

ENERGY STAR®. The simple choice for energy efficiency.



NATIONAL AWARENESS OF ENERGY STAR® FOR 2014

ANALYSIS OF CEE HOUSEHOLD SURVEY



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EXECUTIVE SUMMARY

In the fall of 2014, members of the Consortium for Energy Efficiency (CEE) sponsored the fifteenth 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.

This report discusses the results of the CEE 2014 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

- Significantly more households in 2014 (81 percent) compared with 2013 (73 percent) have seen or heard of the ENERGY STAR label (without visual aid).
- Eighty-nine percent of households recognized the ENERGY STAR label when shown the label. This is similar to the 87 percent finding in 2013.
- Understanding of the ENERGY STAR label increased in 2014. Households with a high understanding of the label increased to 75 percent from 70 percent in 2013; households with at least a general understanding of the label increased to 84 percent from 80 percent in 2013.
- Among all households, 45 percent knowingly purchased an ENERGY STAR-labeled product in the past 12 months.

- 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. This proportion has remained the same since 2012.
- For 77 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.” This increased from 70 percent in 2013. For another 11 percent of these households, the label influenced their purchase decisions “slightly.”
- Seventeen percent of households that knowingly purchased an ENERGY STAR-labeled product report receiving a financial incentive for doing so in 2014; this is the same as 2013. Eighty-nine percent of these households report they would have been “very likely” (60 percent) or “somewhat likely” (29 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; 32 percent of these households reported that they were “extremely likely” to recommend ENERGY STAR-labeled products. Both findings are similar to 2013.

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, 90 percent of households in high-publicity areas recognized the label versus 87 percent in non-high-publicity areas. Without a visual aid, a similar proportion of households in high- and non-high-publicity areas recognized the label, 83 percent in high publicity and 79 percent in non-high-publicity areas.
- A significantly larger proportion of households in high-publicity areas than non-high-publicity areas associate products with the ENERGY STAR label when prompted for 12 of the 28 products. None of the 28 products had higher levels of association in non-high-publicity areas than high-publicity areas.
- The proportions of households in high- and non-high-publicity areas were the same (77 percent) for households that recognized the ENERGY STAR label (aided), knowingly purchased an ENERGY STAR-labeled product, and indicated the label influenced at least one of their purchase decisions “very much” or “somewhat.” For households in non-high-publicity areas this increased from 67 percent in 2013. For households in high-publicity areas the 2014 result was similar to 2013.

- Sixty-five percent of the households in high-publicity areas and 60 percent of the households in non-high-publicity areas associated the ENERGY STAR label with “efficiency or energy savings.”
- Considering only households that recognized the label (with a visual aid), a smaller proportion of households in high-publicity areas than in non-high-publicity areas heard or saw something about ENERGY STAR from homebuilders, lenders, and other sources.

Conclusions

This fifteenth 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.
- A large proportion of households consistently associate the label with energy efficiency and saving energy.
- There was a significant increase in understanding of the ENERGY STAR label in 2014 compared to prior years. Households with a high understanding of label messaging increased from 70 percent to 75 percent; while households with at least a general understanding increased from 80 percent to 84 percent.
- The proportion of households that exhibit only a general understanding of the label is small (9 percent) compared with the proportion of households that exhibit a high understanding (75 percent).

INTRODUCTION

In the fall of 2014, members of the Consortium for Energy Efficiency (CEE) sponsored the fifteenth 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 2014 additional surveys were conducted in New York State (including Long Island) and the Pacific Northwest (Idaho, Montana, Oregon, Washington). As in the fourteen previous years, CEE and sponsoring members made the survey data publicly available for this analysis.

This report discusses the results of the CEE 2014 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 2014 survey (Appendix C), and a copy of the 2014 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 November 2014, 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 description 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 – 2013. As in previous years, CEE and its sponsoring members made the survey data available to EPA for analysis.

The sampling frame for this national survey included all households in the largest 57 Nielsen Designated Market Areas® (DMAs) that together accounted for about 70 percent of U.S. television households. In addition, some CEE members periodically choose to sponsor more intensive sampling (i.e., an oversample) in selected localities, referred to here as *sponsor areas*. In 2014, there were two sponsor areas:

- New York State (including Long Island)
- Pacific Northwest (Idaho, Montana, Oregon, Washington)

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 13 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 2014 publicity classifications, *low publicity* and *other publicity* are combined in the analysis and referenced as *non-high-publicity* areas. One 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 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.² 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

² The CEE member sponsoring the New York State oversample requested stratification by Upstate and Downstate; no other CEE member funding an oversample requested additional stratification.

proportion to that stratum's share of the U.S. population living in DMAs. In 2014, the national sample is comprised of 1,400 respondents from the top 57 DMAs.³

This report presents the 2014 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.

³ In a year when CEE members choose not to sponsor an oversample the national sample comprises 1,000 respondents from the top 57 DMAs. In 2014, the national sample included an additional 400 respondents that were part of the oversample and were from the top 57 DMAs.

KEY FINDINGS

RECOGNITION

In 2014, 89 percent of households recognized the ENERGY STAR label when shown the label (i.e., *aided recognition*). Eighty-one 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 aided 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 2014 and 2013 surveys are summarized in the following table. Unaided recognition of the ENERGY STAR label was significantly higher at the 1-percent level (p-value = 0.0011) in 2014 when compared to 2013. Aided recognition of the ENERGY STAR label results were similar in 2013 and 2014 (p-value = 0.3843).

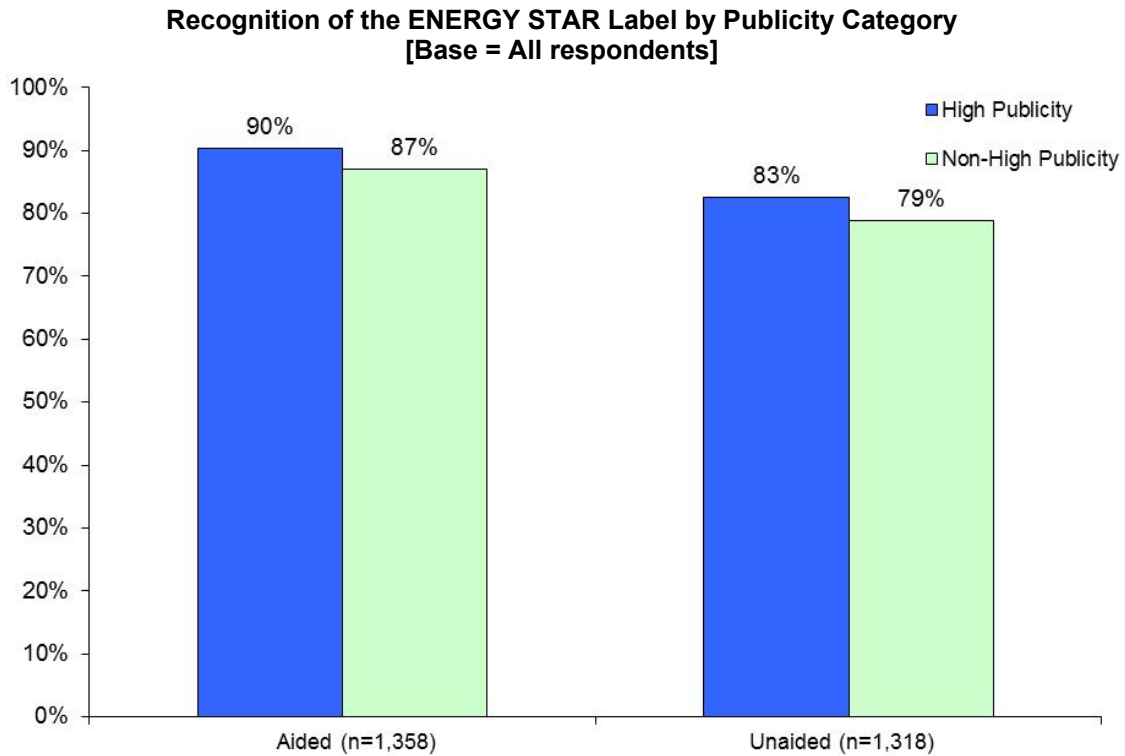
Recognition of the ENERGY STAR Label
[Base = All respondents]

Recognize ENERGY STAR Label	2014		2013	
	Aided (n=1,358)	Unaided (n=1,318)	Aided (n=959)	Unaided (n=868)
Yes	89%	81%	87%	73%
Standard error	1.1%	1.4%	1.3%	1.9%

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

After being shown the ENERGY STAR label (aided), 90 percent of households in high-publicity areas, and 87 percent in non-high-publicity areas recognized the label; this difference was not statistically significant (p-value = 0.1371). Unaided recognition was 83 percent in high-publicity areas and 79 percent in non-high-publicity areas; this difference was not statistically significant (p-value = 0.187).



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

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.

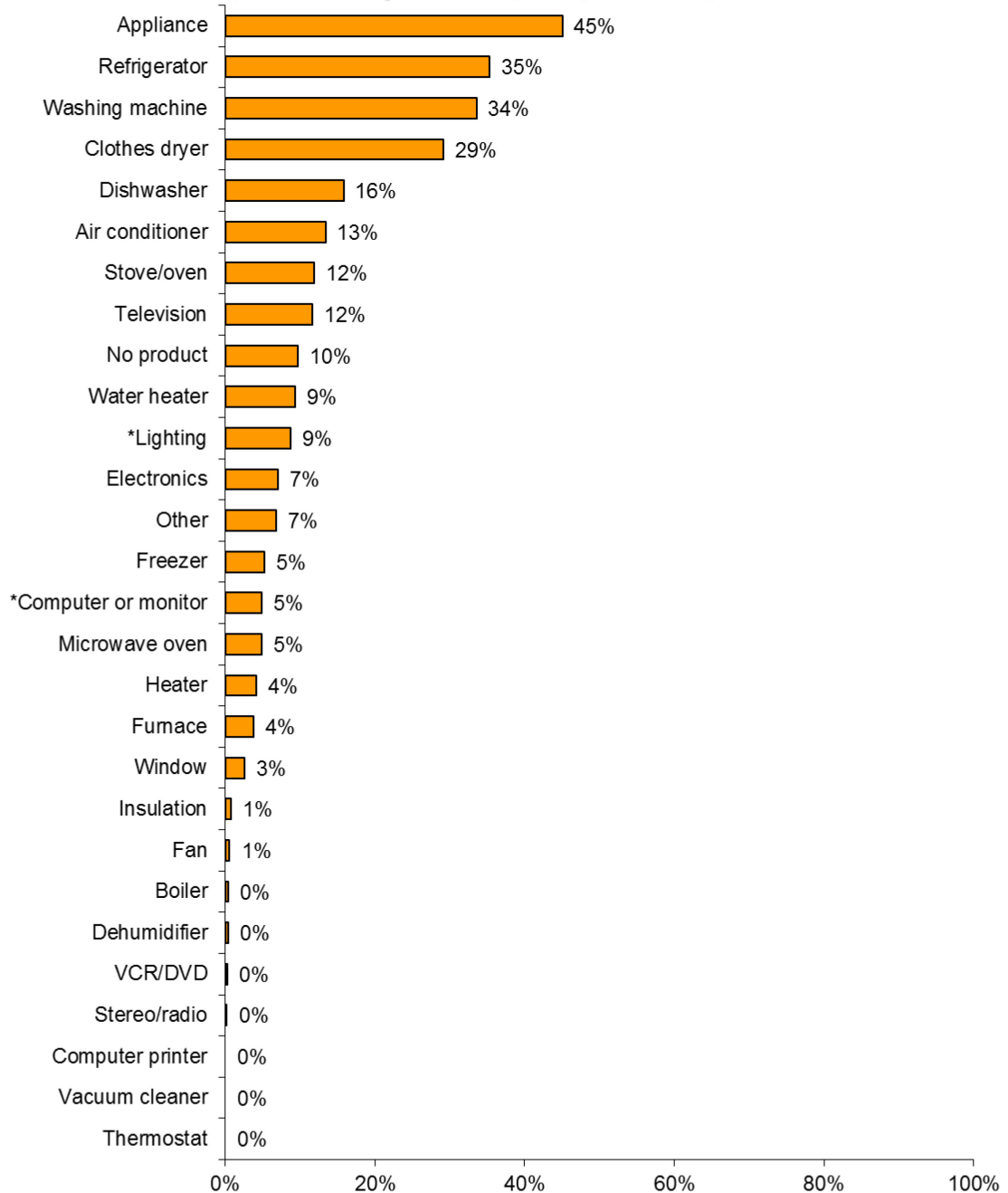
Appliances, refrigerators, and washing machines showed the strongest unprompted associations with the label at 45, 35, and 34 percent, respectively. Though the product category was not eligible for ENERGY STAR certification when the 2014 survey was fielded, clothes dryers showed the fourth strongest association with the label at 29 percent.⁴ The next most strongly associated products (unprompted) were dishwashers, air conditioners, and stoves/ovens, at 16, 13, and 12 percent, respectively. Of the top six product associations, none are significantly different from the 2013 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. Lighting showed a significant increase from 2013, computers or monitors showed a significant decrease; however, these products were mentioned by relatively few respondents (9 and 5 percent, respectively).

When prompted, 86 percent of households had seen the label on refrigerators. Dishwashers (75 percent) and washing machines (75 percent) were the next products most commonly associated with the ENERGY STAR label. Within the top three, dishwashers showed a statistically significant increase at the 10-percent level, from 70 percent in 2013 to 75 percent in 2014 (p-value = 0.0633). Water heaters, televisions, central A/C, microwave ovens, room air conditioners, and windows followed next in a range of 40 to 56 percent. In this group, water heaters showed a statistically significant increase, from 46 in 2013 to 56 percent in 2014 (p-value=0.0005).⁵ At the same time, windows showed a statistically significant decrease, from 48 percent in 2013 to 40 percent in 2014 (p-value=0.0054). While 46 percent of households associated microwave ovens with the ENERGY STAR label, they are not a product category eligible for ENERGY STAR labeling.

⁴ Prior to 2015, clothes dryers were not eligible for ENERGY STAR certification. The clothes dryer specification went into effect in January 2015. .

⁵ Before 2014, this response was “Gas water heater.”

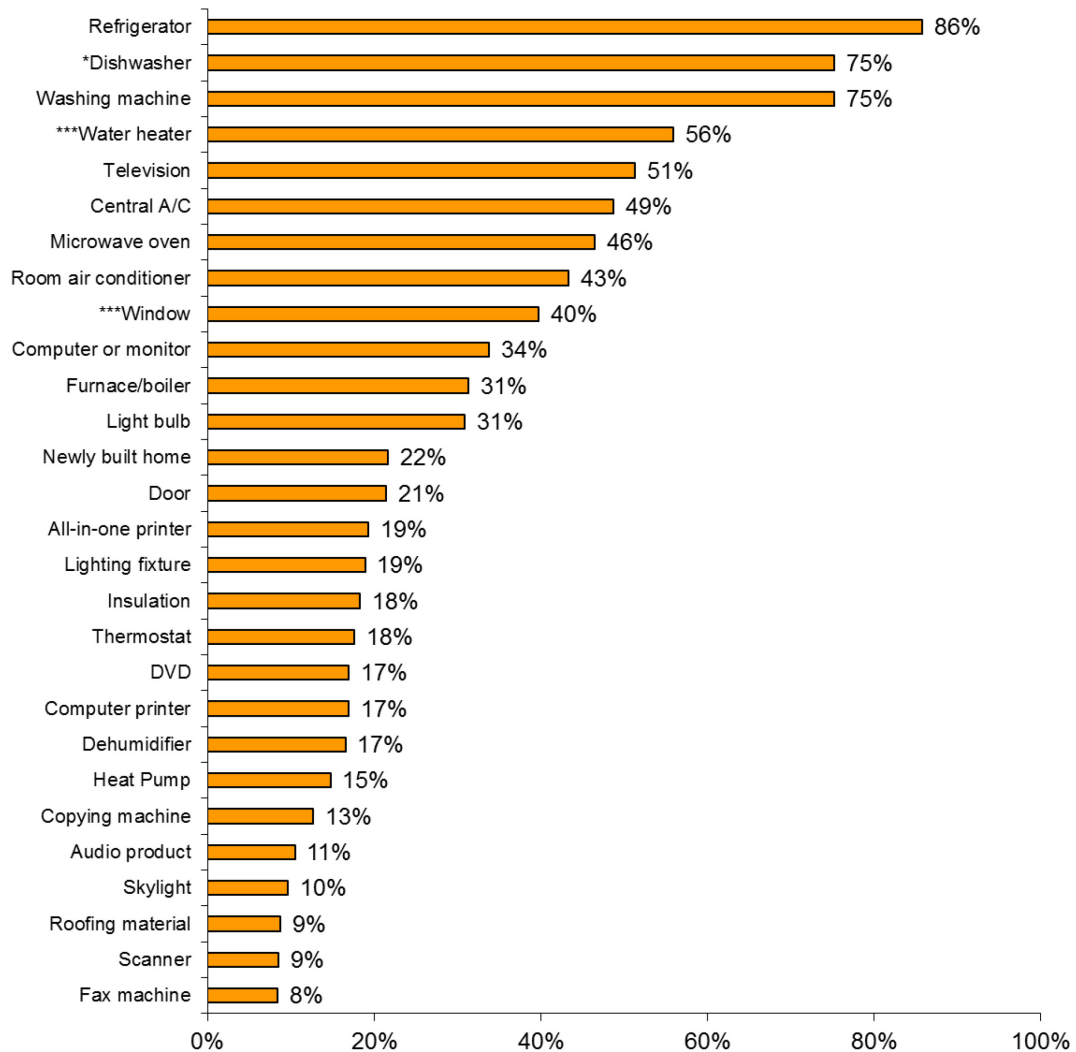
Unprompted Product Association with the ENERGY STAR Label
[Base = Recognize label (aided), n = 1,084]



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."

