



NATIONAL AWARENESS OF ENERGY STAR® FOR 2012

ANALYSIS OF CEE HOUSEHOLD SURVEY



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EXECUTIVE SUMMARY

In the fall of 2012, members of the Consortium for Energy Efficiency (CEE) sponsored the thirteenth national household survey of consumer awareness of ENERGY STAR. Each year, the survey objectives have largely been the same: to collect national data on consumer recognition, understanding, and purchasing influence of the ENERGY STAR label, as well as data on messaging and product purchases. CEE members may choose to supplement the national sample by adding additional data points in order to assess label awareness in their local service territories. In 2012, additional surveys were conducted in the metropolitan areas of Denver and Minneapolis/St. Paul and the state of New York (excluding Long Island). As in all previous years, CEE and sponsoring members made the survey data publicly available to the U.S. Environmental Protection Agency's (EPA's) ENERGY STAR program for analysis.

This report discusses the results of the CEE 2012 ENERGY STAR Household Survey, building on prior years' survey results and focusing on the extent to which consumers recognize the ENERGY STAR label, understand its intended messages, and utilize (or are influenced by) the label in their energy-related purchase decisions. Research questions of interest included:

- Where do consumers see or hear about the ENERGY STAR label?
- How does increased publicity affect recognition, understanding, and influence of the ENERGY STAR label?
- Which key messages about the ENERGY STAR label are consumers retaining?
- Do consumers demonstrate loyalty to the ENERGY STAR label?

Key Findings at the National Level

- Eighty-seven percent of households recognized the ENERGY STAR label when shown the label. This is similar to the 84 percent finding in 2011.
- Eighty-two percent of households had a high or general understanding of the label's purpose. Furthermore, the proportion of households that demonstrated a general understanding was small compared with the proportion that demonstrated a high understanding (12 percent versus 70 percent).
- The proportion of households with at least a general understanding of the ENERGY STAR label is similar from 2011 to 2012, 85 percent and 82 percent, respectively (p-value = 0.1495).
- Sixty-four percent of households associated the ENERGY STAR label with "efficiency or energy savings."

- Of households that recognized the ENERGY STAR label (aided) and purchased a product in a relevant product category within the past 12 months, 75 percent purchased an ENERGY STAR-labeled product.
- Among all households, 41 percent knowingly purchased an ENERGY STAR-labeled product in the past 12 months.
- For 73 percent of the households that recognized the ENERGY STAR label (aided), and knowingly purchased an ENERGY STAR-labeled product, the label influenced at least one of their purchase decisions “very much” or “somewhat.” For another 11 percent of these households, the label influenced their purchase decisions “slightly.”
- Eighteen percent of households that knowingly purchased an ENERGY STAR-labeled product received a financial incentive for doing so in 2012, six percentage points less than in 2011. Seventy-four percent of these households report they would have been “very likely” (42 percent) or “somewhat likely” (32 percent) to purchase the labeled product without the financial incentive.
- Seventy-five percent of households that recognized the label and purchased a product in a category where ENERGY STAR-labeled products are an option were likely to recommend ENERGY STAR-labeled products to a friend; 30 percent of these households reported that they were “extremely likely” to recommend ENERGY STAR-labeled products.

Key Findings from Publicity-Level Analyses

High-publicity areas are defined as having a locally sponsored energy-efficiency program [sponsored by a utility, state agency, or other organization] that has actively and continuously promoted ENERGY STAR for two or more years.

- When the ENERGY STAR label was shown to them, 89 percent of households in high-publicity areas recognized the label versus 85 percent in non-high-publicity areas; this difference is statistically significant ($p\text{-value} = 0.063$). Without a visual aid, a similar proportion of households in high- and non-high-publicity areas recognized it, 76 percent in high publicity and 71 percent in non-high-publicity areas ($p\text{-value} > 0.10$).
- Sixty-four percent of the households in high-publicity areas associated the ENERGY STAR label with “efficiency or energy savings,” compared with 63 percent of households in non-high-publicity areas; this difference is similar.
- Considering only households that recognized the label (with a visual aid), a larger proportion of households in high-publicity areas than in non-high-publicity areas heard or saw something about ENERGY STAR via utility mailings or bill inserts; this difference is statistically significant at the 1-percent level ($p\text{-value} = 0.0068$).

Conclusions

This thirteenth national study of household awareness of the ENERGY STAR label confirms key findings from the previous years' surveys:

- Substantial portions of U.S. households in the surveyed population recognize, understand, and are influenced by the ENERGY STAR label.
- The proportion of households with at least a general understanding of the ENERGY STAR label is similar from 2011 to 2012, 85 percent and 82 percent, respectively (p-value = 0.1495).
- The proportion of households that exhibit only a general understanding of the label is small (12 percent) compared with the proportion of households that exhibit a high understanding (70 percent).
- Publicity efforts of active regional/local energy efficiency program sponsors are associated with increased recognition (aided) of the ENERGY STAR label; aided recognition of the label is higher (89 percent) in high-publicity areas than in non-high-publicity areas (85 percent).

INTRODUCTION

In the fall of 2012, members of the Consortium for Energy Efficiency (CEE) sponsored the thirteenth national household survey of consumer awareness of ENERGY STAR. Each year, the survey objectives have largely been the same: to collect national data on consumer recognition, understanding, and purchasing influence of the ENERGY STAR label, as well as data on messaging and product purchases. CEE members may choose to supplement the national sample in order to assess label awareness in their local service territories. To this end, in 2012 additional surveys were conducted in two Nielsen Designated Market Areas[®] (DMA), Denver and Minneapolis-St. Paul, and one state – New York (excluding Long Island). As in the twelve previous years, CEE and sponsoring members made the survey data publicly available for this analysis.

This report discusses the results of the CEE 2012 ENERGY STAR Household Survey, building on prior years' survey results and focusing on the extent to which consumers recognize the ENERGY STAR label, understand its intended messages, and utilize (or are influenced by) the label in their energy-related purchase decisions. Research questions of interest included the following:

- Where do consumers see or hear about the ENERGY STAR label?
- How does increased publicity affect recognition, understanding, and influence of the ENERGY STAR label?
- Which key messages about the ENERGY STAR label are consumers retaining?
- Do consumers demonstrate loyalty to the ENERGY STAR label?

The remainder of this report summarizes the survey and analysis methodology; it provides key findings regarding ENERGY STAR label recognition, understanding, influence, and information sources. It also contains appendices presenting detailed survey methodology (Appendix A), demographic information (Appendix B), additional questions from the 2012 survey (Appendix C), and a copy of the 2012 questionnaire (Appendix D). In all cases, the results presented in this report were weighted to obtain results applicable at the national level (please refer to Appendix A for details on the weighting methodology).

METHODOLOGY OVERVIEW

During October 2012, CEE fielded a questionnaire to obtain information at the national level on consumer awareness of the ENERGY STAR label (please refer to Appendix A for a more detailed outline of the survey methodology). A random sample of households that are members of an Internet panel was surveyed. Both the Internet panel as a whole and the sample of households completing the survey were selected by address-based sampling and recruited by telephone.¹ The panel is designed to be representative of the U.S. population.

This year's questionnaire was similar to the ones CEE fielded in 2000 – 2011. As in previous years, CEE and its sponsoring members made the survey data available to EPA for analysis.

The survey was a national survey. The sampling frame for this national survey included all households in the largest 57 DMAs that together accounted for about 70 percent of U.S. television households. In addition, some CEE members chose to sponsor more intensive sampling (i.e., an oversample) in selected localities, referred to here as *sponsor areas*. In 2012, there were three sponsor areas:

- Minneapolis-St. Paul DMA
- Denver DMA
- New York state (with the exception of Long Island)

Sponsor areas are not limited to the 57 largest DMAs, however, to facilitate comparisons across years, the national results were based only on data collected from respondents from the 57 largest DMAs. Some of the 57 largest DMAs are also included in the sponsor areas and therefore were oversampled. The data from these respondents (as well as from the other respondents in the 57 largest DMAs) received an appropriate weight in the analysis in order to generate valid national results and facilitate comparison with data from other years.

As in previous years' studies, the Top-57 DMAs in the sampling frame were classified by publicity category. The original intent of the classification was to be able to assess the effect of local energy efficiency program publicity on awareness. The majority of these local efficiency programs historically have been supported by utility rate-payer funding.

¹ In previous years, the panel was recruited via random-digit dial. GfK, formerly Knowledge Networks, the firm that conducts the survey each year, believes that address-based sampling (ABS) offers advantages, including coverage of cell-phone-only households, and analysis of non-response bias. More information is available at <http://www.knowledgenetworks.com/accuracy/fall-winter2010/abs-fall2010.html>.

A decision was made to retain the same publicity classification procedure used in the past 11 years and to retain the prior year's publicity classification of the 57 largest DMAs—in essence preserving the historical classification for future study years, which was based on the following criteria:

- **High publicity:** Active local ENERGY STAR promotion *recently* sponsored by a utility, state agency, or other organization for two or more continuous years. The activities must include *sustained* promotions and publicity from non-federal sources.
- **Low publicity:** Federal campaign activities only and no *significant* regional program sponsor activities.
- **Other:** All other DMAs.

The key working definitions are below:

- **Recent:** The 2 years of activity must include the time period during which the survey was in the field.
- **Sustained:** The 2 years of activity must be continuous.
- **Significant:** In addition to any direct federal publicity efforts, a DMA's publicity efforts must include a deliberate and multifaceted regional program sponsor investment in ENERGY STAR programming, such as direct marketing efforts or the creation and distribution of promotional material.

Although the sample design was based on the 2012 publicity classifications, *low publicity* and *other publicity* are combined in the analysis and referenced as *non-high-publicity* areas. Another reason to combine these categories in the analysis is that over time, the population of low-publicity DMAs has dropped to about 15 percent, while high-publicity DMAs now account for about half of U.S. television households.

The sample was stratified by area and within an area by publicity category. Each sponsor area is also further stratified by large versus non-large DMA. The CEE members who fund the oversample for a sponsor area determine the total number of sampling points allocated to the sponsor areas as a whole. This total number of sampling points is then allocated across sponsor area strata proportional to population.

While the dataset has always been appropriately weighted in the national analysis, beginning in 2010, the number of respondents in each stratum was chosen in proportion to that stratum's share of the U.S. population living in DMAs. As in the past for the national sample, the three publicity categories (the top 57 DMAs) comprise 1,000 respondents.

This report presents the 2012 survey results at the national level and by publicity category. Results are presented on consumer recognition and understanding, and purchasing influence of the ENERGY STAR label, as well as on messaging, product purchases, and information sources that consumers use in their purchasing decisions.

In this report, the following terminology is used in comparing results across years or sub-categories. (1) The term “significant” implies statistical significance. In other words, differences between proportions that are described as “significant” are at least statistically different at the 10-percent level of significance. In some cases, the p-values are given to provide the exact level of statistical significance. (2) Unless stated otherwise, terms such as “smaller,” “larger,” “increase,” or “decrease” refer to changes that are statistically significant at the 10-percent level or better. (3) The term “similar” implies that there is no statistical difference between the results being compared at the 10-percent level of significance. In other words, the difference between the results is within the bounds that would be expected from chance variation in a random sample.

KEY FINDINGS

RECOGNITION

In 2012, 87 percent of households recognized the ENERGY STAR label when shown the label (i.e., *aided recognition*). Seventy-four percent of households recalled having seen or heard of the ENERGY STAR label without first being shown the label (i.e., *unaided recognition*).

For purposes of this analysis, respondents were said to recognize the ENERGY STAR label if they had seen or heard of the label before the survey. Recognition of the label was explored in two ways. Unaided recognition was measured by asking if the respondent had seen or heard of the ENERGY STAR label without showing the label. Delivery of the survey by Internet made it possible to measure unaided recognition. Aided recognition was measured by showing respondents the ENERGY STAR label and then asking if they had seen or heard of the label. Both methods are useful measurements of label recognition, although unaided recognition is the more conservative of the two.

Recognition results for both the 2012 and 2011 surveys are summarized in the following table. Aided and unaided recognition of the ENERGY STAR label results were similar in 2011 and 2012.

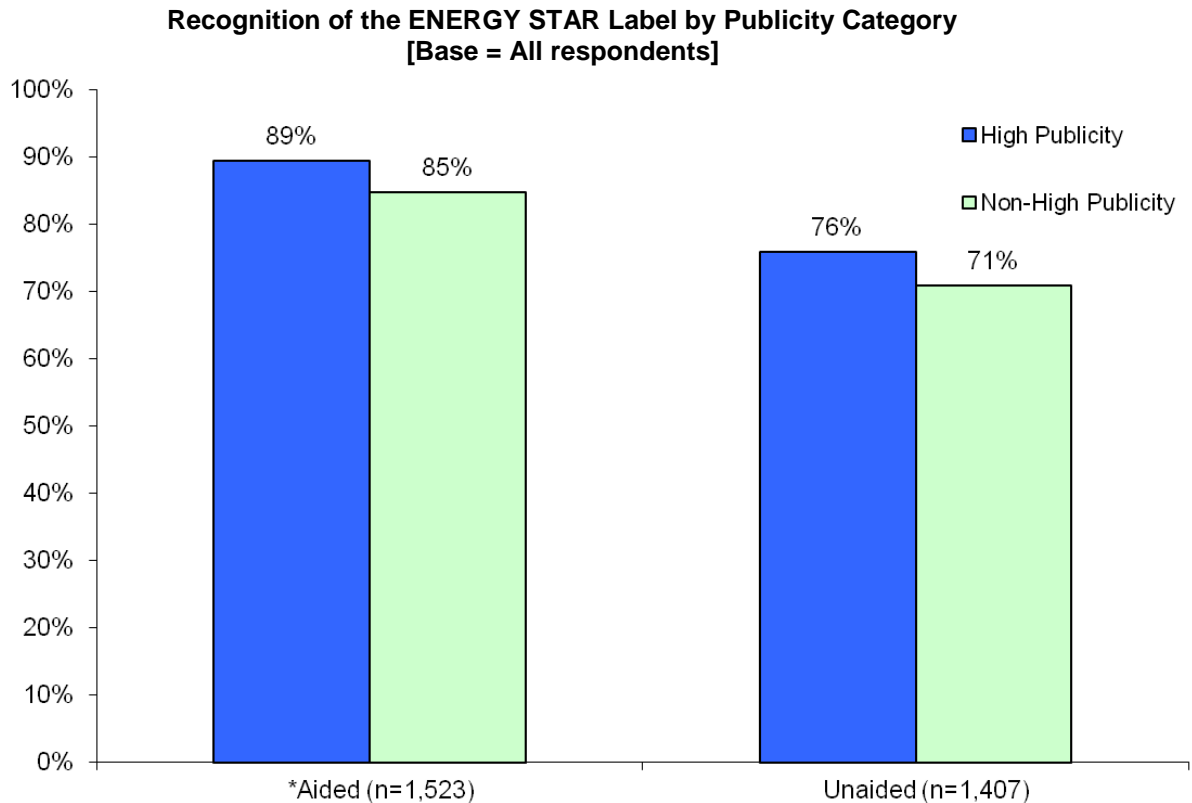
Recognition of the ENERGY STAR Label
[Base = All respondents]

Recognize ENERGY STAR Label	2012		2011	
	Aided (n=1,523)	Unaided (n=1,407)	Aided (n=976)	Unaided (n=909)
Yes	87%	74%	84%	75%
Standard error	1.3%	1.8%	1.5%	1.8%

Note: The unaided recognition results for both years were based on the question ES1: "Have you ever seen or heard of the ENERGY STAR label?" The aided recognition results were based on five questions. (1) ES3A and (2) ES3B were asked if ES1 = "yes." ES3A: "Is this the label you have seen or heard of before?"—whether the old or new label was shown was randomly determined. ES3B: "Have you seen or heard of this version of the ENERGY STAR label?" — where the label shown was the one not shown previously. (3) ES3C and (4) ES3D were asked if ES1 = "no." ES3C: "Please look at the ENERGY STAR label on the left. Have you ever seen or heard of this label?"—whether the old or new label was shown was randomly determined. ES3D: "Have you seen or heard of this version of the ENERGY STAR label?"—where the label shown was the one not shown previously. (5) ES6 was asked if either ES1 = "no" or both ES3A and ES3B = "no." ES6: "Now that you have had the opportunity to see the ENERGY STAR label, do you recall seeing or hearing anything about it before this survey?"—where both the old and new labels were shown.

Recognition by Publicity Category

Aided recognition was higher in high-publicity than non-high-publicity areas. After being shown the ENERGY STAR label (aided), 89 percent of households in high-publicity areas, and 85 percent in non-high-publicity areas recognized the label; this difference was statistically significant at the 10-percent level for aided recognition (p-value = 0.063). Unaided recognition was 76 percent in high-publicity areas and 71 percent in non-high-publicity areas; this difference was not statistically significant (p-value = 0.173).



* High- and non-high-publicity area proportions are statistically different from each other at the 10-percent level of significance (p-value \leq 0.10).

Product Associations

Households that recognized the ENERGY STAR label (aided) indicate strong association between the label and products historically supported by regional energy efficiency programs (refrigerators, washing machines, dishwashers, compact fluorescent light bulbs, etc.).

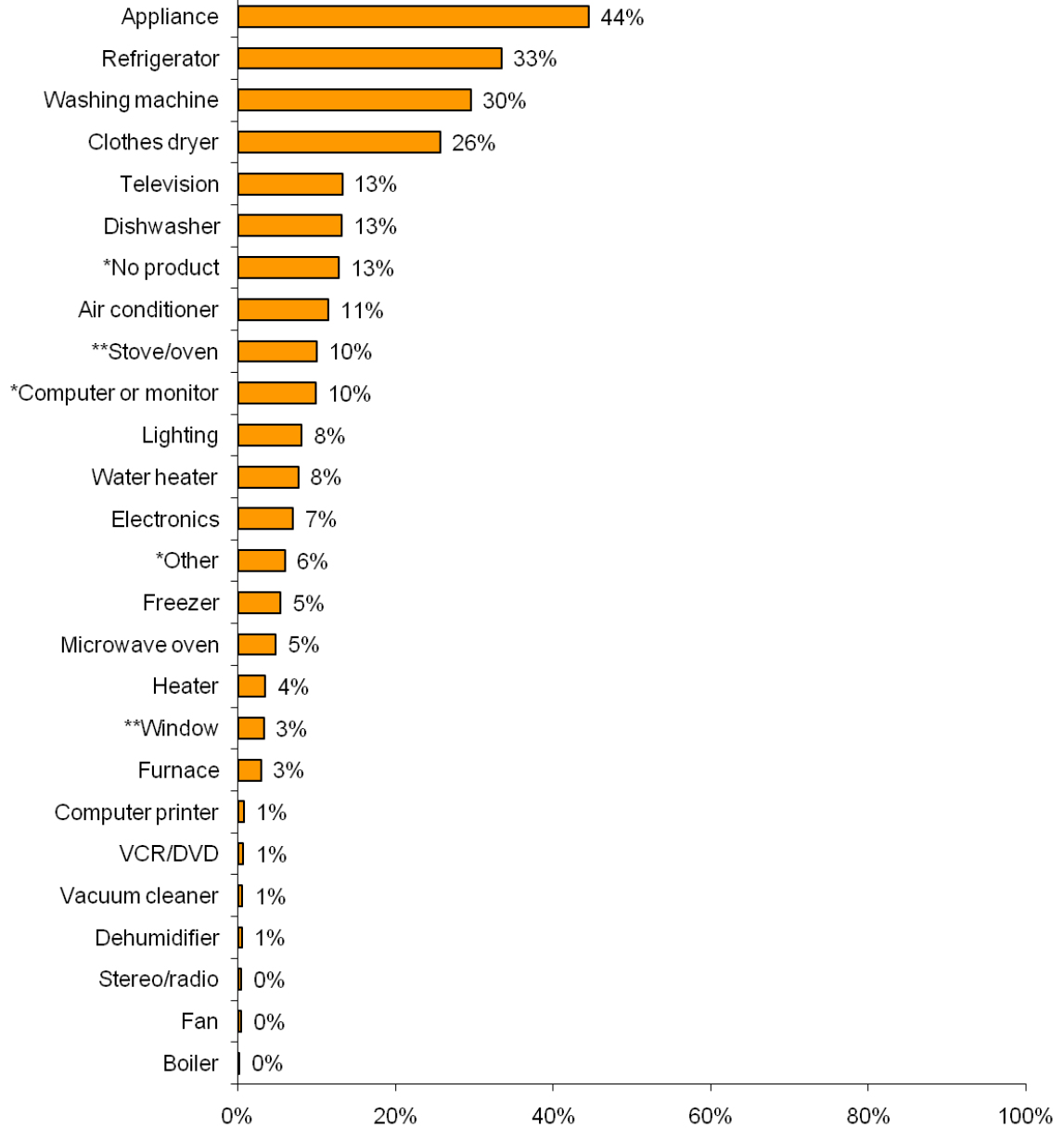
Survey respondents that recognized the ENERGY STAR label (aided) were asked, “What types of products, goods, and services do you think of when you think of the ENERGY STAR label?” (survey question QA). The figure on the next page presents the results for this question, which indicate *unprompted* product associations.

