incentive on your decision to move forward with your project? Please answer using a 5 point scale where 5 means it had a great influence and 1 means it did not have any influence. (**caution: small sample size*)

Gas Tank Water Heaters

- Ninety-six percent of Gas Tank Water Heater respondents rated their overall satisfaction a 4 or 5 out of 5.
- Forty-four percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before work was scheduled or performed.
- Fifty-six percent of respondents said that they would have bought the same water heater without Energy Trust incentives; however, the influence of the incentive was rated a 4 or 5 out of 5 by 61 percent of the respondents. Free ridership was 41 percent.
- Sixty-seven percent of respondents have applied (or will apply) for the Oregon state tax credit.
- Eighty-seven percent of respondents were satisfied with their contractor; 29 percent considered the approved trade ally list when choosing their contractor.

Participant Satisfaction

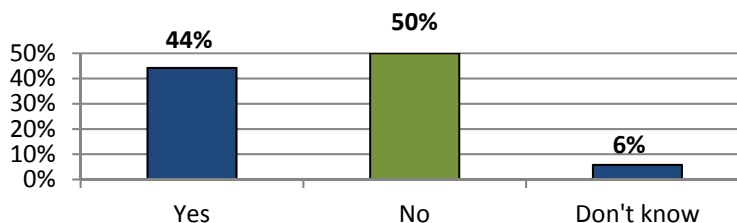


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied. (*caution: small sample size)

Interactions With Energy Trust Prior to Project

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to project (n=52)



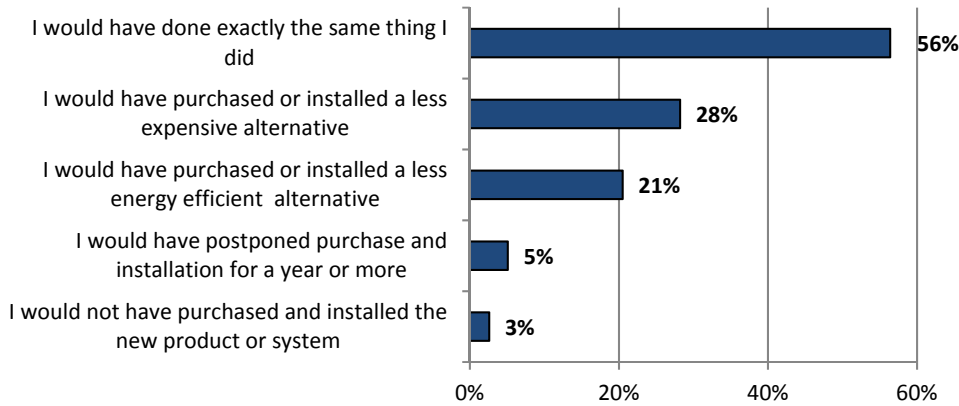
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Gas Tank Water Heaters

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=39)



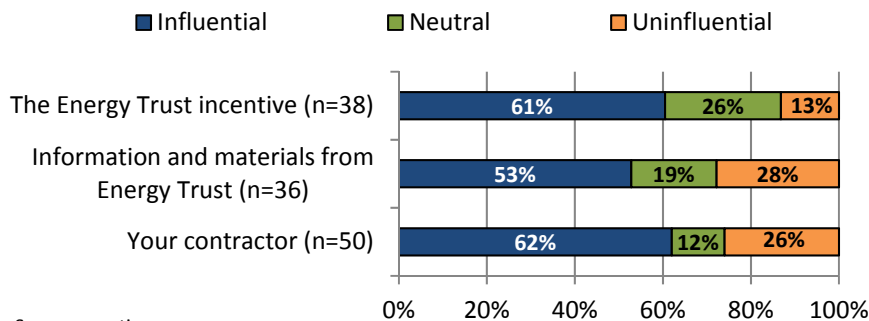
Was your old water heater operating when you replaced it with the new equipment? (n=52)

Yes	59.6%
No	40.4%

Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)
- Q3D. Was your old water heater operating when you replaced it with the new equipment?

Influences on Decision to Have Services or Work Performed



Have you applied or will you apply for the applicable Oregon state residential energy tax credit? (n=49)

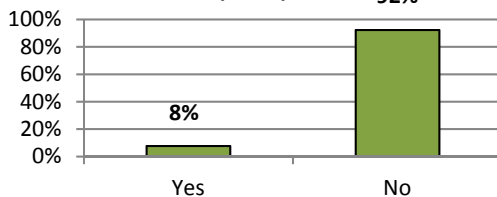
Yes	67.3%
No	14.3%
Not aware of the tax credit	8.2%
Does not apply	2.0%
Don't know	8.2%

Survey questions:

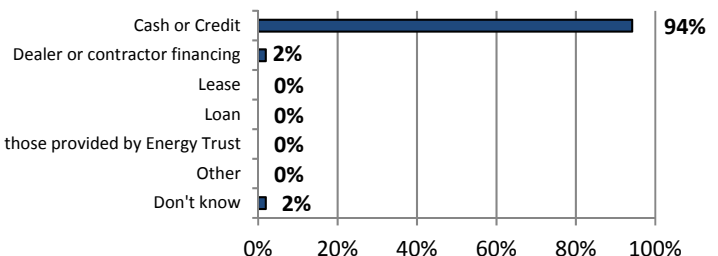
- Q4A. How influential were the following elements on your decision to have services or work performed?
- Q6. Have you applied or will you apply for the applicable Oregon state residential energy tax credit?

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=52)



How it was paid for (n=52)

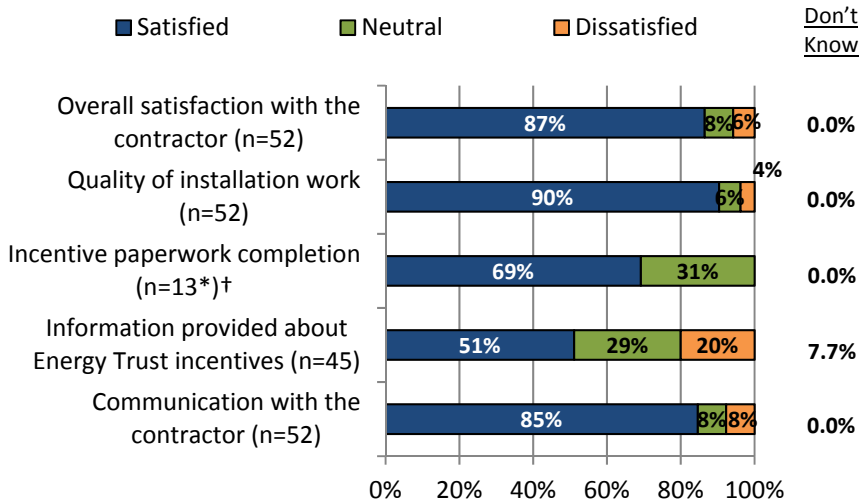


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (Multiple responses possible)

Gas Tank Water Heaters

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=52)

Yes	28.8%
No	65.4%
Don't know	5.8%

Did your contractor complete some or all of the incentive paperwork for you? (n=20*)

Yes	65.0%
No	35.0%

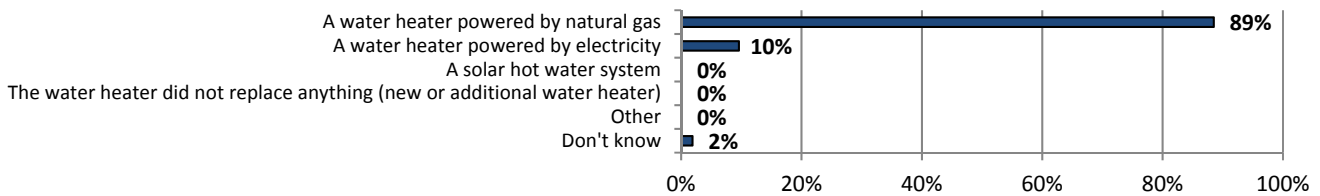
Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

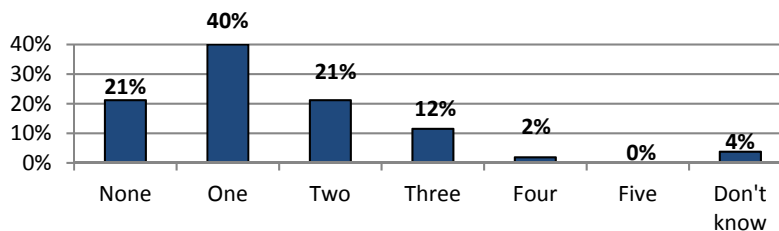
- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (*caution: small sample size) († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you? (*caution: small sample size)

Replacement Info and Number of Contractors Who Gave Bid

Did the new water heater you purchased replace... (n=52)



Number of contractors that provided bids (n=52)



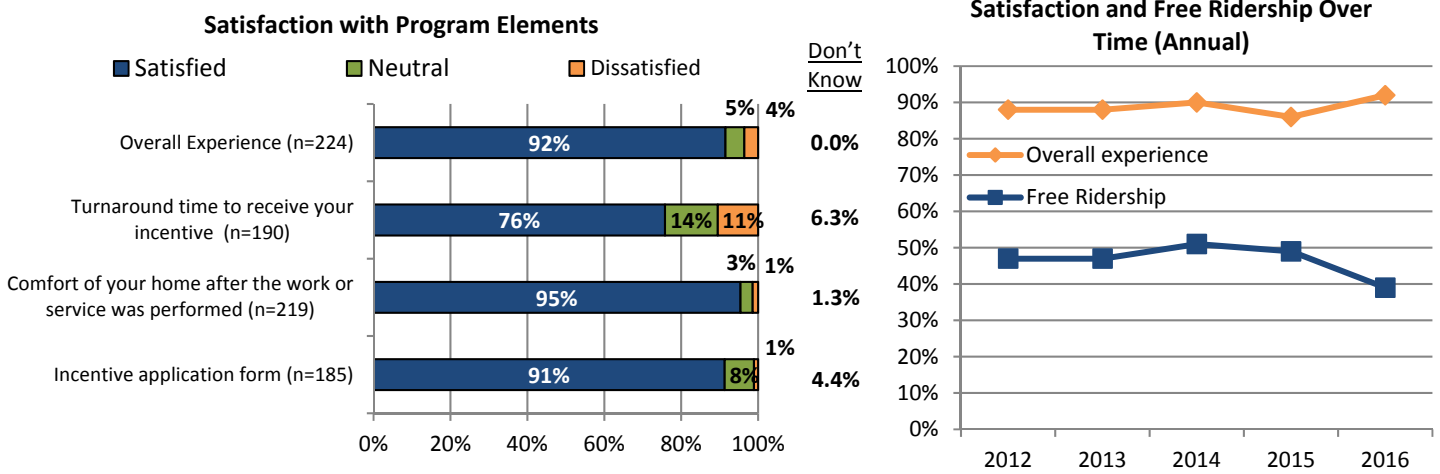
Survey questions:

- Q12S. Did the new water heater you purchased replace...?
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Windows

- Ninety-two percent of Window respondents rated their overall satisfaction a 4 or 5 out of 5. Respondents were least satisfied with the turnaround time for the incentive (76 percent), but were very satisfied with the comfort of their home (95 percent).
- Thirty-nine percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before having their windows installed.
- Fifty-eight percent of respondents indicated that in the absence of Energy Trust incentives, they would have installed the same windows. Free ridership was 39 percent.
- The contractor was the most influential factor on their decision to have work performed (78 percent rating 4 or 5), followed by the incentive (51 percent).
- Eighty-seven percent of respondents were satisfied with their contractor; only 25 percent considered the approved trade ally list when choosing their contractor.

Participant Satisfaction

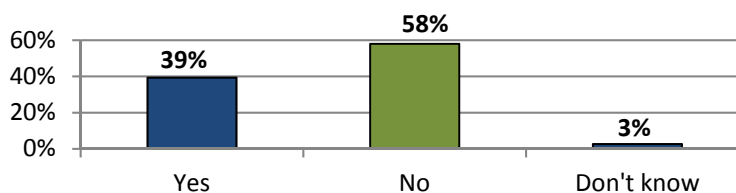


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Project

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to project (n=224)

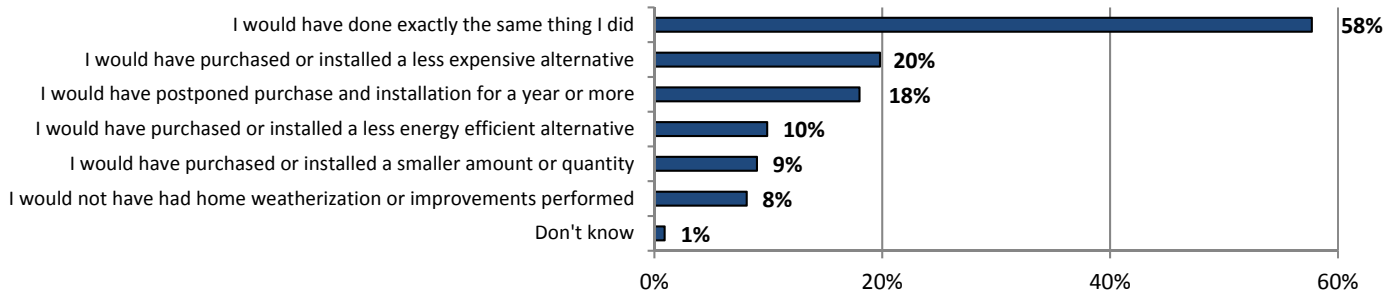


Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Impact of Incentives and Information