* 2013 and 2014 proportions are significantly different from each other at the 10-percent level of significance ($p\text{-value} \leq 0.10$). The proportion of households in 2014 is smaller than 2013 for computers or monitors, and is larger than 2013 for lighting.

Prompted Product Association with the ENERGY STAR Label
[Base = Recognize label (aided)⁶]



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.”

*** 2014 and 2013 proportions are statistically different from each other at the 1-percent level of significance (p-value ≤ 0.01). The proportion of households in 2014 is larger than 2013 for water heaters, and smaller than 2013 for windows.

* 2014 and 2013 proportions are statistically different from each other at the 10-percent level of significance (p-value ≤ 0.10). The proportion of households in 2014 is larger than 2013 for dishwashers.

⁶ 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 1124, 1121, and 1089 respectively.

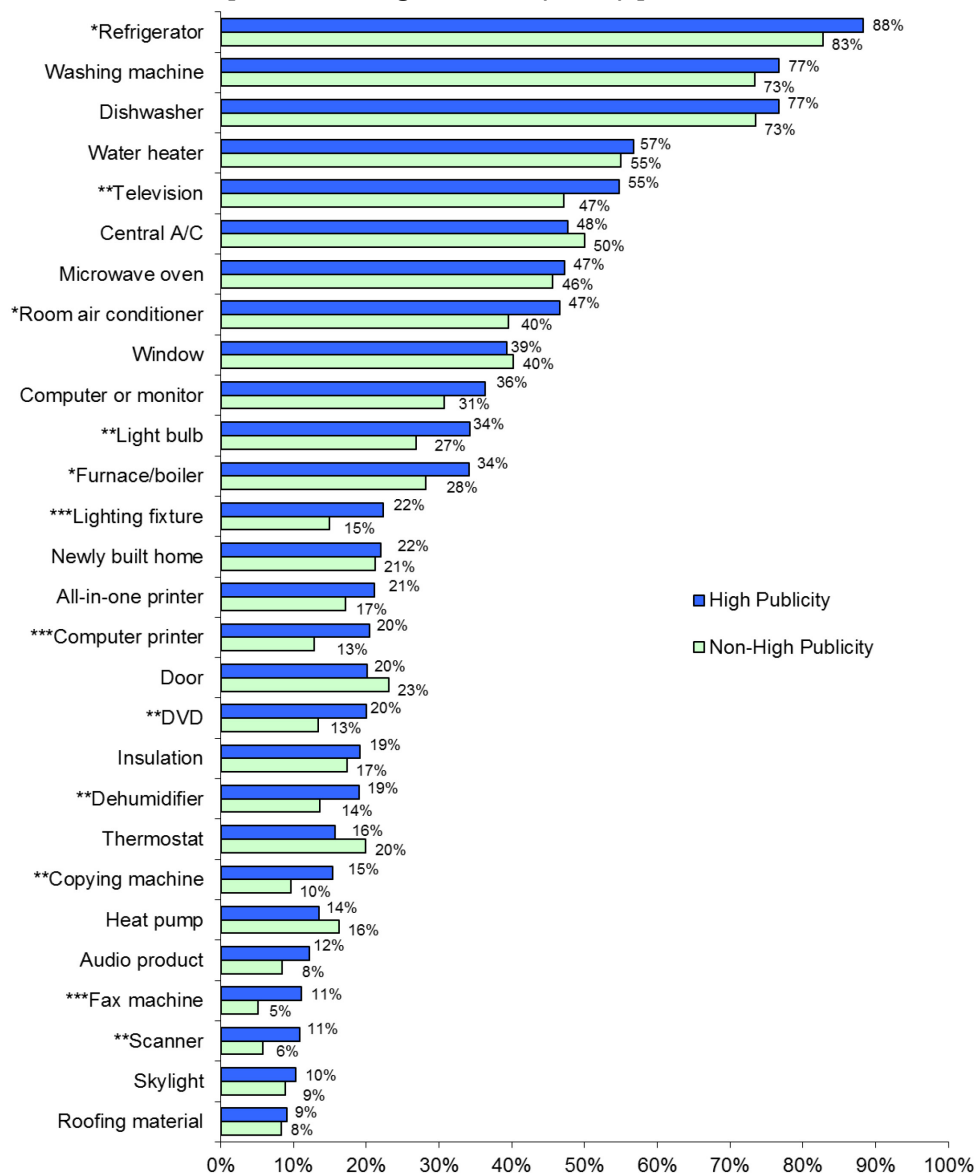
Product Associations by Publicity Category

Regional energy efficiency program sponsors have traditionally focused on promoting ENERGY STAR certified lighting, refrigerators, room air conditioners, washing machines, dishwashers, programmable thermostats⁷, 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.

- This year, twelve products showed a significantly larger proportion of households in high-publicity areas than non-high-publicity areas associate with the ENERGY STAR label when prompted. These products include:
 - At the 1-percent level of significance: lighting fixtures (22 percent and 15 percent, respectively), computer printers (20 percent and 13 percent, respectively) and fax machines (11 percent and 5 percent, respectively).
 - At the 5-percent level of significance: televisions (55 percent and 47 percent, respectively), light bulbs (34 percent and 27 percent, respectively), DVDs (20 percent and 13 percent, respectively), dehumidifiers (19 percent and 14 percent, respectively), copying machines (15 percent and 10 percent, respectively), and scanners (11 percent and 6 percent, respectively).
 - At the 10-percent level of significance: refrigerators (88 percent and 83 percent, respectively), room air conditioners (47 percent and 40 percent, respectively), and furnace/boilers (34 percent and 28 percent, respectively),
- None of the twenty-eight products had higher levels of association in non-high-publicity areas than high-publicity areas.

⁷ 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)]⁸⁹



*** 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 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).

⁸ As discussed in footnote 6, 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 705 and 419, respectively. For Home Appliances/Lighting and Home Electronics they are 704 and 417, and for Building Materials and Buildings they are 682 and 407.

⁹ 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 2014, 84 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 (9 percent) was small compared with the proportion that exhibited a high understanding (75 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 2014 and 2013 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 increased to 75 percent in 2014 from 70 percent in 2013. This difference is statistically different at the 5-percent level (p-value = 0.0157). The proportion of respondents with at least a general understanding of the label from 2013 to 2014 is also statistically different and increased to 84 percent in 2014 from 80 percent in 2013 (p-value = 0.0257).

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

Level of Understanding of the Label	2014 (n=1,400)	2013 (n=1,000)
High understanding	75%	70%
General understanding	9%	10%
No understanding	16%	20%
Total	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.

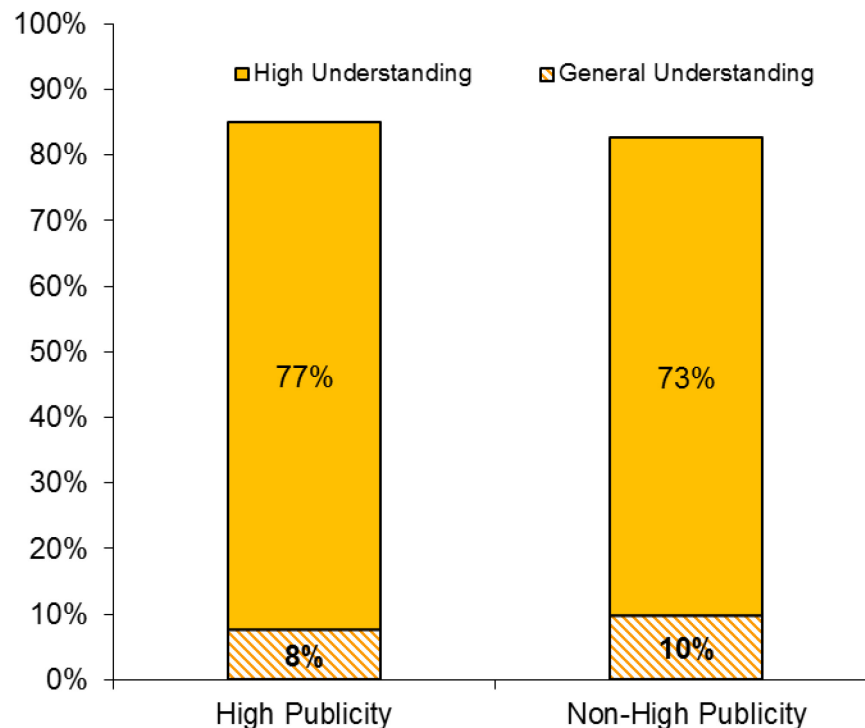
Understanding by Publicity Category

Eighty-five percent of households in high-publicity areas had at least a general understanding of the label compared with 83 percent of households in non-high-publicity areas. Additionally, a large percent of households exhibited a high degree of understanding in both high- (77 percent) and non-high-publicity areas (73 percent). Neither of these differences is 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	85%
Non-high	83%
Difference (High minus Non-high)	2%
p-value	0.506

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



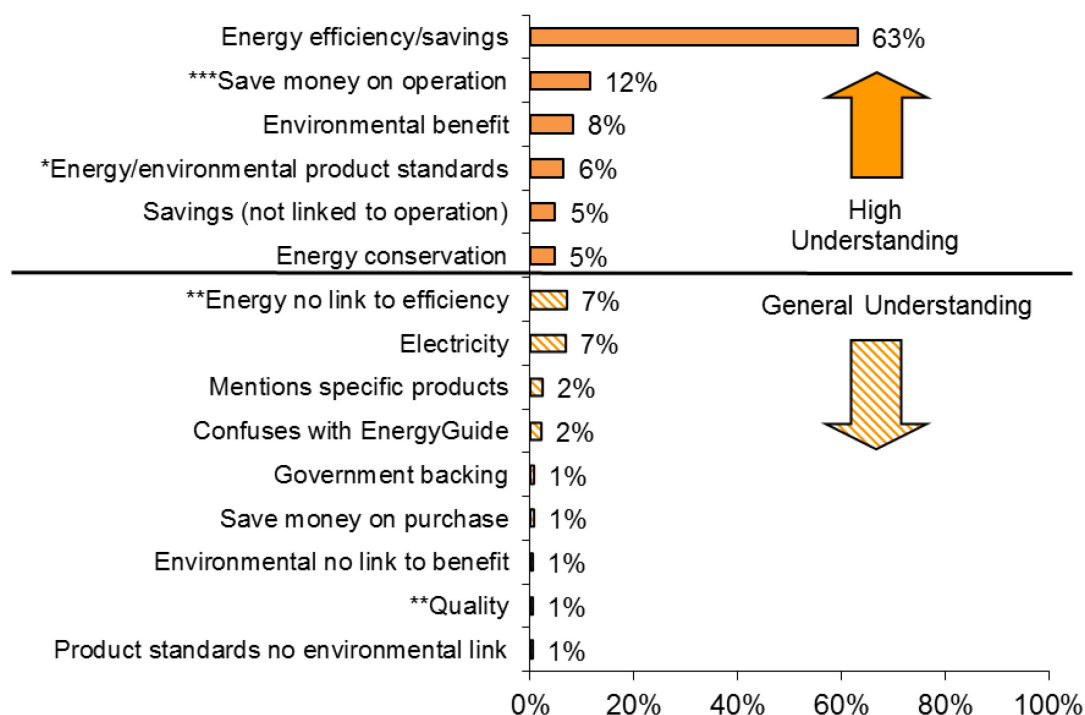
Understanding of Label Messaging

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-three percent of households surveyed associated the ENERGY STAR label with this message.

Between 2013 and 2014, there was a marked increase in the percent of households that associated the ENERGY STAR label with “saving money on operation” which is considered a high understanding of the label (5 percent to 12 percent). This is statistically different at the 1-percent level ($p\text{-value} \leq 0.01$). The 2012 result (6 percent) was similar to the 2013 result (5 percent). There was a decrease in the percent of households that associated the ENERGY STAR label with “energy/environmental product standards” (9 percent in 2013 to 6 percent in 2014); this difference is statistically significant at the 10-percent level ($p\text{-value} = 0.0698$).

For messages considered a general understanding of the ENERGY STAR label there was a decrease in association with “energy no link to efficiency” and “quality” messages. In 2014, 7 percent associated the ENERGY STAR label with “energy no link to efficiency,” down from 11 percent in 2013; this is statistically different at the 5-percent level ($p\text{-value} = 0.0243$).

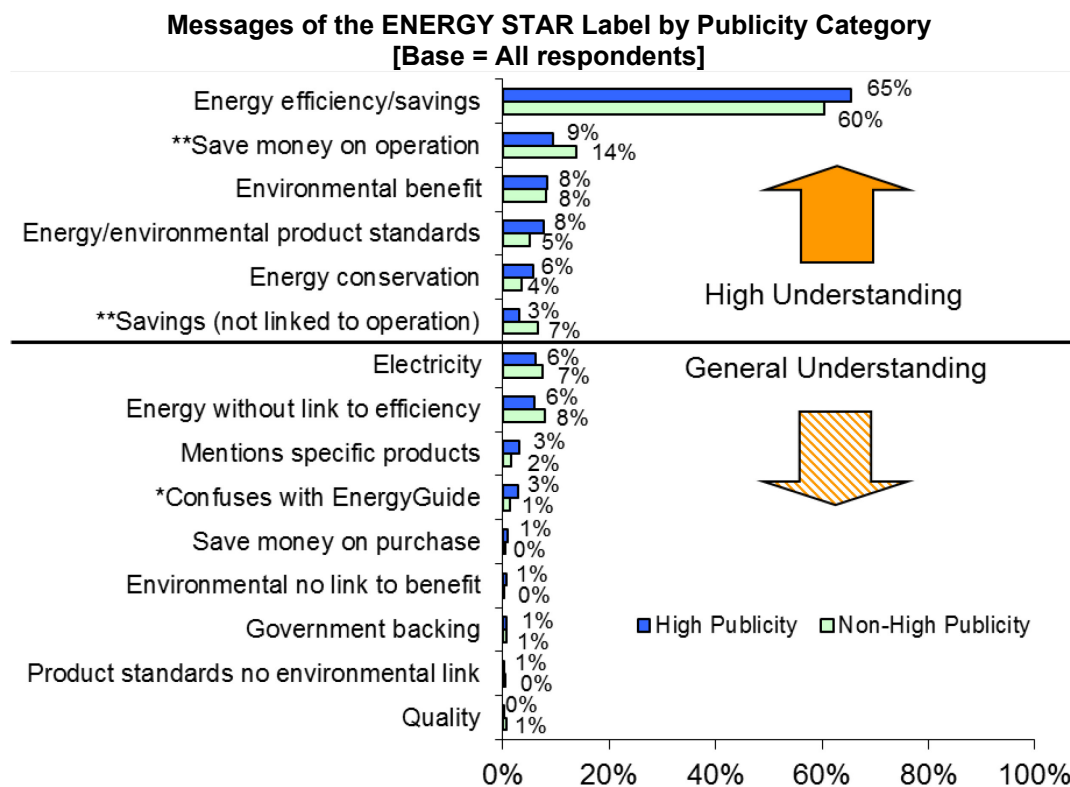
Messages of the ENERGY STAR Label [Base = All respondents]



- *** 2014 and 2013 proportions are statistically different from each other at the 1-percent level of significance (p-value ≤ 0.01). The proportion of households in 2014 is larger than 2013 for "save money on operation."
- ** 2014 and 2013 proportions are statistically different from each other at the 5-percent level of significance (p-value ≤ 0.05). The proportion of households in 2014 is smaller than 2013 for "energy no link to efficiency" and "quality."
- * 2014 and 2013 proportions are statistically different from each other at the 10-percent level of significance (p-value ≤ 0.10). The proportion of households in 2014 is smaller than 2013 for "energy/environmental product standards."