Unprompted, appliances, refrigerators, and washing machines showed the strongest associations with the label at 44, 33, and 30 percent, respectively. Though the product category is not yet eligible for ENERGY STAR certification, clothes dryers showed the fourth strongest association with the label at 26 percent. The next most strongly associated products (unprompted) were televisions, dishwashers, and air conditioners, at 13, 13, and 11 percent, respectively. Of the top six product associations, none are significantly different from the 2011 results. The list of products mentioned by households without prompting also includes two products, in addition to clothes dryers, that do not have an ENERGY STAR specification: microwave ovens and stoves/ovens. Computers or monitors showed a significant increase from 2011 in unprompted association, and stoves/ovens and windows showed a significant decrease; however, these products were mentioned by relatively few respondents (10, 10, and 3 percent respectively).

When prompted, 83 percent of households had seen the label on refrigerators. Washing machines (72 percent) and dishwashers (67 percent) were the next products most commonly associated with the ENERGY STAR label. Televisions, windows, microwave ovens, central A/C, and gas water heaters followed next in a range of 33 to 47 percent. While 45 percent of households associated microwave ovens with the ENERGY STAR label, as mentioned above, they are not a product category eligible for ENERGY STAR labeling.

Unprompted Product Association with the ENERGY STAR Label

[Base = Recognize label (aided), n = 1,165]

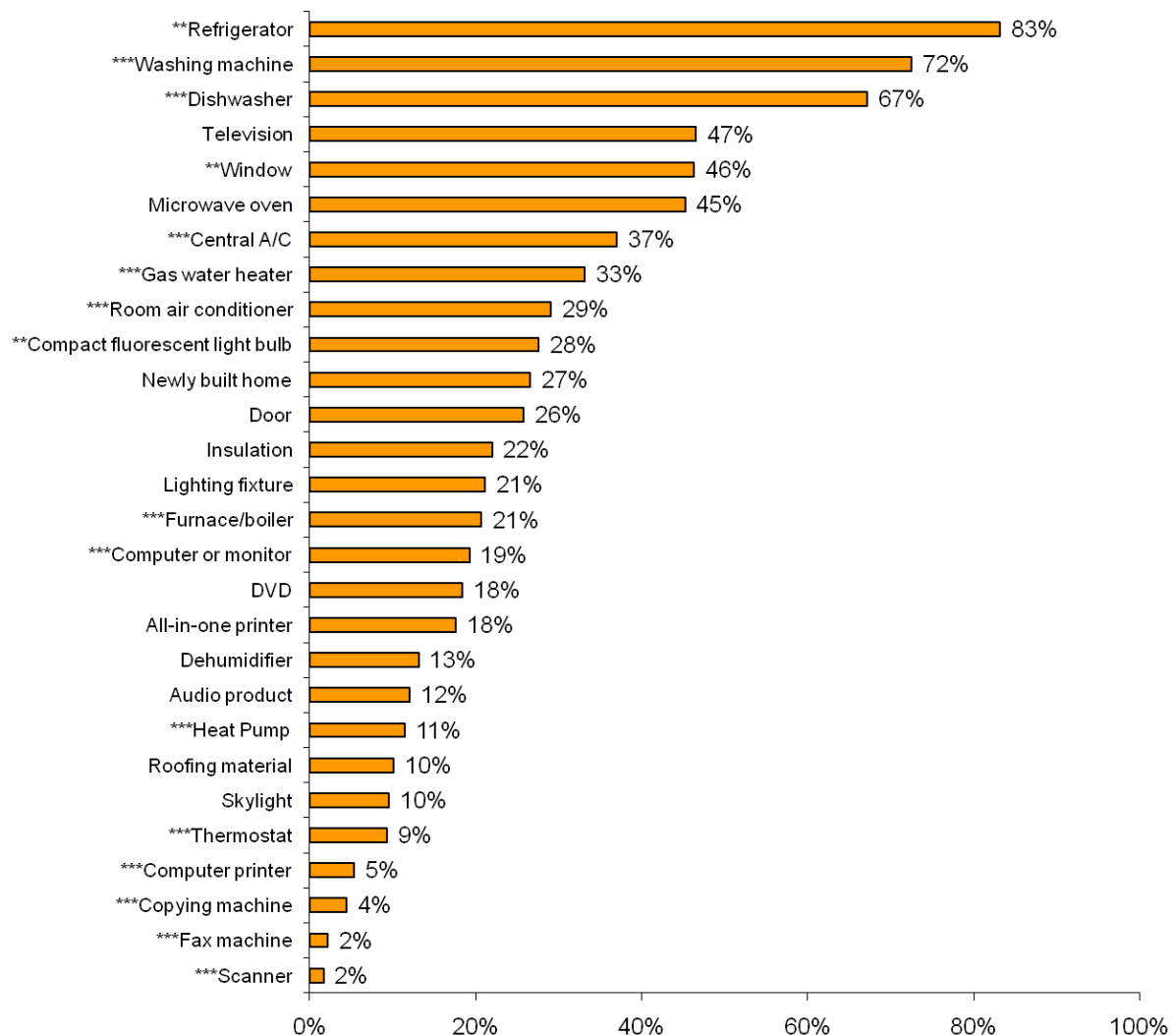


Note: QA: "What types of products, goods, or services do you think of when you think of the ENERGY STAR label? Please write your answers below."

** 2012 and 2011 proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05). The proportion of households in 2012 is smaller than 2011 for stove/oven and window.

* 2012 and 2011 proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10). The proportion of households in 2012 is larger than 2011 for computer or monitor.

Prompted Product Association with the ENERGY STAR Label
[Base = Recognize label (aided)]²



Note: Q5 (a, b, and c): “Now we’re going to ask you about several groups of products. As you review the list, please select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.”

*** 2012 and 2011 proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01). The proportion of households in 2012 is smaller than 2011 for washing machine, dishwasher, central A/C, gas water heater, room air conditioner, furnace/boiler, computer or monitor, heat pump, thermostat, computer printer, copying machine, fax machine, and scanner.

** 2012 and 2011 proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05). The proportion of households in 2012 is smaller than 2011 for refrigerator, window, and compact fluorescent light bulb.

² Respondents were asked about three sets of product groupings: (1)(a) Heating and Cooling Products and Home Office Equipment, (2)(b) Home Appliances/Lighting and Home Electronics, and (3)(c) Building Materials and Buildings. The sample sizes, n, for these sets of product groupings are 1185, 1186, and 1151 respectively.

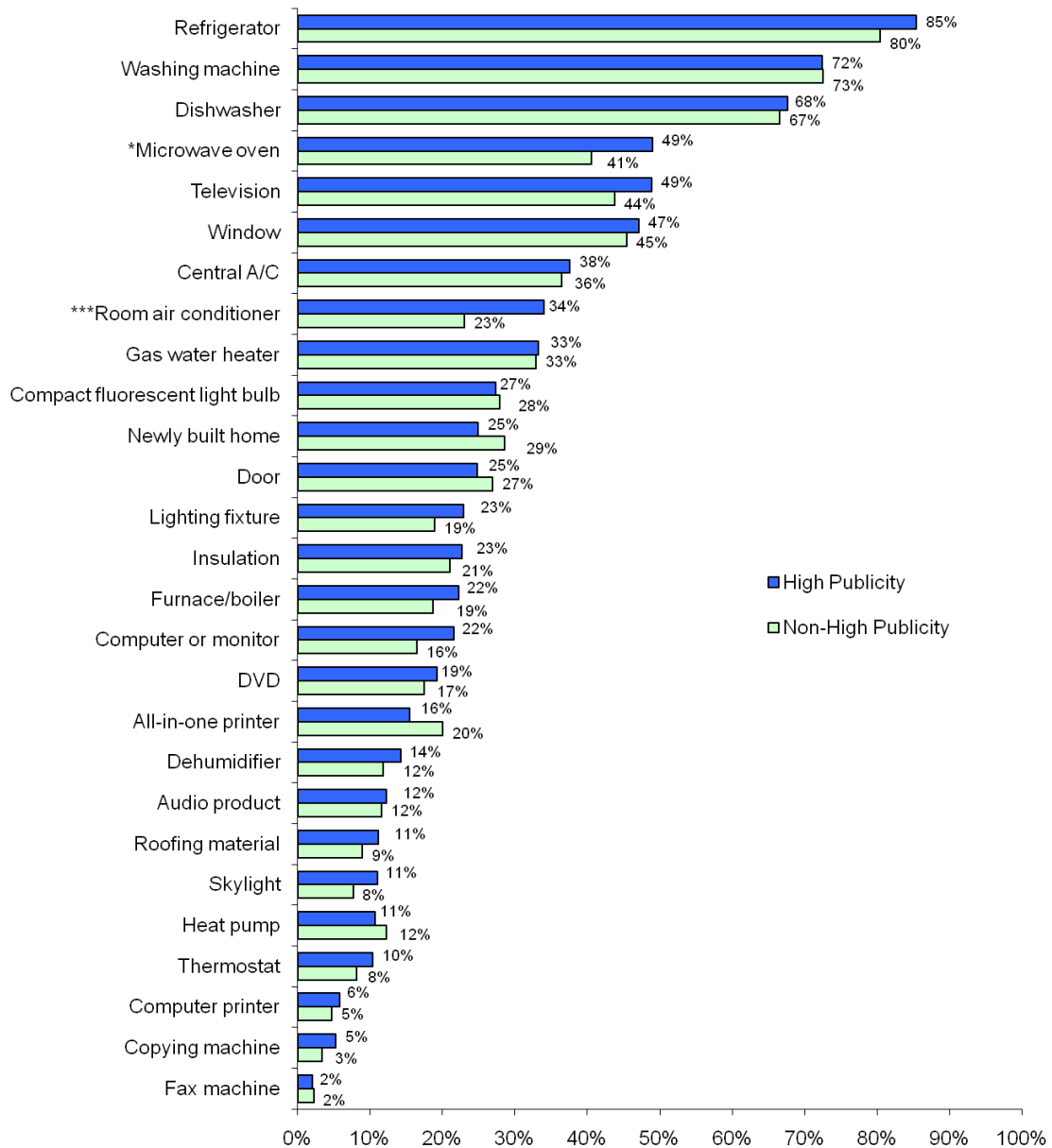
Product Associations by Publicity Category

Regional energy efficiency program sponsors have traditionally focused on promoting ENERGY STAR certified lighting, refrigerators, room air conditioners, washing machines, dishwashers, programmable thermostats³, and new homes. More recently, program sponsors have begun to promote ENERGY STAR certified water heaters and TVs in some parts of the country. Key findings from this year's analysis of product association by publicity category include the following.

- A significantly larger proportion of households in high-publicity areas than non-high-publicity areas associated microwave ovens (which do not qualify for ENERGY STAR labeling) (49 percent and 41 percent, respectively) and room air conditioners (34 percent and 23 percent, respectively) with the ENERGY STAR label when prompted.

³ EPA suspended the use of the ENERGY STAR label for programmable thermostats December 31, 2009. While EPA recognizes the potential for programmable thermostats to save significant amounts of energy, there continue to be questions regarding the net savings and environmental benefits achieved due to variations in consumer understanding and usage of programmable thermostats. EPA is working to develop a related Residential Climate Control specification. For more information visit: www.energystar.gov/productdevelopment.

Prompted Product Association with the ENERGY STAR Label by Publicity Category
[Base = Recognize label (aided)⁴]⁵



*** High- and non-high-publicity area proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01).

* High- and non-high-publicity area proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10).

⁴ As discussed in footnote 3, respondents were asked about three sets of product groupings. In Heating and Cooling Products and Home Office Equipment, the sample sizes for high- and non-high- publicity areas are 678 and 507, respectively. For Home Appliances/Lighting and Home Electronics they are 681 and 505, and for Building Materials and Buildings they are 660 and 491.

⁵ The percent labels on the bars are rounded to the nearest whole number. Therefore bars with the same label may not be the same length.

UNDERSTANDING

In 2012, 82 percent of households had at least a general understanding of the ENERGY STAR label. Furthermore, the proportion of households that exhibited only a general understanding (12 percent) was small compared with the proportion that exhibited a high understanding (70 percent). The level of understanding was investigated by asking respondents what messages came to mind when they saw the ENERGY STAR label. Based on the reported messages, a respondent's understanding was classified as *high*, *general*, or *no understanding*.

The 2012, 2011, and 2010 survey results on the level of understanding of the ENERGY STAR label are provided in the following table. The proportion of respondents with a high understanding of the label has decreased to 70 percent from 75 percent in 2011. This difference is statistically significant at the 5 percent level ($p\text{-value}=0.0295$). However, the proportion of respondents with at least a general understanding of the label is similar from 2011 to 2012, 85 percent and 82 percent, respectively ($p\text{-value}=0.1495$). There are no statistical differences in the level of understanding between 2012 (70 percent) and 2010 (73 percent).

Understanding of the ENERGY STAR Label
[Base = All respondents]

Level of Understanding of the Label	2012 (n=1,579)	2011 (n=1,017)	2010 (n=1,091)
High understanding	70%	75%	73%
General understanding	12%	10%	11%
No understanding	18%	15%	16%
Total	100%	100%	100%

Note: The level of understanding of the ENERGY STAR label is determined using the open-ended responses to two questions (1) ES2: "What does the ENERGY STAR label mean to you?", and (2) ES4A1: "Please look at the ENERGY STAR labels on the left. Type the messages that come to mind when you see the ENERGY STAR label."

In all years except 2006, all respondents were asked either ES2 or ES4A1, depending on their answers to ES1. Respondents that answered "Yes" to ES1 were then asked ES2, while all other respondents were asked ES4A1.

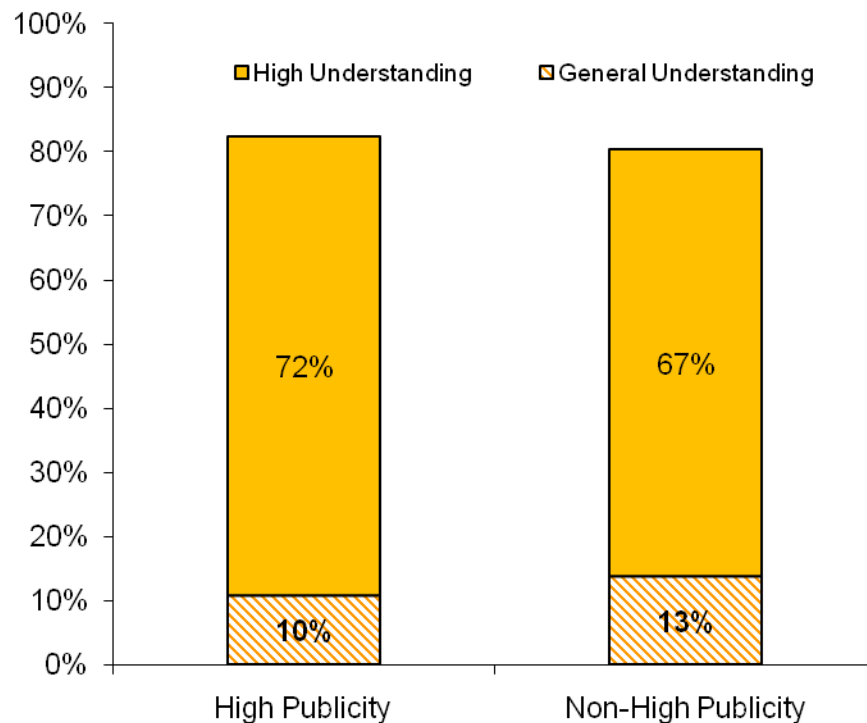
Understanding by Publicity Category

Eighty-two percent of households in high-publicity areas had at least a general understanding of the label compared with 80 percent of households in non-high-publicity areas. Additionally, a large percent of households exhibited a high degree of understanding in both high- (72 percent) and non-high-publicity areas (67 percent). Neither of these differences are significant at the 10 percent level.

Understanding of the ENERGY STAR Label by Publicity Category
[Base = All respondents]

Publicity Category	At Least General Understanding of Label
High	82%
Non-high	80%
Difference (High minus Non-high)	2%
p-value	0.492

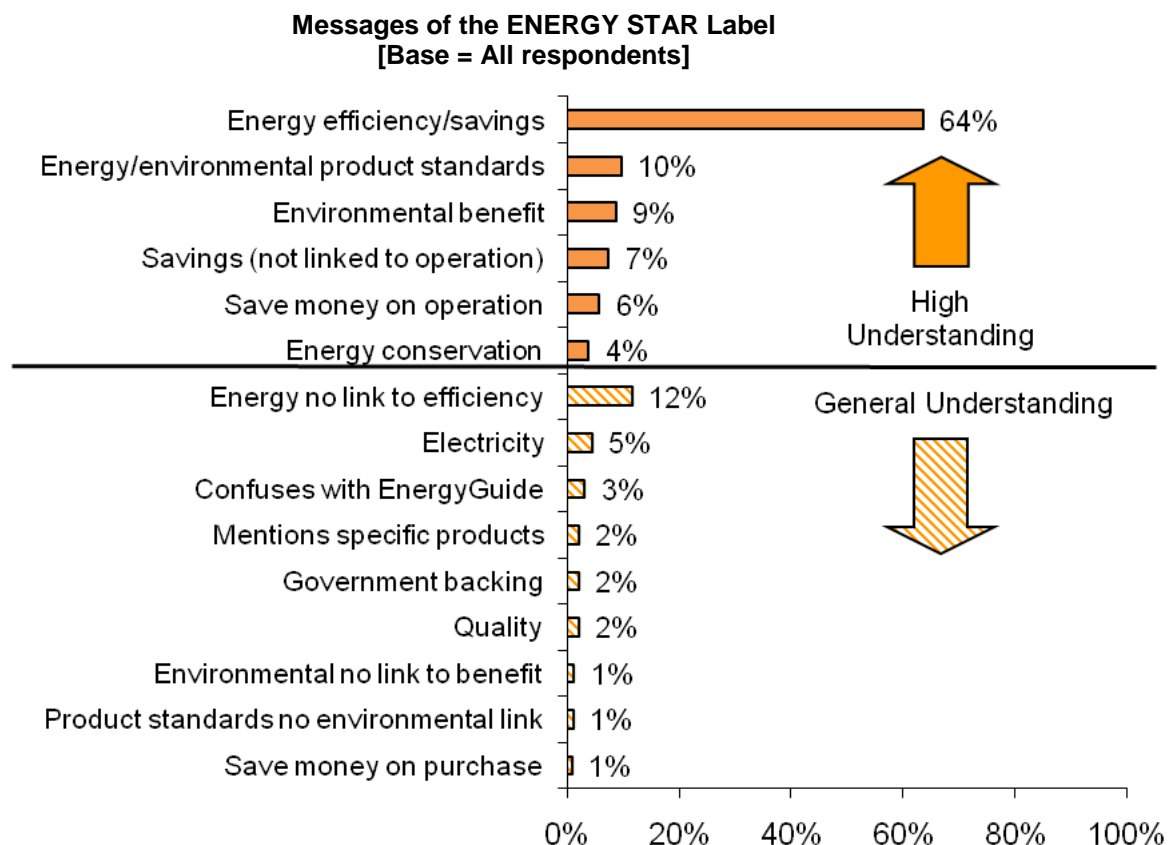
Understanding of the ENERGY STAR Label by Publicity Category
[Base = All respondents]



Understanding of Label Messaging

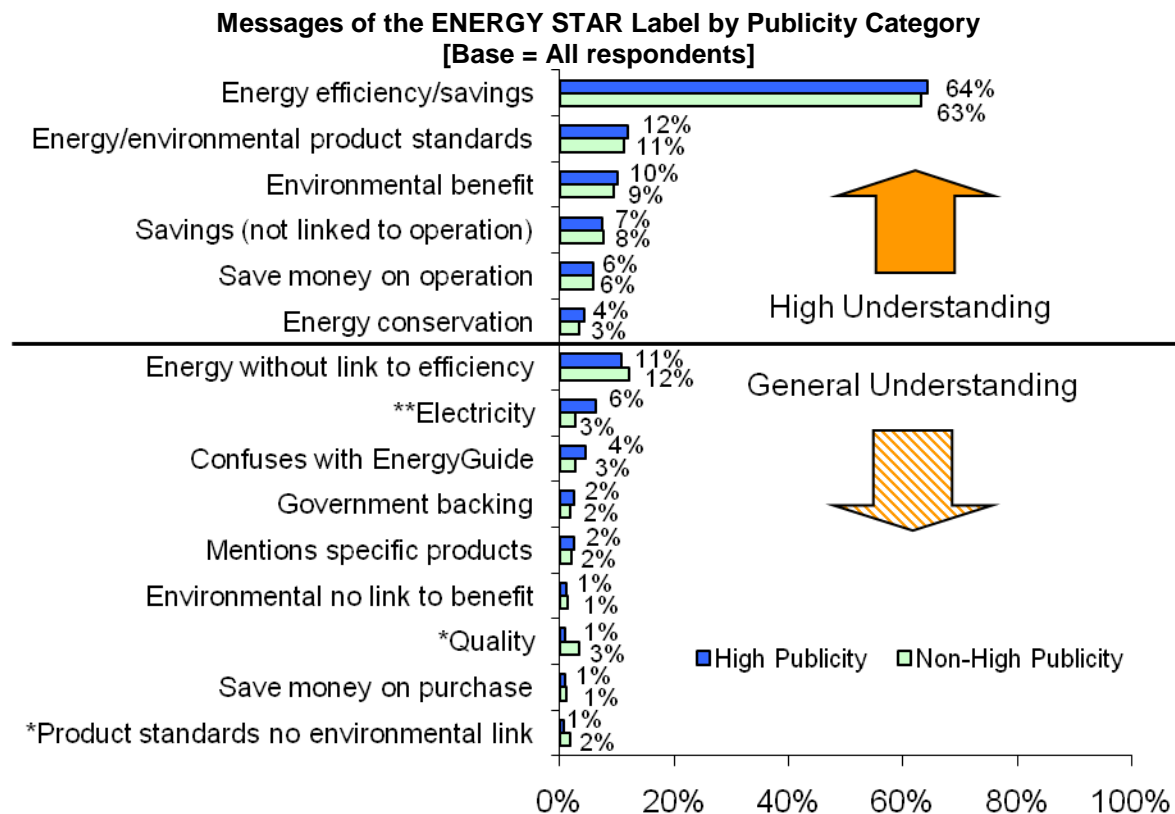
Open-ended responses to the questions on the level of understanding of the ENERGY STAR label are an indicator of how effectively EPA communicates its messages through the label. These responses are used in the analysis of understanding in the previous section. By far, the most common message associated with the label was “energy efficiency or energy savings,” which is considered high understanding of the label. Sixty-four percent of households surveyed associated the ENERGY STAR label with this message. The second most common response was “energy/environmental product standards” offered by 10 percent of households, which is also considered high understanding of the label.

