

Fast Feedback Results

2015 Report

Prepared by
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August 30, 2016



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, is customized for each program or measure of interest, and is designed to take no more than 5 minutes to complete.
- There are quarterly quotas for each program or measure of interest 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 12 months. Results are summarized and distributed quarterly to program staff. There is at least one opportunity in each survey for the respondent to give feedback that is recorded verbatim, and this feedback is provided with anonymity to program staff on a monthly basis (not included in this report).
- A total of 3,015 participants that completed projects between January and December 2015 were surveyed between March 2015 and February 2016. We strive to survey customers about a month after they receive their incentive check.
- 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.
- Please see Appendix A for a description of changes to methods for calculating free ridership.
- Appendix B contains information about which measures are included and excluded from Fast Feedback surveys.

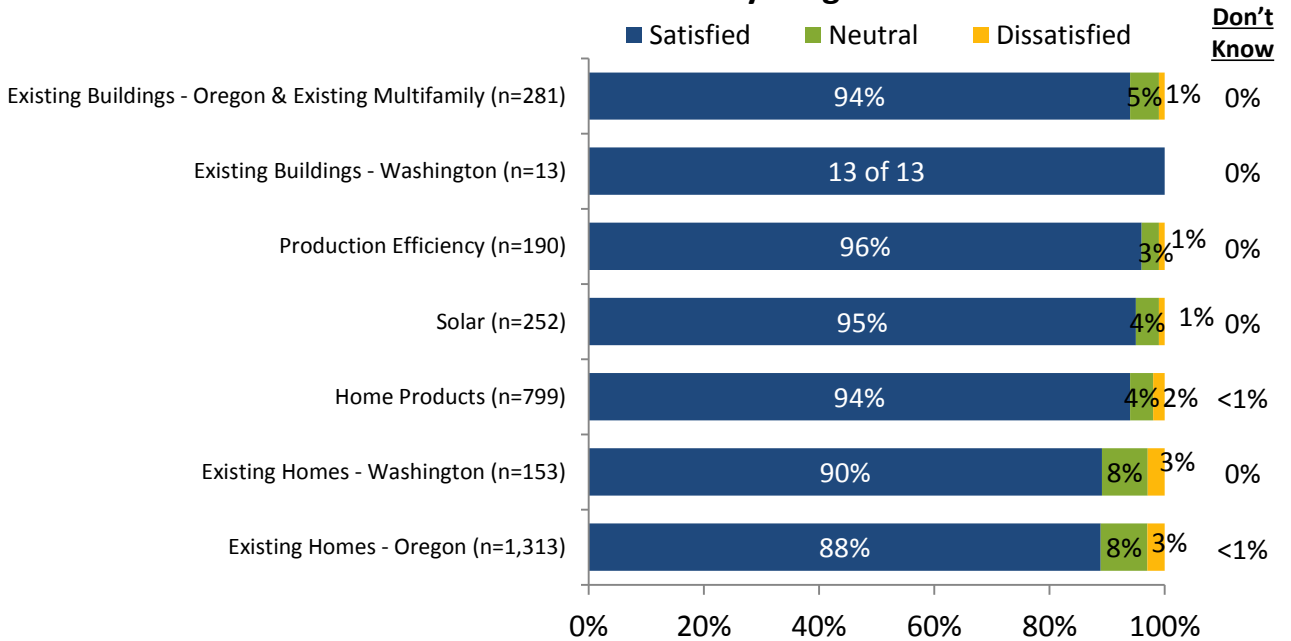
History of Fast Feedback

- 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 from Q2 2010 is available on the Energy Trust website ([link](#)); 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, AbtSRBI has been making Fast Feedback survey calls.

Summary of Results

- Satisfaction with overall experience was high for the program groupings shown below, ranging from a high of 96% for Production Efficiency to 88% for Existing Homes – Oregon.

Overall Satisfaction by Program

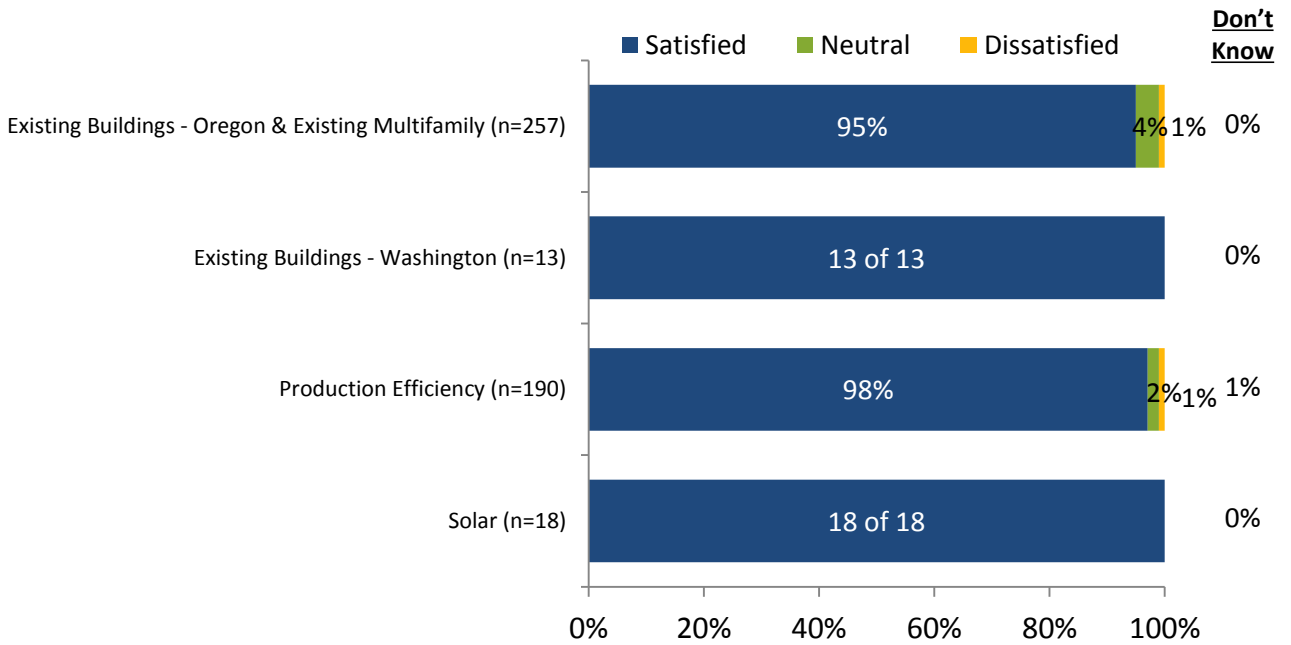


- Free ridership – the portion of participants who would have made energy efficient improvements or upgrades without incentives or information from Energy Trust – was much more variable than satisfaction and ranged from a high of 55% for clothes washers to a low of 19% for Multifamily electric projects. See Appendix A for an explanation of free ridership calculations.
- For many programs and measures, the Energy Trust incentive was the most influential of the program aspects in the decision to undertake an energy efficient improvement or upgrade. Other aspects investigated included information provided by Energy Trust, the contractor, and other features unique to certain programs or measures, such as free pick-up for refrigerator recycling.

Summary of Results

- Satisfaction with program representatives is only asked of commercial and industrial respondents. Since residential customers have varying degrees of interaction with program representatives (many may not have any interaction), and because it is not possible to identify customers who did have interaction to survey, residential customers are not questioned on this topic. Satisfaction was high for the program groupings shown below.

Satisfaction with Program Representative by Program



Summary of Results

Program	Respondents	Percent Satisfied	Free Ridership‡	
Commercial and Industrial				
			Electric	Gas
Existing Buildings – Oregon	208	95%	33%	35%*
Existing Buildings – Washington	13	13 of 13	--†	--†
Existing Multifamily	73	93%	19%	34%*
Production Efficiency	190	96%	23%	22%*
Solar				
Commercial Solar Electric and Water Heating	20	100%	--†	
Residential Solar Electric	233	94%	--†	
Home Products				
Clothes Washers	260	96%	55%	
Refrigerators	275	94%	54%	
Refrigerator Recycling	275	92%	33%	
Existing Homes				
Ceiling Insulation	221	91%	43%	
Insulation	157	85%	44%	
Heat Pumps	112	90%	44%	
Ductless Heat Pumps	148	96%	35%	
Heat Pump Water Heater	119	83%	32%	
Gas Fireplaces	220	90%	44%	
Water Heaters	70	87%	47% ^α	
Windows	308	86%	49%	
Home Performance	21	100%	32%*	
Existing Homes – Washington***	154	90%	--†	
Existing Homes – Oregon	1,323	88%	--	

* Free ridership numbers are calculated using respondents that completed projects in prior years due to small sample sizes. See Appendix A for more information.

***Projects also included in other Existing Homes measure totals.

† Free ridership is not calculated through Fast Feedback.

‡ Free ridership estimates for residential measures are calculated for Oregon respondents only. However, the number of respondents and the satisfaction numbers for Existing Homes measures includes both Oregon and Washington respondents.

^α0.67 residential gas water heaters are part of a market transformation effort; free ridership is shown for information only and will not be the basis for programmatic decisions about the measure.

Summary of Results

- Existing Homes participants were asked about satisfaction with their contractors; 91% were satisfied with their contractor overall. Satisfaction with the quality of installation work was also very high at 95%. Roughly 34% of Existing Homes participants considered Energy Trust's list of approved trade allies when selecting their contractor.

	Percent satisfied with contractor	Percent who considered trade ally list
Ceiling Insulation	95%	43%
Insulation	91%	45%
Heat Pumps	86%	32%
Ductless Heat Pumps	97%	39%
Heat Pump Water Heaters	78%	42%
Gas Fireplaces	89%	29%
Water Heaters	87%	37%
Windows	92%	23%
Home Performance	91%	57%
Overall	91%	34%

- Overall, 40% of residential participants who received an instant incentive, a bonus, or third party solar recalled receiving the incentive, bonus, or third party solar.

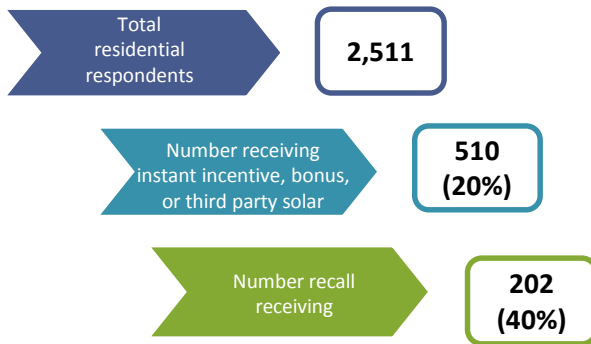


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Commercial and Industrial Summary

- Fast Feedback surveys were completed with enough participants for results to meet the criteria of 90% confidence / 10% margin of error for all groups except Existing Buildings – Washington, due to the small population size for that group.
- Starting in 2015, non-residential contacts are excluded from being surveyed for Fast Feedback if they have been surveyed within the past six months (previously, this threshold was one year). This was done to increase the sample available for the custom quota groups.
- 95% of Existing Buildings – Oregon respondents rated their overall satisfaction a 4 or 5 out of 5. Satisfaction for Production Efficiency is very high at 96%. Satisfaction for Existing Multifamily is also high at 93%.
- Free ridership for Existing Buildings – Oregon electric projects was 33% (up from 24% in 2014 - note that the 2014 estimate includes projects from 2013 and 2014), while free ridership for gas projects was 35%. Free ridership for Multifamily electric projects was 19% (up slightly from 16% in 2014), while free ridership for gas projects was 34%. Free ridership for Production Efficiency electric projects was 23% (down from 32% in 2014), while free ridership for gas projects was 22%. Note that gas free ridership numbers are calculated using respondents that completed projects in years other than 2015 due to small sample sizes.
- New Buildings program participants are no longer surveyed through Fast Feedback as of Q1 2013. New Buildings projects often involve numerous market actors (architect, engineer, developer, owner and more) at different project stages, so it is difficult to reach a project representative who is able to respond to questions about satisfaction. As of Q2 2012, satisfaction and other information about New Buildings participants is obtained through annual program process evaluations.

Survey Group	2015 Projects [§]	Completed Surveys
Existing Buildings – Oregon*	2,590	208
Existing Buildings – Washington	49	13
Existing Multifamily	596	73
Production Efficiency*	854	190

*Contains subquotas for program tracks to ensure a variety of project types were surveyed.

[§] Project totals for 2015 only include projects eligible for Fast Feedback, and therefore may not match other Energy Trust reports for 2015.

Program	Percent Satisfied	Free Ridership (savings-weighted)	
		Electric	Gas
Existing Buildings – Oregon	95%	33%	35%*
Existing Buildings – Washington	13 of 13	--†	--†
Existing Multifamily	93%	19%	34%*
Production Efficiency	96%	23%	22%*

* Free ridership numbers are calculated using respondents that completed projects in years other than 2015 due to small sample sizes. See Appendix A for more information.

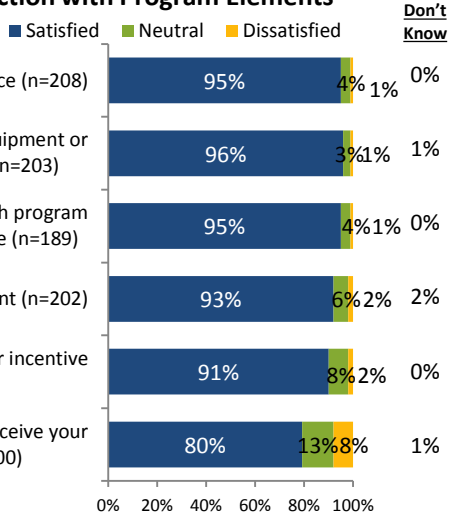
† Free ridership is not calculated through Fast Feedback.

Existing Buildings

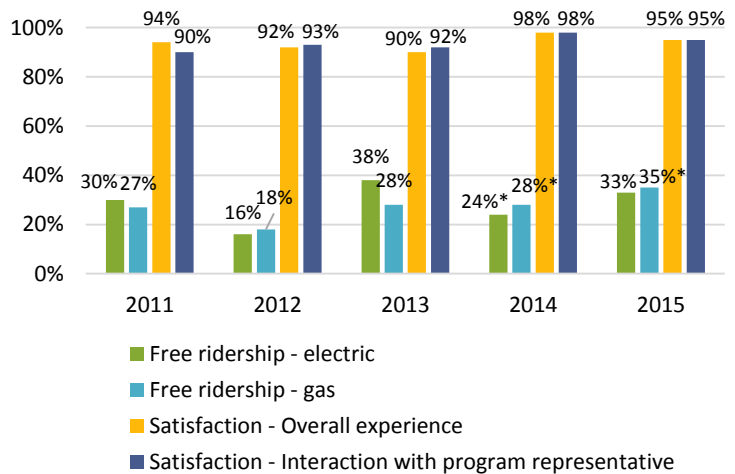
- 95% of respondents rated their satisfaction with Energy Trust a 4 or 5 out of 5, a slight decrease from 2014 (98%). Satisfaction was lowest for the turnaround time to receive the incentive.
- The electric free ridership rate was 33% (up from 24% in 2014 - note that the 2014 estimate includes projects from 2013 and 2014). The annual gas free ridership rate was 35%. Note that the 2015 estimate of gas free ridership includes projects from 2014 and 2015.
- 48% of respondents would have done the project the same way if Energy Trust incentives were not available; of those, 59% say that they would have been able to cover the cost of the project in the absence of Energy Trust's incentives.

Participant Satisfaction

Satisfaction with Program Elements



Free Ridership and Satisfaction Over Time



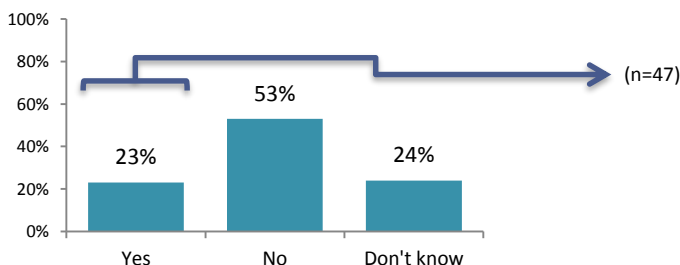
Note: The free ridership rates with asterisks were calculated using respondents that completed projects in years other than the year in question due to small sample sizes. The remaining free ridership rates do not include projects from other years.

Survey question:

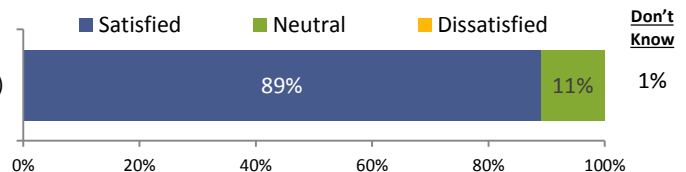
- Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Energy Trust-Funded Study

Did you receive an Energy Trust-funded technical study? (n=208)



Satisfaction with Study



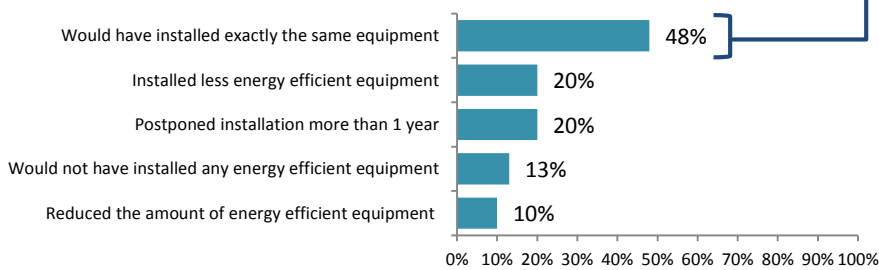
Survey questions:

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

Existing Buildings

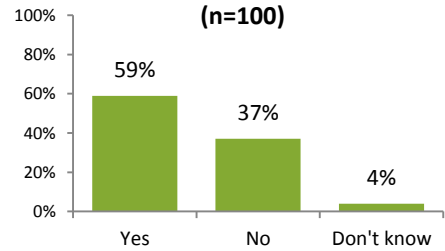
Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=208)*



*Multiple responses possible

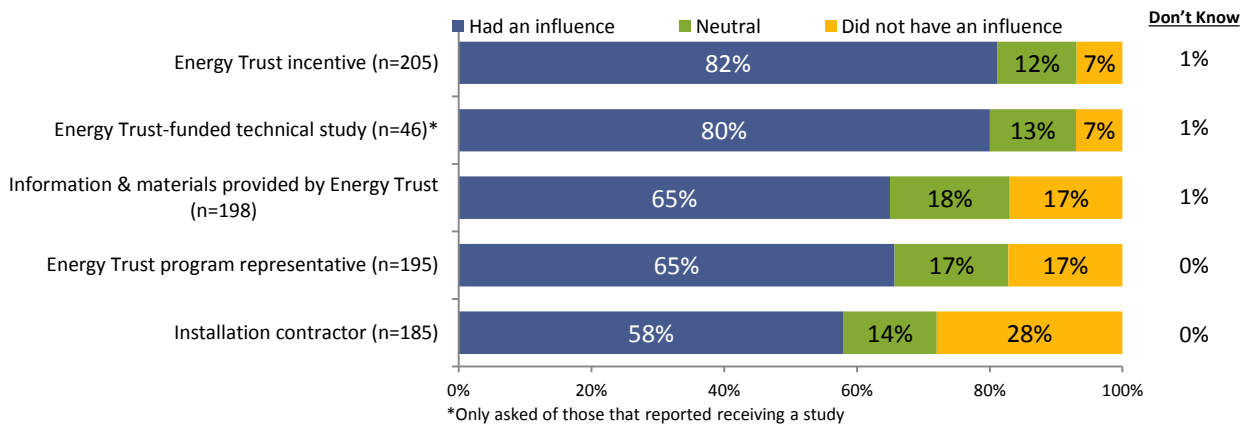
Would project cost have been covered without incentive? (n=100)



Survey questions:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?
- In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of <improvement>?

Influences on Decision to Incorporate Energy Efficient Features in Project



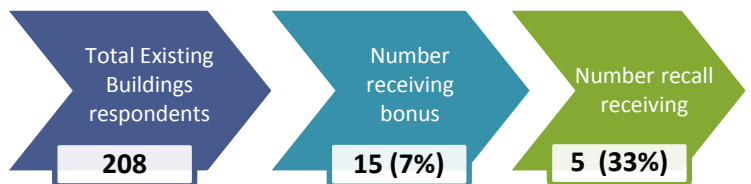
*Only asked of those that reported receiving a study

Survey question:

- How influential were the following elements on your decision to incorporate energy efficient features in your project?

Oregon State Tax Credit & Bonus Incentives

Have you applied for the Oregon state tax credit? (n=129)	
Yes	7%
No, but plan to	20%
No, do not plan to	42%
Don't know	26%
Not applicable	5%



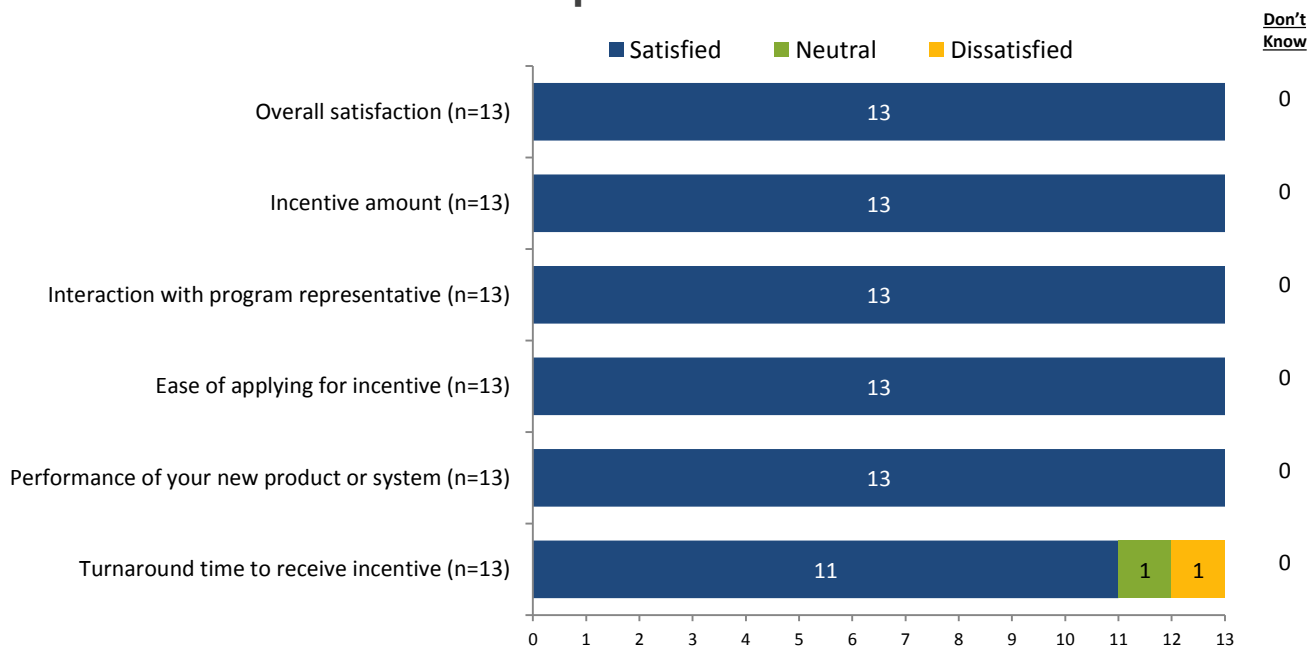
Survey question:

- Have you applied for the Oregon state tax credit, also known as the state Energy Incentives Program, for this project?
- Do you recall receiving a bonus incentive for your project?

Existing Buildings – Washington

- All thirteen respondents rated their overall satisfaction a 4 or 5 out of 5, and all thirteen were satisfied with the incentive amount.
- Nine out of thirteen respondents would have installed exactly the same equipment without Energy Trust’s incentive.
- Ten out of thirteen respondents reported that Energy Trust information and materials had an influence on their decision to incorporate energy efficient features in their project.

