



ENERGY STAR

# NATIONAL AWARENESS OF ENERGY STAR® FOR 2008

## ANALYSIS OF CEE HOUSEHOLD SURVEY



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- Tennessee Valley Authority
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## EXECUTIVE SUMMARY

In the fall of 2008, members of the Consortium for Energy Efficiency (CEE) sponsored the ninth 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. In 2008, additional surveys were conducted in three states—Massachusetts, New York (except Long Island), Wisconsin; two Nielsen Designated Market Areas<sup>®</sup> (DMA)—Denver and Minneapolis-St. Paul; and the Tennessee Valley Authority's service territory. As in the eight previous years, CEE and sponsoring members made the survey data publicly available.

This report discusses the results of the CEE 2008 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

- Seventy-six percent of households recognized the ENERGY STAR label when shown the label.
- Seventy-eight percent of households had a *high* or *general* understanding of the label's purpose. Furthermore, the proportion of households that demonstrated a general understanding was small compared with the proportion that demonstrated a high understanding (10 percent versus 68 percent).
- Sixty-three percent of households associated the ENERGY STAR label with "efficiency or energy savings."
- Of households that recognized the ENERGY STAR label (aided) and purchased a product in a relevant product category within the past 12 months, 73 percent purchased an ENERGY STAR-labeled product.

- Among all households, 40 percent knowingly purchased an ENERGY STAR-labeled product in the past 12 months.
- For 76 percent of the households that recognized the ENERGY STAR label (aided), and knowingly purchased an ENERGY STAR-labeled product, the label influenced at least one of their purchase decisions “very much” or “somewhat.” For another 9 percent of these households, the label influenced their purchase decisions “slightly.”
- Twenty-one percent of households that knowingly purchased an ENERGY STAR-labeled product received a financial incentive for doing so. Ninety percent of these households report they would have been “very likely” (68 percent) or “somewhat likely” (22 percent) to purchase the labeled product without the financial incentive.
- Seventy-nine 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; 35 percent of these households reported that they were “extremely” likely to recommend ENERGY STAR-labeled products.

### **Key Findings from Publicity-Level Analyses**

- A larger proportion of households in high- than in low-publicity areas recognized the ENERGY STAR label, both with and without being shown the label. With a visual aid, 80 percent of households in high-publicity areas recognized the label versus 70 percent in low-publicity areas. (*High-publicity areas* have an active local ENERGY STAR program that has been sponsored by a utility, state agency, or other organization for two or more continuous years.)
- Sixty-eight percent of households in high-publicity areas associated the ENERGY STAR label with “efficiency or energy savings,” compared with 55 percent of households in low-publicity areas.
- Considering only households that recognized the label (with a visual aid), a larger proportion of households in high- than in low-publicity areas heard or saw something about ENERGY STAR via TV and radio commercials, newspaper or magazine article, utility mailing or bill insert, or salesperson.

## Conclusions

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

- Substantial portions of U.S. households in the surveyed population recognize, understand, and are influenced by the ENERGY STAR label.
- The proportion of households that exhibit only a general understanding of the label is small (10 percent) compared with the proportion of households that exhibit a high understanding (68 percent).
- Publicity efforts of active regional/local energy efficiency program sponsors increase recognition of the label. These efforts also appear to have an effect on the understanding of the label, with a larger proportion of households in high- than low-publicity areas associating "Energy efficiency/savings" and "Energy/environmental product standards" messages with the label.

## INTRODUCTION

In the fall of 2008, members of the Consortium for Energy Efficiency (CEE) sponsored the ninth 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 2008 additional surveys were conducted in three states—Massachusetts, New York (except Long Island), Wisconsin; two Nielsen Designated Market Areas<sup>®</sup> (DMA)—Denver and Minneapolis-St. Paul; and the Tennessee Valley Authority's service territory. As in the eight previous years, CEE and sponsoring members made the survey data publicly available.

This report discusses the results of the CEE 2008 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; provides key findings regarding ENERGY STAR label recognition, understanding, influence, and information sources; and contains appendices presenting detailed survey methodology (Appendix A), demographic information (Appendix B), additional questions from the 2008 survey (Appendix C), and a copy of the 2008 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 September 2008, CEE fielded a questionnaire to obtain information at the national level on consumer awareness of the ENERGY STAR label (please refer to Appendix A for a more detailed outline of the survey methodology). A random sample of households that are members of an Internet/WebTV panel was surveyed. Both the Internet/WebTV panel as a whole and the sample of households completing the survey were selected by random digit dial and recruited by telephone. The panel is designed to be representative of the U.S. population.

The questionnaire was similar to the questionnaires CEE fielded in previous years. As in previous years, CEE and its sponsoring members made the survey data publicly available.

The survey was a national survey. The sampling frame for this national survey included all households in the largest Nielsen Designated Market Areas<sup>®</sup> (DMAs) that together accounted for about 70 percent of U.S. television households. In 2008, this encompassed the 57 largest DMAs. In addition, CEE members may choose to sponsor more intensive sampling (i.e., an oversample) in selected localities, referred to here as *sponsor areas*. In 2008, the sponsor areas were:

- Denver DMA,
- Massachusetts,
- Minneapolis-St. Paul DMA,
- New York state (with the exception of Long Island),
- Tennessee Valley Authority's service territory, and
- Wisconsin.

Sponsor areas are not limited to the 57 largest DMAs. Thus, the complete frame for the study was the combination of the largest DMAs and any portion of the sponsor areas that fell outside 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. Data collected from respondents not in the 57 largest DMAs, but in a sponsor area, 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 facilitate comparison with data from other years.

As in previous years' studies, the DMAs in the sampling frame were classified by publicity category, so that the effect of local energy efficiency program publicity on national awareness could be considered. The same publicity classification procedure

used in the past 7 years was used this year.<sup>1</sup> A DMA was classified as *high publicity*, *low publicity*, or *other* using the following criteria:

- **High publicity:** Active local ENERGY STAR program *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.

This classification was designed to provide clear and verifiable definitions. 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, 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.

These definitions were constructed to be sufficiently operational to be applicable to future survey efforts; they can be modified by simply increasing the duration of sustained high publicity.

The sample was stratified by area and within an area by publicity category. Each sponsor area is also further stratified by large versus non-large DMA as well as any stratification requested by the CEE member funding the oversample.<sup>2</sup> 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. Among the top 57 DMAs, for areas located outside the sponsor area, each publicity category was allocated approximately 333 sampling points.

This report presents the 2008 survey results at the national level and by publicity category. The publicity category results provide evidence of the effectiveness of EPA's model for increasing awareness, understanding, and use of ENERGY STAR by supporting regional energy efficiency program sponsors. Results are presented on consumer recognition and understanding, and purchasing influence of the

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<sup>1</sup> Between September 2007 and 2008, 2 of the 57 largest DMAs changed publicity category: Atlanta and Phoenix. Both changed from "Other" to "High".

<sup>2</sup> No CEE member funding an oversample requested additional stratification.

ENERGY STAR label, as well as on messaging, product purchases, and information sources consumers use in their purchasing decisions.

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

## KEY FINDINGS

### RECOGNITION

In 2008, 76 percent of households recognized the ENERGY STAR label when shown the label (i.e., *aided recognition*). Sixty-two percent of households recalled seeing or hearing 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/WebTV made it possible to measure unaided recognition. Aided recognition was measured by showing respondents the ENERGY STAR label and then asking if they had seen or heard of the label. Both methods are useful measurements of label recognition, although unaided recognition is the more conservative of the two.

Recognition results for both the 2008 and 2007 surveys are summarized in the following table. The 2008 and 2007 aided and unaided recognition of the ENERGY STAR label results are not statistically different at the 10-percent level of significance.

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

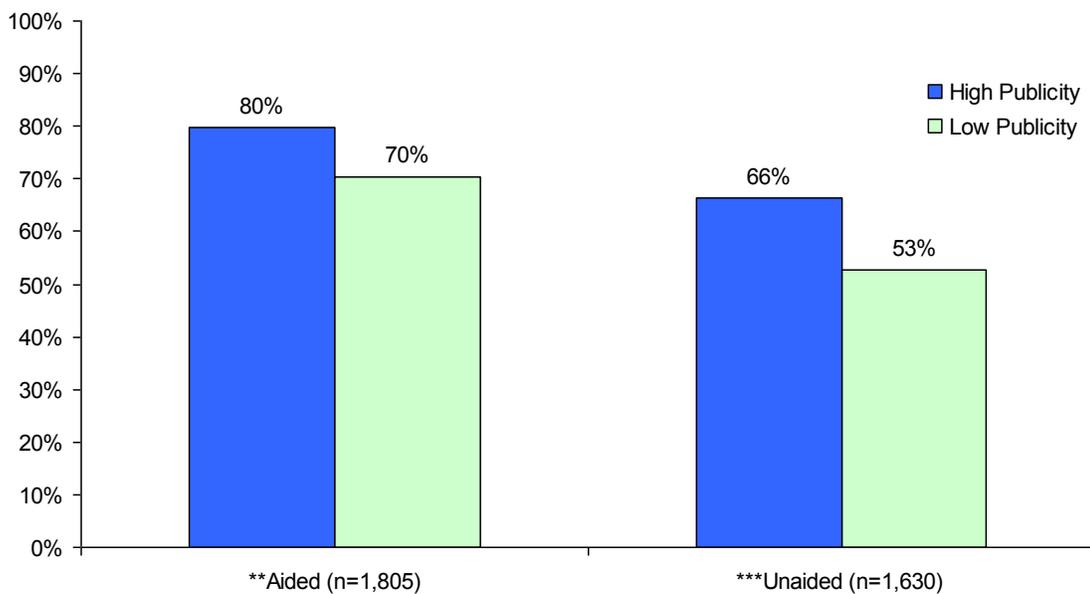
| Recognize ENERGY STAR Label | 2008            |                   | 2007          |                 |
|-----------------------------|-----------------|-------------------|---------------|-----------------|
|                             | Aided (n=1,805) | Unaided (n=1,630) | Aided (n=995) | Unaided (n=892) |
| Yes                         | 76%             | 62%               | 74%           | 58%             |
| Standard error              | 1.7%            | 2.0%              | 1.7%          | 2.1%            |

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

Both aided and unaided recognition were higher in high-publicity areas than in low-publicity areas. After being shown the ENERGY STAR label, 80 percent of households in high-publicity areas recognized the label versus 70 percent in low-publicity areas. Unaided recognition was 66 percent in high-publicity areas compared with 53 percent in low-publicity areas.

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



\*\*\* High- and low-publicity area proportions for unaided recognition are statistically different from each other at the 1-percent level of significance ( $p\text{-value} \leq 0.01$ ).

\*\* High- and low-publicity area proportions for aided recognition are statistically different at the 5-percent level of significance ( $p\text{-value} \leq 0.05$ ).

## Product Associations

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

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

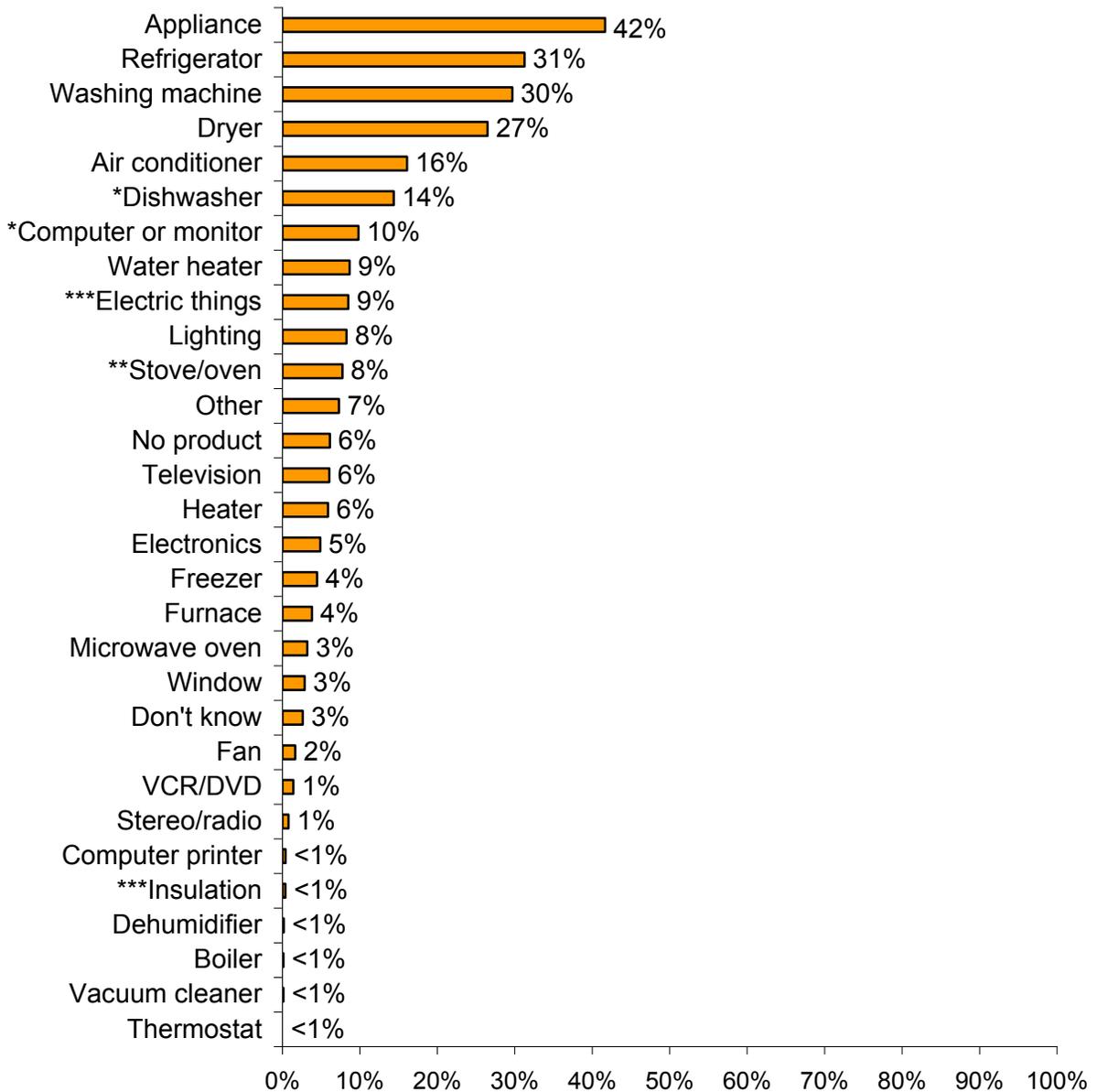
Unprompted, appliances, refrigerators and washing machines showed the strongest association with the label at 30 to 42 percent. Clothes dryers followed at 27 percent. The next most strongly associated products (unprompted) were air conditioners and dishwashers at 16 and 14 percent, respectively. The list of products mentioned by households without being prompted also includes several products that do not have an ENERGY STAR specification: clothes dryers, water heaters<sup>3</sup>, microwave ovens, and stoves or ovens.

When prompted, eighty-one percent of households had seen the label on refrigerators. At about 70 percent, washing machines and dishwashers were the next products most commonly associated with the ENERGY STAR label. Room air conditioners, windows and central air conditioners followed at about 47 percent. However, 38 percent of households associated microwave ovens with the ENERGY STAR label, although they do not in fact have an ENERGY STAR specification. (Nevertheless, of all appliances, microwave ovens were the least often associated with the label). Doors were the only product to show a significant decrease in prompted association with the ENERGY STAR label from 2007 to 2008. There were no significant increases in prompted association.

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<sup>3</sup> An ENERGY STAR specification for water heaters went into effect on January 1, 2009. During the time the study was conducted water heaters were not a qualified product.

