

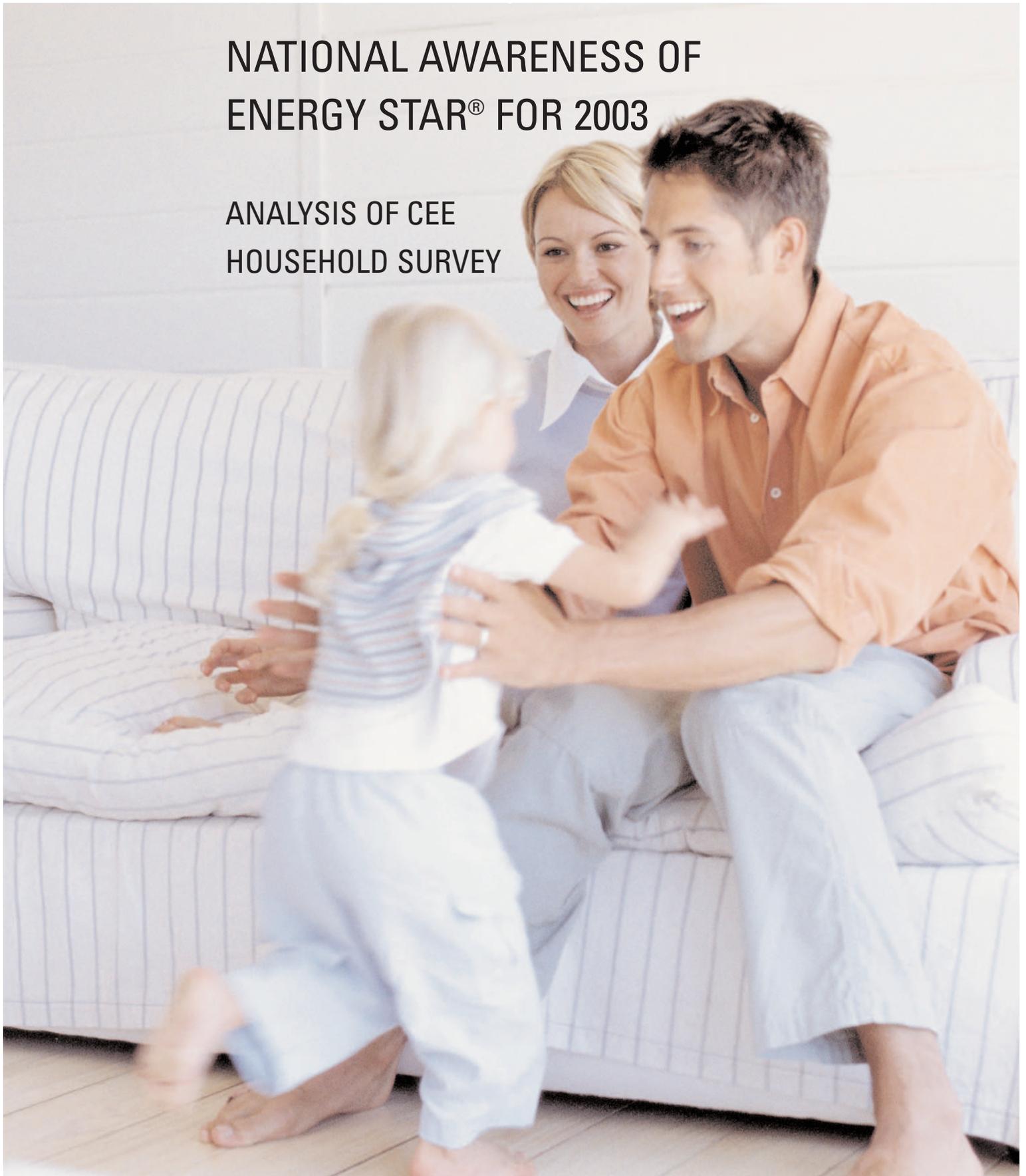


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## **NATIONAL AWARENESS OF ENERGY STAR® FOR 2003**

**ANALYSIS OF CEE  
HOUSEHOLD SURVEY**



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- Tim Pettit of Nexus Market Research for support developing the initial methodology and analysis.

## **EXECUTIVE SUMMARY**

In the fall of 2003, members of the Consortium for Energy Efficiency (CEE) sponsored the fourth 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, product purchases, and information sources used by consumers in their purchasing decisions. Some CEE members also chose to supplement the national sample in order to better gauge awareness in their local service territories. Additional survey cases were collected in Massachusetts, the Midwest, and the Pacific Northwest. As in the three previous years, CEE and the sponsoring members made the survey data publicly available.

This report discusses the results of the CEE 2003 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 use (or are influenced by) the label in their energy-related purchasing decisions. Research questions of interest included:

- Where do consumers see or hear about the ENERGY STAR label?
- How does increased publicity impact 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?

### **Key Findings at the National Level**

- Fifty-six percent of households recognize the ENERGY STAR label (with a visual aid).
- Sixty-three percent of households have a “high” or “general” understanding of the label. Furthermore, the proportion of households that demonstrate a general understanding is small compared with the percent of households that demonstrate a high understanding, 13 percent versus 50 percent.
- Of households that recognized the ENERGY STAR label and purchased a product in the past twelve months, 58 percent purchased an ENERGY STAR-labeled product.
- Considering households that recognized the label and those that did not (i.e., all households), 22 percent of households knowingly purchased an ENERGY STAR-labeled product in the past twelve months.
- For 52 percent of households that knowingly purchased an ENERGY STAR-labeled product, the presence of the label influenced their purchasing decision “very much” or “somewhat.” For another 14 percent of households, the presence of the label influenced their purchasing decision “slightly.”

- Fifteen percent of households that knowingly purchased an ENERGY STAR-labeled product received a financial incentive. Sixty-five percent of these households report they would have been “very likely” (51 percent) or “somewhat likely” (14 percent) to purchase the labeled product without the financial incentive.
- Sixty-six percent of households that knowingly purchased an ENERGY STAR-labeled product report they were “very likely” or “somewhat likely” to recommend labeled products to a friend, and another 16 percent report they were “slightly likely.”

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

- A larger proportion of households in high- than in low-publicity areas recognize the ENERGY STAR label, both with and without a visual aid. (High-publicity areas are areas with active ENERGY STAR promotions by a regional/local energy efficiency program sponsor for two or more continuous years.)
- Considering only households that recognized the label (with a visual aid), a larger proportion of these households in high- than in low-publicity areas associate the ENERGY STAR label with products heavily promoted by regional program sponsors. From September 2002 to September 2003, many regional programs participated in product-specific seasonal campaigns focusing on lighting, home electronics, appliances, and heating and cooling products.
- A larger proportion of households in high- than in low-publicity areas have at least a general understanding of the ENERGY STAR label.
- For three messages of the ENERGY STAR label, a larger proportion of households in high- than in low-publicity areas associate the message with the label. These three messages are “energy efficiency or energy savings,” “associating specific products with the ENERGY STAR label,” and “energy product or environmental standards.”
- A larger proportion of households in high- than in low-publicity areas knowingly purchased an ENERGY STAR product within the past 12 months.
- Considering households that recognized the label (with a visual aid), a larger proportion of these households in high- than in low-publicity areas have seen or heard something about ENERGY STAR via store displays, utility mailings or bill inserts, TV commercials, newspaper or magazine advertisements, and radio commercials.