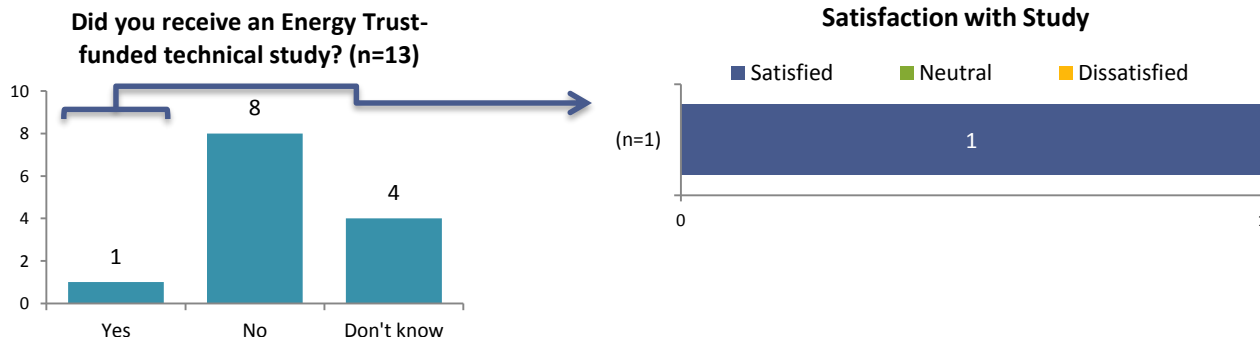
Participant Satisfaction



Survey question:

- 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 Study



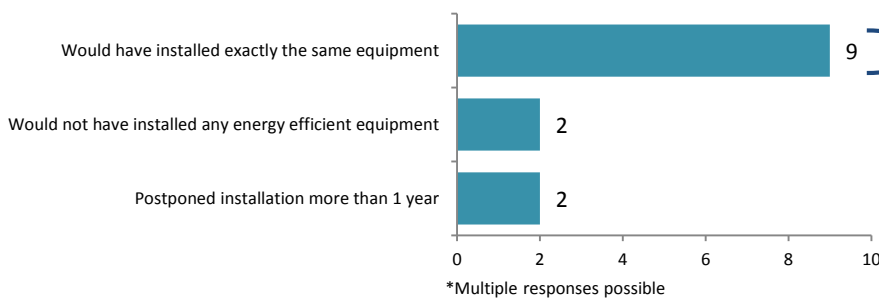
Survey questions:

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

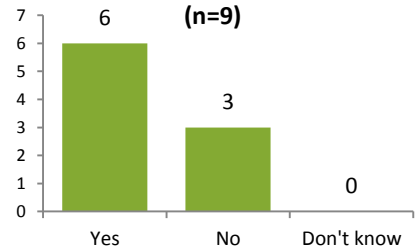
Existing Buildings - Washington

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=13)*



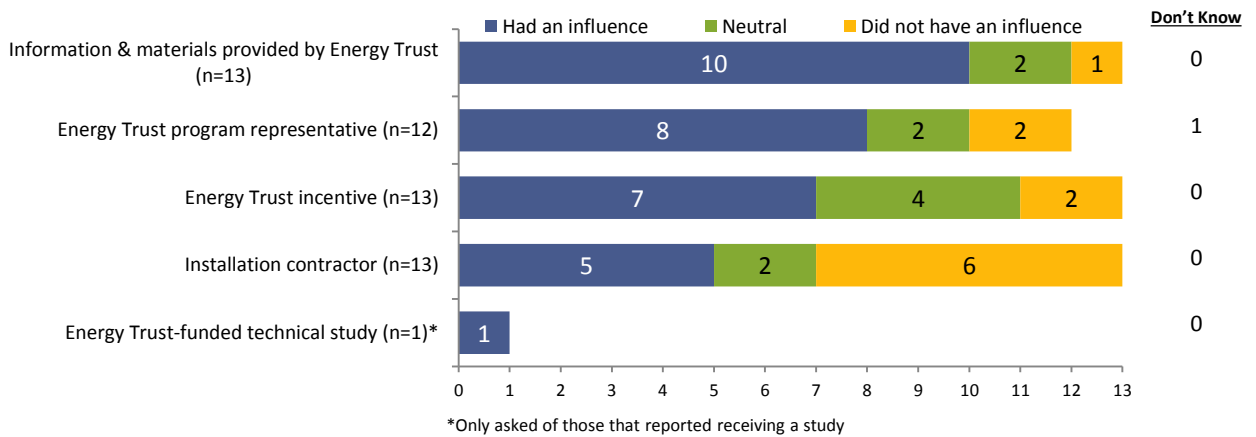
Would project cost have been covered without incentive? (n=9)



Survey questions:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?
- In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of <improvement>?

Influences on Decision to Incorporate Energy Efficient Features in Project



Survey question:

- How influential were the following elements on your decision to incorporate energy efficient features in your project?

Existing Multifamily

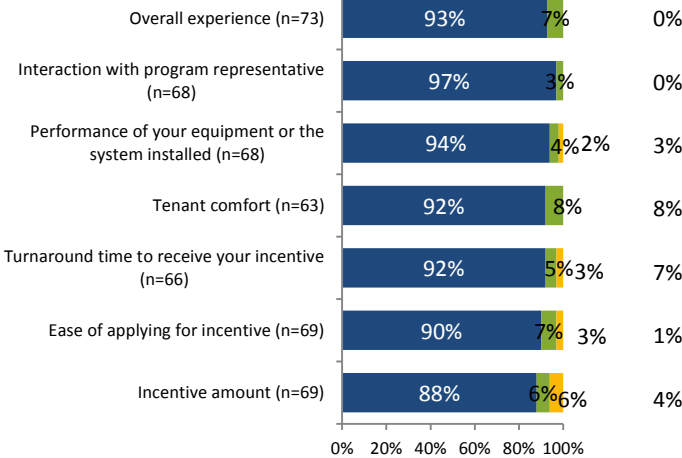
- 93% of respondents rated their overall experience a 4 or 5 out of 5 (down from 100% in 2014). Satisfaction was lowest for the incentive amount. However, satisfaction was high for interaction with program representative and performance of the equipment installed.
- The electric free ridership rate was 19% (up from 16% in 2014). The annual gas free ridership rate was 34%. Note that the 2015 estimate of gas free ridership includes projects from 2012, 2013, 2014, and 2015.
- 51% of respondents would have done the project the same way if Energy Trust incentives were not available; of those, 70% say that they would have been able to cover the cost of the project in the absence of Energy Trust's incentives.

Participant Satisfaction

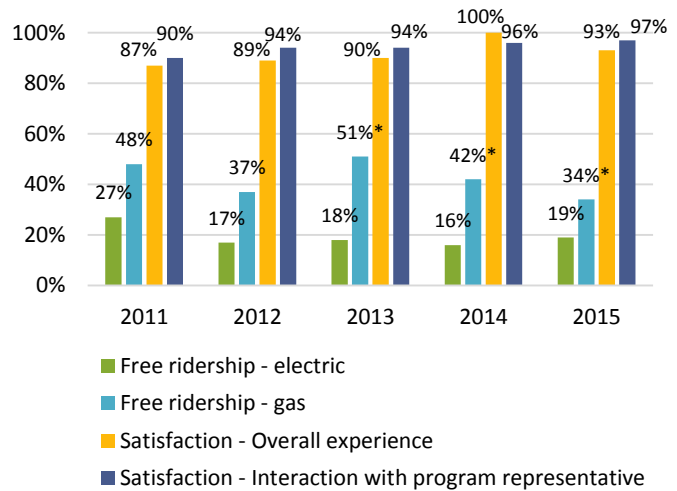
Satisfaction with Program Elements

■ Satisfied ■ Neutral ■ Dissatisfied

Don't Know



Free Ridership and Satisfaction Over Time



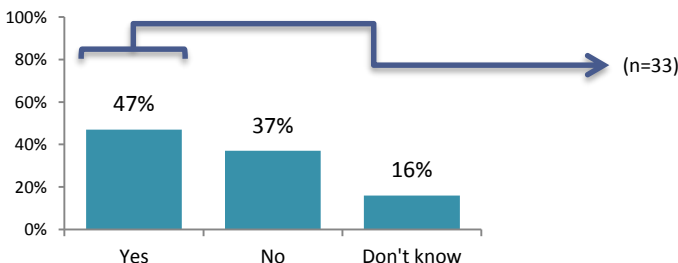
Note: The free ridership rates with asterisks were calculated using respondents that completed projects in years other than the year in question due to small sample sizes. The remaining free ridership rates do not include projects from other years.

Survey question:

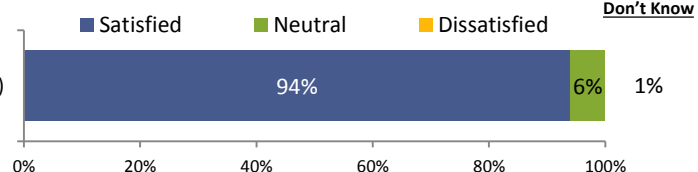
- Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Energy Trust-Funded Building Assessment

Did you receive an Energy Trust-funded building assessment? (n=73)



Satisfaction with Building Assessment

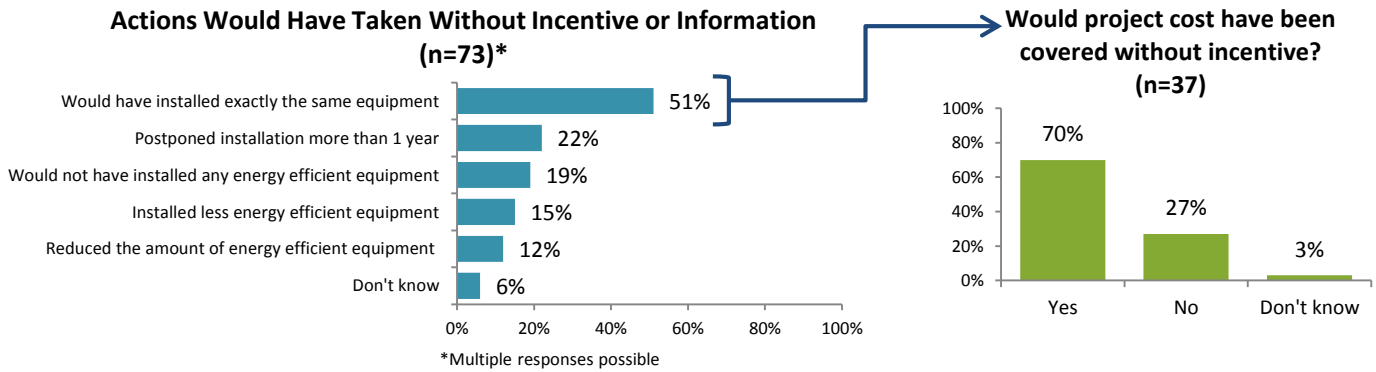


Survey questions:

- Did you receive an Energy Trust-funded building assessment?
- Please rate your satisfaction with the quality of the assessment on a scale of 1 to 5 where 1 means not at all satisfied and 5 means very satisfied.

Existing Multifamily

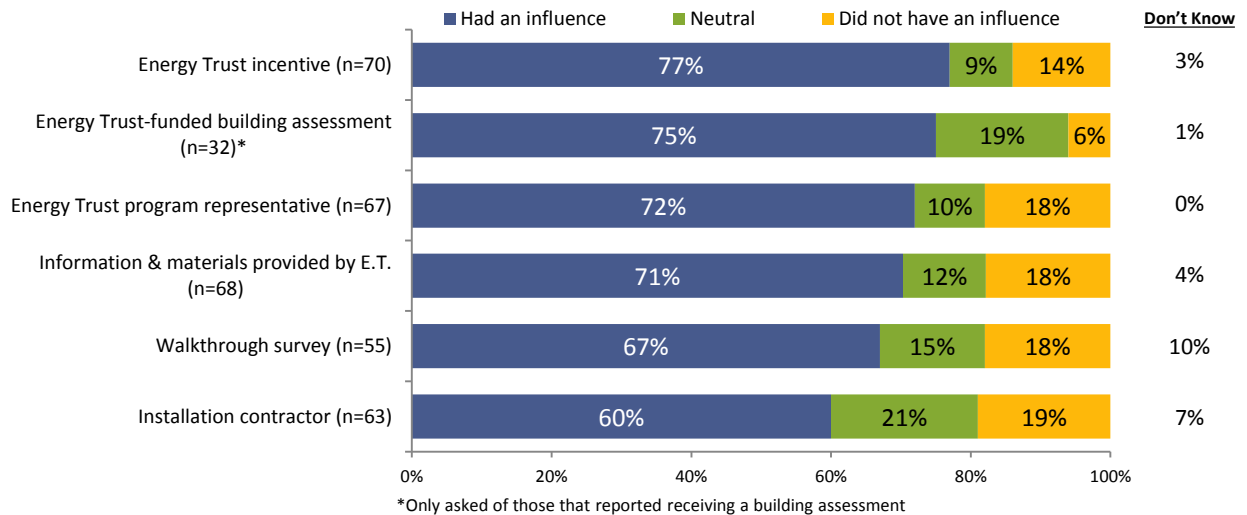
Impact of Incentives and Information



Survey questions:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?
- In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of <improvement>?

Influences on Decision to Incorporate Energy Efficient Features in Project

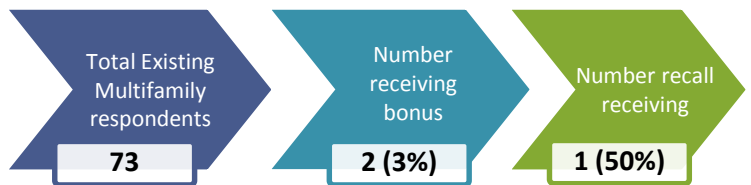


Survey question:

- How influential were the following elements on your decision to incorporate energy efficient features in your project?

Oregon State Tax Credit & Bonus Incentives

Have you applied for the Oregon state tax credit? (n=73)	
Yes	16%
No, but plan to	21%
No, do not plan to	27%
Don't know	32%
Not applicable	4%



Survey question:

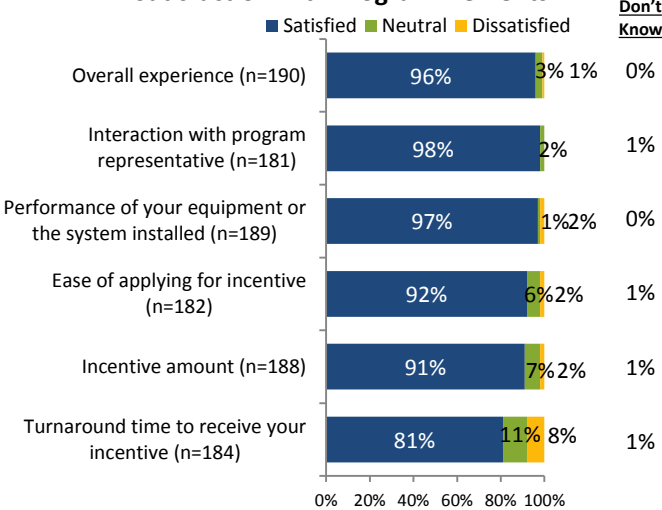
- Have you applied for the Oregon state tax credit, also known as the state Energy Incentives Program, for this project?
- Do you recall receiving a bonus incentive for your project?

Production Efficiency

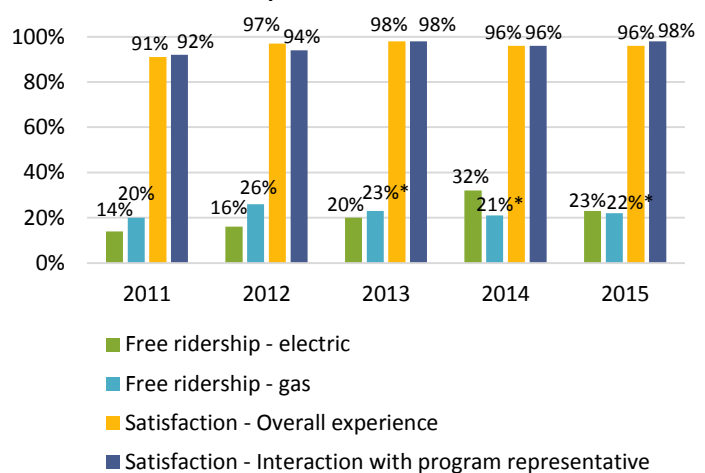
- A high number of respondents (96%) rated their overall satisfaction a 4 or 5 out of 5, in line with 2014 (96%). Satisfaction was very high for the interaction with program representatives and performance of equipment or systems installed. Respondents that reported receiving an Energy Trust-funded technical study were highly satisfied with the study.
- The electric free ridership rate was 23% (down from 32% in 2014). The gas free ridership rate was 22%. Note that the 2015 estimate of gas free ridership includes projects from 2013-2015.
- 44% of respondents would have done the project the same way if Energy Trust incentives were not available; of those, 63% say that they would have been able to cover the cost of the project in the absence of Energy Trust's incentives. 75% of respondents said the Energy Trust-funded technical study had an influence on their decision to incorporate energy efficient features in their projects.

Participant Satisfaction

Satisfaction with Program Elements



Free Ridership and Satisfaction Over Time



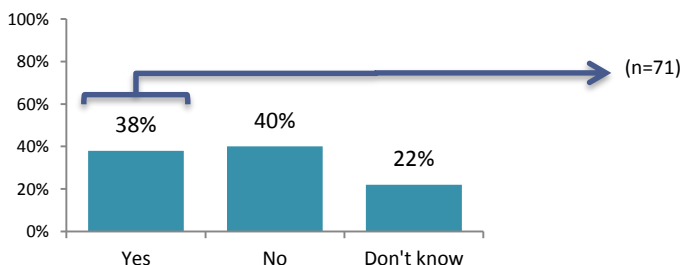
Note: The free ridership rates with asterisks were calculated using respondents that completed projects in years other than the year in question due to small sample sizes. The remaining free ridership rates do not include projects from other years.

Survey question:

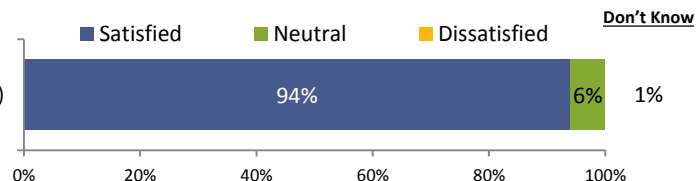
- Thinking of your participation with Energy Trust, please rate your satisfaction with each of the following elements on a 5-point scale where 5 is very satisfied and 1 is not at all satisfied.

Energy Trust-Funded Study

Did you receive an Energy Trust-funded technical study? (n=190)



Satisfaction with Study



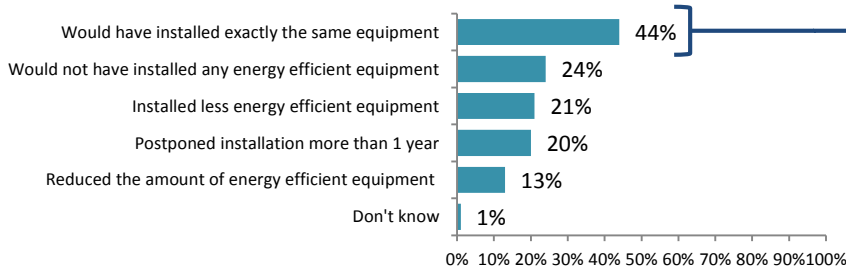
Survey questions:

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

Production Efficiency

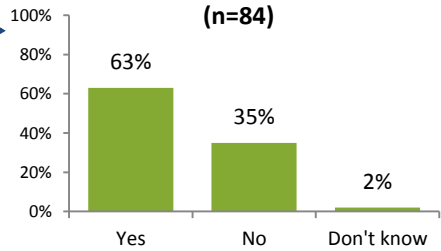
Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=190)*



*Multiple responses possible

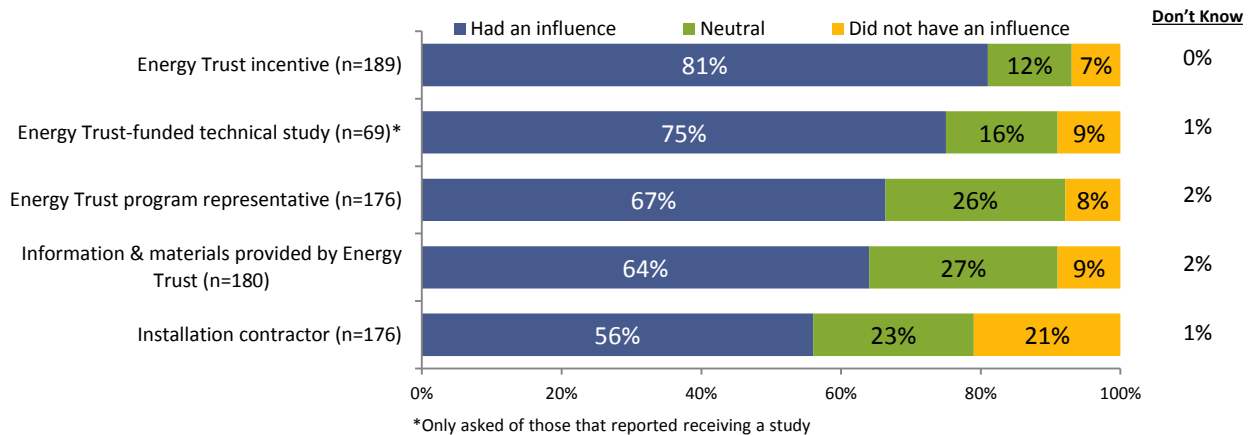
Would project cost have been covered without incentive? (n=84)



Survey questions:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?
- In the absence of the Energy Trust incentive, would your firm have made funds available to cover the entire cost of <improvement>?

Influences on Decision to Incorporate Energy Efficient Features in Project



*Only asked of those that reported receiving a study

Survey question:

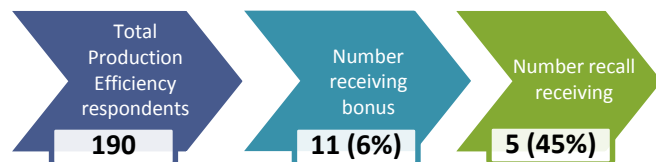
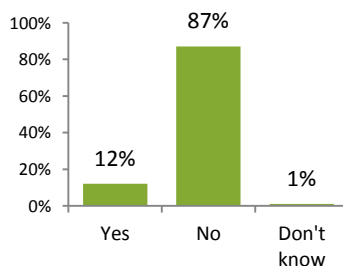
- How influential were the following elements on your decision to incorporate energy efficient features in your project?

Oregon State Tax Credit & Other Sources of Funding & Bonus Incentives

Have you applied for the Oregon state tax credit?

Response	Percentage (n=116)
Yes	15%
No, but plan to	16%
No, do not plan to	24%
Don't know	41%
Not applicable	3%

Did you pursue other external sources of funding/technical services? (n=190)



Survey questions:

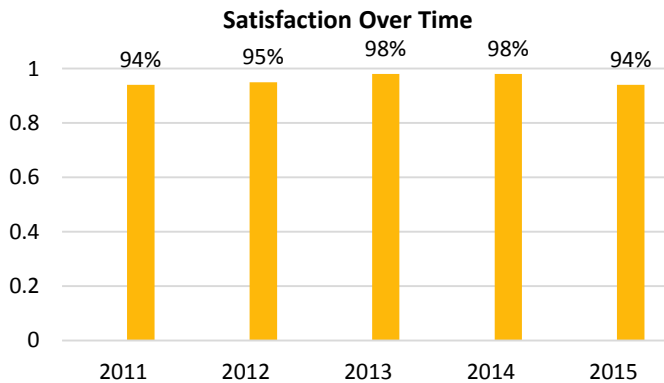
- Have you applied for the Oregon state tax credit, also known as the state Energy Incentives Program, for this project?
- Did you pursue other external sources of funding/technical services?
- Do you recall receiving a bonus incentive for your project?

Solar Summary

- Due to small population sizes, only residential solar electric met the goal of 90% confidence / 10% margin of error.
- All of the commercial solar electric respondents were satisfied. On the residential side, 94% of solar electric respondents were satisfied.
- Starting in 2015, customers working with third party solar providers were eligible to be surveyed through Fast Feedback. In addition, commercial solar contacts are excluded from being surveyed for Fast Feedback if they have been surveyed within the past six months (previously, this threshold was one year).

Survey Group	2015 Projects [§]	Surveys Completed	Percent Satisfied
Commercial Solar Electric	74	20	20 of 20
Residential Solar Electric	1,351	233	94%

[§] Project totals for 2015 only include projects eligible for Fast Feedback, and therefore may not match other Energy Trust reports for 2015.