**Unprompted Product Association with the ENERGY STAR Label**  
**[Base = Recognize label (aided), n = 1,150]**



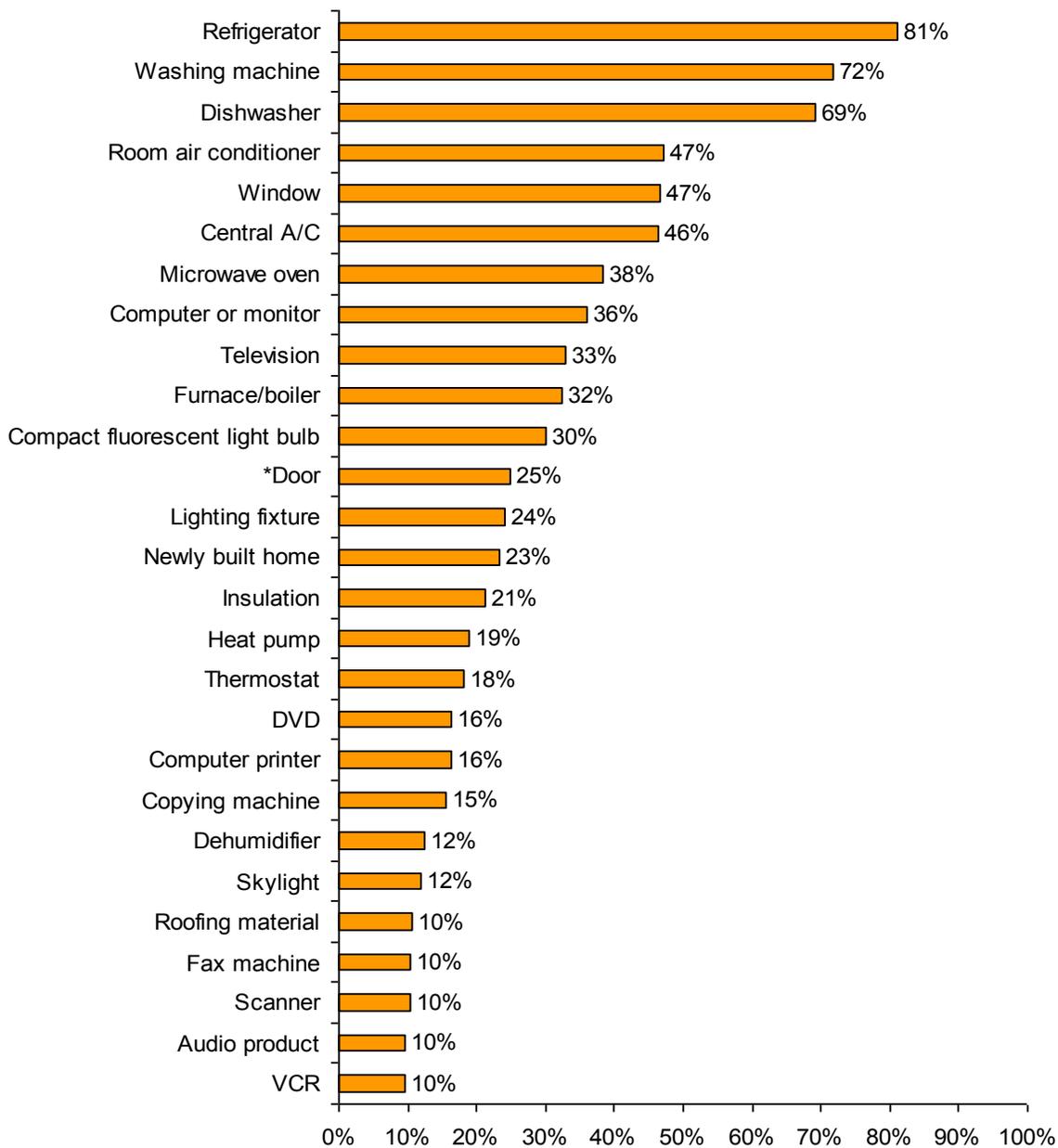
Note: QA: "What types of products, goods, or services do you think of when you think of the ENERGY STAR label? Please write your answers below."

\*\*\* 2008 and 2007 proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01). The proportion of households in 2008 is larger than in 2007 for "electric things" and smaller for insulation.

\*\* 2008 and 2007 proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05). The proportion of households in 2008 is smaller than in 2007.

\* 2008 and 2007 proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10). The proportion of households in 2008 is smaller than in 2007.

**Prompted Product Association with the ENERGY STAR Label  
[Base = Recognize label (aided)<sup>4</sup>]**



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.”

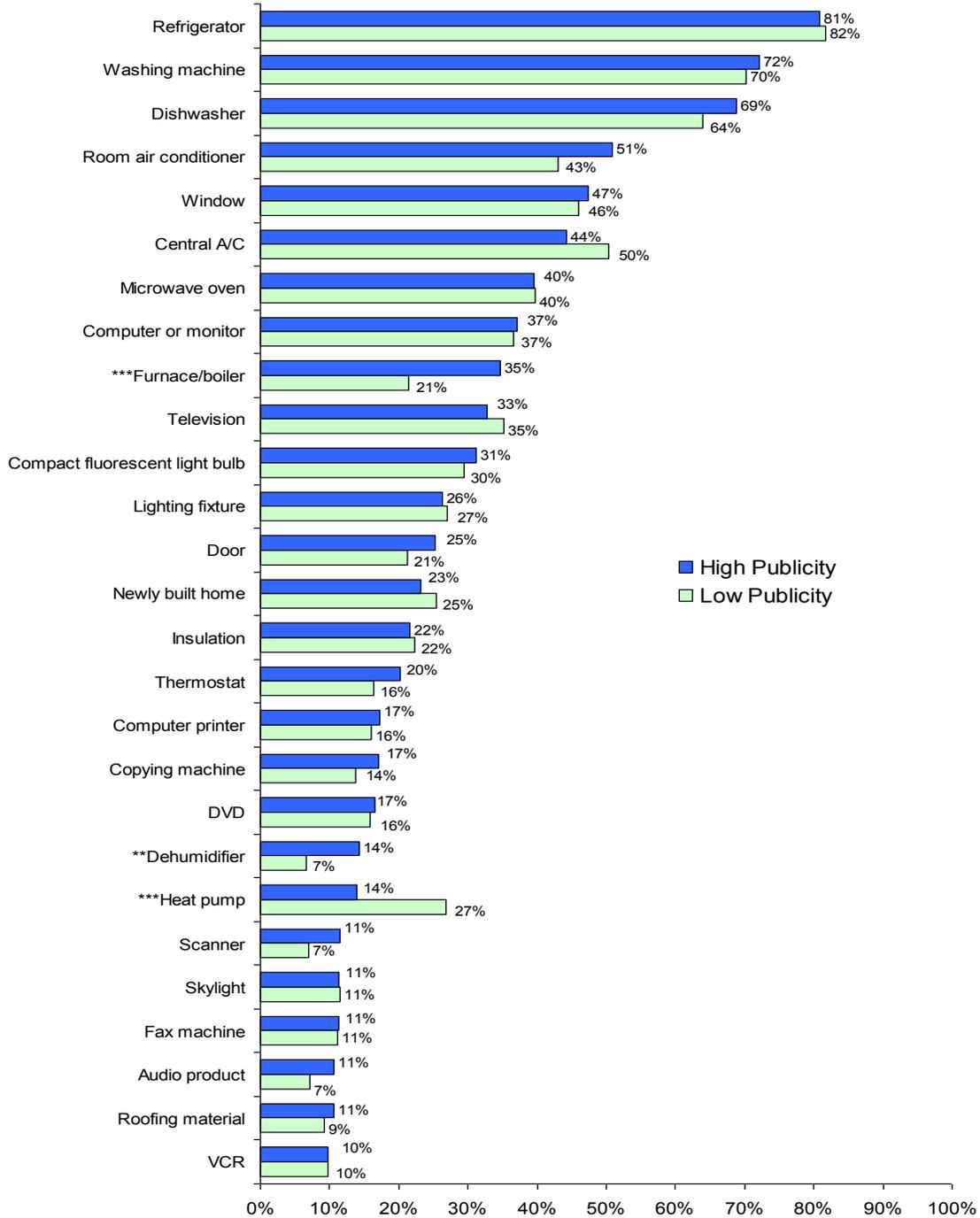
\* 2008 and 2007 proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10). The proportion of households in 2008 is smaller than in 2007.

<sup>4</sup> Respondents were asked about three sets of product groupings: (1) Heating and Cooling Products and Home Office Equipment, (2) Home Appliances/Lighting and Home Electronics, and (3) Building Materials and Buildings. The sample size, n, for all of these sets of product groupings is 1,194.

## **Product Associations by Publicity Category**

Regional energy efficiency program sponsors promoted HVAC system improvements, lighting, refrigerators, room air conditioners, washing machines, and dishwashers. For furnace/boilers and dehumidifiers, a larger proportion of households in high- than low-publicity areas associated these products with the ENERGY STAR label when prompted. A significantly smaller proportion of households associated heat pumps in high- than in low-publicity areas in 2008. This result was seen for heat pumps in each of the previous 4 years.

**Prompted Product Association with the ENERGY STAR Label by Publicity Category**  
**[Base = Recognize label (aided)<sup>5</sup>]**



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

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

<sup>5</sup> As discussed in footnote 4, respondents were asked about three sets of product groupings. In all groupings, the sample size in high- and low- publicity areas is 621 and 264, respectively.

## UNDERSTANDING

In 2008, 78 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 (10 percent) was small compared with the proportion that exhibited a high understanding (68 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 2008 and 2007 survey results on the level of understanding of the ENERGY STAR label are provided in the following table.

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

| <b>Level of Understanding of the Label</b> | <b>2008<br/>(n=1,881)</b> | <b>2007<br/>(n=1,051)</b> |
|--|---------------------------|---------------------------|
| High understanding                         | 68%                       | 65%                       |
| General understanding                      | 10%                       | 11%                       |
| No understanding                           | 22%                       | 24%                       |
| <b>Total</b>                               | 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.

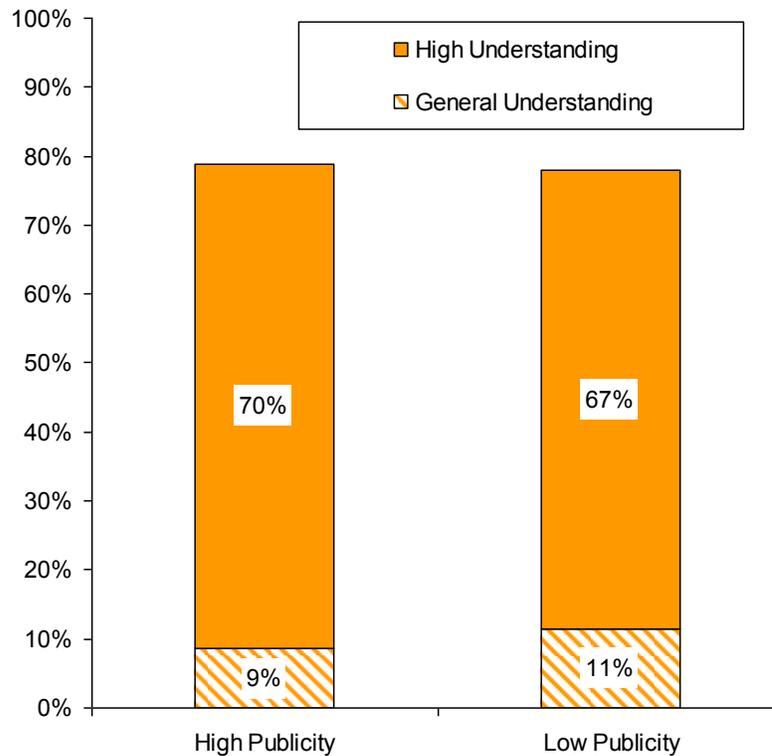
## Understanding by Publicity Category

The level of understanding of the ENERGY STAR label was similar in high- and in low-publicity areas. Seventy-nine percent of households in high-publicity areas had at least a general understanding of the label compared with 78 percent of households in low-publicity areas. The difference between the publicity areas is not statistically significant at the 10-percent level. Among those households with at least a general understanding of the ENERGY STAR label, more households exhibited a high degree of understanding in both publicity categories.

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

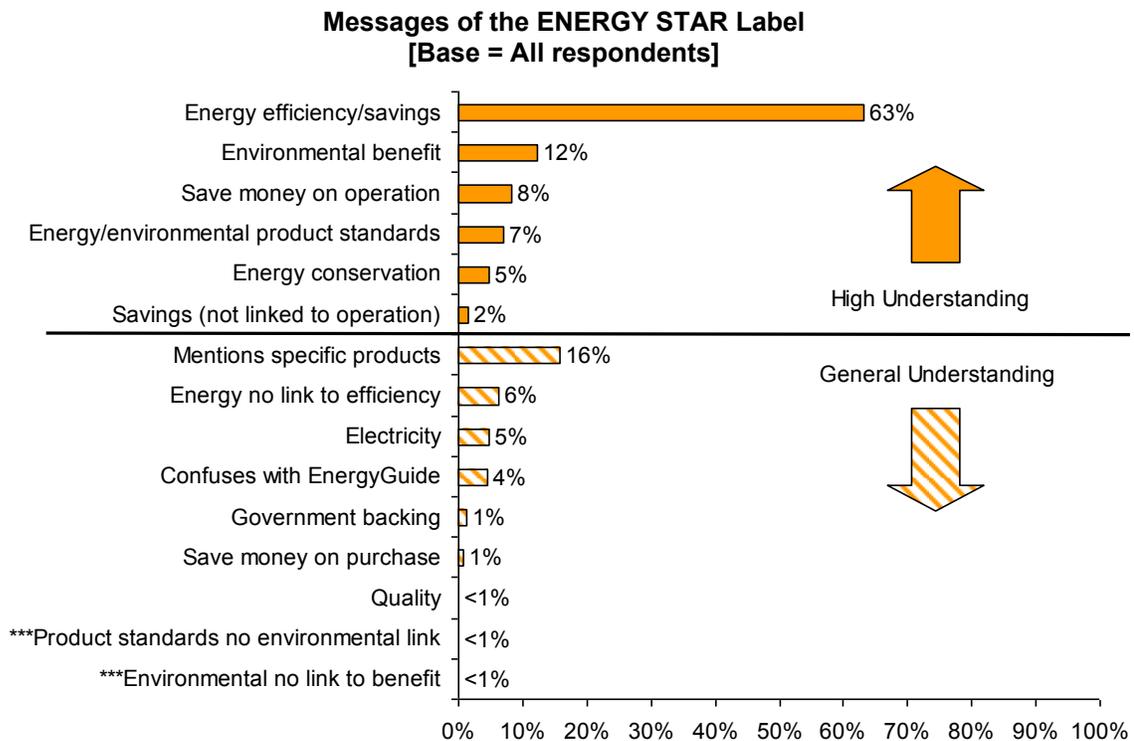
| Publicity Category                 | At Least General Understanding of Label |
|------------------------------------|---|
| High                               | 79%                                     |
| Low                                | 78%                                     |
| <b>Difference (High minus Low)</b> | 1%                                      |
| <b>p-value</b>                     | 0.792                                   |

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



## Understanding of Label Messaging

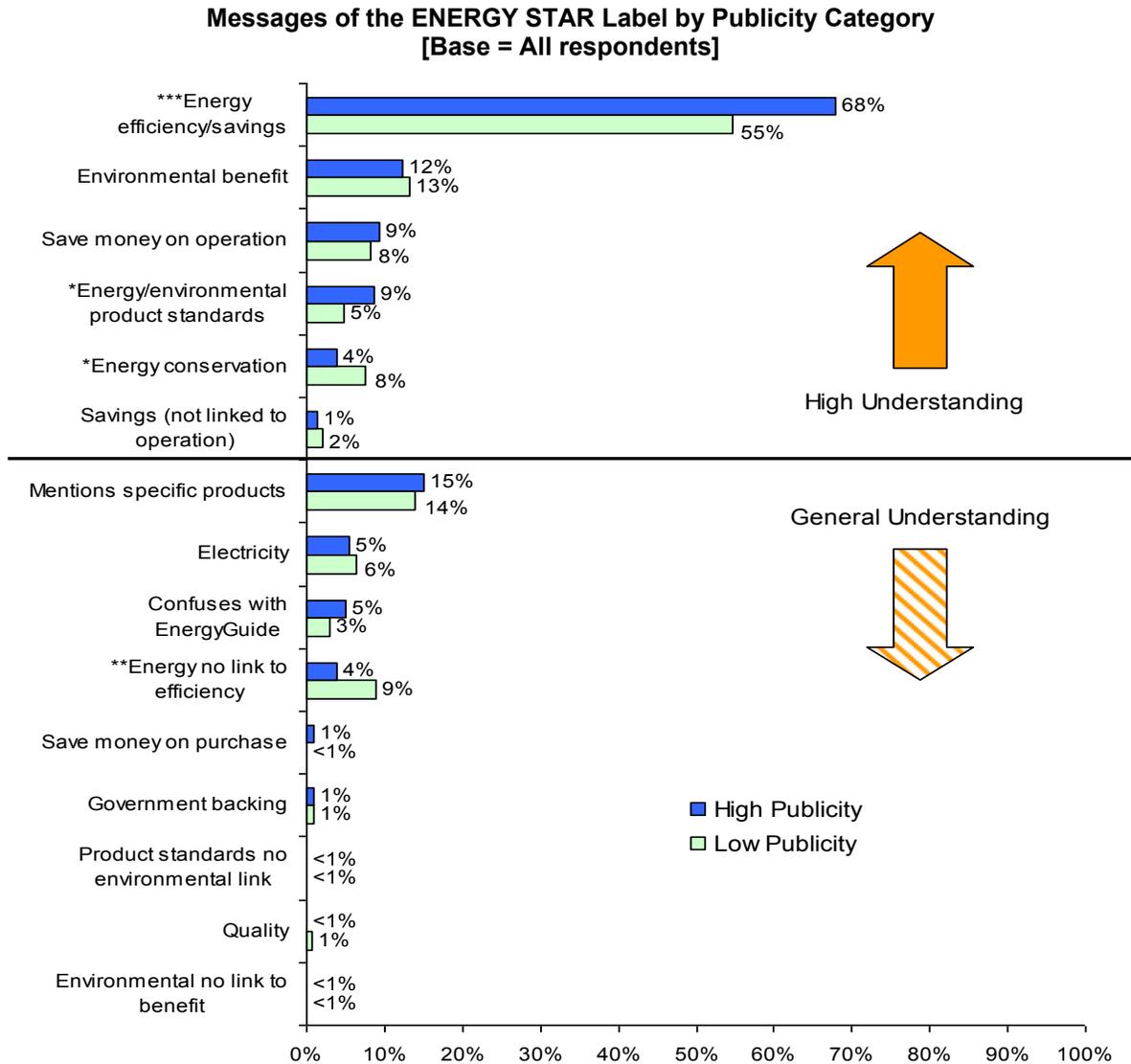
Open-ended responses to the questions on the level of understanding of the ENERGY STAR label are an indicator of how effectively EPA communicates its messages through the label. These responses are used in the analysis of understanding in the previous section. By far, the most common message associated 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. The second most common response was “associating specific products with the ENERGY STAR label,” at 16 percent of households, which is considered general understanding of the label.