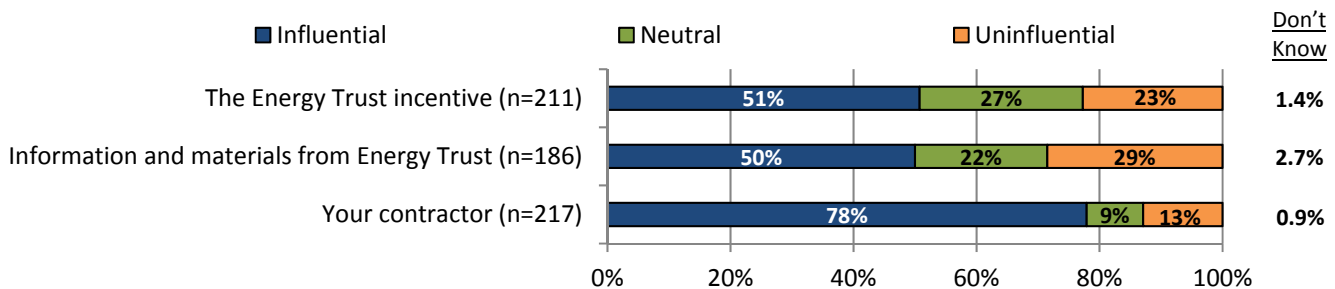
Actions Would Have Taken Without Incentive or Information (n=274)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

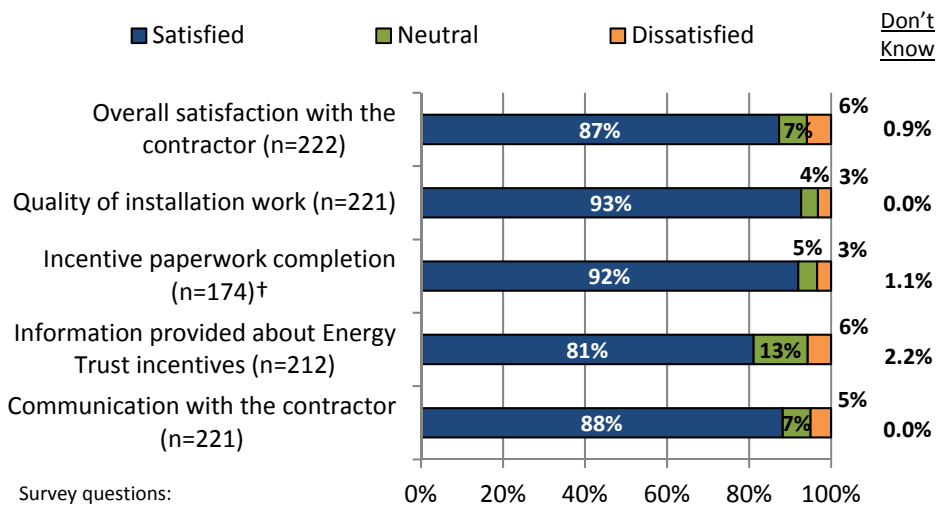
Influences on Decision to Have Services or Work Performed



Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed?

Satisfaction With Contractor



Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?

Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=224)

Yes	24.6%
No	73.7%
Don't know	1.8%

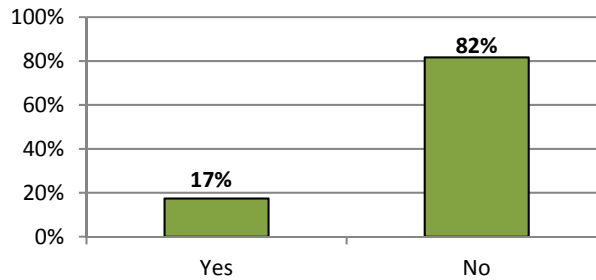
Did your contractor complete some or all of the incentive paperwork for you? (n=205)

Yes	86.3%
No	11.2%
Don't know	1.5%

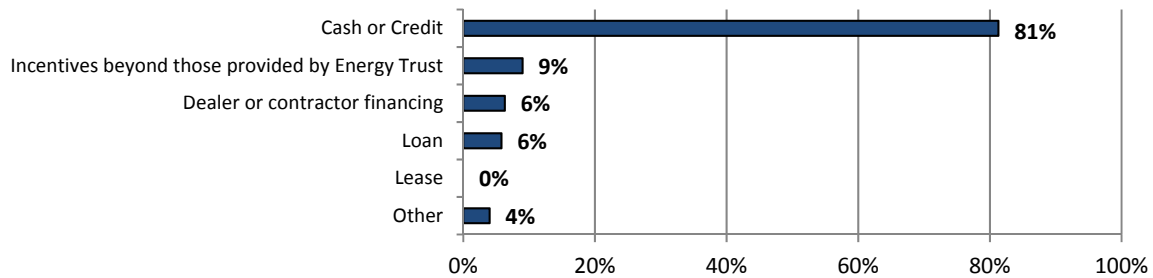
Windows

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=224)



How it was paid for (n=224)

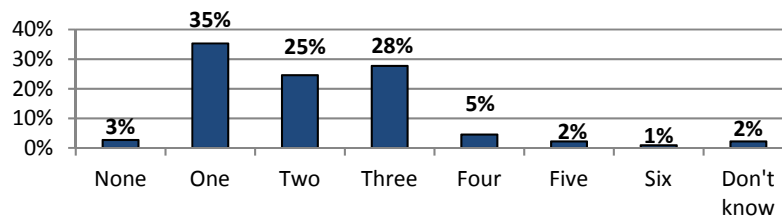


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (Multiple responses possible)

Number of Contractor Who Gave Bid

Number of contractors that provided bids (n=224)



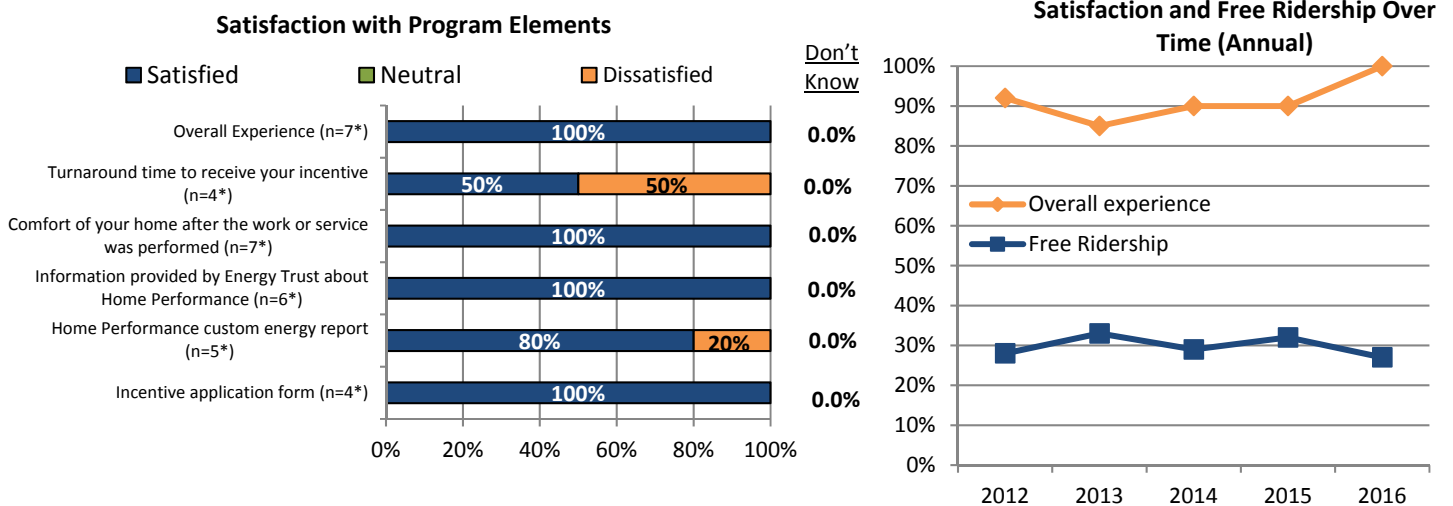
Survey questions:

- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Home Performance

- Only seven Home Performance participants were surveyed in 2016, due to very low program volume, so the results in this section should be interpreted with caution.
- All Home Performance respondents rated their overall satisfaction a 4 or 5 out of 5. Respondents were least satisfied with the turnaround time for the incentive (50 percent).
- Seventy-one percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before having their windows installed.
- The contractor was the most influential factor on their decision to have work performed (all respondents rating 4 or 5), followed by the incentive (50 percent). Free ridership was 27 percent.
- One hundred percent of respondents were satisfied with their contractor; only 43 percent considered the approved trade ally list when choosing their contractor.

Participant Satisfaction

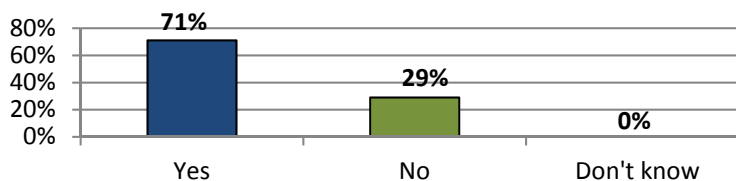


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied. (*caution: small sample size)

Interactions With Energy Trust Prior to Project

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to project (n=7*)



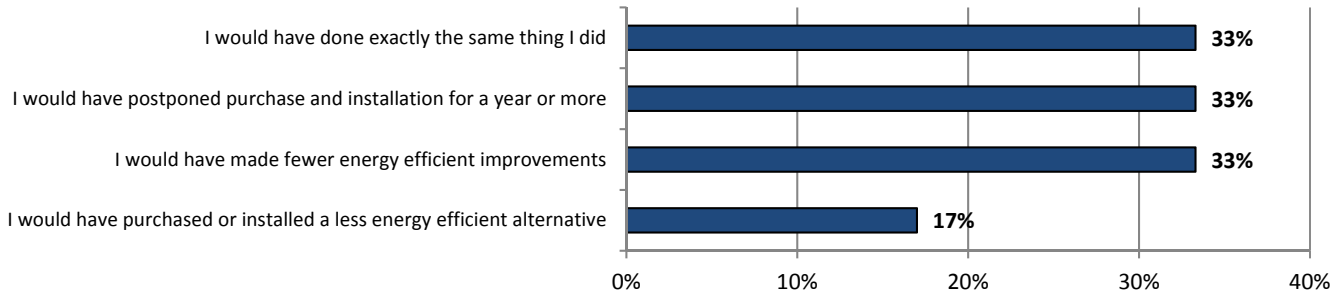
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed? (*caution: small sample size)

Home Performance

Impact of Incentives and Information

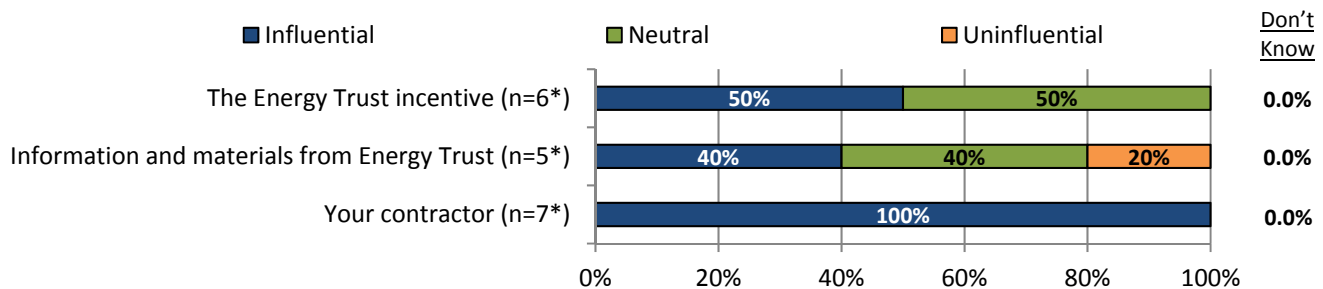
Actions Would Have Taken Without Incentive or Information (n=6*)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (*caution: small sample size) (Multiple responses possible)

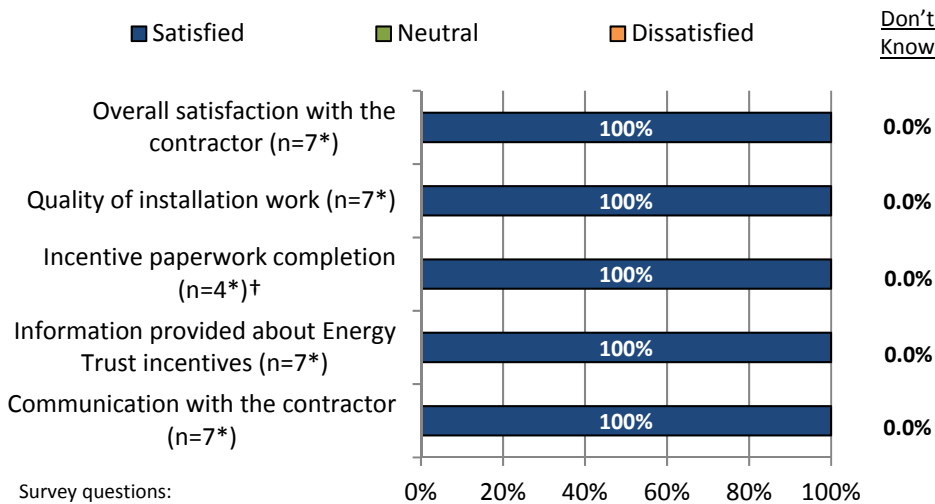
Influences on Decision to Have Services or Work Performed



Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed? (*caution: small sample size)

Satisfaction With Contractor



Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (*caution: small sample size) († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor? (*caution: small sample size)
- Q9A. Did your contractor complete some or all of the incentive paperwork for you? (*caution: small sample size)

Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=7*)

Yes	42.9%
No	57.1%
Don't know	0.0%

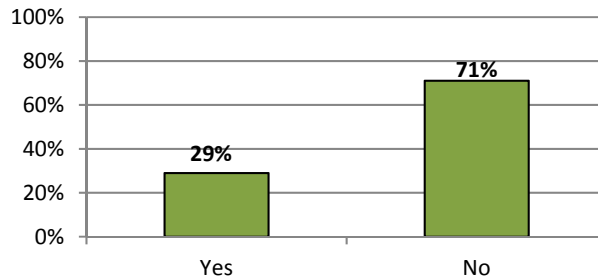
Did your contractor complete some or all of the incentive paperwork for you? (n=7*)