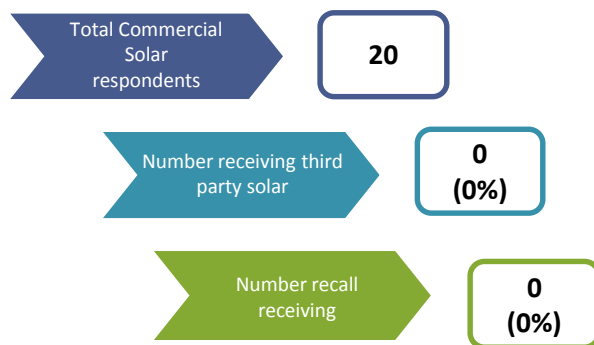


■ Satisfaction - Overall experience

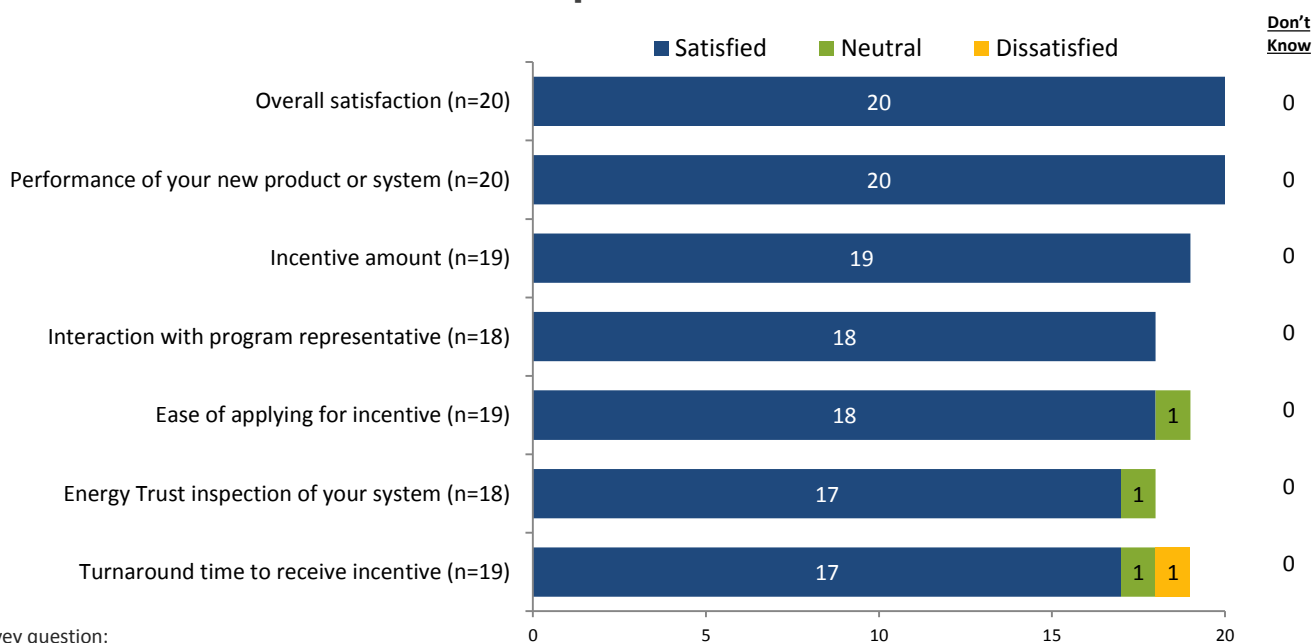
Note: The number of commercial solar respondents has fluctuated greatly over time – 32 in 2011, 17 in 2012, 5 in 2013, and 4 in 2014. Due to very small sample sizes in some years, we do not show satisfaction over time for commercial solar.

Commercial Solar

- All twenty respondents rated their overall satisfaction a 4 or 5 out of 5, and were satisfied with all aspects of their experience except the turnaround time to receive the incentive.
- 8 of the 20 respondents said they would have installed exactly the same equipment without the incentive.
- 17 out of 20 respondents reported that the Energy Trust incentive was influential on the decision to install the system.
- Regarding tax credits, 13 of 20 have or will apply for a federal tax credit.



Participant Satisfaction



Survey question:

- 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.

Tax Credits

Have you or will you apply for a federal tax credit? (n=20)	
Yes	13
No	5
Don't know	2
Does not apply	0

Have you applied for the Oregon state tax credit? (n=20)	
Yes	6
No, but plan to	4
No, do not plan to	6
Don't know	3
Not applicable	1

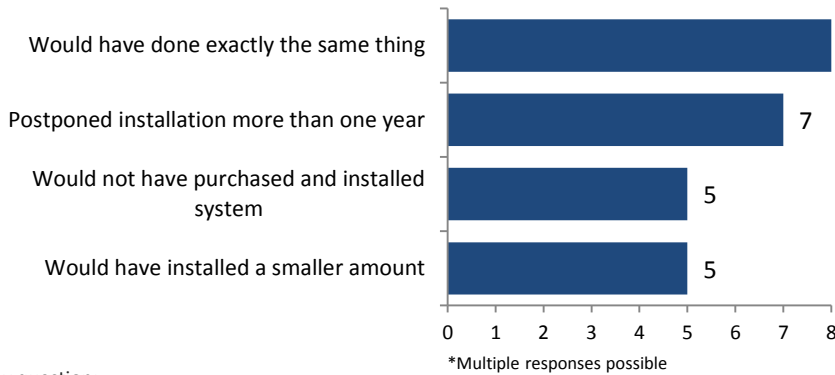
Survey question:

- Have you applied or will you apply for a federal tax credit?
- Have you applied for the Oregon state tax credit?

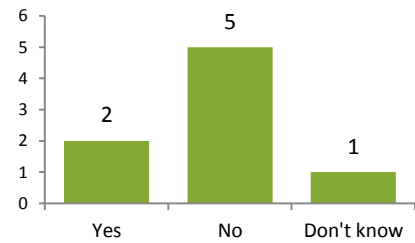
Commercial Solar

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=20)*



Would project cost have been covered without incentive? (n=8)

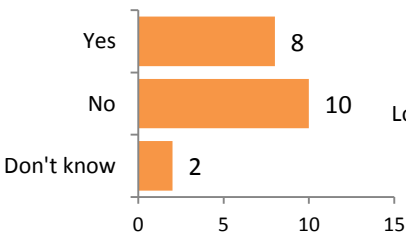


Survey question:

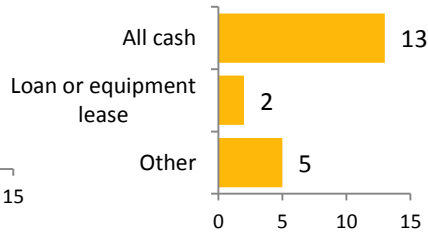
- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Grants Used for New System/Number of Contractors Contacted

Were Grants Used? (n=20)



How did you pay for your system? (n=20)



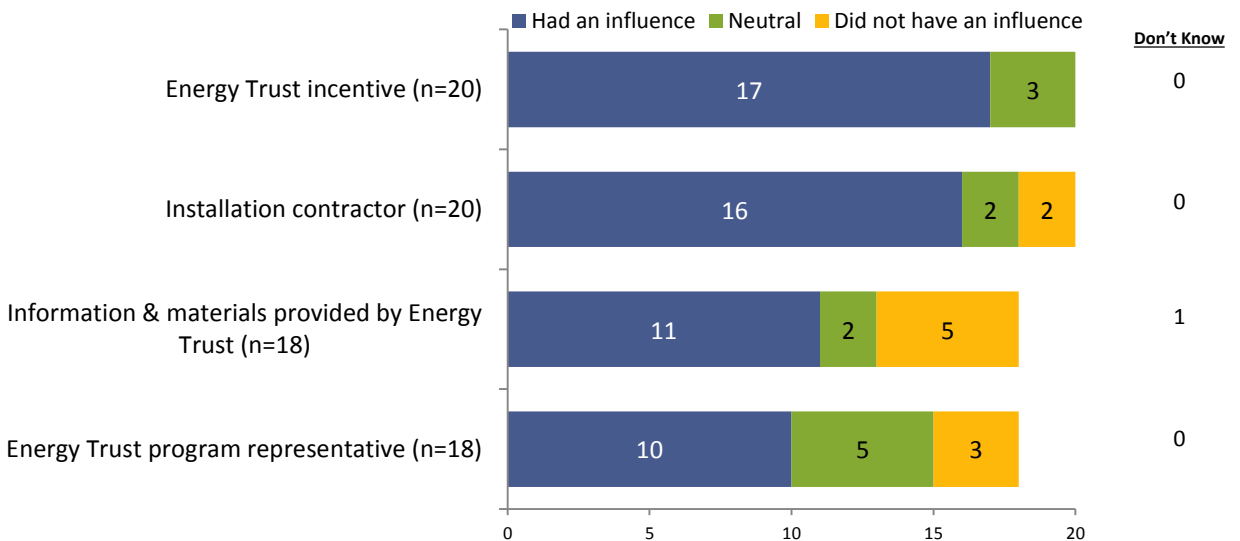
How many contractors did you get a bid from before deciding to move forward with your project? (n=20)



Survey question:

- Were any grants used to reduce the cost of your system?
- How did you pay for your system?
- How many contractors did you get a bid from before deciding to move forward with your project?

Influences on Decision to Install Solar

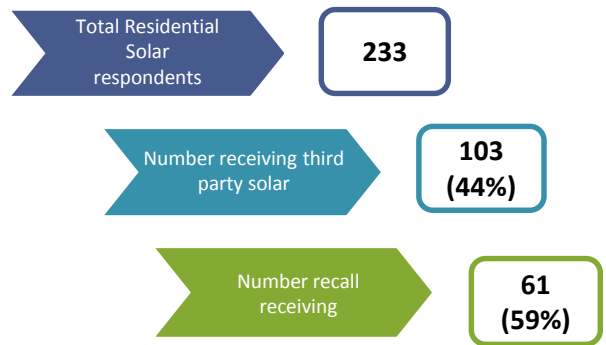


Survey question:

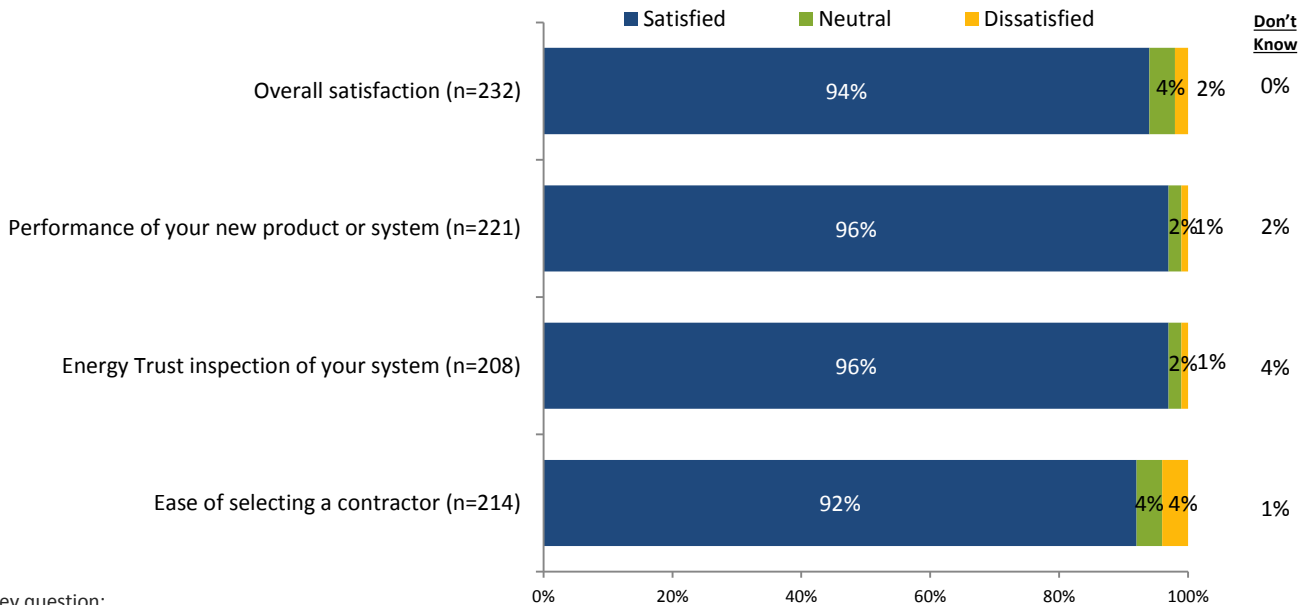
- How influential were the following elements on your decision to purchase your system?

Residential Solar

- 94% of respondents rated their overall satisfaction a 4 or 5 out of 5 and 96% were satisfied with the performance of the system.
- 40% of respondents had visited the website or received a brochure before having their system installed.
- 30% of respondents would not have installed the same system without Energy Trust incentives and information; 47% would have done exactly the same thing.
- Two-thirds of respondents paid for their system with cash or savings, while 23% used a loan.



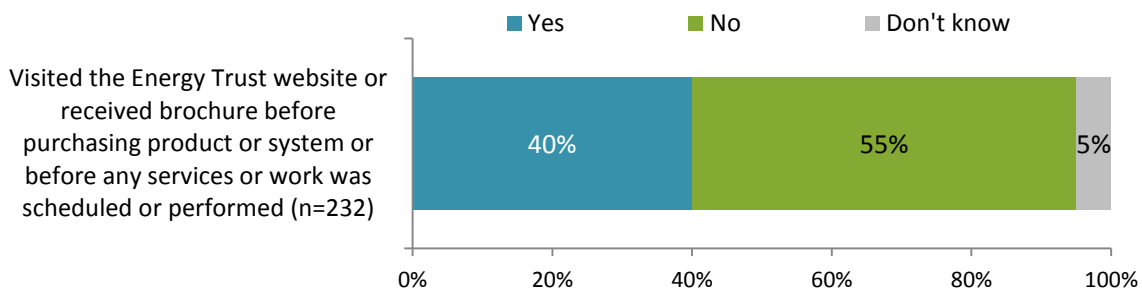
Participant Satisfaction



Survey question:

- 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



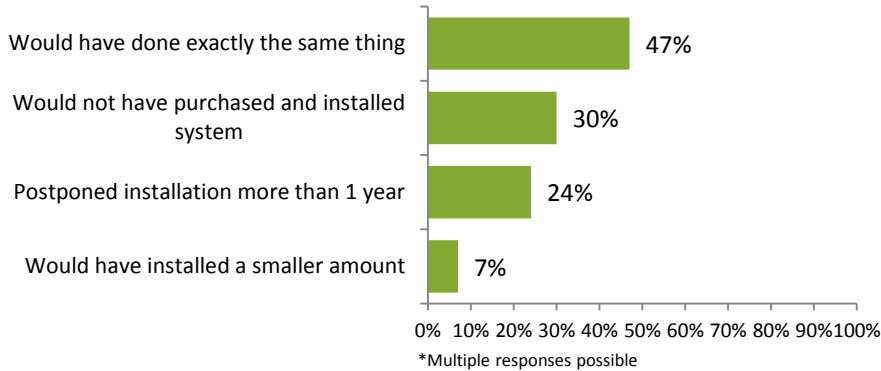
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Residential Solar

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=233)*



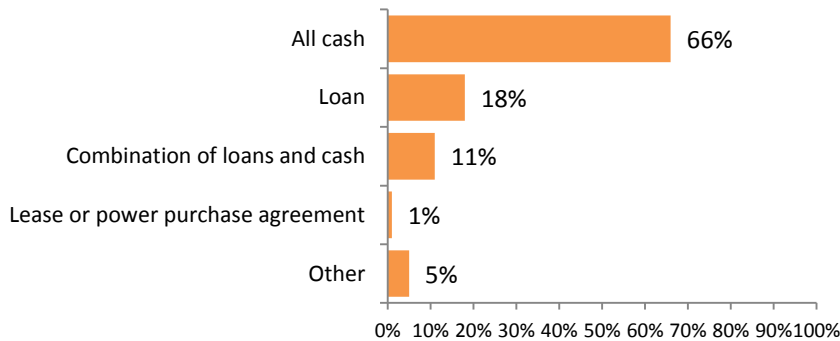
Have you applied for the Oregon state tax credit? (n=130)	
Yes	99%
No	1%
Don't know	0%

Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Funding for New System

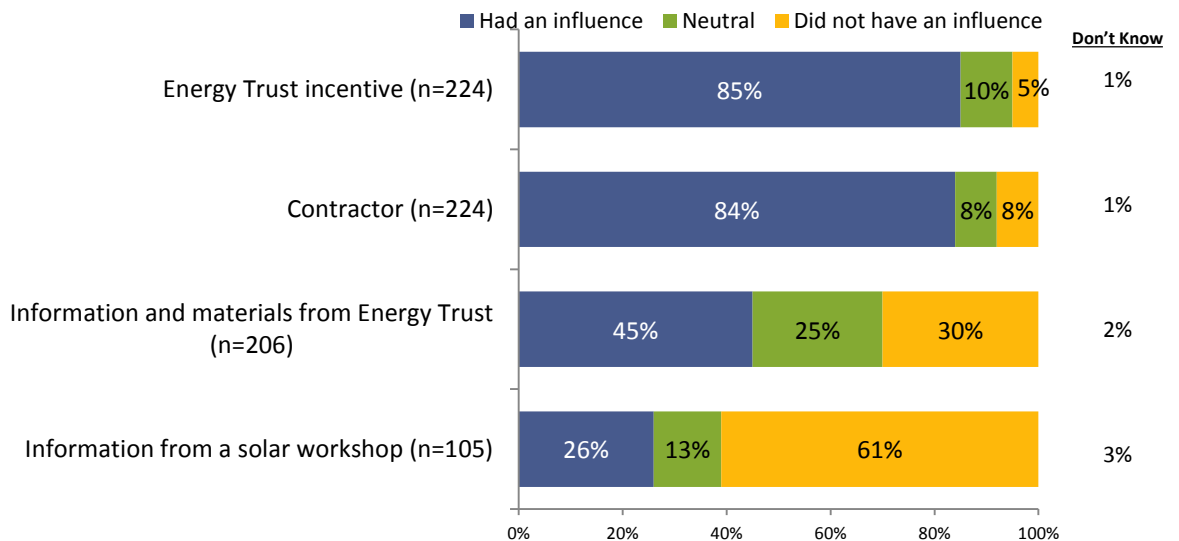
How Respondents Paid for System (n=128)



Survey questions:

- How did you pay for your system?

Influences on Decision to Install Solar



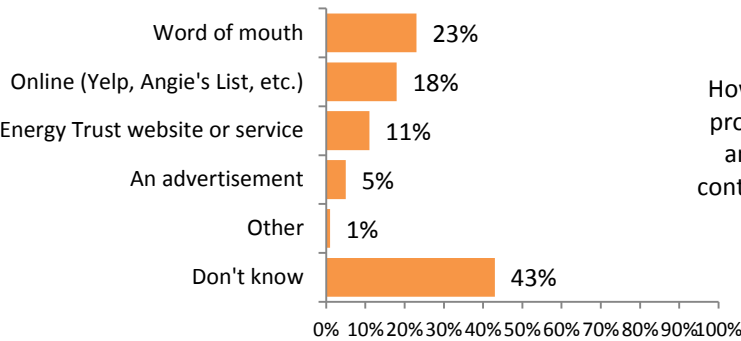
Survey question:

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

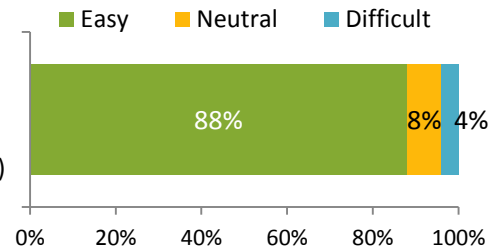
Residential Solar

Choosing a Contractor

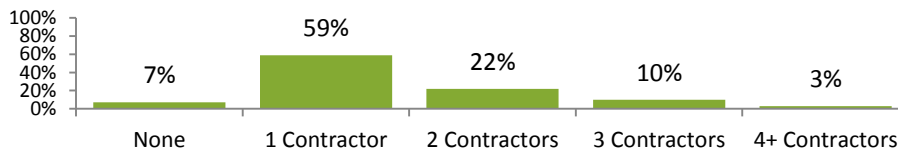
How did you find your contractor? (n=233)



How easy was the process of finding and selecting a contractor? (n=225)



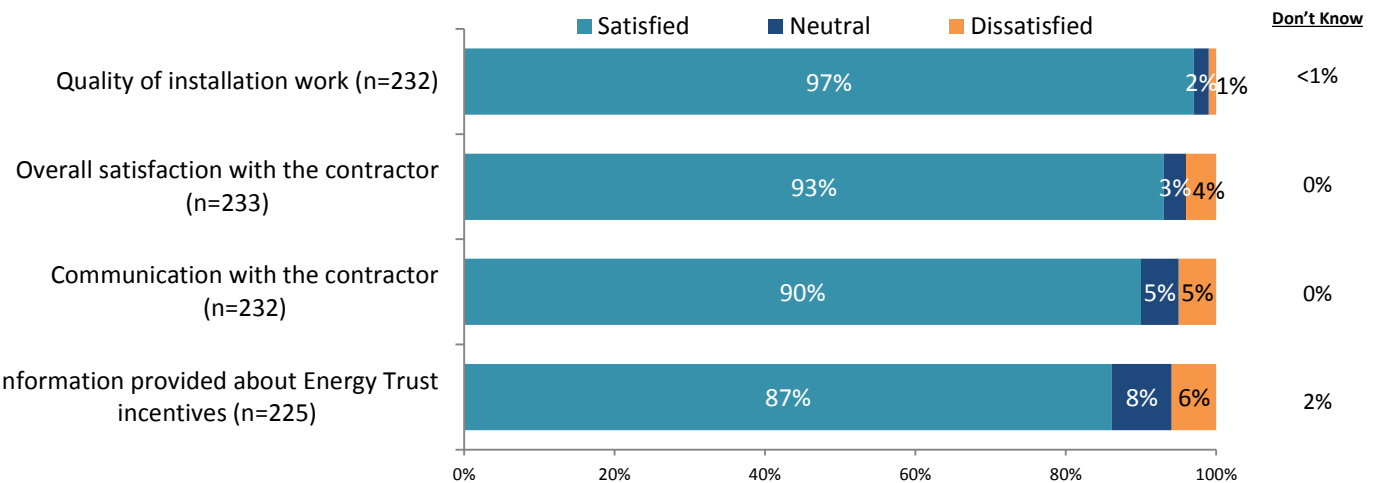
How many contractors did you get a bid from before deciding to move forward with your project? (n=229)



Survey question:

- How did you find your contractor?
- How easy was the process of finding and selecting a contractor?
- How many contractors did you get a bid from before deciding to move forward with your project?

Satisfaction With Contractor



Survey question:

- 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.

Home Products Summary

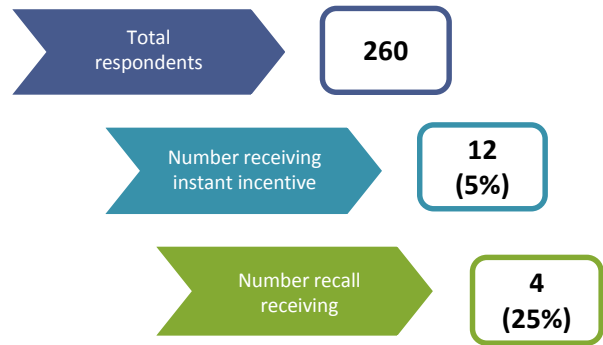
- For all three groups, a sufficient number of surveys were completed for the results to meet the goal of 90% confidence / 10% margin of error.
- Satisfaction for all three groups was relatively high, especially for clothes washers.
- Free ridership rates remained in line with 2014 numbers; refrigerator recycling increased slightly, from 27% to 33%.

Survey Group	2015 Projects [§]	Surveys Completed	Percent Satisfied	Free Ridership
Clothes Washers	11,649	260	96%	55%
Refrigerators	4,126	275	94%	53%
Refrigerator Recycling	7,483	275	92%	33%

[§] Project totals for 2015 only include projects eligible for Fast Feedback, and therefore may not match other Energy Trust reports for 2015.

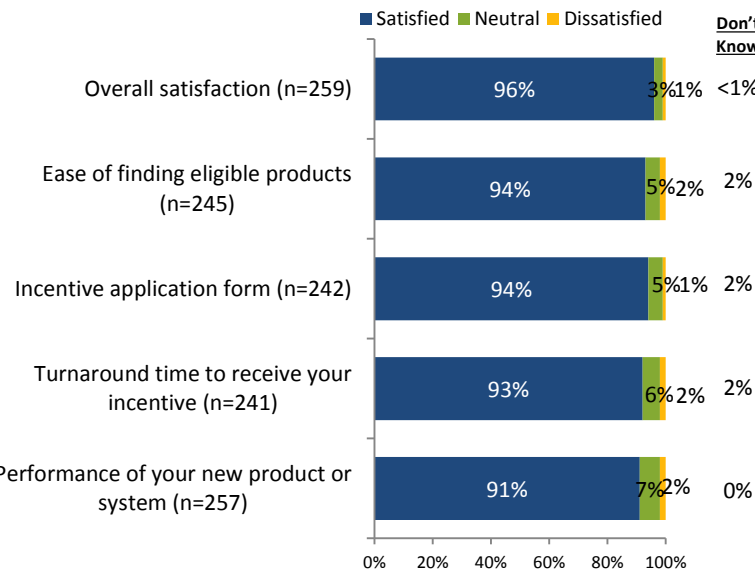
Clothes Washers

- 96% of respondents rated their overall satisfaction a 4 or 5 out of 5. Satisfaction with performance of the new product received the lowest rating (91%).
- 24% of respondents had used the website or received a brochure before purchasing their unit.
- 79% of respondents would have bought the same unit in the absence of Energy Trust incentives and information; 61% rated the influence of the salesperson or retailer a 4 or 5 out of 5.