Between 2011 and 2012 there was a decrease in the proportion of respondents who associated the ENERGY STAR label with “environmental benefit” (11 percent to 9 percent) and “savings (not linked to operation)” (10 percent to 7 percent) and there was an increase in “save money on operation” (5 percent to 6 percent) and “energy conservation” (3 percent to 4 percent). Proportions are statistically similar for all messages in 2011 and 2012.



Understanding of Label Messaging by Publicity Category

A similar number of respondents in high-publicity regions (64 percent) and non-high-publicity regions (63 percent) associated the ENERGY STAR label with “energy efficiency/savings.” More respondents (6 percent) in high-publicity regions than in non-high-publicity regions (3 percent) associated the label with “electricity”; this difference is significant at the 5-percent level. Fewer respondents in high-publicity than in non-high publicity regions associated the label with “quality” and “product standards no environmental link” (1 percent and 3 percent and 1 percent and 2 percent, respectively); these differences are significant at the 10-percent level and were mentioned by relatively few respondents. For other messages, the proportion of households that associated the message with the ENERGY STAR label was similar for high- and non-high-publicity areas.



** High- and non-high-publicity area proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05).

* High- and non-high-publicity area proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10).

Understanding of the ENERGY STAR Label by Aided Recognition

Households that recognized the ENERGY STAR label when shown the label were more likely to have at least a general understanding of the label than those that did not recognize the label. In 2012, 87 percent of households that recognized the ENERGY STAR label had at least a general understanding of it, while among households that did not recognize the label, 53 percent had at least a general understanding of it. This 34 percentage point difference in understanding between households that recognized the label and those that did not is statistically significant at the 1-percent level.

Among households that did not recognize the label when shown it, the proportion that had at least a general understanding of the label in 2012 (53 percent) is statistically different (lower) from the 2010 result (74 percent). It is not statistically different from the 2011 result (58 percent), suggesting the 2010 result is not part of an upward trend.

Understanding of the ENERGY STAR Label by Aided Recognition
[Base = All respondents]

Recognize ENERGY STAR Label Aided	At Least General Understanding of Label		
	2012	2011	2010
Yes	87%	90%	87%
No	53%	58%	74%
Difference (Yes minus No)	34%	32%	13%
p-value	<0.0001	<0.0001	0.002

INFLUENCE

The survey provided some insight into consumers' decisions to purchase ENERGY STAR-labeled products, including the following:

- The proportion of households nationwide that recognized the ENERGY STAR label and knowingly purchased an ENERGY STAR-labeled product
- The influence of the ENERGY STAR label on purchase decisions
- The role of rebates or financing in decisions to buy ENERGY STAR-labeled products
- The loyalty of purchasers to ENERGY STAR-labeled products

Purchases of ENERGY STAR-labeled Products

In order to estimate the percent of *all* households that knowingly purchased an ENERGY STAR product, the following three proportions were multiplied:

- The proportion of all households that recognized the ENERGY STAR label (aided)
- Of the households that recognized the label (aided), the proportion that purchased a product in a product category that has an ENERGY STAR specification
- Of the households that recognized the label (aided) and purchased a product in a relevant category, the proportion that knowingly purchased an ENERGY STAR-labeled product

For each of the three proportions, the results for 2011 and 2012 are similar. In 2012, of the households that recognized the label (aided) and purchased a product in a relevant product category, 75 percent purchased an ENERGY STAR-labeled product.

**National Household Market Penetration of
ENERGY STAR Products by Year**

	Aided Recognition (2011 n=976) (2012 n=1,523)	Purchased Product (2011 n=829) (2012 n=1,334)	Knowingly Purchased ENERGY STAR product (2011 n=423) (2012 n=638)
2011	84%	67%	78%
2012	87%	63%	75%
Difference	-3.0%	3.9%	2.6%
p-value	0.119	0.177	0.477

Overall, 41 percent of all households knowingly purchased an ENERGY STAR product in the past 12 months. This is similar to the 2011 result (44 percent).

**Knowingly Purchased ENERGY STAR Product By Year
(Base = All respondents)**

Purchased ENERGY STAR product	2012 (n=1,523)	2011 (n=976)
Estimate (yes)	41%	44%
Standard Error	2.4%	2.5%

Purchases of ENERGY STAR by Publicity Category

The proportion of *all* households that knowingly purchased an ENERGY STAR product in high- versus non-high-publicity areas is 45 and 37 percent, respectively. This difference is statistically significant at the 10-percent level (p-value = 0.0907). The proportions of respondents who knowingly purchased ENERGY STAR products in high-publicity areas and non-high-publicity areas was similar between 2011 and 2012.

**Knowingly Purchased ENERGY STAR
Product by Publicity Category and Year**
[Base = All respondents]

Publicity Category	% Households	
	2012	2011
High	45%	44%
Non-High	37%	43%
Difference (High minus Non-High)	8%	1%
p-value	0.091	0.822

As noted above, three proportions are used to calculate the proportion of *all* households that knowingly purchased an ENERGY STAR product: aided recognition of the program label, purchase of a product in a relevant product category, and the proportion of those purchasers that knowingly bought ENERGY STAR products. In 2012, the difference between high- and non-high-publicity is statistically significant at the 10-percent level for aided recognition of the program label and the differences between high- and non-high-publicity areas are not statistically significant for the other two proportions. The only proportion that changed from 2011 to 2012 were purchased products for non-high-publicity areas (p-value = 0.0991).

**National Household Market Penetration of
ENERGY STAR Products by Publicity Category**

	2012			2011
	Aided Recognition (n=1,523)	Knowingly Purchased ENERGY STAR product (n=638)	Purchased Product (n=1,334)	Purchased Product (n=829)
High Publicity	89%	77%	65%	66%
Non-High Publicity	85%	72%	61%	67%
Difference	4.7%	5.5%	4.4%	-1.1%
p-value	0.063	0.298	0.283	0.784

Influence of the ENERGY STAR Label

In 2012, nearly three quarters (73 percent) of the households that recognized the ENERGY STAR label (aided), and knowingly purchased an ENERGY STAR-labeled product reported having been influenced “very much” or “somewhat” by the label. For 11 percent of households, the label influenced their purchase decisions “slightly” and 16 percent of households reported the presence of the ENERGY STAR label had no influence on their purchase. These findings are not significantly different from those of 2011.

Influence of the ENERGY STAR Label on Purchase Decisions⁶
[Base = Recognize label (aided) and ENERGY STAR purchasers]

Influence of the Label on Purchasing Decisions	2012 (n=458) Maximum	2011 (n=305) Maximum
Very much	46%	50%
Somewhat	27%	26%
Slightly	11%	12%
Not at all	16%	12%
Total	100%	100%

Note: Q8: “For each ENERGY STAR-labeled product you purchased, how much did the ENERGY STAR label influence your purchase decision?”

⁶ Respondents that recognize the label (aided) and purchased an ENERGY STAR-labeled product are asked Q8 (“For each ENERGY STAR-labeled product you purchased, how much did the ENERGY STAR label influence your purchase decision?”) for each ENERGY STAR-labeled product they purchased. The results presented in this table use the highest influence rating provided by respondents that purchased more than one ENERGY STAR-labeled product.

Influence of the ENERGY STAR Label by Publicity Category

The purchase decisions of 44 percent of households in high-publicity areas were influenced "very much" by the ENERGY STAR label, compared to 48 percent in non-high-publicity areas; this difference is not significant at the 10-percent level. When these proportions are added to the proportions of households for which the ENERGY STAR label was "somewhat" influential in their purchasing decisions, the high- to non-high-publicity area comparison is 69 to 77 percent, respectively, which is not statistically different at the 10-percent level of significance. The combined "very much, somewhat, or slightly" proportion is 80 percent in high-publicity areas, and 87 percent in non-high-publicity areas, which is not statistically different at the 10 percent level.

Influence of the ENERGY STAR Label on Purchase Decisions by Publicity Category [Base = Recognize label (aided) and ENERGY STAR purchasers, n = 458]

Publicity Category	Very much	Very much or somewhat	Very much, somewhat, or slightly
High	44%	69%	80%
Non-High	48%	77%	87%
Difference (High minus Non-High)	-4%	-8%	-6%
p-value	0.592	0.209	0.266

Rebate and Financing Influence

From 2011 to 2012, the percentage of households that knowingly purchased an ENERGY STAR-labeled product and received rebates or reduced-rate financing was at 18 percent. Of these households in 2012, 42 percent would have been “very likely” to purchase the ENERGY STAR product if financial incentives had not been available. Although this is a decrease of 18 percentage points from the previous year (60 percent), it is not statistically significant.

Another 32 percent would have been “somewhat likely” to purchase without a rebate in 2012. This leaves 14 percent that would have been “slightly likely” and 12 percent “not at all likely.” None of these are significantly different from 2011.

Received Financial Incentive for an ENERGY STAR Product Purchased [Base = Recognize label (aided) and ENERGY STAR purchaser]

Received Financial Incentive for an ENERGY STAR Product Purchased	% Households	
	2012 (n=429)	2011 (n=281)
Yes	18%	24%
No	82%	76%
Total	100%	100%

Note: Q9: “Did you receive rebates or reduced-rate financing for any ENERGY STAR-labeled product(s) you purchased?”

Influence of Rebates and Financing on Purchasing Decisions [Base = Recognize label (aided), ENERGY STAR purchaser, and received an incentive]

Likelihood Purchase ENERGY STAR Product Without Financial Incentive	% Households	
	2012 (n=75)	2011 (n=65)
Very likely	42%	60%
Somewhat likely	32%	27%
Slightly likely	14%	10%
Not at all likely	12%	3%
Total	100%	100%

Note: Q10: “If rebates or reduced-rate financing had not been available, how likely is it that you would have purchased the ENERGY STAR-labeled product?”

Loyalty to ENERGY STAR

Loyalty to ENERGY STAR is investigated by asking respondents who knowingly purchased an ENERGY STAR-labeled product how likely they would be to recommend ENERGY STAR products to a friend. Respondents were asked to report this likelihood on a scale of 0 to 10, where 0 means “extremely unlikely” and 10 means “extremely likely.” As can be seen in the table below, 30 percent of households who knowingly purchased an ENERGY STAR-labeled product reported they would be “extremely likely” to recommend ENERGY STAR products to a friend. This proportion is similar to the 2011 value.

The likelihood of recommending ENERGY STAR products to a friend is greater than “6” for 75 percent of these households. This is similar to the previous year’s result of 78 percent.

Loyalty to ENERGY STAR
[Base = Recognize label (aided) and purchasers]

Likelihood Recommend ENERGY STAR Products	% Households	
	2012 (n=481)	2011 (n=320)
10 - Extremely likely	30%	32%
9	18%	22%
8	17%	13%
7	10%	11%
6	7%	6%
5	12%	11%
4	2%	3%
3	1%	0%
2	1%	0%
1	0%	2%
0 - Extremely unlikely	2%	0%
Total	100%	100%

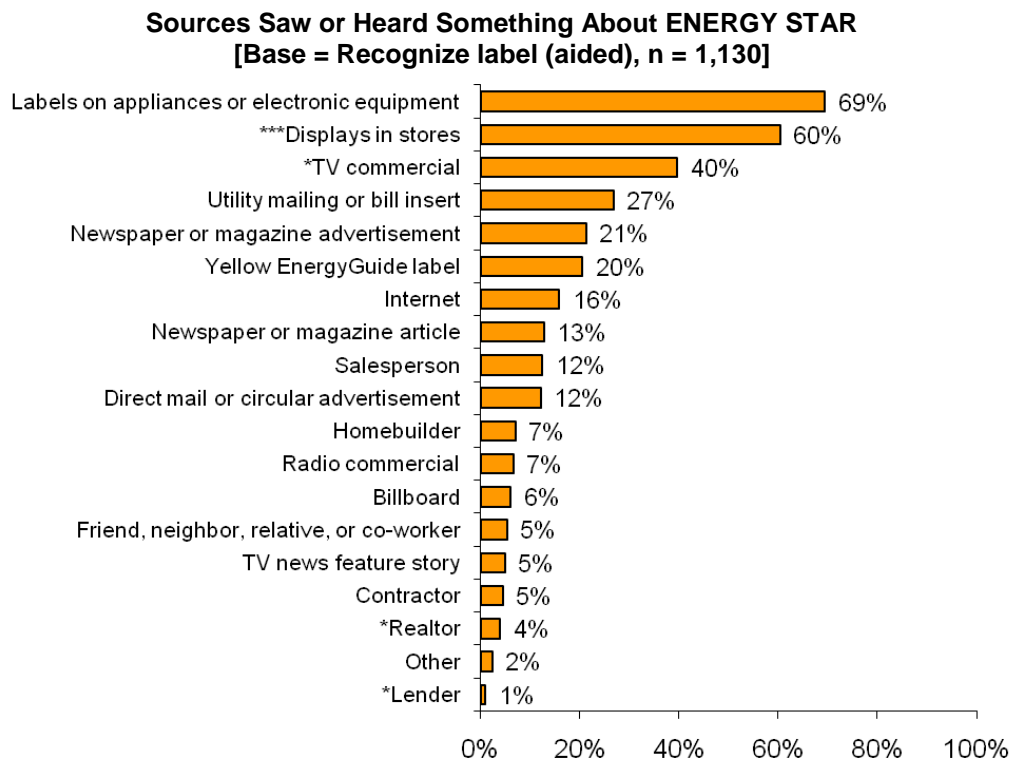
Notes: Q11: “How likely are you to recommend ENERGY STAR-labeled products to a friend?” is measured on an 11-point scale, where 0 = “Extremely unlikely” and 10 = “Extremely likely.”

INFORMATION SOURCES

Sources Seen

Sixty-nine percent of households have seen something about ENERGY STAR on appliance or electronics labels, and 60 percent of households have seen something about ENERGY STAR in store displays. Forty percent of households heard or saw something about ENERGY STAR on TV commercials. Between 20 and 27 percent of households saw something about ENERGY STAR in utility mailings or bill inserts, in newspaper or magazine advertisements or on EnergyGuide labels.

Significantly fewer households in 2012 than in 2011 saw something about ENERGY STAR in store displays (60 percent compared to 69 percent). The proportion of households informed by TV commercials fell from 46 percent in 2011 to 40 percent in 2012. The proportion informed by their realtor increased from two percent in 2011 to four percent in 2012 and the proportion informed by their lender increased from zero percent in 2011 to one percent in 2012. All other responses were statistically similar to the proportions from the 2011 survey.



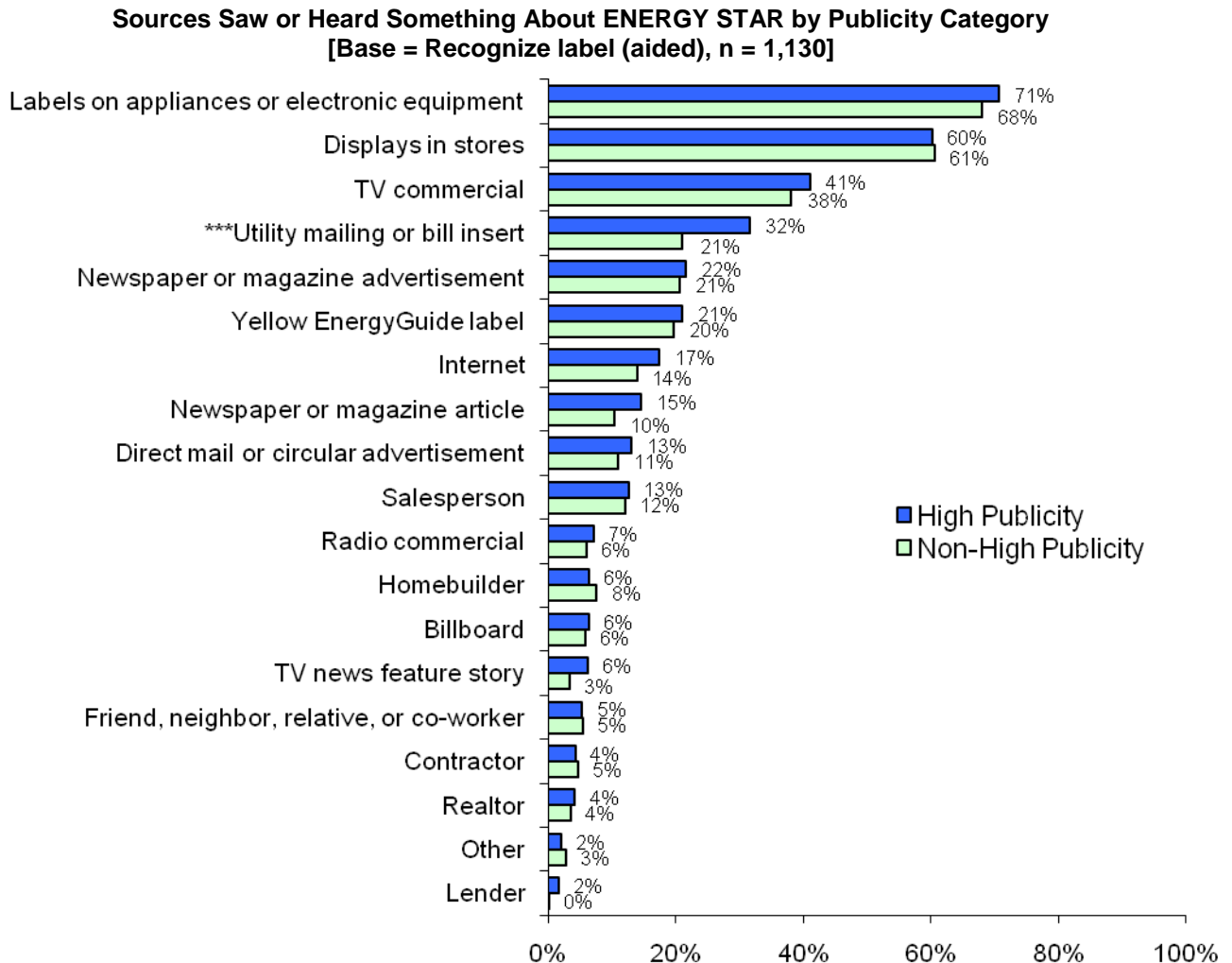
Note: SO1: "Where did you see or hear something about ENERGY STAR? Please mark all that apply."

*** 2012 and 2011 proportions are statistically different from each other at the 1-percent level of significance ($p\text{-value} \leq 0.01$). Proportion of households in 2012 is smaller than in 2011 for displays in stores.

* 2012 and 2011 proportions are statistically different from each other at the 10-percent level of significance ($p\text{-value} \leq 0.10$). Proportion of households in 2012 is smaller than in 2011 for TV commercial, Realtor and Lender.