Yes	100.0%
No	0.0%
Don't know	0.0%

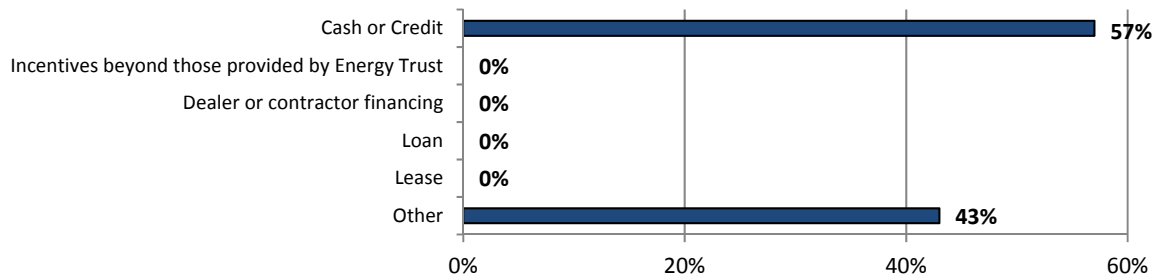
Home Performance

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=7*)



How it was paid for (n=7*)

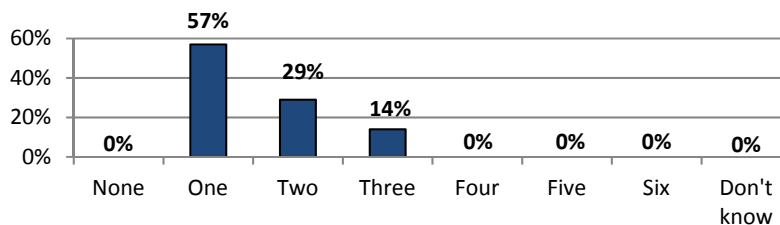


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed? (*caution: small sample size)
- Q12W. How did you pay for it? (*caution: small sample size) (Multiple responses possible)

Number of Contractor Who Gave Bid

Number of contractors that provided bids (n=7*)



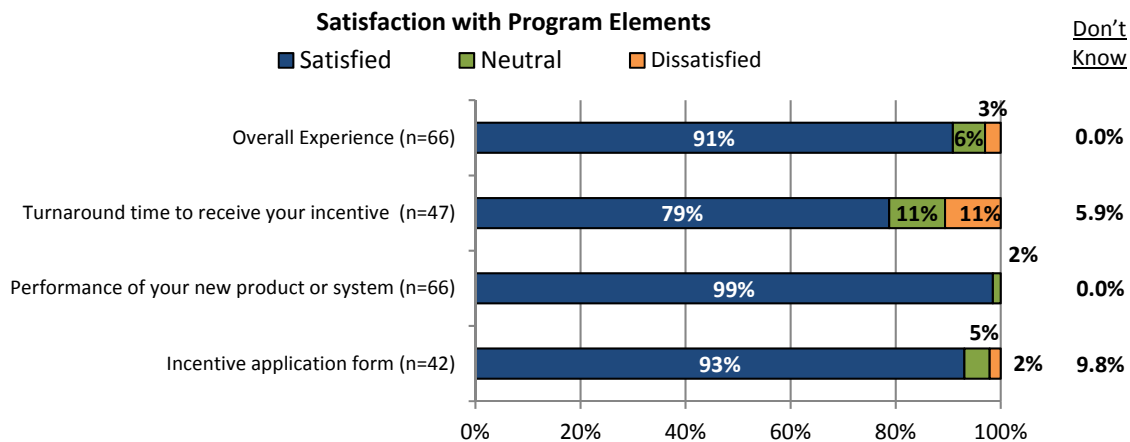
Survey questions:

- Q13New. How many contractors did you get a bid from before deciding to move forward with your project? (*caution: small sample size)

Gas Furnaces

- Only gas furnace participants in Washington were surveyed for Fast Feedback. Free ridership is not calculated for Washington participants. This group was not separately reported in the past, so there is no time trend of results.
- Ninety-one percent of Gas Furnace respondents rated their overall satisfaction a 4 or 5 out of 5.
- Sixty-three percent of respondents said they would have done the same project in absence of Energy Trust incentives and information.
- The contractor had the most influence on the decision to get the work performed (77 percent). The incentive was influential for about half of participants (53 percent).
- Ninety-three percent of respondents were satisfied with their contractor; 33 percent considered the approved trade ally list when choosing their contractor.

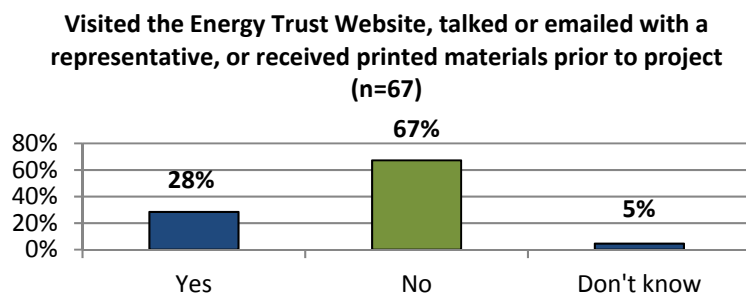
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Project



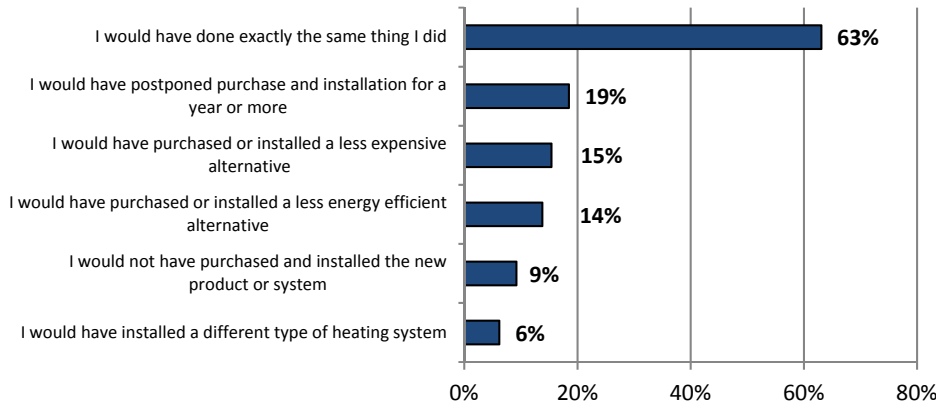
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Gas Furnaces

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=65)



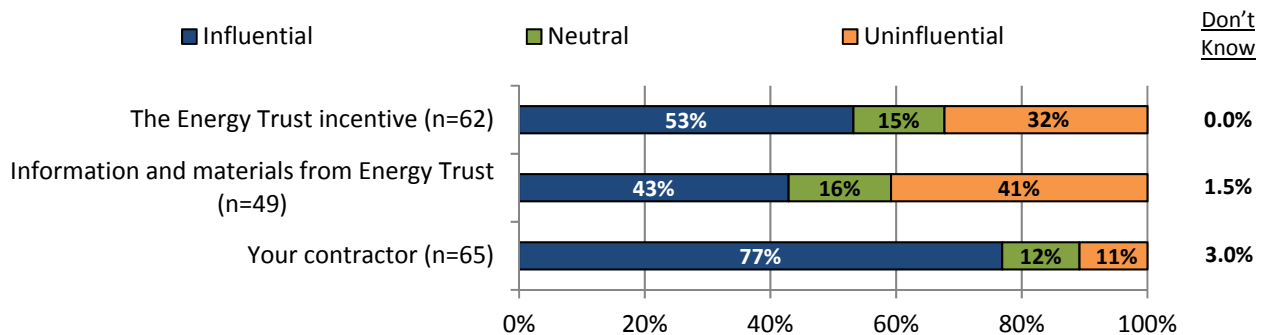
Was your old gas furnace operating when you replaced it with the new equipment? (n=67)

Yes	73.1%
No	26.9%

Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (*Multiple responses possible*)
- Q3D. Was your old gas furnace operating when you replaced it with the new equipment?

Influences on Decision to Have Services or Work Performed

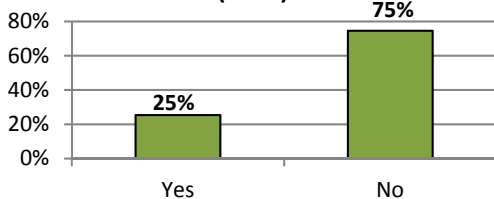


Survey questions:

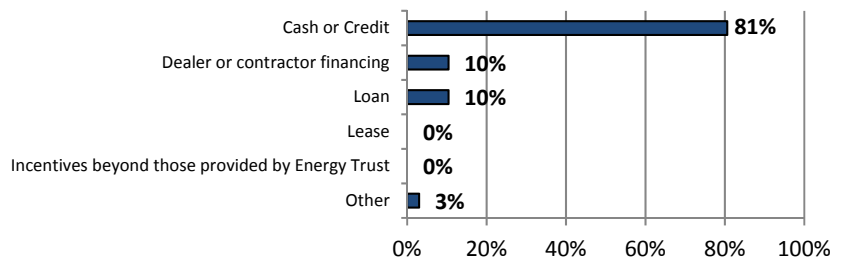
- Q4A. How influential were the following elements on your decision to have services or work performed?

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=67)



How it was paid for (n=67)

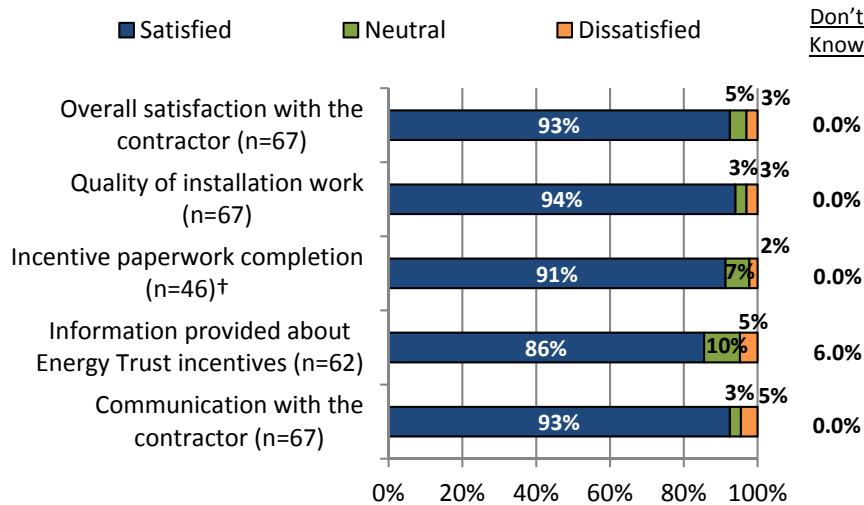


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (*Multiple responses possible*)

Gas Furnaces

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=67)

Yes	32.8%
No	65.7%
Don't know	1.5%

Did your contractor complete some or all of the incentive paperwork for you? (n=51)

Yes	92.2%
No	5.9%
Don't know	2.0%

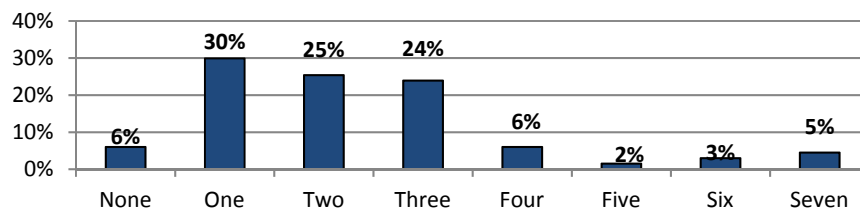
Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?

Number of Contractors Who Gave Bid

Number of contractors that provided bids (n=67)



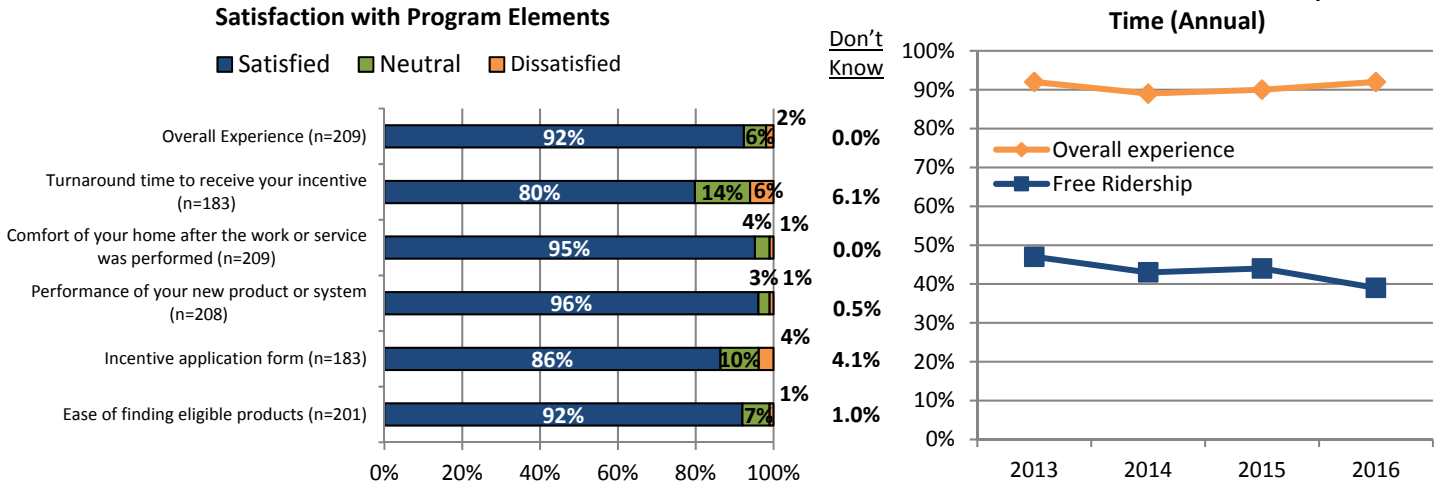
Survey questions:

- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Gas Fireplaces

- Ninety-two percent of respondents with gas fireplaces rated their overall satisfaction a 4 or 5 out of 5.
- Sixty percent of respondents said they would have done the same project in absence of Energy Trust incentives and information. Free ridership was 39 percent.
- In 64 percent of cases, the gas fireplace replaced a wood burning fireplace or stove, while 26 percent replaced a previous gas fireplace.
- The appearance of the gas fireplace had the most influence on the decision to get the work performed (90 percent). The incentive was influential for 53 percent of participants .
- 89 percent of respondents were satisfied with their contractor; 35 percent considered the approved trade ally list when choosing their contractor.