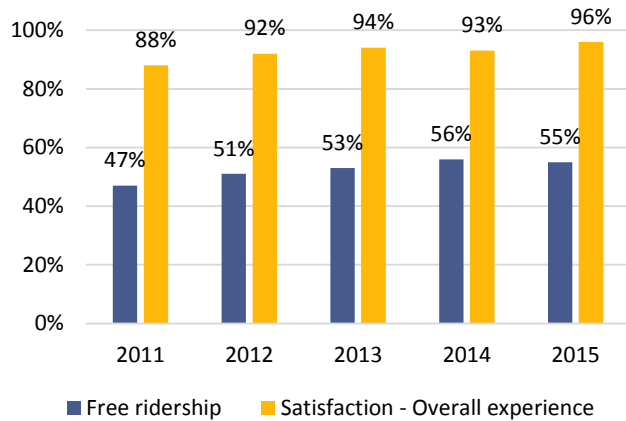


Participant Satisfaction

Satisfaction with Program Elements



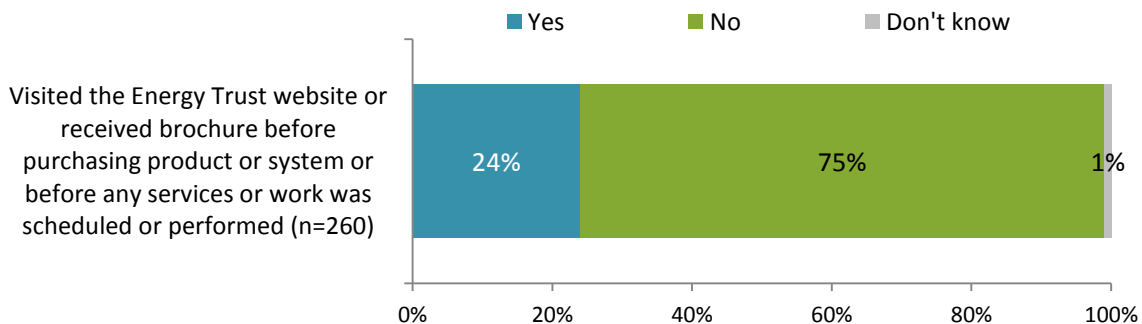
Free Ridership and Satisfaction Over Time



Survey question:

- 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



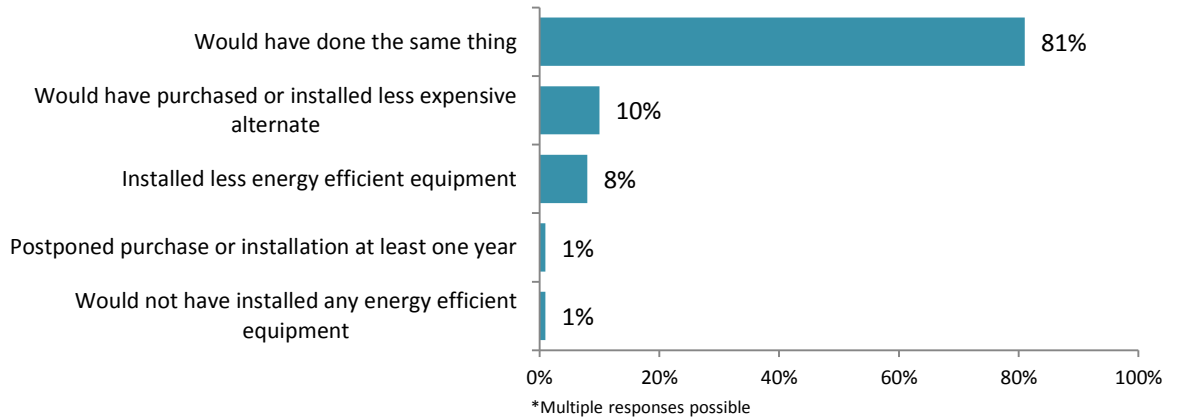
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Clothes Washers

Impact of Incentives and Information

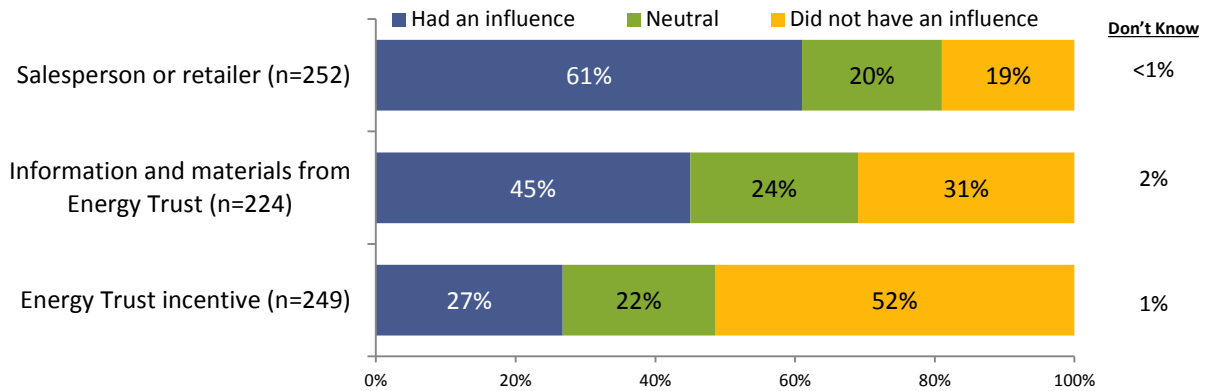
Actions Would Have Taken Without Incentive or Information (n=260)*



Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Influences on Decision to Purchase Energy Efficient Unit

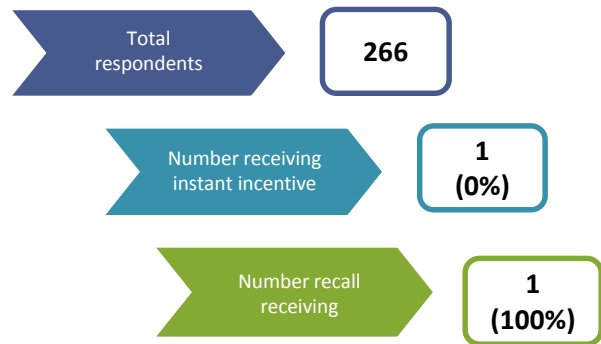


Survey question:

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

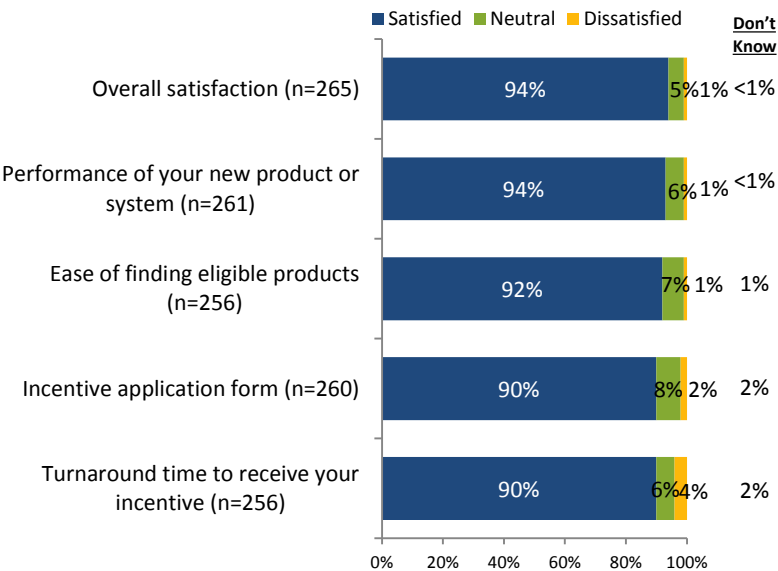
Refrigerators

- 94% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 84% would have gotten the same refrigerator without incentives and information from Energy Trust.
- 76% of respondents said the purchased unit was replacing an old unit. 27% had the old unit removed by the retailer that delivered their new refrigerator.

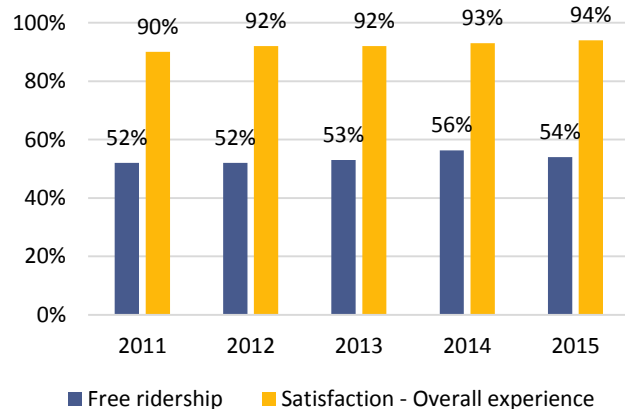


Participant Satisfaction

Satisfaction with Program Elements



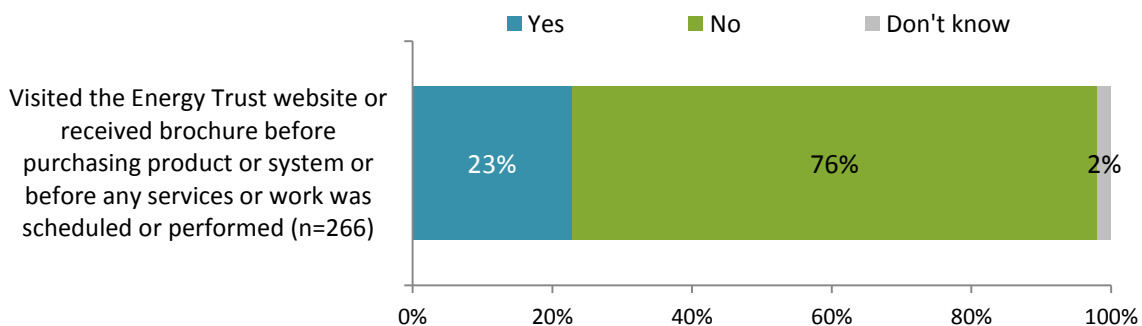
Free Ridership and Satisfaction Over Time



Survey question:

- 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



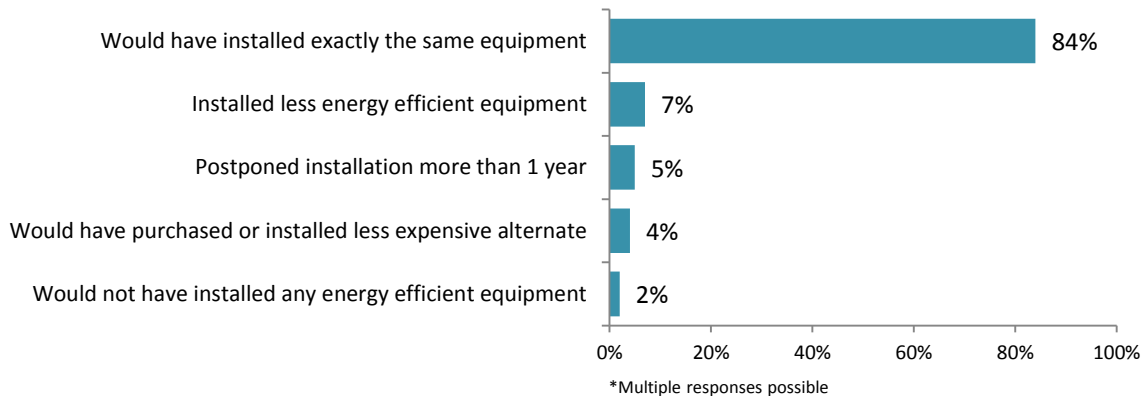
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Refrigerators

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=266)*

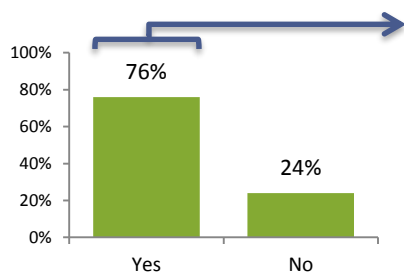


Survey question:

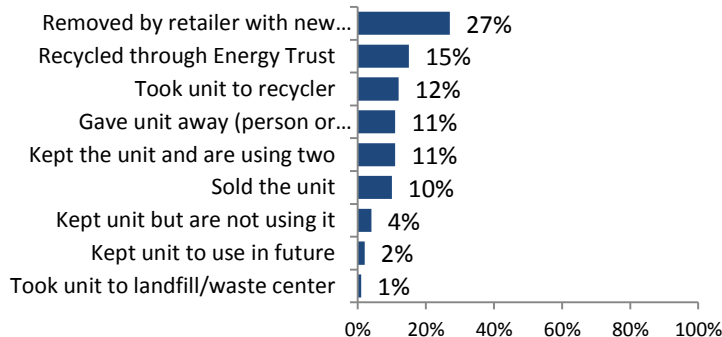
- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Household Refrigerator and Freezer Units

Did the refrigerator just purchased replace an old unit? (n=266)



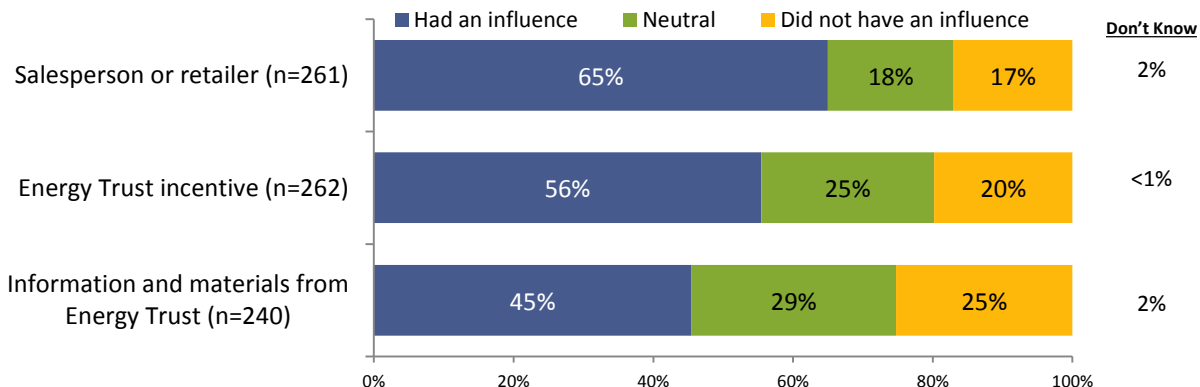
What was done with the old unit? (n=197)



Survey questions:

- Did the refrigerator you purchased replace an old unit?
- What did you do with your old unit?

Influences on Decision to Purchase Energy Efficient Unit

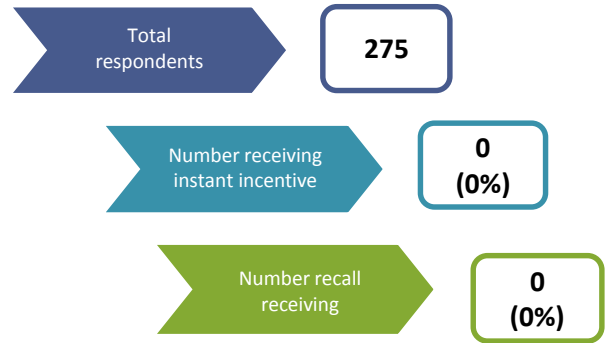


Survey question:

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

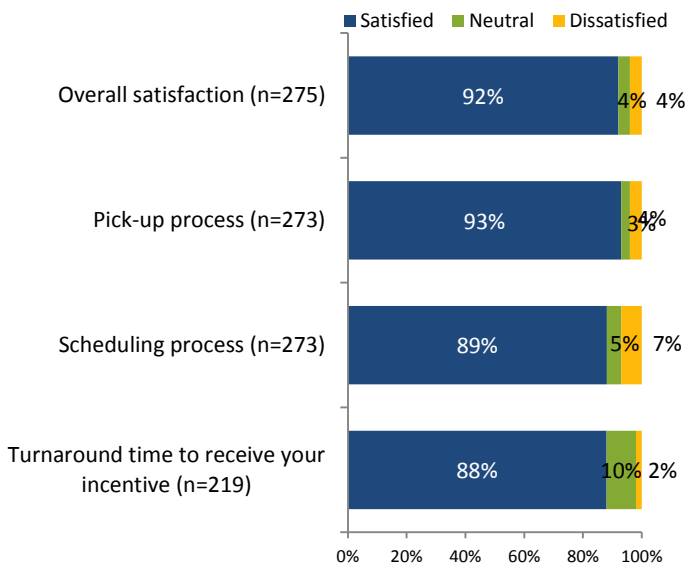
Refrigerator Recycling

- 92% of respondents rated their overall satisfaction a 4 or 5 out of 5. 93% were satisfied with the pick-up process and 89% were satisfied with the scheduling process.
- 75% of respondents indicated that they were replacing the old unit; the majority of those were replacing with a new unit.

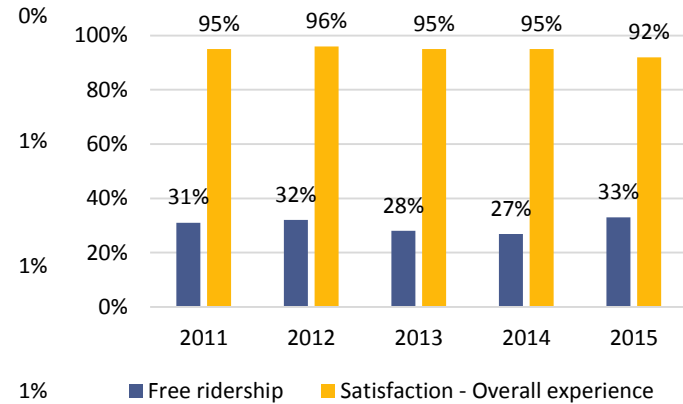


Participant Satisfaction

Satisfaction with Program Elements



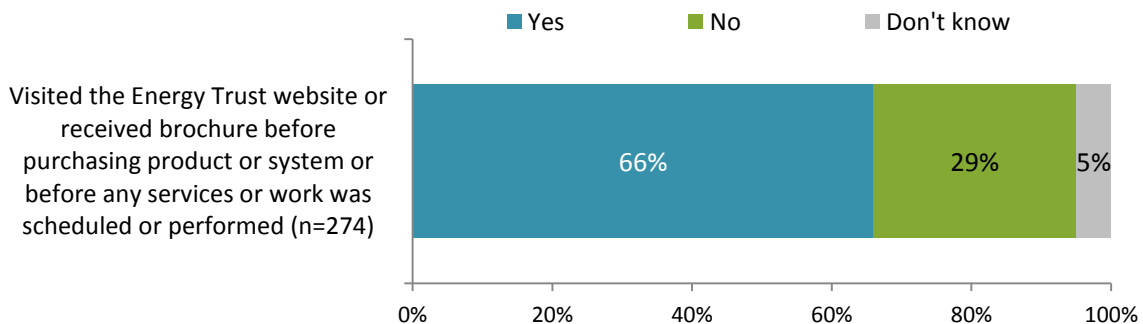
Free Ridership and Satisfaction Over Time



Survey question:

- 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



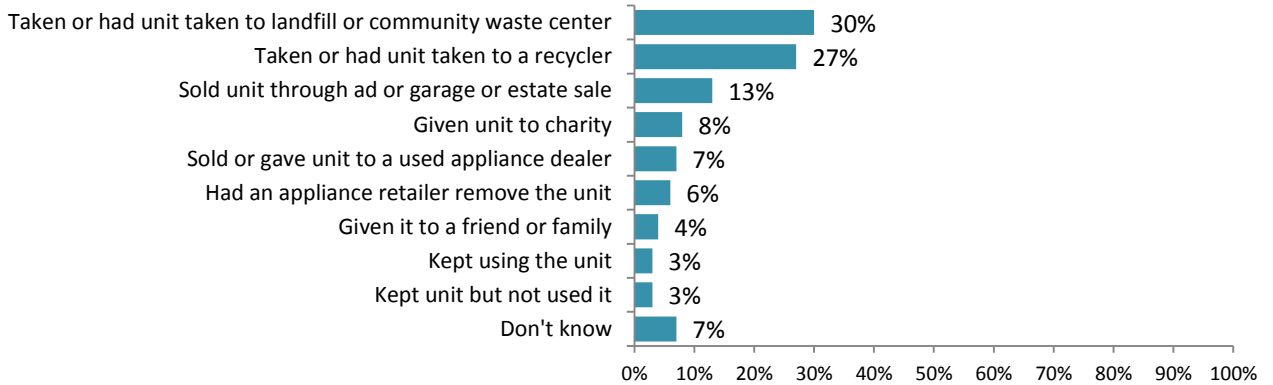
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Refrigerator Recycling

Impact of Incentives and Information

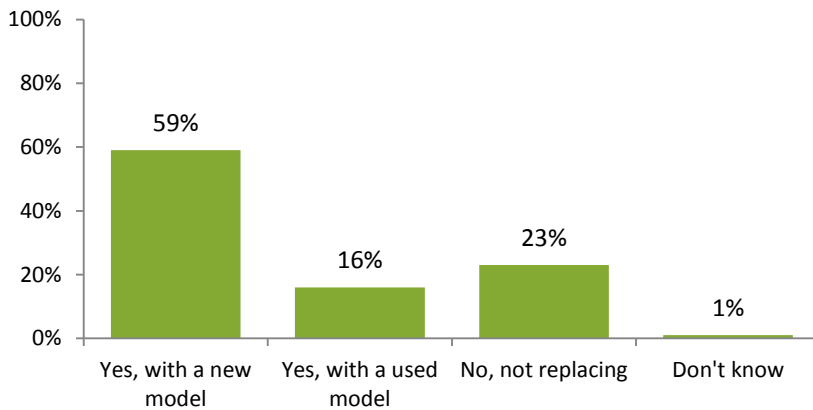
Actions Would Have Taken Without Incentive or Information (n=275)



Survey question:

• Please describe the actions you would have taken had the Energy Trust fridge recycling incentive and information not been available...

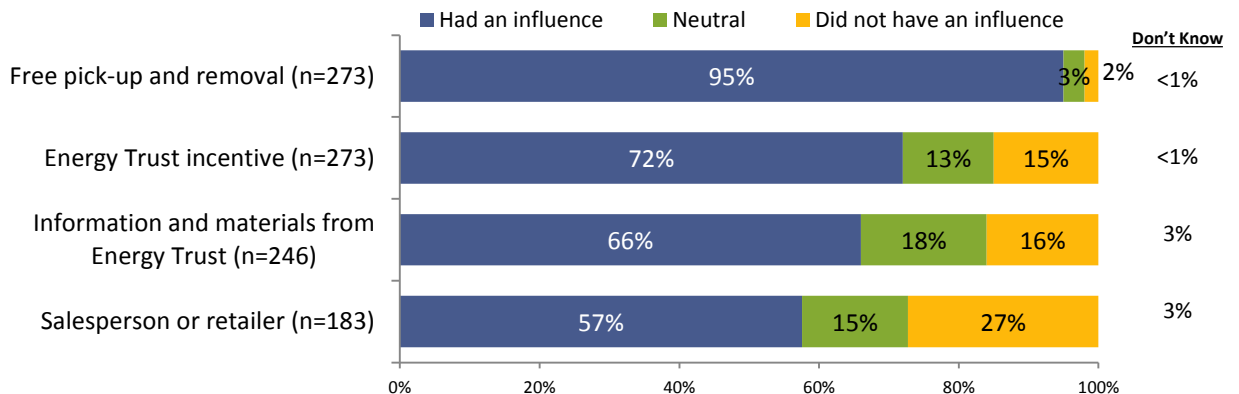
Replacing the Refrigerator (n=275)



Survey question:

• Are you replacing, or have you replaced the refrigerator that was recycled?

Influences on Decision to Recycle Refrigerator



Survey question:

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

Existing Homes Summary

- For all groups except for Home Performance, sample sizes were sufficient to meet the goal of 90% confidence / 10% margin of error.
- In 2015, the quota groups for floor, wall, and duct insulation were consolidated into a single insulation category and heat pump water heaters are now surveyed through Fast Feedback.
- Overall satisfaction with Existing Homes programs varied from a high of 100% (Home Performance) to a low of 83% (heat pump water heaters).
- Free ridership is up five or more percentage points relative to 2014 for ceiling insulation (37% in 2014). Free ridership for all other measures was in line with 2014 estimates.

Survey Group	2015 Measures in Oregon [§]	Oregon Surveys Completed	2015 Measures in Washington [§]	Washington Surveys Completed	Percent Satisfied	Free Ridership [‡]
Ceiling Insulation	1,107	216	22	5	91%	43%
Insulation	1,148	157	13	--	85%	44%
Gas Furnaces	--	--	--	101	--	--
Heat Pumps	1,460	112	--	--	90%	44%
Ductless Heat Pumps	1,696	148	--	--	96%	
Heat Pump Water Heaters	328	119	--	--	83%	32%
Gas Fireplaces	1,513	207	111	13	90%	44%
Water Heaters	246	65	24	5	87%	47% ^α
Windows	4,125	278	135	30	86%	49%
Home Performance	74 ^Ω	21	--	--	100%	32% [*]
Existing Homes – Washington	--	--	--	154	90%	-- [†]
Existing Homes – Oregon	--	1,323	--	--	88%	--

Note: There are no measure-level quotas for Existing Homes – Washington.

* Free ridership numbers are calculated using respondents that completed projects in years other than 2015 due to small sample sizes. See Appendix A for more information.

† Free ridership is not calculated through Fast Feedback.

‡ Free ridership estimates for residential measures are calculated for Oregon respondents only. However, the satisfaction numbers for Existing Homes measures include both Oregon and Washington respondents.