\*\*\* 2008 and 2007 proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01).

## Understanding of Label Messaging by Publicity Category

For most messages, the proportion of households that associated the message with the ENERGY STAR label was similar for high- and low-publicity areas. However, for the “Energy efficiency/savings” and “Energy/environmental product standards” messages, a significantly larger proportion of households in high- than in low-publicity areas associated these messages with the label. A larger proportion of households in the low- than in high-publicity areas associated the “Energy conservation” and “Energy no link to efficiency” messages with the label.



\*\*\* High- and low-publicity area proportions are statistically different from each other at the 1-percent level of significance ( $p\text{-value} \leq 0.01$ ).

\*\* High- and low-publicity area proportions are statistically different from each other at the 5-percent level of significance ( $p\text{-value} \leq 0.05$ ).

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

## 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 2008, 84 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, 58 percent had at least a general understanding of it.

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

| Recognize ENERGY STAR Label Aided | At Least General Understanding of Label |         |
|-----------------------------------|---|---------|
|                                   | 2008                                    | 2007    |
| Yes                               | 84%                                     | 82%     |
| No                                | 58%                                     | 59%     |
| <b>Difference (Yes minus No)</b>  | 26%                                     | 24%     |
| <b>p-value</b>                    | <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 product

The result is that 40 percent of all households knowingly purchased an ENERGY STAR product in the past twelve months. This result is not statistically different, at the 10-percent level, from the 2007 result.

**Purchased ENERGY STAR  
(Base = All respondents)**

| <b>Purchased ENERGY STAR product</b> | <b>2008<br/>(n=1,805)</b> | <b>2007<br/>(n=995)</b> |
|--------------------------------------|---------------------------|-------------------------|
| Estimate (yes)                       | 40%                       | 37%                     |
| Standard Error                       | 2.3%                      | 2.6%                    |

An increase or decrease in the percent of all households that knowingly purchased an ENERGY STAR product could be due to changes in any of the three proportions listed above between 2007 and 2008. There were no statistically significant changes

(at the 10-percent level) for any of the three proportions. In 2008, considering only households that recognized the label and purchased a product in a relevant category, 73 percent knowingly purchased an ENERGY STAR product in the past twelve months. This proportion is similar to the 68 percent measured in 2007 (p-value = 0.143).

**Purchased ENERGY STAR**  
**[Base = Recognize label (aided) and purchaser]**

| <b>Purchased ENERGY STAR product</b> | <b>2008<br/>(n=764)</b> | <b>2007<br/>(n=376)</b> |
|--------------------------------------|-------------------------|-------------------------|
| Estimate (yes)                       | 73%                     | 68%                     |
| Standard error                       | 2.4%                    | 3.1%                    |

Note: 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 instructions)?"

**Purchases of ENERGY STAR by Publicity Category**

The proportion of *all* households that knowingly purchased an ENERGY STAR product in high- versus low-publicity areas is 44 and 37 percent, respectively. This seven percentage point difference is not significant at the 10-percent level (p-value = 0.216).

**National Household Market Penetration of ENERGY STAR**  
**Products by Publicity Category**  
**[Base = All respondents]**

| <b>Publicity Category</b>          | <b>% Households</b> |
|------------------------------------|---------------------|
| High                               | 44%                 |
| Low                                | 37%                 |
| <b>Difference (High minus Low)</b> | 7%                  |
| <b>p-value</b>                     | 0.216               |

**Influence of the ENERGY STAR Label**

In 2008, for 53 percent of households that knowingly purchased an ENERGY STAR-labeled product, the label influenced at least one of their purchase decisions "very much". Compared to the 2007 result of 40 percent, this increase is significant at the 5-percent level (p-value = 0.025). The increase in the "very much" category is accompanied by a significant decrease in the "somewhat" category (p-value = 0.068).

For 9 percent of households, the label influenced their purchase decisions "slightly". Fifteen percent of households reported the presence of the ENERGY STAR label had no influence on their purchase. These findings are not significantly different from those of 2007.

**Influence of the ENERGY STAR Label on Purchase Decisions<sup>6</sup>**  
**[Base = Recognize label (aided) and ENERGY STAR purchasers]**

| <b>Influence of the Label on Purchasing Decisions</b> | <b>2008<br/>(n=506)</b> | <b>2007<br/>(n=234)</b> |
|---|-------------------------|-------------------------|
| Very much   | 53%                     | 40%                     |
| Somewhat  | 23%                     | 32%                     |
| Slightly  | 9%                      | 12%                     |
| Not at all  | 15%                     | 16%                     |
| <b>Total</b>  | <b>100%</b>             | <b>100%</b>             |

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

**Influence of the ENERGY STAR Label by Publicity Category**

The purchase decisions of 51 percent of households in high-publicity areas were influenced "very much" by the ENERGY STAR label, compared to 48 percent in low-publicity areas. Similarly, 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 low-publicity area comparison is 76 to 74 percent, respectively. None of these proportions are statistically different from each other at the 10-percent level of significance.

**Influence of the ENERGY STAR Label on Purchase Decisions  
by Publicity Category**

**[Base = Recognize label (aided) and ENERGY STAR purchasers, n = 506]**

| <b>Publicity Category</b>          | <b>Very much</b> | <b>Very much<br/>or somewhat</b> |
|------------------------------------|------------------|----------------------------------|
| High                               | 51%              | 76%                              |
| Low                                | 48%              | 74%                              |
| <b>Difference (High minus Low)</b> | 3%               | 2%                               |
| <b>p-value</b>                     | 0.695            | 0.768                            |

<sup>6</sup> 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.

## Rebate and Financing Influence

From 2007 to 2008, the percentage of households that knowingly purchased an ENERGY STAR-labeled product and received rebates or reduced-rate financing remained the same, at 21 percent. Of these households in 2008, 68 percent would have been “very likely” to purchase the ENERGY STAR product if financial incentives had not been available. Another 22 percent would have been “somewhat likely.” This leaves 9 percent that would have been “slightly likely” and 1 percent “not at all likely.” Among these results, the 2008 result for “very likely” is statistically different at the 10-percent level from the 44 percent reported in 2007 (p-value = 0.067).

**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 |              |
|---|--------------|--------------|
|   | 2008 (n=471) | 2007 (n=220) |
| Yes   | 21%          | 21%          |
| No  | 79%          | 79%          |
| <b>Total</b>  | 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, n = 69]**

| Likelihood Purchase ENERGY STAR Product Without Financial Incentive | % Households |
|---|--------------|
| Very likely   | 68%          |
| Somewhat likely   | 22%          |
| Slightly likely   | 9%           |
| Not at all likely   | 1%           |
| <b>Total</b>  | 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, 35 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.

The likelihood of recommending ENERGY STAR products to a friend is greater than “6” for 79 percent of these households. This is consistent with the previous year’s result of 80 percent.

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

| Likelihood Recommend ENERGY STAR Products | % Households |              |
|---|--------------|--------------|
|   | 2008 (n=530) | 2007 (n=247) |
| 10 - Extremely likely                     | 35%          | 29%          |
| 9   | 17%          | 19%          |
| 8   | 15%          | 21%          |
| 7   | 12%          | 11%          |
| 6   | 6%           | 4%           |
| 5   | 7%           | 9%           |
| 4   | 3%           | 1%           |
| 3   | 1%           | 1%           |
| 2   | 1%           | <1%          |
| 1   | 1%           | 1%           |
| 0 - Extremely unlikely                    | 2%           | 3%           |
| <b>Total</b>                              | 100%         | 100%         |

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

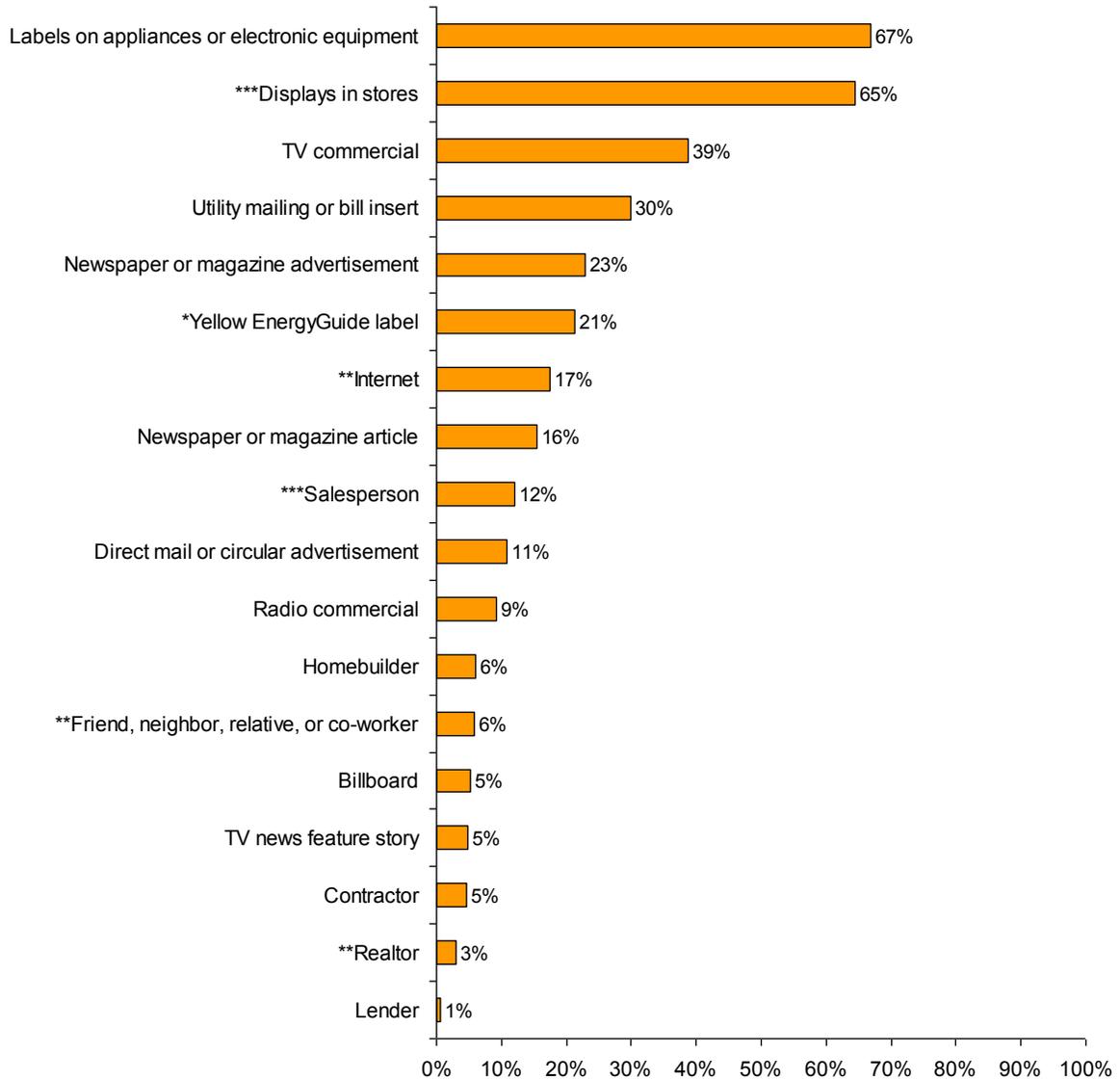
## INFORMATION SOURCES

### Sources Seen

Sixty-seven percent of households have seen something about ENERGY STAR on the labels of appliance or electronic equipment, followed by store displays at 65 percent. Thirty-nine percent of households heard or saw something about ENERGY STAR on TV commercials. Between 21 and 30 percent of households saw something about ENERGY STAR on or in utility mailings or bill inserts, EnergyGuide labels, or in newspaper or magazine advertisements.

A larger proportion of households in 2008 than in 2007 saw something about ENERGY STAR on displays in stores (p-value = 0.006) and Internet (p-value = 0.021), as well as heard about ENERGY STAR from a salesperson (p-value = 0.003), realtor (p-value = 0.011), and from a friend, neighbor, relative, or co-worker (p-value = 0.031). The proportion of households that saw something about ENERGY STAR on the EnergyGuide labels decreased from 27 percent in 2007 to 21 percent in 2008 (p-value = 0.099).

**Sources Saw or Heard Something About ENERGY STAR**  
**[Base = Recognize label (aided), n = 1,117]**



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

\*\*\* 2008 and 2007 proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01). The proportion of households in 2008 is larger than in 2007.

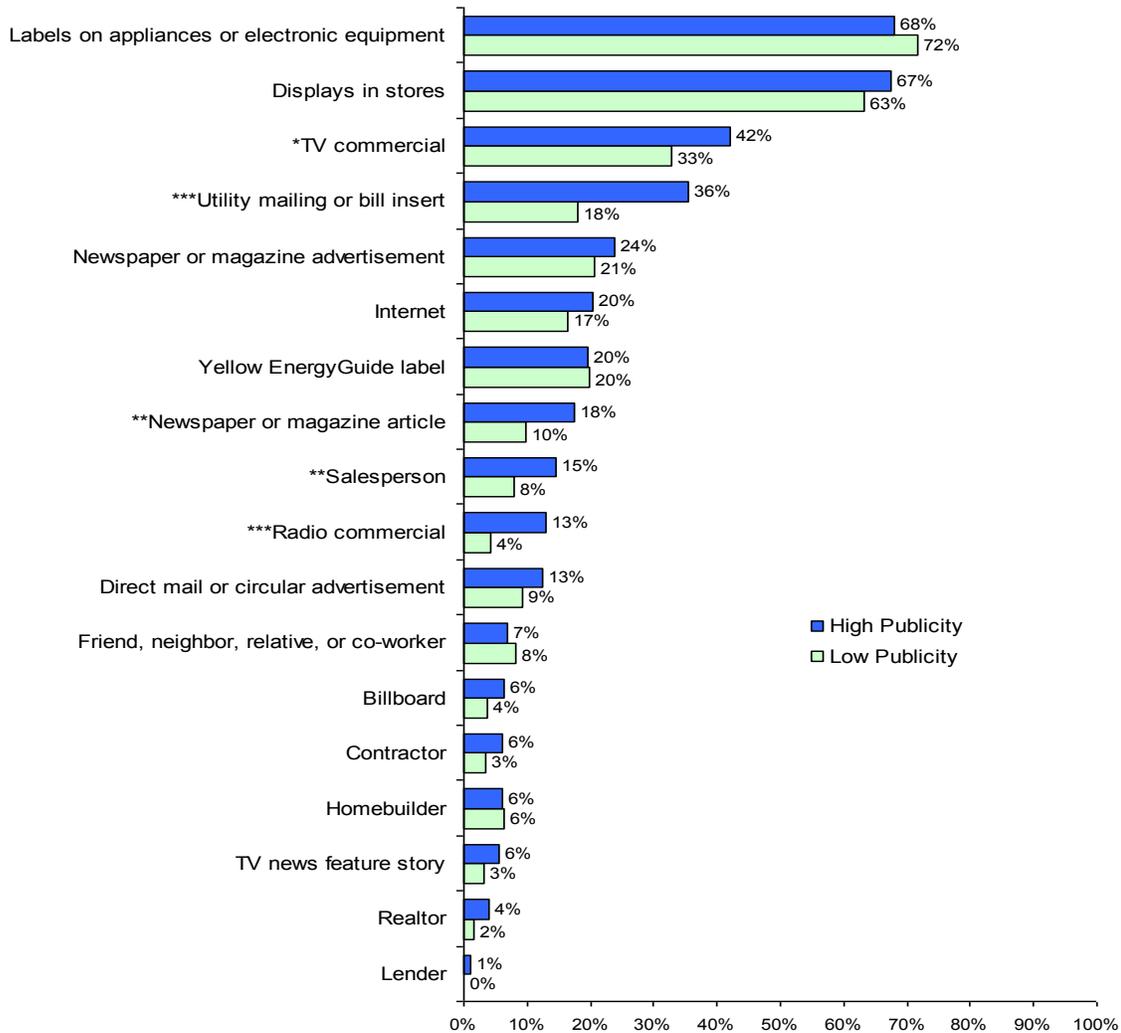
\*\* 2008 and 2007 proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05). The proportion of households in 2008 is larger than in 2007.