### **Conclusions and Future Directions**

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

- Substantial portions of the 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 (13 percent) compared with the proportion that exhibit a high degree of understanding (50 percent).
- Publicity from active regional/local energy efficiency program sponsors increases recognition and understanding of the label.

Furthermore, between 2003 and 2002, consumer recognition of the ENERGY STAR label increased 15 percentage points, from 41 to 56 percent.

The results of the CEE 2003 ENERGY STAR survey indicate that activities to promote the ENERGY STAR label carried out by EPA, DOE, survey sponsors, and ENERGY STAR partners in 2003 were effective. In addition, a comparison of the sources that households recognizing the ENERGY STAR label consult for product information against the venues in which they reported seeing or hearing something about ENERGY STAR, suggests future ENERGY STAR activities should aim to:

- Increase positive exposure of ENERGY STAR in newspapers and magazines, and on TV.
- Expand cooperative efforts to include ENERGY STAR materials in utility mailings or bill inserts.
- Improve the availability of ENERGY STAR information on the Internet.
- Enhance efforts to train salespersons and contractors to actively and accurately deliver information about ENERGY STAR.

## **INTRODUCTION**

In the fall of 2003, members of the Consortium for Energy Efficiency (CEE) sponsored the fourth 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, product purchases, and information sources used by consumers in their purchasing decisions. Some CEE members also chose to supplement the national sample in order to better gauge label awareness in their local service territories. Additional survey cases were collected in Massachusetts, the Midwest, and the Pacific Northwest. As in the three previous years, CEE and sponsoring members made the survey data publicly available.

This report discusses the results of the CEE 2003 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 use (or are influenced by) the label in their energy-related purchasing decisions. Research questions of interest included:

- Where do consumers see or hear about the ENERGY STAR label?
- How does increased publicity impact 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?

This report has two parts. Part I includes an Executive Summary, this introduction, a summary of methods, key findings in four sections, and three appendices. Appendix A is the detailed methodology, Appendix B considers demographic information from the 2003 WebTV/Internet survey, and Appendix C provides a copy of the 2003 WebTV/Internet questionnaire. Part II presents the 2003 WebTV/Internet survey results by publicity category. In all cases, the results presented are properly weighted to obtain national estimates.

## **METHODOLOGY**

From September through October 2003, CEE fielded a household survey to obtain information at the national level on consumer awareness of the ENERGY STAR label. The survey was fielded to a random sample of households that are part of a WebTV/Internet panel that is selected by random digit dial and recruited by telephone.

The survey was similar to the 2002 (and 2001) WebTV/Internet surveys. As in the previous three years, CEE and its sponsoring members made the survey data publicly available.

The survey was a national survey. The sampling frame for the survey is all households in the 57 largest Nielsen Designated Market Areas® (DMAs). In 2003, the 57 largest DMAs accounted for approximately 70 percent of U.S. television households. In addition, some CEE members sponsored more intensive sampling (i.e., an oversample) for various states and metropolitan areas, which are referred to here as “sponsor areas.” The sponsor areas were:

- Massachusetts
- Chicago DMA
- Minneapolis-St. Paul DMA
- Iowa
- Idaho
- Montana
- Oregon
- Washington

Both Chicago, IL and Minneapolis-St. Paul, MN are among the 57 largest DMAs.

For each of the sponsor areas that is a state, the frame was not limited to the large DMAs, but included the entire state. Thus, the complete frame for the study was the combination of the largest DMAs and any portion of the sponsor areas that fell outside these DMAs.

To facilitate comparisons across years, the national results are based only on data collected from all respondents in the top 57 DMAs. Data collected from respondents not in the top 57 DMAs, but in a sponsor area, are not included in the analysis. Some of the top 57 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 top 57 DMAs, received the appropriate weight in the analysis to generate valid national results and comparisons against data from other years.

As in previous years’ studies, to consider the effect of publicity on national awareness, the DMAs in the complete frame were classified by publicity category. The same publicity classification procedure used the past two 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:** At least two *recent* years of *sustained* promotions and publicity from non-federal activities.
- **Low publicity:** Federal campaign activities only and no *significant* regional program sponsor activities.
- **Other:** All other DMAs.

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<sup>1</sup> Between September 2002 and 2003, only one DMA changed publicity category. Orlando, FL changed from “Low” to “Other.”

This classification procedure identifies three publicity categories and provides clear and verifiable definitions. The key working definitions are:

- **Recent:** The two years of activity must include the time of the survey fielding.
- **Sustained:** The two years of activity must be continuous.
- **Significant:** In addition to any direct federal publicity efforts,<sup>2</sup> publicity efforts must include a deliberate and multifaceted regional program sponsor investment in ENERGY STAR programming, such as direct marketing and promotional efforts.

These definitions are sufficiently operational to be applicable to future survey efforts, and can be modified by simply increasing the duration of sustained high publicity.

The sample is stratified by area and within an area by publicity category. The areas consist of each sponsor area and the largest or parts of the largest DMAs that were not in a sponsor area as a single area. Further stratifying each area by publicity category results in 15 strata.<sup>3</sup> The CEE members who funded the oversample for a sponsor area determined the number of sampling points allocated to the area as a whole. This total number of sampling points was then allocated across publicity categories present in a sponsor area proportional to population. In the single area consisting of the largest or parts of the largest DMAs that were not in a sponsor area, each publicity category was allocated approximately 333 sampling points.

This report presents the 2003 survey results at the national level and often by publicity category. The publicity category results provide evidence on the effectiveness of EPA's model to increase awareness of ENERGY STAR by supporting regional energy efficiency program sponsors. Results are presented on consumer recognition, understanding, and purchasing influence of the ENERGY STAR label, as well as on messaging, product purchases, and information sources used by consumers in their purchasing decisions.

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<sup>2</sup> During the September 2001 to September 2003 period, EPA launched and maintained three television national Public Service Announcements (PSAs) as part of its *Change* campaign. The *Change* campaign also included continued distribution of several radio and print PSAs as a component of its overall outreach strategy.

<sup>3</sup> Montana was not further stratified by publicity category because 95 percent of Montana households are in low-publicity DMAs and the number of sampling points to be allocated across all of Montana was only about 50.

## KEY FINDINGS

### RECOGNITION

In 2003, 56 percent of households recognized the ENERGY STAR mark when shown the label (i.e., aided recognition). Approximately 33 percent of households correctly assessed whether or not they had seen or heard of the ENERGY STAR label without first being shown the label (i.e., unaided recognition).

For purposes of this analysis, respondents are said to recognize the ENERGY STAR label if they have seen or heard of the label before the survey. Recognition of the ENERGY STAR label was explored two different ways. “Aided” recognition was measured by showing the label and asking if the respondent had heard of or seen it before. Delivering the survey by WebTV/Internet also made it possible to measure “unaided” recognition. Unaided recognition was measured by asking this same question, but without showing the label. Both methods are useful measurements of label recognition, although unaided recognition is more conservative.

Recognition results for both this year’s and last year’s WebTV/Internet surveys are summarized in the next table. Aided recognition of the ENERGY STAR label is clearly higher this year than last year (the difference is statistically significant at the 1-percent level, p-value < 0.0001). Between 2003 and 2002, aided recognition increased 15 percentage points, from 41 to 56 percent. Unaided recognition is 5 percentage points higher this year than last year, 33 versus 28 percent (the difference is statistically significant at the 5-percent level, p-value = 0.047).