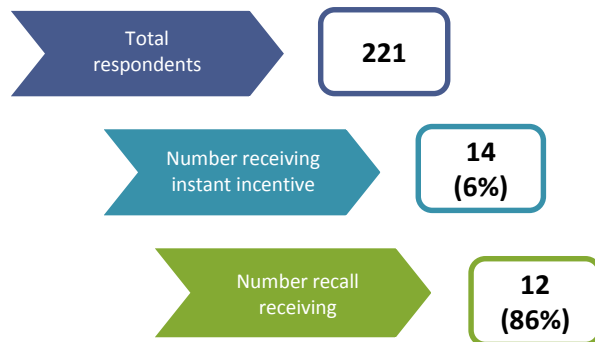
^Ω We report number of home performance projects, not measures.

^α 0.67 residential gas water heaters are part of a market transformation effort; free ridership is shown for information only and will not be the basis for programmatic decisions about the measure.

[§] Measure totals for 2015 only include projects eligible for Fast Feedback, and therefore may not match other Energy Trust reports for 2015.

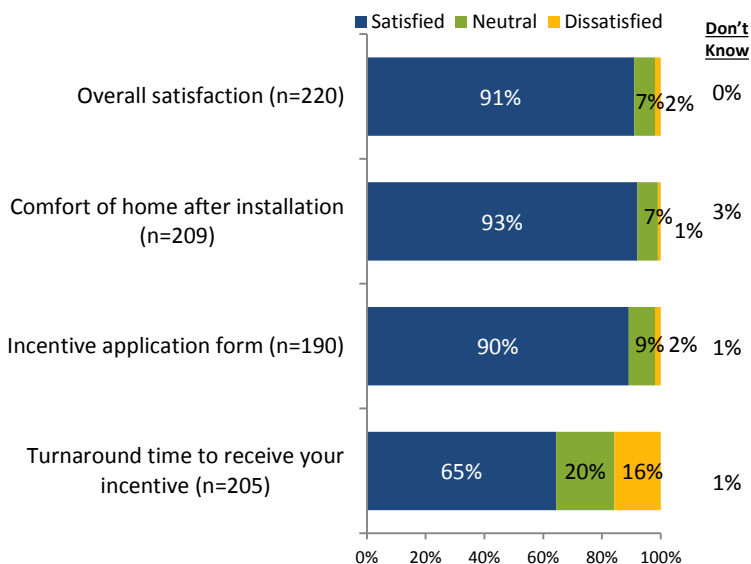
Ceiling Insulation

- 91% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 95% of respondents were satisfied with their contractor and the quality of installation work; 43% consulted the approved trade ally list when choosing their contractor.
- 83% reported that their contractor completed some or all of the incentive paperwork for them.

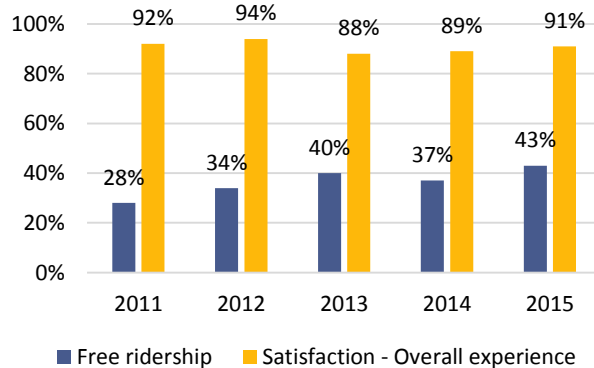


Participant Satisfaction

Satisfaction with Program Elements



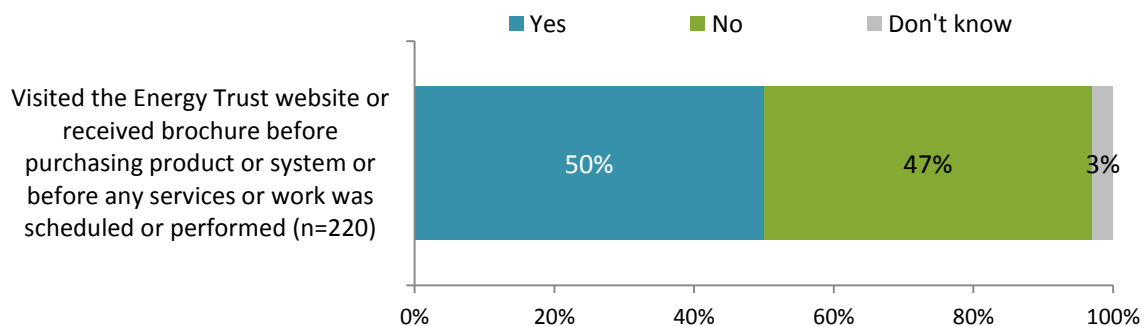
Free Ridership and Satisfaction Over Time



Survey question:

- 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



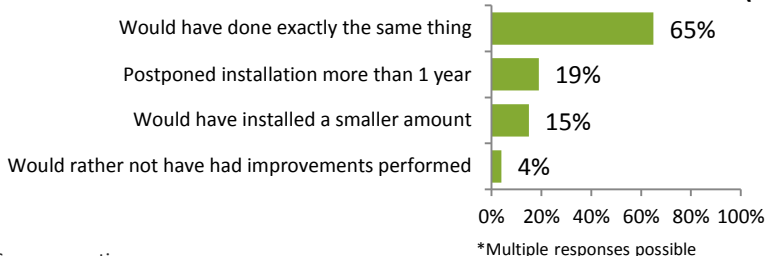
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

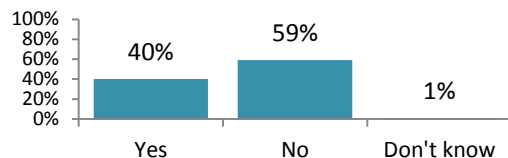
Ceiling Insulation

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=221)*



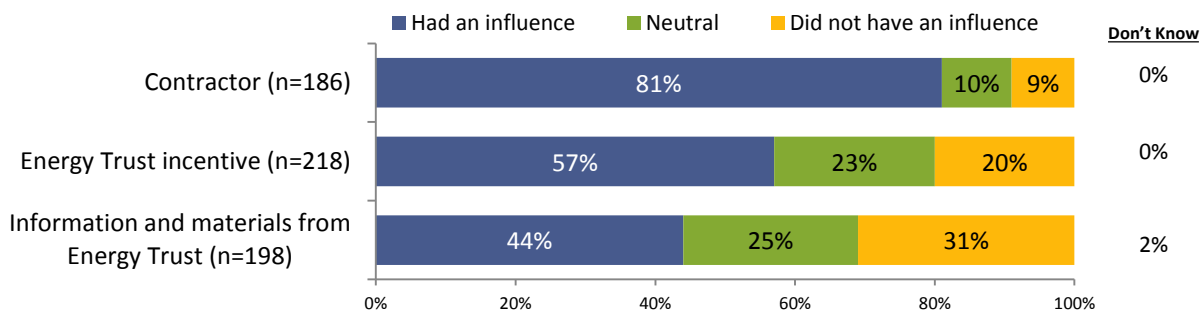
Did you make any additional energy-saving improvements?



Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

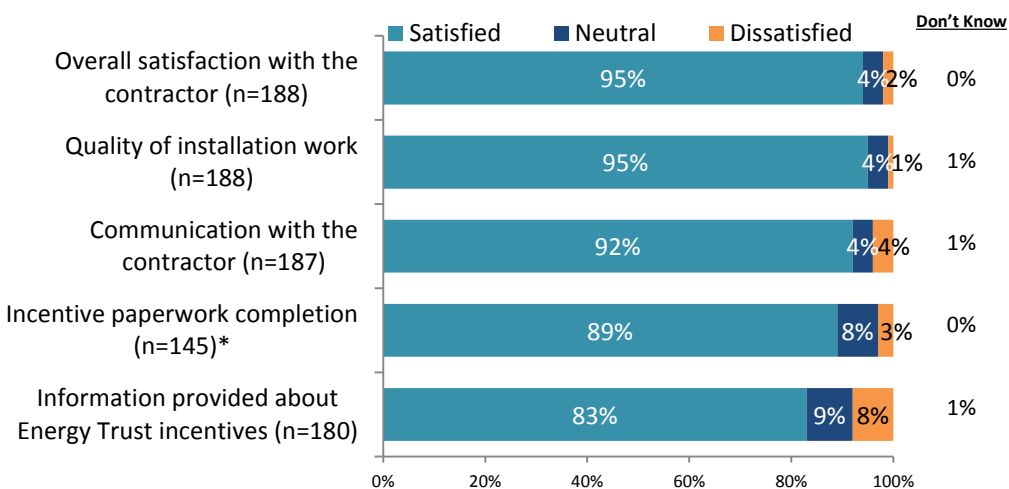
Influences on Decision to Have Services or Work Performed



Survey question:

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

Satisfaction With Contractor



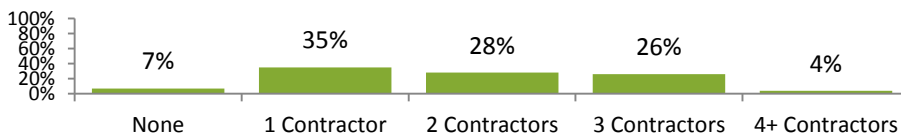
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=190)

Yes	43%
No	55%
Don't know	3%

Did your contractor complete some or all of the incentive paperwork for you? (n=176)

Yes	83%
No	14%
Don't know	3%

How many contractors did you get a bid from before deciding to move forward with your project? (n=188)

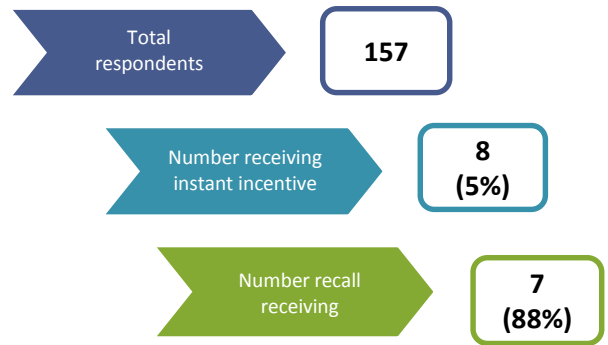


Survey question:

- 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.

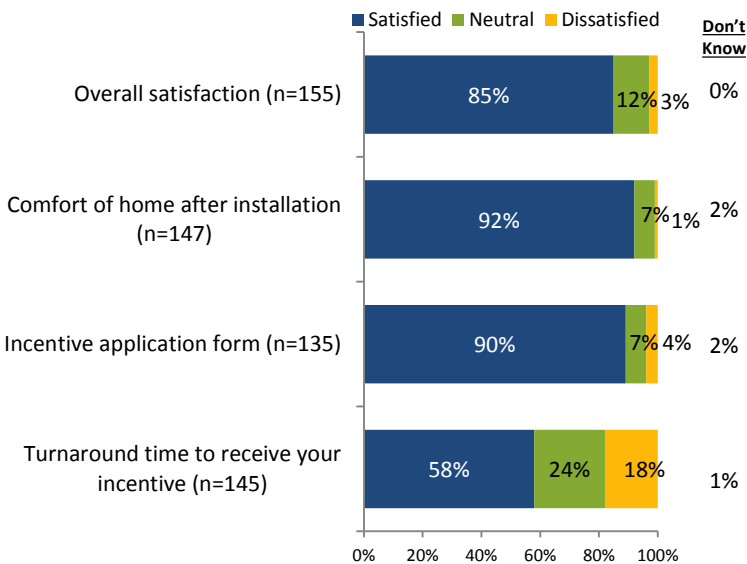
Insulation

- 85% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 91% of respondents were satisfied with their contractor; 45% consulted the approved trade ally list when choosing their contractor. 90% reported that their contractor completed some or all of the incentive paperwork for them.
- 2 of 157 respondents performed self-installs.



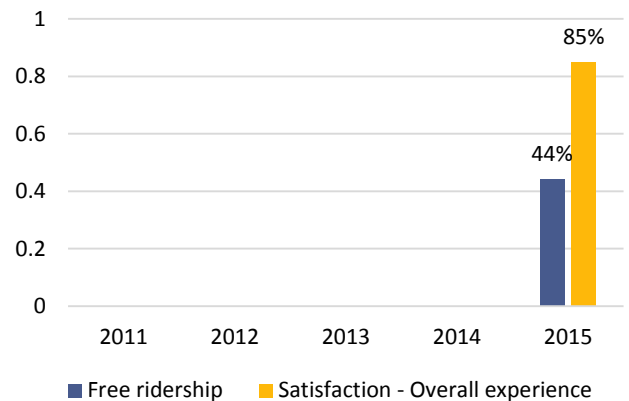
Participant Satisfaction

Satisfaction with Program Elements



Insulation (n=157)	
Duct insulation	16
Floor insulation	96
Wall insulation	45

Free Ridership and Satisfaction Over Time

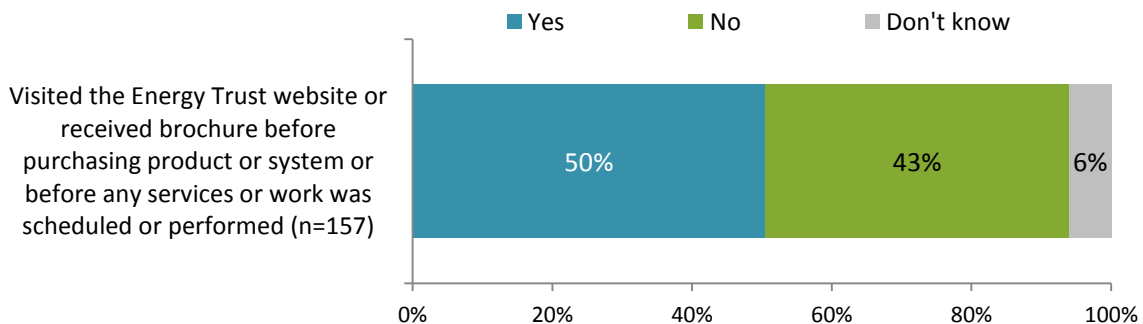


Note: The quota groups for floor, wall, and duct insulation were consolidated into a single insulation category in 2015, which is why there is no historical free ridership or satisfaction information available.

Survey question:

- 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



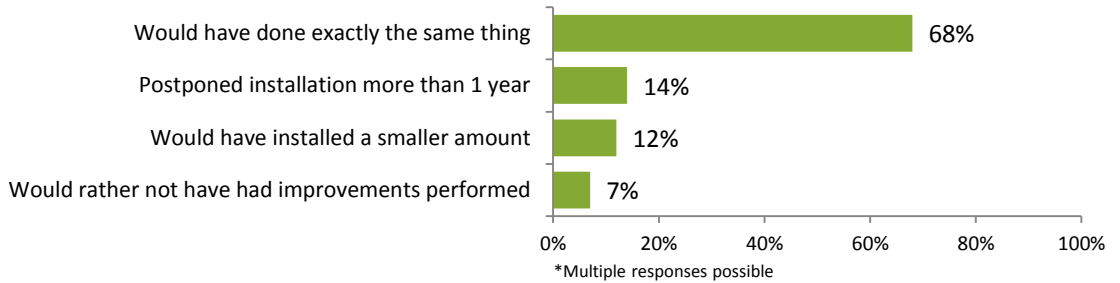
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Insulation

Impact of Incentives and Information

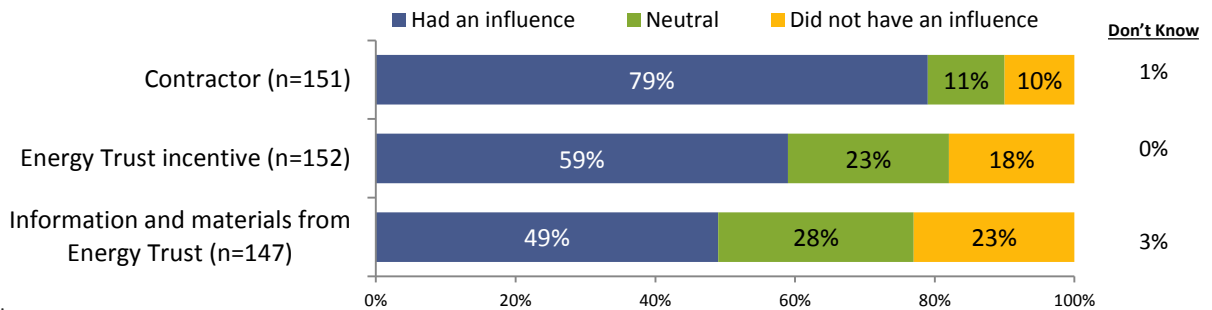
Actions Would Have Taken Without Incentive or Information (n=157)*



Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

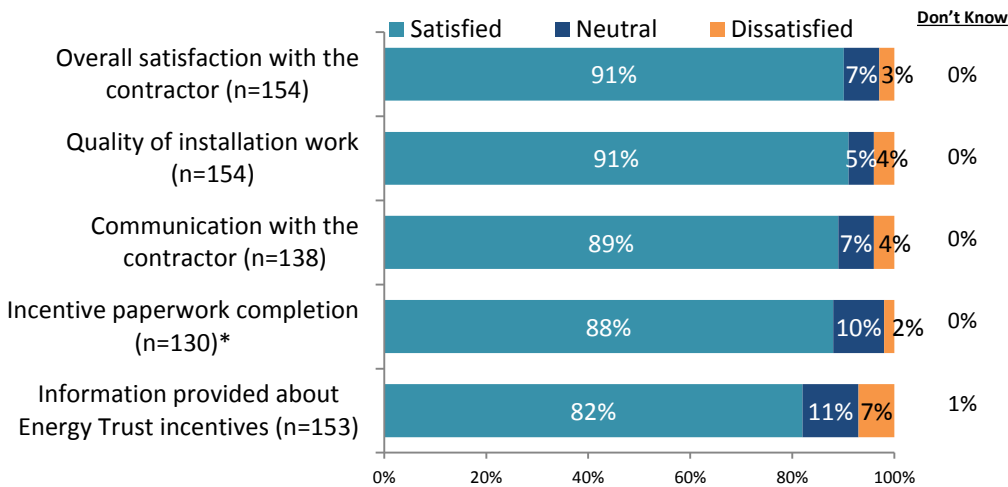
Influences on Decision to Have Services or Work Performed



Survey question:

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

Satisfaction With Contractor



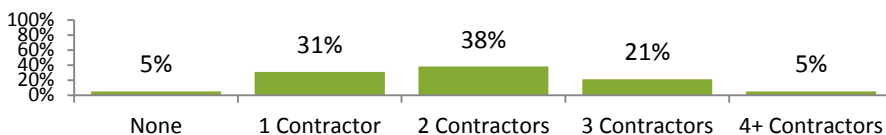
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=155)

Yes	45%
No	52%
Don't know	3%

Did your contractor complete some or all of the incentive paperwork for you? (n=146)

Yes	90%
No	9%
Don't know	1%

How many contractors did you get a bid from before deciding to move forward with your project? (n=154)

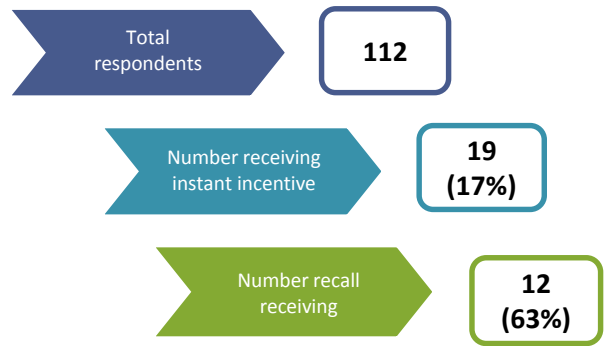


Survey question:

- 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.

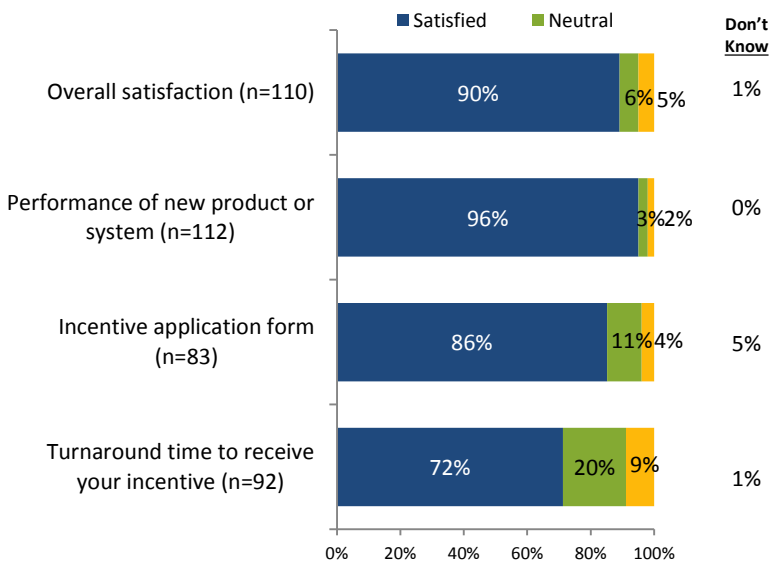
Heat Pumps

- 90% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 30% of respondents visited the website or received a brochure before installing their heat pump.
- 59% of respondents would have installed the same heat pump in the absence of Energy Trust incentives and information.
- 75 of 112 respondents received a heat pump upgrade.

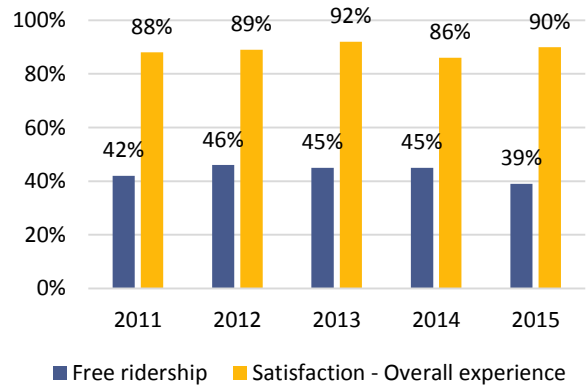


Participant Satisfaction

Satisfaction with Program Elements



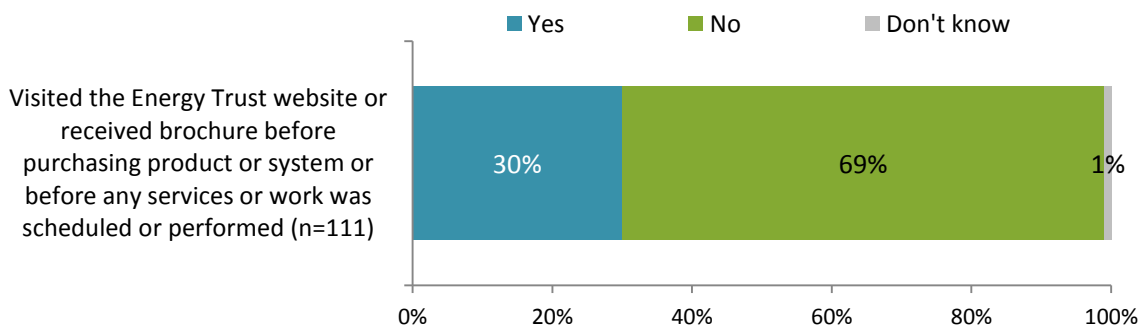
Free Ridership and Satisfaction Over Time



Survey question:

- 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



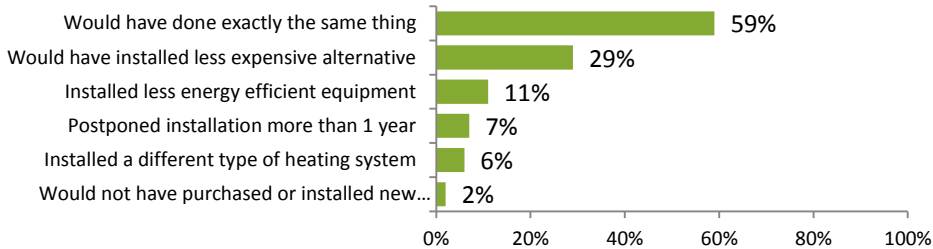
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Heat Pumps

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=112)*



Have you or will you apply for the Oregon State Residential Energy Tax Credit? (n=111)

Yes	83%
No	6%
Don't know	8%
Not aware of credit	3%

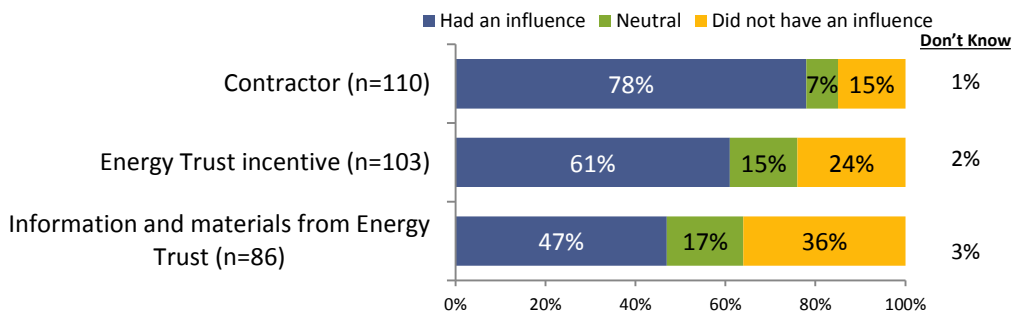
Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Influences on Decision to Have Services or Work Performed

Was the old device operating when replaced with new equipment? (n=75)

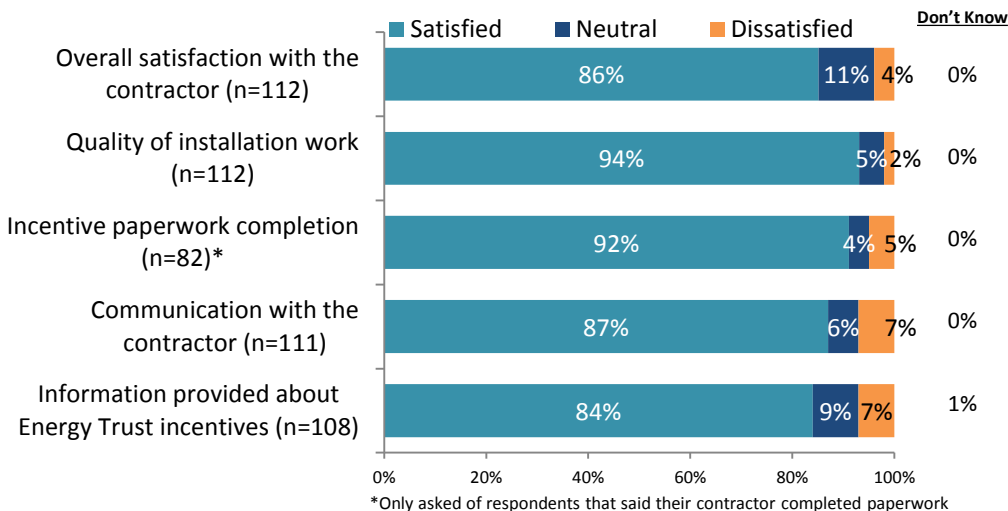
Yes	36%
No	56%
Don't know	8%



Survey question:

- 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=111)

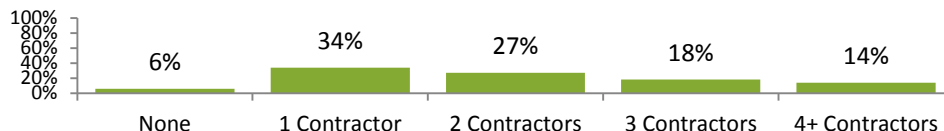
Yes	32%
No	67%
Don't know	2%

Did your contractor complete some or all of the incentive paperwork for you? (n=93)

Yes	90%
No	10%
Don't know	0%

*Only asked of respondents that said their contractor completed paperwork

How many contractors did you get a bid from before deciding to move forward with your project? (n=111)

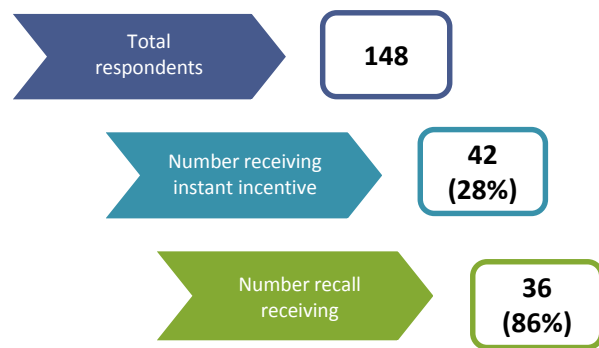


Survey question:

- 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.