\* 2008 and 2007 proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10). The proportion of households in 2008 is smaller than in 2007.

## Sources Seen by Publicity Category

For several sources, the proportion of households that heard or saw something about ENERGY STAR was significantly larger in high- than in low-publicity areas. This was the case for TV and radio commercials, newspaper or magazine articles, utility mailings or bill inserts and salespersons. All of these sources, except salespersons, involve means of mass communication.

**Sources Saw or Heard Something About ENERGY STAR by Publicity Category**  
**[Base = Recognize label (aided), n = 1,117]**



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

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

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

## **APPENDIX A: DETAILED METHODOLOGY**

During September 2008, 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 2007). As in the eight previous years, CEE and its members sponsoring the survey made the survey data available to EPA for analysis. In 2001, a rigorous comparative analysis of the results obtained via a mail survey versus an Internet/WebTV survey was conducted. The results from the two survey methods were comparable for most major indicators.<sup>7</sup> Results from that time-frame were also analogous to telephone surveys for aided recognition.<sup>8</sup>

This report discusses the results of the 2008 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 September 17 through September 30, 2008.

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.

### **1 QUESTIONNAIRE DESIGN**

In 2008, CEE conducted the ENERGY STAR survey using a questionnaire designed to be delivered by Internet/WebTV. The survey was conducted via an interactive Internet/WebTV format with a random sample of households that are members of an Internet/WebTV panel. Households were selected to participate in the panel by

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

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

random digit dial and recruited by telephone. 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 2008 survey.

The panel is designed to be representative of the U.S. population. Panel members are provided with an Internet appliance (WebTV) 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 and WebTV. 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 2008 Internet/WebTV questionnaire may in most cases be compared with data collected using the Internet/WebTV questionnaires fielded in previous years, for which CEE was also responsible.

## **1.1 Survey Objectives**

CEE had several broad objectives in designing the 2008 questionnaire, including:

- To maintain consistency with the CEE 2000 and 2001 mail questionnaires and the Internet/WebTV questionnaires fielded in 2001 and subsequent years
- 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 2008 survey against those from the 2007 CEE survey

The 2008 Internet/WebTV 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/WebTV survey as the demographic characteristics of the respondents were already on file)
- Recognition and understanding of the yellow *EnergyGuide* labels

## 1.2 Internet/WebTV Questionnaire

The interactive format of an Internet/WebTV 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/WebTV questionnaires (after questions about the yellow *EnergyGuide* label) ask respondents—without showing the ENERGY STAR label—whether they have ever seen or heard of the ENERGY STAR label. Responses to this question should thus be comparable to those obtained through a telephone survey. The Internet/WebTV 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/WebTV 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/WebTV questionnaire who say they have 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/Web TV survey is able to combine some of the attributes of both print and telephone surveys.

### **1.3 Changes to the Questionnaire**

The 2008 Internet/WebTV questionnaire was very similar to the 2007 questionnaire. However the 2008 survey contains the addition of compact fluorescent light bulbs (CFLs) purchaser questions, sources of information questions, and two additions to list of products used throughout the survey.

#### **1.3.1 New Questions for CFL Purchasers**

Respondents who purchased CFLs were asked if they installed the bulbs purchased, and what kind of bulb(s) were replaced. The respondents who purchased an ENERGY STAR-labeled lighting fixture were further asked to identify the type of lighting fixtures purchased. The new CFL Purchaser questions include:

**Q12D:** Did you install the fluorescent light bulb(s) you purchased in your fixture?

**Q12E:** What kind of bulb(s) did you replace?

**Q8A\_1-4:** Which ENERGY STAR-labeled lighting fixture did you purchase?

#### **1.3.2 New Questions About Sources of Information**

The respondents were asked to identify sources they are most likely to rely on for information on Heating and Cooling Products, Home Appliances, Lighting, and Electronics. Households who identified Internet as a source of information were asked to select the type of Internet source(s) they are most likely to rely on for information. The new Sources of Information questions are:

**Q13A\_1-12:** Please select the source(s) of information you are most likely to use to obtain information about this product type [Heating and Cooling Products].

**Q13A1\_1-6:** Please select the type of Internet source(s) you are most likely to rely on to obtain information about this product type [Heating and Cooling Products].

**Q13B\_1-12:** Please select the source of information you are most likely to use to obtain information about this product type [Home Appliances / Lighting / Home Electronics].

**Q13B1\_1-6:** Please select the type of Internet source(s) you are most likely to rely on to obtain information about this product type [Home Appliances / Lighting / Home Electronics].

### 1.3.3 Questions About DVD Products and Dehumidifiers

In 2008, “DVD product” and “Dehumidifiers” were added to the product lists used in the following questions.

**Q5(b):** Please select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.

**Q6A:** 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?

**Q7A:** On which products did you see the ENERGY STAR label?

**Q8:** How much did the ENERGY STAR label influence your purchase decision?

**Q12(b):** Which of these products have you purchased in the last 12 months?

**QC:** In general, how satisfied are you with each of the following products you purchased?

### 1.4. Determination of Aided Recognition

In the 2008 analysis the determination of *aided* recognition was based on the responses to five questions. This is the same sequence and numbering used in the 2007 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 8 years was used in 2008. A Nielsen Designated Marketing Area<sup>®</sup> (DMA) was classified as *high publicity*, *low publicity*, or *other* using 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.

This classification procedure was designed to identify three publicity categories and provide clear and verifiable definitions. 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.

These definitions were constructed to be applicable to future survey efforts; they can be modified by simply increasing the duration of sustained high publicity.

## 2.2 Sample Design

The survey was a national survey. The sampling frame for this national survey included all households in the largest Nielsen Designated Market Areas<sup>®</sup> (DMAs) that together accounted for about 70 percent of U.S. television households. In 2008, this encompassed the 57 largest DMAs. In addition, CEE members may choose to sponsor more intensive sampling (i.e., an oversample) in selected localities, referred to here as *sponsor areas*. In 2008, the sponsor areas were:

- Denver DMA,
- Massachusetts,
- Minneapolis-St. Paul DMA,
- New York state (with the exception of Long Island),
- Tennessee Valley Authority's service territory, and
- Wisconsin.

Sponsor areas are not limited to the 57 largest DMAs. Thus, the complete frame for the study was the combination of the largest DMAs and any portion of the sponsor areas that fell outside the 57 largest DMAs.

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, but in a sponsor area, 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 facilitate comparison with data from other years.

The sample was stratified by area and within an area by publicity category. Each sponsor area is also further stratified by large versus non-large DMA as well as any stratification requested by the CEE member funding the oversample.<sup>9</sup> 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. Among the top 57 DMAs, for areas located outside the sponsor area, each publicity category was allocated approximately 333 sampling points. In order to

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<sup>9</sup> No CEE member funding an oversample requested additional stratification.

achieve the target number of sampling points, a larger sample was selected to receive the survey to allow for non-response.

A list of the large DMAs and their publicity category assignments is provided in the table below.<sup>10</sup> 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.

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<sup>10</sup> Between September 2007 and 2008, 2 of the 57 largest DMAs changed publicity category: Atlanta and Phoenix. Both changed from “Other” to “High”.

### Large (Top 57) DMAs

| Rank | DMA                        | TV Households<br>2007-2008 |         | Publicity<br>Category |
|------|----------------------------|----------------------------|---------|-----------------------|
|      |                            | Number                     | % of US |                       |
| 1    | New York                   | 7,391,940                  | 6.553   | High                  |
| 2    | Los Angeles                | 5,647,440                  | 5.007   | High                  |
| 3    | Chicago                    | 3,469,110                  | 3.076   | High                  |
| 4    | Philadelphia               | 2,939,950                  | 2.606   | Other                 |
| 5    | Dallas-Ft. Worth           | 2,435,600                  | 2.159   | Other                 |
| 6    | San Francisco-Oak-San Jose | 2,419,440                  | 2.145   | High                  |
| 7    | Boston (Manchester)        | 2,393,960                  | 2.122   | High                  |
| 8    | Atlanta                    | 2,310,490                  | 2.048   | High                  |
| 9    | Washington, DC (Hagrstwn)  | 2,308,290                  | 2.046   | High                  |
| 10   | Houston                    | 2,050,550                  | 1.818   | Other                 |
| 11   | Detroit                    | 1,925,460                  | 1.707   | Other                 |
| 12   | Phoenix (Prescott)         | 1,802,550                  | 1.598   | High                  |
| 13   | Tampa-St. Pete (Sarasota)  | 1,783,910                  | 1.582   | Low                   |
| 14   | Seattle-Tacoma             | 1,782,040                  | 1.580   | High                  |
| 15   | Minneapolis-St. Paul       | 1,706,740                  | 1.513   | High                  |
| 16   | Miami-Ft. Lauderdale       | 1,536,020                  | 1.362   | Other                 |
| 17   | Cleveland-Akron (Canton)   | 1,533,710                  | 1.360   | Other                 |
| 18   | Denver                     | 1,477,280                  | 1.310   | Other                 |
| 19   | Orlando-Daytona Bch-Melbrn | 1,434,050                  | 1.271   | Other                 |
| 20   | Sacramnto-Stkton-Modesto   | 1,391,790                  | 1.234   | High                  |
| 21   | St. Louis                  | 1,244,370                  | 1.103   | Other                 |
| 22   | Pittsburgh                 | 1,158,210                  | 1.027   | Other                 |
| 23   | Portland, OR               | 1,150,320                  | 1.020   | High                  |
| 24   | Baltimore                  | 1,095,490                  | 0.971   | Other                 |
| 25   | Charlotte                  | 1,085,640                  | 0.962   | Low                   |
| 26   | Indianapolis               | 1,072,090                  | 0.950   | Other                 |
| 27   | San Diego                  | 1,051,210                  | 0.932   | High                  |
| 28   | Raleigh-Durham (Fayetvll)  | 1,039,890                  | 0.922   | Low                   |
| 29   | Hartford & New Haven       | 1,007,490                  | 0.893   | High                  |
| 30   | Nashville                  | 966,170                    | 0.857   | Low                   |
| 31   | Kansas City                | 927,060                    | 0.822   | Other                 |
| 32   | Columbus, OH               | 905,690                    | 0.803   | Other                 |
| 33   | Cincinnati                 | 904,340                    | 0.802   | Low                   |
| 34   | Milwaukee                  | 891,010                    | 0.790   | High                  |
| 35   | Salt Lake City             | 874,650                    | 0.775   | High                  |
| 36   | Greenvll-Spart-Ashevll-And | 838,270                    | 0.743   | Low                   |
| 37   | San Antonio                | 792,440                    | 0.703   | Low                   |
| 38   | West Palm Beach-Ft. Pierce | 775,340                    | 0.687   | Low                   |
| 39   | Grand Rapids-Kalmzoo-B.Crk | 739,640                    | 0.656   | Other                 |
| 40   | Birmingham (Ann, Tusc)     | 730,430                    | 0.648   | Low                   |
| 41   | Harrisburg-Lncstr-Leb-York | 723,620                    | 0.642   | Other                 |
| 42   | Norfolk-Portsmth-Newpt Nws | 717,440                    | 0.636   | Low                   |
| 43   | Las Vegas                  | 707,470                    | 0.627   | High                  |
| 44   | Albuquerque-Santa Fe       | 677,740                    | 0.601   | Other                 |
| 45   | Oklahoma City              | 676,850                    | 0.600   | Low                   |
| 46   | Greensboro-H.Point-W.Salem | 671,980                    | 0.596   | Low                   |

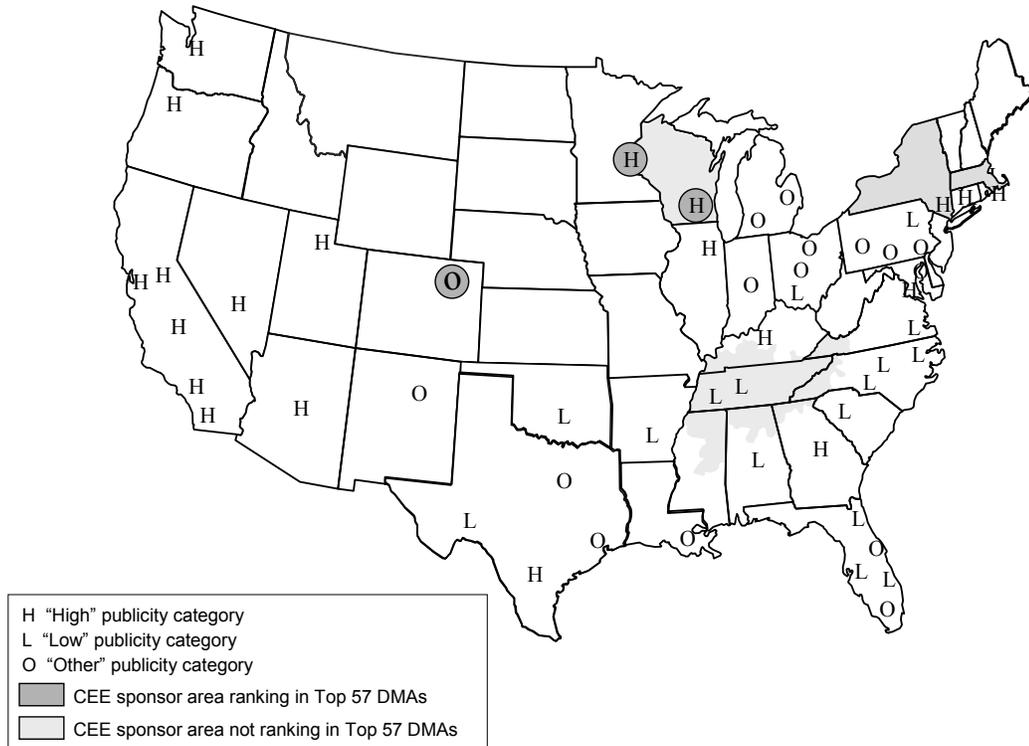
| Rank         | DMA                     | TV Households<br>2007-2008 |         | Publicity<br>Category |
|--------------|-------------------------|----------------------------|---------|-----------------------|
|              |                         | Number                     | % of US |                       |
| 47           | Memphis                 | 667,890                    | 0.592   | Low                   |
| 48           | Louisville              | 657,180                    | 0.583   | High                  |
| 49           | Jacksonville            | 655,470                    | 0.581   | Low                   |
| 50           | Buffalo                 | 636,700                    | 0.564   | High                  |
| 51           | Austin                  | 635,860                    | 0.564   | High                  |
| 52           | Providence-New Bedford  | 626,800                    | 0.556   | High                  |
| 53           | New Orleans             | 600,150                    | 0.532   | Other                 |
| 54           | Wilkes Barre-Scranton   | 592,310                    | 0.525   | Low                   |
| 55           | Fresno-Visalia          | 568,730                    | 0.504   | High                  |
| 56           | Albany-Schenectady-Troy | 553,790                    | 0.491   | High                  |
| 57           | Little Rock-Pine Bluff  | 552,400                    | 0.490   | Low                   |
| <b>Total</b> |                         | 79,912,450                 | 70.846  |                       |

**Sponsor Areas**

| <b>Sponsor Area</b>  | <b>Publicity Category</b> | <b>DMA (Large and Small)</b>  |
|--|---------------------------|---|
| Denver   | Other                     | Large: all<br>*Denver DMA (Rank 18)   |
| Massachusetts  | High                      | Large: parts of<br>*Boston DMA (Rank 7)<br>*Providence-New Bedford (Rank 52)<br>*Albany-Schenectady-Troy DMA (Rank 56)<br>Small: all of Springfield-Holyoke DMA (Rank 109)  |
| Minneapolis-St. Paul DMA                                       | High                      | Large: all<br>*Minneapolis-St. Paul DMA in MN (Rank 15)<br>*Minneapolis-St. Paul DMA in WI (Rank 15)  |
| New York (with the exception of Long Island)                   | High                      | Large: parts of<br>*New York DMA (Rank 1)<br>*Buffalo DMA (Rank 49)<br>*Albany-Schenectady-Troy DMA (Rank 56)<br>Small: all of<br>*Rochester (Rank 78)<br>*Syracuse (Rank 80)<br>*Binghamton (Rank 156)<br>*Utica (Rank 169)<br>*Watertown (Rank 177)<br>Small: parts of<br>*Burlington-Plattsburgh (Rank 92)<br>*Elmira (Rank 173) |
| Tennessee Valley Authority                                     | Low                       | Large: parts of<br>*Nashville (Rank 30)<br>*Memphis (Rank 47)<br>Small: parts of<br>*Knoxville (Rank 58)<br>*Huntsville-Decatur (Flor) (Rank 83)<br>*Chattanooga (Rank 86)  |
| Wisconsin (with the exception of the Minneapolis-St. Paul DMA) | High                      | Large: all<br>*Milwaukee (Rank 34)<br>Small: all<br>*Madison (Rank 85)<br>*Wausau-Rhineland (Rank 134)<br>Small: partial<br>*Green Bay - Appleton (Rank 70)<br>*Cedar Rapids-Wtrlo-IWC&Dub (Rank 87)<br>*Duluth-Superior (Rank 138)<br>*Marquette (Rank 179)  |

## Large (Top 57) DMAs and Sponsor Areas by Publicity Category<sup>11</sup>

2008



### 2.3 Weighting Procedures

Knowledge Networks, the company that provided the Internet/WebTV survey service, developed the weights used in the analysis. Knowledge Networks 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 Internet/WebTV 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.