**Recognition of the ENERGY STAR Label**  
(Base = All respondents)

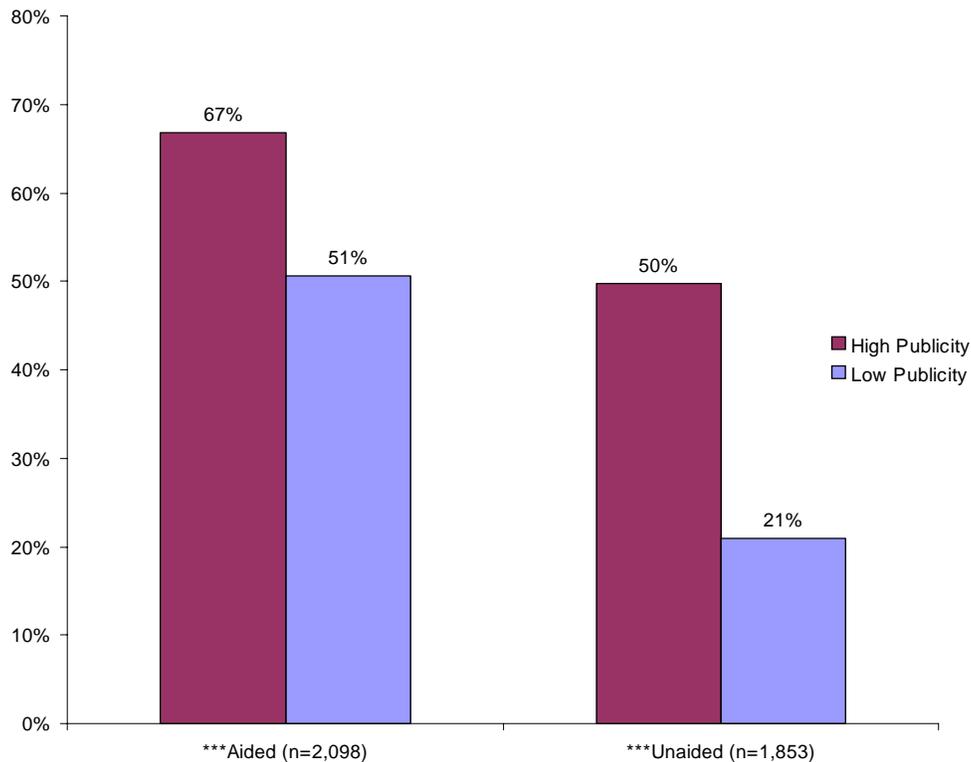
Recognize ENERGY STAR label	2003		2002	
	Aided (n=2,098)	Unaided (n=1,853)	Aided (n=1,091)	Unaided (n=991)
Yes	56%	33%	41%	28%
Standard error	1.7%	1.7%	2.2%	2.1%

Note: The unaided recognition results for both years are based on the question ES1: “Have you ever seen or heard of the ENERGY STAR label?” The 2003 aided recognition results are based on five questions. (1) ES3A and (2) ES3B are asked if ES1 = “yes.” ES3A: “Is this the label you have seen or heard of before?,” whether the old or new label is shown is randomly determined. ES3B: “Have you seen or heard of this version of the ENERGY STAR label?,” where the label shown is the one not shown previously. (3) ES3C and (4) ES3D are 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 is shown is randomly determined. ES3D: “Have you seen or heard of this version of the ENERGY STAR label?,” where the label shown is the one not shown previously. (5) ES6 is 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 are shown. The 2002 aided recognition results are based on two questions. (1) ES3: “Is this the label you have seen or heard of before?,” which is asked if ES1=“yes.” (2) 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?,” which is asked if either ES1=“no” or ES3=“no.”

## Recognition by Publicity Category

Both aided and unaided recognition were higher in high-publicity areas (areas with an active local ENERGY STAR program sponsored by a utility, state agency, or other organization for two or more continuous years) than in low-publicity areas. Aided households in high-publicity areas recognized the ENERGY STAR label at 67 percent versus 51 percent in low-publicity areas. Unaided recognition was 50 percent in high-publicity areas compared with 21 percent in low-publicity areas.

**Recognition of the ENERGY STAR Label by Publicity Category**  
(Base = All respondents)

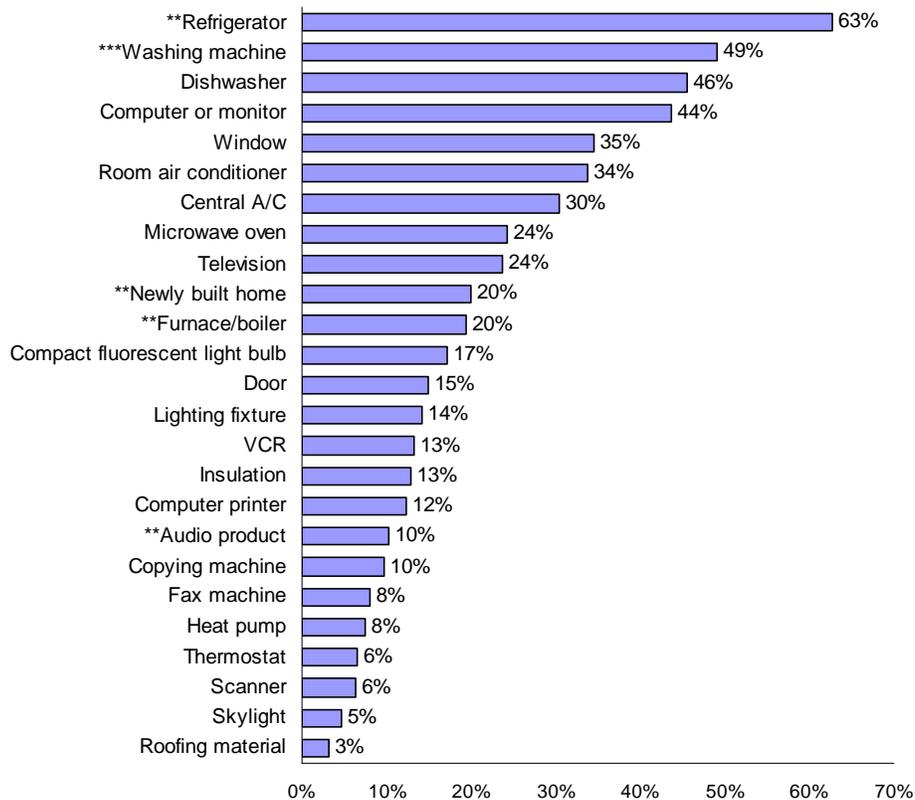


\*\*\*High- and low-publicity areas proportions are statistically different from each other at the 1-percent level of significance (p-value<=0.01).

## Product Associations

Sixty-three percent of households have seen the ENERGY STAR label on refrigerators. Washing machines, dishwashers, and computers were the next most commonly associated products with the label, at 49 to 44 percent. Windows, room air conditioners, and central air conditioners were in the 35- to 30-percent range. Products supported by regional programs, such as refrigerators, dishwashers, washing machines, and air conditioning equipment, show strong association with the ENERGY STAR label. The strong association of the label with computers is probably the combined effect of manufacturer labeling and the prevalence of these products in daily life. Twenty-four percent of households associate the ENERGY STAR label with microwave ovens, which do not in fact have an ENERGY STAR specification. However, microwave ovens were the least recognized of all the appliances. Products that showed an increase in association with the ENERGY STAR label from 2002 to 2003 were refrigerators, washing machines, newly built homes, furnaces/boilers, and audio products.