Understanding of Label Messaging by Publicity Category

A similar number of respondents in high-publicity regions (65 percent) and non-high-publicity regions (60 percent) associated the ENERGY STAR label with “energy efficiency/savings.” Fewer respondents (9 percent) in high-publicity regions than in non-high-publicity regions (14 percent) associated the label with “save money on operation;” this difference is statistically significant at the 5-percent level (p-value = 0.0487). This change is likely driven by an increase in non-high-publicity regions (7 percent in 2013 to 14 percent in 2014). There were also fewer respondents in high-publicity regions than in non-high-publicity regions that associated the label with “savings (not linked to operation);” this difference is statistically significant at the 5-percent level (p-value = 0.0273). For messages considered to show a general understanding, more respondents (3 percent) in high-publicity regions than non-high-publicity regions confused the label with the EnergyGuide label; this difference is statistically significant at the 10-percent level (p-value = 0.0611). For other messages, the proportion of households that associated the message with the ENERGY STAR label was similar for high- and non-high-publicity categories.



** 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 (≤ 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 2014, 88 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, 62 percent had at least a general understanding of it. This 26 percentage point difference in understanding between households that recognized the label and those that did not is statistically significant at the 1-percent level. The proportion of households that had at least a general understanding of the label in 2014 is statistically different from the 2013 result (84 percent) at the 10-percent level (p-value = 0.0653).

Among households that did not recognize the label when shown it, the proportion that had at least a general understanding of the label in 2014 (62 percent) is similar to the 2013 result (55 percent).

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

Recognize ENERGY STAR Label Aided	At Least General Understanding of Label	
	2014	2013
Yes	88%	84%
No	62%	55%
Difference (Yes minus No)	26%	29%
p-value	<0.0001	<0.0001

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 2013 and 2014 are similar. In 2014, 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. This proportion has remained the same since 2012.

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

	Aided Recognition (2013 n=959) (2014 n=1,358)	Purchased Product (2013 n=835) (2014 n=1,206)	Knowingly Purchased ENERGY STAR product (2013 n=383) (2014 n=596)
2014	89%	69%	75%
2013	87%	65%	75%
Difference	1.5%	3.2%	0.5%
p-value	0.384	0.228	0.895

Overall, 45 percent of all households knowingly purchased an ENERGY STAR product in the past 12 months. This is similar to the 2013 result (43 percent).

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

Purchased ENERGY STAR product	2014 (n=1,358)	2013 (n=959)
Estimate (yes)	45%	43%
Standard Error	2.2%	2.6%

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 48 and 42 percent, respectively. This difference is not statistically significant (p-value = 0.1603). In 2014, a larger proportion of households in high-publicity areas (48 percent) knowingly purchased ENERGY STAR products than in 2013 (40 percent), p-value = 0.0728. The proportions of respondents who knowingly purchased ENERGY STAR products in non-high-publicity areas was similar between 2014 (42 percent) and 2013 (46 percent), p-value = 0.4441.

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

Publicity Category	% Households	
	2014	2013
High	48%	40%
Non-High	42%	46%
Difference (High minus Non-High)	6%	-6%
p-value	0.160	0.254

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 2014, high- and non-high-publicity proportions are similar. The only proportion that changed from 2013 to 2014 were purchased products for high-publicity areas (p-value = 0.008).

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

	2014			2013
	Aided Recognition (n=1,358)	Knowingly Purchased ENERGY STAR product (n=1,206)	Purchased Product (n=596)	Purchased Product (n=829)
High Publicity	90%	76%	70%	61%
Non-High Publicity	87%	73%	66%	71%
Difference	3.3%	3.2%	4.1%	-10.2%
p-value	0.137	0.484	0.240	0.012

Influence of the ENERGY STAR Label

In 2014, over three quarters (77 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. This is a statistically significant increase from the 70 percent of households that were influenced by the label in 2013 (p-value = 0.0789). This difference is driven by a change in the percent of households for which the label influenced their purchase decisions “somewhat;” 24 percent in 2013 to 34 percent in 2014 (p-value = 0.0173). From 2013 to 2014, all other proportions are statistically similar.

Influence of the ENERGY STAR Label on Purchase Decisions¹⁰
[Base = Recognize label (aided) and ENERGY STAR purchasers]

Influence of the Label on Purchasing Decisions	2014 (n=415) Maximum	2013 (n=277) Maximum
Very much	43%	46%
Somewhat	34%	24%
Slightly	11%	14%
Not at all	12%	16%
Total	100%	100%

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

¹⁰ 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 43 percent of households in high-publicity areas were influenced "very much" by the ENERGY STAR label, compared to 42 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 the same at 77 percent each. The 77 percent in non-high publicity areas increased from 2013 (67 percent) and is statistically significant at the 10-percent level (p-value = 0.0964). The combined "very much, somewhat, or slightly" proportion is 89 percent in high-publicity areas, and 88 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 = 415]

Publicity Category	Very much	Very much or somewhat	Very much, somewhat, or slightly
High	43%	77%	89%
Non-High	42%	77%	88%
Difference (High minus Non-High)	1%	0%	1%
p-value	0.809	0.949	0.829

Rebate and Financing Influence

From 2013 to 2014, the percentage of households that knowingly purchased an ENERGY STAR-labeled product and received rebates or reduced-rate financing was at 17 percent. Of these households in 2014, 60 percent would have been “very likely” to purchase the ENERGY STAR product if financial incentives had not been available. This is statistically different at the 10-percent level from the 2013 result (39 percent). However, when combined “very likely” and “somewhat likely” households from 2013 (86 percent) to 2014 (89 percent) are statistically similar (p-value = 0.9106).

Twenty-nine percent would have been “somewhat likely” to purchase without a rebate in 2014. This leaves 8 percent that would have been “slightly likely” and 3 percent “not at all likely.” None of these are significantly different from 2013.

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	
	2014 (n=382)	2013 (n=261)
Yes	17%	18%
No	83%	82%
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 of Purchasing ENERGY STAR Product Without Financial Incentive	% Households	
	2014 (n=59)	2013 (n=47)
Very likely	60%	39%
Somewhat likely	29%	47%
Slightly likely	8%	9%
Not at all likely	3%	5%
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, 32 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 2013 value (p-value = 0.345).

The likelihood of recommending ENERGY STAR products to a friend is greater than “6” for 74 percent of these households. This is similar to the previous year’s result of 71 percent (p-value = 0.416).

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

Likelihood Recommend ENERGY STAR Products	% Households	
	2014 (n=275)	2013 (n=283)
10 - Extremely likely	32%	27%
9	14%	19%
8	18%	15%
7	10%	10%
6	9%	12%
5	10%	11%
4	1%	1%
3	2%	2%
2	2%	1%
1	1%	1%
0 - Extremely unlikely	1%	1%
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.”

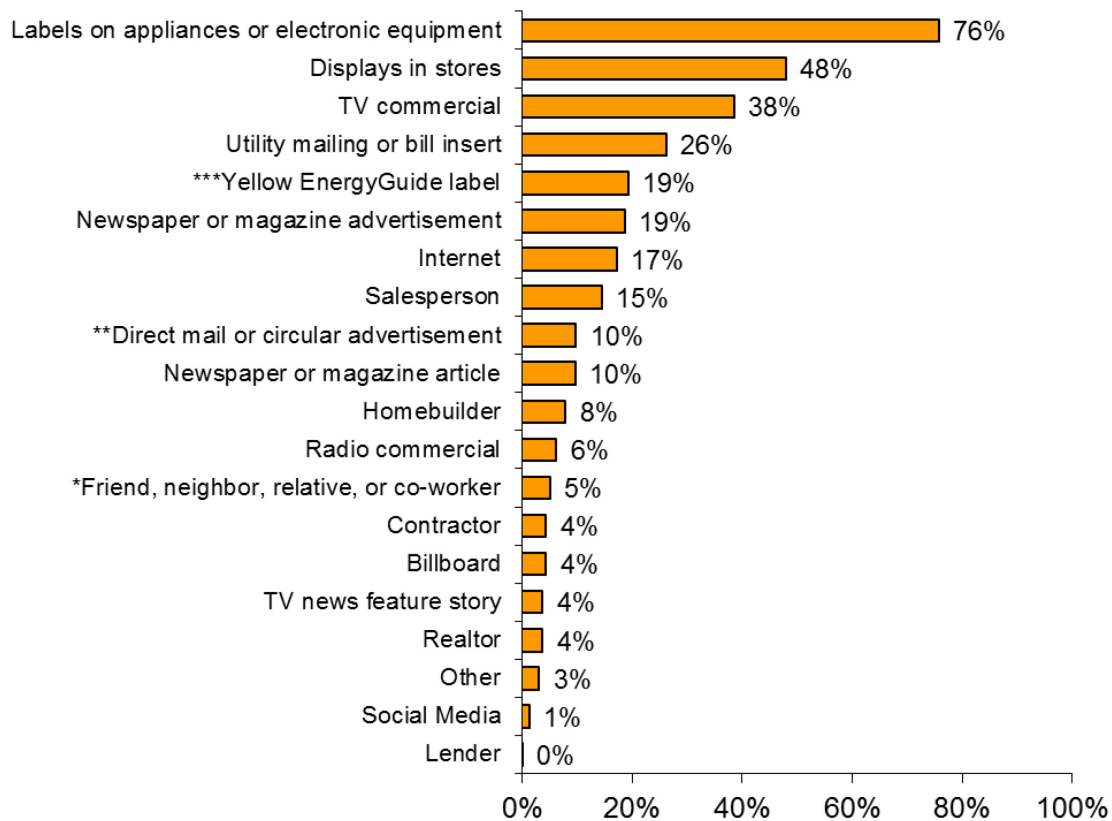
INFORMATION SOURCES

Sources Seen

Seventy-six percent of households have seen something about ENERGY STAR on appliance or electronics labels, and 48 percent of households have seen something about ENERGY STAR in store displays. Thirty-eight percent of households heard or saw something about ENERGY STAR on TV commercials. Between 19 and 26 percent of households saw something about ENERGY STAR in utility mailings or bill inserts, on EnergyGuide labels, or in newspaper or magazine advertisements.

The proportion informed by the yellow EnergyGuide label decreased to 19 percent in 2014 from 26 percent in 2013. Fewer households in 2014 than in 2013 saw something about ENERGY STAR from direct mail or circular advertisements (10 percent compared to 14 percent) and fewer households in 2014 than in 2013 heard something about ENERGY STAR from a friend, neighbor, relative, or co-worker (5 percent compared to 8 percent). All other responses were statistically similar to the proportions from the 2013 survey.

Sources Saw or Heard Something About ENERGY STAR
[Base = Recognize label (aided), n = 1,077]



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

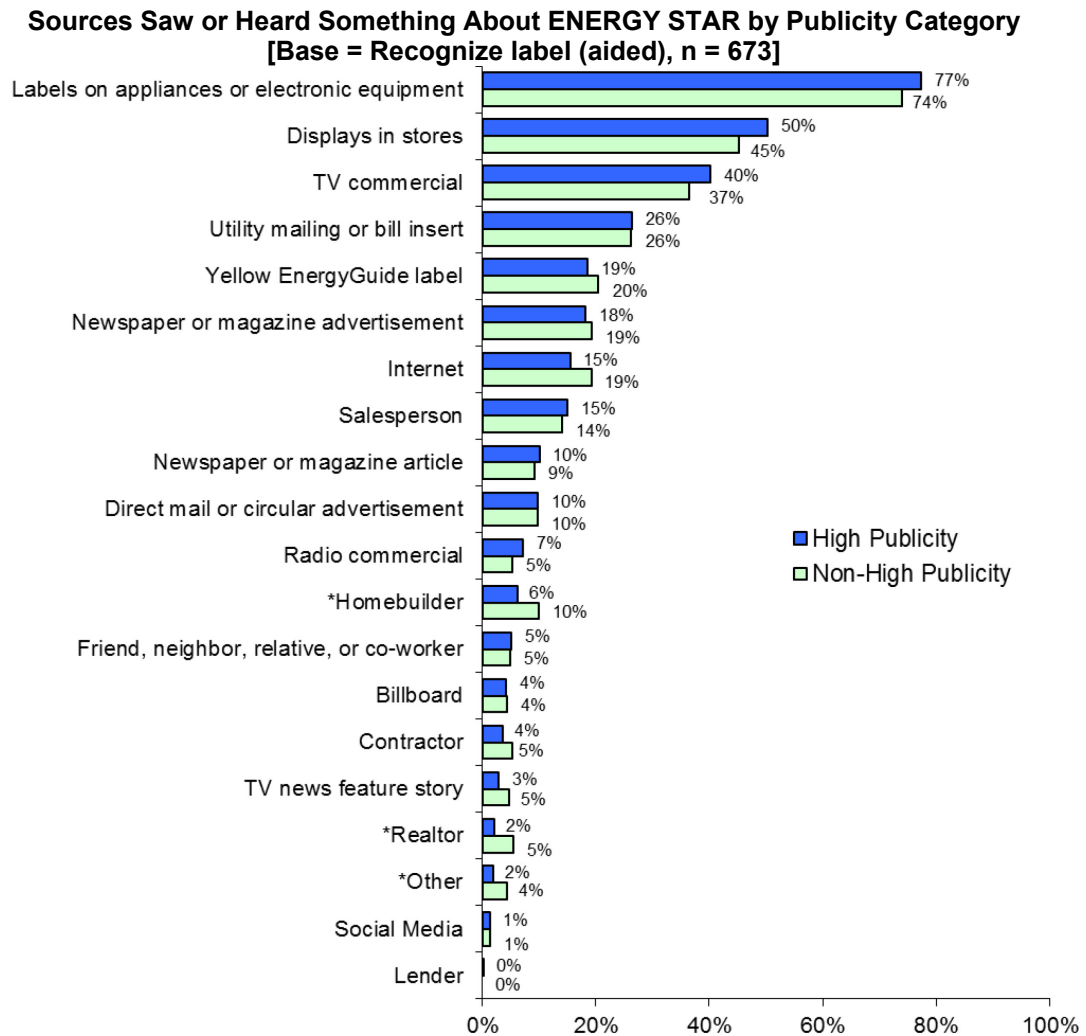
*** 2014 and 2013 proportions are statistically different from each other at the 1-percent level of significance (p-value ≤ 0.01). Proportion of households in 2014 is smaller than in 2013 for yellow EnergyGuide label.

** 2014 and 2013 proportions are statistically different from each other at the 5-percent level of significance (p-value ≤ 0.05). Proportion of households in 2014 is smaller than in 2013 for direct mail or circular advertisement.

* 2014 and 2013 proportions are statistically different from each other at the 10-percent level of significance (p-value ≤ 0.10). Proportion of households in 2014 is smaller than in 2013 for friend, neighbor, relative, or co-worker.

Sources Seen by Publicity Category

The proportion of households that heard or saw something about ENERGY STAR was significantly smaller in high- than in non-high-publicity areas for homebuilders (6 percent and 10 percent, respectively), realtors (2 percent and 5 percent, respectively), and the response of “Other” (a category that contains all answers not falling into any of the other 19 categories) at 2 percent and 4 percent, respectively. All remaining 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 10-percent level of significance (p-value ≤ 0.10). Proportion of households in high-publicity areas is smaller than in non-high.

APPENDIX A: DETAILED METHODOLOGY

During November 2014, 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 2013). As in the 14 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.¹¹ Results from that time-frame were also analogous to telephone surveys for aided recognition.¹²

This report discusses the results of the 2014 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 November 11 through November 20, 2014.¹³

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.

¹¹ National Analysis of CEE 2001 ENERGY STAR Household Surveys. U.S. EPA, 2002.

¹² Tannenbaum, Bobbi and Shel Feldman. "ENERGY STAR Awareness as a Function of Survey Method." IEPEC, 2001.

¹³ This year's survey was fielded 4 to 6 weeks later than in prior years. The 2013 survey was fielded from September 17 to October 1, the 2012 survey from October 4 to October 15, and the 2011 survey from September 27 to October 10. It is not known whether this shift in timeframe had an influence on 2014 results.

1 QUESTIONNAIRE DESIGN

In 2014, 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.¹⁴ 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 2014 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 2014 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 2014 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 2014 survey against those from the 2013 CEE survey.

¹⁴ In previous years, the panel was recruited via random-digit dial. GfK 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 2014 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).
- Respondent recognition and understanding of ENERGY STAR Most Efficient and ENERGY STAR “Connected”.

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 ask respondents—without showing the ENERGY STAR label—whether they have ever seen or heard of the ENERGY STAR label.¹⁵ 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.

¹⁵ In previous years, respondents were asked about their recognition and understanding of the yellow *EnergyGuide* label; in 2014 these questions were removed.

1.3 Changes to the Questionnaire

The 2014 questionnaire was very similar to the 2013 questionnaire. The only changes to the 2014 questionnaire from the previous year were the removal of two *EnergyGuide* label questions, the addition of two new ENERGY STAR “Connected” questions and a couple of product name changes and additions. There was also a slight wording change to question Q7.¹⁶

In June 2014, in order to help simplify the survey, CEE removed two *EnergyGuide* label questions that were previously asked at the beginning of the survey. The *EnergyGuide* label questions were not previously reported in the national analysis:

EG1: Have you ever seen or heard of yellow stickers called *EnergyGuide* labels?