<sup>11</sup> There were no large DMAs or sponsor areas in either Alaska or Hawaii.

After the field data are collected, Knowledge Networks further adjusted the sampling weight to account for survey non-response. The correction for survey non-response is analogous to the adjustment for differences in the Internet/WebTV panel from 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 September 17 and closed on September 30, 2008.

#### 3.2 Response Rate

The overall response rate was 13 percent for the CEE 2008 ENERGY STAR Household Survey. This level of response is typical for Knowledge Networks' surveys.

For an Internet/WebTV 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 2008 ENERGY STAR Household Survey, the return rate was 60 percent. While this number is quite high, it must be adjusted by the *recruitment rate*, which is the number of households that agreed to participate in the Internet/WebTV panel as a proportion of the number of households asked to participate. The recruitment rate was 21 percent. Thus, the response rate for the CEE 2008 ENERGY STAR Household survey was the product of the survey-specific return rate of 60 percent and the recruitment rate of 21 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.

**Survey Response Rate**

|                   |       |
|-------------------|-------|
| Sendout/requested | 1,749 |
| Completed         | 1,051 |
| Return rate       | 60%   |
| Recruitment rate  | 21%   |
| Response rate     | 13%   |

### 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, but in a sponsor area, 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, Knowledge Networks—the company that maintains the Internet/WebTV 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 Internet/WebTV incentive-for-service tradeoff and introduce associated biases.

Weighting used in the analyses of this report are applied to account for differences between the Internet/WebTV 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):<br>Survey Estimate Less Census % |          |
|-------------------------------|---|----------|
|                               | Number of persons in household  | One      |
| Householder/respondent age    | 18-24   | 6.3%     |
| Householder/respondent gender | Gender  | +/- 0.7% |
| Dwelling type                 | Single-family, attached   | 3.3%     |
| Own/rent                      | Own/rent  | +/- 2.2% |
| Household annual income       | Less than \$15,000  | -1.4%    |

The largest difference (in absolute value) between the weighted survey data and national Census data, at around six percentage points, is the proportion of households 18-24 years of age. The difference in the proportion of households dwelling type is the next largest, at about three percentage points. The combined under-representation of 18-24 years of age households and over-representation of households based on dwelling type, 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—number of persons in household, household income, own/rent, and gender—are all quite small, at less than about three percentage points.

### Household Size Distribution

| Number of Persons in Household | Census % Dwelling Units <sup>a</sup> | Survey Estimate Minus Census % Dwelling Units |
|--------------------------------|--------------------------------------|---|
| One                            | 27%                                  | 2.5%  |
| Two                            | 33%                                  | 0.1%  |
| Three                          | 16%                                  | -2.4%   |
| Four                           | 14%                                  | 0.5%  |
| Five or more                   | 10%                                  | -0.7%   |
| <b>Total (%)</b>               | 100%                                 |   |
| <b>Total (1,000s)</b>          | 110,691                              |   |

<sup>a</sup> U.S. Census Bureau, American Housing Survey, 2007, Table 2-9.

### Age Distribution

| Householder/ Respondent Age | Census % Householders <sup>a</sup> | Survey Estimate Minus Census % Householders |
|-----------------------------|------------------------------------|---|
| 18-24 <sup>b</sup>          | 6%                                 | 6.3%  |
| 25-34                       | 17%                                | 0.6%  |
| 35-44                       | 20%                                | 0.1%  |
| 45-54                       | 21%                                | -1.3%                                       |
| 55-64                       | 16%                                | 0.1%  |
| 65 or older                 | 20%                                | -5.9%                                       |
| <b>Total (%)</b>            | 100%                               |   |
| <b>Total (1,000s)</b>       | 110,693                            |   |

<sup>a</sup> U.S. Census Bureau, American Housing Survey, 2007, Table 2-9.

<sup>b</sup> Census, Under 25 years; WebTV/Internet, 18-24 years.

### Gender Distribution

| Householder/ Respondent Gender | Census % Population <sup>a</sup> | Survey Estimate Minus Census % Population |
|--------------------------------|----------------------------------|---|
| Female                         | 51%                              | 0.7%                                      |
| Male                           | 49%                              | -0.7%                                     |
| <b>Total (%)</b>               | 100%                             |   |

<sup>a</sup> U.S. Census Bureau, The Population Profile of the United States: Dynamic Version, Part I: Population Dynamics, Age and Sex Distribution in 2005.

**Dwelling Type Distribution**

| <b>Dwelling Type</b>      | <b>Census % Dwelling Units<sup>a</sup></b> | <b>Survey Estimate Minus Census % Dwelling Units</b> |
|---------------------------|--|--|
| Single-family, unattached | 65%  | 0.4%   |
| Single-family, attached   | 5%   | 3.3%   |
| Bldg. (≥2 units)          | 24%  | -1.7%  |
| Mobile home               | 6%   | -2.1%  |
| <b>Total (%)</b>          | 100%                                       |  |
| <b>Total (1,000s)</b>     | 110,693                                    |  |

<sup>a</sup> U.S. Census Bureau, American Housing Survey, 2007, Table 2-1.

**Own/Rent Distribution**

| <b>Own/Rent</b>       | <b>Census % Households<sup>a</sup></b> | <b>Survey Estimate Minus Census % Households</b> |
|-----------------------|--|--|
| Own                   | 68%                                    | 1.7%   |
| Rent                  | 32%                                    | -1.7%  |
| <b>Total (%)</b>      | 100%                                   |  |
| <b>Total (1,000s)</b> | 110,692                                |  |

<sup>a</sup> U.S. Census Bureau, American Housing Survey, 2007, Table 2-1.

**Income Distribution**

| <b>Total Household Annual Income (before taxes)</b> | <b>Census % Households<sup>a</sup></b> | <b>Survey Estimate Minus Census % Households</b> |
|---|--|--|
| Less than \$15,000                                  | 15%                                    | -1.4%  |
| \$15,000-\$24,999                                   | 10%                                    | 0.2%   |
| \$25,000-\$49,999                                   | 27%                                    | 0.9%   |
| \$50,000-\$74,999 <sup>b</sup>                      | 21%                                    | -0.1%  |
| \$75,000 and over <sup>b</sup>                      | 27%                                    | 0.4%   |
| <b>Total (%)</b>                                    | 100%                                   |  |
| <b>Total (1,000s)</b>                               | 110,692                                |  |

<sup>a</sup> U.S. Census Bureau, American Housing Survey, 2007, Table 2-12.

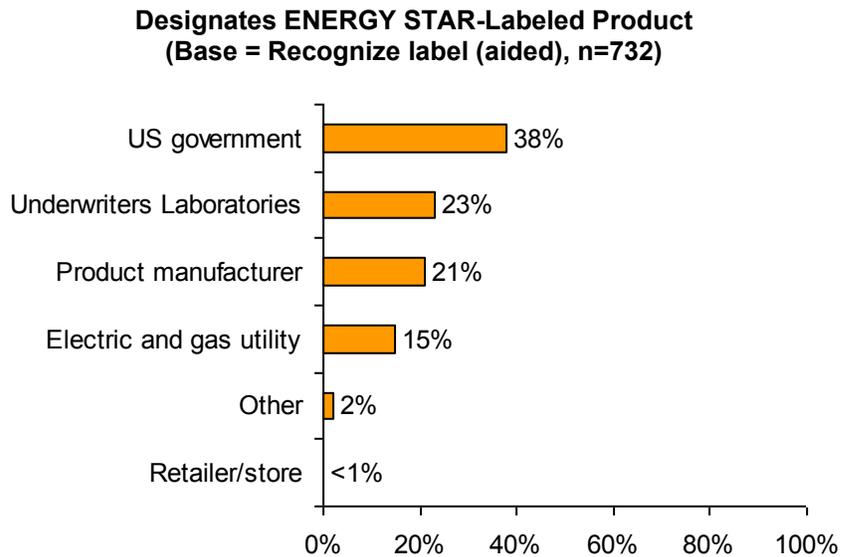
<sup>b</sup> Census, \$50,000-\$80,000 and \$80,000 and over.

## APPENDIX C: ADDITIONAL QUESTIONS FROM 2008 SURVEY

This appendix presents the results of additional ENERGY STAR-related questions that were added by CEE in 2005 and 2008; and were not discussed in the main body of the report.

### 1 ENERGY STAR DESIGNATION

Thirty-eight percent of households that recognized the ENERGY STAR label (aided) thought that the U.S. government decides if a product deserves the label. This is four percentage points larger than the proportion noted in 2007. The difference is not significant at the 10-percent level. Twenty-three percent of households thought the Underwriters Laboratories makes this decision, while 21 percent thought product manufacturers make the decision.



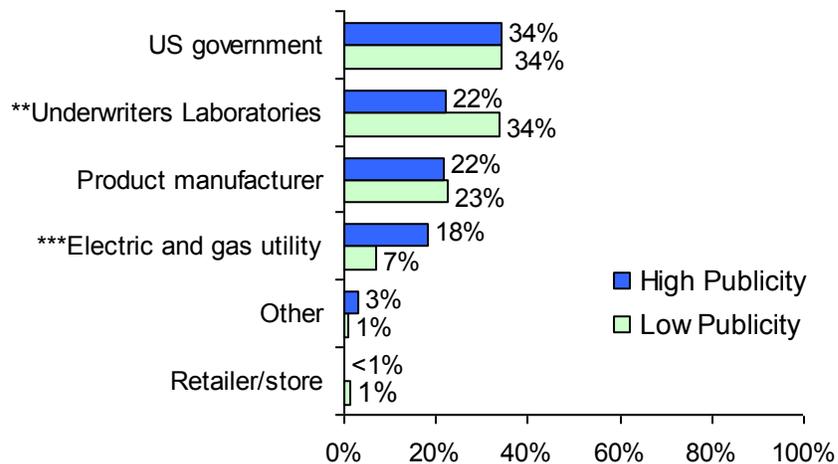
Note: QB: "As far as you know, who decides if a product deserves the ENERGY STAR label?"

## ENERGY STAR Designation by Publicity Category

Similar to the 2007 results, a significantly larger proportion of households in high- than in low-publicity areas thought that electric and gas utilities make this decision, 18 percent compared with 7 percent. This difference is significant at the 1-percent level ( $p$ -value = 0.006). This result is not surprising given the role electric and gas utilities often play in promoting ENERGY STAR-labeled products in high-publicity areas.

Twenty-two percent of households in high-publicity areas and 34 percent of households in low-publicity areas thought that the Underwriters Laboratories decide if a product deserves the ENERGY STAR label. This difference is significant at the 5-percent level ( $p$ -value = 0.035). The same proportion of households, 34 percent, in high- and low-publicity areas thought the U.S. government decides if a product deserves the ENERGY STAR label.

**Designates ENERGY STAR-Labeled Product by Publicity Category**  
(Base = Recognize label (aided), n=732)



\*\*\* High- and low-publicity areas proportions are statistically different from each other at the 1-percent level of significance ( $p$ -value $\leq$ 0.01).

\*\* High- and low-publicity areas proportions are statistically different from each other at the 5-percent level of significance ( $p$ -value $\leq$ 0.05).

## 2 ENERGY STAR PRODUCT SATISFACTION

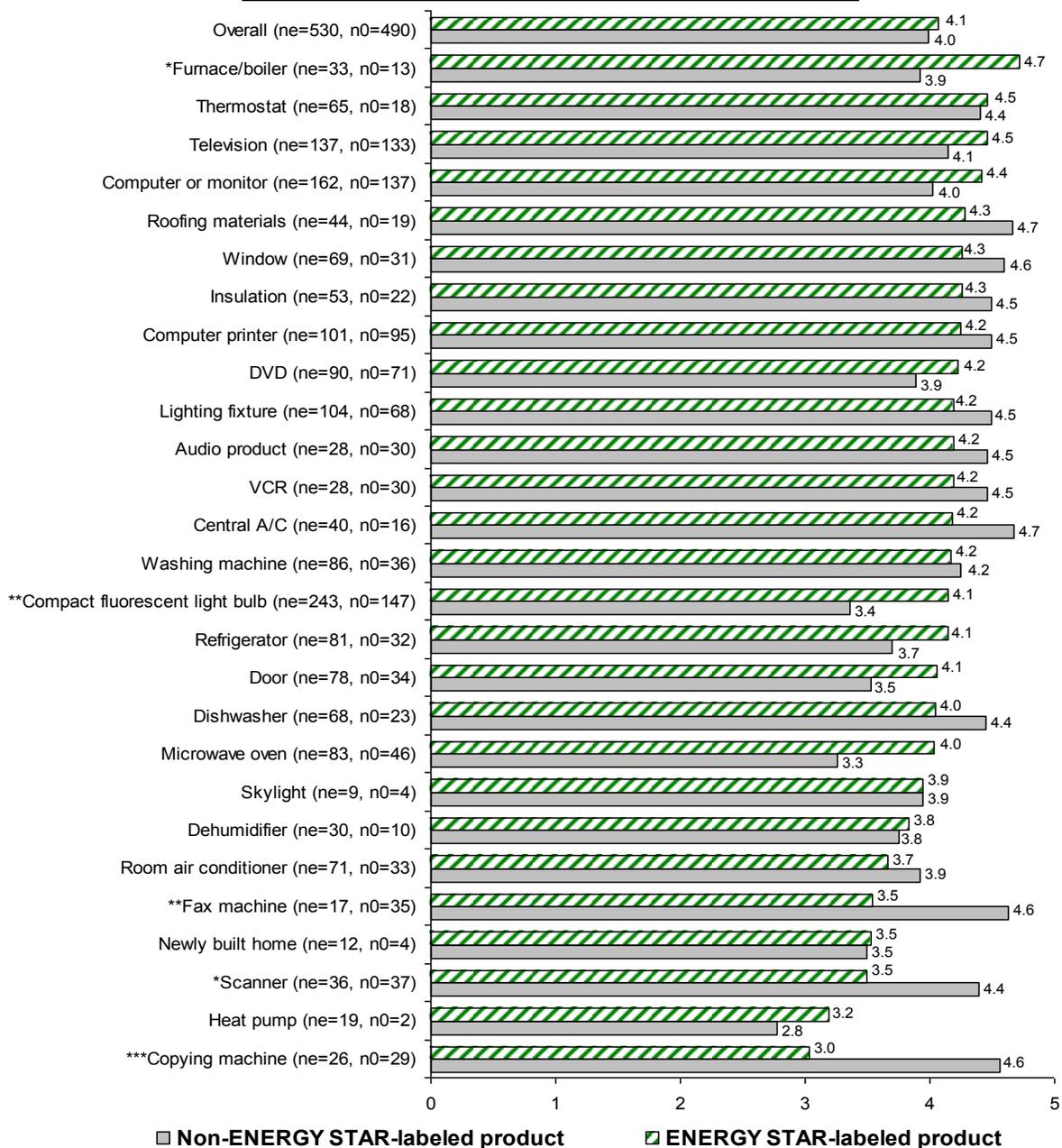
For most products, household satisfaction with a given product in a product category that has an ENERGY STAR specification does not appear to vary based on whether or not the product had an ENERGY STAR label. On a scale of 1 to 5, where 1 means “very dissatisfied” and 5 means “very satisfied,” products with and without the ENERGY STAR label had an average satisfaction rating between 4.0 and 4.1.

ENERGY STAR-labeled furnaces/boilers and CFLs received higher satisfaction ratings compared with the equivalent product without the label (p-value = 0.054 and p-value = 0.011). The satisfaction rating of three office products were lower for ENERGY STAR-labeled models compared with non-ENERGY STAR-labeled models. These include copying machines (p-value = 0.001), fax machines (p-value = 0.035), and scanners (p-value = 0.058).