**Product Association With the ENERGY STAR Label**  
(Base = Recognize label aided, n=811)



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.

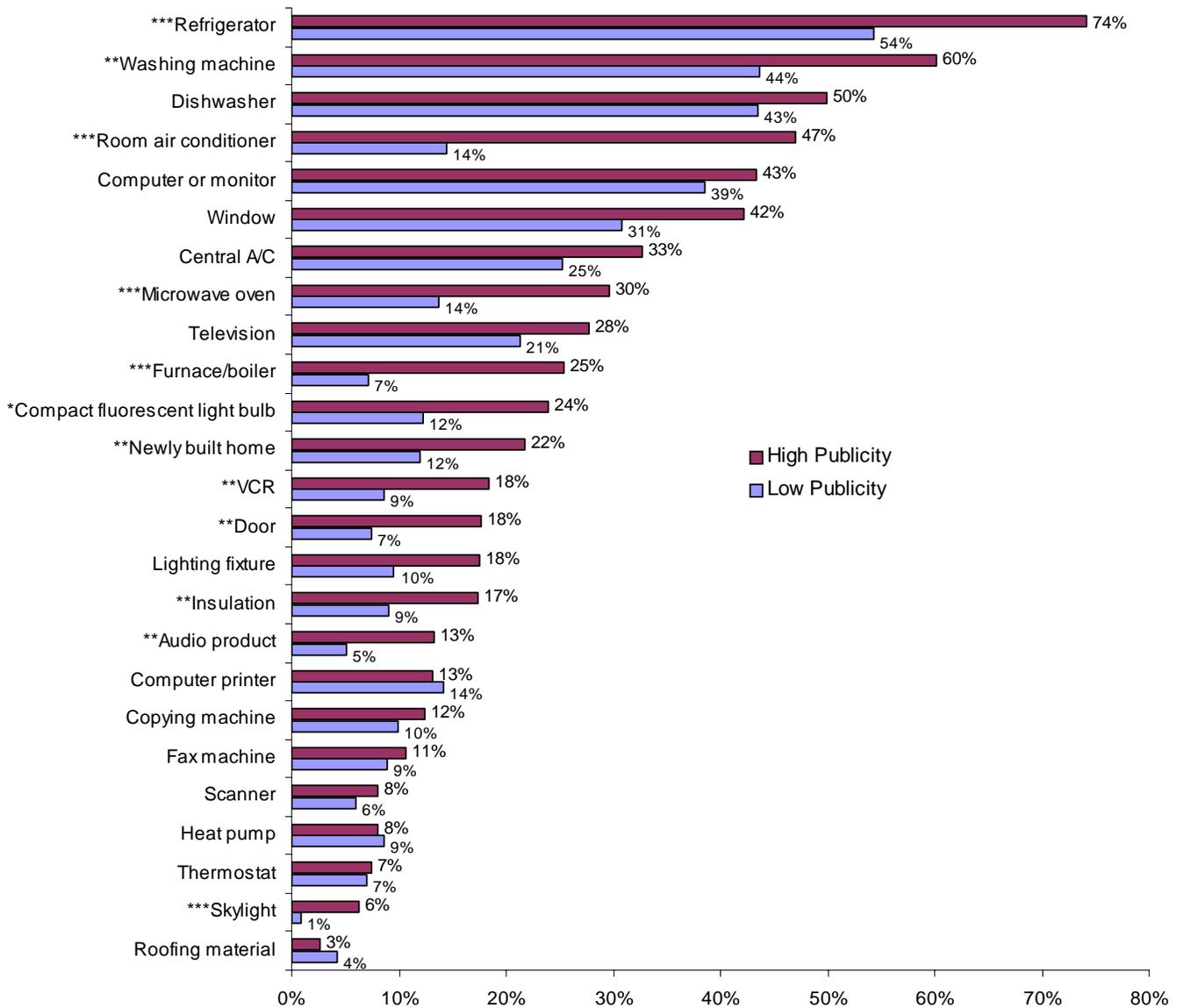
\*\*\*2003 and 2002 proportions are statistically different from each other at the 1-percent level of significance (p-value $\leq$ 0.01). Proportion of households in 2003 is larger than in 2002.

\*\*2003 and 2002 proportions are statistically different from each other at the 5-percent level of significance (p-value $\leq$ 0.05). Proportion of households in 2003 is larger than in 2002.

## Product Associations by Publicity Category

For many products, a larger proportion of households in high- than in low-publicity areas associated the product with the ENERGY STAR label. This was the case for compact fluorescent light bulbs and newly built homes, as well as two or more products in each of the following categories: heating and cooling products, home appliances, home electronics, and building materials. Regional energy efficiency program sponsors promoted refrigerators and washing machines heavily, along with various audio, lighting, and heating and cooling products.

**Product Association With the ENERGY STAR Label by Publicity Category**  
(Base = Recognize label aided, n=811)



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

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

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

## UNDERSTANDING

In 2003, 63 percent of households have at least a general understanding of the ENERGY STAR label. Furthermore, the proportion of households that exhibits only a general understanding is small compared with the proportion that exhibits a high degree of understanding, 13 versus 50 percent. Understanding was probed by asking respondents what messages came to mind when they saw the ENERGY STAR label. Based on these messages, a respondent's understanding was classified as high, general, or no understanding.

The results on understanding of the ENERGY STAR label for both this year's and last year's WebTV/Internet surveys are provided in the next table. The proportions of households with at least a general understanding of the ENERGY STAR label were similar between 2003 and 2002, 63 and 58 percent, respectively (the difference is not statistically significant).<sup>4</sup>

**Level of Understanding of the ENERGY STAR Label**  
(Base = All respondents)

<b>Level of Understanding of the Label</b>	<b>2003 (n=2,206)</b>	<b>2002 (n=1,168)</b>
High understanding	50%	46%
General understanding	13%	12%
No understanding	38%	42%
<b>Total</b>	100%	100%

Note: The level of understanding of the label is based on two questions. (1) If respondent recognized the label unaided, ES2: "What does the ENERGY STAR label mean to you?" (2) If respondent did not recognize the label unaided, ES4A1: "Please look at the ENERGY STAR label(s) on the left. Type the messages that come to mind when you see the ENERGY STAR label(s)." (In 2003, "labels" and in 2002 "label.")