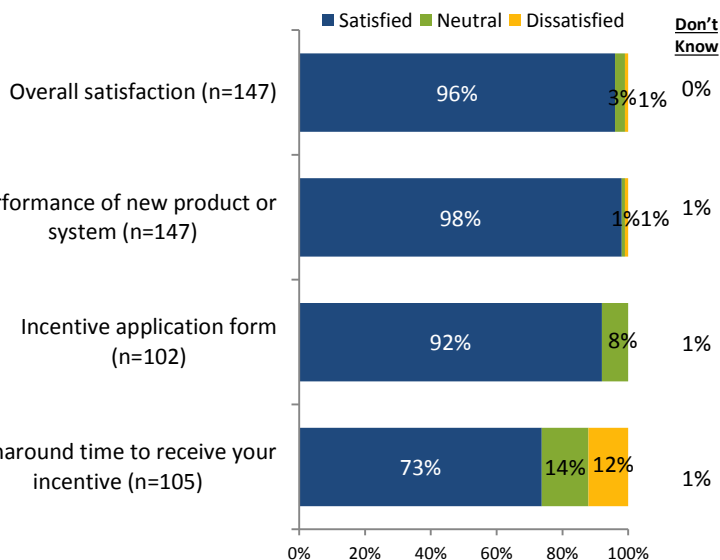
Ductless Heat Pumps

- 96% rated their overall satisfaction a 4 or 5 out of 5.
- 59% of respondents would have installed the same ductless heat pump in absence of Energy Trust incentives and information
- The contractor had the most influence on the decision to install the ductless heat pump (90% rating 4 or 5 out of 5).
- 97% of respondents were satisfied with their contractor.

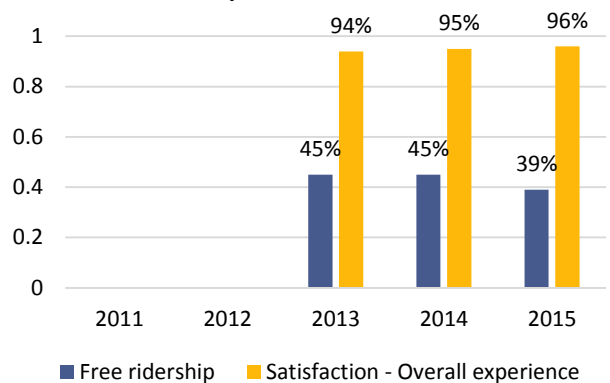


Participant Satisfaction

Satisfaction with Program Elements



Free Ridership and Satisfaction Over Time

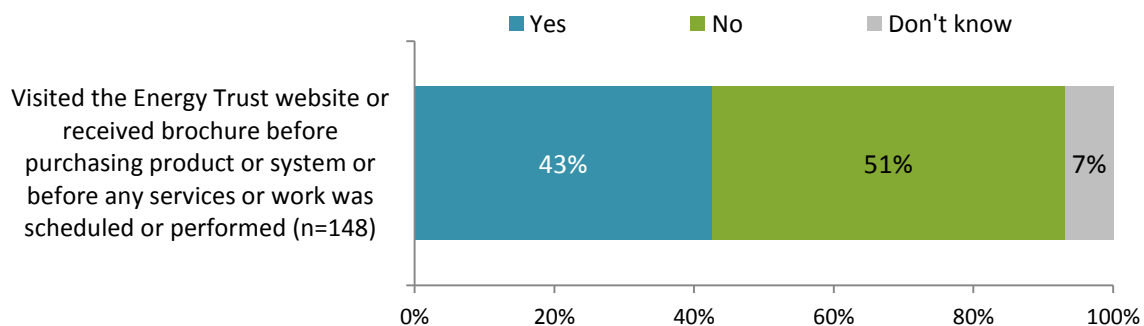


Note: Ductless heat pumps were not surveyed as part of Fast Feedback until 2013, which is why there is no free ridership or satisfaction information available for 2011 or 2012.

Survey question:

- 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



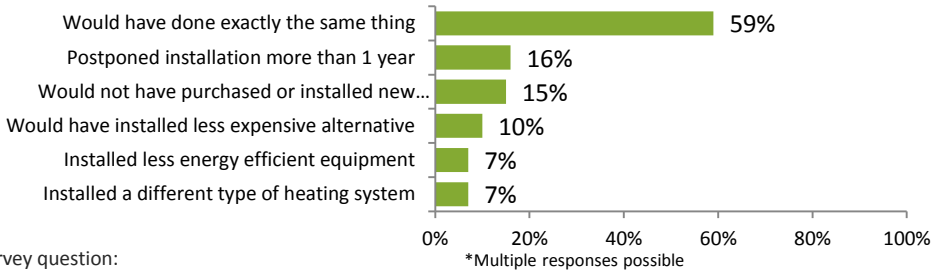
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Ductless Heat Pumps

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=148)*



Have you or will you apply for the Oregon State Residential Energy Tax Credit? (n=147)

Yes	91%
No	4%
Don't know	3%
Not aware of credit	1%

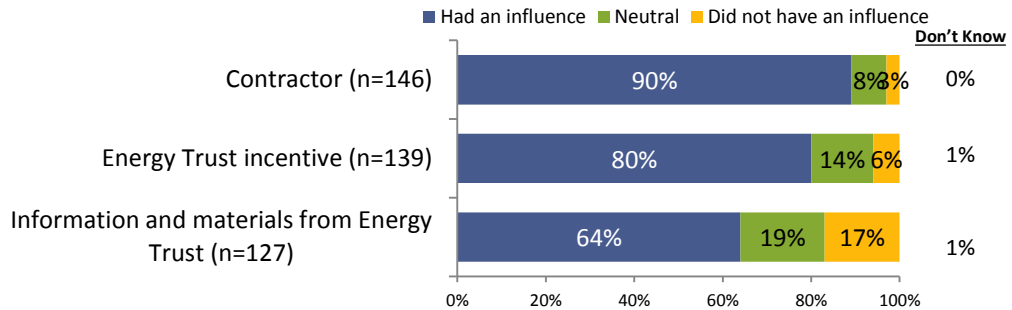
Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Influences on Decision to Have Services or Work Performed

Was the old device operating when replaced with new equipment? (n=44)

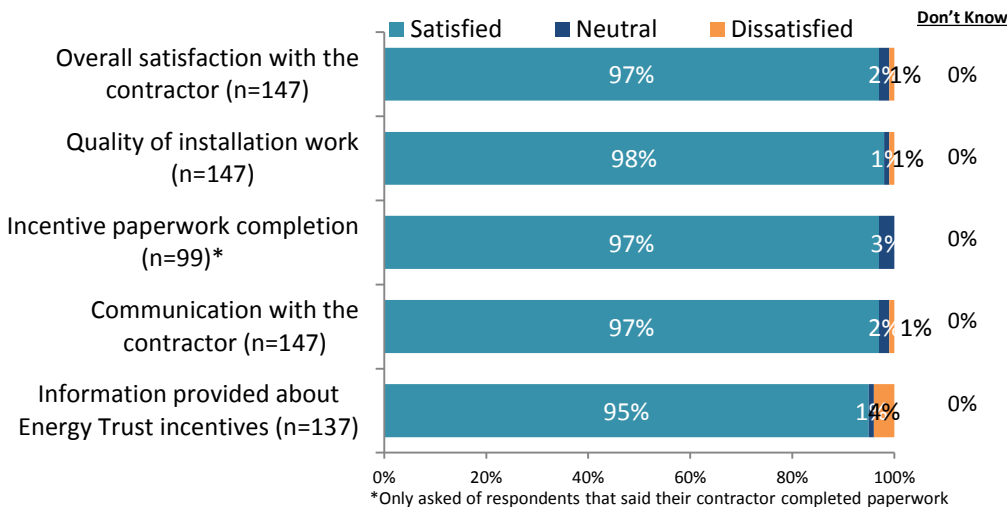
Yes	36%
No	55%
Don't know	9%



Survey question:

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

Satisfaction With Contractor



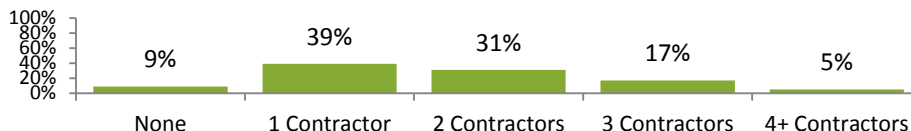
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=148)

Yes	39%
No	55%
Don't know	7%

Did your contractor complete some or all of the incentive paperwork for you? (n=104)

Yes	96%
No	4%
Don't know	0%

How many contractors did you get a bid from before deciding to move forward with your project? (n=148)

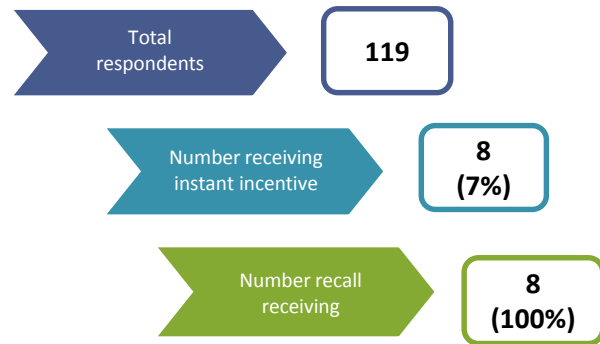


Survey question:

- 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.

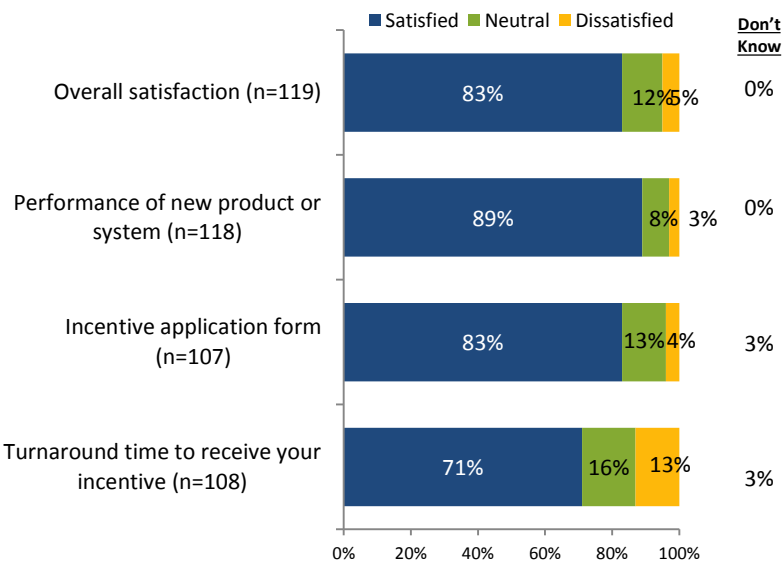
Heat Pump Water Heaters

- 83% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 66% of respondents visited the website or received a brochure before work was scheduled or performed.
- Only 35% of respondents would have installed the same heat pump water heater in the absence of Energy Trust incentives and information.
- 62 of 119 respondents performed self-installs.

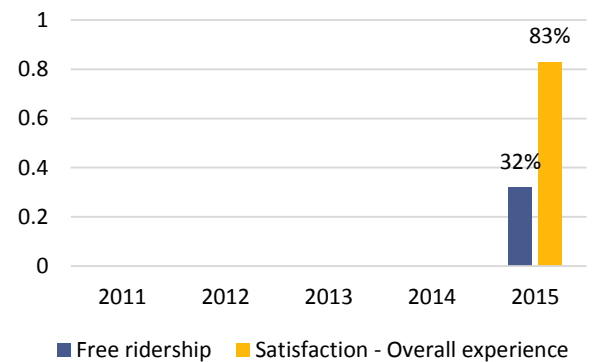


Participant Satisfaction

Satisfaction with Program Elements



Free Ridership and Satisfaction Over Time

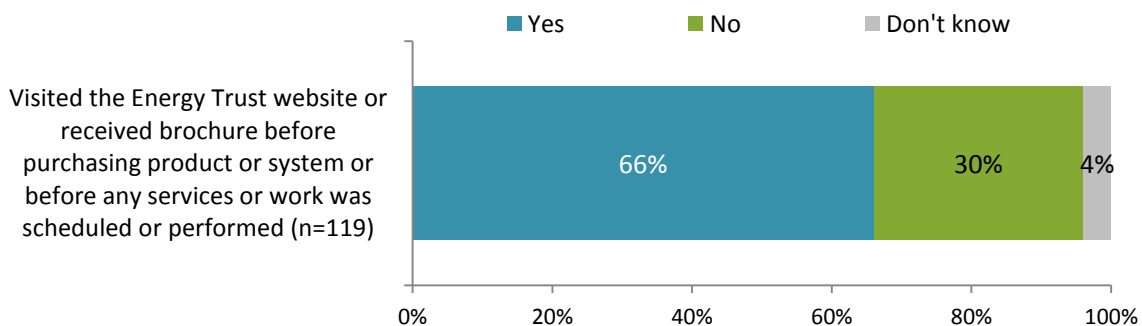


Note: Heat pump water heaters were not surveyed as part of Fast Feedback until 2015, which is why there is no historical free ridership or satisfaction information available.

Survey question:

- 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



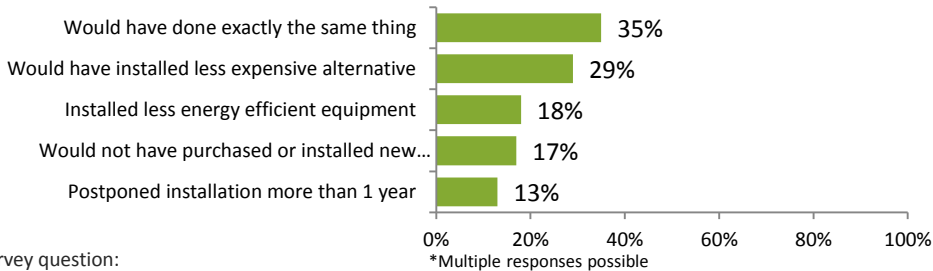
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Heat Pump Water Heaters

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=119)*



Have you or will you apply for the Oregon State Residential Energy Tax Credit? (n=118)

Yes	86%
No	8%
Don't know	3%
Not aware of credit	4%

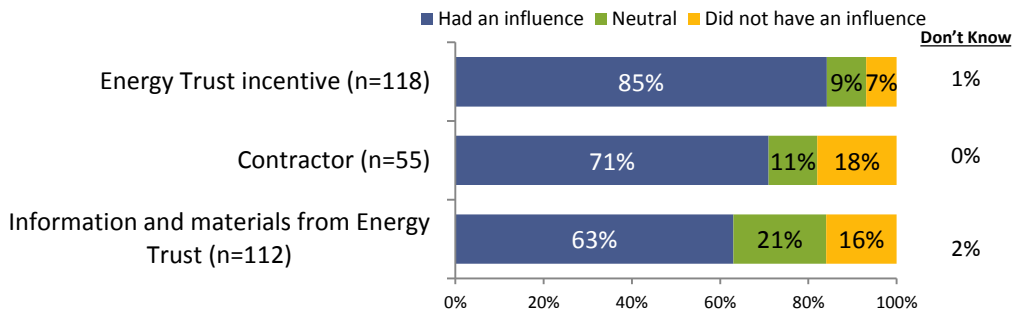
Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Influences on Decision to Have Services or Work Performed

Was old device operating when replaced with new equipment? (n=119)

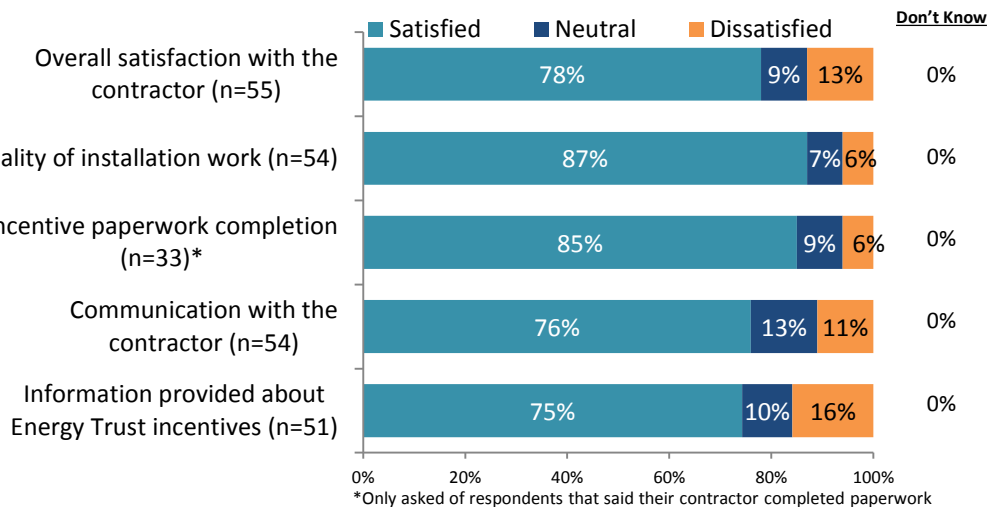
Yes	66%
No	30%
Don't know	3%



Survey question:

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

Satisfaction With Contractor



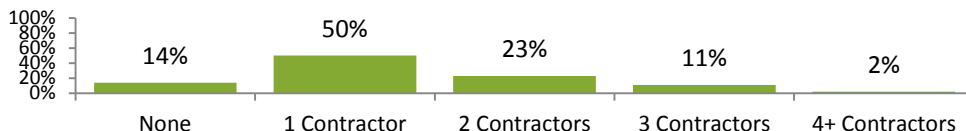
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=57)

Yes	42%
No	54%
Don't know	4%

Did your contractor complete some or all of the incentive paperwork for you? (n=49)

Yes	69%
No	29%
Don't know	2%

How many contractors did you get a bid from before deciding to move forward with your project? (n=56)

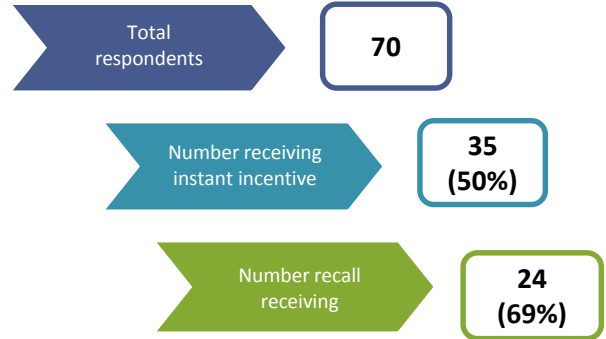


Survey question:

- 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.

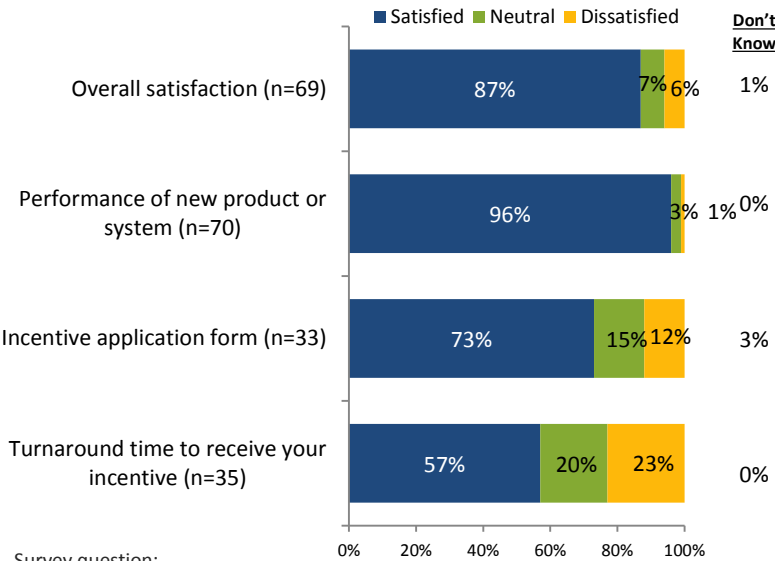
Water Heaters

- 87% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 53% of respondents visited the website or received a brochure before work was scheduled or performed.
- Just over half of respondents have applied (or will) for the state tax credit.
- 87% of respondents were satisfied with their contractor; 37% consulted the approved trade ally list when choosing their contractor.