EG2: What information does the *EnergyGuide* label provide?

The below new questions relating to ENERGY STAR “Connected” were asked in 2014:

Q30: Have you ever heard the term “connected” in relation to ENERGY STAR products?

Q31: What does ENERGY STAR “Connected” mean to you?

There were a couple of product name changes and additions in 2014:

- “Gas Water Heater” was changed to “Water Heater;”
- “Compact fluorescent light bulb” was changed to “Light bulb;” and
- “Halogen light bulb” and “Light-emitting diode (LED)” were added.

Question Q7 was updated to include the wording in **bold** below:

Q7: For any of the products you purchased, did you see the ENERGY STAR label (on the product itself, on the packaging, **or on the product literature**)?

¹⁶ Appendix D: 2014 Survey Questions and Flow Chart provide a graphical presentation of the survey questions and skip patterns.

1.4 Determination of Aided Recognition

In the 2014 analysis, the determination of *aided* recognition was based on the responses to five questions. This is the same sequence and numbering used in the 2013 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 13 years was used in 2014. 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 13 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 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.¹⁷ CEE members may choose to sponsor more intensive sampling (i.e., an oversample) in selected localities, referred to here as *sponsor areas*. In 2014, there were two sponsor areas:

- New York State (including Long Island)
- Pacific Northwest (Idaho, Montana, Oregon, Washington)

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 13 years was used this year.¹⁸ Each sponsor area is also further stratified by larger 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 fourteen 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. In 2014, the national sample is comprised of 1,400 respondents from the top 57 DMAs.¹⁹

¹⁷ Analysis included in the 2010 report showed no statistical difference for key metrics between the 57 largest DMAs and all 210 DMAs.

¹⁸ None of the 57 largest DMAs changed publicity category between 2013 and 2014.

¹⁹ In a year when CEE members choose not to sponsor an oversample the national sample comprises 1,000 respondents from the top 57 DMAs. In 2014, the national sample included an additional 400 respondents that were part of the oversample and were from the top 57 DMAs.

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.

Large (Top 57) DMAs²⁰

Rank	Designated Market Area (DMA)	TV Households 2013-2014		Publicity Category
		Number	% of US	
1	New York	7,461,030	6.442	High
2	Los Angeles	5,665,780	4.892	High
3	Chicago	3,534,080	3.052	High
4	Philadelphia	2,963,500	2.559	Other
5	Dallas-Ft. Worth	2,655,290	2.293	Other
6	San Francisco-Oak-San Jose	2,518,900	2.175	High
7	Boston (Manchester)	2,433,040	2.101	High
8	Washington, DC (Hagrstwn)	2,412,250	2.083	High
9	Atlanta	2,375,050	2.051	High
10	Houston	2,289,360	1.977	Other
11	Detroit	1,856,400	1.603	Other
12	Phoenix (Prescott)	1,855,310	1.602	High
13	Seattle-Tacoma	1,847,780	1.596	High
14	Tampa-St. Pete (Sarasota)	1,827,510	1.578	Other
15	Minneapolis-St. Paul	1,748,070	1.509	High
16	Miami-Ft. Lauderdale	1,663,290	1.436	Other
17	Denver	1,574,610	1.360	Other
18	Orlando-Daytona Bch-Melbrn	1,490,380	1.287	Other
19	Cleveland-Akron (Canton)	1,484,530	1.282	Other
20	Sacramnto-Stkton-Modesto	1,387,950	1.198	High
21	St. Louis	1,254,530	1.083	Other
22	Portland, OR	1,185,160	1.023	High
23	Pittsburgh	1,181,540	1.020	Other
24	Raleigh-Durham (Fayetvll)	1,165,120	1.006	Low
25	Charlotte	1,157,920	1.000	Other
26	Indianapolis	1,096,650	0.947	Other
27	Baltimore	1,095,240	0.946	Other
28	San Diego	1,080,880	0.933	High
29	Nashville	1,043,440	0.901	Low
30	Hartford & New Haven	999,990	0.863	High
31	Kansas City	941,980	0.813	Other
32	Columbus, OH	928,530	0.802	Other
33	Salt Lake City	921,240	0.795	High
34	Milwaukee	916,590	0.791	High
35	Cincinnati	908,440	0.784	Low
36	San Antonio	906,210	0.782	Low
37	Greenvll-Spart-Ashevll-And	849,340	0.733	Low
38	West Palm Beach-Ft. Pierce	809,640	0.699	Low

²⁰ Publicity categories are the same as 2013.

Rank	Designated Market Area (DMA)	TV Households 2013-2014		Publicity Category
		Number	% of US	
39	Grand Rapids-Kalmzoo-B.Crk	734,480	0.634	Other
40	Austin	733,390	0.633	High
41	Oklahoma City	730,020	0.630	Low
42	Las Vegas	726,010	0.627	High
43	Harrisburg-Lncstr-Leb-York	725,340	0.626	Other
44	Birmingham (Ann and Tusc)	719,200	0.621	Low
45	Norfolk-Portsmth-Newpt Nws	718,930	0.621	Low
46	Greensboro-H.Point-W.Salem	705,380	0.609	Low
47	Albuquerque-Santa Fe	690,740	0.596	Other
48	Jacksonville	675,650	0.583	Low
49	Louisville	674,950	0.583	High
50	Memphis	672,390	0.581	Low
51	New Orleans	652,180	0.563	Other
52	Buffalo	634,280	0.548	High
53	Providence-New Bedford	614,880	0.531	High
54	Wilkes Barre-Scranton-Hztn	584,870	0.505	Low
55	Fresno-Visalia	580,180	0.501	High
56	Little Rock-Pine Bluff	571,040	0.493	Low
57	Richmond-Petersburg	559,980	0.484	Other
Total		82,190,440	70.970	

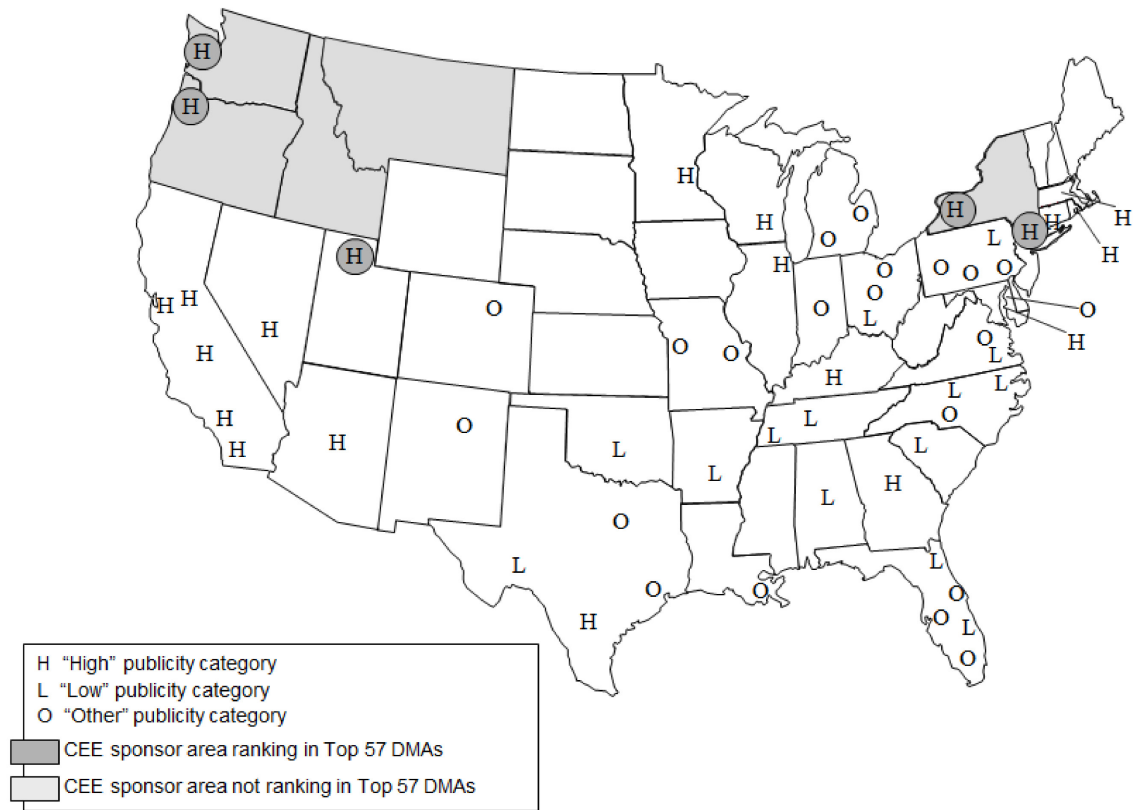
Sponsor Areas

Sponsor Area	Region	Publicity Category	DMA (Large and Small)
New York State (with Long Island)	Downstate	High	Large: partial *New York (rank 1)**
	Upstate	High	Large: partial *New York (rank 1)** *Buffalo (rank 52) Small: all *Rochester (rank 78) *Syracuse (rank 85) *Binghamton (rank 153) *Utica (rank 171) *Watertown (rank 176) Small: partial *Albany-Schenectady-Troy (rank 58) *Burlington-Plattsburgh (rank 98) *Elmira (Corning) (rank 174)
Pacific Northwest	Idaho	Other	Large: parts of Salt Lake City DMA (Rank 33) Small: parts of Spokane DMA (Rank 73)
		Low	Small: all of Twin Falls DMA (Rank 192) Small: parts of *Boise DMA (Rank 110) *Idaho Falls-Pocatello DMA (Rank 162)
	Montana	Other	Small: parts of Spokane DMA (Rank 73)
		Low	Small: all of *Missoula DMA (Rank 164) *Great Falls DMA (Rank 191) *Butte-Bozeman, MT DMA (Rank 188) *Helena DMA (Rank 205) *Glendive DMA (Rank 210) Small: parts of *Minot-Bismarck-Dickinson DMA (Rank 145) *Billings DMA (Rank 168) *Rapid City DMA (Rank 173)
	Oregon	High	Large: parts of Portland, OR DMA (Rank 22)
		Other	Small: all of Eugene DMA (Rank 121) Small: parts of *Spokane DMA (Rank 73) *Yakima-Pasco-Richland-Kennewick DMA (Rank 124)
		Low	Small: all of Bend, OR DMA (Rank 193) Small: parts of *Boise DMA (Rank 110) *Medford-Klamath Falls DMA (Rank 140)
	Washington	High	Large: *all of Seattle-Tacoma DMA (Rank 13) *parts of Portland, OR DMA (Rank 22)
		Other	Small: parts of *Spokane DMA (Rank 73) *Yakima-Pasco-Richland-Kennewick DMA (Rank 124)

**DMA is in both Upstate and Downstate New York.

Large (Top 57) DMAs by Publicity Category²¹

2014



²¹ There were no large DMAs in either Alaska or Hawaii.

2.3 Weighting Procedures

GfK, 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 November 11 and closed on November 20, 2014.

3.2 Response Rate

The overall response rate was 7 percent for the CEE 2014 ENERGY STAR Household Survey. This level of response is typical for GfK's 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 2014 ENERGY STAR Household Survey, the return rate was 51 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 GfK's panel as a proportion of the number of households asked to participate. The recruitment rate was 14 percent. Thus, the response rate for the CEE 2014 ENERGY STAR Household survey was the product of the survey-specific return rate of 51 percent and the recruitment rate of 14 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 2014 ENERGY STAR Household Survey Response Rate²²

Response Rate Factors	Number or % of Respondents
Sendout/requested	2,731
Completed	1,400
Return rate	51%
Recruitment rate	14%
Response rate	7%

²² 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	7.9%
Householder/respondent age	18-24 ^a	8.3%
Householder/respondent gender	Gender	+/- 1.0%
Dwelling type	Mobile home	4.5%
Own/rent	Own/rent	+/- 0.8%
Household annual income	\$75,000 and over ^b	9.7%

^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 9.7 and 8.3 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 -7.9 percentage points, and the number of mobile home dwellings is the next largest, at 4.5 percentage points. 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 one percentage point and one percentage point, respectively.

Household Size Distribution

Number of Persons in Household	Census % Dwelling Units^a	Survey Estimate Minus Census % Dwelling Units
One	28%	-7.9%
Two	33%	2.4%
Three	16%	1.0%
Four	13%	2.2%
Five or more	10%	2.4%
Total (%)	100%	
Total (1,000s)	115,894	

^a U.S. Census Bureau, American Housing Survey, 2013, Table C-08-AO.

Age Distribution

Householder/Respondent Age	Census % Householders^a	Survey Estimate Minus Census % Householders
18-24 ^b	4%	8.3%
25-34	17%	-0.1%
35-44	17%	0.5%
45-54	20%	-4.2%
55-64	19%	0.5%
65 or older	23%	-5.0%
Total (%)	100%	
Total (1,000s)	115,894	

^a U.S. Census Bureau, American Housing Survey, 2013, 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%	1.0%
Male	49%	-1.0%
Total (%)	100%	

^aU.S. Census Bureau, 2008-2013 American Community Survey 5-Year Estimates.

Dwelling Type Distribution

Dwelling Type	Census % Dwelling Units ^a	Survey Estimate Minus Census % Dwelling Units
Single-family, unattached	65%	2.2%
Single-family, attached	6%	4.5%
Bldg. (>=2 units)	24%	-3.6%
Mobile home	5%	-3.4%
Total (%)	100%	
Total (1,000s)	115,894	

^a U.S. Census Bureau, American Housing Survey, 2013, Table C-01-AO.

Own/Rent Distribution

Own/Rent	Census % Households ^a	Survey Estimate Minus Census % Households
Own	65%	0.0%
Rent	35%	0.8%
Total (%)	100%	
Total (1,000s)	115,894	

^a U.S. Census Bureau, American Housing Survey, 2013, Table C-01-AO.

Income Distribution

Total Household Annual Income (before taxes)	Census % Households^a	Survey Estimate Minus Census % Households
Less than \$15,000	13%	-4.8%
\$15,000-\$24,999	11%	-3.1%
\$25,000-\$49,999	24%	-2.4%
\$50,000-\$74,999	18%	0.6%
\$75,000 and over	34%	9.7%
Total (%)	100%	
Total (1,000s)	122,952	

^a U.S. Census Bureau, CPS Annual Social and Economic Supplement 2014, Table HINC-01 Selected Characteristics of Households, by Total Money Income (2013 data).

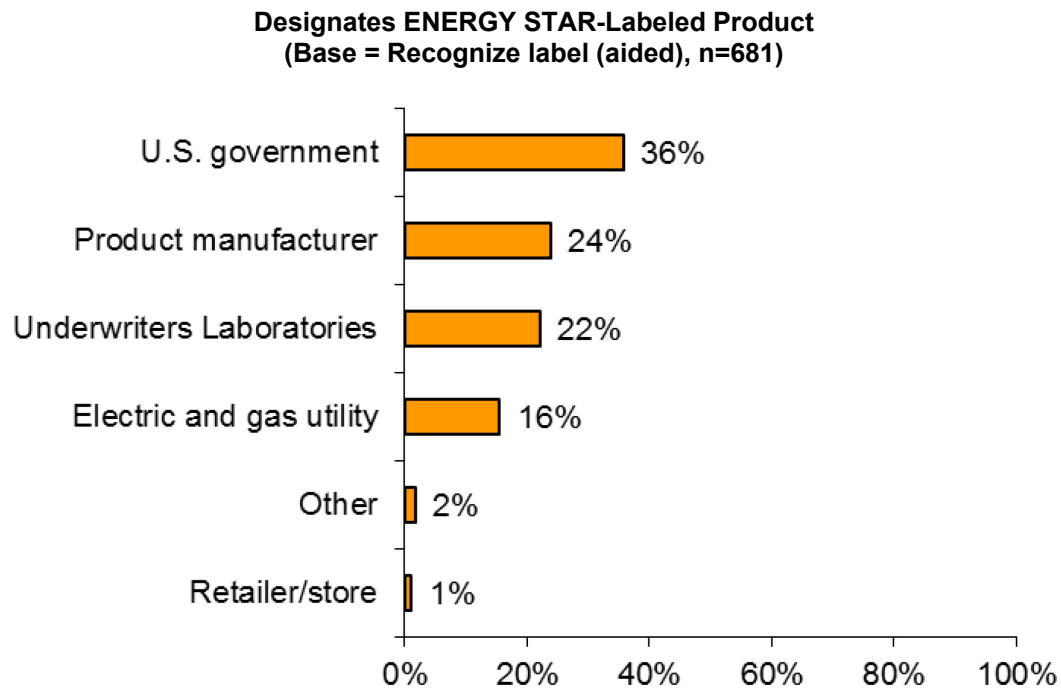
APPENDIX C: ADDITIONAL QUESTIONS FROM 2014 SURVEY

This appendix presents the results of additional ENERGY STAR related questions in the 2014 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
- Light Bulb Purchaser Questions
- Most Efficient Designation
- ENERGYSTAR.gov Question
- ENERGY STAR “Connected” Questions