Sources Seen by Publicity Category

The proportion of households that heard or saw something about ENERGY STAR was significantly larger in high- than in non-high-publicity areas for utility mailings or bill inserts (32 percent and 21 percent, respectively). Other sources of information are not significantly different between high- and non-high-publicity areas.



*** High- and non-high-publicity area proportions are statistically different from each other at the 1-percent level of significance ($p\text{-value} \leq 0.01$). Proportion of households in high-publicity areas are higher than in non-high.

APPENDIX A: DETAILED METHODOLOGY

During October 2012, the Consortium for Energy Efficiency (CEE) fielded a questionnaire to obtain information at the national level on consumer awareness and understanding of the ENERGY STAR label, the value accrued to the label in the eyes of consumers, satisfaction with labeled products, and other ENERGY STAR-related information. The questionnaire was similar to the Internet/WebTV-based questionnaires fielded in previous years (2001 through 2011). As in the 12 previous years, CEE and its members sponsoring the survey made the survey data available to the U.S. Environmental Protection Agency (EPA) for analysis. In 2001, a rigorous comparative analysis of the results obtained via a mail survey versus an Internet survey was conducted. The results from the two survey methods were comparable for most major indicators.⁷ Results from that time-frame were also analogous to telephone surveys for aided recognition.⁸

This report discusses the results of the 2012 CEE ENERGY STAR Household Survey, building on prior years' survey results and focusing on the extent to which consumers recognized the ENERGY STAR label, understood its intended messages, and utilized (or were influenced by) the label in their energy-related purchase decisions. Research questions of interest included:

- Where do consumers see or hear about the ENERGY STAR label?
- How does increased publicity impact consumer ENERGY STAR label recognition, understanding, and influence?
- Which key messages about the ENERGY STAR label are consumers retaining?
- Do consumers demonstrate loyalty to the ENERGY STAR label?

The survey was fielded from October 4 through October 15, 2012.

The remainder of Appendix A discusses the questionnaire design, sampling and weighting methodologies, data collection, and the national analysis. See Appendix D for survey questions.

⁷ National Analysis of CEE 2001 ENERGY STAR Household Surveys. U.S. EPA, 2002.

⁸ Tannenbaum, Bobbi and Shel Feldman. "ENERGY STAR Awareness as a Function of Survey Method." IEPEC, 2001.

1 QUESTIONNAIRE DESIGN

In 2012, CEE conducted the ENERGY STAR survey using a questionnaire designed to be delivered by Internet/WebTV. The survey was conducted via an interactive Internet format with a random sample of households that are members of an Internet-based panel. Both the panel as a whole and the sample of households completing the survey were selected by address-based sampling (ABS) and recruited by telephone.⁹ Participants in this survey were then randomly selected from the panel. Only one member per household in the random sample was contacted. Households selected for previous years' surveys were not eligible to participate in the 2012 survey.

The panel is designed to be representative of the U.S. population. Panel members without their own Internet access are provided with a laptop and an Internet service connection. Households that already have Internet service receive other incentives to participate in the panel. Panel members respond to questionnaires administered to them via the Internet. They receive no more than three to four short questionnaires each month, and are expected to respond to a certain percentage of them.

Data collected using the 2012 Internet questionnaire may in most cases be compared with data collected using the internet questionnaires fielded in previous years, for which CEE was also responsible.

1.1 Survey Objectives

CEE had several broad objectives in designing the 2012 questionnaire including:

- To fine-tune the questionnaire based on lessons learned from prior years' analyses of the CEE survey while maintaining the ability to analyze the results of the 2012 survey against those from the 2011 CEE survey

⁹ In previous years, the panel was recruited via random-digit dial. GfK, formerly Knowledge Networks, believes that ABS offers advantages, including coverage of cell-phone-only households, and analysis of non-response bias. More information is available at <http://www.knowledgenetworks.com/accuracy/fall-winter2010/abs-fall2010.html>.

The 2012 Internet questionnaire addressed the following:

- Respondent recognition and understanding of the ENERGY STAR label
- Key messages communicated by the ENERGY STAR label
- Products on which respondents have seen the ENERGY STAR label
- Products that respondents have shopped for or purchased in the past year
- Products that respondents have purchased that displayed the ENERGY STAR label on the product, packaging, or instructions
- Influence of the presence or absence of the ENERGY STAR label on the purchase decision
- Whether purchases of ENERGY STAR-labeled products involved rebates or reduced-rate financing
- Likelihood of having purchased ENERGY STAR-labeled products in the absence of rebates or reduced-rate financing
- Likelihood of recommending ENERGY STAR-labeled products to a friend and other measures of loyalty to the ENERGY STAR label
- Satisfaction with ENERGY STAR-labeled products versus products without the ENERGY STAR label
- Demographic questions (most of the demographic questions were not asked in the Internet survey as the demographic characteristics of the respondents were already on file)
- Recognition and understanding of the yellow EnergyGuide label

1.2 Internet Questionnaire

The interactive format of an Internet questionnaire allows questions to be asked in a way that is not possible with a printed questionnaire. On printed questionnaires, respondents can see questions in advance and may be tempted to read the entire questionnaire before completing it, potentially educating themselves in a limited way about the subject and affecting their responses.

The Internet questionnaires (after questions about the yellow EnergyGuide label) ask respondents—without showing the ENERGY STAR label—whether they have ever seen or heard of the ENERGY STAR label. Responses to this question should thus be comparable to those obtained through a telephone survey. The Internet questionnaires then show the ENERGY STAR label(s) (which is not possible with a telephone survey) and ask again about recognition and understanding. As a result, responses to these questions should be comparable to those obtained through a mail survey where respondents are shown the label.

Another difference between a mail questionnaire and an Internet questionnaire is that the latter—like a telephone questionnaire using computer-assisted telephone interviewing (CATI)—can program lines of questions based on responses to earlier questions. For example, respondents to an Internet questionnaire who say they bought a given product in the past year can then be asked whether that specific product (or its packaging or instructions) had the ENERGY STAR label.

Thus, the Internet survey is able to combine some of the attributes of both print and telephone surveys.

1.3 Changes to the Questionnaire

The 2012 questionnaire was very similar to the 2011 questionnaire. The only changes to the 2012 questionnaire from the previous year were the addition of a new skip pattern and three new attitudinal questions.¹⁰

A new skip pattern was added to the ENERGY STAR Most Efficient designation sequence. Last year, this question sequence was asked of all respondents; this year this question sequence was only asked of respondents who recognized the standard ENERGY STAR label.

The new questions asked in 2012 were:¹¹

Q16t: On a scale by the following statement (1 = Strongly Disagree to 5 = Strongly Agree), please indicate how strongly you agree or disagree with the statement: I am willing to pay more money for a product that saves the most energy.

Q16u: On a scale by the following statement (1 = Strongly Disagree to 5 = Strongly Agree), please indicate how strongly you agree or disagree with the statement: I like to have the most advanced technology available to me.

Q16v: On a scale by the following statement (1 = Strongly Disagree to 5 = Strongly Agree), please indicate how strongly you agree or disagree with the statement: I consider myself up to date with technology.

¹⁰ Appendix D: 2012 Survey Questions and Flow Chart provides a graphical presentation of the survey questions and skip patterns.

¹¹ The new attitudinal questions are asked in random order for each respondent as can be seen on page 8 of 9 in Appendix D: 2012 Survey Questions and Flow Chart.

1.4 Determination of Aided Recognition

In the 2012 analysis, the determination of *aided* recognition was based on the responses to five questions. This is the same sequence and numbering used in the 2011 survey. Specifically:

ES3A: Is this the label you have seen or heard of before? (Respondents were randomly shown either the old or new ENERGY STAR label. This question was asked to respondents who said they had seen or heard of the ENERGY STAR label.)

ES3B: Have you seen or heard of this version of the ENERGY STAR label? (In this question, asked after ES3A, respondents were shown the label not shown in the previous question.)

ES3C: Please look at the ENERGY STAR label on the left. Have you ever seen or heard of this label? (Respondents were randomly shown either the old or new ENERGY STAR label. This question was asked to respondents who said they had not seen or heard of or didn't know whether they had seen or heard of ENERGY STAR.)

ES3D: Have you seen or heard of this version of the ENERGY STAR label? (In this question, asked after ES3C, respondents were shown the label not shown in the previous question.)

ES6: Now that you had the opportunity to see the ENERGY STAR label, do you recall seeing or hearing anything about it before this survey? (This question was asked to respondents who answered "no" or "don't know" to ES3A and ES3B. It was also asked to all respondents who answered ES3C and ES3D.)

- Respondents who answered ES3A, ES3B, ES3C, ES3D, or ES6 "yes" were categorized as recognizing the ENERGY STAR label (aided).
- Respondents who did not answer ES3A, ES3B, ES3C, or ES3D "yes" and answered ES6 "no," were categorized as not recognizing the label (aided).
- Respondents who did not answer ES3A, ES3B, ES3C, or ES3D "yes" and answered ES6 "don't know" or refused to answer ES6 were not included in the analysis of aided recognition. (Their data were set to missing.)

2 SAMPLING

2.1 Designated Marketing Areas' Publicity Categories

The same publicity classification procedure used in the past 11 years was used in 2012. The original intent of the classification was to be able to assess the effect of local energy efficiency program publicity on awareness. The majority of these local efficiency programs historically have been supported by utility rate-payer funded energy efficiency programming. A decision was made to retain the same publicity classification used in the past 11 years and to retain the prior year's publicity classification of the 57 largest DMAs—in essence preserving the historical classification for future study years, which was based on the following criteria:

- **High publicity:** Active local ENERGY STAR program *recently* sponsored by a utility, state agency, or other organization for 2 or more continuous years. The activities must include *sustained* promotions and publicity from non-federal sources.
- **Low publicity:** Federal campaign activities only and no *significant* regional program sponsor activities.
- **Other:** All other DMAs.

The key working definitions are:

- **Recent:** The 2 years of activity must include the time period during which the survey was in the field.
- **Sustained:** The 2 years of activity must be continuous.
- **Significant:** In addition to any direct federal publicity efforts, publicity efforts must include a deliberate and multifaceted regional program sponsor investment in ENERGY STAR programming, such as direct marketing efforts or the creation and distribution of promotional material.

Each of the Top 57 DMAs was classified according to these three criteria and sampled based on that classification. For the purpose of this report, *low publicity* and *other publicity* are combined in the analysis and referenced as *non-high-publicity* areas. One reason for combining these categories in the analysis is that over time, the population of low-publicity DMAs has dropped to about 15 percent, while high-publicity DMAs now account for about half of U.S. television households.

2.2 Sample Design

The survey was a national survey. The sampling frame for this national survey included all households in any DMAs that together accounted for about 70 percent of

U.S. television households. As in prior years, to facilitate comparison across years, the national results were based only on data collected from respondents from the 57 largest DMAs.¹² CEE members may choose to sponsor more intensive sampling (i.e., an oversample) in selected localities, referred to here as *sponsor areas*. In 2012, there were three sponsor areas:

- Minneapolis-St. Paul DMA
- Denver DMA
- New York state (with the exception of Long Island)

Sponsor areas are not limited to the 57 largest DMAs, however, to facilitate comparisons across years, the national results were based only on data collected from respondents from the 57 largest DMAs. Some of the 57 largest DMAs were also included in the sponsor areas and therefore were oversampled. The data from these respondents (as well as from the other respondents in the 57 largest DMAs) received an appropriate weight in the analysis in order to generate valid national results and facilitate comparison with data from other years.

As in previous years' studies, the Top-57 DMAs in the sampling frame were classified by publicity category, so the effect of local energy-efficiency program publicity on national awareness could be considered. The same publicity classification procedure used in the past 11 years was used this year.¹³ Each sponsor area is also further stratified by large versus non-large DMA. The CEE members who fund the oversample for a sponsor area determine the total number of sampling points allocated to the sponsor area as a whole. This total number of sampling points is then allocated across sponsor area strata proportional to population.

Program publicity has expanded over the past twelve years. Originally, high-publicity, low-publicity, and other groups had similar numbers of households, and so the sample was allocated equally among the three groups. Beginning in 2010, the number of respondents in each stratum was chosen in proportion to that stratum's share of the U.S. population living in DMAs. As in the past for the national sample, the three publicity categories (the top 57 DMAs) comprise 1,000 respondents.

A list of the large DMAs and their publicity category assignments is provided in the table below. A list of the DMAs included in the sponsor area and their publicity category assignments follows. Lastly, the large DMAs and the DMAs in the sponsor areas are shown on a map along with their publicity categories.

¹² Analysis included in the 2010 report showed no statistical difference for key metrics between the 57 largest DMAs and all 210 DMAs.

¹³ None of the 57 largest DMAs changed publicity category between 2011 and 2012.

Large (Top 57) DMAs¹⁴

Rank	Designated Market Area (DMA)	TV Households 2011-2012		Publicity Category
		Number	% of	
1	New York	7,387,810	6.444	High
2	Los Angeles	5,569,780	4.858	High
3	Chicago	3,493,480	3.047	High
4	Philadelphia	2,993,370	2.611	Other
5	Dallas-Ft. Worth	2,571,310	2.243	Other
6	San Francisco-Oak-San Jose	2,506,510	2.186	High
7	Boston (Manchester)	2,379,690	2.076	High
8	Washington, DC (Hagrstwn)	2,360,180	2.059	High
9	Atlanta	2,292,640	2.000	High
10	Houston	2,185,260	1.906	Other
11	Detroit	1,842,650	1.607	Other
12	Seattle-Tacoma	1,811,420	1.580	High
13	Phoenix (Prescott)	1,811,330	1.580	High
14	Tampa-St. Pete (Sarasota)	1,788,240	1.560	Other
15	Minneapolis-St. Paul	1,721,940	1.502	High
16	Miami-Ft. Lauderdale	1,583,800	1.381	Other
17	Denver	1,548,570	1.351	Other
18	Cleveland-Akron(Canton)	1,514,170	1.321	Other
19	Orlando-Daytona Bch-Melbrn	1,465,460	1.278	Other
20	Sacramnto-Stkton-Modesto	1,388,570	1.211	High
21	St. Louis	1,253,920	1.094	Other
22	Portland, OR	1,190,010	1.038	High
23	Pittsburgh	1,171,490	1.022	Other
24	Raleigh-Durham (Fayetvll)	1,143,420	0.997	Low
25	Charlotte	1,140,900	0.995	Other
26	Indianapolis	1,109,970	0.968	Other
27	Baltimore	1,097,310	0.957	Other
28	San Diego	1,077,600	0.940	High
29	Nashville	1,024,560	0.894	Low
30	Hartford & New Haven	1,006,280	0.878	High
31	Kansas City	939,740	0.820	Other
32	Columbus, OH	932,680	0.814	Other
33	Salt Lake City	927,540	0.809	High
34	Milwaukee	907,660	0.792	High
35	Cincinnati	896,090	0.782	Low
36	San Antonio	880,690	0.768	Low
37	Greenvll-Spart-Ashevl-And	860,930	0.751	Low
38	West Palm Beach-Ft. Pierce	788,020	0.687	Low
39	Birmingham (Ann and Tusc)	738,790	0.644	Low
40	Las Vegas	737,300	0.643	High
41	Harrisburg-Lncstr-Leb-York	729,440	0.636	Other
42	Grand Rapids-Kalmzoo-B.Crk	722,150	0.630	Other
43	Norfolk-Portsmth-Newpt Nws	718,750	0.627	Low
44	Oklahoma City	712,630	0.622	Low
45	Albuquerque-Santa Fe	710,050	0.619	Other
46	Greensboro-H.Point-W.Salem	691,200	0.603	Low
47	Austin	686,830	0.599	High
48	Louisville	674,050	0.588	High
49	Memphis	669,940	0.584	Low
50	Jacksonville	669,840	0.584	Low
51	Buffalo	645,190	0.563	High
52	New Orleans	643,660	0.561	Other

¹⁴ Publicity categories are the same as 2011.

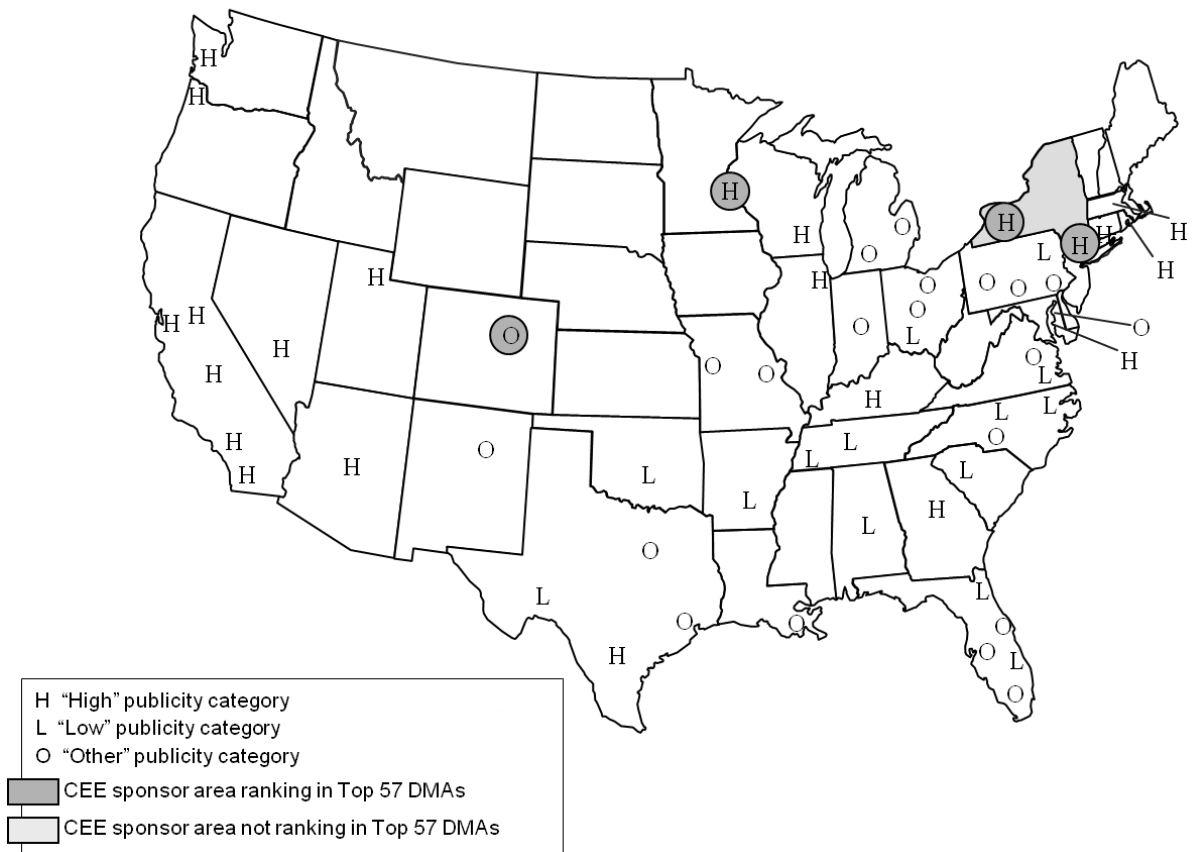
53	Providence-New Bedford	620,010	0.541	High
54	Wilkes Barre-Scranton	590,740	0.515	Low
55	Fresno-Visalia	574,800	0.501	High
56	Little Rock-Pine Bluff	571,630	0.499	Low
57	Richmond-Petersburg	559,390	0.488	Other
Total		81,231,380	70.852	

Sponsor Areas

Sponsor Area	Publicity Category	DMA (Large and Small)
Minneapolis-St. Paul	High	Large: all * Minneapolis-St. Paul (rank 15)
Denver	Other	Large: all *Denver (rank 17)
New York (with the exception of Long Island)	High	Large: all Large: partial *New York (rank 1) *Buffalo (rank 51) Small: all *Rochester (rank 79) *Syracuse (rank 84) *Binghamton (rank 157) *Utica (rank 172) *Watertown (rank 177) Small: partial *Albany-Schenectady-Troy (rank 58) *Burlington-Plattsburgh (rank 95) *Elmira (Corning) (rank 174)

Large (Top 57) DMAs and Sponsor Areas by Publicity Category¹⁵

2012



¹⁵ There were no large DMAs in either Alaska or Hawaii.

2.3 Weighting Procedures

GfK, formerly Knowledge Networks, the company that provided the Internet survey service, developed the weights used in the analysis. GfK first adjusted its panel members for known disproportions due to the panel's original selection and recruitment design and then proceeded with a post-stratification weighting that accounted for differences between the panel and the U.S. population. The adjustment to this typical sampling weight approach was based on geographic and demographic characteristics known for both the panel and the population (refer to Appendix B). It effectively scales up under-represented population dimensions in the panel and scales down dimensions that are over-represented in the panel. This more closely aligned the panel with the basic demographic characteristics of the U.S. population.