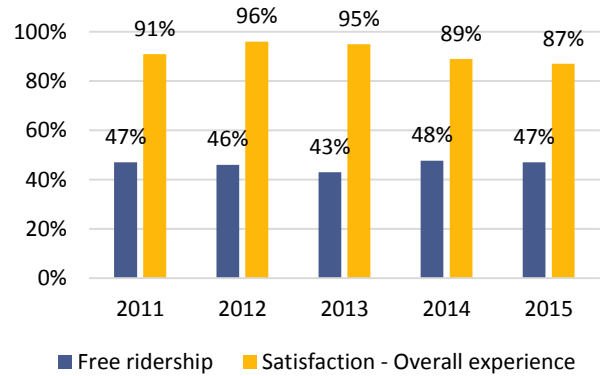


Participant Satisfaction

Satisfaction with Program Elements



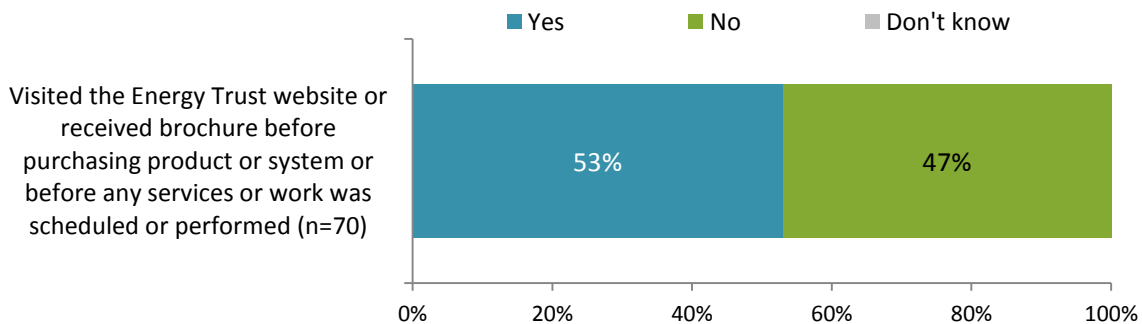
Free Ridership and Satisfaction Over Time



Survey question:

- 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:

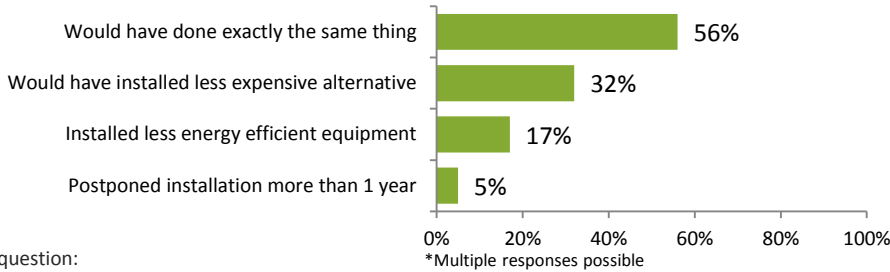
- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Water Heaters

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information

(n=70)*



Have you or will you apply for the Oregon State Residential Energy Tax Credit? (n=62)

Yes	55%
No	13%
Don't know	21%
Not aware of credit	11%

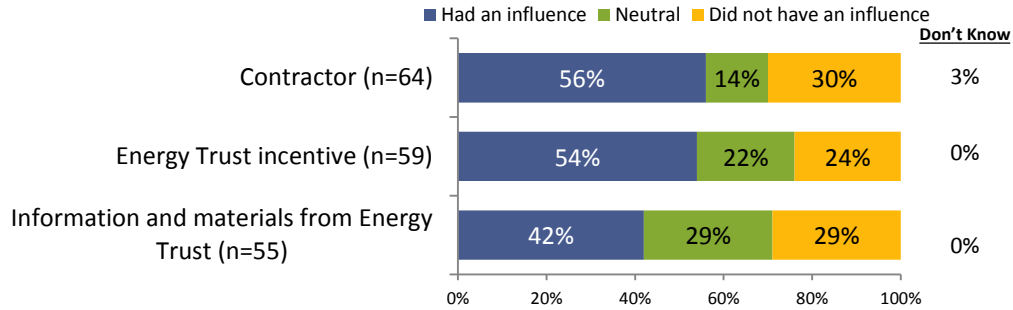
Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Influences on Decision to Have Services or Work Performed

Was old device operating when replaced with new equipment? (n=70)

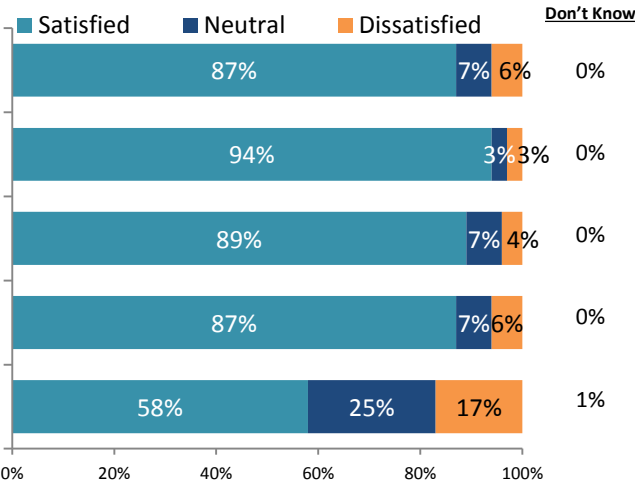
Yes	66%
No	33%
Don't know	1%



Survey question:

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

Satisfaction With Contractor



*Only asked of respondents that said their contractor completed paperwork

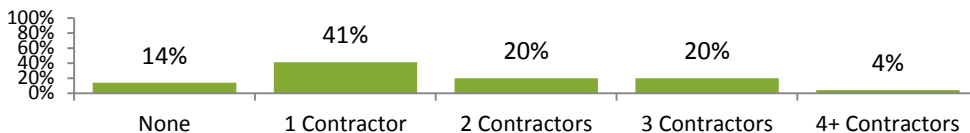
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=70)

Yes	37%
No	61%
Don't know	1%

Did your contractor complete some or all of the incentive paperwork for you? (n=34)

Yes	79%
No	21%
Don't know	0%

How many contractors did you get a bid from before deciding to move forward with your project? (n=70)

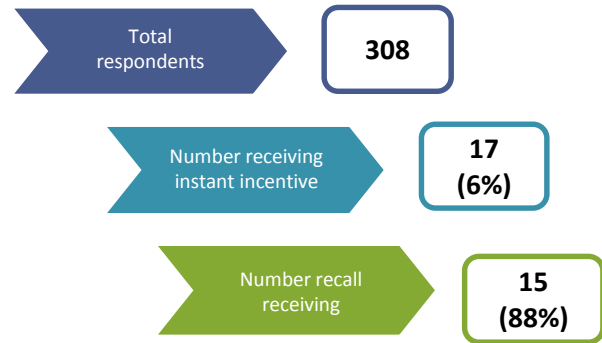


Survey question:

- 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.

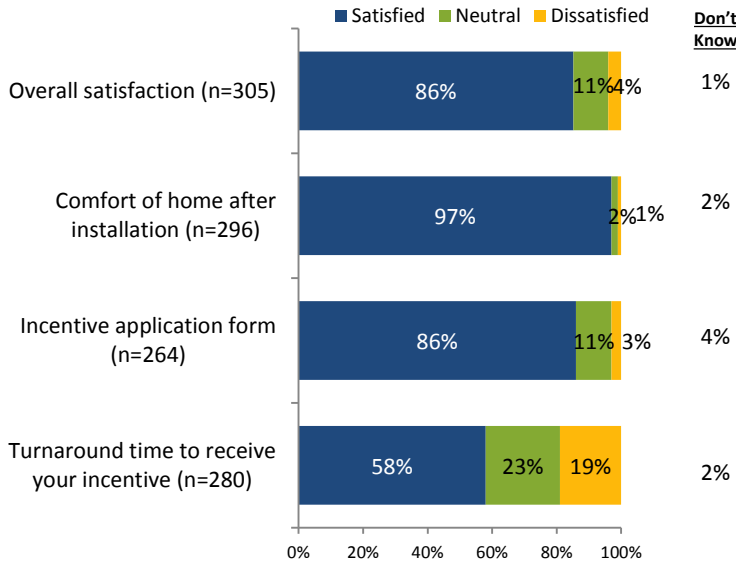
Windows

- 86% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- 36% of respondents visited the website or received a brochure before having their windows installed.
- 75% of respondents indicated that in the absence of Energy Trust incentives, they would have installed the same windows.
- The contractor was most influential on respondents' decision to install windows (81% rating a 4 or 5 out of 5).

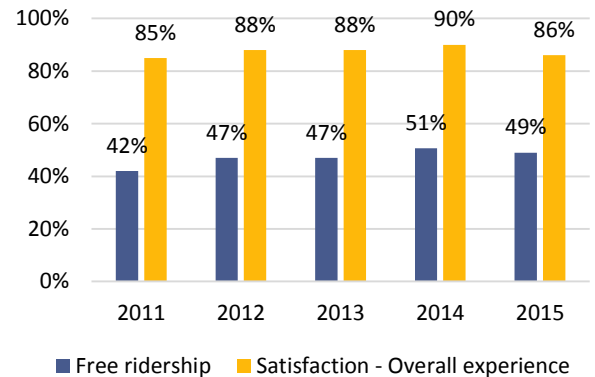


Participant Satisfaction

Satisfaction with Program Elements



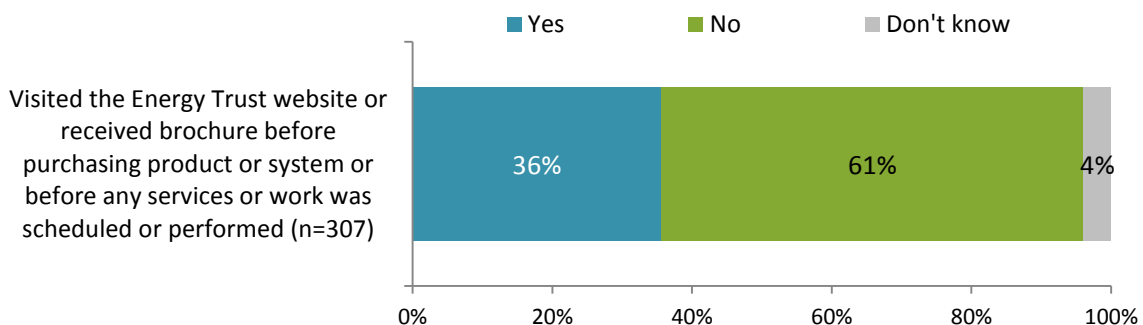
Free Ridership and Satisfaction Over Time



Survey question:

- 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

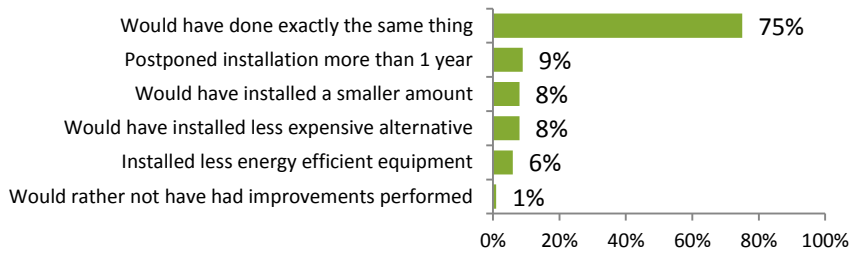


Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=308)*



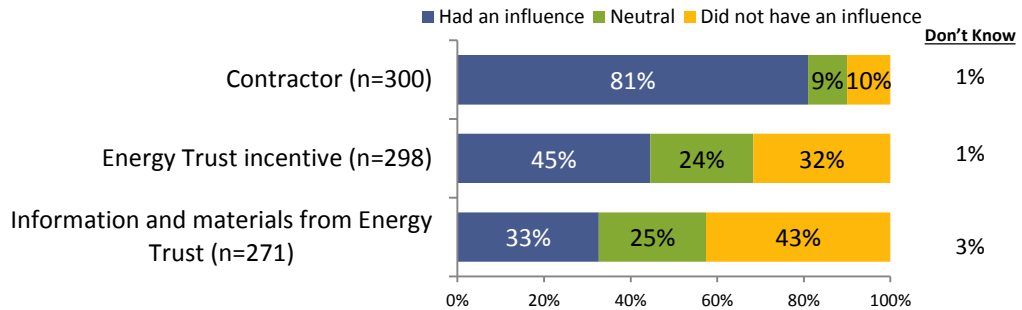
Survey question:

- 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 Have Services or Work Performed

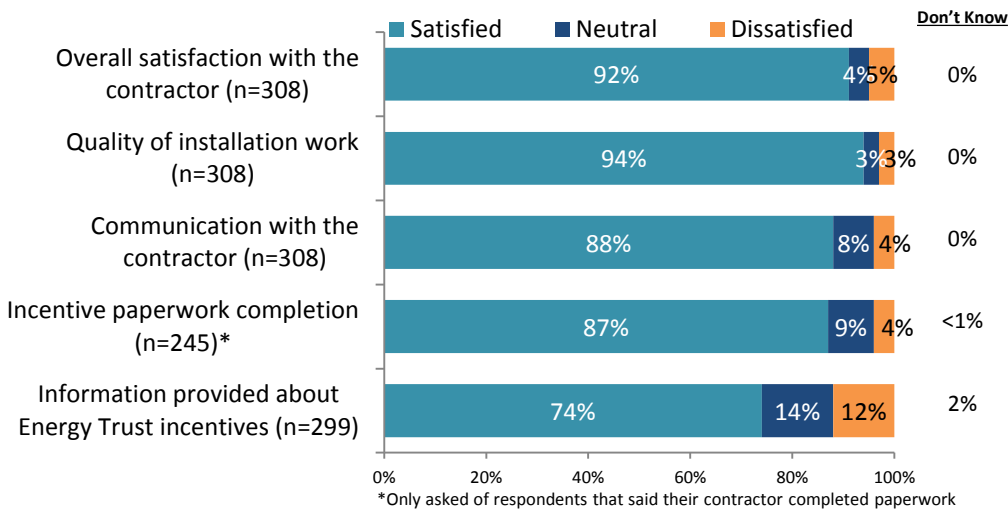
Was the old device operating when replaced with new equipment? (n=36)	
Yes	72%
No	28%
Don't know	0%



Survey question:

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

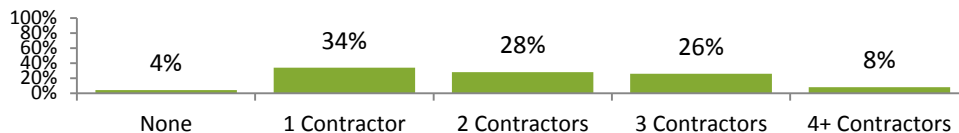
Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=308)	
Yes	23%
No	72%
Don't know	5%

Did your contractor complete some or all of the incentive paperwork for you? (n=290)	
Yes	85%
No	13%
Don't know	2%

How many contractors did you get a bid from before deciding to move forward with your project? (n=305)

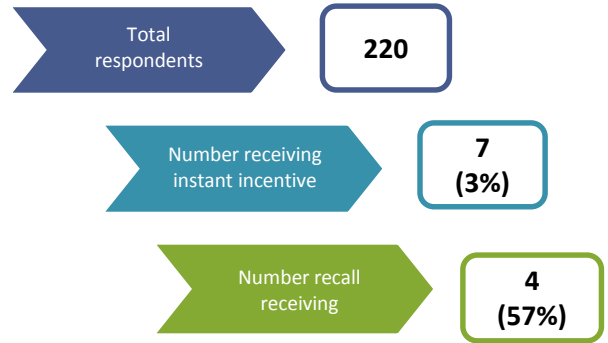


Survey question:

- 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.

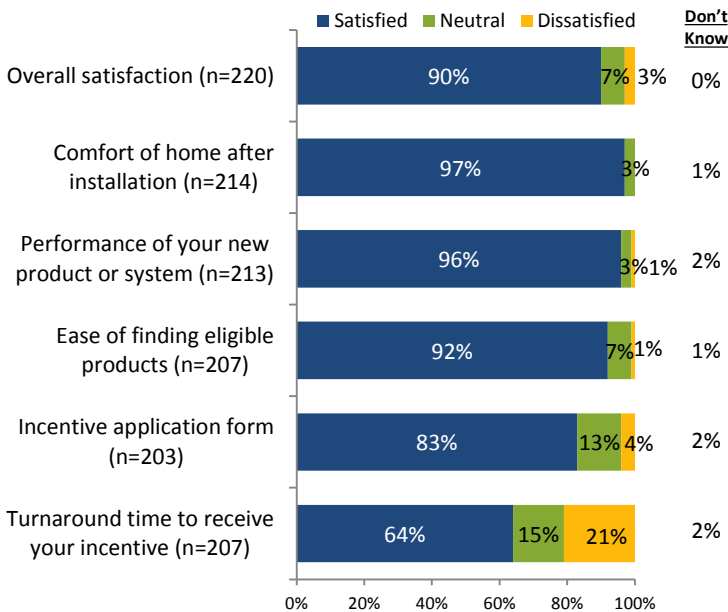
Gas Fireplaces

- 90% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- Nearly two-thirds of respondents reported that the gas fireplace replaced a wood burning fireplace.
- The energy efficiency rating and appearance of the gas fireplace had the most influence on the decision to install the fireplace.

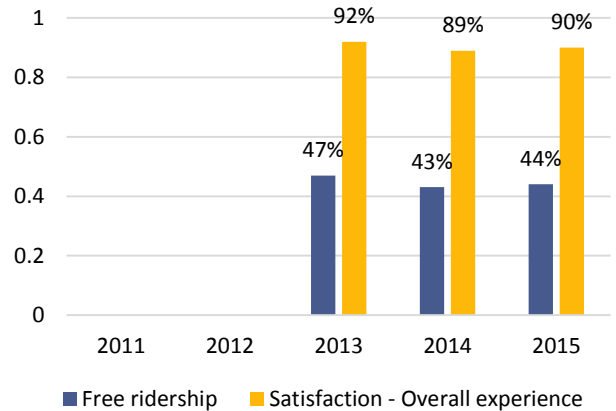


Participant Satisfaction

Satisfaction with Program Elements



Free Ridership and Satisfaction Over Time

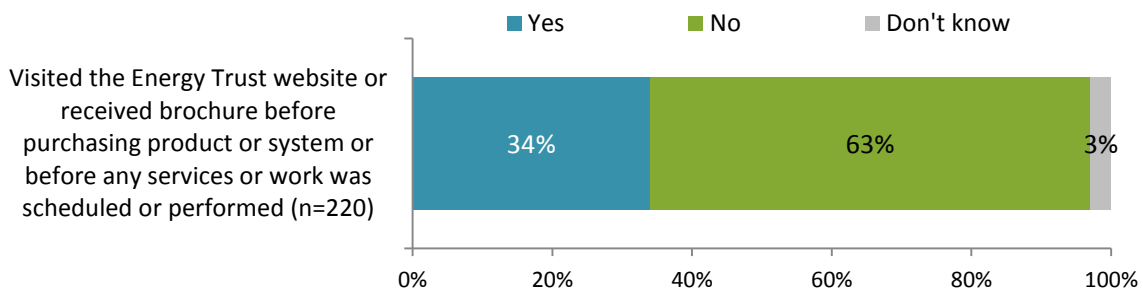


Note: Gas fireplaces were not surveyed as part of Fast Feedback until 2013, which is why there is no free ridership or satisfaction information available for 2011 or 2012.

Survey question:

- 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



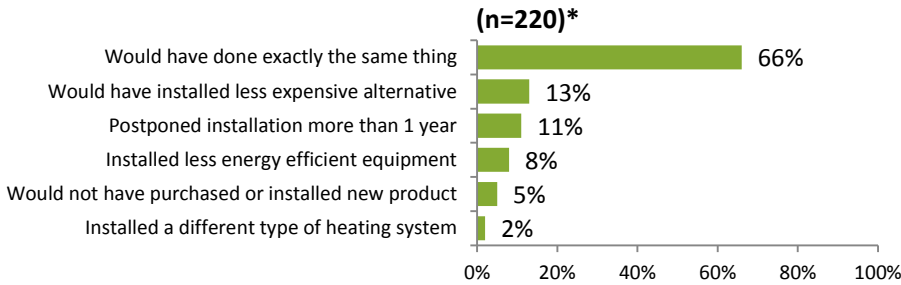
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Gas Fireplaces

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information



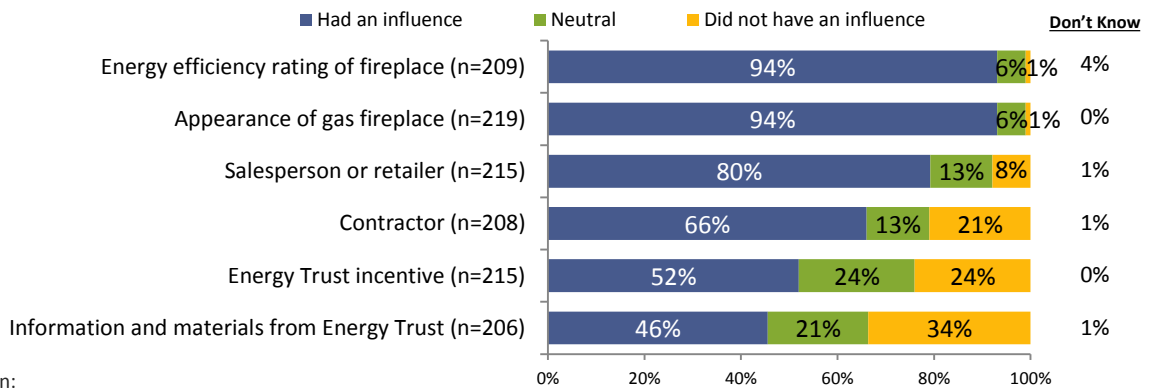
Have you or will you apply for the Oregon State Residential Energy Tax Credit? (n=202)

Yes	68%
No	9%
Don't know	11%
Not aware of credit	11%

Survey question:

- Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

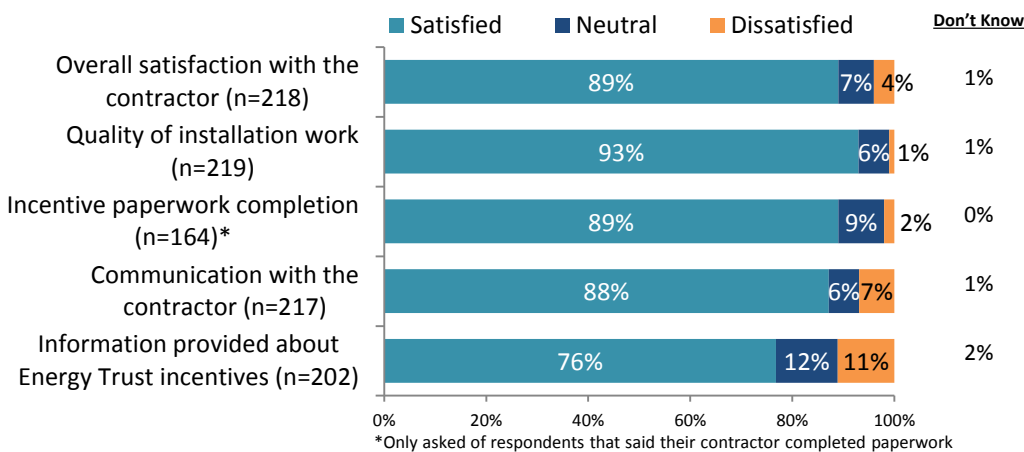
Influences on Decision to Have Services or Work Performed



Survey question:

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

Satisfaction With Contractor



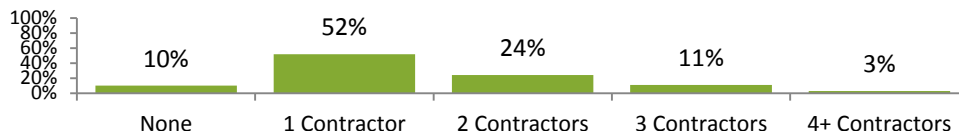
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=220)

Yes	29%
No	66%
Don't know	6%

Did your contractor complete some or all of the incentive paperwork for you? (n=212)

Yes	78%
No	20%
Don't know	2%

How many contractors did you get a bid from before deciding to move forward with your project? (n=217)

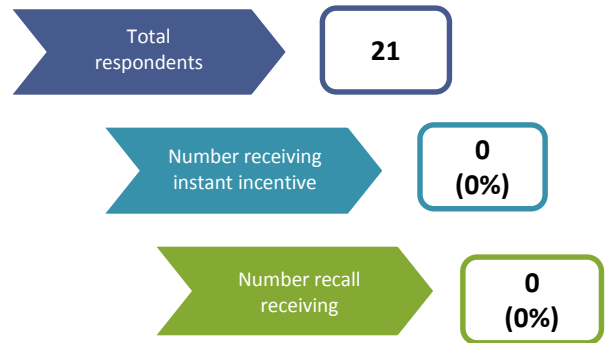


Survey question:

- 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.

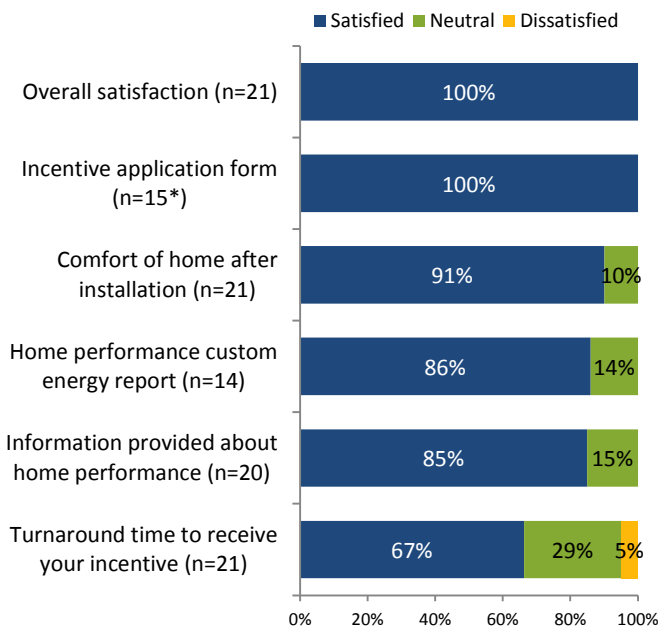
Home Performance

- 21 of 21 rated their overall satisfaction a 4 or 5 out of 5.
- 43% of respondents said they would have done the same project in absence of the program.
- The contractor had more influence than the incentive (95% vs. 60%).