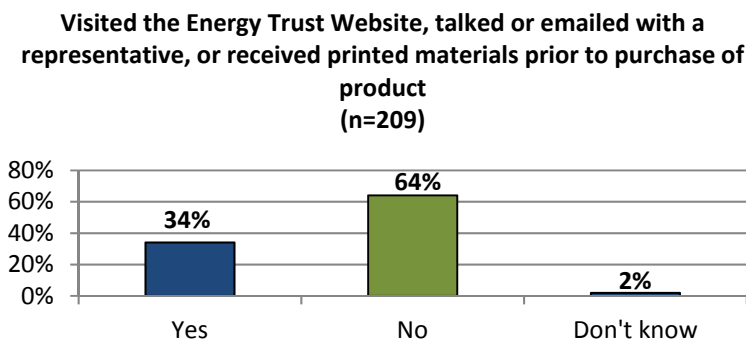
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Purchasing Product



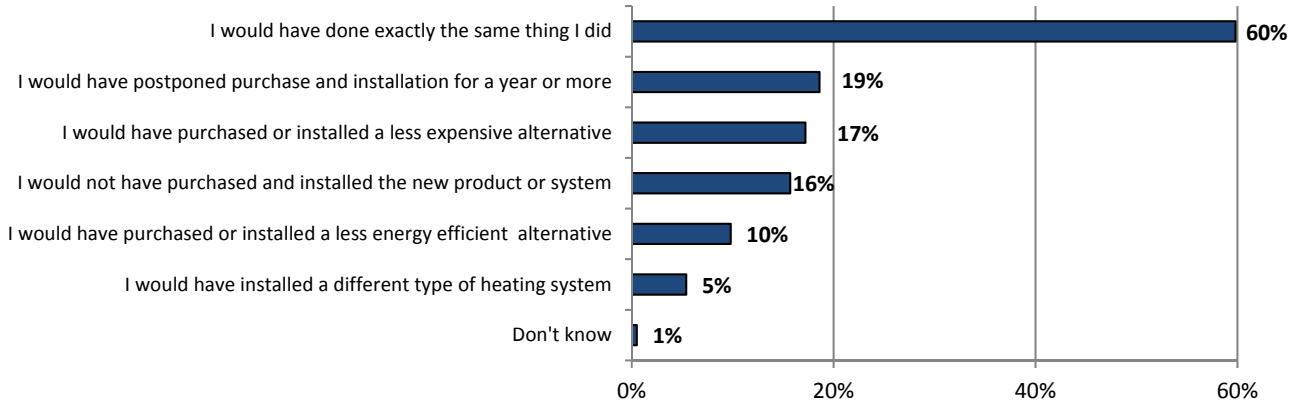
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you purchased your product?

Gas Fireplaces

Impact of Incentives and Information

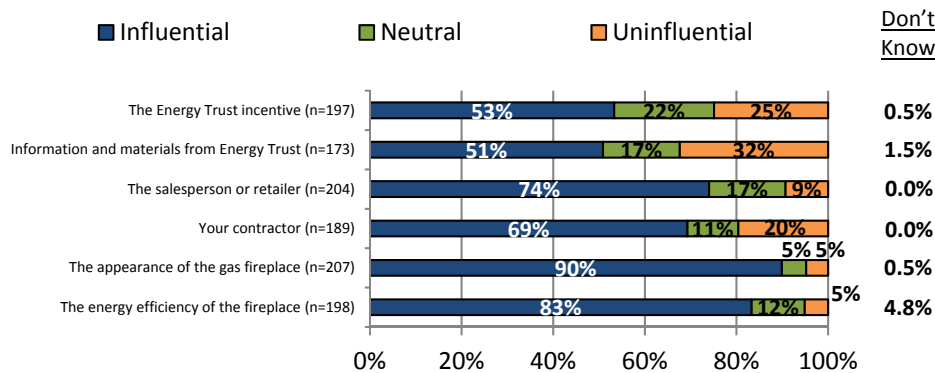
Actions Would Have Taken Without Incentive or Information (n=204)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

Influences on Decision to Purchase Product



Have you applied or will you apply for the applicable Oregon state residential energy tax credit? (n=196)

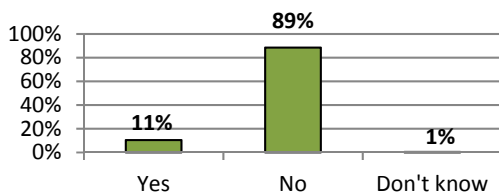
Yes	84.2%
No	4.6%
Not aware of the tax credit	4.6%
Does not apply	1.5%
Don't know	5.1%

Survey questions:

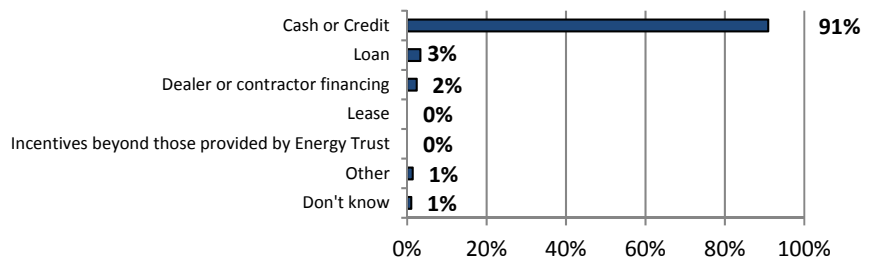
- Q4A. How influential were the following elements on your decision to purchase your product?
- Q6. Have you applied or will you apply for the applicable Oregon state residential energy tax credit?

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=209)



How it was paid for (n=209)

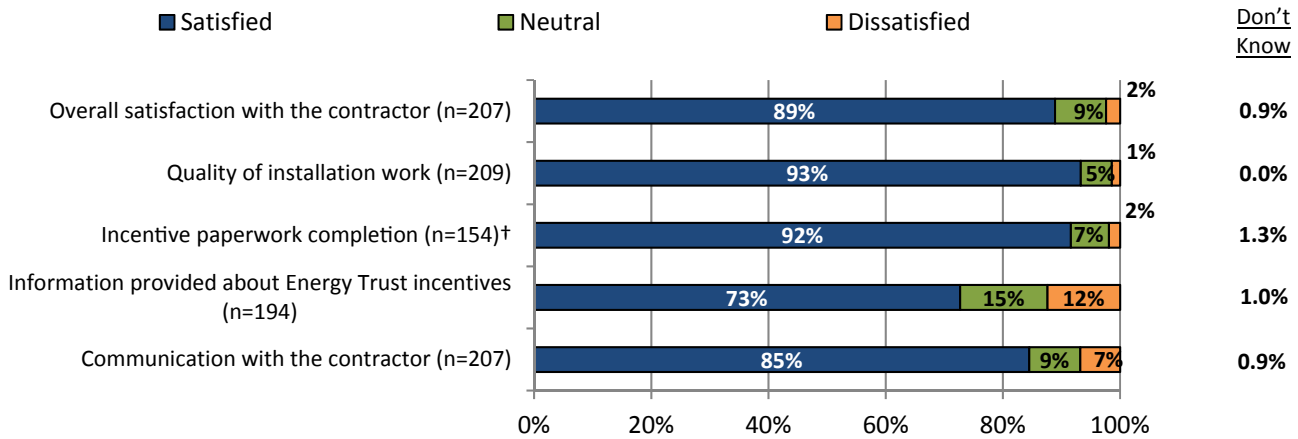


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (Multiple responses possible)

Gas Fireplaces

Satisfaction With Contractor



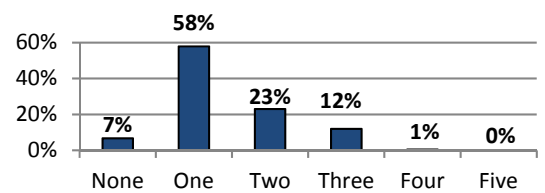
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=209)

Yes	34.9%
No	61.2%
Don't know	3.3%

Did your contractor complete some or all of the incentive paperwork for you? (n=196)

Yes	80.6%
No	13.8%
Don't know	3.6%

Number of contractors that provided bids (n=209)



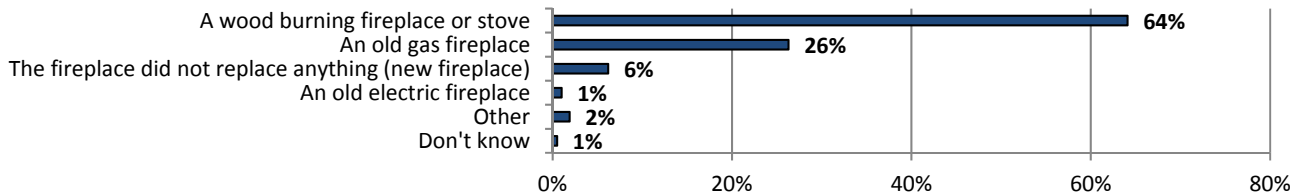
Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

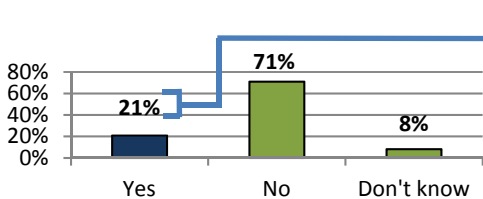
- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Replacement Info and Bonus Incentive

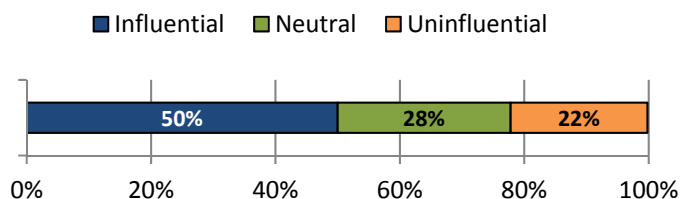
Did the gas fireplace you purchased replace... (n=209)



Do you recall receiving a bonus incentive for your project? (n=86)



Influence of Bonus Incentive (n=18*)



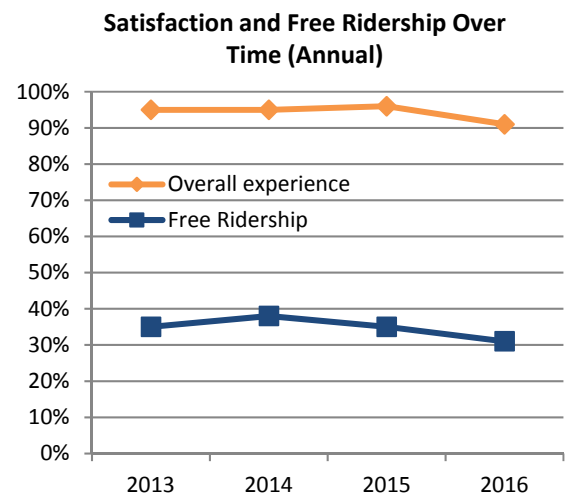
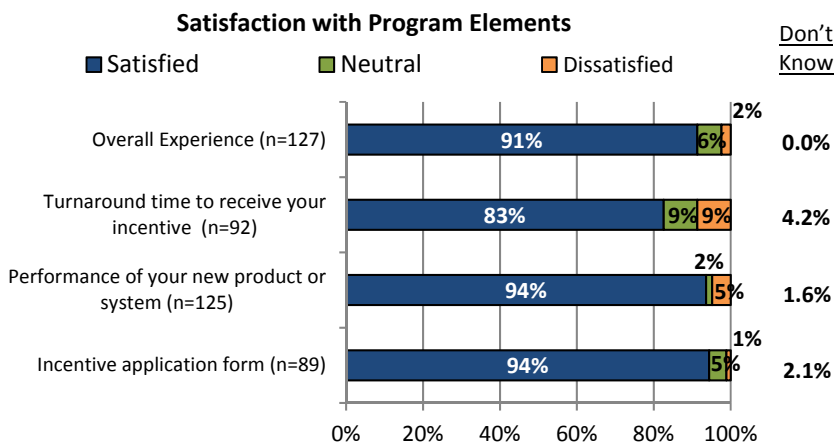
Survey questions:

- Q12O. Did the gas fireplace you purchased replace...?
- Q13NewB. Do you recall receiving a bonus incentive for your project? (Only asked of respondents that received a bonus incentive)
- Q13NewI. How influential was the bonus incentive on your decision to move forward with your project? Please answer using a 5 point scale where 5 means it had a great influence and 1 means it did not have any influence. (*caution: small sample size) (Only asked of respondents that received a bonus incentive)

Ductless Heat Pumps

- Ninety-one percent of respondents rated their overall satisfaction with ductless heat pumps a 4 or 5 out of 5.
- Thirty-eight percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before installing their heat pump.
- Forty-six percent would have installed the same equipment in the absence of Energy Trust incentives and information, although 74 percent reported that the Energy Trust incentive influenced their decision; 30 percent would have postponed the installation for a year or more. Free ridership was 31 percent.
- The contractor was the most influential element on the decision to have the system installed (85 percent rating a 4 or 5 out of 5).
- Ninety-six percent of respondents were satisfied with their contractor; 38 percent considered the approved trade ally list when choosing their contractor.