1 ENERGY STAR DESIGNATION

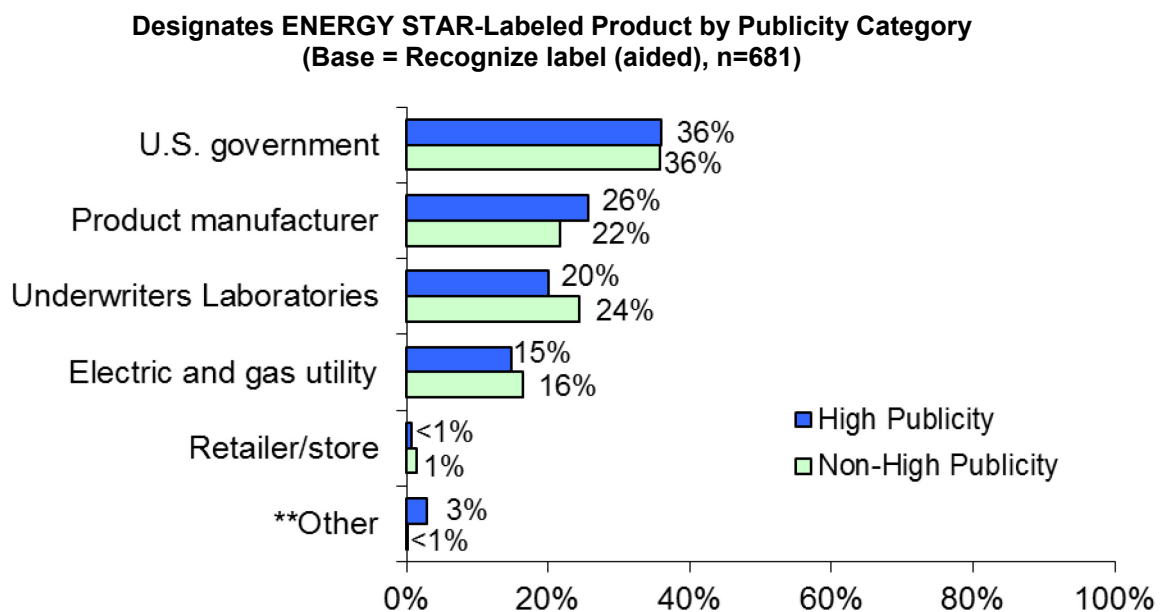
Thirty-six percent of households that recognized the ENERGY STAR label (aided) thought that the U.S. government decides if a product deserves the label. Twenty-four percent thought product manufacturers make the decision, up from 19 percent in 2013. Twenty-two percent thought Underwriters Laboratories makes this decision, down from 23 percent in 2013. All 2014 and 2013 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 2014, high-publicity areas and non-high-publicity areas identified the entity that designates the ENERGY STAR label in similar proportions in all categories with the exception of “other.” A larger proportion of high-publicity areas (3 percent) than non-high-publicity areas (less than one percent) identified “other” for the entity that designates the ENERGY STAR label. This difference is statistically significant at the 5-percent level (p-value = 0.0293). It is unclear if this change reflects increased understanding of the role of third-party certification in the ENERGY STAR program (see http://www.energystar.gov/index.cfm?c=third_party_certification.tpc_index).



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

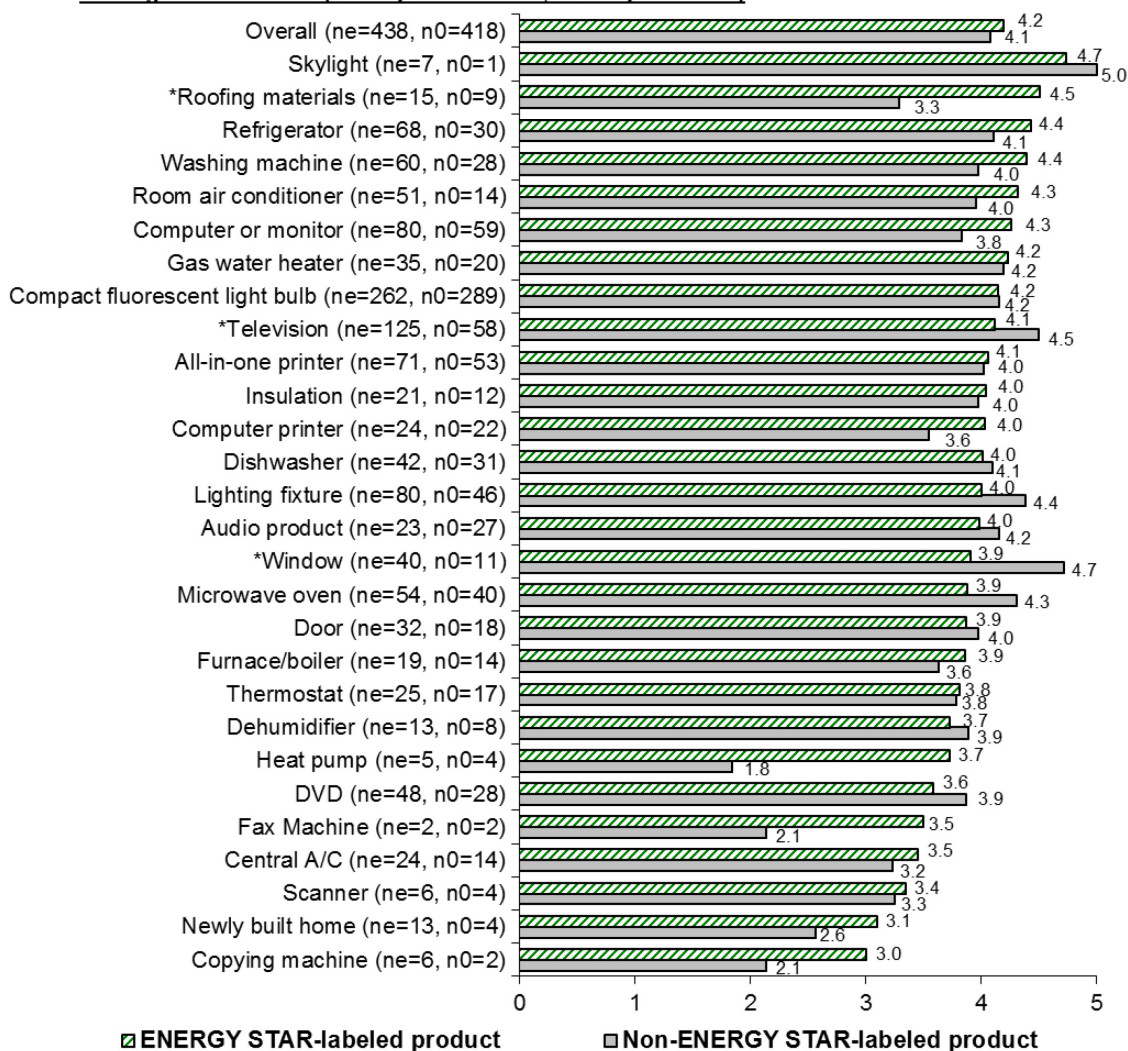
3 ENERGY STAR PRODUCT SATISFACTION

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 4.01 and 4.03 respectively. As shown in the chart on the next page, ENERGY STAR-labeled roofing materials received higher satisfaction ratings compared with unlabeled versions of these products, whereas ENERGY STAR-labeled windows and televisions received lower satisfaction ratings when compared with their unlabeled counterparts.

Overall, 2014 customer satisfaction with ENERGY STAR products is statistically similar to 2013 for both ENERGY STAR and non-ENERGY STAR products. The only ENERGY STAR-labeled product that showed a statistically significant increase in customer satisfaction between 2013 and 2014 was copying machine. Nine ENERGY STAR-labeled products showed a decrease in customer satisfaction over the same period, which includes central A/C, furnace/boilers, heat pumps, fax machine, lighting fixture, DVD, audio product and newly built home. In addition, two product categories in the list--thermostats and microwave--are not currently eligible for the ENERGY STAR designation.

ENERGY STAR vs. Non-ENERGY STAR-Labeled Product Satisfaction **(Bases = Recognize label (aided) and purchased specified product²³)²⁴**

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



* ENERGY STAR and Non-ENERGY STAR product proportions are statistically different from each other at the 10-percent level of significance ($p\text{-value} \leq 0.10$). ENERGY STAR product proportions are larger for roofing materials than non-ENERGY STAR, and smaller for televisions and windows.

²³ 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

²⁴ There is no ENERGY STAR designation for microwave ovens.

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.²⁵ 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

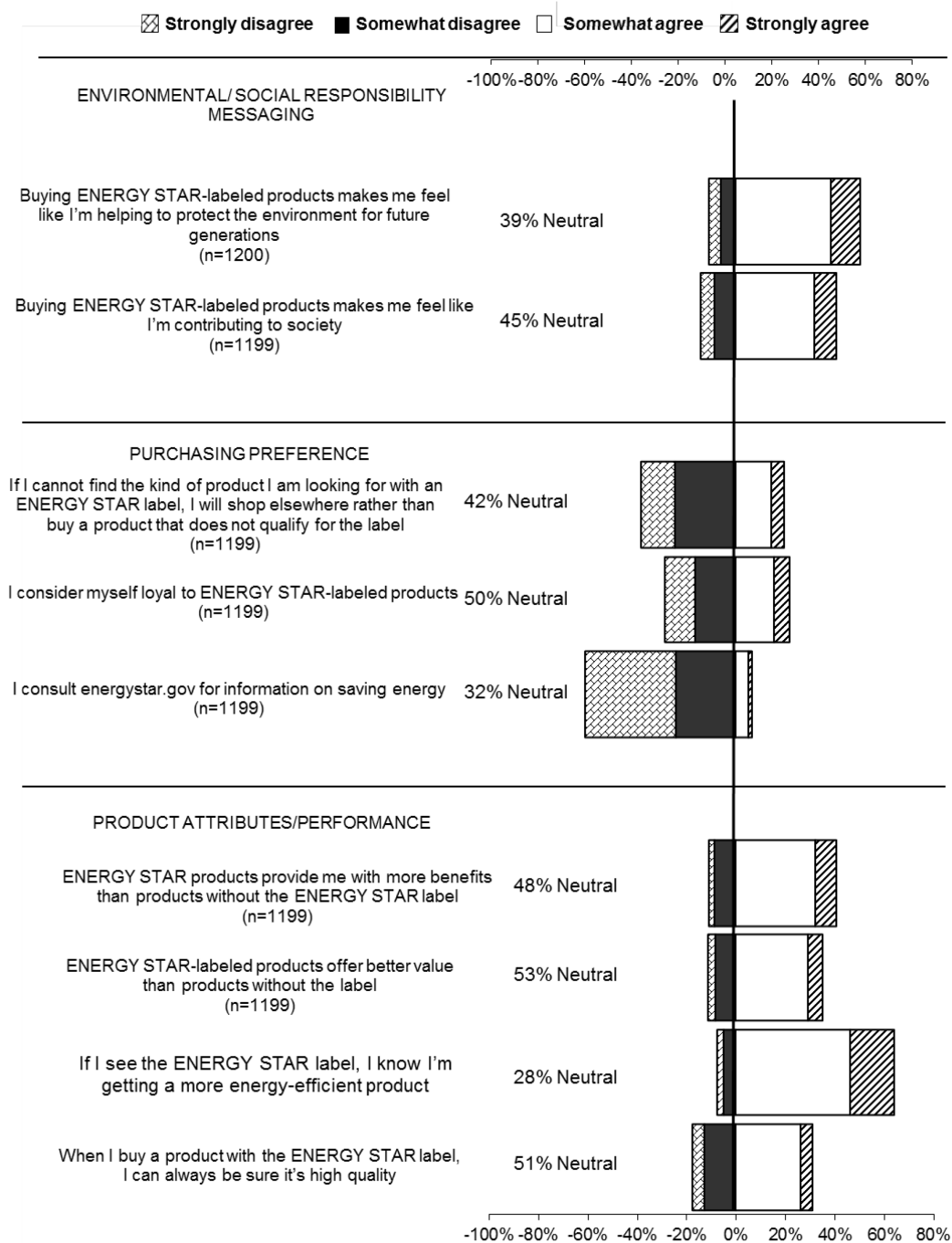
The 2014 survey results indicate that households generally agree with positive statements about the ENERGY STAR label and disagree with negative statements about the label.²⁶ Similar to 2013 results, few statements elicit strong agreement or strong disagreement among substantial proportions of households; 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.

²⁵ These statements are numbered Q16a through Q16w in the survey.

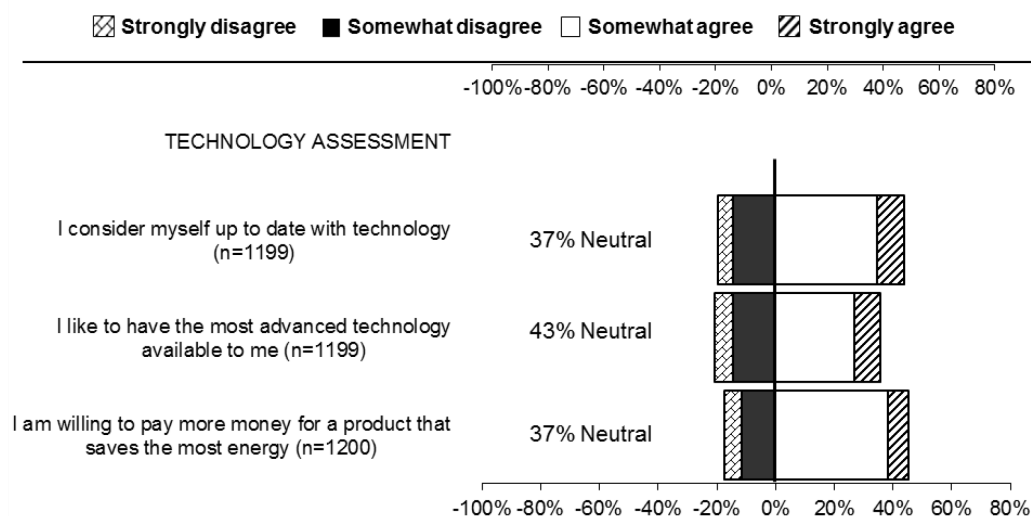
²⁶ In this discussion, the term “agree” is used to correspond to survey responses of “strongly agree” or “somewhat agree.” Similarly, the term “disagree” corresponds to survey responses of “strongly disagree” or “somewhat disagree.”

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.

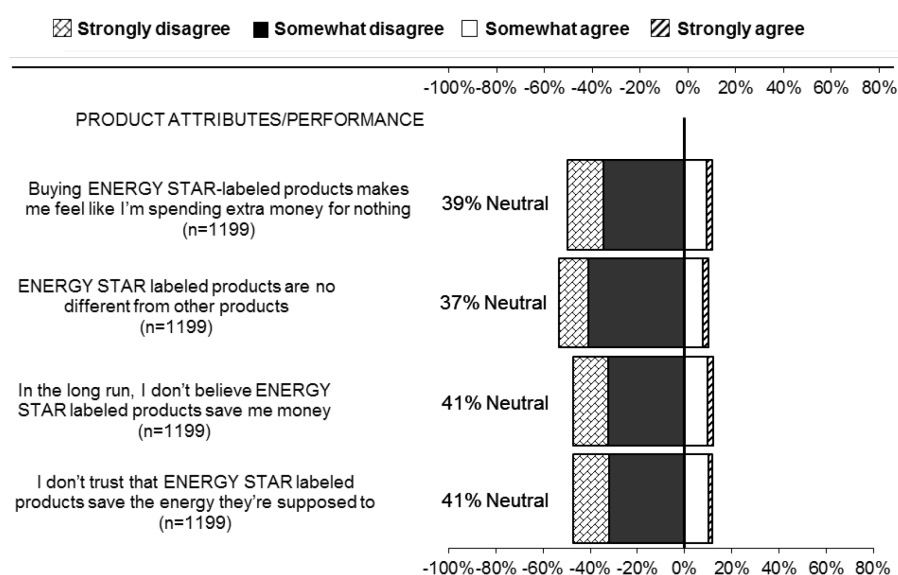


**Response to Categorical Statements Regarding Messaging,
Purchasing, and Product Attributes – Agreement with Positive Statements (Cont.)
(Base = Recognize label (aided))**



**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 2014 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 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 smaller in 2014 (50 percent) than in 2013 (55 percent); this difference is not statistically significant. Forty-one 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 is statistically similar to the 2013 result (44 percent).

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 2013 and 2014 surveys, two separate statements were included to investigate households' views of their purchasing preferences with respect to ENERGY STAR-labeled products. In 2013, a new question was added to learn consumers' tendency to consult the energystar.gov website for information on energy savings. This year, 7 percent of households somewhat or strongly agree with the statement "I consult energystar.gov for information on saving energy" while 32 percent are neutral and 61 percent somewhat or strongly disagree. Compared to last year, this shows a 4 percentage point decrease for those that somewhat or strongly agreed with the statement and an 8 percent increase for those that somewhat or strongly disagreed. Both of these results are statistically different at the 1-percent level when compared to 2013.