After the field data were collected, GfK further adjusted the sampling weight to account for survey non-response. The correction for survey non-response is analogous to the adjustment for differences between the panel members and the U.S. population. It was based on geographic and demographic characteristics known for both the sample of panel survey completes and the entire sampling frame for the study. The weighting scaled up under-represented population dimensions and scaled down over-represented dimensions in the sample of survey completes. This more closely aligned the sample of survey completes with the basic demographic characteristics of the entire sampling frame for the study.

3 DATA COLLECTION

3.1 Survey Fielding Period

The survey began on October 4 and closed on October 18, 2012.

3.2 Response Rate

The overall response rate was 9 percent for the CEE 2012 ENERGY STAR Household Survey. This level of response is typical for Knowledge Networks' surveys.

For an Internet survey, the response rate is defined as the product of the *return rate*, which is survey-specific, and the *recruitment rate*. The *return rate* is the ratio of the number of questionnaires completed to the number of panel members asked to complete the questionnaire. For the CEE 2012 ENERGY STAR Household Survey, the return rate was 61 percent. While this number is quite high, it must be adjusted by the *recruitment rate*, which is the number of households that agreed to participate in the Knowledge Networks panel as a proportion of the number of households asked to participate. The recruitment rate was 15 percent. Thus, the response rate for the CEE 2012 ENERGY STAR Household survey was the product of the survey-specific return rate of 61 percent and the recruitment rate of 15 percent. This product is equivalent to the ratio of the number of questionnaires completed to the number of households that were offered the opportunity to be in the study.

CEE 2012 ENERGY STAR Household Survey Response Rate¹⁶

Response Rate Factors	Number or % of Respondents
Sendout/requested	2,582
Completed	1,579
Return rate	61%
Recruitment rate	15%
Response rate	9%

¹⁶ Only respondents from Top-57 DMAs are included in this table.

4 NATIONAL ANALYSIS

4.1 DMAs Included

To facilitate comparisons across years, the national results were based only on data collected from respondents from the 57 largest DMAs. Data collected from respondents not in the 57 largest DMAs are not included in this analysis. Some of the 57 largest DMAs are also included in the sponsor areas and therefore were oversampled. The data from these respondents, as well as from the other respondents in the 57 largest DMAs, received an appropriate weight in the analysis in order to generate valid national results and comparison with data from other years.

4.2 Treatment of “Don’t Know” Responses and Refusals

For most questions, how “don’t know” responses or refusals are handled has a negligible effect on the results. Still, it is necessary to make a decision as to how they should be handled. The results presented in this report for a given question do not include “don’t know” responses or refusal to answer (i.e., the results for a given question were calculated after any “don’t know” responses to that question or refusals to answer that question were set to missing).

APPENDIX B: DEMOGRAPHICS

This appendix presents the relationship between the demographic characteristics found in the weighted survey data and the corresponding characteristics in the study population of all U.S. households. Professional survey and data collection firms make significant efforts to ensure the rigor of their methods and to produce the highest quality results. Each year, GfK—the company that maintains the Internet-based survey panel used in this analysis—strives to create a panel that is representative of the U.S. population. However, as in any survey effort, those who respond to surveys tend to be different from those who do not. In this case, the panel used for this survey may contain subjects that are receptive to the incentive-for-service tradeoff and introduce associated biases.

Weighting used in the analyses of this report is applied to account for differences between the Internet-based panel and the U.S. population. If weighting was accomplished perfectly, the distribution of various demographic characteristics in the weighted survey data would be the same as the distribution of those characteristics in national Census data. For most demographic characteristics, the two distributions are quite similar. This suggests the weighted survey results are a reasonable representation of the study population. A summary of the comparisons of demographic characteristics is provided in the table below. Detailed comparisons are provided in tables presented at the end of this appendix.

Summary of Distribution Comparisons

Demographic Characteristic	Largest Difference (Absolute Value): Survey Estimate Less Census %	
Number of persons in household	One	-4.8%
Householder/respondent age	18-24 ^a	5.9%
Householder/respondent gender	Gender	+/- 1.2%
Dwelling type	Single-family, attached	4.6%
Own/rent	Own/rent	+/- 1.0%
Household annual income	\$75,000 and over ^b	8.1%

^aCensus, under 25 years; WebTV/Internet, 18-24 years.

^bCensus, \$50,000-\$80,000 and \$80,000 and over.

The largest differences (in absolute value) between the weighted survey data and national Census data, at 6 and 8 percentage points, are the proportion of households in the \$75,000 and over income category and the proportion of householder/respondent age 18-24, respectively. The difference in the proportion of one person households is the next largest, at -4.8 percentage points, and the number of single-family dwellings is the next largest, at 4.6 percentage. The combined under-representation of single-person households and over-representation of higher income households are not expected to bias the survey results in any particular direction. Differences between the weighted survey data and

Census data for other demographic characteristics of the population—own/rent, and gender—are all quite small, at less than two percentage points.

Household Size Distribution

Number of Persons in Household	Census % Dwelling Units^a	Survey Estimate Minus Census % Dwelling Units
One	27%	-4.8%
Two	33%	2.1%
Three	16%	1.1%
Four	14%	0.5%
Five or more	10%	1.0%
Total (%)	100%	
Total (1,000s)	114,907	

^a U.S. Census Bureau, American Housing Survey, 2011, Table C-08-AO.

Age Distribution

Householder/Respondent Age	Census % Householders^a	Survey Estimate Minus Census % Householders
18-24 ^b	5%	5.9%
25-34	17%	0.5%
35-44	18%	0.8%
45-54	20%	-2.9%
55-64	18%	-0.2%
65 or older	22%	-4.2%
Total (%)	100%	
Total (1,000s)	114,907	

^a U.S. Census Bureau, American Housing Survey, 2011, Table C-08-AO.

^b Census, under 25 years; WebTV/Internet, 18-24 years.

Gender Distribution

Householder/ Respondent Gender	Census % Population ^a	Survey Estimate Minus Census % Population
Female	51%	1.2%
Male	49%	-1.2%
Total (%)	100%	

^aU.S. Census Bureau, 2007-2011 American Community Survey 5-Year Estimates.

Dwelling Type Distribution

Dwelling Type	Census % Dwelling Units ^a	Survey Estimate Minus Census % Dwelling Units
Single-family, unattached	64%	-2.7%
Single-family, attached	6%	4.6%
Bldg. (>=2 units)	24%	0.6%
Mobile home	6%	-2.6%
Total (%)	100%	
Total (1,000s)	114,908	

^a U.S. Census Bureau, American Housing Survey, 2011, Table C-01-AO.

Own/Rent Distribution

Own/Rent	Census % Households ^a	Survey Estimate Minus Census % Households
Own	66%	0.0%
Rent	34%	1.0%
Total (%)	100%	
Total (1,000s)	114,908	

^a U.S. Census Bureau, American Housing Survey, 2011, Table C-01-AO.

Income Distribution

Total Household Annual Income (before taxes)	Census % Households^a	Survey Estimate Minus Census % Households
Less than \$15,000	14%	-3.8%
\$15,000-\$24,999	12%	-3.5%
\$25,000-\$49,999	25%	-2.0%
\$50,000-\$74,999	18%	1.2%
\$75,000 and over	31%	8.1%
Total (%)	100%	
Total (1,000s)	121,084	

^a U.S. Census Bureau, CPS Annual Social and Economic Supplement 2012, Table HINC-01 Selected Characteristics of Households, by Total Money Income (2011 data).

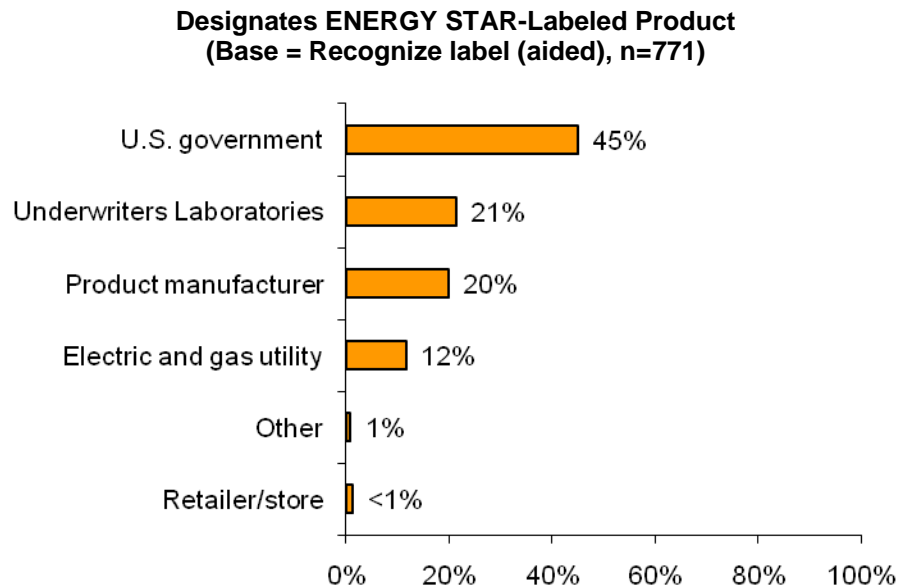
APPENDIX C: ADDITIONAL QUESTIONS FROM 2012 SURVEY

This appendix presents the results of additional ENERGY STAR related questions in the 2012 survey that were added by CEE since 2005; and are not discussed in the main body of the report. Topics included in this appendix include:

- ENERGY STAR Designation
- ENERGY STAR Product Satisfaction
- Consumer Perceptions
- Purchasing Decisions
- CFL Purchaser Questions
- Most Efficient Designation

1 ENERGY STAR DESIGNATION

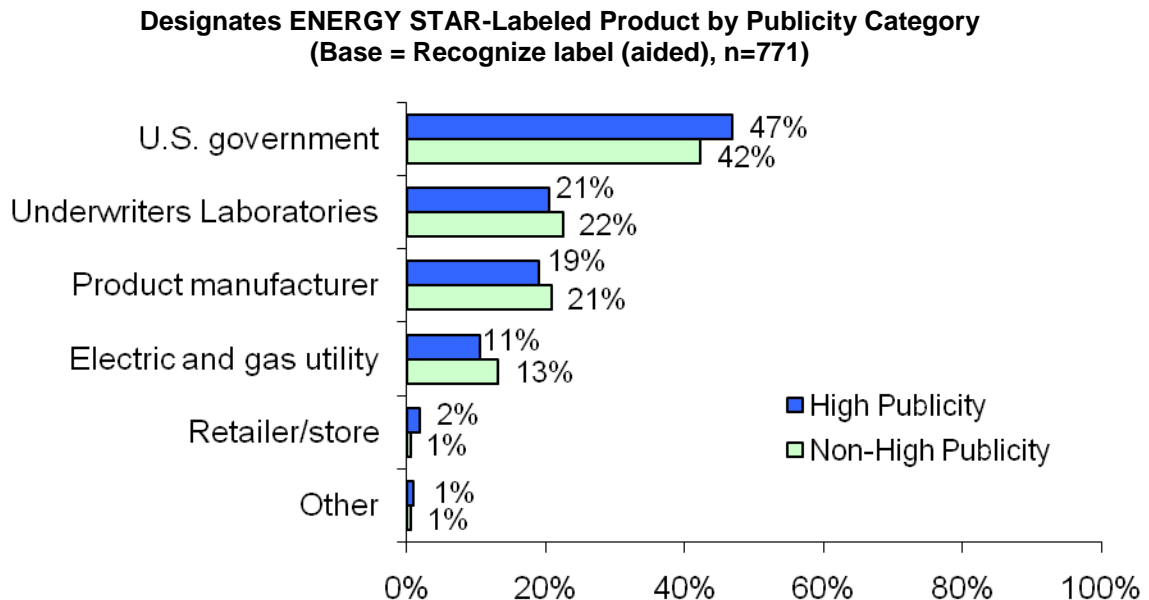
Forty-five percent of households that recognized the ENERGY STAR label (aided) thought that the U.S. government decides if a product deserves the label. Twenty-one percent thought Underwriters Laboratories makes this decision, down from 24 percent in 2011. Twenty percent thought the product manufacturers make the decision, up from eighteen percent in 2011. All 2012 and 2011 proportions are statistically similar to each other.



Note: QB: "As far as you know, who decides if a product deserves the ENERGY STAR label?"

2 ENERGY STAR DESIGNATION BY PUBLICITY CATEGORY

In 2012, high-publicity areas and non-high-publicity areas identified the entity that designates the ENERGY STAR label in similar proportions in all categories.



3 ENERGY STAR PRODUCT SATISFACTION

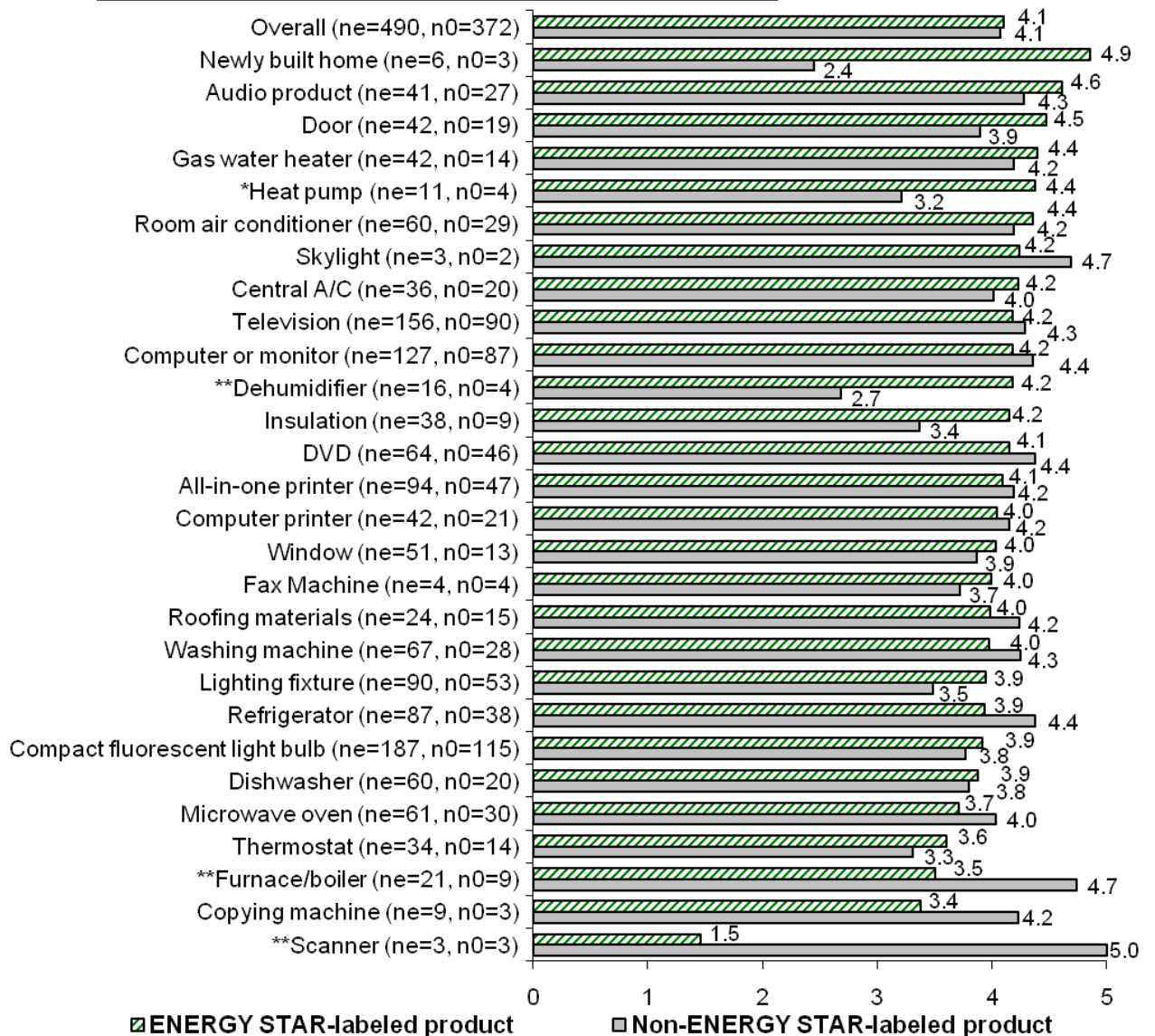
For most products, household satisfaction with a given product in a product category that has an ENERGY STAR specification does not appear to vary based on whether or not the product had an ENERGY STAR label. On a scale of 1 to 5, where 1 means “very dissatisfied” and 5 means “very satisfied,” products with and without the ENERGY STAR label had similar average satisfaction ratings, at 4.10 and 4.07 respectively.

Four ENERGY STAR-labeled products—heat pumps (p-value=0.077), dehumidifiers (p-value=0.028), furnace/boiler (p-value=0.041), and scanners (p-value=0.015)—showed a statistically significant increase in customer satisfaction between 2011 and 2012.

ENERGY STAR-labeled heat pumps and dehumidifiers received higher satisfaction ratings compared with unlabeled versions of these products, whereas ENERGY STAR-labeled furnace/boilers and scanners received lower satisfaction ratings when compared with their unlabeled counterparts.

ENERGY STAR vs. Non-ENERGY STAR-Labeled Product Satisfaction
(Bases = Recognize label (aided) and purchased specified product¹⁷)

Average Satisfaction (1=very dissatisfied, 5=very satisfied)



** ENERGY STAR and Non-ENERGY STAR product proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05).

* ENERGY STAR and Non-ENERGY STAR product proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10).

¹⁷ ne = number of respondents that recognized the label (aided) and purchased this product with an ENERGY STAR label

n0 = number of respondents that recognized the label (aided) and purchased this product without an ENERGY STAR label

4 CONSUMER PERCEPTIONS

Survey respondents that recognized the ENERGY STAR label (aided) were asked to indicate how strongly they agree or disagree with a number of attitudinal statements about ENERGY STAR-labeled products.¹⁸ The statements were shown to respondents in random order.

For purposes of discussion, the statements are grouped into four categories:

- Environmental and social responsibility messaging
- Purchasing preference
- Product attributes and performance
- Technology affinity

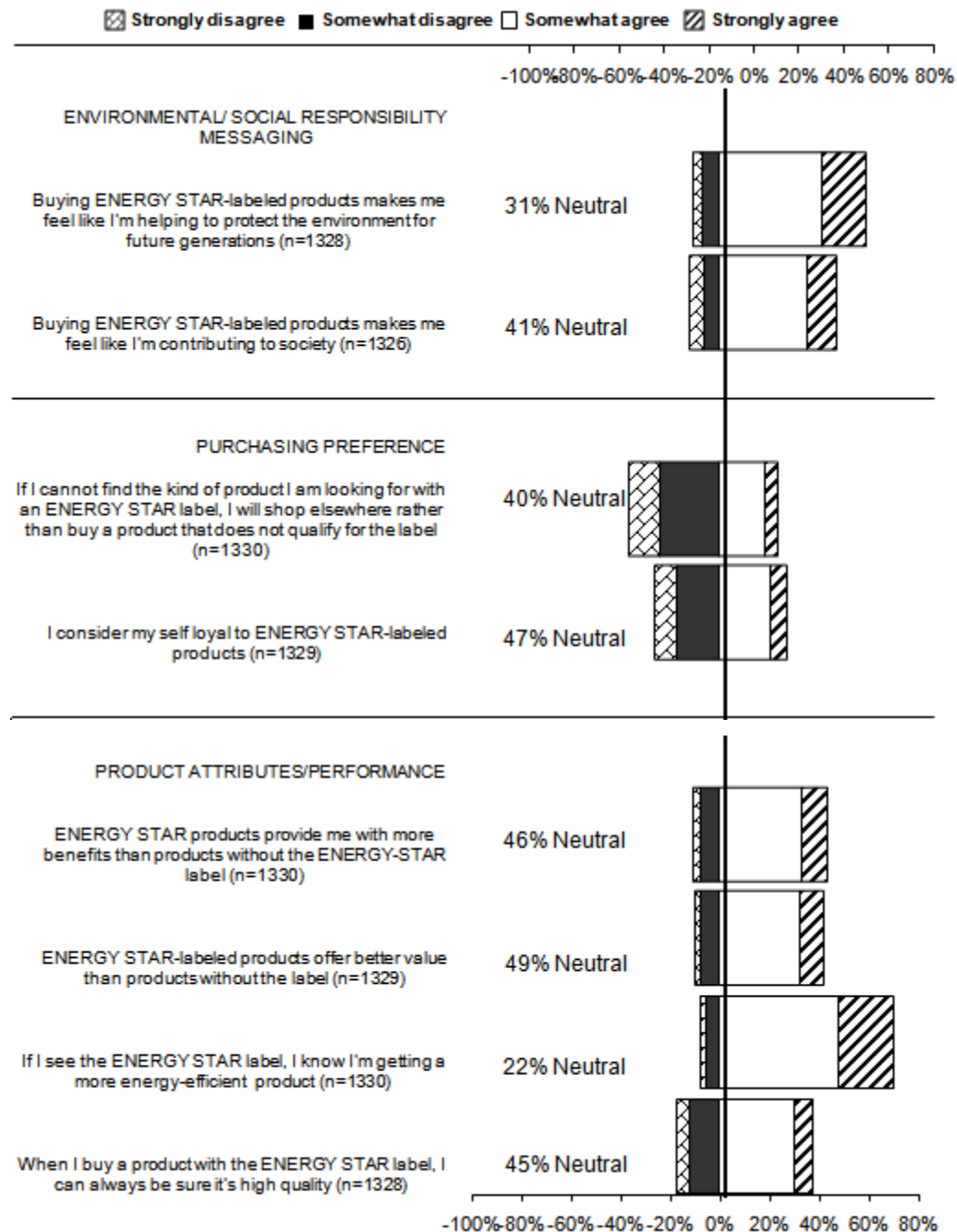
The 2012 survey results indicate that households generally agree with positive statements about the ENERGY STAR label and disagree with negative statements about the label.¹⁹ Similar to 2011 results, few statements elicit strong agreement or strong disagreement among substantial proportions of households; in contrast, a number of statements generated neutral responses from a sizeable proportion of households. A more detailed discussion of the findings regarding the attitudinal statements is provided on the following pages.