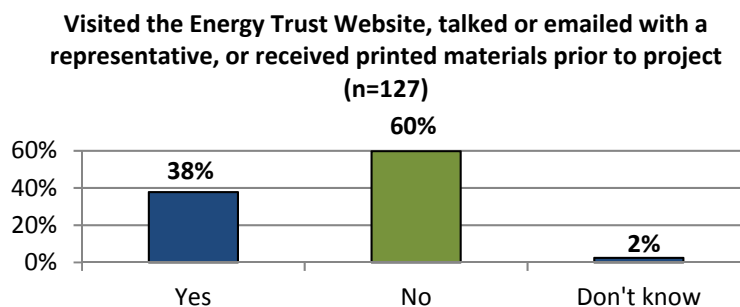
Participant Satisfaction



Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Project



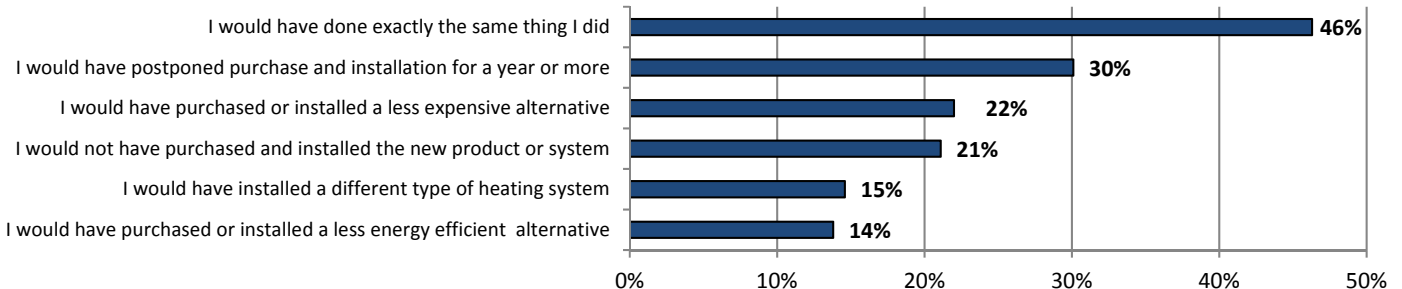
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Ductless Heat Pumps

Impact of Incentives and Information

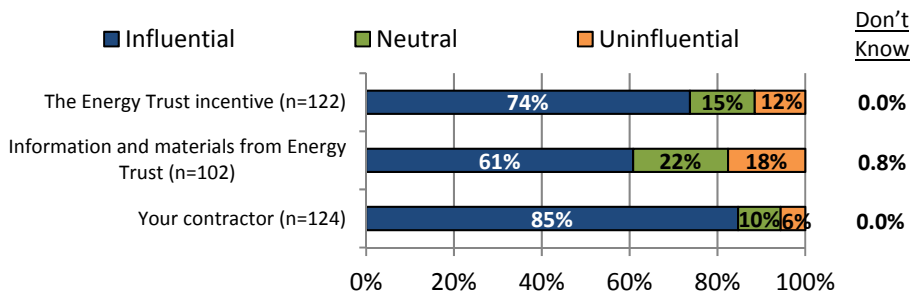
Actions Would Have Taken Without Incentive or Information (n=123)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

Influences on Decision to Have Services or Work Performed



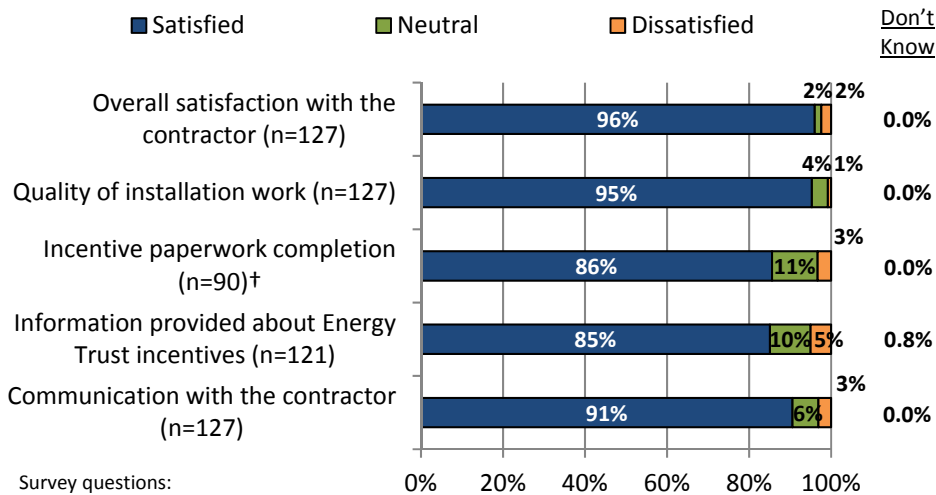
Have you applied or will you apply for the applicable Oregon state residential energy tax credit? (n=127)

Yes	81.9%
No	8.7%
Not aware of the tax credit	2.4%
Does not apply	0.8%
Don't know	6.3%

Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed?
- Q6. Have you applied or will you apply for the applicable Oregon state residential energy tax credit?

Satisfaction With Contractor



Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?

Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=127)

Yes	37.8%
No	55.9%
Don't know	6.3%

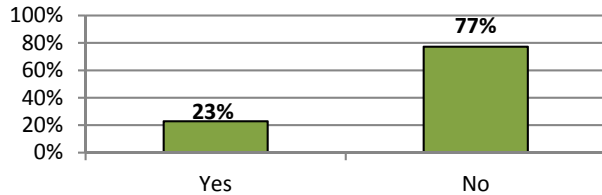
Did your contractor complete some or all of the incentive paperwork for you? (n=96)

Yes	93.8%
No	5.2%
Don't know	1.0%

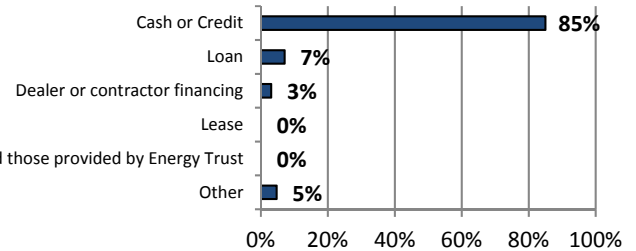
Ductless Heat Pumps

Financing of Services or Work Performed

Did you use financing to pay for the services or worked performed? (n=127)



How it was paid for (n=127)

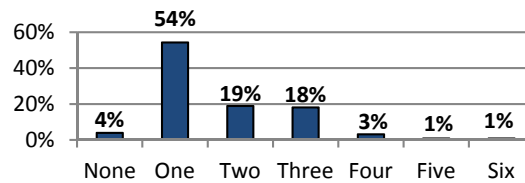


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (*Multiple responses possible*)

Number of Contractor Who Gave Bid

Number of contractors that provided bids (n=127)

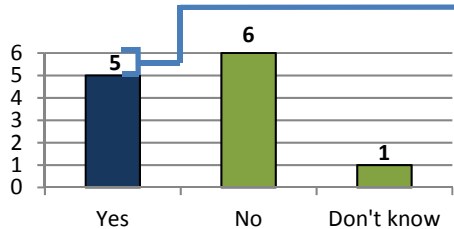


Survey questions:

- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

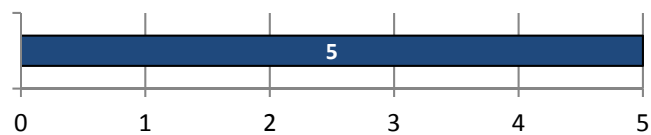
Bonus Incentive

Do you recall receiving a bonus incentive for your project? (n=12*)



Influence of Bonus Incentive (n=5*)

■ Influential ■ Neutral ■ Uninfluential



Survey questions:

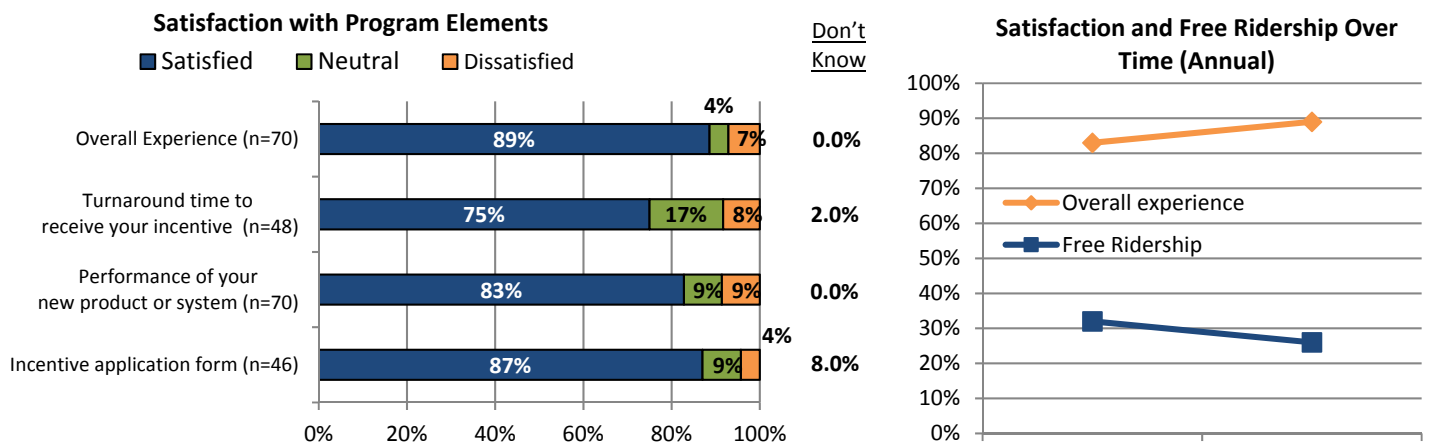
(These questions are only asked of respondents that received a bonus incentive)

- Q13NewB. Do you recall receiving a bonus incentive for your project? (**caution: small sample size*)
- Q13NewI. How influential was the bonus incentive on your decision to move forward with your project? Please answer using a 5 point scale where 5 means it had a great influence and 1 means it did not have any influence. (**caution: small sample size*)

Heat Pump Water Heaters

- Eighty-nine percent of Heat Pump Water Heater respondents rated their overall satisfaction with heat pump water heaters a 4 or 5 out of 5.
- Sixty-three percent of respondents visited the Energy Trust website, talked or emailed with a representative, or received printed materials before installing their heat pump.
- Forty-two percent of respondents would have installed a less expensive alternative in the absence of Energy Trust incentives and information and 36 percent would have installed a less efficient alternative; only 27 percent would have done exactly the same project. Free ridership was 26 percent.
- The Energy Trust incentive was the most influential element on the decision to have the system installed (79 percent rating a 4 or 5 out of 5), followed by the contractor (67 percent).
- Eighty-eight percent of respondents were satisfied with their contractor; 46 percent considered the approved trade ally list when choosing their contractor.
- Eighty-seven percent of respondents replaced an electric water heater. Heat pump water heaters were most commonly installed in a garage (50 percent) or a basement (24 percent).

Participant Satisfaction

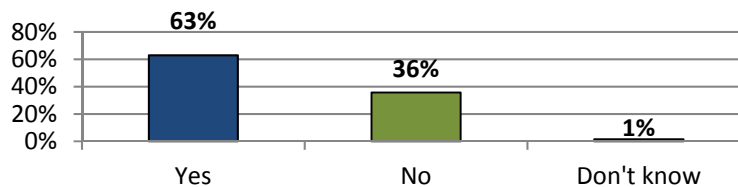


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Project

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to project (n=70)



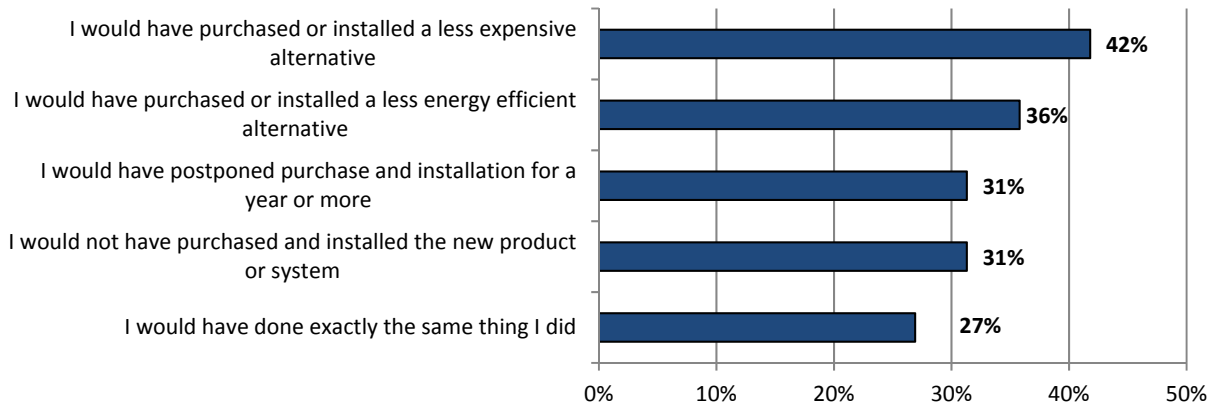
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Heat Pump Water Heaters

Impact of Incentives and Information

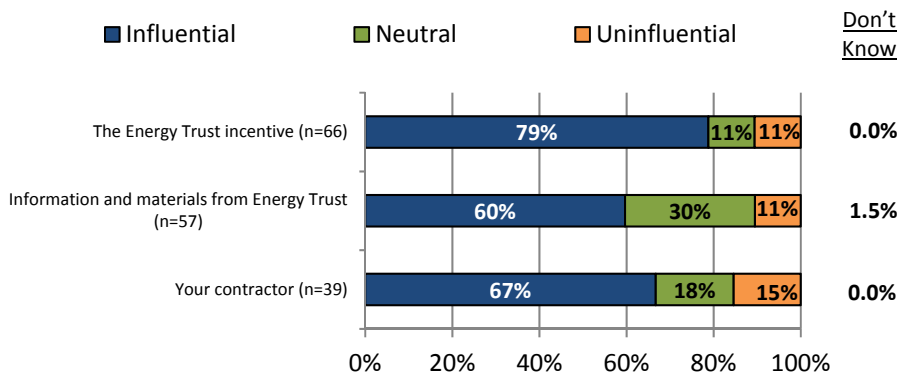
Actions Would Have Taken Without Incentive or Information (n=67)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

Influences on Decision to Have Services or Work Performed

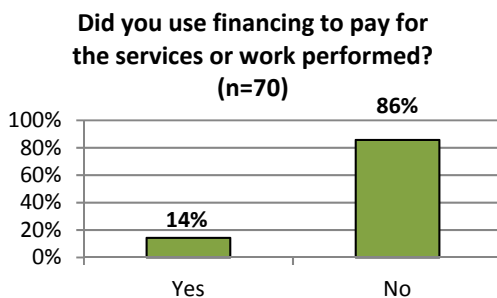


Have you applied or will you apply for the applicable Oregon state residential energy tax credit? (n=70)	
Yes	85.7%
No	2.9%
Not aware of the tax credit	2.9%
Don't know	8.6%

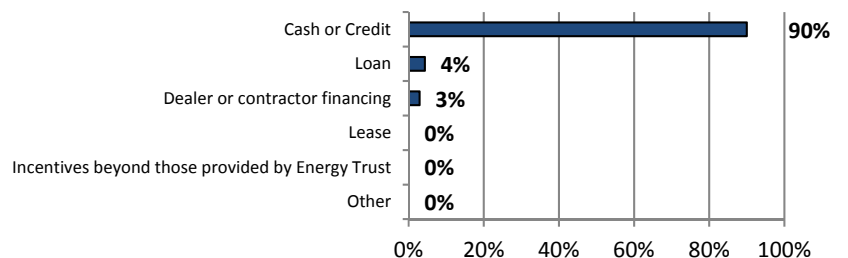
Survey questions:

- Q4A. How influential were the following elements on your decision to have services or work performed?
- Q6. Have you applied or will you apply for the applicable Oregon state residential energy tax credit?