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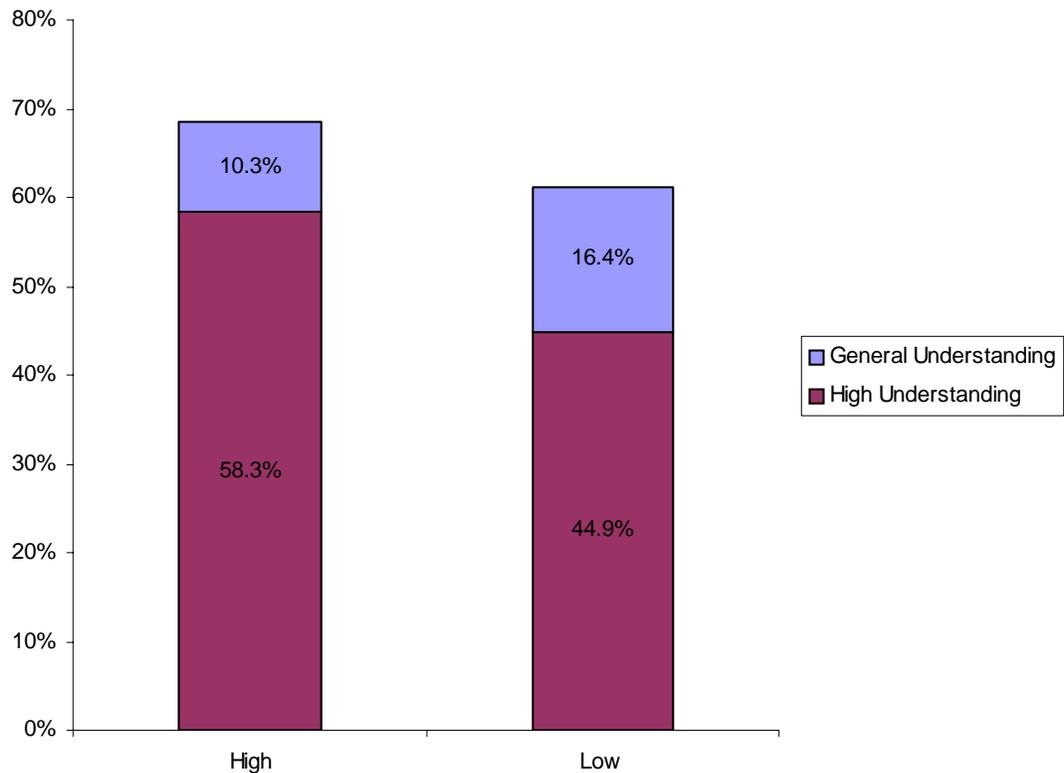
<sup>4</sup> Throughout the report, "not statistically significant" refers to not significant at the 10-percent level.

## Understanding by Publicity Category

Understanding of the ENERGY STAR label was greater in high- than in low-publicity areas. Sixty-nine percent of households in high-publicity areas had at least a general understanding of the label compared with 61 percent of households in low-publicity areas. (The difference is statistically significant at the 10-percent level, p-value = 0.073.)

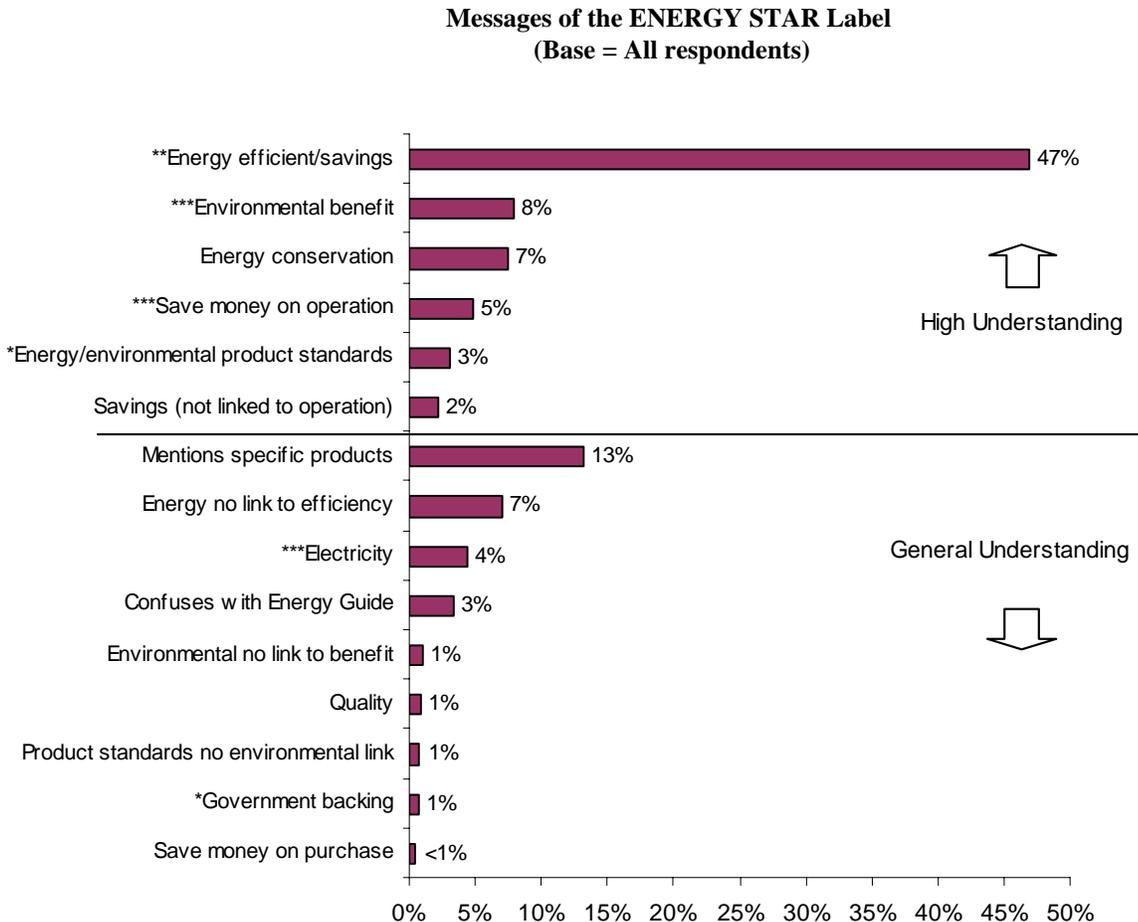
In both publicity categories, among those households with at least a general understanding of the ENERGY STAR label, more respondents exhibited a high degree of understanding.

**Understanding of the ENERGY STAR Label by Publicity Category**  
(Base = All respondents)



## Label Messaging

Open-ended responses used to measure understanding are also an indicator of how effectively EPA communicates its messages through the ENERGY STAR label. By far, the most common message associated with the label is “energy efficiency or energy savings,” which is considered high understanding of the label. Forty-seven percent of households associate the ENERGY STAR label with this message. The second most common message is “associating specific products with the ENERGY STAR label,” at 13 percent of households. “Associating specific products with the ENERGY STAR label” is considered general understanding of the label.