¹⁸ These statements are numbered Q16a through Q16v in the survey.

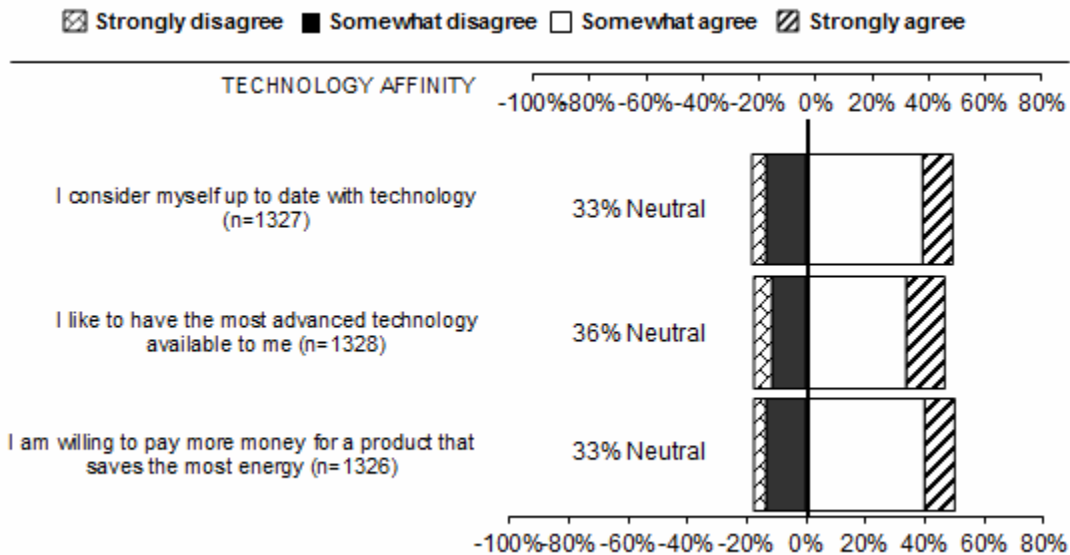
¹⁹ In this discussion, the term “agree” is used to correspond to survey responses of “strongly agree” or “somewhat agree.” Similarly, the term “disagree” corresponds to survey responses of “strongly disagree” or “somewhat disagree.”

**Response to Categorical Statements Regarding Messaging,
Purchasing, and Product Attributes – Agreement with Positive Statements
(Base = Recognize label (aided))**

For each attitudinal statement, respondents were asked whether they strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, or strongly disagree. The response of “neither agree nor disagree” is described as “Neutral” in the chart below and the discussion that follows. In the chart, the results for the “Neutral” response category are shown in text and not depicted in the bar graph. The results for the other four response categories are depicted in the bar graph.

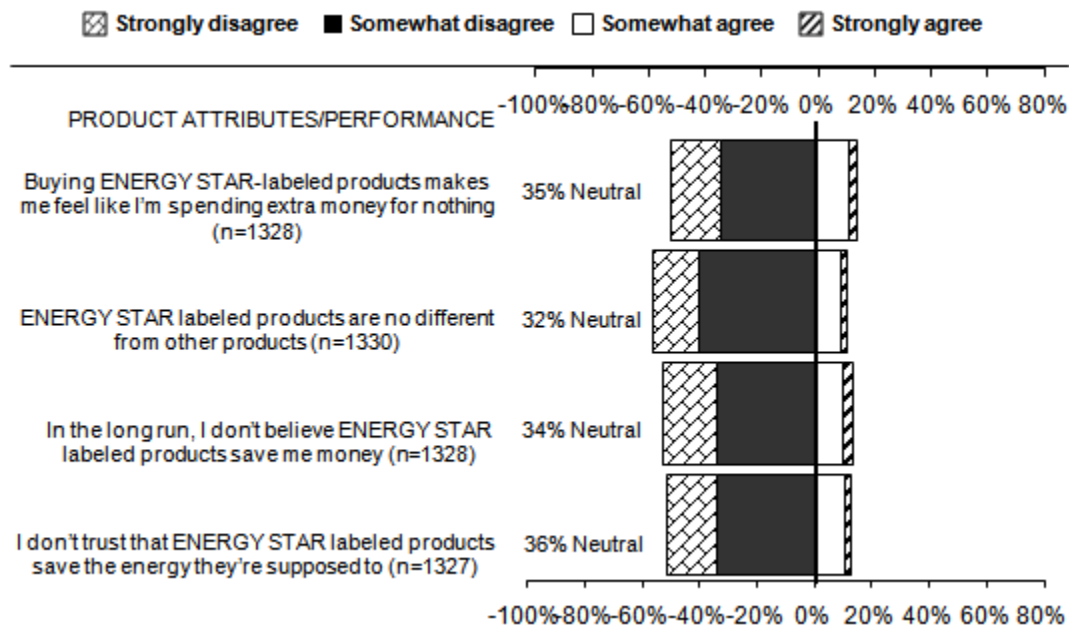


**Response to Categorical Statements Regarding Messaging,
Purchasing, and Product Attributes – Agreement with Positive Statements (Cont.)
(Base = Recognize label (aided))**



**Response to Categorical Statements Regarding Messaging,
Purchasing, and Product Attributes – Disagreement with Negative Statements
(Base = Recognize label (aided))**

For each attitudinal statement, respondents were asked whether they strongly agree, somewhat agree, neither agree nor disagree, somewhat disagree, or strongly disagree. The response of “neither agree nor disagree” is described as “Neutral” in the chart below and the discussion that follows. In the chart, the results for the “Neutral” response category are shown in text and not depicted in the bar graph. The results for the other four response categories are depicted in the bar graph.



4.1 Environmental and Social Responsibility Messaging

The development of the environmental and social responsibility messaging of the ENERGY STAR label has been a strong focus of the national ENERGY STAR education campaign. In the 2012 survey, two statements addressed the label's messaging in these areas: "Buying ENERGY STAR-labeled products makes me feel like I'm helping to protect the environment for future generations" and "Buying ENERGY STAR-labeled products makes me feel like I'm contributing to society."

Of the thirteen statements in the 2011 and 2012 survey that explore consumer attitudes toward the ENERGY STAR label and products, the two messages cited above ranked second and third in terms of the proportion of households who strongly agree with the statements. These two statements had the same ranking in the six previous years. With the addition of three new attitudinal questions, of the sixteen statements in the 2012 survey that explore consumer attitudes toward the ENERGY STAR label and products, the two messages cited above ranked second and fourth, respectively, in terms of the proportion of households who strongly agree with the statements.

Of households that recognize the ENERGY STAR label, the proportion that either strongly or somewhat agree with the statement that by buying ENERGY STAR-labeled products they feel they are helping protect the environment was higher in 2012 (59 percent) than in 2011 (56 percent); this difference is not statistically significant. Forty-seven percent of ENERGY STAR aware households strongly or somewhat agree that by purchasing ENERGY STAR-labeled products they feel they are contributing to society; this percentage was unchanged from 2011.

4.2 Purchasing Preferences

Increasing consumers' preferences for purchasing ENERGY STAR-labeled products is also an intended outcome of the national education campaign. In the 2012 survey, two separate statements were included to investigate households' views of their purchasing preferences with respect to ENERGY STAR-labeled products. In 2012, twenty-three percent of households either strongly or somewhat agree with the statement, "If I cannot find the kind of product I am looking for with an ENERGY STAR label, I will shop elsewhere rather than buy a product that does not qualify for the label." This is similar to 2011 (21 percent). More households (37 percent) either strongly or somewhat disagree, this is up from 2011 (32 percent) and is statistically similar. Forty percent of households are neutral in their level of agreement or disagreement with this statement of their purchasing behavior.

Twenty-seven percent of households agree with the second statement addressing households' views of their purchasing preferences: "I consider myself loyal to ENERGY STAR products." This is similar to 2011 (26 percent). Disagreement with this statement was 26 percent, two percentage points more than in 2011; this difference is not statistically significant.

4.3 Technology Affinity

To support research interest related to advanced technologies the following questions were asked in the 2012 survey:

- On a scale by the following statement (1 = Strongly Disagree to 5 = Strongly Agree), please indicate how strongly you agree or disagree with the statement “I am willing to pay more money for a product that saves the most energy.”
- On a scale by the following statement (1 = Strongly Disagree to 5 = Strongly Agree), please indicate how strongly you agree or disagree with the statement “I like to have the most advanced technology available to me.”
- On a scale by the following statement (1 = Strongly Disagree to 5 = Strongly Agree), please indicate how strongly you agree or disagree with the statement “I consider myself up to date with technology.”

Half of households agree either somewhat or strongly with the statement “I am willing to pay more money for a product that saves the most energy.” Thirty-three percent of households are neutral in their level of agreement or disagreement with this statement. Seventeen percent of households either somewhat or strongly disagree with this statement addressing households’ willingness to pay more for a product that saves the most energy.

Nearly half (46 percent) of households indicate that they like to have the most advanced technology available to them and thirty-six percent are neutral. Seventeen percent disagree with the statement “I like to have the most advanced technology available to me.”

Almost half (49 percent) of households agree with the statement “I consider myself up to date with technology.” Thirty-three percent are neutral and eighteen percent disagree with this statement.

4.4 Product Attributes and Performance

A third goal of the national ENERGY STAR education campaign has been to inform consumers that ENERGY STAR-labeled products are more energy efficient than non-labeled products. The degree to which this goal is being accomplished is addressed in the 2012 survey by asking respondents their level of agreement or disagreement with the statement “If I see the ENERGY STAR label, I know I’m getting a much more energy-efficient product.” Seventy percent of respondents either strongly or somewhat agree with this statement, up from 2011 (67 percent) and is statistically similar. This indicates a high perception among consumers that the ENERGY STAR label indicates superior performance with respect to energy efficiency relative to products without the label.

The survey addressed perceptions of product quality. Survey respondents were asked the level at which they agreed or disagreed with the statement “When I buy a product with the ENERGY STAR label, I can always be sure it’s high quality.” A higher percentage (37 percent) of households either strongly or somewhat agree with this statement than in 2011 (32 percent); this difference is statistically significant at the 10-percent level. Forty-five percent are neutral and eighteen percent disagree with this statement. Households that are neutral in their agreement and disagreement and in that disagree with this statement are similar to last year’s results.

A number of attitudinal statements were included in the survey to measure consumers’ perceptions of ENERGY STAR-labeled product value. One of these statements is “ENERGY STAR products provide me with more benefits than products without the ENERGY STAR label.” The results show that forty-three percent either strongly or somewhat agree with the statement and only 10 percent of households disagree. On another statement regarding product value, “ENERGY STAR-labeled products offer better value than products without the label,” 42 percent of households either strongly or somewhat agree, up from 2011 results (39 percent). Only 10 percent disagree, down from 2011 results (13 percent). The proportions of households that agree and disagree with these statements in 2012 are similar to the 2011 results.

The results related to the statement “Buying ENERGY STAR-labeled products make me feel like I’m spending extra money for nothing” provide additional information on perceptions of product value. Half of all households who recognize the ENERGY STAR label strongly or somewhat disagree with the statement, while 35 percent of households are neutral. Only 14 percent agree with this statement. The proportions of households that agree and disagree with this statement in 2012 are similar to the 2011 results.

In 2012, the following negative statements about product performance, added in 2010, were included.

- The statement, “I don’t trust that ENERGY STAR-labeled products save the energy they’re supposed to” had only 13 percent agreement, and four times as much disagreement (52 percent).
- The statement, “In the long run, I don’t believe ENERGY STAR-labeled products save me money” had only 13 percent agreement, and over four times as much disagreement (53 percent).
- Finally, the statement, “ENERGY STAR products are no different from other products” received only 11 percent agreement, and over five times as much disagreement (57 percent).

Fifty-three percent of respondents either somewhat or strongly agree with the statement “It seems like most products have the ENERGY STAR label these days.”²⁰ Only 12 percent disagreed with the statement. This suggests people are recognizing the label on many products.

²⁰ This statement was deemed neither positive nor negative so it does not appear in the previous chart.

4.5 Consumer Perceptions by Publicity Category

The 2012 results also suggest that local and regional efforts to publicize ENERGY STAR have been successful in affecting consumer perception and recognition of the label. A larger proportion of people in high-publicity areas than non-high-publicity areas agree with the following statements that communicate a positive perception of ENERGY STAR:

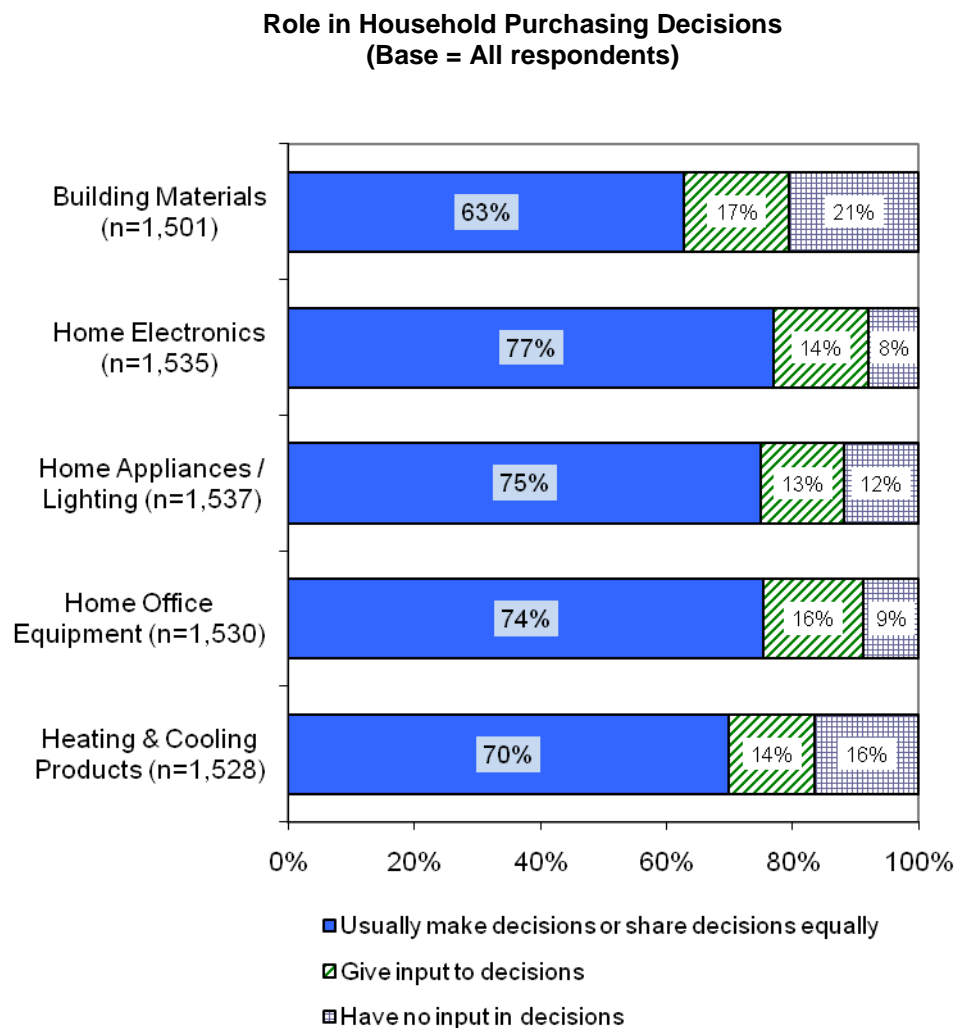
- “If I see the ENERGY STAR label, I know I’m getting a more energy-efficient product” (73 percent compared to 67 percent).
- “Buying ENERGY STAR-labeled products makes me feel like I’m helping to protect the environment for future generations” (64 percent compared to 53 percent).
- “I consider myself loyal to ENERGY STAR-labeled products” (33 percent compared to 20 percent).

A larger proportion of people in high-publicity areas than non-high-publicity areas also agree with the following statements.

- “It seems like most products have the ENERGY STAR label these days” (57 percent compared to 48 percent).
- “I consider myself up to date with technology” (53 percent compared to 45 percent).

5 PURCHASING DECISIONS

At the end of the survey, respondents were asked to characterize their role in the household purchasing decisions. The results indicate that the vast majority of those represented are primary decision makers, meaning they usually make household purchasing decisions alone or share equally in these decisions. As can be seen below, this varies little across product categories. Seventy-seven percent of individuals were primary decision makers for their household's home electronics purchases; 63 percent were primary decision makers for purchase of building materials.



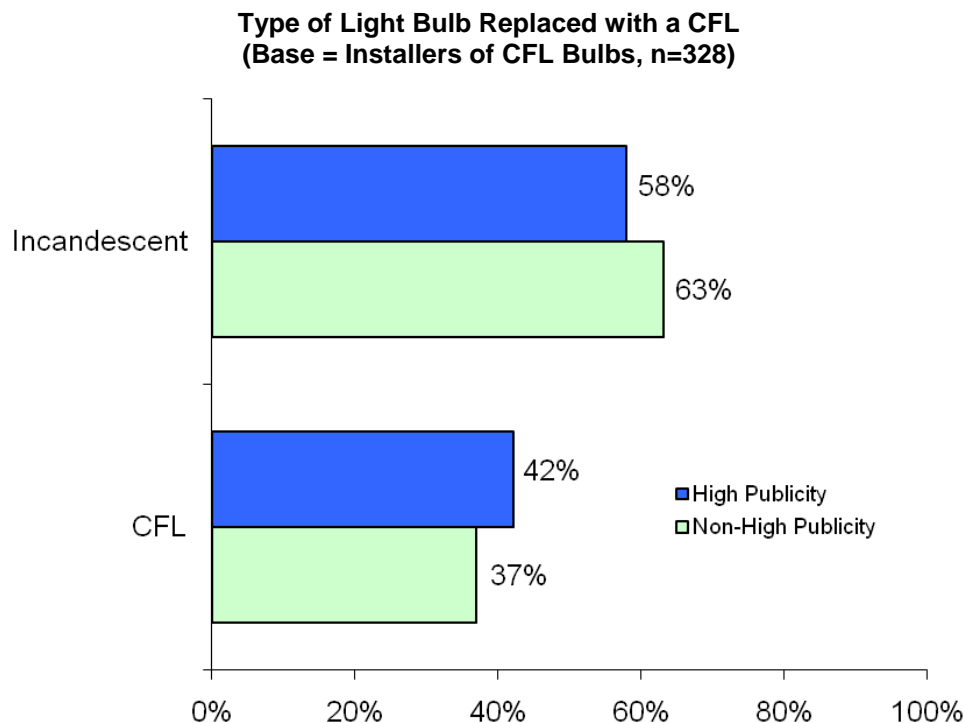
6 CFL PURCHASER QUESTIONS

Similar to previous years, all respondents are asked what products they have purchased in the last 12 months, with additional questions being asked of those who purchased compact fluorescent light bulbs (CFLs) and fixtures. In 2012, 18 percent and 9 percent of all households purchased CFLs and fixtures, respectively.

Respondents that purchased CFLs were asked the following questions:

- “Did you install the compact fluorescent light bulb(s) you purchased in a light fixture?”
 - If yes, then ask “Which type of bulb(s) did you replace?”

An overwhelming majority (94 percent) of CFL purchasers indicated they installed the purchased CFL. This result did not vary significantly by publicity category. Respondents that installed CFLs were then asked if the purchased CFL was used to replace a CFL or an incandescent light bulb. In 2012, 60 percent of households replaced an incandescent light bulb with the purchased CFL, up from 59 percent in 2011, and 40 percent of households replaced a CFL with a purchased CFL, down from 41 percent in 2011. These differences are not statistically significant at the 10-percent level. Similar to last year, the difference between proportions of households in high- and non-high-publicity areas that replaced incandescent bulbs is not significant at the 10-percent level.