Financing of Services or Work Performed



How it was paid for (n=70)

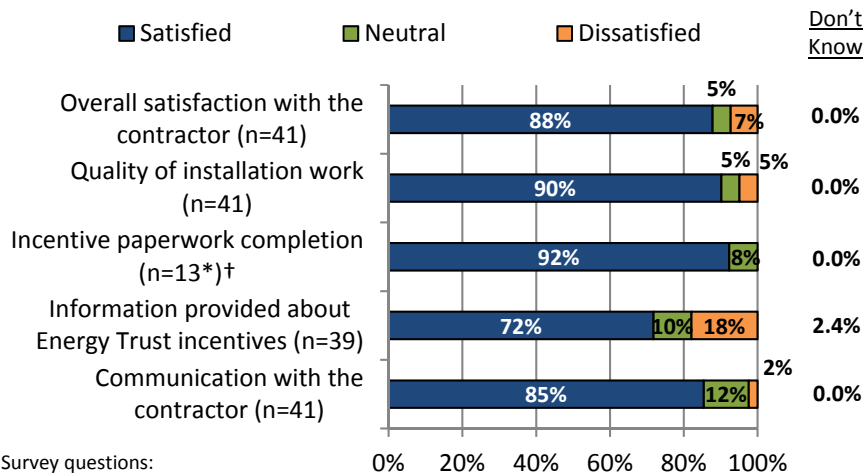


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (Multiple responses possible)

Heat Pump Water Heaters

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=41)

Yes	46.3%
No	48.8%
Don't know	4.9%

Did your contractor complete some or all of the incentive paperwork for you? (n=21*)

Yes	61.9%
No	38.1%

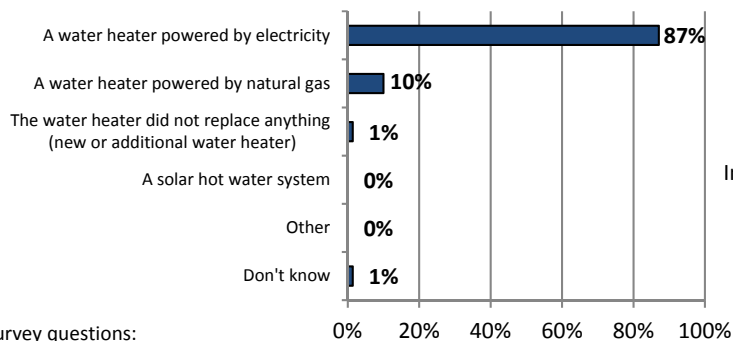
Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (*caution: small sample size) († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor? (*caution: small sample size)
- Q9A. Did your contractor complete some or all of the incentive paperwork for you? (*caution: small sample size)

Replacement Info

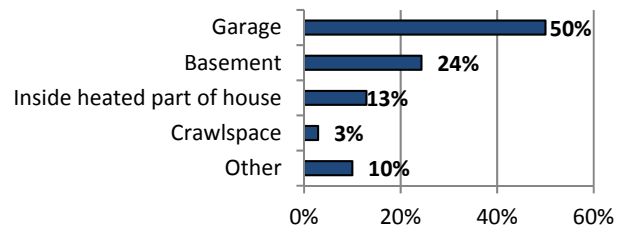
Did the new water heater you purchased replace... (n=70)



Survey questions:

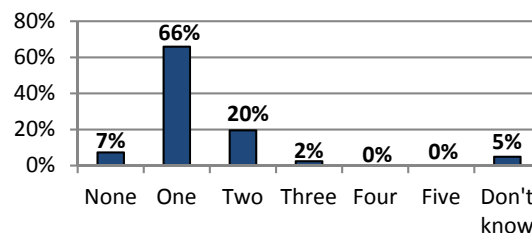
- Q12S. Did the new water heater you purchased replace...?
- Q12T. Where in your home is your heat pump water heater located? (Only asked of Heat Pump Water Heater respondents.)

Where in your home is your heat pump water heater located? (n=70)



Number of Contractors Who Gave Bid

Number of contractors that provided bids (n=41)



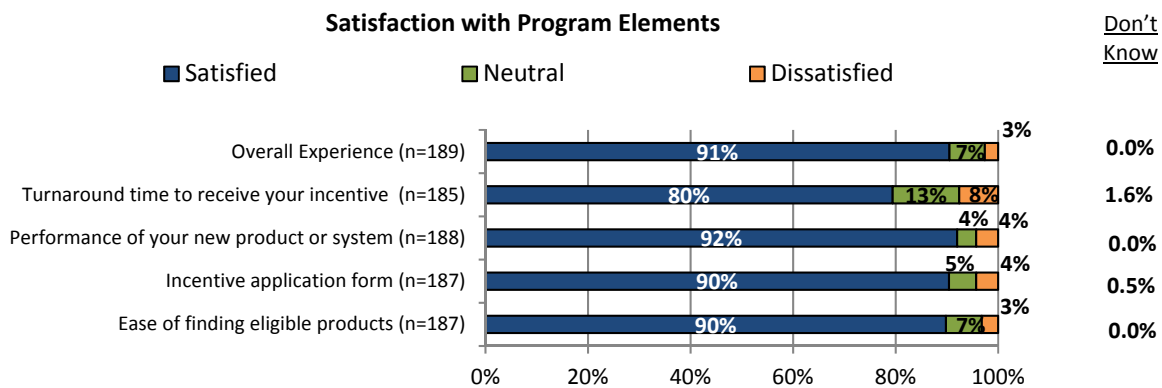
Survey questions:

- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Smart Thermostats

- 2016 was the first full year that Energy Trust offered an incentive for smart thermostats.
- Ninety-one percent of Smart Thermostat respondents rated their overall satisfaction a 4 or 5 out of 5.
- Forty-seven percent reported visiting the Energy Trust website, communicating with a representative, receiving printed material prior to purchasing their thermostat.
- Fifty-seven percent said they would have purchased and installed the same product without the Energy Trust incentive or information. However, 63 percent of respondents said the Energy Trust incentive had the greatest influence on their purchase decision. Free ridership was estimated to be 43%.
- For participants that had a contractor install their smart thermostat, 91 percent were satisfied with their contractor and 12 percent had considered the trade ally list when selecting their contractor.

Participant Satisfaction

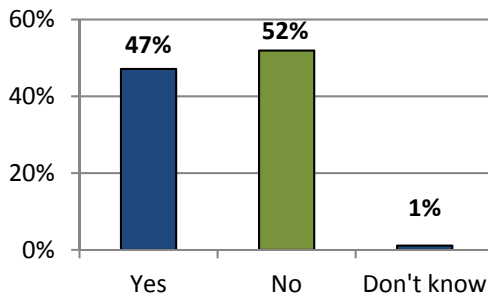


Survey question:

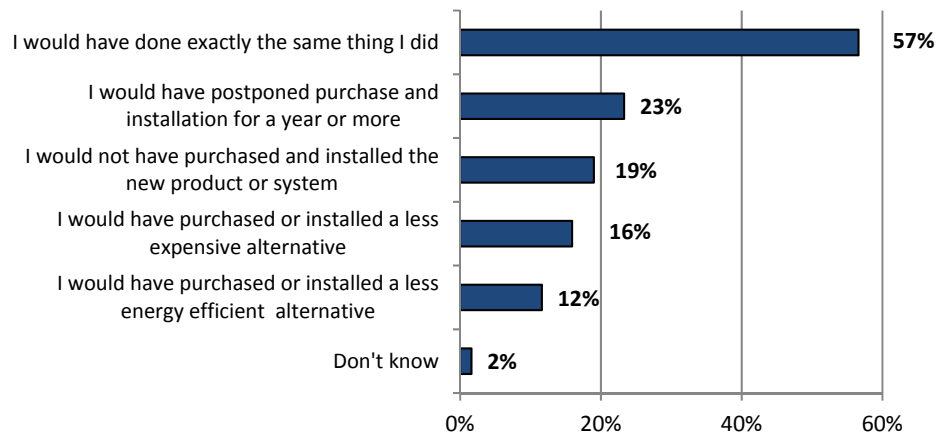
- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Interactions With Energy Trust Prior to Purchasing Product

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to purchase of product (n=189)



Actions Would Have Taken Without Incentive or Information (n=189)

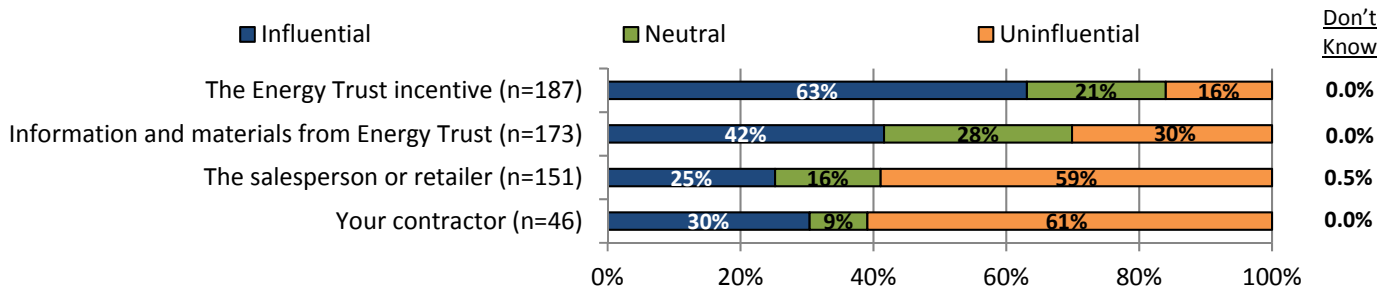


Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you purchased your product?
- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

Smart Thermostats

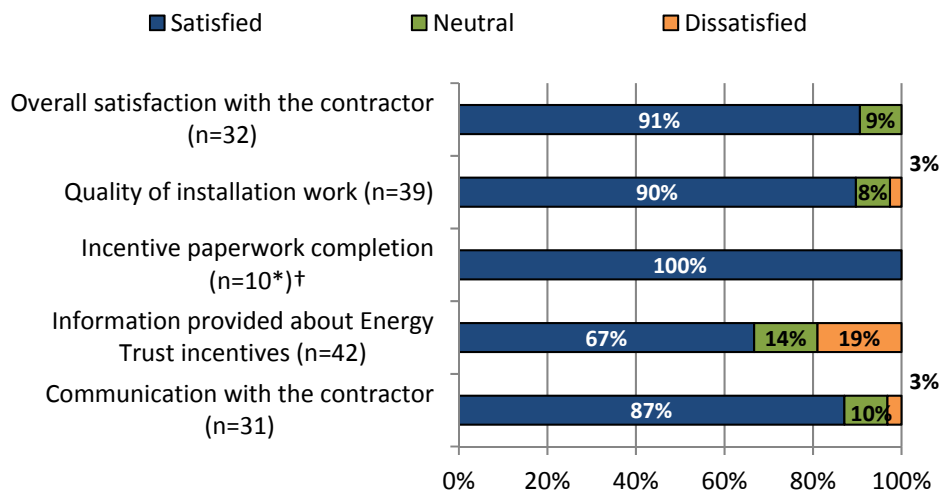
Influences on Decision to Purchase Product



Survey questions:

- Q4A. How influential were the following elements on your decision to purchase your product?

Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=92)

Yes	12.0%
No	85.9%
Don't know	1.1%

Did your contractor complete some or all of the incentive paperwork for you? (n=92)

Yes	10.9%
No	43.5%

Survey questions:

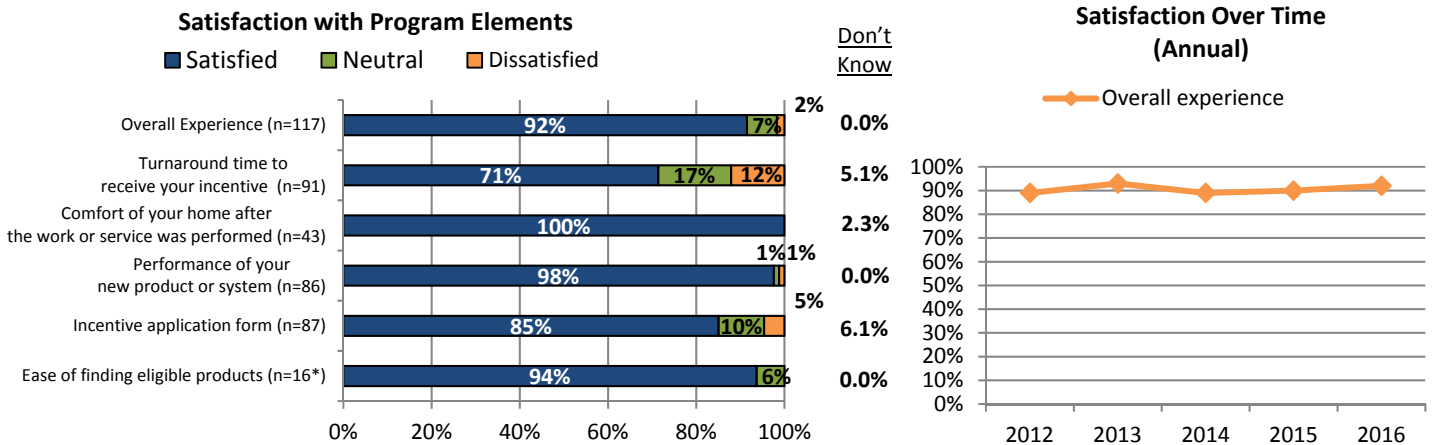
(These questions are only asked of respondents who used a contractor to have work performed)

- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (*caution: small sample size) († Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?