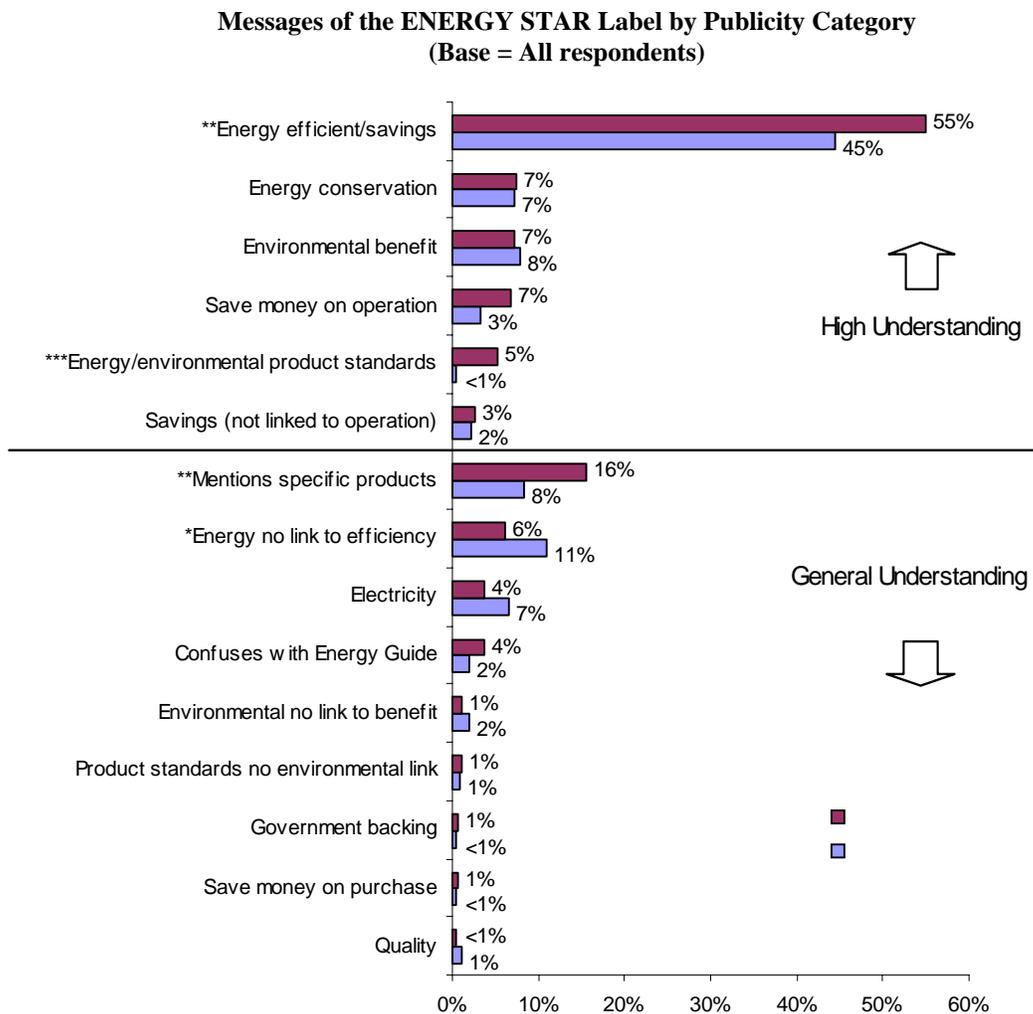
\*\*\*2003 and 2002 proportions are statistically different from each other at the 1-percent level of significance (p-value<=0.01). For “Save money on operation” and “Electricity,” proportion of households in 2003 is larger than in 2002. For “Environmental benefit,” proportion of households in 2003 is smaller than in 2002.

\*\*2003 and 2002 proportions are statistically different from each other at the 5-percent level of significance (p-value<=0.05). Proportion of households in 2003 is larger than in 2002.

\*2003 and 2002 proportions are statistically different from each other at the 10-percent level of significance (p-value<=0.10). Proportion of households in 2003 is larger than in 2002.

## 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. For three messages, however, a larger proportion of households in high- than in low-publicity areas associated the messages with the label. These three messages are “energy efficiency or energy savings,” “associating specific products with the ENERGY STAR label,” and “energy product standards or environmental product standards.” In addition, a smaller proportion of households in high- than in low-publicity areas associated the message “energy no link to efficiency” with the ENERGY STAR label. Associating either “energy efficiency or energy savings” or “energy product standards or environmental product standards” with the ENERGY STAR label is considered high understanding of the label. Associating either specific products or “energy no link to efficiency” with the ENERGY STAR label is considered general understanding of the label.



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

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

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

## Understanding by Aided Recognition

Households that recognize the ENERGY STAR label with a visual aid are more likely to have at least a general understanding of the label than those who do not recognize the label. Among households that recognize the label, 73 percent have at least a general understanding of the label, compared with households that do not recognize the label at 50 percent. (The difference is statistically significant at the 1-percent level, p-value < 0.0001.)

**Understanding of the ENERGY STAR Label  
by Aided Recognition of the Label  
(Base = All respondents)**

<b>Recognize ENERGY STAR Label Aided</b>	<b>At Least General Understanding of Label</b>
Yes	73%
No	50%
<b>Yes-No</b>	23%
<b>p-value</b>	<0.0001

## INFLUENCE

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

- The proportion of households, nationally, that recognize the ENERGY STAR label and report actually purchasing a labeled product.
- The influence of the label on purchasing decisions.
- The role of rebates or financing in decisions to buy ENERGY STAR products.
- The loyalty of ENERGY STAR purchasers.

## Purchases of ENERGY STAR

In order to estimate the proportion 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, the proportion that purchased a product.
- Of the households that recognized the label and reported purchasing a product, the proportion that purchased an ENERGY STAR product.

The result of this question is that 22 percent of all households knowingly purchased at least one qualifying ENERGY STAR product in the past twelve months.

Considering only those households that recognized the label in 2003, 58 percent purchased at least one qualifying ENERGY STAR product in the past twelve months. This result is very similar to last year's, 60 percent (the difference is not statistically significant).

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

	2003 (n=565)	2002 (n=228)
Purchased ENERGY STAR product	58%	60%

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

A larger proportion of *all* households knowingly purchased an ENERGY STAR product in high-publicity areas than in low-publicity areas. Thirty percent of all households in high-publicity areas knowingly purchased an ENERGY STAR product compared with 16 percent of all households in low-publicity areas. (The difference is statistically significant at the 5 percent level, p-value = 0.012).

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

Publicity Category	% Households
High	30%
Low	16%
High-Low	15%
p-value	0.012

## Influence of the ENERGY STAR Label

In 2003, for 52 percent of households that reported purchasing an ENERGY STAR-labeled product, the presence of the label influenced their purchasing decision “very much” or “somewhat.” For another 14 percent of households, the presence of the label influenced their purchasing decision “slightly.”

The results on influence of the ENERGY STAR label for this year’s and last year’s surveys are provided in the following table. The proportions of households for which the ENERGY STAR label was at least somewhat influential in their purchasing decision were similar between 2003 and 2002, 52 and 46 percent, respectively (the difference is not statistically significant).

**Influence of the ENERGY STAR Label on Purchasing Decisions  
(Base = Recognize label aided and ENERGY STAR purchasers)**

Influence of the Label on Purchasing Decisions	2003 (n=319)	2002 (n=141)
Very much	22%	21%
Somewhat	30%	25%
Slightly	14%	21%
Not at all	33%	33%
<b>Total</b>	100%	100%

Note: Q8: “For any ENERGY STAR-labeled product(s) you purchased, how much did the presence or absence of the ENERGY STAR label influence your purchasing decision?”

## Influence of the ENERGY STAR Label by Publicity Category

For two of the three levels of influence of the ENERGY STAR label on purchasing decisions, the proportion of households was similar for high- and low-publicity areas. However, a smaller proportion of the purchasing decisions of households in high- than in low-publicity areas was very much influenced by the ENERGY STAR label, 23 percent compared to 44 percent. This result was unexpected. In none of the previous years was a smaller proportion of the purchasing decisions of households in high- than in low-publicity areas influenced by the ENERGY STAR label. This year’s result may be an anomaly. If next year’s results are similar, further examination will be warranted.