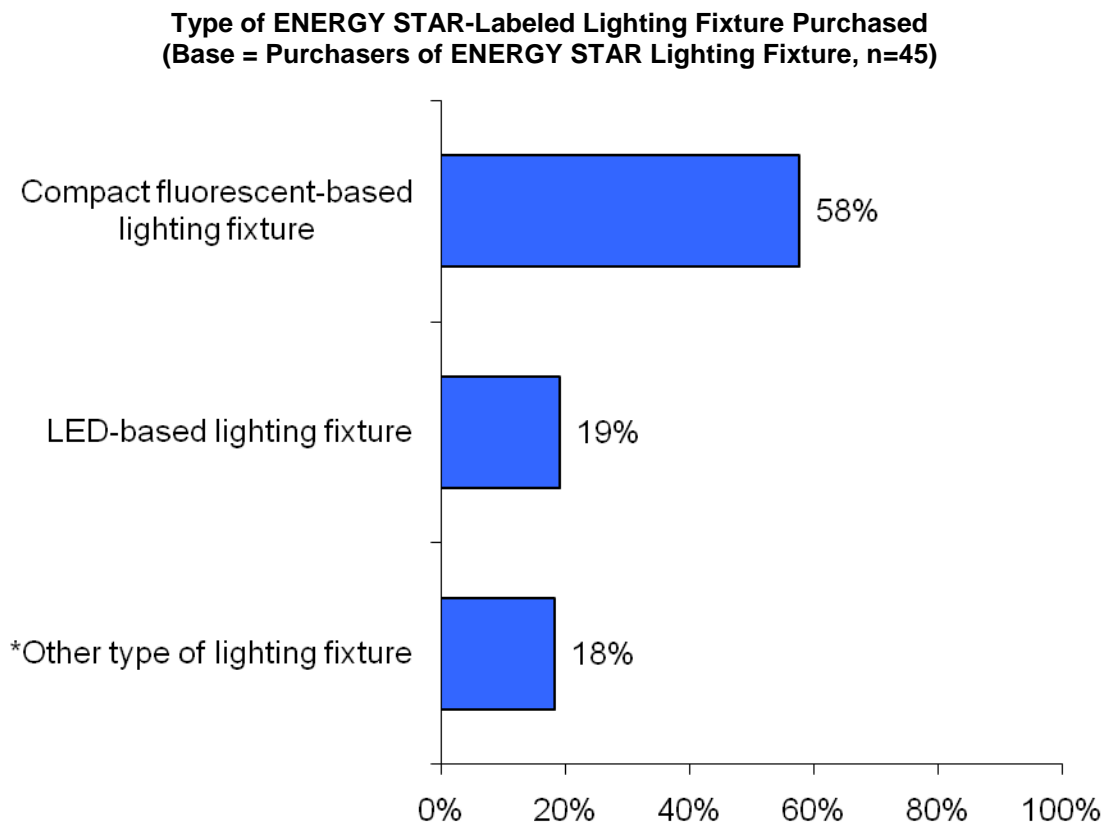


Note: Q12(e) “Which type of bulb(s) did you replace?”

Consistent with previous years, purchasers that recognize the ENERGY STAR label were asked if they saw the label on the product(s) they purchased. Respondents that reported purchasing an ENERGY STAR-labeled lighting fixture were asked:

- “Which kind of ENERGY STAR-labeled lighting fixture did you purchase?”

In 2012, fifty-eight percent of ENERGY STAR-labeled lighting fixture purchasers report purchasing a compact fluorescent-based lighting fixture, this is similar to 2011 (57 percent). However, ENERGY STAR-labeled lighting fixture purchasers that report purchasing some other type of lighting fixture decreased from 2011 (42 percent in 2011 to 18 percent in 2012) (p-value=0.0788). This result varies by publicity category: in 2012, in high-publicity areas, 56 percent report purchasing a compact fluorescent-based lighting fixture compared to 61 percent in non-high publicity areas. This difference is statistically similar.



Note: Q8A 1-4. Which kind of ENERGY STAR-labeled lighting fixture did you purchase?
QBA 1-4 is a multiple response question and therefore does not always sum to 100 percent. In 2012, 5 percent of respondents “Don’t know” the type of ENERGY STAR lighting fixture purchased.

7 ENERGY STAR MOST EFFICIENT QUESTIONS

The 2011 questionnaire added a brief series of questions to collect information on recognition and influence of the ENERGY STAR Most Efficient marketing designation. This same series was included in the 2012 questionnaire but a new skip pattern was added. In order to compare the 2012 results from the ENERGY STAR Most Efficient designation series to 2011 results, 2011 results have been analyzed using the new skip pattern and therefore are not equal to those in the 2011 report. Results from the 2012 questionnaire are presented below and are compared against reanalyzed 2011 data.

In 2012, nineteen percent of respondents indicated they had seen or heard of ENERGY STAR Most Efficient; this is consistent with 2011 (21 percent). Of those respondents who had seen or heard of ENERGY STAR Most Efficient, just over half (51 percent) recognized the ENERGY STAR Most Efficient marketing graphic when it was shown to them; again this is consistent with 2011 (53 percent). These differences are not statistically significant.

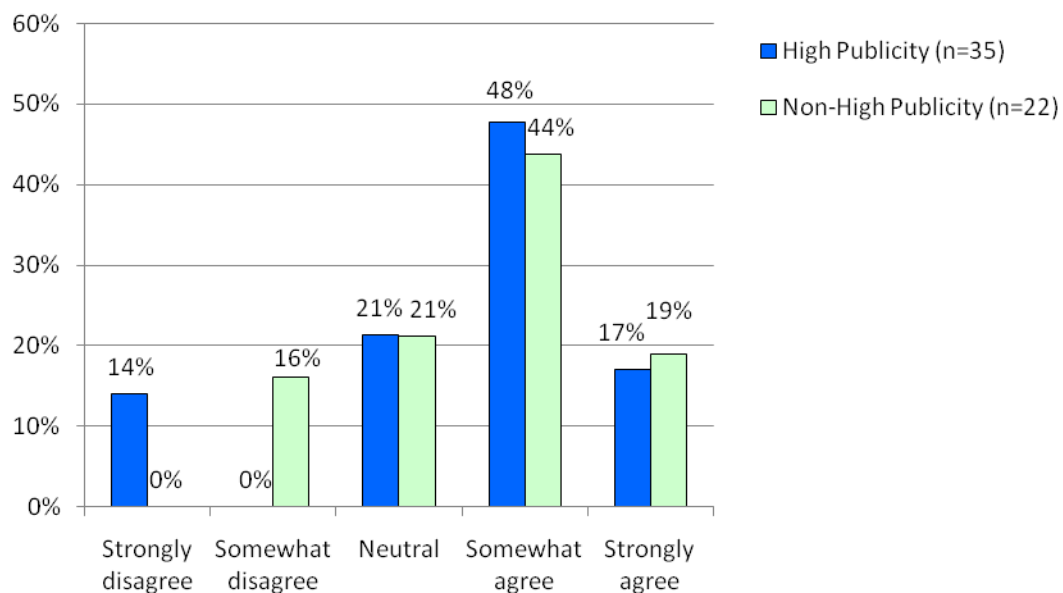
Among respondents who had seen or heard of ENERGY STAR Most Efficient and recognized the Most Efficient graphic in 2012, 64 percent agreed (either somewhat or strongly) with the statement that “All other things equal, I would buy a product because it is designated as ENERGY STAR Most Efficient,” while 15 percent disagreed. This proportion is similar to 2011, where 57 percent agreed and 20 percent disagreed.

**Response to Statement Regarding Purchase of ENERGY STAR Most Efficient Product
(Base= Seen or Heard of ENERGY STAR label and
Recognize Most Efficient graphic)**

Would buy a product because it is ENERGY STAR Most Efficient	2012 (n=57)	2011 (n=52)
Strongly disagree	8%	13%
Somewhat disagree	6%	7%
Neither agree nor disagree	21%	23%
Somewhat agree	46%	37%
Strongly agree	18%	20%

Comparing responses to this statement across high-publicity areas and non-high-publicity areas reveals some differences. However, it should be noted that the number of respondents for these questions is fairly small (35 high-publicity, 22 non-high-publicity). A smaller proportion of people in high-publicity areas than non-high-publicity areas strongly agree with the statement that “All other things equal, I would buy a product because it is designated as ENERGY STAR Most Efficient,” and a larger proportion in high-publicity areas than non-high-publicity areas strongly disagree with that statement. These differences are not statistically significant.

**Response to Statement Regarding Purchase of ENERGY STAR Most Efficient Product
by Publicity Category (Would buy a product because it is ENERGY STAR Most Efficient)**



High- and non-high-publicity area proportions are statistically similar to each other.

7.1 ENERGY STAR Most Efficient Influenced (MEI)

The 2012 results were analyzed by Most Efficient Influenced (MEI) households and non-Most Efficient Influenced (non-MEI) households in order to learn about potential differences. MEI households report having seen or heard of the ENERGY STAR Most Efficient label, confirm recognition when shown the Most Efficient label and were influenced by the Most Efficient label.²¹ MEI households somewhat or strongly agree with the statement “All other things equal, I would buy a product because it is designated ENERGY STAR Most Efficient.” Non-MEI households neither agree nor disagree, somewhat disagree, or strongly disagree with the above mentioned statement.

DEMOGRAPHICS

For most demographic characteristics MEI and non-MEI proportions are similar. However, some differences between MEI households and non-MEI households exist. A larger proportion of MEI householders (66 percent) compared to non-MEI (47 percent) are male. Thirty-four percent of MEI householders and 53 percent of non-MEI are female. This difference is statistically significant at the 10 percent level of significance (p-value=0.0950). For a couple of age breakouts, MEI and non-MEI proportions are statistically different from each other.

Age Distribution			
Householder/ Respondent Age	MEI % Householders (n=40)	Non-MEI % Householders (n=1,539)	p-value
18-24	10%	10%	0.984
25-34	30%	17%	0.248
35-44*	8%	19%	0.013
45-54	16%	18%	0.879
55-64***	6%	19%	0.002
65-74	13%	12%	0.946
75 or older	17%	5%	0.274

*** MEI and non-MEI proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01). Proportion of MEI householder/respondent ages 55-64 is smaller than non-MEI.

* MEI and non-MEI proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10). Proportion of MEI householder/respondent ages 35-44 is smaller than non-MEI.

²¹ Base for Most Efficient Influenced (MEI) households are those who are aware of the ENERGY STAR label; have indicated awareness of ENERGY STAR Most Efficient (unaided recognition, Q18. Have you ever seen or heard of ENERGY STAR Most Efficient?); confirmed recognition of ENERGY STAR Most Efficient (aided recognition, Q20. Is this the graphic you have seen or heard of before?); and report they would buy a product because it is ENERGY STAR Most Efficient (somewhat or strongly agree with Q21. All other things equal, I would buy a product because it is designated as ENERGY STAR Most Efficient).

INFORMATION SOURCES

A larger proportion of MEI households (56 percent) than non-MEI households (14 percent) saw something about ENERGY STAR on the Internet. This difference is statistically significant at the 1 percent level ($p\text{-value}=0.0012$).

For three information sources, the proportion of MEI households that heard or saw something about ENERGY STAR was smaller when compared to non-MEI households.

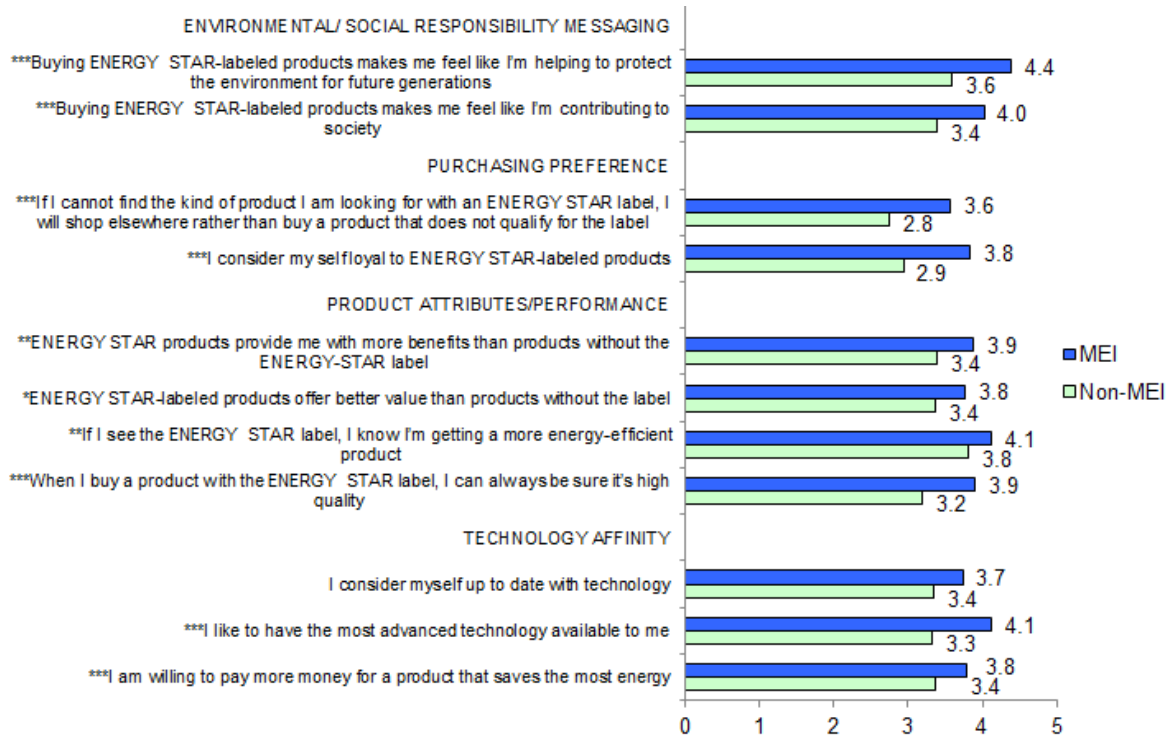
- Forty-seven percent of MEI households have seen something about ENERGY STAR on appliance or electronics labels compared to 70 percent of non-MEI households ($p\text{-value}=0.0774$).
- Thirty-nine percent of MEI households have seen something about ENERGY STAR in store displays compared to 61 percent of non-MEI households ($p\text{-value}=0.0815$).
- MEI households (zero percent) have not heard something about ENERGY STAR on radio commercials whereas 7 percent of non-MEI households have ($p\text{-value}\leq 0.01$).

For all other sources seen, MEI and non-MEI results are similar.

CONSUMER PERCEPTIONS

MEI households are very likely to associate ENERGY STAR with environmental and social benefits, are very likely to shop where they can find the ENERGY STAR label, perceive ENERGY STAR products to have superior performance, and are motivated by advanced technologies. MEI households had higher agreement than non-MEI households for ten of the eleven attitudinal statements shown below. Furthermore, seven of the statements in the table below are statistically significant at the 1 percent level ($p\text{-value}\leq 0.01$).

**Response to Categorical Statements Regarding Messaging,
Purchasing, and Product Attributes – Average Response Positive Statements
(MEI Base = Recognize Most Efficient label (aided), Non-MEI Base = Recognize label (aided))**



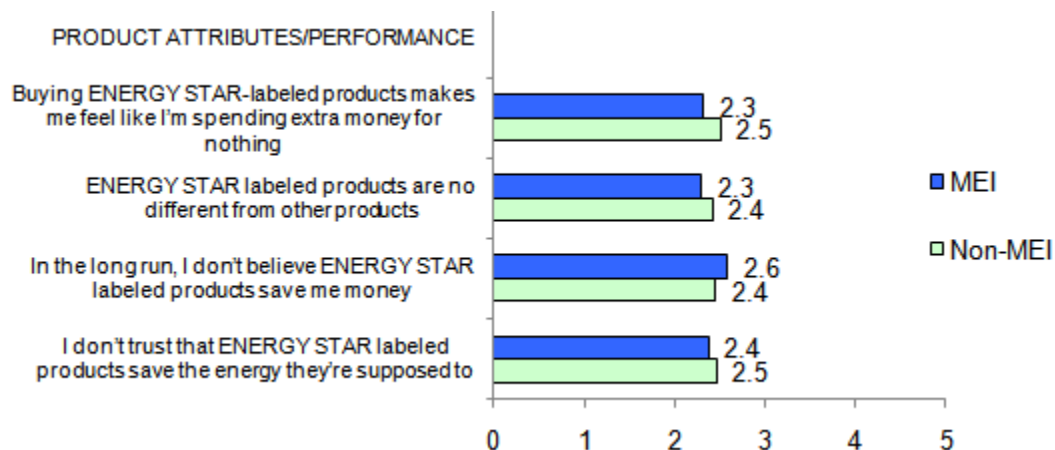
*** MEI and non-MEI averages are statistically different from each other at the 1-percent level of significance (p-value≤0.01).

** MEI and non-MEI averages are statistically different from each other at the 5-percent level of significance (p-value≤0.05).

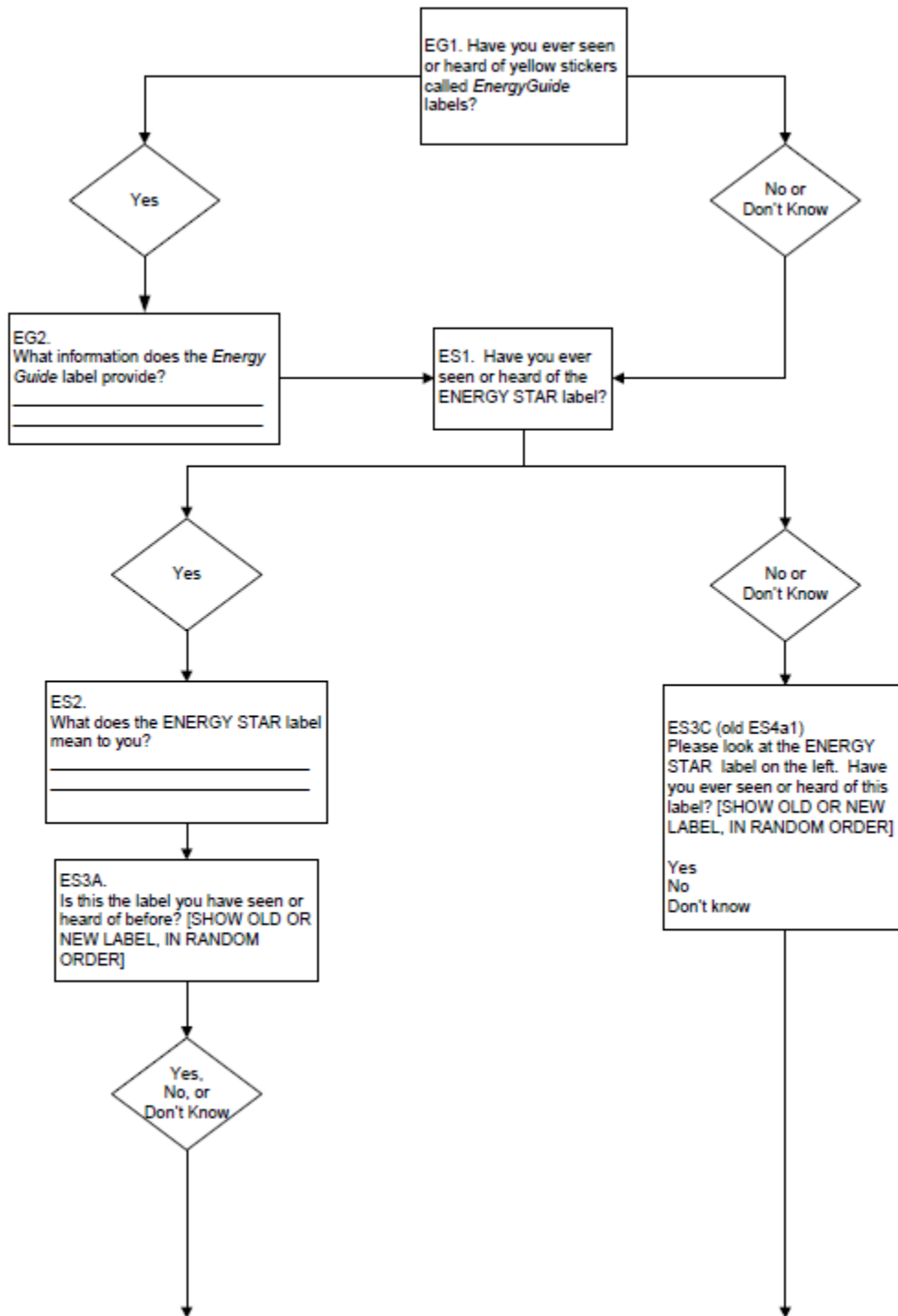
* MEI and non-MEI averages are statistically different from each other at the 10-percent level of significance (p-value≤0.10).