There were no significant (p-value  $\leq$  0.10) changes in product satisfaction between 2007 and 2008 for households that knowingly purchased a product with the ENERGY STAR label. However, there were many significant decreases in product satisfaction for products without the ENERGY STAR label. These include refrigerator (p-value = 0.082), television (p-value = 0.024), microwave oven (p-value = 0.009), door (p-value = 0.020) and CFL (p-value = 0.034).

## ENERGY STAR vs. Non-ENERGY STAR-Labeled Product Satisfaction (Bases = Recognize label (aided) and purchased specified product<sup>12</sup>)

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



- \*\*\* ENERGY STAR and Non-ENERGY STAR product proportions are statistically different from each other at the 1-percent level of significance (p-value≤0.01).
- \*\* ENERGY STAR and Non-ENERGY STAR product proportions are statistically different from each other at the 5-percent level of significance (p-value≤0.05).
- \* ENERGY STAR and Non-ENERGY STAR product proportions are statistically different from each other at the 10-percent level of significance (p-value≤0.10).

<sup>12</sup> 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

### 3 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.<sup>13</sup> The statements were shown to respondents in random order.

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

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

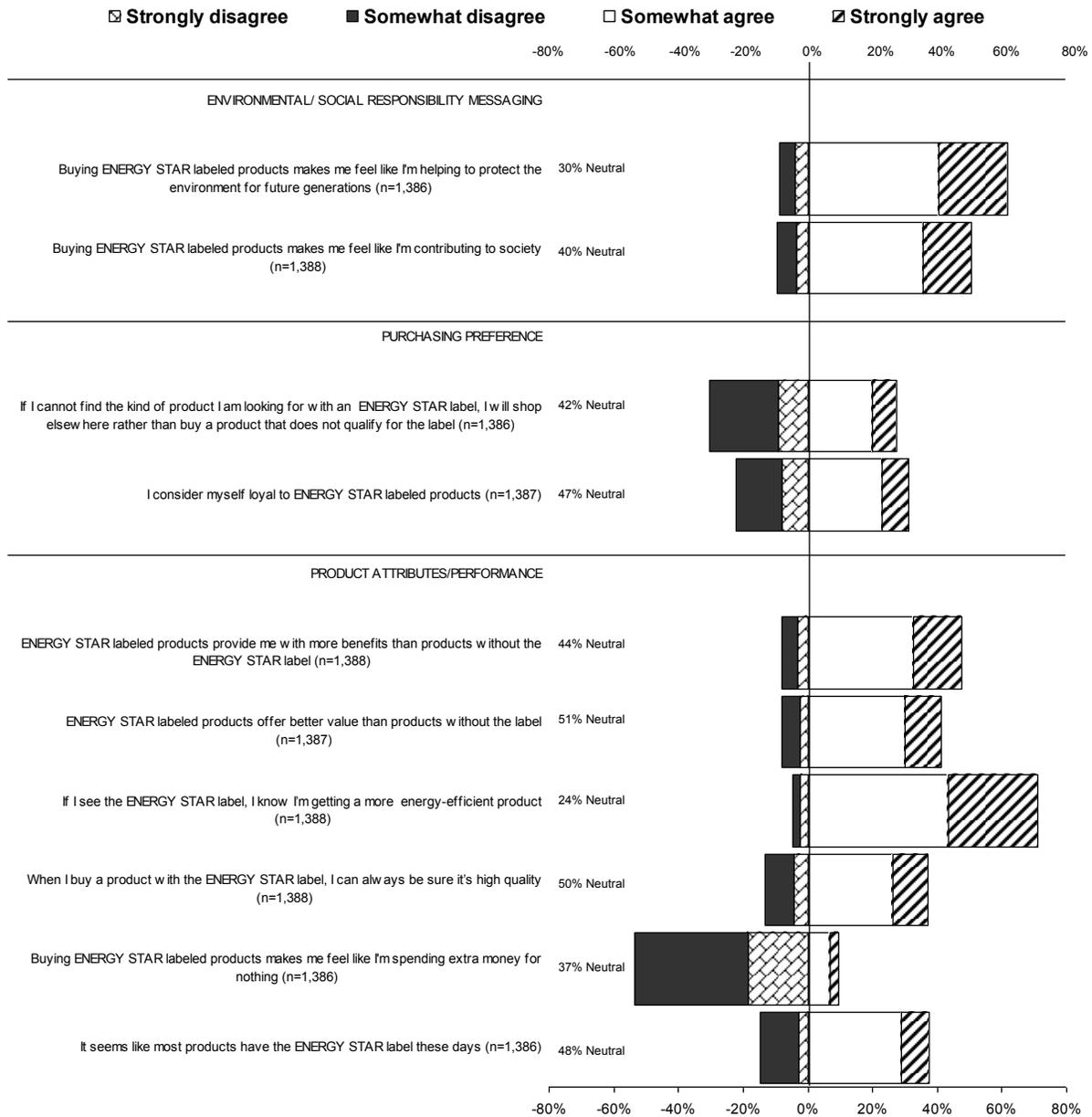
The 2008 survey results indicate that households generally agree with positive statements about the ENERGY STAR label and disagree with negative statements about the label.<sup>14</sup> Similar to the 2007 results, few statements elicit strong agreement or strong disagreement among substantial proportions 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 below.

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<sup>13</sup> These statements are numbered Q16a through Q16p in the survey.

<sup>14</sup> 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 (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 above 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.

### **3.1 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 2008 survey, two statements addressed the label's messaging in these areas: "Buying ENERGY STAR-labeled products makes me feel like I'm helping to protect the environment for future generations" and "Buying ENERGY STAR-labeled products makes me feel like I'm contributing to society."

Of the ten statements that explore consumer attitudes toward the ENERGY STAR label and products, these two ranked second and third in terms of the proportion of households who agree with the statements. These two statements had the same ranking in 2006 and 2007. Of households that recognize the ENERGY STAR label, 62 percent either strongly or somewhat agree with the statement that by buying ENERGY STAR-labeled products they feel they are helping protect the environment. Fifty-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. The proportion of households agreeing with the statement regarding contribution to society is smaller than the 2007 result of 56 percent ( $p$ -value = 0.086).

### **3.2 Purchasing Preferences**

Increasing consumers' preferences for purchasing ENERGY STAR-labeled products is also an intended outcome of the national education campaign. In the 2008 survey, two separate statements were included to investigate households' views of their purchasing preferences with respect to ENERGY STAR-labeled products. Household agreement and disagreement with the first statement in 2008 was similar to the 2007 results. Twenty-seven 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." More households (31 percent) either strongly or somewhat disagree. However, the largest proportion of households—42 percent—are neutral in their level of agreement or disagreement with this statement of their purchasing behavior.

Similar to 2007, thirty-one percent of households agree with the second statement addressing households' views of their purchasing preferences: "I consider myself loyal to ENERGY STAR products." Disagreement with this statement increased from 17 percent in 2007 to 22 percent in 2008. The difference is significant at the 5-percent level ( $p$ -value = 0.046).

### **3.3 Product Attributes and Performance**

A third goal of the national ENERGY STAR education campaign has been to inform consumers that ENERGY STAR qualifying products are more energy efficient than non-qualifying models. The degree to which this goal is being accomplished is addressed in the 2008 survey by asking respondents their level of agreement or disagreement with the statement “If I see the ENERGY STAR label, I know I’m getting a much more energy-efficient product.” Seventy-one percent of respondents either strongly or somewhat agree with this statement. This indicates a high perception among consumers that the ENERGY-STAR label indicates superior performance with respect to energy efficiency relative to products without the label.

The survey addressed perceptions of product quality. Survey respondents were asked the level at which they agreed or disagreed with the statement “When I buy a product with the ENERGY STAR label, I can always be sure it’s high quality.” The results show that 37 percent of households either strongly or somewhat agree with this statement—almost three times as many as those who strongly or somewhat disagree—50 percent are neutral. Household agreement and disagreement with this statement is 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. Two such statements are “ENERGY STAR products provide me with more benefits than products without the ENERGY STAR label” and “ENERGY STAR-labeled products offer better value than products without the label.” The results show that almost half of households (47 percent and 41 percent, respectively) either strongly or somewhat agree with these statements. Only eight percent of households disagreed with these statements. The remaining of households were neutral (44 percent and 51 percent, respectively). The proportions are similar to the 2007 results.

The results related to the statement “Buying ENERGY STAR-labeled products makes me feel like I’m spending extra money for nothing” provide additional information on perceptions of product value. Here, over half (53 percent) of all households who recognize the ENERGY STAR label strongly or somewhat disagree with the statement, while 37 percent of households are neutral. Only 10 percent agree with this statement. The proportions of households that agree and disagree with this statement in 2008 are similar to the 2007 results.

### **3.4 Consumer Perceptions by Publicity Category**

The 2008 results also suggest that local and regional efforts to publicize ENERGY STAR have been successful in affecting consumer perception of the label. There are statistically significant differences between high- and low-publicity areas for three of the ten attitudinal statements.

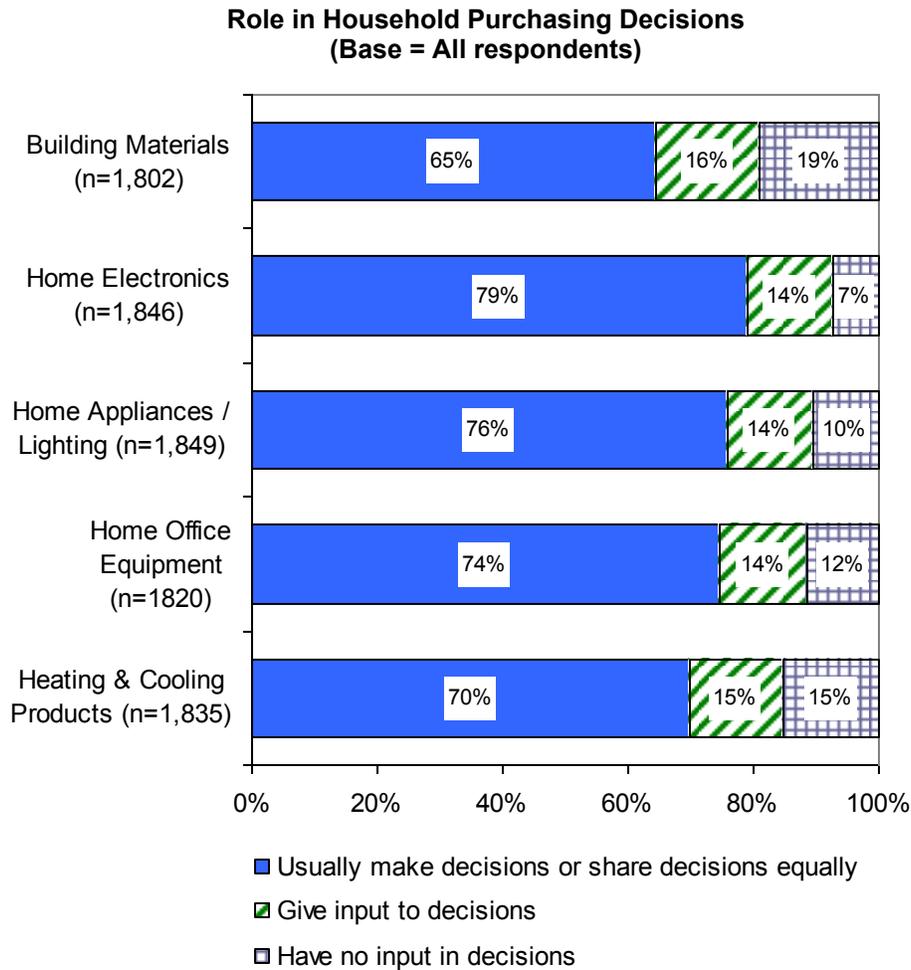
With respect to the environmental and social messaging of the ENERGY STAR label, a significantly higher proportion of consumers in high- than in low-publicity areas strongly or somewhat agree with the statement that buying ENERGY STAR-labeled products makes them feel like they are contributing to society (p-value = 0.044). With regards to purchasing preference, a larger proportion in high- than low-publicity areas agree with the statements that they consider themselves loyal to ENERGY STAR-labeled products (p-value = 0.067). Lastly, the success of local and regional efforts to promote ENERGY STAR is evident with respect to the product quality statement. A larger proportion of low- than high-publicity area consumers disagree that ENERGY-STAR-labeled products are higher quality than products without the label (p-value = 0.032).

The level of consumers' agreement, disagreement, and neutrality is similar in high- and low-publicity areas for the following statements:

- “Buying ENERGY STAR-labeled products makes me feel like I’m helping to protect the environment for future generations.”
- “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.”
- ENERGY STAR products provide me with more benefits than products without the ENERGY STAR label.”
- “ENERGY STAR-labeled products offer better value than products without the label.”
- “If I see the ENERGY STAR label, I know I’m getting a much more energy-efficient product.”
- “Buying ENERGY STAR-labeled products makes me feel like I’m spending extra money for nothing.”
- “It seems like most products have the ENERGY STAR label these days.”

## 4 PURCHASING DECISIONS

At the end of the survey, respondents were asked to characterize their role in the household purchasing decisions. The results indicate that the vast majority of those represented are primary decision makers, meaning they usually make household purchasing decisions alone or share equally in these decisions. As can be seen below, this varies little across product categories. Seventy-nine of individuals were primary decision makers for their household's home electronics purchases, whereas this was true for 65 percent for purchases of building materials.

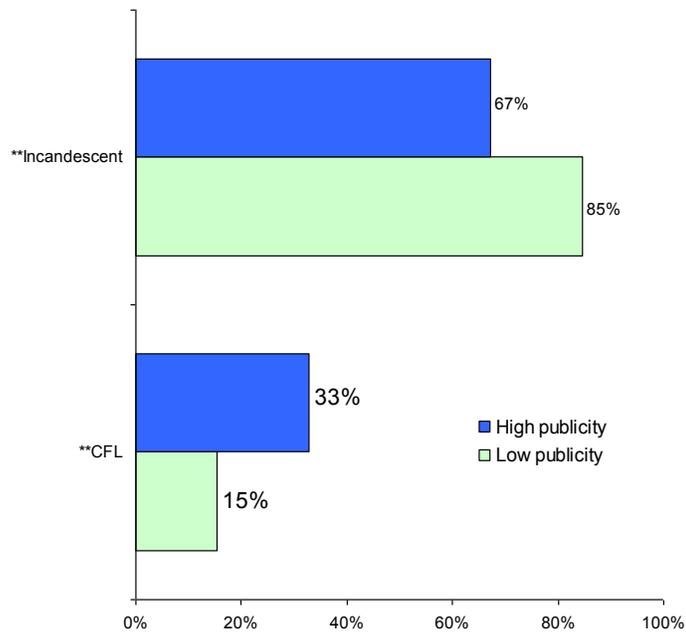


## 5 CFL PURCHASER QUESTIONS

Similar to previous years all respondents are asked what products they have purchased in the last 12 months.<sup>15</sup> Twenty-one percent and 10 percent of households purchased compact fluorescent light bulbs (CFLs) and fixtures, respectively. The 2008 survey included new follow-up questions for purchaser of CFLs and fixtures.

An overwhelming majority (96 percent) of CFL purchasers indicated they installed the purchased CFL. This result did not vary by publicity category. Respondents that installed CFLs were then asked if the purchased CFL was used to replace a CFL or an incandescent light bulb. Overall, three-quarter of households replaced an incandescent light bulb with the purchased CFL. Compared to high-publicity areas, a larger proportion of households in low-publicity areas replaced incandescent bulbs. This difference is significant at the 5-percent level (p-value = 0.019).

**Type of Light Bulb Replaced with a CFL**  
(Base = Installers of Compact Fluorescent Light Bulbs, n=416)

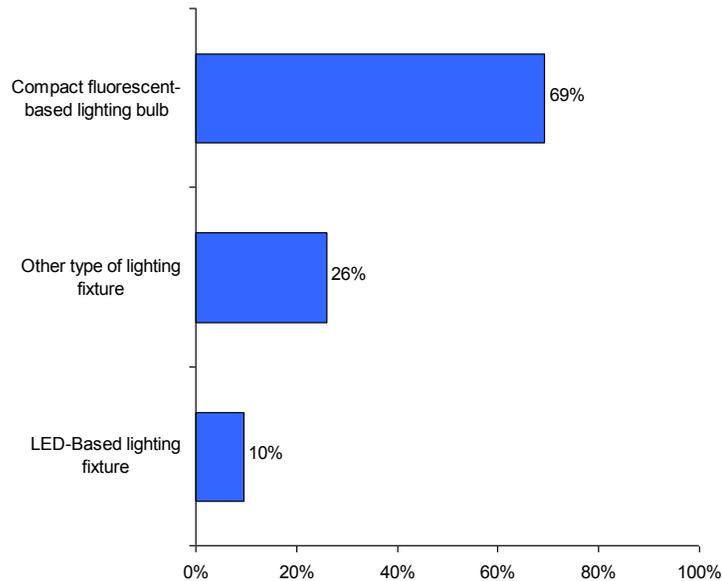


\*\* High- and low-publicity areas proportions are statistically different from each other at the 5-percent level of significance (p-value $\leq$ 0.05).