Existing Homes - Washington

- Ninety-two percent of Existing Homes Washington respondents rated their overall satisfaction a 4 or 5 out of 5.
- Sixty-four percent of respondents said they would have made the same improvements without Energy Trust incentive and information. Free ridership is not calculated for Washington participants.
- Eighty percent said the contractor had an influence on their decision making for the project and 53 percent said the Energy Trust incentive influenced their decision.
- For participants that had measures installed by a contractor, 92 percent were satisfied with their contractor and 30 percent had considered the trade ally list when selecting their contractor.
- When asked to rate the importance of various factors in motivating energy efficient improvements, 91% rated cost savings a 4 or 5 out of 5. Increased comfort or convenience and improved health and safety of the home were also rated as important by 89 percent and 83 percent of respondents, respectively.

Participant Satisfaction

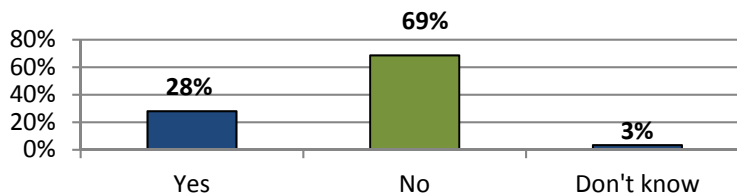


Survey question:

- Q1. Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied. (*caution: small sample size)

Interactions With Energy Trust Prior to Project

Visited the Energy Trust Website, talked or emailed with a representative, or received printed materials prior to project (n=118)



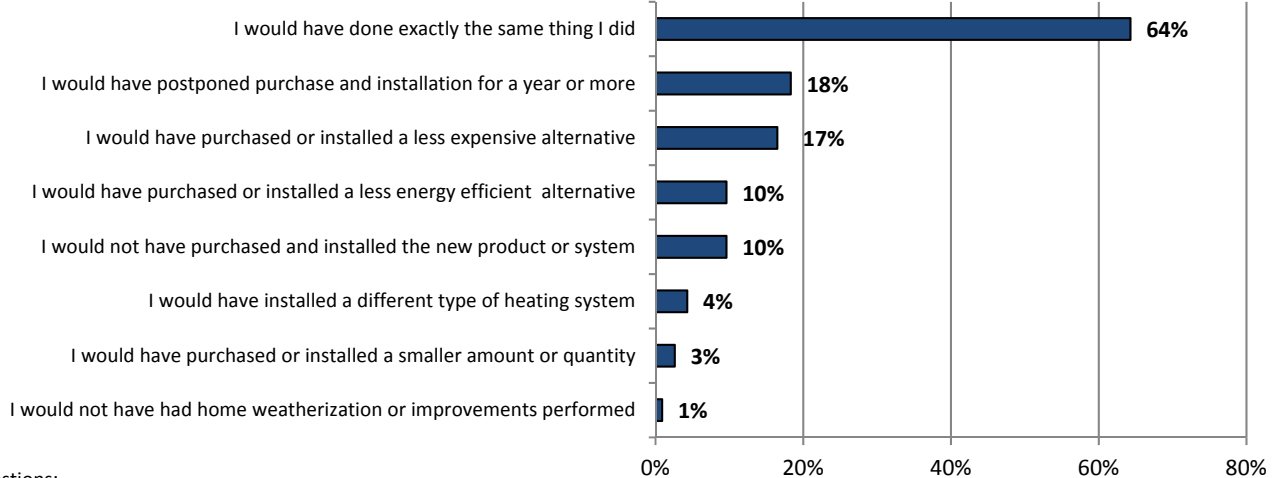
Survey Question:

- Q2. Did you or anyone in your household visit the Energy Trust website, talk or e-mail with an Energy Trust representative, or receive any printed materials before you had any services or work performed?

Existing Homes - Washington

Impact of Incentives and Information

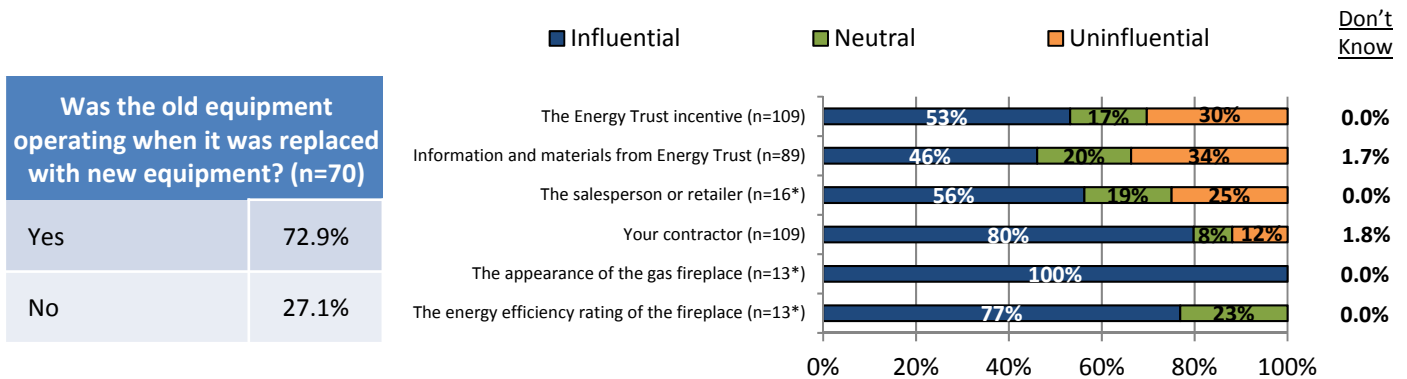
Actions Would Have Taken Without Incentive or Information (n=115)



Survey questions:

- Q3A. Which of the following statements describe the actions you would have taken had the Energy Trust incentives and information not been available? (Multiple responses possible)

Influences on Decision to Have Services or Work Performed

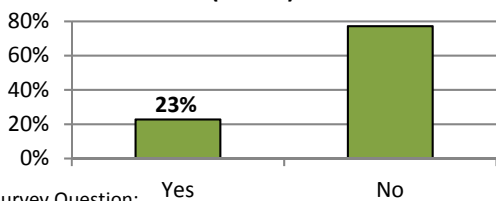


Survey questions:

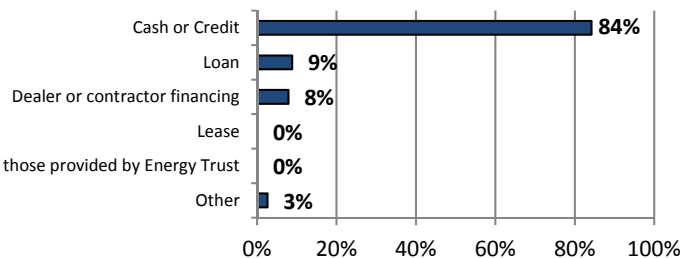
- Q3D. Was your old <measure> operating when you replaced it with the new equipment?
- Q4A. How influential were the following elements on your decision to have services or work performed? (*caution: small sample size)

Financing of Services or Work Performed

Did you use financing to pay for the services or work performed? (n=114)



How it was paid for (n=114)

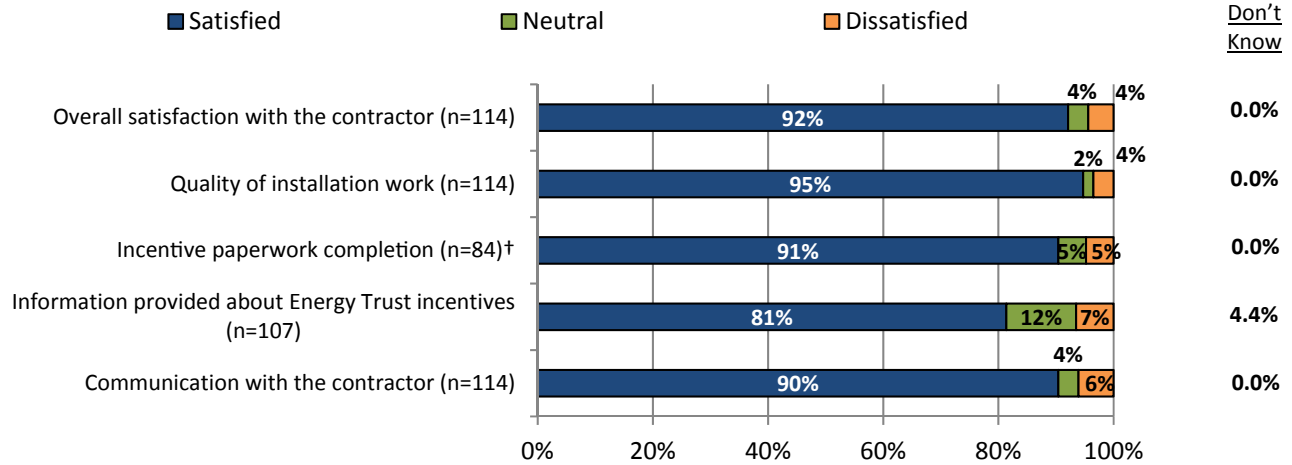


Survey Question:

- Q12V. Did you use financing to pay for the services or work performed?
- Q12W. How did you pay for it? (Multiple responses possible)

Existing Homes - Washington

Satisfaction With Contractor



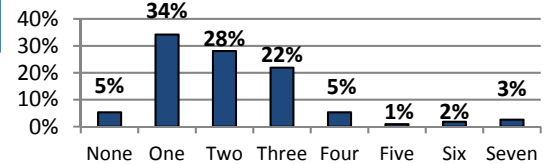
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=114)

Yes	29.8%
No	69.3%
Don't know	0.9%

Did your contractor complete some or all of the incentive paperwork for you? (n=94)

Yes	90.4%
No	7.4%
Don't know	1.1%

Number of contractors that provided bids (n=114)



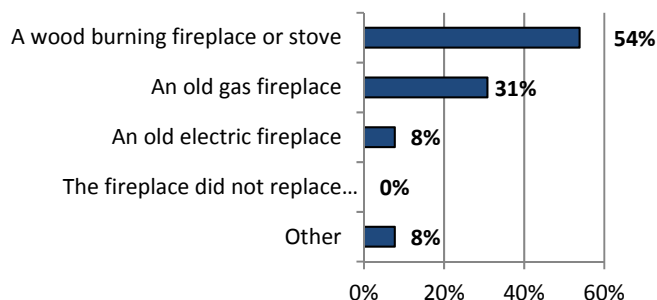
Survey questions:

(These questions are only asked of respondents who used a contractor to have work performed)

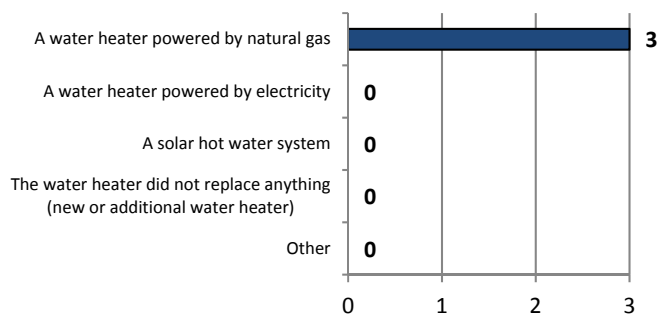
- Q8. Thinking of your experience with your contractor, please indicate the number that corresponds to your satisfaction with the following service elements, with 1 indicating not at all satisfied and 5 indicating very satisfied. (* Only asked of those who had a contractor complete their paperwork)
- Q9. Did you ever consider Energy Trust's list of approved allies when selecting your contractor?
- Q9A. Did your contractor complete some or all of the incentive paperwork for you?
- Q13New. How many contractors did you get a bid from before deciding to move forward with your project?