**Influence of the ENERGY STAR Label on Purchasing Decisions by Publicity Category  
(Base = Recognize label aided and ENERGY STAR purchasers, n=319)**

Publicity Category	Very much	Very much or somewhat	Very much, somewhat, or slightly
High	23%	61%	76%
Low	44%	51%	57%
<b>High-Low</b>	-21%	11%	18%
<b>p-value</b>	0.096	0.435	0.183

## Rebate and Financing Influence

Fifteen percent of the households that knowingly purchased an ENERGY STAR-labeled product received rebates or reduced-rate financing. A large proportion of these households, 65 percent, reported that they would have been “very likely” or “somewhat likely” to purchase the labeled product if financial incentives had not been available.

**Influence of Rebates and Financing on Purchasing Decisions**  
(Base = Recognize label aided, ENERGY STAR purchaser, and received an incentive, n=52)

Likelihood Purchase ENERGY STAR Product Without Financial Incentive	% Households
Very likely	51%
Somewhat likely	14%
Slightly likely	24%
Not at all likely	11%
<b>Total</b>	<b>100%</b>

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

In 2003, 66 percent of households that reported purchasing an ENERGY STAR-labeled product say they would be “very likely” or “somewhat likely” to recommend labeled products to a friend. Furthermore, only 18 percent of households would be “not at all likely” to recommend ENERGY STAR products to a friend.

The results on loyalty to the ENERGY STAR label for both this year’s and last year’s surveys are shown in the next table. The proportions of households at least somewhat likely to recommend labeled products to a friend were similar between 2003 and 2002, 66 and 63 percent, respectively (the difference is not statistically significant).

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

Likelihood Recommend ENERGY STAR Products	2003 (n=292)	2002 (n=121)
Very likely	35%	39%
Somewhat likely	31%	24%
Slightly likely	16%	23%
Not at all likely	18%	14%
<b>Total</b>	<b>100%</b>	<b>100%</b>

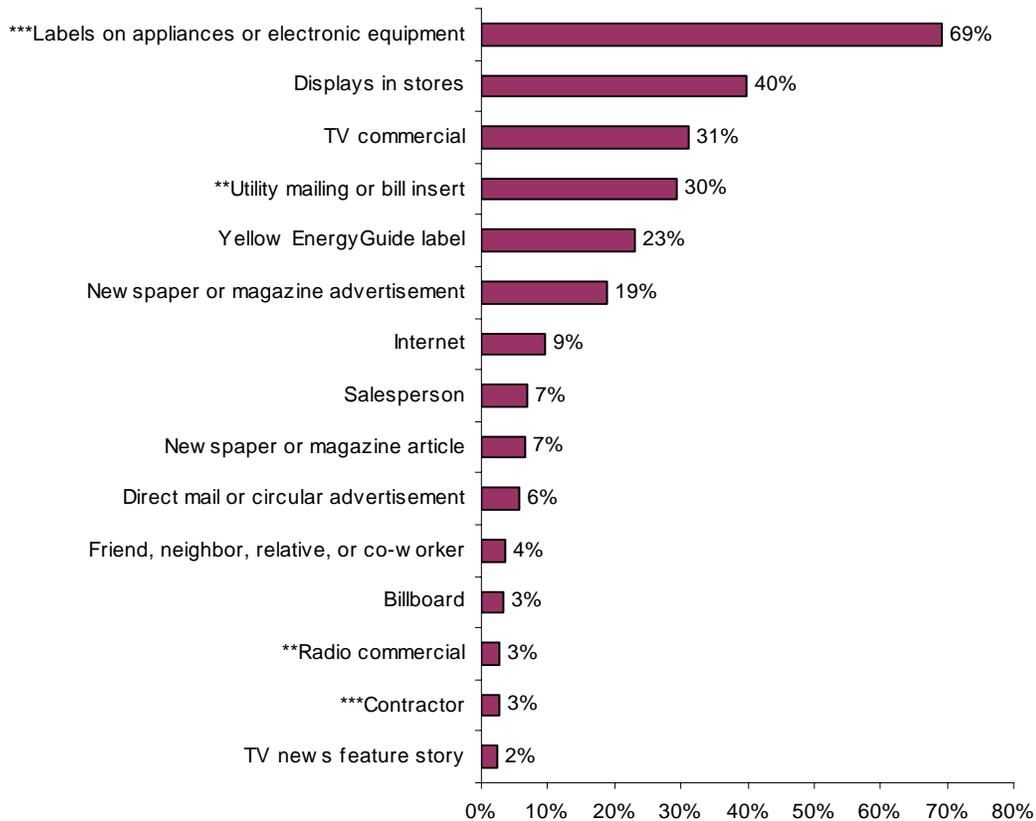
Note: Q11: “How likely are you to recommend ENERGY STAR-labeled products to a friend?”

## INFORMATION SOURCES

### Sources Seen

Sixty-nine percent of households have seen something about ENERGY STAR on appliance or electronic equipment labels, followed by store displays at 40 percent. Next, about 30 percent of households have heard or seen something about ENERGY STAR on TV commercials or on utility mailings or bill inserts. After these four sources, about 20 percent of households have seen something about ENERGY STAR on EnergyGuide labels or in newspaper or magazine advertisements. A larger proportion of households in 2003 than 2002 saw something about ENERGY STAR on appliances or electronic equipment labels or in utility mailings or bill inserts, or heard something about ENERGY STAR from contractors.