In 2014, 19 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 statistically similar to the 2013 result (23 percent). More households (38 percent) either strongly or somewhat disagree, this is up from 2013 (33 percent) and is statistically significant at the 10-percent level. Forty-two percent of households are neutral in their level of agreement or disagreement with this statement of their purchasing behavior.

Twenty-two 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 2013 (23 percent). Disagreement with this statement was 29 percent, which is also similar to 2013 (26 percent).

4.3 Technology Affinity

To support research interest related to advanced technologies the following questions were added in 2012 and were included in the 2014 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.”

In 2014, 45 percent 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-seven percent of households are neutral in their level of agreement or disagreement with this statement. Eighteen 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. These proportions are statistically similar to the 2013 results where 48 percent of households agreed, 37 percent were neutral, and 15 percent disagreed with the above statement.

Fewer (36 percent) households agreed (either somewhat or strongly) with the statement “I like to have the most advanced technology available to me” when compared to 2013 (41 percent). This difference is statistically significant at the 5-percent level of significance (p -value = 0.043). Forty-three percent are neutral, similar to the 2013 result. A larger proportion of households disagree with this statement in 2014 (21 percent) when compared to 2013 (15 percent). This difference is statistically different at the 1-percent level (p -value = 0.0024).

When compared to 2013 (45 percent), a similar proportion of households in 2014 (44 percent) agree (either somewhat or strongly) with the statement “I consider myself up to date with technology.” In 2014, 37 percent are neutral and 20 percent somewhat or strongly disagree with this statement. This is statistically similar to the 2013 result, 37 percent and 18 percent, respectively.

4.4 Product Attributes and Performance

Another 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 2014 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.” Sixty-four percent of respondents either strongly or somewhat agree with this statement, down from 2013 (67 percent), which is statistically similar. This continues to indicate a 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.” Thirty-one percent of households either strongly or somewhat agree with this statement, fifty-one percent are neutral and 18 percent disagree with this statement. These results 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 41 percent either strongly or somewhat agree with the statement; this is smaller than the 2013 result (47 percent) and is statistically different at the 5-percent level ($p\text{-value} = 0.0145$). A similar percentage of households disagree (11 percent in 2014 and 9 percent in 2013). On another statement regarding product value, “ENERGY STAR-labeled products offer better value than products without the label,” 35 percent of households either strongly or somewhat agree; this is statistically similar to the 2013 result (39 percent). Only 11 percent disagree, which is also similar to the 2013 result (9 percent).

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. A larger percentage (50 percent) of all households who recognize the ENERGY STAR label strongly or somewhat disagree with the statement; this is up from the 2013 result (44 percent). This difference is statistically significant at the 5-percent level of significance ($p\text{-value} = 0.0186$). Thirty-nine percent of households in 2014 are neutral, down from 44 percent in 2013; this is statistically different at the 10-percent level ($p\text{-value} = 0.05227$). Only 11 percent agree with this statement, this is similar to the 2013 result (12 percent).

In 2014, 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 12 percent agreement, with four times as much disagreement (48 percent). The proportions of households that agree and disagree with these statements in 2014 are similar to the 2013 results.
- The statement, “In the long run, I don’t believe ENERGY STAR-labeled products save me money” had only 12 percent agreement; this is the same as the 2013 result. Fewer (47 percent) households disagree with this statement in 2014 than in 2013 (52 percent); this is statistically different at the 10-percent level (p-value = 0.0762).
- Finally, the statement, “ENERGY STAR products are no different from other products” received only 10 percent agreement, and over five times as much disagreement (54 percent). The proportion of households that agreed and disagreed with this statement is similar to the 2013 results.

Forty-eight percent of respondents either somewhat or strongly agree with the statement “It seems like most products have the ENERGY STAR label these days.”²⁷ Only 12 percent disagreed with the statement. This suggests people are recognizing the label on many products. The proportions of households that agree and disagree with these statements in 2014 are similar to the 2013 results.

²⁷ 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 2014 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:

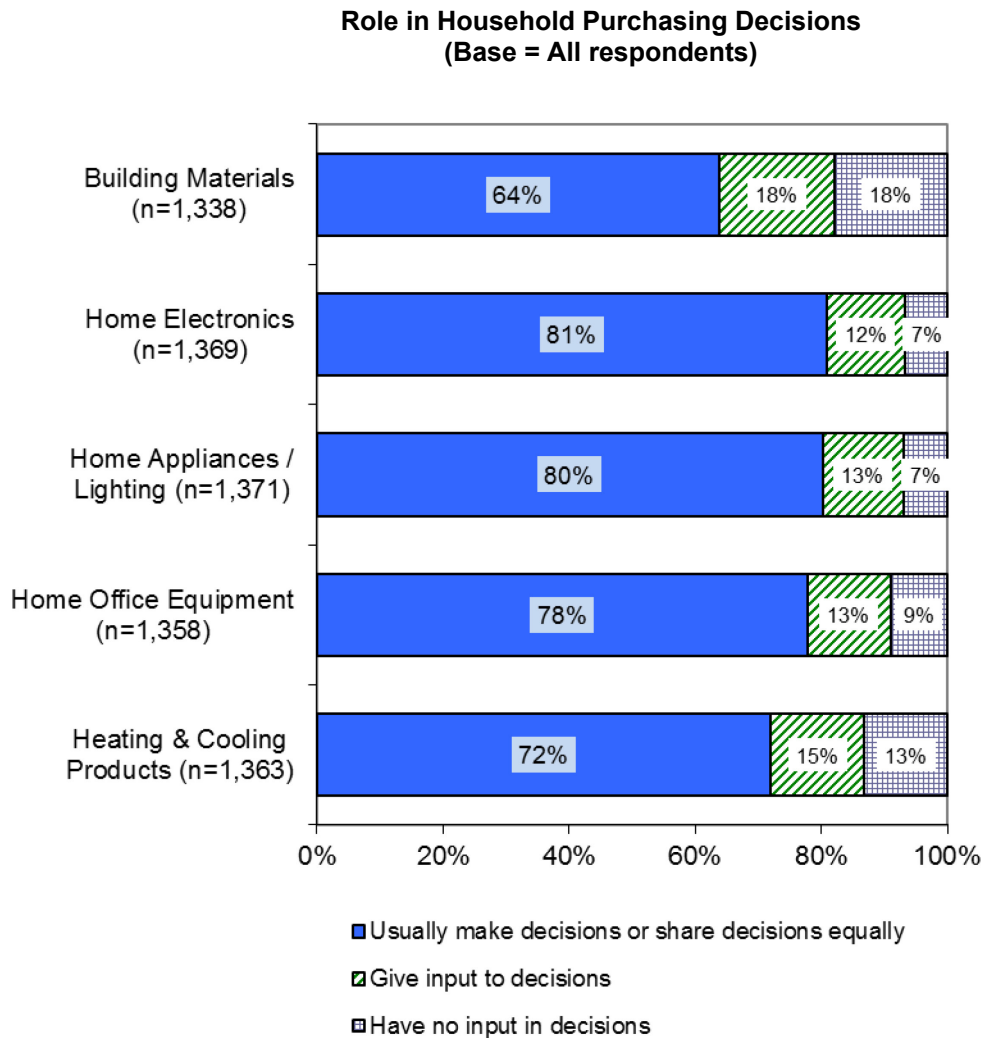
- “Buying ENERGY STAR-labeled products makes me feel like I’m contributing to society” (45 percent compared to 36 percent).
- “I consider myself loyal to ENERGY STAR-labeled products” (24 percent compared to 20 percent).
- “If I see the ENERGY STAR label, I know I’m getting a more energy-efficient product” (67 percent compared to 60 percent).

A larger proportion of people in high-publicity areas than non-high-publicity areas disagree with the following statements:

- “ENERGY STAR labeled products are no different from other products” (57 percent compared to 50 percent).
- “I like to have the most advanced technology available to me” (23 percent compared to 18 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. Eighty-one percent of individuals were primary decision makers for their household's home electronics purchases; 64 percent were primary decision makers for purchase of building materials.



6 LIGHT BULB PURCHASER QUESTIONS

The light bulb purchaser question sequence changed in 2014. In previous years, all respondents were asked if they purchased a “**compact fluorescent light bulb**” in the past 12 months. In 2014 respondents were asked more broadly if they purchased a “**light bulb**” including inefficient bulbs in the past 12 months.²⁸ As a result of this change, comparisons to 2013 compact fluorescent light bulb purchaser results are not included in this report.

In 2014, 45 percent of all households purchased a light bulb(s). Ninety-two percent of households that recognized the label and purchased a light bulb saw the ENERGY STAR label on the bulb, packaging or product literature of the purchased bulb. The percentage of households that recognized the label and purchased an ENERGY STAR labeled light bulb was higher in high-publicity areas (96 percent) compared to non-high-publicity areas (87 percent). This difference is significant at the 5-percent level. All respondents who indicated that they had purchased a “light bulb(s)” in the past 12 months were asked:

- “Did you install the light bulb(s) you purchased in a light fixture?”
 - If yes, then ask “Which type of bulb(s) did you replace?”²⁹

An overwhelming majority (93 percent) of light bulb purchasers that recognize the ENERGY STAR label and saw the ENERGY STAR label on the light bulb, packaging or on the product literature indicated they installed the purchased ENERGY STAR-labeled light bulb.³⁰ This result did not vary significantly by publicity category. Respondents that installed an ENERGY STAR-labeled light bulb were asked if the purchased light bulb was used to replace a CFL, incandescent light bulb, halogen light bulb, or light-emitting diode (LED).³¹ Twenty-eight percent of households replaced an incandescent light bulb, 44 percent replaced CFLs, 10 percent replaced halogens and 18 percent replaced LEDs.

Half of the households in high-publicity areas (49 percent) replaced a CFL with an ENERGY STAR-labeled light bulb compared to 41 percent of households in non-high-publicity areas. High- and non-high-publicity proportions are statistically similar for all types of bulbs replaced.

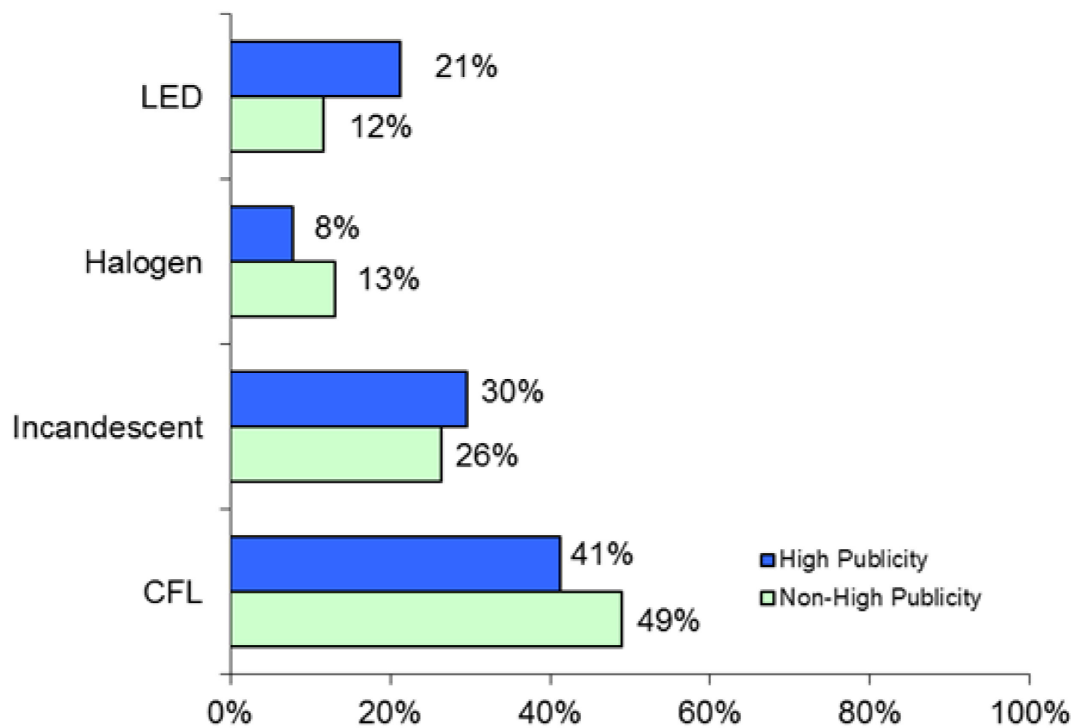
²⁸ The product name was changed from “compact fluorescent light bulb” to “light bulb.”

²⁹ In 2014, halogen light bulb and light emitting diode (LED) were added to the list of light bulbs replaced.

³⁰ Respondents met the following three criteria: (1) Recognized the label (aided), (2) answered yes to Q7: For any of the products you purchased, did you see the ENERGY STAR label (on the product itself, on the packaging, or on the product literature)?; and (3) indicated the purchased light bulb for Q7a: On which products did you see the ENERGY STAR label?

³¹ In 2014, halogen light bulb and light emitting diode (LED) were added to the list of light bulbs replaced.

Type of Light Bulb Replaced with ENERGY STAR-Labeled Light Bulb
(Base = Recognized ENERGY STAR (aided) and
Installed an ENERGY STAR-Labeled Light Bulb, n=181)



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

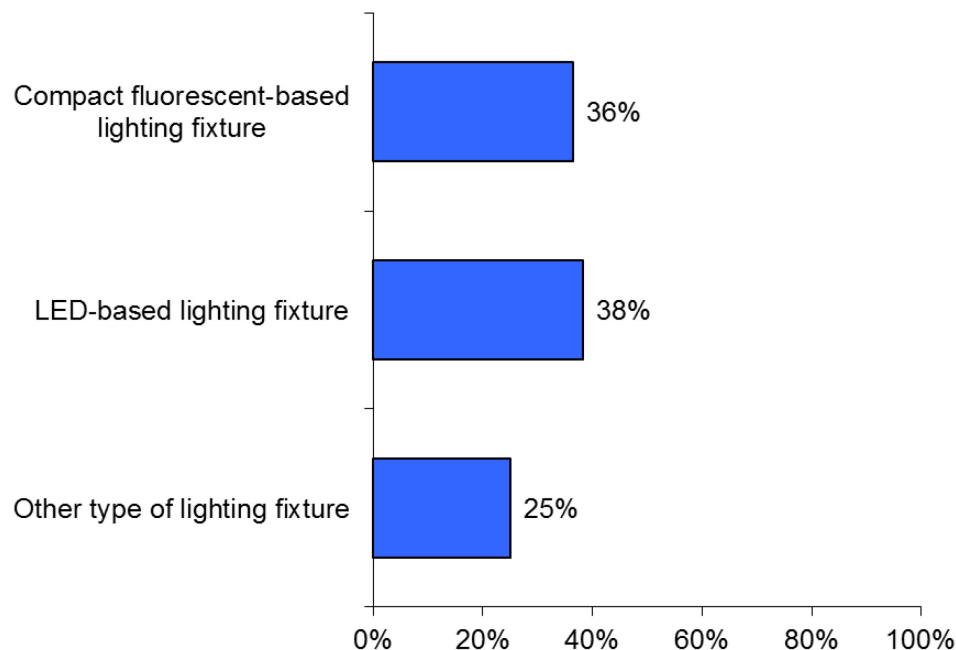
7 LIGHTING FIXTURE PURCHASER QUESTIONS

In 2014, 10 percent of all households purchased fixtures. The proportion that purchased fixtures in 2014 (10 percent) is similar to the 2013 proportion (9 percent) (p -value = 0.7596). 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 2014, 36 percent of ENERGY STAR-labeled lighting fixture purchasers report purchasing a compact fluorescent-based lighting fixture, this is similar to 2013 (40 percent) (p -value = 0.8019). The proportion of LED fixtures purchased in 2014 (38 percent) is also similar to the 2013 result (39 percent) (p -value = 0.9467). For all types of ENERGY STAR-labeled lighting fixtures purchased there are no differences between high- and non-high-publicity areas.

Type of ENERGY STAR-Labeled Lighting Fixture Purchased
(Base = Recognized ENERGY STAR (aided) and
Purchased an ENERGY STAR Lighting Fixture, $n=34$)



Note: Q8A 1-4. Which kind of ENERGY STAR-labeled lighting fixture did you purchase?
Q8A 1-4 is a multiple response question and therefore does not always sum to 100 percent. In 2014, 12 percent of respondents “Don’t know” the type of ENERGY STAR lighting fixture purchased.

8 ENERGY STAR MOST EFFICIENT QUESTIONS

The 2011 questionnaire added a brief series of questions³² to collect information on recognition and influence of the ENERGY STAR Most Efficient marketing designation. Only respondents that recognize the ENERGY STAR label (aided) were asked the ENERGY STAR Most Efficient questions. These questions were continued with minor modification in the 2014 survey.