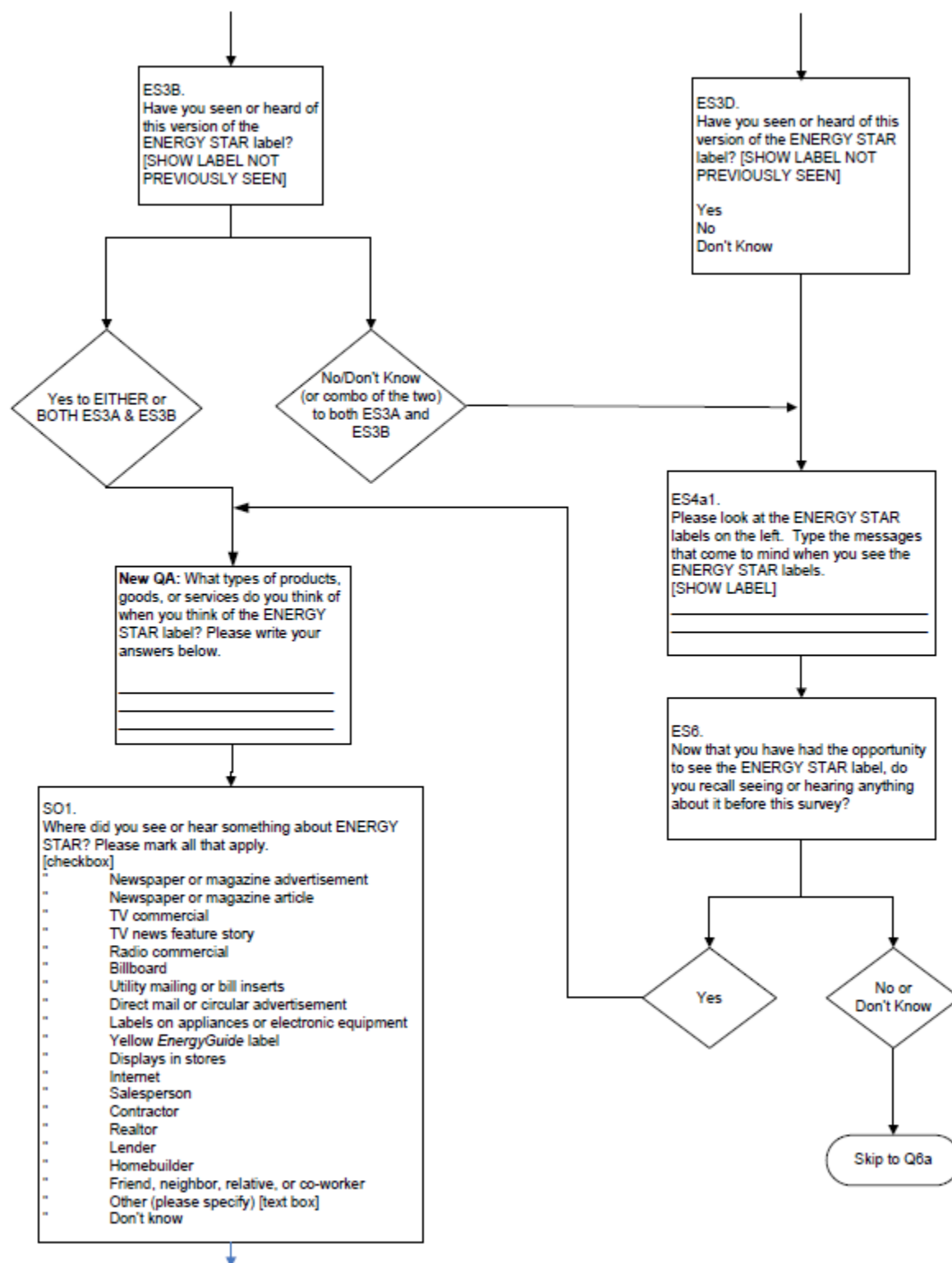
MEI and non-MEI averages are similar for all negative statements.

**Response to Categorical Statements Regarding Messaging,
Purchasing, and Product Attributes – Average Response to Negative Statements
(MEI Base = Recognize Most Efficient label (aided), Non-MEI Base = Recognize label (aided))**



APPENDIX D: 2012 SURVEY QUESTIONS AND FLOW CHART





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SO2.
What did you see or hear about ENERGY STAR? Please be specific.

↓

New QB: As far as you know, who decides if a product deserves the ENERGY STAR label? Select one answer only.

Product manufacturers
Retailers/stores
US Government
Underwriters Laboratories
Electric & gas utilities
Other: _____
Don't know

↓

Q5(a). Now we're going to ask you about several groups of products. As you review the list, please select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.

<p><u>Heating and Cooling Products</u></p> <p>Central air conditioner Furnace or boiler Heat pump Thermostat Room air conditioner Gas water heater None of these products</p>	<p><u>Home Office Equipment</u></p> <p>Computer or monitor Computer printer Copying machine Fax machine Scanner All-in-one printer (includes copier/scanner/fax)</p>
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Q5(b). Please continue reviewing the lists of products below, and select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.

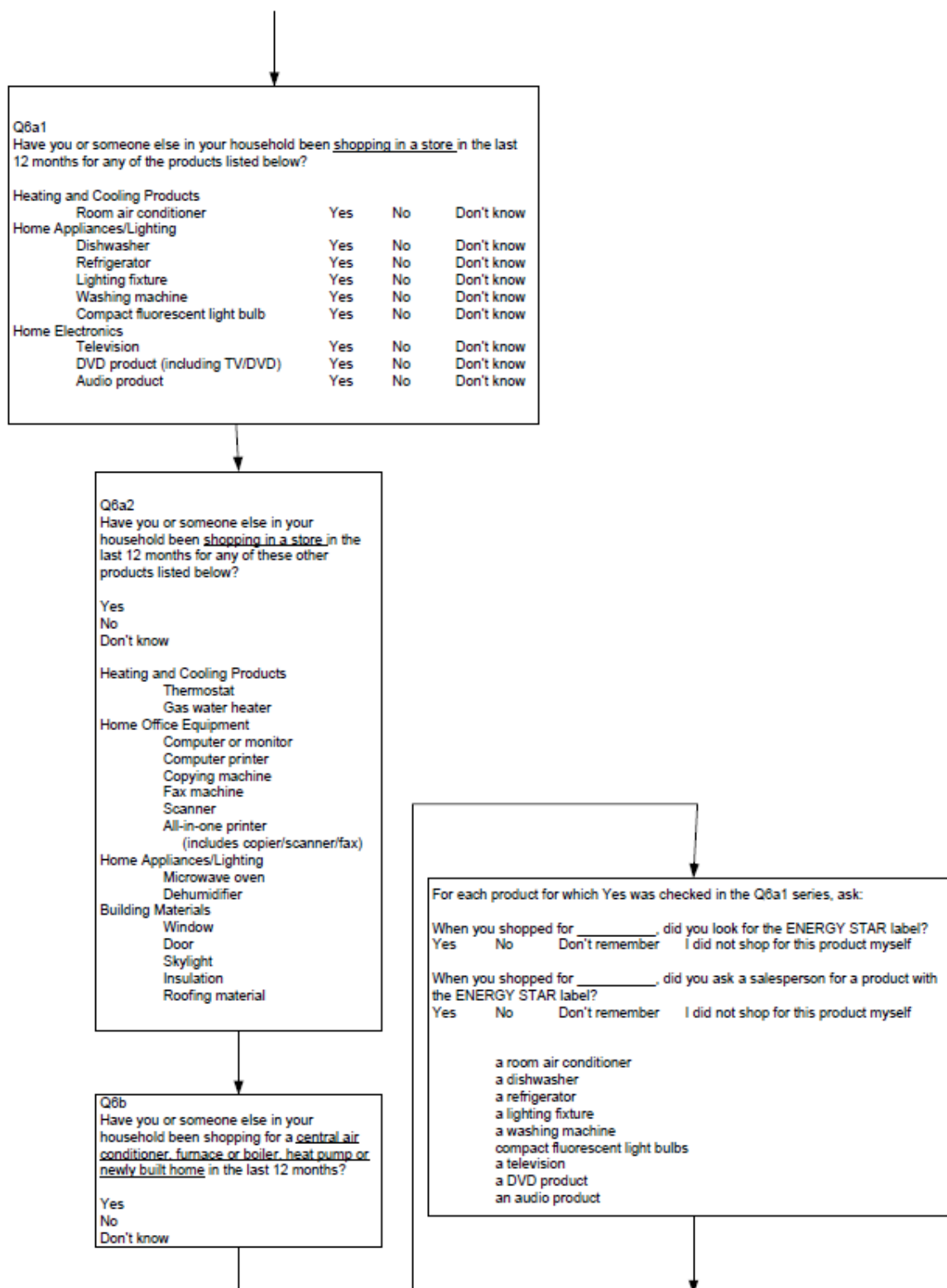
<p><u>Home Appliances/Lighting</u></p> <p>Dishwasher Refrigerator Lighting fixture Washing machine Compact fluorescent light bulb Microwave oven Dehumidifier None of these products</p>	<p><u>Home Electronics</u></p> <p>Television DVD product (including TV/DVD) Audio product</p>
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Q5(c). Finally, please review the last of the product lists below and select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.

<p><u>Building Materials</u></p> <p>Window Door Skylight Insulation Roofing material</p>	<p><u>Buildings</u></p> <p>Newly built home</p>
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Q12(a). Please look at each of the groups of products again. Which of these products have you purchased in the last 12 months? Please check all that apply.

<u>Heating and Cooling Products</u>	<u>Home Office Equipment</u>
Central air conditioner	Computer or monitor
Furnace or boiler	Computer printer
Heat pump	Copying machine
Thermostat	Fax machine
Room air conditioner	Scanner
Gas water heater	All-in-one printer (includes copier/scanner/fax)
None of these products	

Q12(b). Please continue reviewing the lists of products below. Which of these products have you purchased in the last 12 months? Please check all that apply.

<u>Home Appliances/Lighting</u>	<u>Home Electronics</u>
Dishwasher	Television
Refrigerator	DVD product (including TV/DVD)
Lighting fixture	Audio Product
Washing machine	
Compact fluorescent light bulb	
Microwave oven	
Dehumidifier	
None of these products	

Q12(c). Finally, please review the last of the product lists below. Which of these products have you purchased in the last 12 months? Please check all that apply.

<u>Building Materials</u>	<u>Buildings</u>
Window	Newly built home
Door	
Skylight	
Insulation	
Roofing material	
None of these products	

Did you install the compact fluorescent light bulb(s) you purchased in a light fixture?

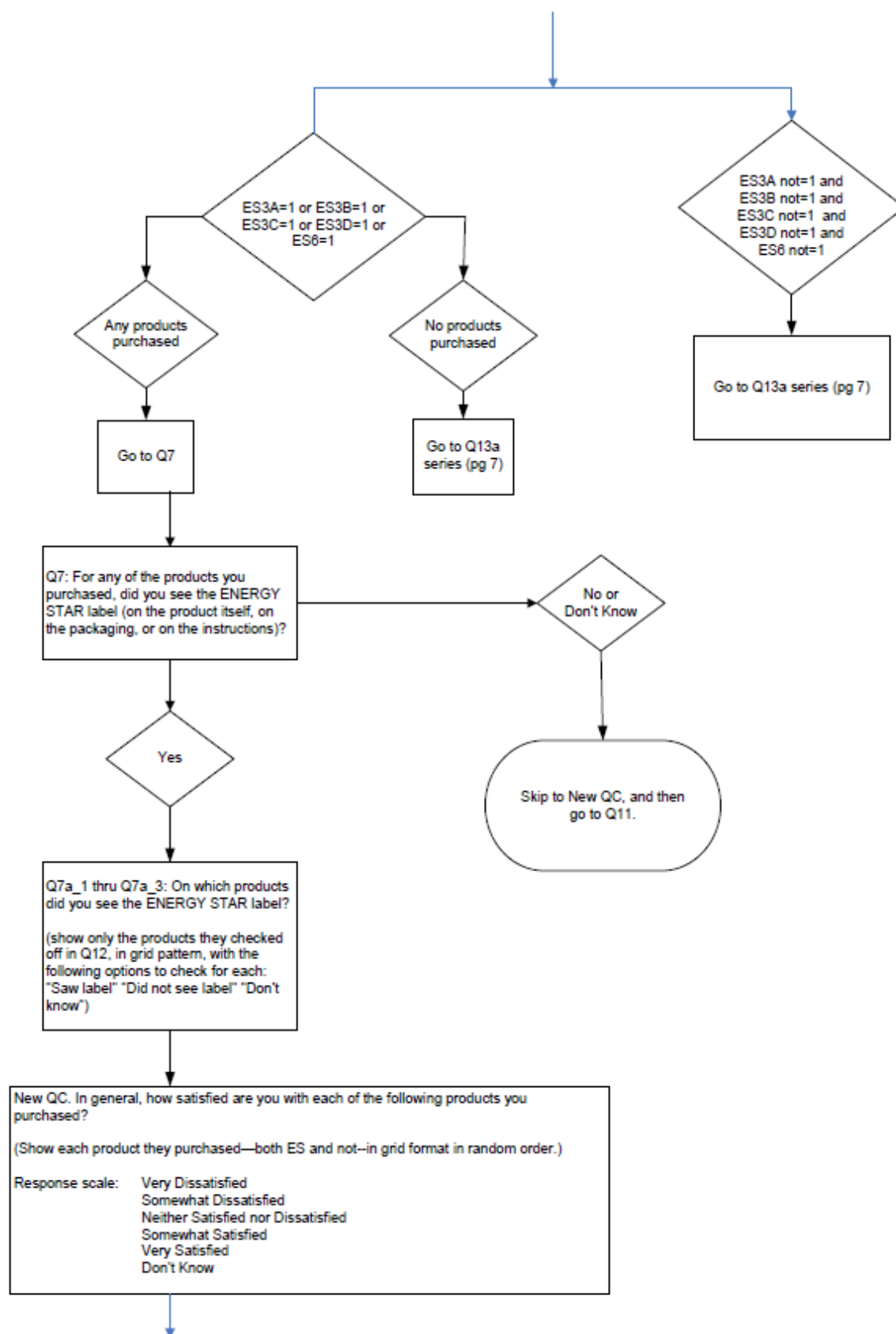
Yes
No
Don't know

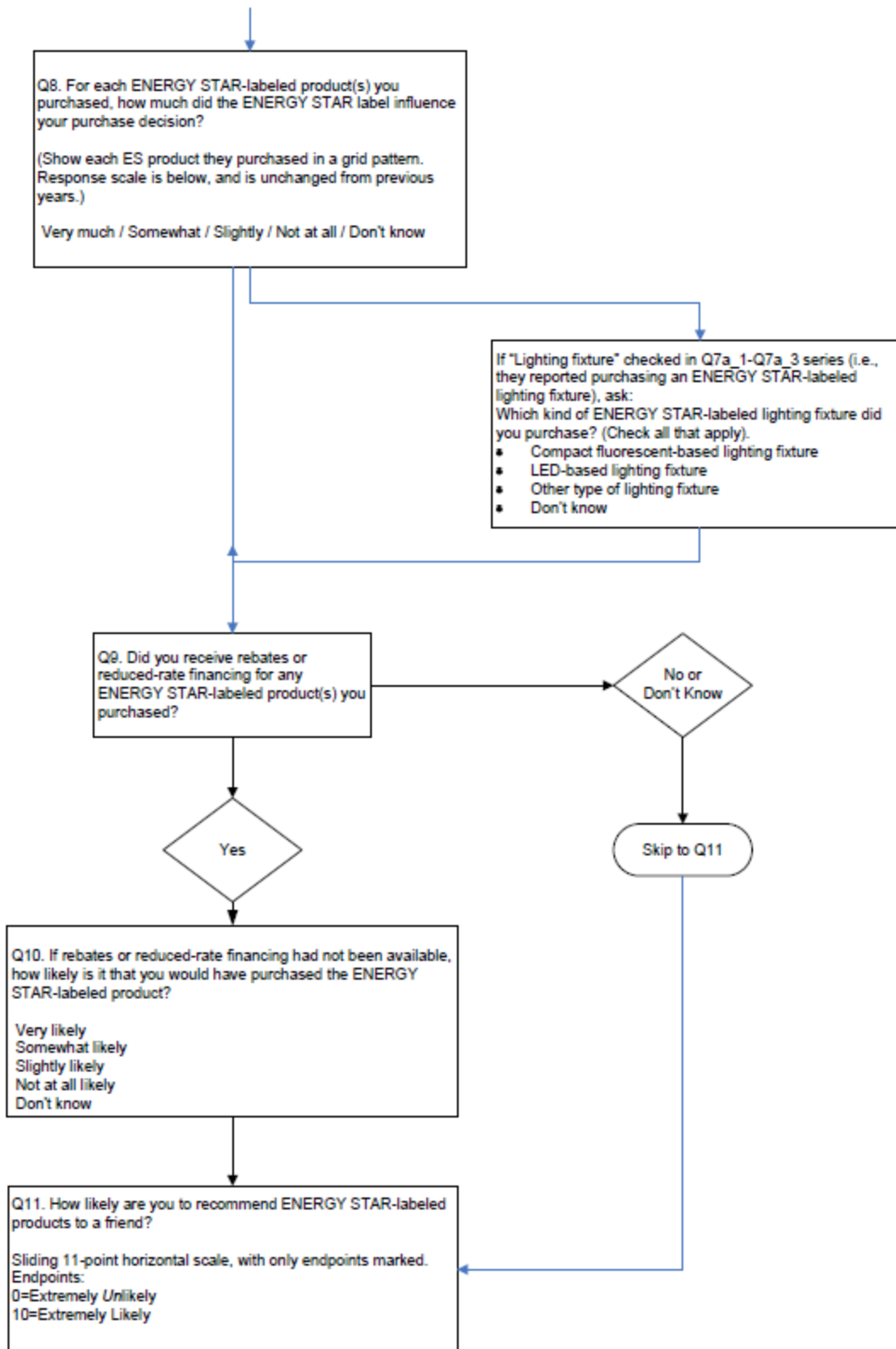
Yes

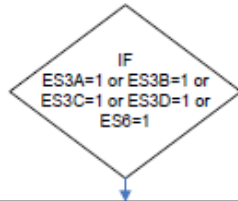
If Yes checked to this question, ask:
What kind of bulb(s) did you replace? (Check the answer that best describes most of the replacements you made.)

- Compact fluorescent light bulb
- Incandescent light bulb
- Don't know

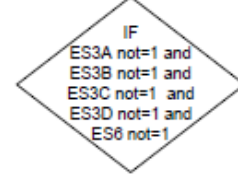
No/
Don't Know







Note: These two
diamonds are
the same as
those before Q7.



On the scale by each statement, please indicate how strongly you agree or disagree with the statement.
(Note to programmer: present Q16a through Q16s in random order for each respondent.)

	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
Q16a. ENERGY STAR-labeled products provide me with more benefits than products without the ENERGY STAR label.	1	2	3	4	5
Q16c. ENERGY STAR-labeled products offer better value than products without the label.	1	2	3	4	5
Q16d. If I cannot find the kind of product I am looking for with an ENERGY STAR label, I will shop elsewhere rather than buy a product that does not qualify for the label.	1	2	3	4	5
Q16f. Buying ENERGY STAR-labeled products makes me feel like I'm helping to protect the environment for future generations.	1	2	3	4	5
Q16h. Buying ENERGY STAR-labeled products makes me feel like I'm contributing to society.	1	2	3	4	5
Q16i. Buying ENERGY STAR-labeled products makes me feel like I'm spending extra money for nothing.	1	2	3	4	5
Q16l. I consider myself loyal to ENERGY STAR-labeled products.	1	2	3	4	5
Q16n. It seems like most products have the ENERGY STAR label these days.	1	2	3	4	5
Q16o. If I see the ENERGY STAR label, I know I'm getting a more energy-efficient product.	1	2	3	4	5
Q16p. When I buy a product with the ENERGY STAR label, I can always be sure it's high quality.	1	2	3	4	5
Q16q. ENERGY STAR-labeled products are no different from other products.	1	2	3	4	5
Q16r. In the long run, I don't believe ENERGY STAR-labeled products save me money.	1	2	3	4	5
Q16s. I don't trust that ENERGY STAR-labeled products save the energy they're supposed to.	1	2	3	4	5
Q16t. I am willing to pay more money for a product that saves the most energy.	1	2	3	4	5
Q16u. I like to have the most advanced technology available to me.	1	2	3	4	5
Q16v. I consider myself up to date with technology.	1	2	3	4	5

Q17. Please tell us about your role in your household's purchasing decisions. For each of the product groups listed below, do you usually make the purchasing decisions, do you share the decision-making equally with another household member, does someone else usually make the decisions but you have some input, or do you have no input in the decision-making?

	I usually make the decisions	I share the decision-making equally	Someone else usually makes the decisions, but I have some input	I have no input in decision- making	I'm not sure
Heating and Cooling Products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home Office Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home Appliances/Lighting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Home Electronics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Building Materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