<sup>15</sup> Q12(a-c). Please look at each of the groups of products again. Which of these products have you purchased in the last 12 months? Please select all that apply.

Consistent with previous years, purchasers that recognize the ENERGY STAR label are asked if they saw the label on the product(s) they purchased.<sup>16</sup> Respondents that reported purchasing an ENERGY STAR-labeled lighting fixture were asked what kind of ENERGY STAR-labeled lighting fixture they purchased. Seventy percent of ENERGY STAR-labeled lighting fixture purchasers report purchasing a compact fluorescent-based lighting fixture. These results do not vary by publicity category.

**Type of ENERGY STAR-Labeled Lighting Fixture Purchased  
(Base = Purchasers of ENERGY STAR Lighting Fixture, n=61)**



<sup>16</sup> Q7. For any products you purchased, did you see the ENERGY STAR label?  
If yes, to Q7 then respondents are asked: Q7a. On which products did you see the ENERGY STAR label? (only shown the products they purchased in the last 12 months (Q12)).

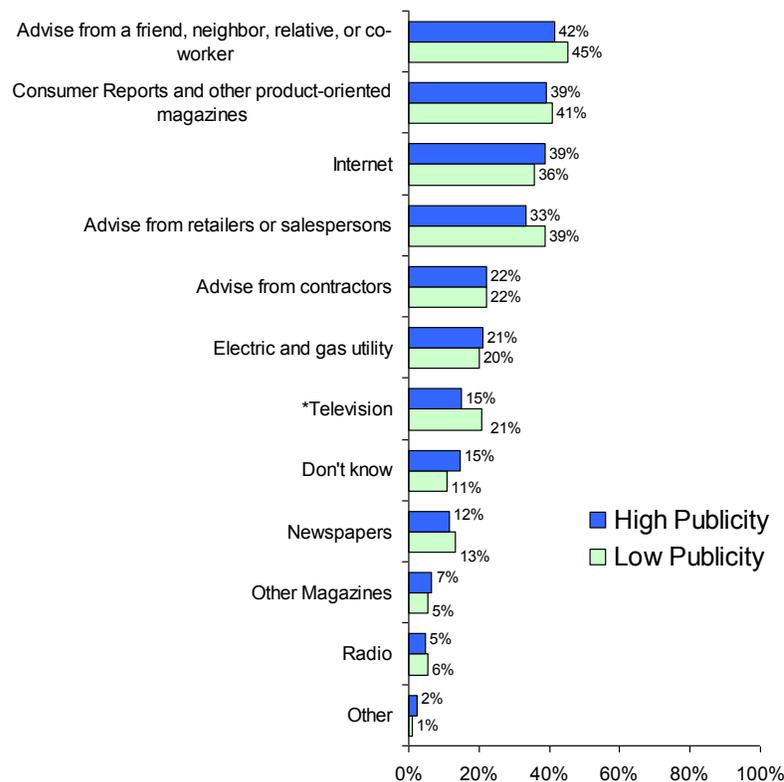
## 6 NEW SOURCES OF INFORMATION QUESTIONS

Respondents that recognized the ENERGY STAR label (aided) were asked where they saw or heard something about the label.<sup>17</sup> The results from these responses are presented in the Information Sources section on Page 22. In 2008, a new series of questions asked all respondents what information sources they were most likely to use to obtain product information about *Heating and Cooling Products* and *Home Appliance / Lighting / Home Electronics*.

### Heating and Cooling Products

The top four sources where households are most likely to obtain information on heating and cooling products are from 1.) a friend, neighbor, relative, or co-worker; 2.) product oriented magazines; 3.) the Internet; and 4.) retailers. This finding on top sources is consistent across publicity categories. A larger proportion of households in the low-publicity category (21 percent) than high-publicity category (15 percent) would seek information from the television (p-value = 0.074).

**Heating and Cooling Product Information Sources by Publicity Category  
(Base = All Respondents, n=1,881)**



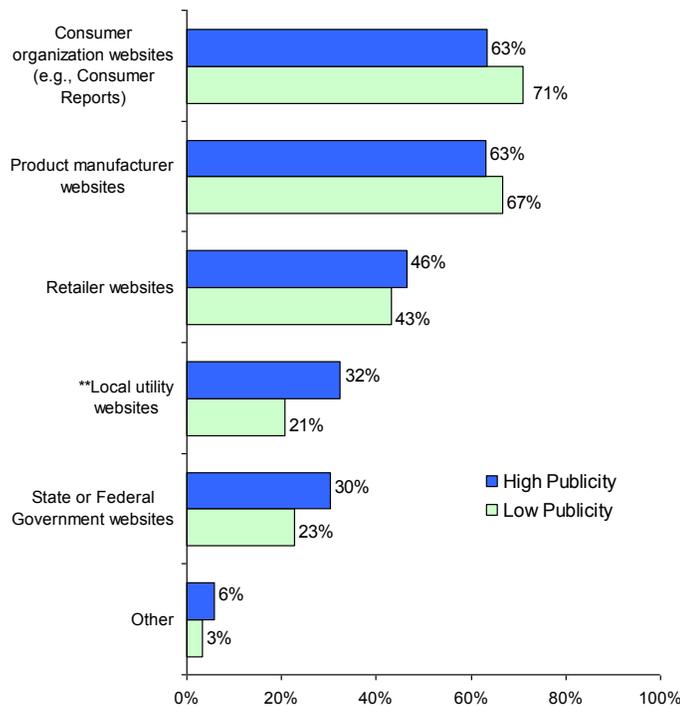
\* High- and low-publicity area proportions are statistically different from each other at the 10-percent level of significance (p-value  $\leq$  0.10).

<sup>17</sup> SO1. "Where did you see or hear something about ENERGY STAR? Mark all that apply."

Respondents that identified the Internet as the source of information they would most likely refer to were then asked to select the type of Internet source(s) they were most likely to rely on to obtain information about heating and cooling products. Two-thirds of these households would visit consumer organization and product manufacturer websites for heating and cooling information; and nearly half of these households would turn to retailer websites.

A larger proportion of households in the high- than low-publicity category are most likely to obtain information from the local utility websites (p-value = 0.033). Thirty percent of households in the high-publicity category compared with 23 percent of households in the low-publicity category would visit state or federal government websites. This difference is not significant at the 10-percent level (p-value = 0.173).

**Heating and Cooling Product Internet Information Sources by Publicity Category  
(Base = All Respondents, n=796)**

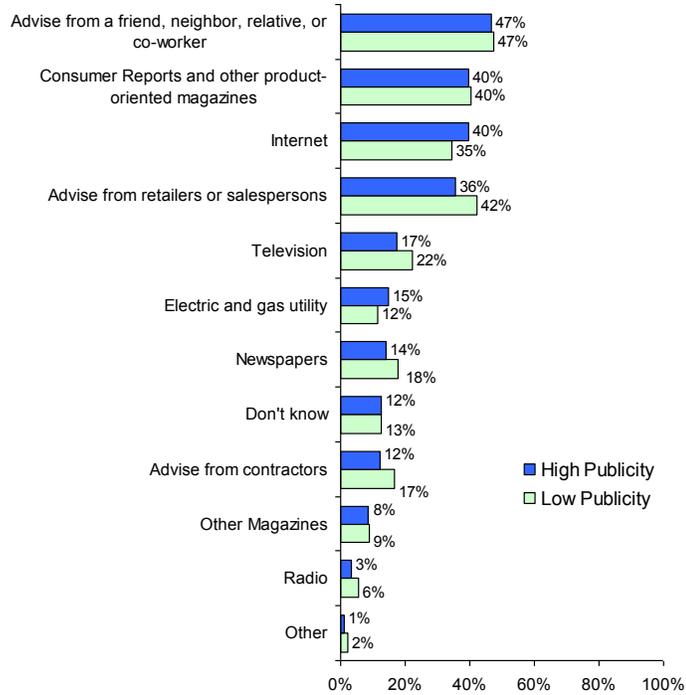


\*\* High- and low-publicity area proportions are statistically different from each other at the 5-percent level of significance (p-value ≤ 0.05).

## Home Appliance/Lighting/Home Electronics

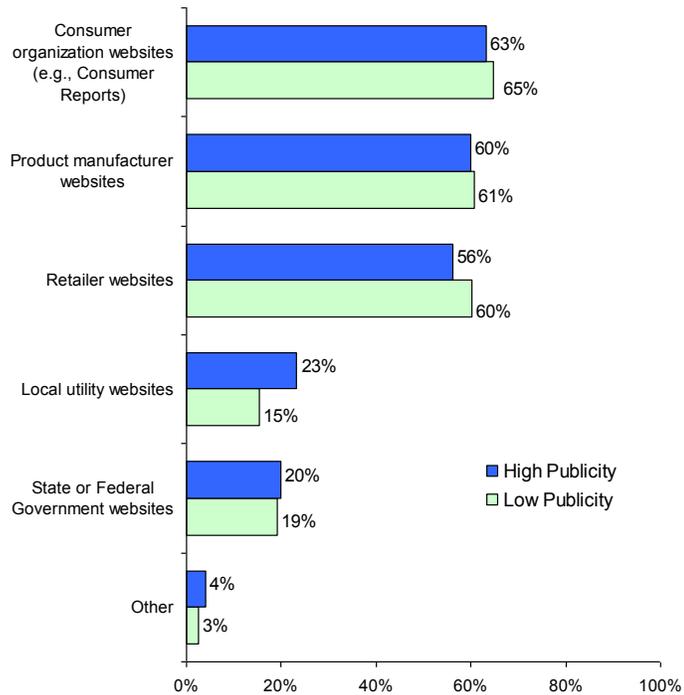
The top four product information sources for home appliance/lighting/home electronics were the same for heating and cooling products. The high- versus low-publicity category comparisons did not yield any statistically significant differences at the 10-percent level.

**Home Appliance/Lighting/Home Electronics Product Information Sources by Publicity Category**  
(Base = All Respondents, n=1,881)

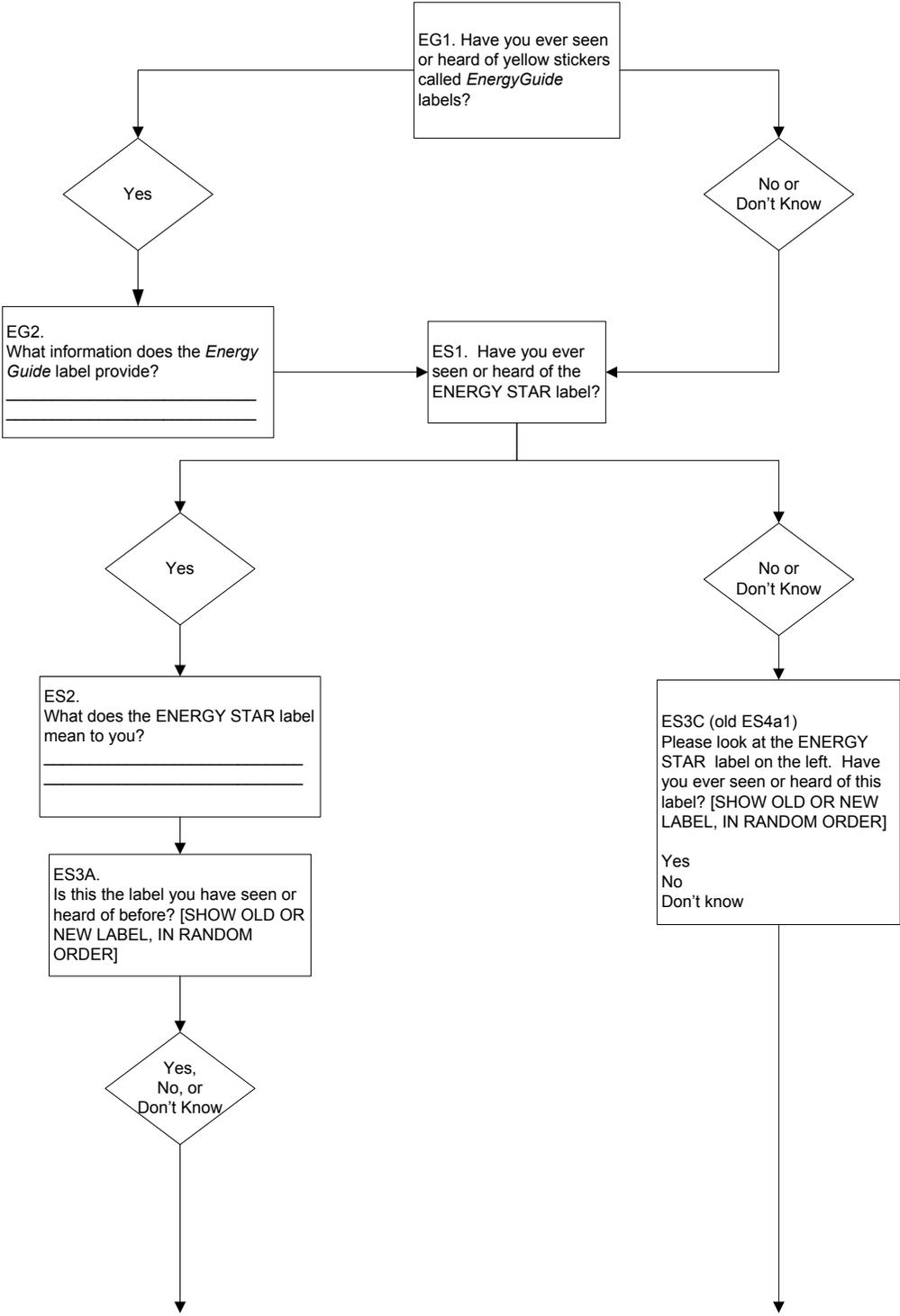


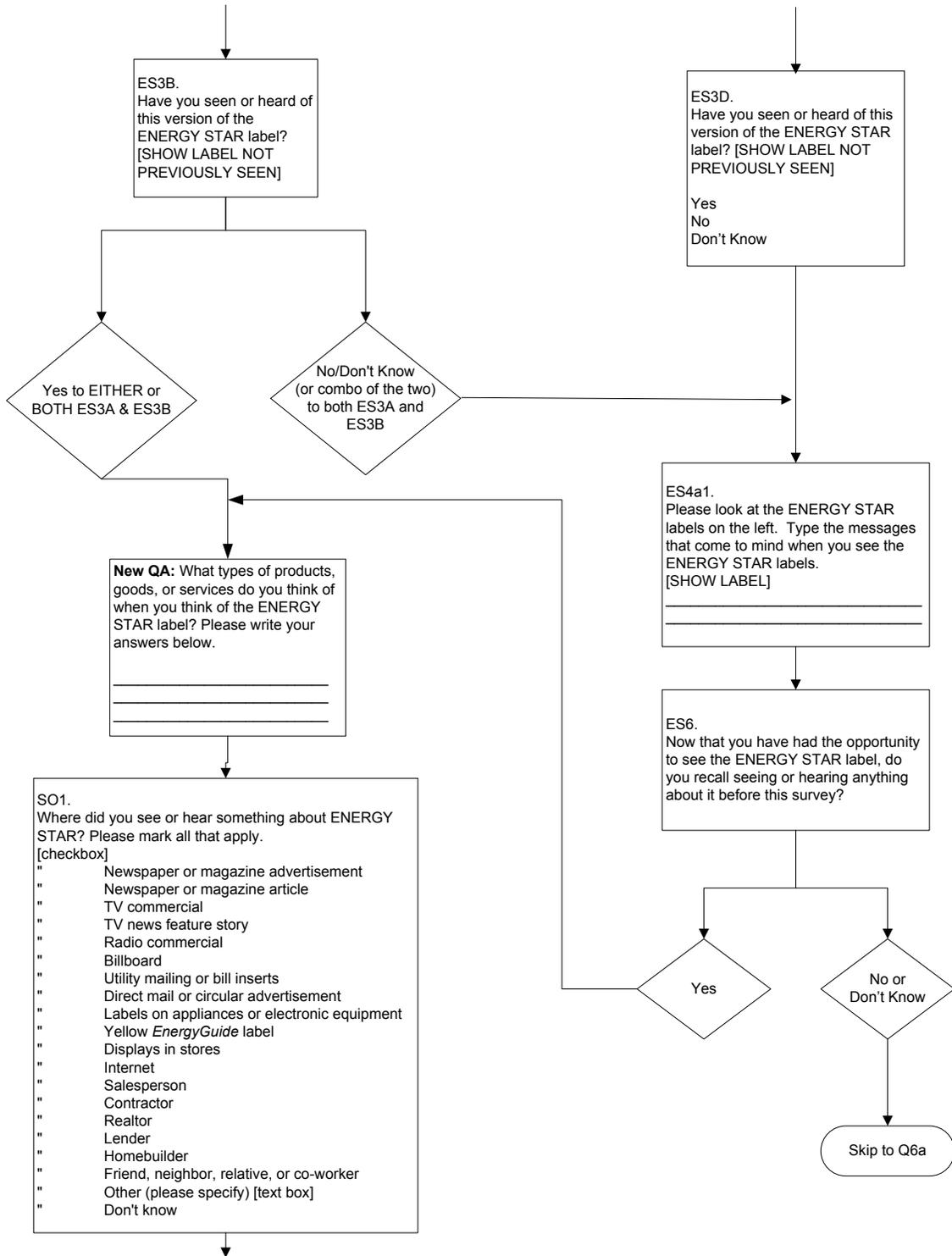
The top tier of Internet sources for home appliance/lighting/home electronics were the same for heating and cooling products. The high- versus low-publicity category comparison for local utility Web sites narrowly missed the threshold for a statistically significant difference at the 10-percent level (p-value = 0.102).