In 2014, 21 percent of households that recognized the ENERGY STAR label (aided) indicated they had seen or heard of ENERGY STAR Most Efficient; this is consistent with 2013 (22 percent). Among households that had seen or heard of ENERGY STAR Most Efficient:

- Twenty-nine percent were aware that products designated ENERGY STAR Most Efficient 2014 represent a subset of ENERGY STAR qualified products within a given product category.³³ This is statistically similar to the 2013 result of 40 percent (p-value = 0.1824).
- Just under half (42 percent) recognized the ENERGY STAR Most Efficient marketing graphic when it was shown to them; this is similar to 55 percent in 2013 (p-value = 0.1120).
- Fifty-six percent of households 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.” This result is similar to last year.

Response to Statement Regarding Purchase of ENERGY STAR Most Efficient Product
[Base = Recognized ENERGY STAR (aided) and
Recognized ENERGY STAR Most Efficient (unaided)]

Would buy a product because it is ENERGY STAR Most Efficient	2014 (n=169)	2013 (n=111)
Strongly disagree	8%	1%
Somewhat disagree	4%	2%
Neither agree nor disagree	32%	40%
Somewhat agree	37%	41%
Strongly agree	19%	16%
Total	100%	100%

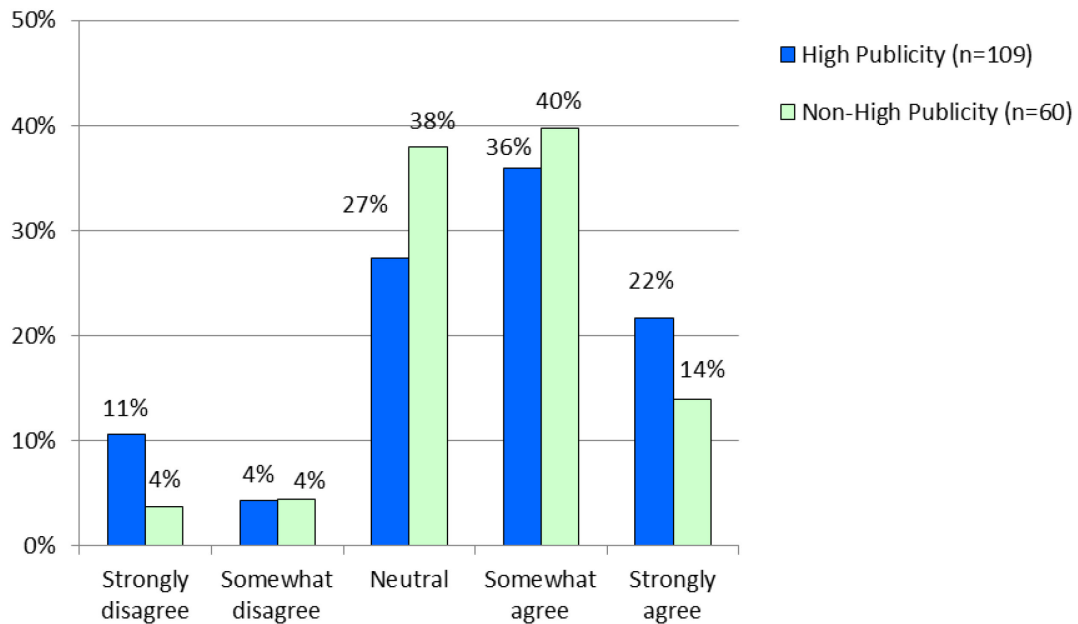
Fifty-eight percent of households in high-publicity areas and 54 percent of households in non-high-publicity areas strongly agree or somewhat strongly agree

³² The ENERGY STAR Most Efficient questions, Q18 – Q22, are shown in Appendix D: 2014 Survey Questions and Flow Chart on page D-9.

³³ This question was added to the survey in 2013 (Q20: “Were you aware that products designated ENERGY STAR Most Efficient 2014 represent a subset of ENERGY STAR qualified products within a given product category?”).

with this statement: “All other things equal, I would buy a product because it is designated as ENERGY STAR Most Efficient.” There are no statistical differences at the 10-percent level between high-publicity areas and non-high-publicity areas.

**Response to Statement Regarding Purchase of ENERGY STAR Most Efficient Product
by Publicity Category**
[Base = Recognized ENERGY STAR (aided) and
Recognized ENERGY STAR Most Efficient (unaided)]



8.1 ENERGY STAR Most Efficient Influenced (MEI)

The survey results were analyzed by Most Efficient Influenced (MEI) households and non-Most Efficient Influenced (non-MEI) households to learn about potential demographic or attitudinal differences. This was done in order to understand the customer segment that would likely be influenced by the marketing designation regardless of whether they had been exposed to it or not. MEI households report having seen or heard of the ENERGY STAR label and the ENERGY STAR Most Efficient label, and report that they would be influenced by the Most Efficient label.³⁴ 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.”

Demographics

Consistent with previous years, the 2014 demographic characteristics of MEI and non-MEI households were similar. However, the following differences were identified:

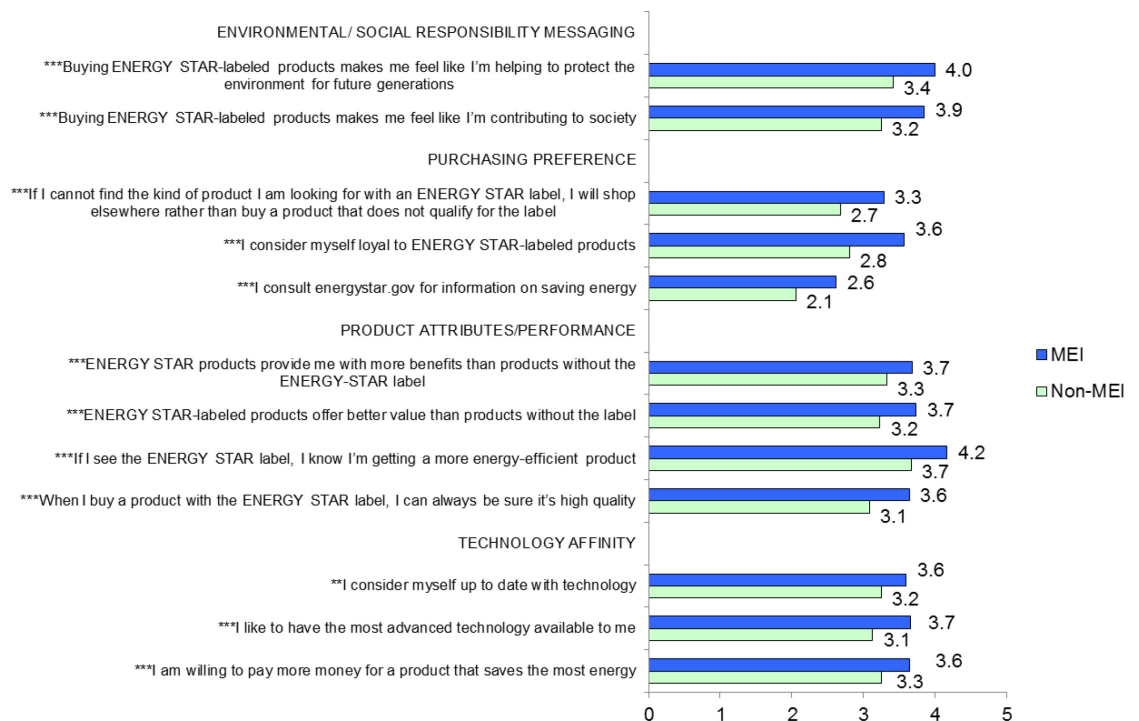
- A smaller proportion of MEI households (9 percent) than non-MEI households (17 percent) are between the ages of 25-45 (p-value = 0.012).
- A smaller proportion of MEI households (21 percent) than non-MEI households (32 percent) have a bachelor's degree or higher (p-value = 0.0105).

³⁴ 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?) and report they would buy a product because it is ENERGY STAR Most Efficient (somewhat or strongly agree with Q22. All other things equal, I would buy a product because it is designated as ENERGY STAR Most Efficient).

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 willing to pay more money for a product that saves the most energy. MEI households had higher agreement than non-MEI households for all twelve positive attitudinal statements shown below. Furthermore, eleven of the positive 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, Non-MEI Base = Recognize label)

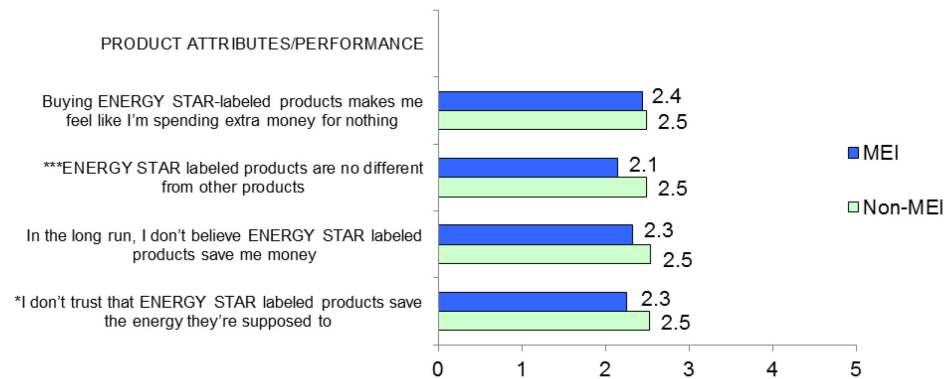


*** MEI and non-MEI averages are statistically different from each other at the 1-percent level of significance ($p\text{-value} \leq 0.01$).

** MEI and non-MEI averages are statistically different from each other at the 5-percent level of significance ($p\text{-value} \leq 0.05$).

MEI and non-MEI averages are statistically different for half of the negative statements. MEI respondents agree less with the statements: “ENERGY STAR labeled products are no different from other products” and “I don’t trust that ENERGY STAR labeled products save the energy they’re supposed to” when compared to non-MEI respondents.

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



*** MEI and non-MEI averages are statistically different from each other at the 1-percent level of significance ($p\text{-value} \leq 0.01$).

* MEI and non-MEI averages are statistically different from each other at the 10-percent level of significance ($p\text{-value} \leq 0.10$).

9 ENERGY STAR “CONNECTED” QUESTIONS

In 2014, questions were added to the end of the survey to assess awareness and understanding of ENERGY STAR “Connected” products. ENERGY STAR “Connected” products contain a set of advanced energy saving features such as the following:

- Demand Response (DR) status (e.g., normal operation, delay appliance load, temporary appliance load reduction)
- Remote Access to Product
- Energy Consumption Reporting and Feedback
- Peak Period Avoidance
- Smart Grid Capability
- Product Connectivity

ENERGY STAR “Connected” Recognition

In 2014, survey respondents that recognized the ENERGY STAR label (aided) were asked “Have you ever heard the term “connected” in relation to ENERGY STAR products” (survey question Q30). Only 5 percent of households that recognize the ENERGY STAR label have heard of the term “connected” in relation to ENERGY STAR products. Results for recognition of ENERGY STAR “Connected” by publicity category are provided in the following table.

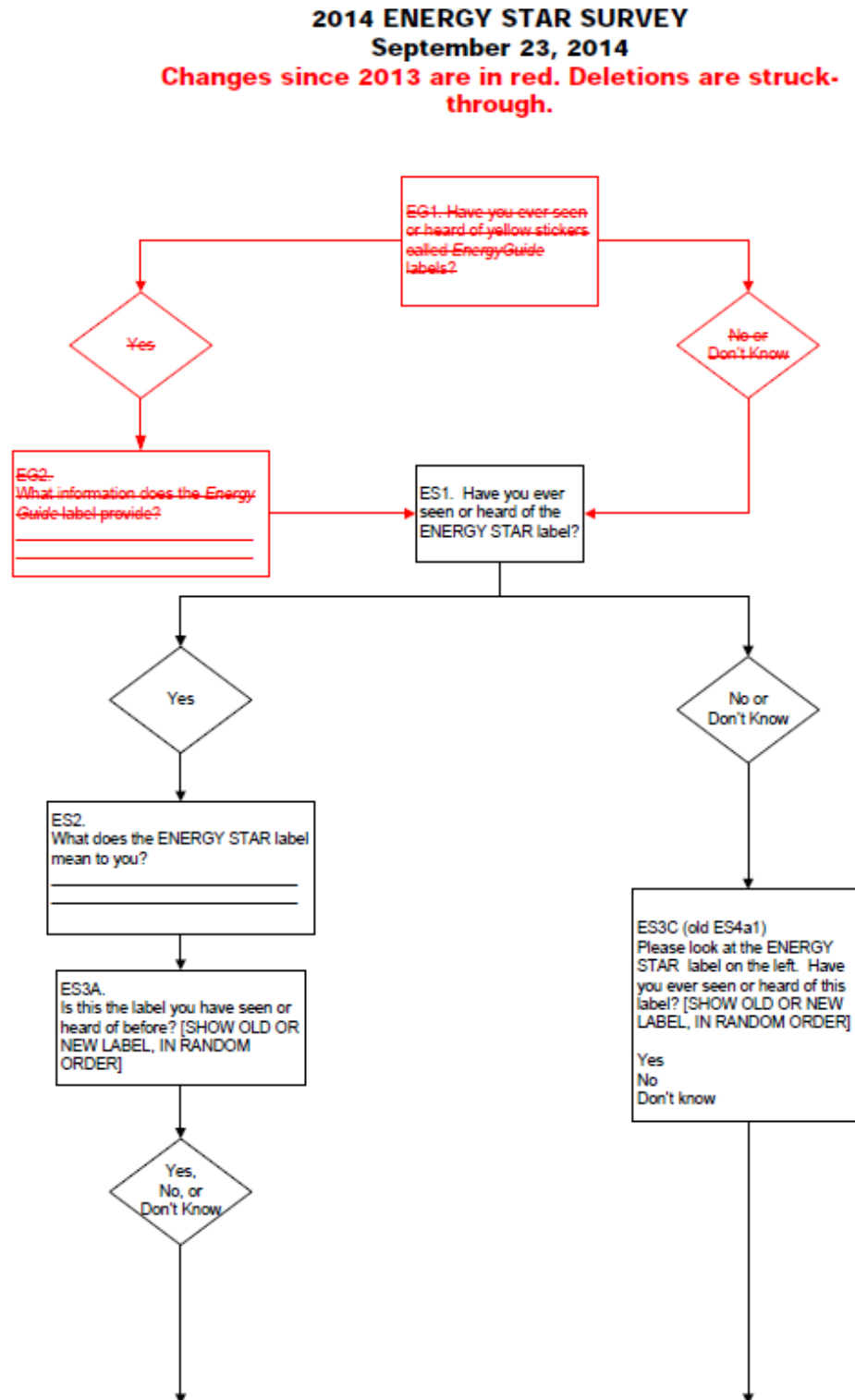
Recognition of the ENERGY STAR “Connected” Label by Publicity Category
[Base = Recognize label (aided)]

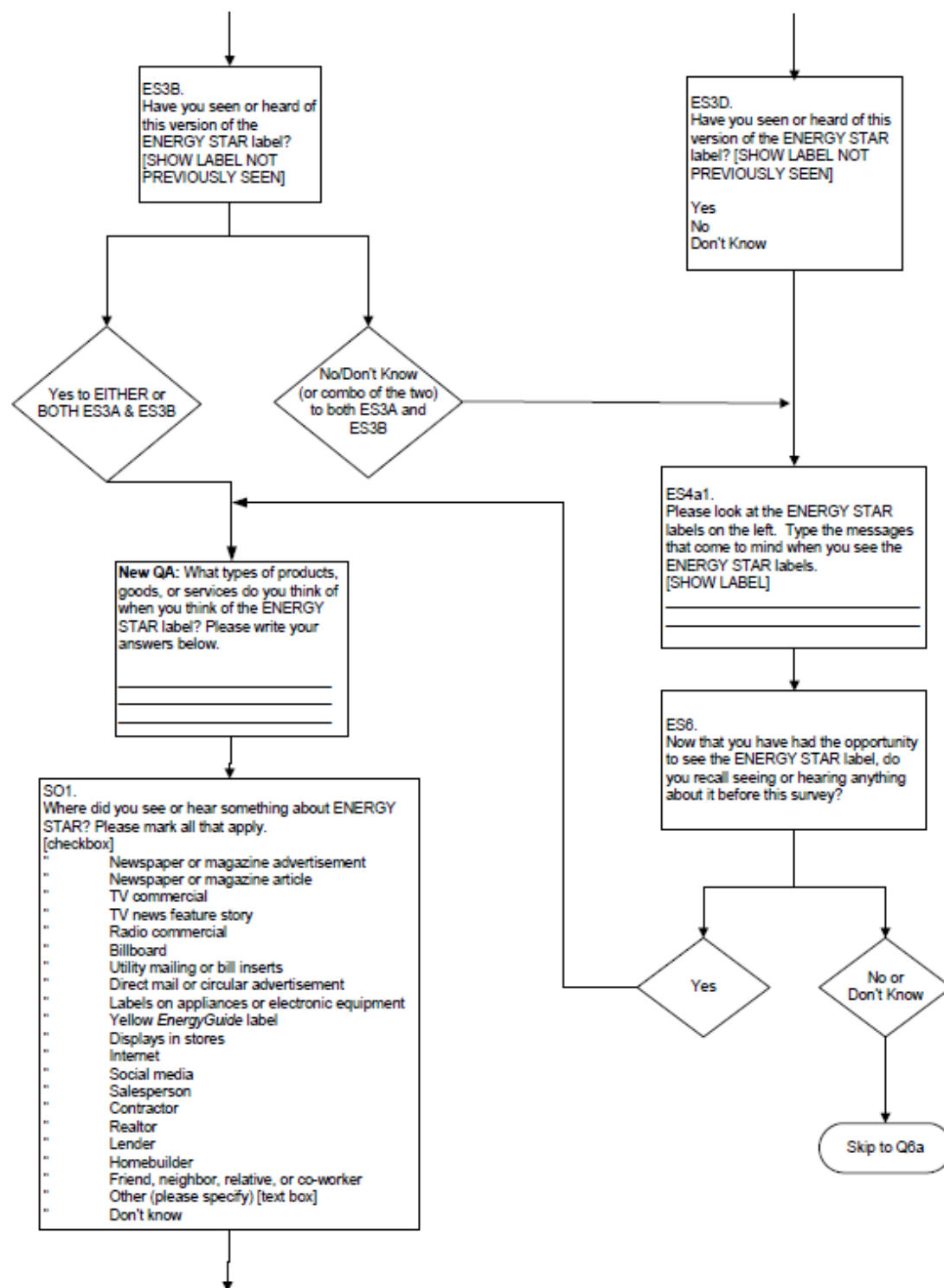
Publicity Category	Recognized ENERGY STAR “Connected” (n=986)
High	6.0%
Non-high	3.7%
Difference (High minus Non-high)	2.3%
p-value	0.215

Respondents that indicated they heard of the term “connected” in relation to ENERGY STAR products were asked “What does ENERGY STAR “Connected” mean to you?” (survey question Q31). Nine of the 32 respondents were not able to articulate what ENERGY STAR “Connected” meant to them.³⁵ Of the remaining respondents 12 answered product connectivity, three answered energy efficiency/savings, and the remaining eight respondents reported a meaning that is related to the environment, money, or other response.