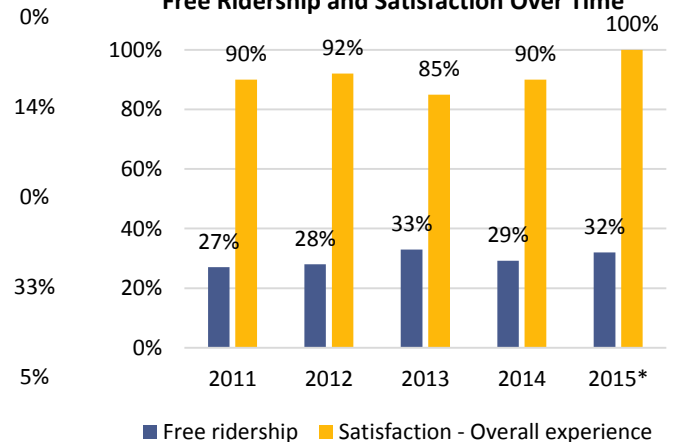
Participant Satisfaction

Satisfaction with Program Elements



Don't Know

Free Ridership and Satisfaction Over Time

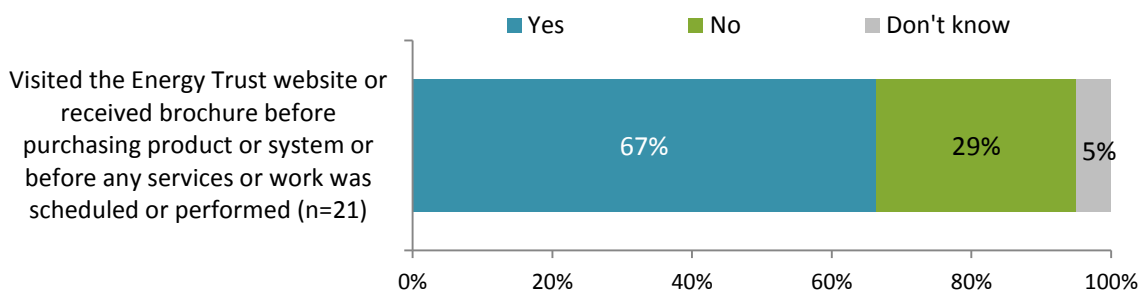


Note: The 2015 free ridership rate (with asterisk) includes projects from 2014-2015. The remaining free ridership rates do not include projects from other years. See Appendix A for more details.

Survey question:

- 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



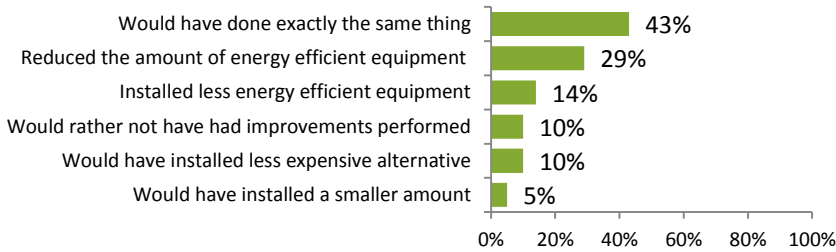
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

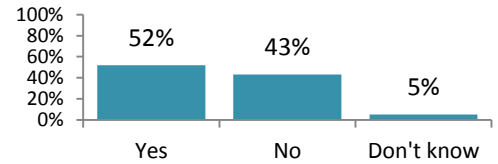
Home Performance

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=21)*



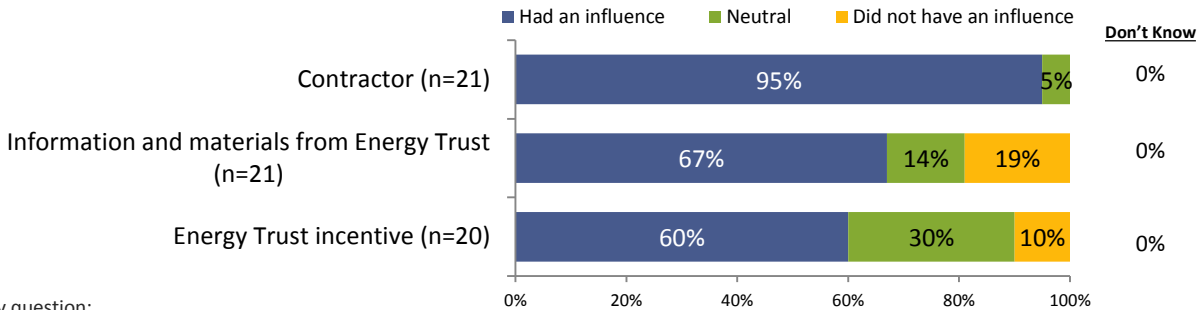
Did you make any additional energy-saving improvements?



Survey question:

*Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

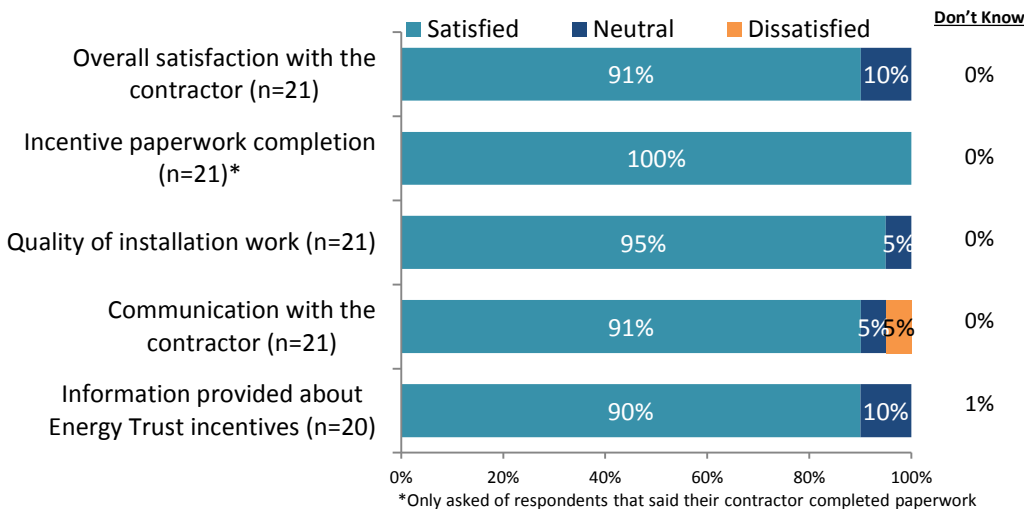
Influences on Decision to Have Services or Work Performed



Survey question:

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

Satisfaction With Contractor



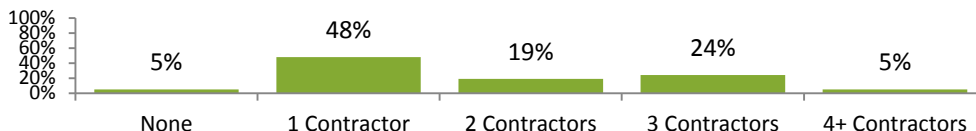
Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=21)

Yes	57%
No	39%
Don't know	5%

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

Yes	100%
No	0%
Don't know	0%

How many contractors did you get a bid from before deciding to move forward with your project? (n=21)



Survey question:

• 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.

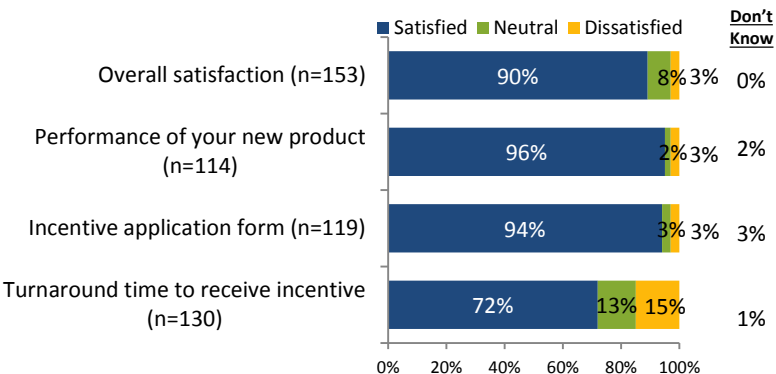
Existing Homes – Washington

- 90% of respondents rated their overall satisfaction a 4 or 5 out of 5.
- Of the 154 respondents who installed measures, 72% said they would have made the same improvements without Energy Trust incentives and information. 85% said the contractor had an influence on their decision making for the project and 40% said the incentive influenced their decision.
- For participants that installed measures, 94% were satisfied with their contractor and 29% had consulted the trade ally list when selecting their contractor.
- When asked to rate the importance of various factors in motivating energy efficient improvements, 92% rated improved health and safety of their home a 4 or 5 out of 5.

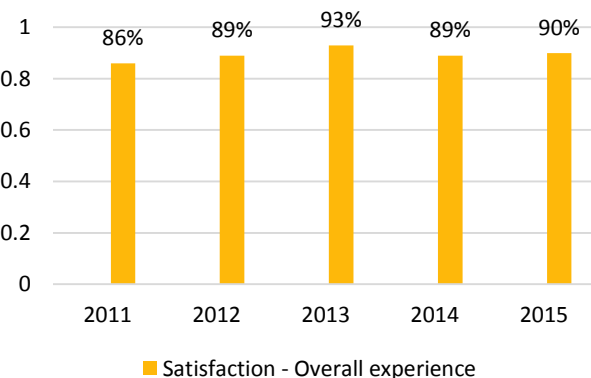
Measure	N
Ceiling Insulation	5
Gas Fireplaces	13
Gas Furnaces	101
Water Heaters	5
Windows	30
Total	154

Participant Satisfaction

Satisfaction with Program Elements



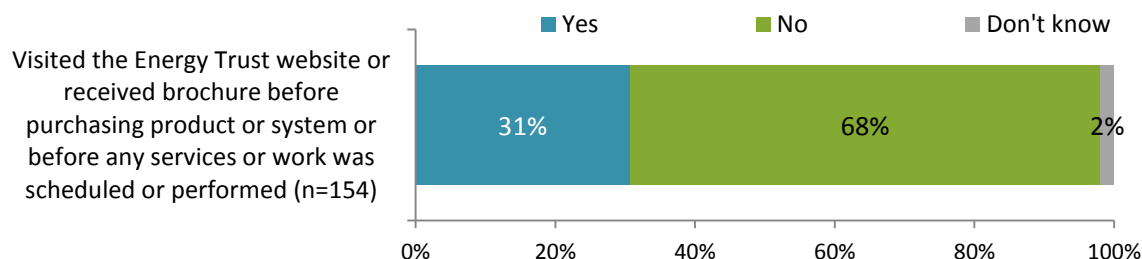
Satisfaction Over Time



Survey question:

- 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



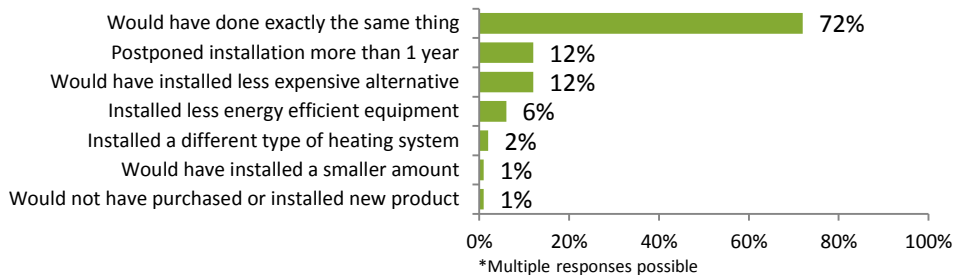
Survey question:

- Did you visit the Energy Trust website or receive one of their brochures before you purchased your product or system or before you had any services or work scheduled and performed?

Existing Homes - Washington

Impact of Incentives and Information

Actions Would Have Taken Without Incentive or Information (n=154)*

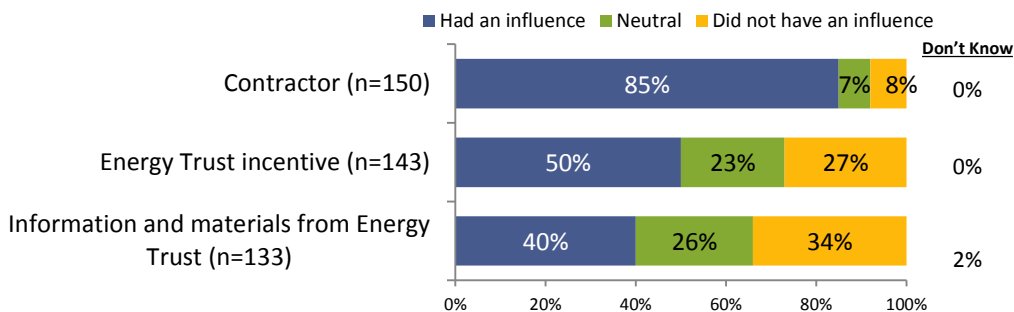


Survey question:

• Which of the following statements describe the actions you would have taken had the Energy Trust incentive and information not been available?

Influences on Decision to Have Services or Work Performed

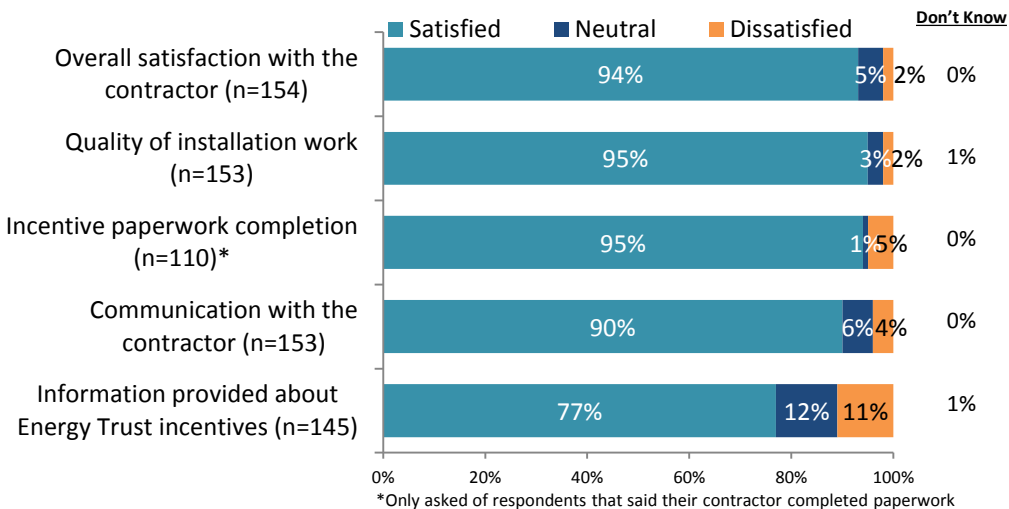
Was the old device operating when replaced with new equipment? (n=106)	
Yes	75%
No	26%
Don't know	0%



Survey question:

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

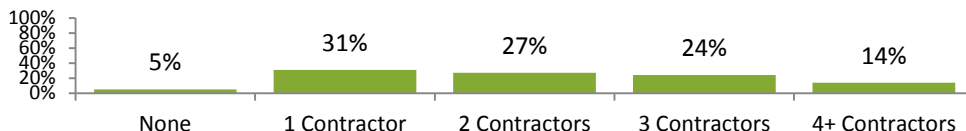
Satisfaction With Contractor



Did you consider Energy Trust's list of approved trade allies when selecting your contractor? (n=154)	
Yes	29%
No	67%
Don't know	5%

Did your contractor complete some or all of the incentive paperwork for you? (n=131)	
Yes	86%
No	12%
Don't know	3%

How many contractors did you get a bid from before deciding to move forward with your project? (n=153)

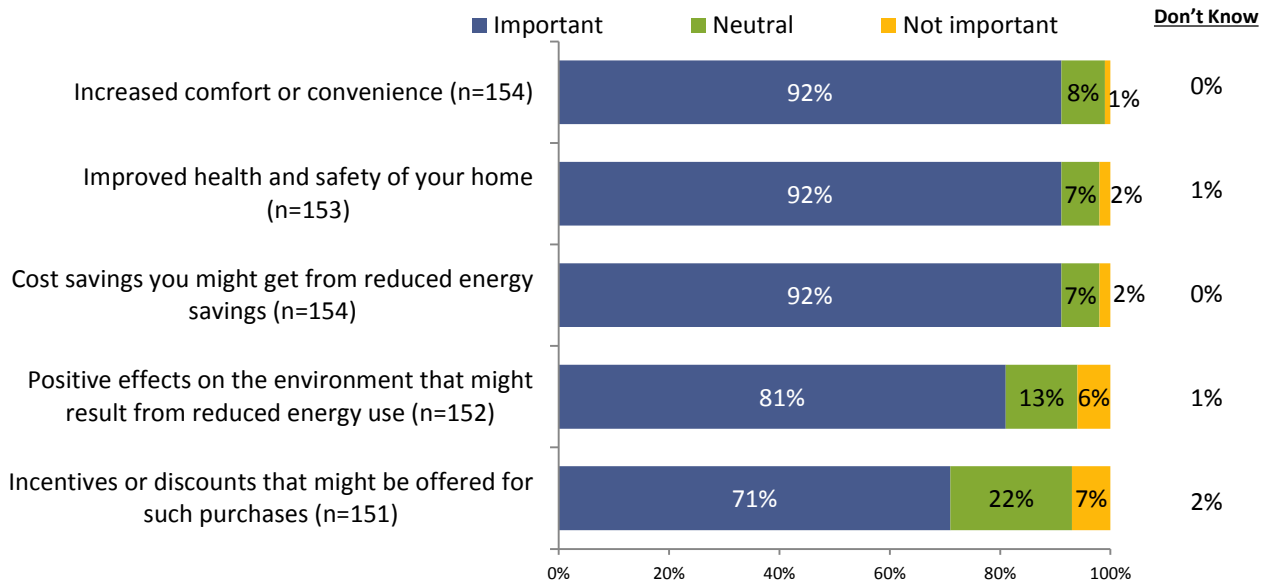


Survey question:

• 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.

Existing Homes – Washington

Importance of Factors When Making Energy Efficient Improvements



Survey question:

- Please rate the importance of each of the following factors when you plan energy efficient improvements to your home or shop for energy related products or equipment on a 5 point scale, with 1 indicating not at all important and 5 indicating very important.

Other Renewables

- We were unable to survey any small wind participants in 2015.

Appendix A – Free Ridership Calculations

The method used here 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 a quarterly basis to provide early feedback and show trends, and once surveying for the calendar year is complete, an annual number is estimated and used in True-Up. 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.

Program staff expressed concern that low numbers of respondents on the gas side may be contributing to variability in the gas free-ridership rate, and requested that Evaluation staff investigate this issue. Evaluation staff agree that the number of respondents required to estimate the annual free-ridership numbers used in True-Up should be increased.

Additionally, program staff requested that Evaluation staff investigate how representative the Fast Feedback sample is compared to the population in terms of project type (for Existing Buildings and Production Efficiency). Evaluation staff found that lighting projects were underrepresented in the sample and custom projects were overrepresented. This was especially true for Existing Buildings. Evaluation staff proposed, and the Evaluation Committee accepted, a slightly modified method for calculating free ridership to better align the sample with the population.

We have increased the number of respondents required to estimate free ridership from 10 to 30. Also, for Existing Buildings and Production Efficiency, which have subquotas, we also strive to estimate free ridership for each subquota and then weight 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%.

In cases where we lack 30 or more respondents, we pool responses from prior quarters or years such that we have 30 or more respondents.

To estimate annual free ridership numbers, we pool responses from prior years such that we have 30 or more respondents. For example, there were 13 Production Efficiency respondents with gas savings in 2013. To estimate the free ridership numbers that would be applied to 2013 Production Efficiency 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, 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.

Appendix A – Free Ridership Calculations

For example, there were fewer than 30 respondents in 2015 for Production Efficiency Custom and Standard gas projects (5 and 4, respectively). When we go back to 2011, there are 35 respondents in Custom, but only 22 in Standard. So, we estimate a free ridership rate without breaking out Custom and Standard, and go back to 2013 to get the requisite 30 respondents for both subquota groups combined.

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

In some cases, we report two free ridership numbers: one to be used for the purposes of True-Up and one to be used for the purposes of budgeting. Two different numbers are calculated when projects represent more than 30% of the surveyed savings in a given group (driven by sample size considerations – decision rules for this are described above). All numbers in this report are to be used for the purposes of True-Up and budgeting, unless noted otherwise.

For example, in 2015, a single project represented 44% of the savings for the Multifamily gas group. A free ridership rate to be used for the purposes of True-Up was calculated, which included all of the projects (34%) and a free ridership rate to be used for the purposes of budgeting was calculated (42%) which excludes that large project.

Detailed Free Ridership Numbers

Commercial and Industrial

Existing Buildings - electric

2015	Low Scenario	Mid Scenario	High Scenario
Custom (n=40)	34%	39%	44%
Lighting (n=79)	26%	30%	33%
Standard (n=47)	30%	37%	44%

There were more than 30 respondents in 2015 for all three tracks, so we just use 2015 data to estimate free ridership.

Project Type	Free Ridership Rate	Proportion in Population (2015)
Custom	39%	31%
Lighting	30%	61%
Standard	37%	8%
Free Ridership Rate	33%	

Existing Buildings - gas

2014-2015	Low Scenario	Mid Scenario	High Scenario
Custom (n=25)	29%	34%	39%
Standard (n=86)	31%	36%	41%

There were fewer than 30 respondents in 2015 for Custom (18), but more than 30 for Standard (44). So, we go back to 2014 to estimate free ridership.

Project Type	Free Ridership Rate	Proportion in Population (2015)
Custom	34%	61%
Standard	36%	39%
Free Ridership Rate	35%	

Production Efficiency - electric

2015	Low Scenario	Mid Scenario	High Scenario
Custom (n=43)	19%	20%	21%
Lighting (n=74)	20%	26%	33%
Standard (n=66)	22%	26%	31%

There were more than 30 respondents in 2015 for all three tracks, so we just use 2015 data to estimate free ridership.

Project Type	Free Ridership Rate	Proportion in Population (2015)
Custom	20%	54%
Lighting	26%	33%
Standard	26%	13%
Free Ridership Rate	23%	

Production Efficiency - gas

2013-2015	Low Scenario	Mid Scenario	High Scenario
Custom and Standard (n=33)	22%	22%	22%

There were fewer than 30 respondents in 2015 for Custom and Standard (5 and 4, respectively). When we go back to 2011, there are 35 respondents in Custom, but only 22 in Standard. So, we estimate a free ridership rate without breaking out Custom and Standard, and go back to 2013 to get the requisite 30 respondents.

Detailed Free Ridership Numbers

Existing Multifamily - electric

2015	Low Scenario	Mid Scenario	High Scenario
Electric (n=66)	16%	19%	23%

The Existing Multifamily sample does not have subquotas, so we estimate one free ridership rate for electric and one for gas. On the electric side, there 66 respondents in 2015.

Existing Multifamily - gas

2012-2015	Low Scenario	Mid Scenario	High Scenario
Gas (n=38)	20%	34%	49%

On the gas side, there were fewer than 30 respondents in 2015 (6). 2014 and 2013 had only 11 and 8 respondents, respectively. So, we go back to 2012 to estimate free ridership. One project accounted for greater than 30% of the sampled savings. This project was removed to estimate a free ridership rate for budgeting purposes, leaving n=37 projects. The resulting low, mid, and high scenario free ridership rates were 35%, 42%, and 49%, respectively.

Home Products

2015	Low Scenario	Mid Scenario	High Scenario
Clothes Washers (n=260)	52%	55%	58%
Refrigerators (n=266)	53%	54%	56%
Refrigerator Recycling (n=275)	28%	33%	39%

Existing Homes

2015	Low Scenario	Mid Scenario	High Scenario
Ceiling Insulation (n=216)	43%	43%	44%
Insulation (n=157)	43%	44%	44%
Heat Pumps (n=112)	37%	44%	51%
Ductless Heat Pumps (n=148)	32%	35%	39%
Gas Fireplaces (n=207)	40%	44%	48%
Water Heaters (n=70) ^a	39%	47%	55%
Windows (n=278)	47%	49%	51%
Home Performance (n=64)*	31%	32%	33%
Heat Pump Water Heater (n=119)	27%	32%	37%

^a 0.67 residential gas water heaters are market of a market transformation effort; free ridership is shown for information only and will not be the basis for programmatic decisions about the measure.

*There were fewer than 30 respondents in 2015 (21). So, we go back to 2014 to estimate free ridership.

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, Direct Install, and Comprehensive are *not* included; distributor buy-down and other direct install measures are also excluded
- 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
- Projects with a track of Industrial Energy Improvement, Kaizen Blitz, Prescriptive, and Strategic Energy Management are *not* included; motor projects are also excluded
- Mega projects are *not* included

Existing Multifamily

- Projects must have an incentive amount above zero
- Projects must have a program code of BEM
- Instant savings measures and direct install 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, refrigerator recycling, and clothes washer measures are eligible to be surveyed
- New home, lighting and showerheads, and new manufactured home measures are *not* included

Existing Homes

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

Solar

- Solar PV projects are surveyed through Fast Feedback

Other Renewables

- Projects must have a program code of VSW and working kWh savings

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 (non-residential) and owner or host owner (residential)
- Have a status of “completed” (non-residential) 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 within the past twelve months to avoid survey fatigue. It is worth noting that for the purposes of surveying, we consider a year (for example, 2011) to go from December 31st of the prior year through December 30th of 2011. 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.