Replacement Info

Did the gas fireplace you purchased replace... (n=13*)



Did the new water heater you purchased replace... (n=3*)

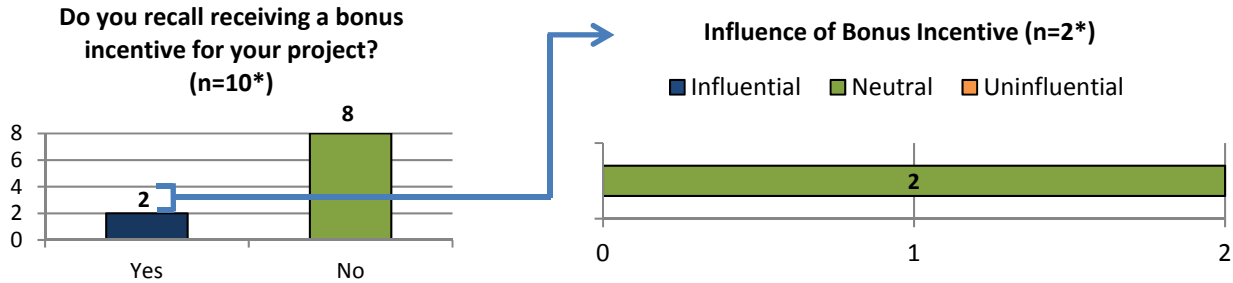


Survey questions:

- Q12O. Did the gas fireplace you purchased replace...? (*caution: small sample size)
- Q12S. Did the new water heater you purchased replace...? (*caution: small sample size)

Existing Homes - Washington

Bonus Incentive

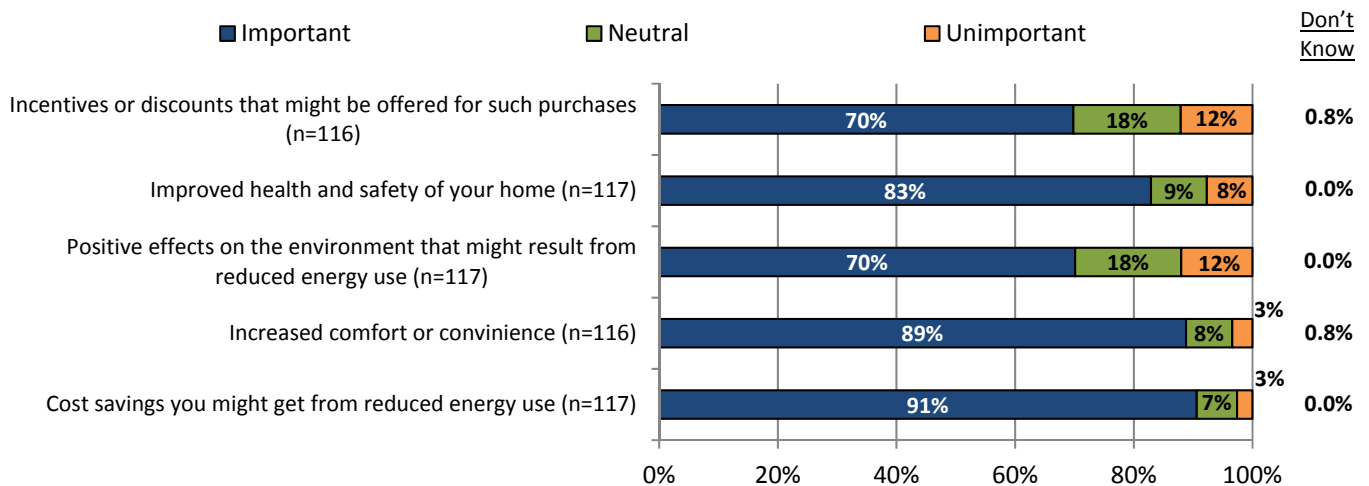


Survey questions:

(These questions are only asked of respondents that received a bonus incentive)

- Q13NewB. Do you recall receiving a bonus incentive for your project? (*caution: small sample size)
- Q13NewI. How influential was the bonus incentive on your decision to move forward with your project? Please answer using a 5 point scale where 5 means it had a great influence and 1 means it did not have any influence. (*caution: small sample size)

Important factors when planning energy efficiency projects



Survey questions:

- Q13A. I'd like to ask you how important some different factors are when you plan energy efficient improvements to your home or shop for energy related products or equipment. Please rate the importance of each of the following factors on a 5 point scale where 5 is very important and 1 is not at all important.

Appendix A – Free Ridership Calculations

The method used here to calculate free ridership is described in more detail in the memo “Energy Trust Free Ridership Methodology” by Phil Degens and Sarah Castor, originally dated June 4, 2008 and updated August 7, 2013. For simplicity, a project’s free ridership score is composed of two elements: a project change score and an influence score. The project change score is based on the respondent’s answer to the question “Which of the following statements describe the actions you would have taken if Energy Trust incentives and information were not available?” Possible answer choices are assigned a number between 0 and 0.5, with 0 indicating no free ridership and 0.5 indicated the project was a full free rider. Since respondents can select multiple responses to the question, their answer choice with the lowest score is selected. If the respondent selects “Don’t know”, two scores are created to account for the range of possible answers (0 and 0.5). For non-residential projects, a follow-up question is asked of respondents who answered that they would not have done anything differently in absence of the program: “If your firm had not received the incentive, would it have made available the funds needed to cover the entire cost of the project?” If the respondent selects “Yes” their project change score is 0.5, if they select “No” it is 0, and if they select “Don’t know” they are given two scores for project change, as described above.

The influence score is based on their answers to the question about the influence of Energy Trust incentives, program representatives, contractor/salesperson, studies and other program elements. The answer choices are given a value between 0 (element’s influence was a 5, extremely influential) and 0.5 (element’s influence was a 1, not at all influential). The score for the most influential element is taken as the influence score. If a respondent answers “Don’t know” for all elements, they are given two influence scores to account for the range of possible answers (0 and 0.5).

The project change and influence scores are added to generate the free ridership score for each project. For respondents not providing any “Don’t know” answers this will be one number between 0 (no free ridership) and 1 (full free ridership). For those who gave a “Don’t know” answer to one of the questions, there are two free ridership scores, one high and one low. For those who answered “Don’t know” to both the project change and influence questions, no score is calculated.

Free ridership scores are averaged for all respondents of each program/measure group and shown as a percent, rather than a decimal. “Low Scenario” is the average of the free ridership scores where the low score is used for those who answered “Don’t know” to a question; “High Scenario” is the average where the high score is used for those who answered “Don’t know” to a question. “Mid Scenario” is the average of the Low and High Scenarios.

For non-residential participants, these scores are multiplied by the project’s share of total working kWh and therm savings for all respondents to get a program-level estimate of free ridership. Gas and electric free-ridership rates are calculated separately; if a project has gas *and* electric savings, its free ridership score factors into the program’s gas and electric free ridership estimates.

Appendix A – Free Ridership Calculations

Evaluation staff report free ridership on an annual basis, which is used in Energy Trust's True-Up process to convert gross energy savings to net energy savings. In the past, if there were fewer than 10 respondents in a given program and fuel category, or in a given measure category, Evaluation staff did not estimate free ridership due to the small sample size. For as long as Fast Feedback surveys have been conducted, we have been able to meet this sample size requirement for all programs and fuels. After discussion with program staff, it was determined that this threshold was too low and that we needed larger minimum sample sizes to calculate stable estimates of free ridership.

Currently, the minimum number of respondents required to estimate free ridership is 30. Also, for the Existing Buildings and Production Efficiency programs, which have subquota groups based on program tracks, we strive to estimate free ridership for each subquota group and then weight the results by the proportion of savings in the population. For example, if Custom gas projects had a free ridership rate of 20% and Standard gas projects had a free ridership rate of 14%, and gas savings from Custom and Standard projects in the population were each 50%, the program's free ridership rate would be 17%. Thus, the overall free ridership estimates reflect the actual distribution of program track savings.

To estimate annual free ridership in cases where we lack 30 or more respondents, we pool responses from prior years' surveys until we achieve 30 or more respondents. For example, there were 13 Production Efficiency (PE) respondents with gas savings in 2013. To estimate the free ridership numbers that would be applied to 2013 PE projects in True-Up, we went back to 2011. These responses for 2011-2013 were pooled, which increased the total number of respondents to 37. We use this rule for both residential and non-residential groups.

For Production Efficiency and Existing Buildings programs, if there are fewer than 30 respondents in each subquota group, we will not estimate free ridership by subquota and will instead pool all responses.

For example, there were fewer than 30 respondents in 2014 Q1 and Q2 for Production Efficiency Custom and Standard gas projects (5 and 3, respectively). When we look at the past five quarters, there are only 12 respondents in Custom and 6 in Standard. When we go back to 2011, there are only 17 respondents in Standard. So, we estimate a free ridership rate without breaking out Custom and Standard, and going back to 2012 to get the requisite 30 respondents.

Where free ridership is estimated using data from past years, we clearly note this in the report.

Detailed Free Ridership Numbers

Commercial and Industrial

Existing Buildings - electric

2015-2016	Low Scenario	Mid Scenario	High Scenario
Custom (n=71)	23%	26%	29%
Lighting (n=161)	21%	25%	29%
Standard (n=74)	31%	36%	41%

There were fewer than 30 respondents in 2016 for the Standard track, so, we used data from 2015 and 2016 to estimate free ridership.

Project Type	Free Ridership Rate	Proportion in Population (2016)
Custom	26%	25%
Lighting	25%	66%
Standard	36%	9%
Overall Free Ridership		26%

Existing Buildings - gas

2015-2016	Low Scenario	Mid Scenario	High Scenario
Custom (n=34)	13%	14%	15%
Standard (n=96)	29%	33%	38%

There were fewer than 30 respondents in 2016 for the Custom track, so, we used data from 2015 and 2016 to estimate free ridership.

Project Type	Free Ridership Rate	Proportion in Population (2016)
Custom	14%	52%
Standard	33%	48%
Overall Free Ridership		23%

Production efficiency - electric

2016	Low Scenario	Mid Scenario	High Scenario
Custom (n=44)	7%	10%	13%
Lighting (n=72)	7%	10%	13%
Standard (n=76)	14%	16%	18%

Project Type	Free Ridership Rate	Proportion in Population (2015)
Custom	10%	48%
Lighting	10%	34%
Standard	16%	18%
Lighting and Standard	12%	52%
Overall Free Ridership		11%

Production efficiency - gas

2014-2016	Low Scenario	Mid Scenario	High Scenario
Custom and standard (n=30)	14%	16%	18%

There were fewer than 30 respondents in 2016 for Custom and Standard combined. So, we estimate a free ridership rate without breaking out Custom and Standard, and going back to 2014 to get the requisite 30 respondents.

Detailed Free Ridership Numbers

Multifamily - electric

2016	Low Scenario	Mid Scenario	High Scenario
Electric (n=129)	15%	17%	20%

The Existing Multifamily sample does not have subquotas, so we estimate one free ridership rate for electric and one for gas.

Multifamily - gas

2014-2016	Low Scenario	Mid Scenario	High Scenario
Gas (n=34)	14%	22%	29%

The Existing Multifamily sample does not have subquotas, so we estimate one free ridership rate for electric and one for gas. On the gas side, there were fewer than 30 respondents in 2016, so we used data from 2014-2016 to achieve the requisite 30 respondents to calculate free ridership.

Residential

Home Products

2016	Low Scenario	Mid Scenario	High Scenario
Clothes Washers* (n=223)	39%	42%	46%
Refrigerator Recycling (n=245)	27%	32%	37%
Clothes Washer Recycling (n=180)	26%	31%	37%

*There was a slight change to the free ridership calculation methodology for these categories for 2016. This change better accounts for the incremental nature of efficiency in these measure and program categories and caused a minor reduction in the free ridership rates.

Existing Homes

2016	Low Scenario	Mid Scenario	High Scenario
Ceiling Insulation (n=124)	41%	41%	42%
Other Insulation (floor, wall, duct) (n=115)	35%	36%	38%
Heat Pumps (excl. DHPs)* (n=117)	32%	37%	42%
Water Heaters* (n=48)	32%	41%	51%
Windows* (n=41)	36%	39%	42%
Home Performance with Energy Star (n=7)**	23%	27%	30%
Gas Fireplaces* (n=196)	36%	39%	42%
Ductless Heat Pumps (n=126)	28%	31%	34%
Heat Pump Water Heaters (n=70)	22%	26%	29%
Smart Thermostats (n=185)	42%	43%	45%

*There was a slight change to the free ridership calculation methodology for these categories for 2016. This change better accounts for the incremental nature of efficiency in these measure and program categories and caused a minor reduction in the free ridership rates.

** Very small sample size. Interpret results with caution.

Appendix B – Measures Included in Fast Feedback

Existing Buildings

- Projects must have either working therm or working kWh savings, and the incentive amount must be above zero
- Projects must have a program code of BE
- Studies are not included
- Projects with a track of O&M and Comprehensive are not included
- Strategic Energy Management projects are not included
- Mega projects are not included

Production Efficiency

- Projects must have either working therm or working kWh savings, and the incentive amount must be above zero
- Projects must have a program code of PEF or PEL
- Studies are not included
- Motor projects are not included
- Projects with a track of Industrial Energy Improvement, Kaizen Blitz, and Strategic Energy Management are not included
- Mega projects are not included

Existing Multifamily

- Projects must have either working therm or working kWh savings, and the incentive amount must be above zero
- Projects must have a program code of BEM
- Instant savings measures, direct install measures, and appliance buy-down measures are not included

New Homes and Products

- Projects must have an incentive amount above zero
- Projects must have a program code of EHP
- Only refrigerator recycling, clothes washer recycling, and clothes washer measures are eligible to be surveyed
- New homes, lighting and showerheads, and new manufactured home measures are not included

Appendix B – Measures Included in Fast Feedback

Existing Homes

- Projects must have either working therm or working kWh savings
- Projects must have a program code of HES or HPF
- Only ceiling, floor, duct and wall insulation; gas fireplaces; heat pumps (including ductless); gas tank and heat pump water heaters; windows; gas furnaces (Washington only); smart thermostats; and non-Enhabit home performance projects are surveyed through Fast Feedback
- Savings Within Reach (moderate income track) and existing manufactured homes are not included

Solar

- Commercial and residential solar PV projects must have working kWh production.
- Third-party owned systems are included but may be asked slightly different questions.

Additionally, for all programs, projects must:

- Be recognized within a specific date range
- Be associated with a contact with one of the player roles: lead, owner, accounts receivable, system owner, or host owner (commercial and industrial) and owner or host owner (residential)
- Have a status of “completed” (commercial and industrial) or anything but a status of “abandon” (residential)
- Be associated with a contact record containing a phone number

We also exclude customers that we have recorded as having been surveyed recently (within the past twelve months for residential and the past six months for commercial and industrial) to avoid survey fatigue.

It is worth noting that for the purposes of surveying, we consider a year (for example, 2016) to go from December 31st of the prior year through December 30th of 2016. The reason for this is to ensure that we have sufficient surveys early in the year to provide information about free ridership and satisfaction, which we report on quarterly. In addition, we are looking for the month in which the check was cut, not the month the savings were recognized, and December 31st is a catch-all date for projects that were counted for the previous program year, but for which checks were cut in January, therefore they are really January participants.