³⁵ Six respondents answered “Don’t know” and three answered “Nothing/Not Much.”

APPENDIX D: 2014 SURVEY QUESTIONS AND FLOW CHART





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(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.

Home Appliances/Lighting
Dishwasher
Refrigerator
Lighting fixture
Washing machine
~~Compact fluorescent Light bulb~~
Microwave oven
Dehumidifier
None of these products

Home Electronics
Television
DVD product (including TV/DVD)
Audio product

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.

Heating and Cooling Products
Central air conditioner
Furnace or boiler
Heat pump
Thermostat
Room air conditioner
~~Gas Water heater~~
None of these products

Home Office Equipment
Computer or monitor
Computer printer
Copying machine
Fax machine
Scanner
All-in-one printer (includes copier/scanner/fax)

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.

Building Materials
Window
Door
Skylight
Insulation
Roofing material

Buildings
Newly built home

Q8a1
Have you or someone else in your household been shopping in a store in the last 12 months for any of the products listed below?

	Yes	No	Don't know
<u>Heating and Cooling Products</u>			
Room air conditioner			
<u>Home Appliances/Lighting</u>			
Dishwasher			
Refrigerator			
Lighting fixture			
Washing machine			
Compact fluorescent Light bulb			
<u>Home Electronics</u>			
Television			
DVD product (including TV/DVD)			
Audio product			

Q8a2
Have you or someone else in your household been shopping in a store in the last 12 months for any of these other products listed below?

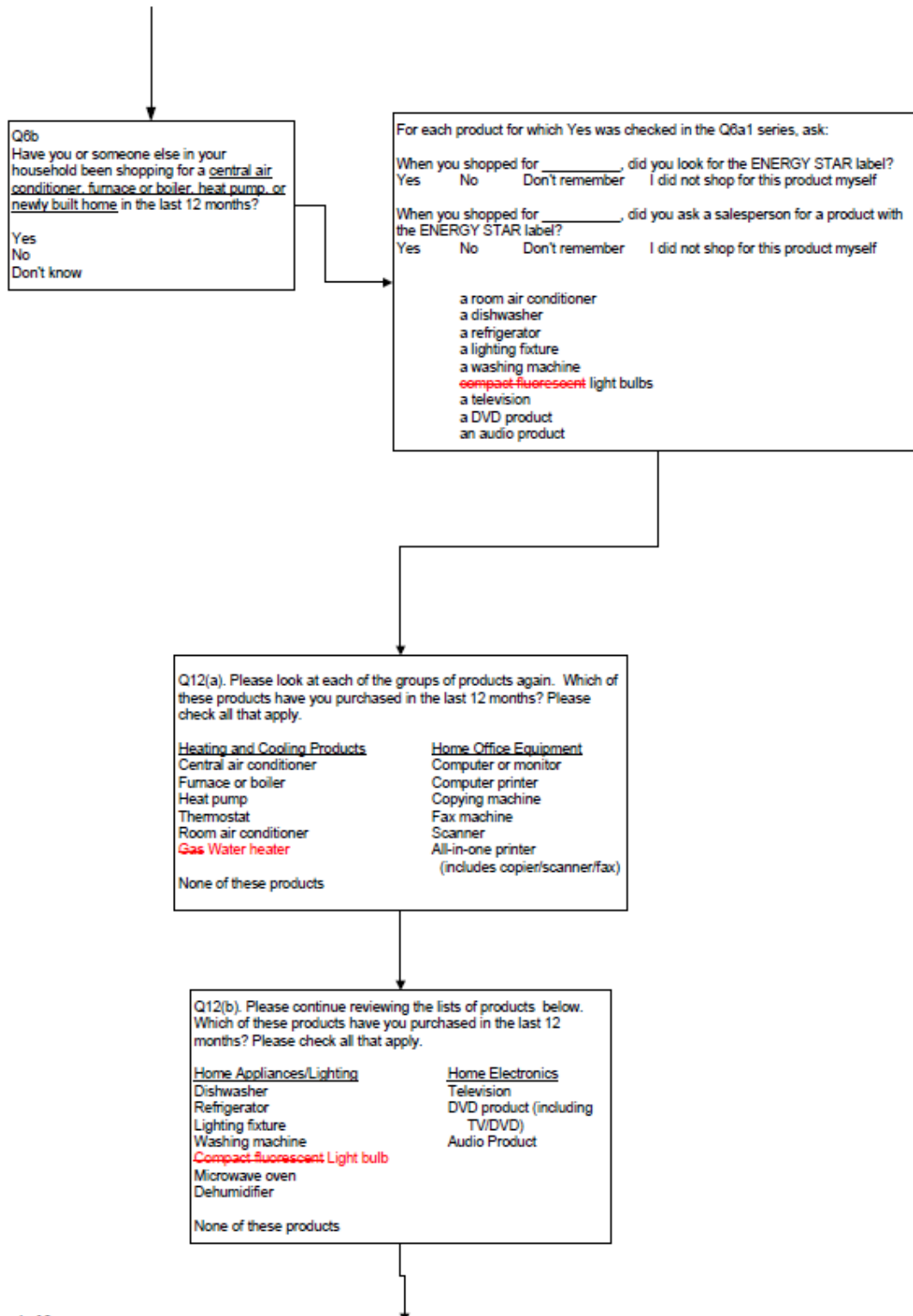
Yes
No
Don't know

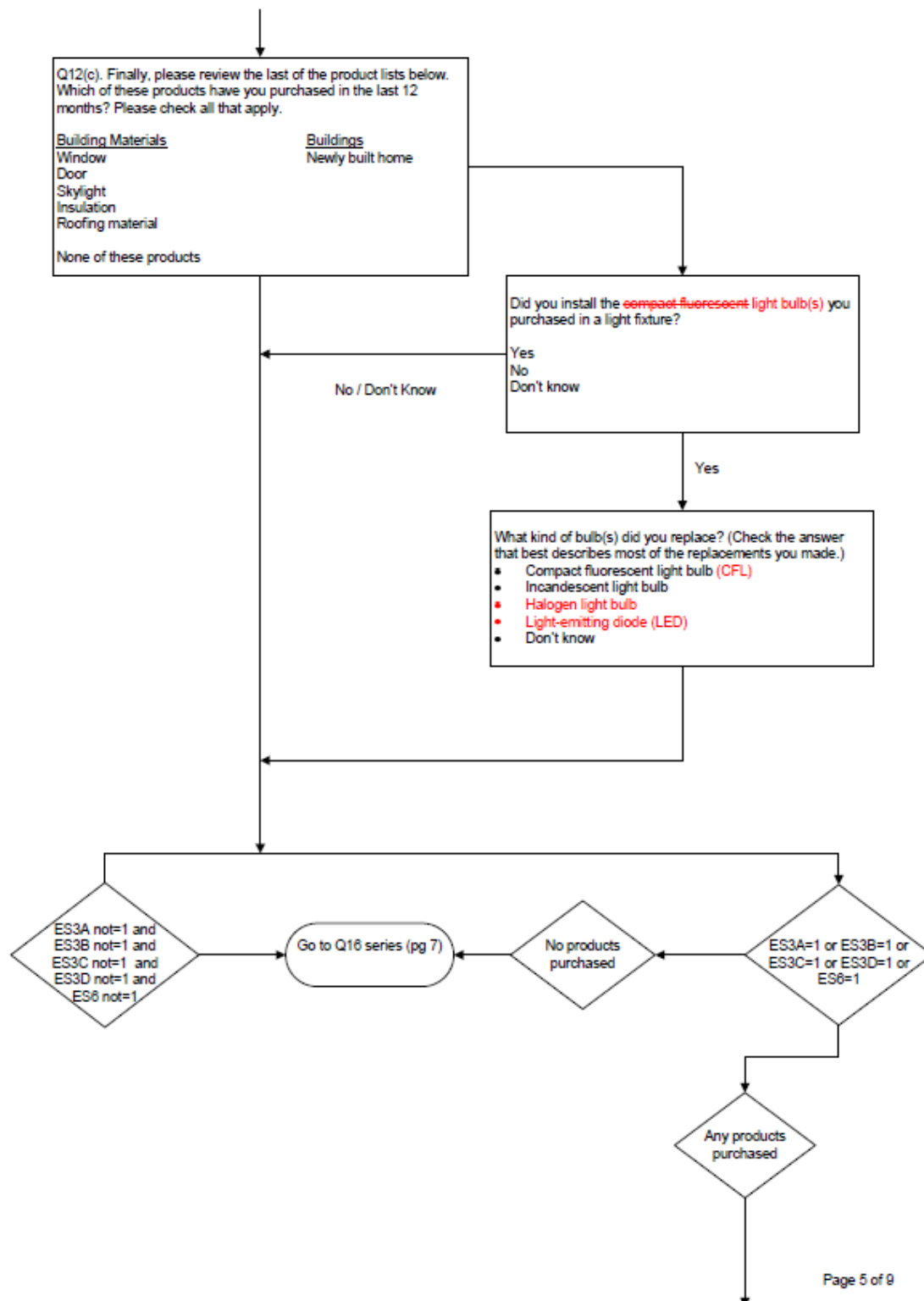
Heating and Cooling Products
Thermostat
~~Gas Water heater~~

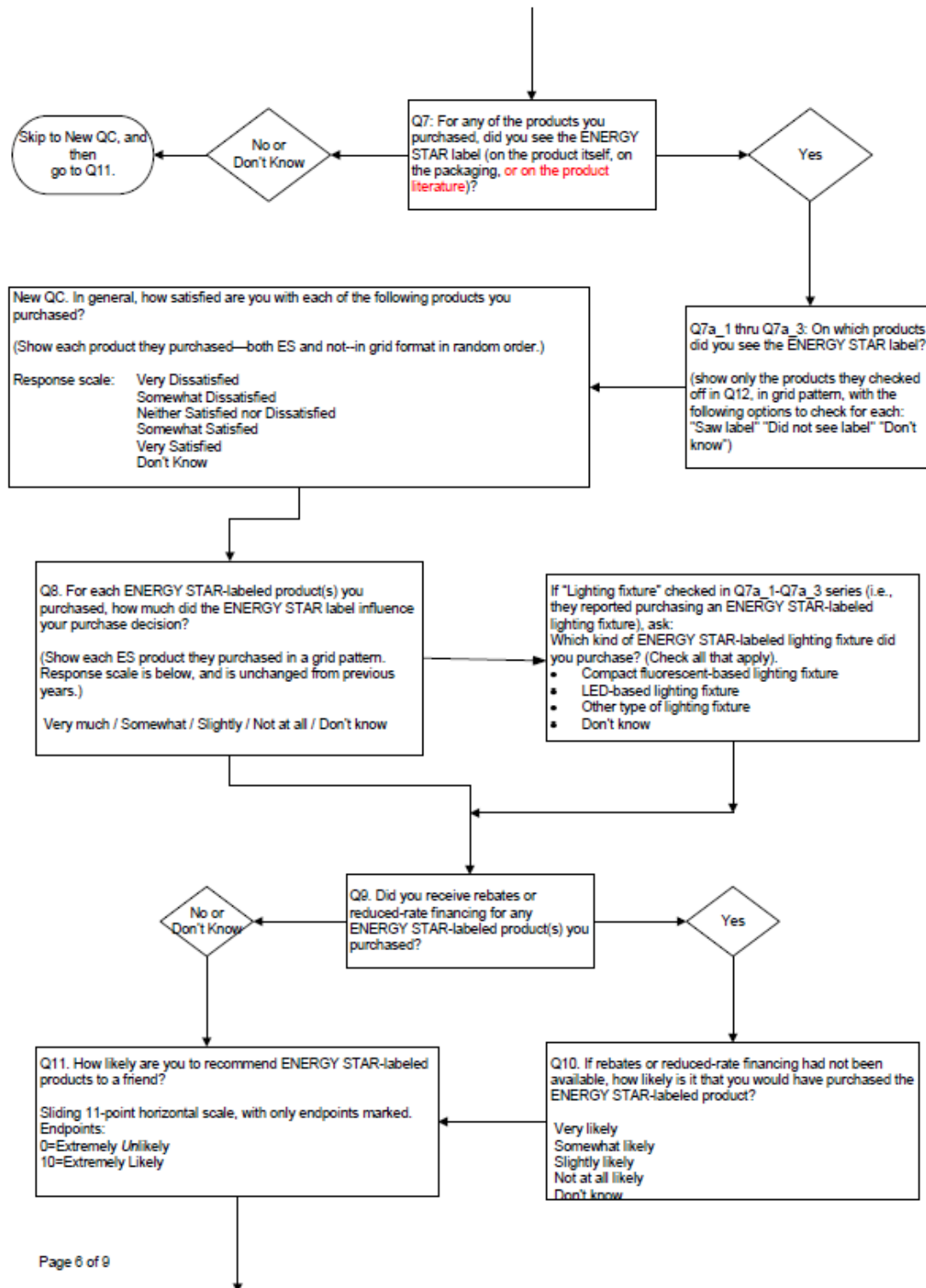
Home Office Equipment
Computer or monitor
Computer printer
Copying machine
Fax machine
Scanner
All-in-one printer (includes copier/scanner/fax)

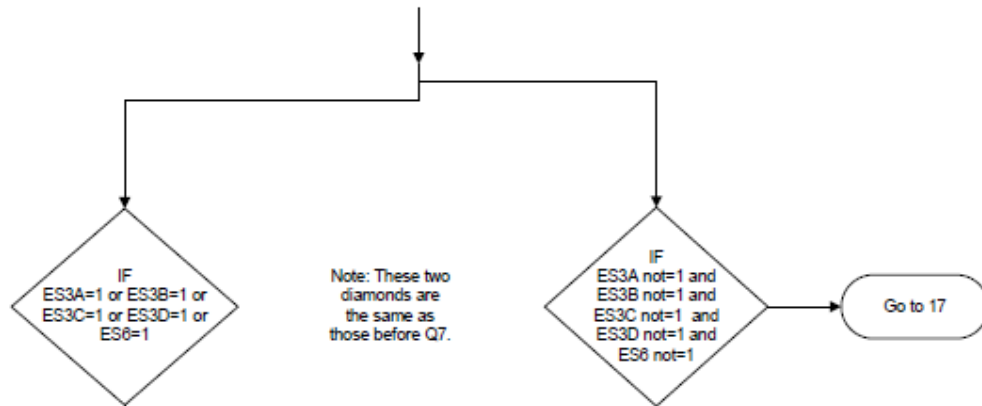
Home Appliances/Lighting
Microwave oven
Dehumidifier

Building Materials
Window
Door
Skylight
Insulation
Roofing material









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
Q16w. I consult energystar.gov for information on saving energy.	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"/>