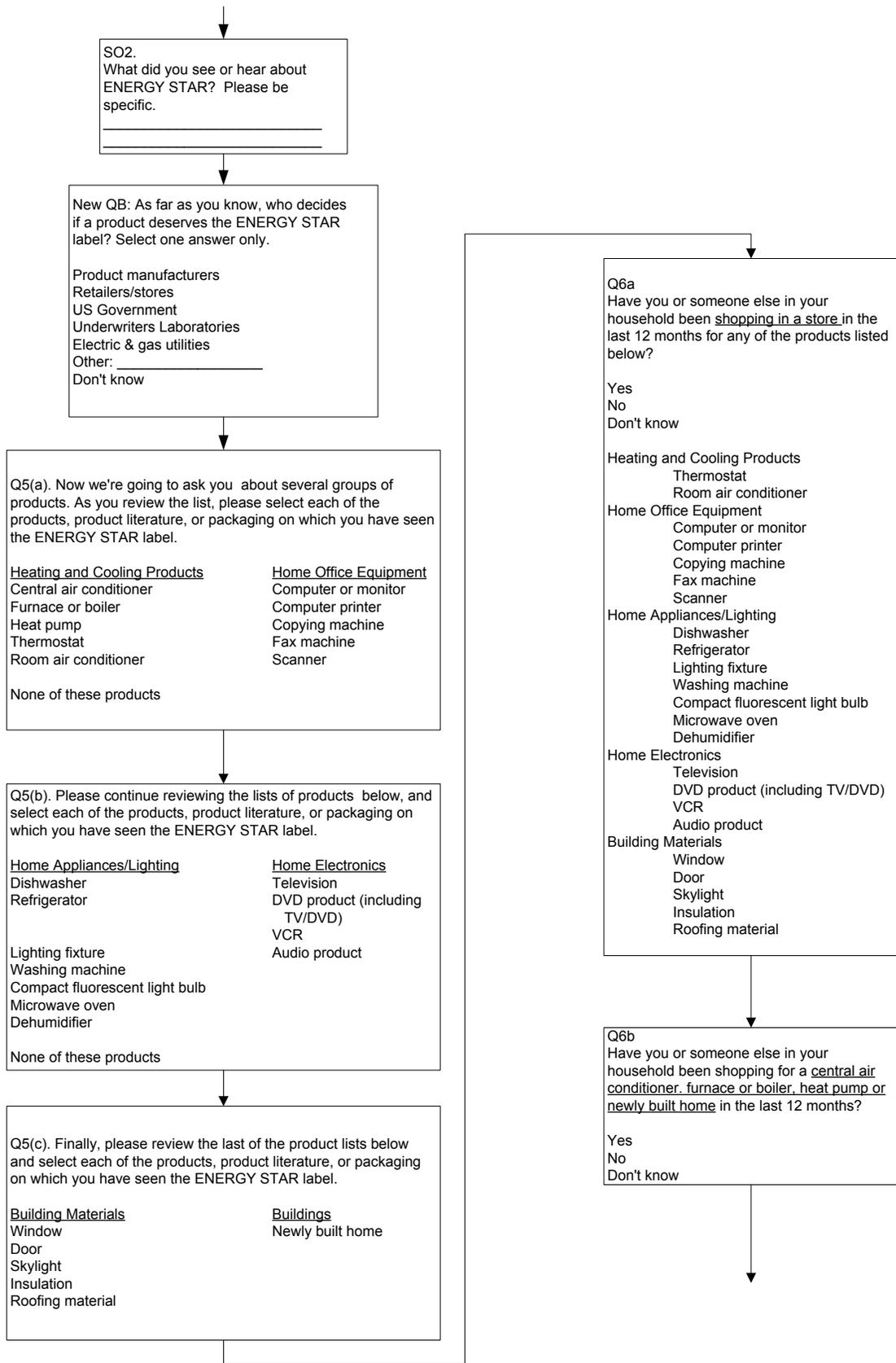
**Home Appliance/Lighting/Home Electronics Product Internet Information Sources  
by Publicity Category  
(Base = All Respondents, n=789)**



**APPENDIX D: 2008 SURVEY QUESTIONS AND FLOW CHART**  
**2008 ENERGY STAR SURVEY**  
**Final Version, September 10, 2008**







Q12(a). Please look at each of the groups of products again. Which of these products have you purchased in the last 12 months? Please check all that apply.

|                                     |                              |
|-------------------------------------|------------------------------|
| <u>Heating and Cooling Products</u> | <u>Home Office Equipment</u> |
| Central air conditioner             | Computer or monitor          |
| Furnace or boiler                   | Computer printer             |
| Heat pump                           | Copying machine              |
| Thermostat                          | Fax machine                  |
| Room air conditioner                | Scanner                      |

None of these products

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

|                                 |                                |
|---------------------------------|--------------------------------|
| <u>Home Appliances/Lighting</u> | <u>Home Electronics</u>        |
| Dishwasher                      | Television                     |
| Refrigerator                    | DVD product (including TV/DVD) |
| Lighting fixture                | VCR                            |
| Washing machine                 | Audio product                  |
| Compact fluorescent light bulb  |                                |
| Microwave oven                  |                                |
| Dehumidifier                    |                                |

None of these products

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

|                           |                  |
|---------------------------|------------------|
| <u>Building Materials</u> | <u>Buildings</u> |
| Window                    | Newly built home |
| Door                      |                  |
| Skylight                  |                  |
| Insulation                |                  |
| Roofing material          |                  |

None of these products

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

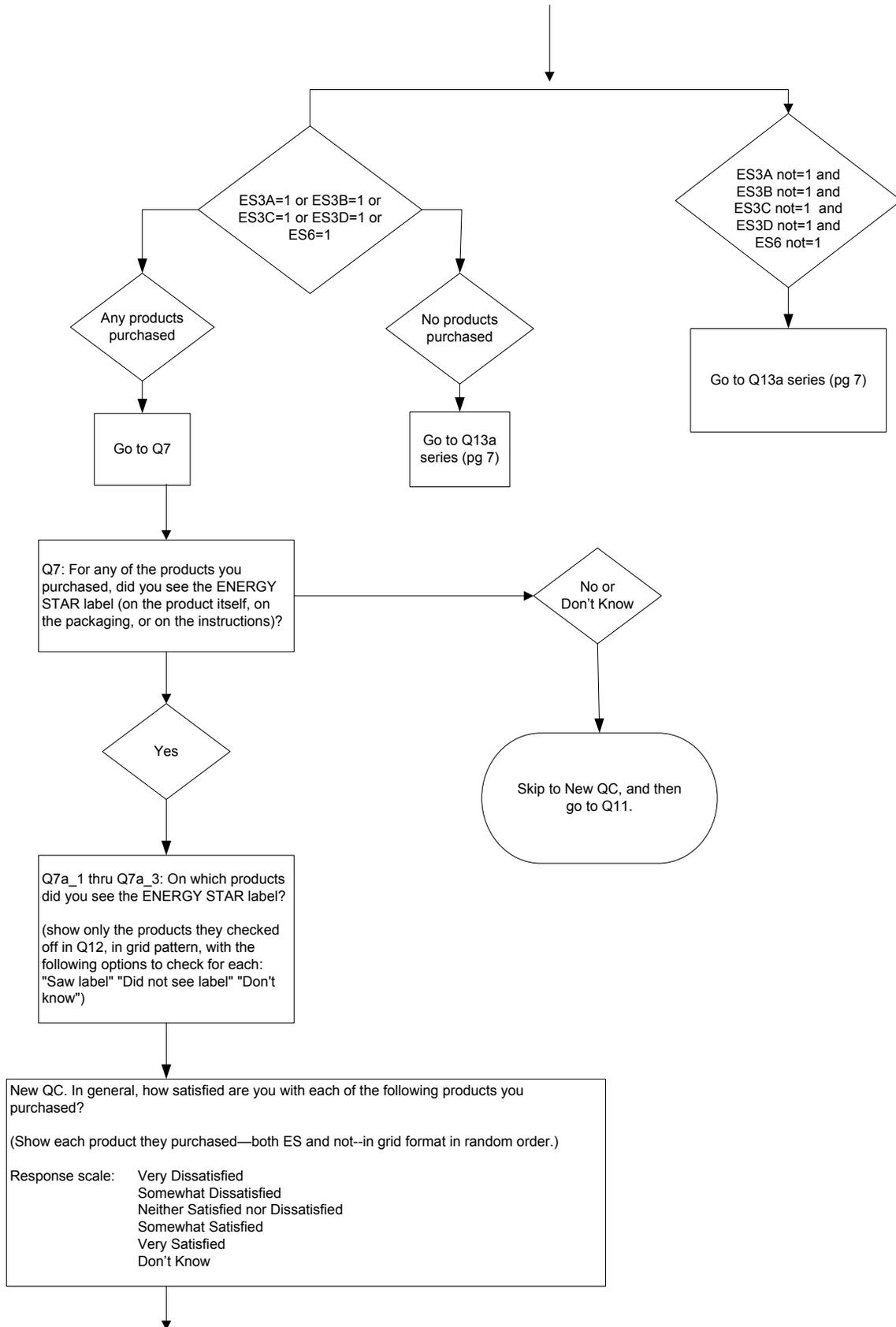
Yes  
No  
Don't know

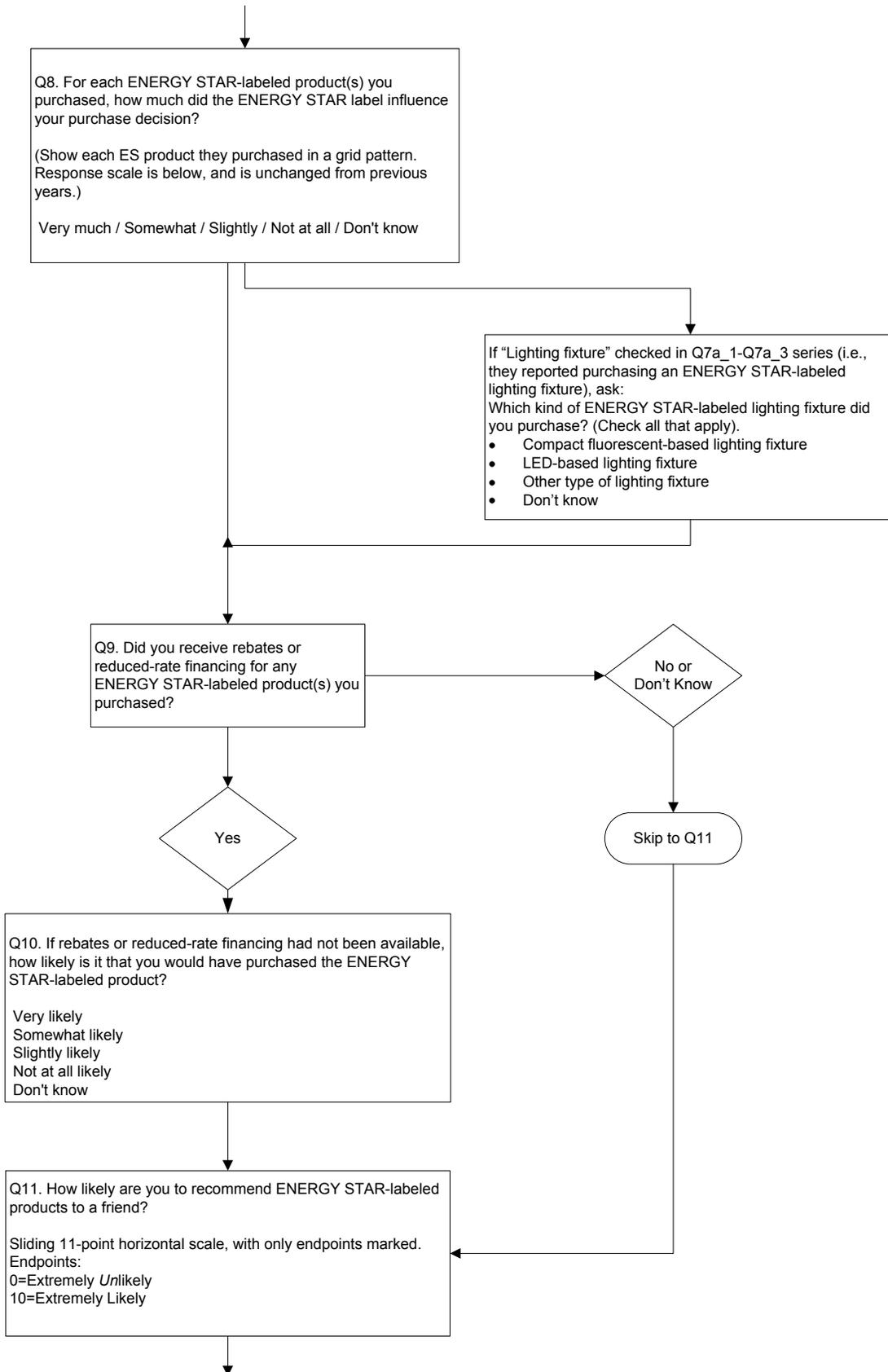
No/  
Don't Know

Yes

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

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

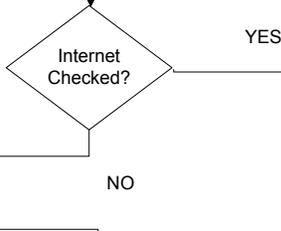




Note: This question series (Q13a through Q13b1) was last fielded in 2004.

Q13a. Now, please think only about Heating and Cooling Products. Please select the source(s) of information you are most likely to use to obtain information about this product type. Please mark all that apply.

Heating and Cooling Products  
Consumer Reports and other product-oriented magazines  
Other magazines  
Newspapers  
Radio  
Television  
Electric or gas utility  
Advice from retailers or salespersons  
Advice from contractors  
Advice from a friend, neighbor, relative, or co-worker  
Internet  
Other \_\_\_\_\_  
Don't know

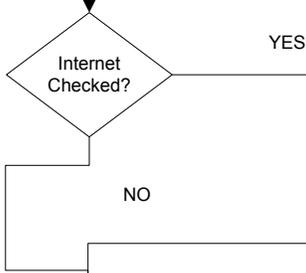


Q13a1. Please select the type of Internet source(s) you are most likely to rely on to obtain information about this product type. Please mark all that apply.

Local utility websites  
State or Federal government websites  
Product manufacturer websites  
Retailer websites  
Consumer organization websites (e.g., Consumer Reports)  
Other \_\_\_\_\_

Q13b. Now, please think only about Home Appliances / Lighting / Home Electronics. Please select the source(s) of information you are most likely to use to obtain information about this product type. Please mark all that apply.

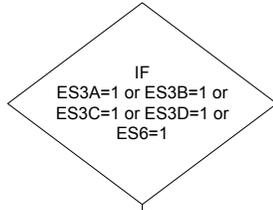
Home Appliances / Lighting / Home Electronics  
Consumer Reports and other product-oriented magazines  
Other magazines  
Newspapers  
Radio  
Television  
Electric or gas utility  
Advice from retailers or salespersons  
Advice from contractors  
Advice from a friend, neighbor, relative, or co-worker  
Internet  
Other \_\_\_\_\_  
Don't know



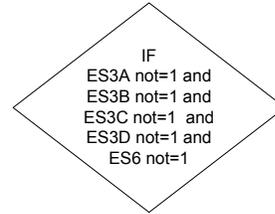
Q13a1. Please select the type of Internet source(s) you are most likely to rely on to obtain information about this product type. Please mark all that apply.

Local utility websites  
State or Federal government websites  
Product manufacturer websites  
Retailer websites  
Consumer organization websites (e.g., Consumer Reports)  
Other \_\_\_\_\_

Go to IF statements on page 8



Note: These two diamonds are the same as on page 5.



On the scale by each statement, please indicate how strongly you agree or disagree with the statement.  
(Note to programmer: present q16a through p 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              |

Q16a. 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"/> |

Go to demographic questions and closing