**Sources Saw or Heard Something About ENERGY STAR**  
(Base = Recognize label aided, n=779)



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

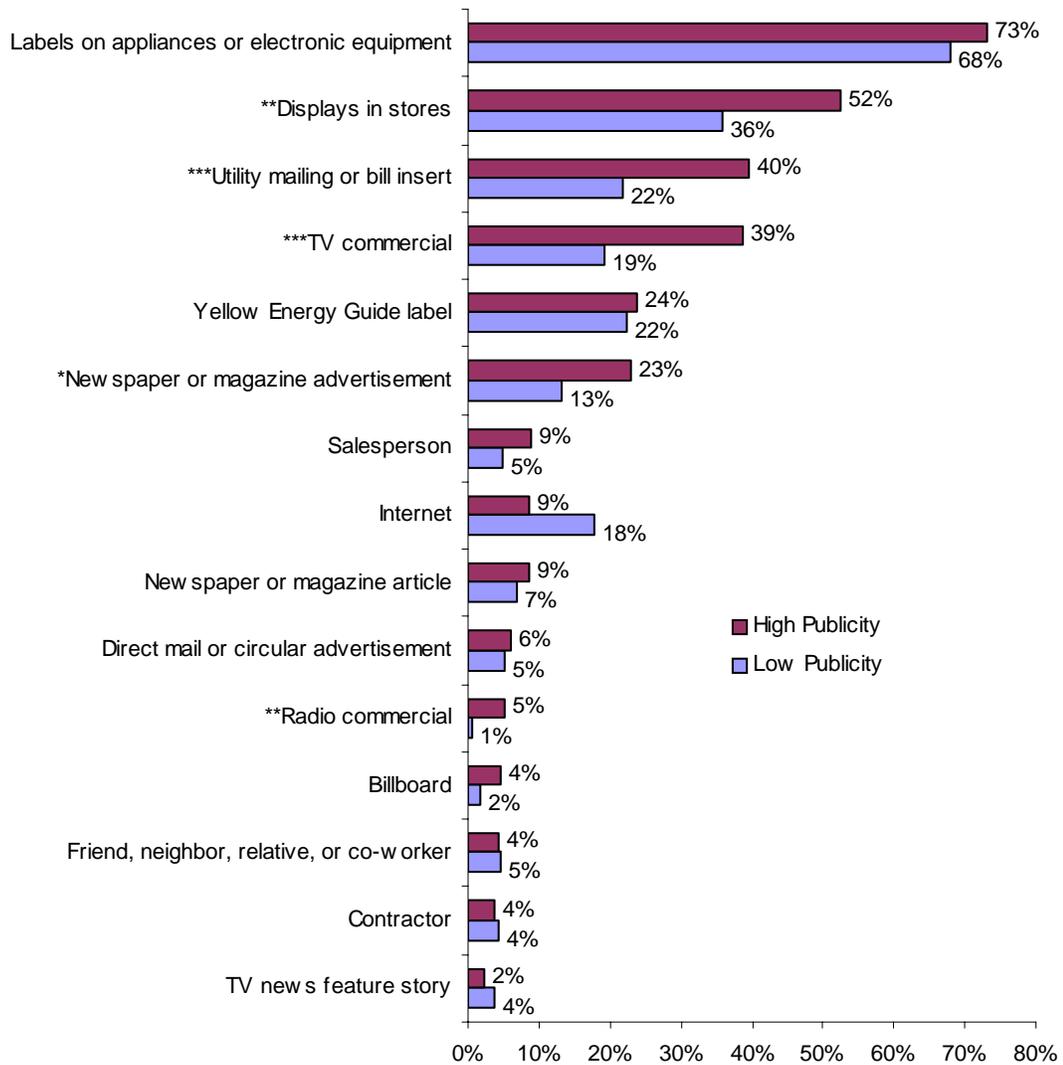
\*\*\*2003 and 2002 proportions are statistically different from each other at the 1-percent level of significance (p-value<=0.01). Proportion of households in 2003 is larger than in 2002.

\*\*2003 and 2002 proportions are statistically different from each other at the 5-percent level of significance (p-value<=0.05). For utility mailings or bill inserts, proportion of households in 2003 is larger than in 2002. For radio commercials, proportion of households in 2003 is smaller than in 2002.

## Sources Seen by Publicity Category

For most sources, the proportion of households that have heard or seen something about ENERGY STAR was similar for high- and low-publicity areas. For several sources, however, a larger proportion of households in high- than in low-publicity areas have heard or seen something about ENERGY STAR via the source. These sources are store displays, utility mailings or bill inserts, TV commercials, newspaper or magazine advertisements, and radio commercials.

**Sources Saw or Heard Something About ENERGY STAR by Publicity Category**  
(Base = Recognize label aided, n=779)



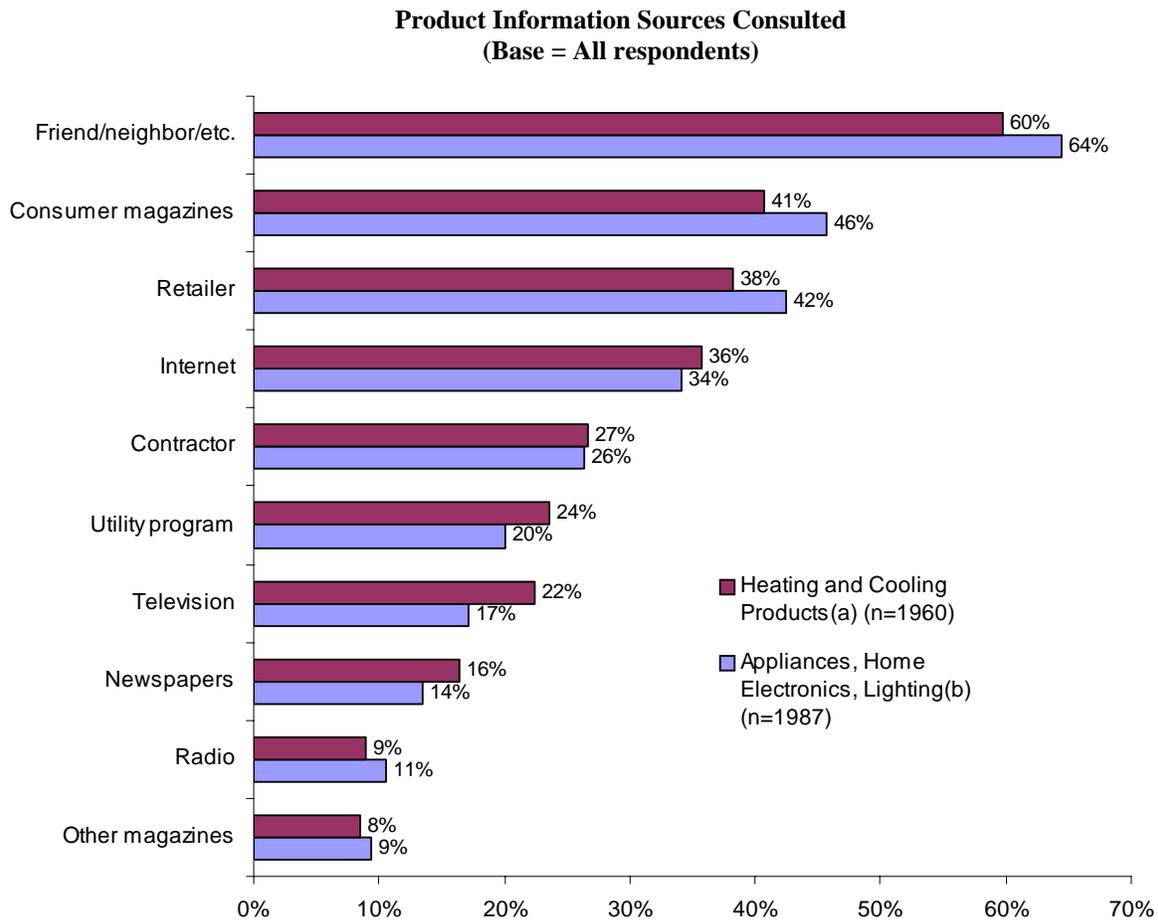
\*\*\*High- and low-publicity areas proportions are statistically different from each other at the 1 percent level of significance (p-value<=0.01).

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

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

## Sources Consumers Consult for Product Information

The survey asked about the sources consumers are most likely to use to obtain information about products covered by the ENERGY STAR program. The question was asked separately for two product groups: (1) heating and cooling products, and (2) home appliances, lighting, and home electronics. The results for the two product groups are similar. The top source was personal acquaintances at around 60 percent, followed by consumer magazines, retailers, and the Internet. For heating and cooling products, the proportion of households consulting each of these latter three sources ranges from 36 to 41 percent. For appliances, home electronics, and lighting, this range is a little broader, from 34 to 46 percent.



(a)Q13\_1: “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.”

(b)Q13\_2: “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.”

Considering only households that recognized the ENERGY STAR label, there were clear differences between the sources they consult for product information and where they saw or heard something about ENERGY STAR. Most of these differences were not surprising and will persist due to the nature of the sources. Nonetheless, the comparison of the sources households consult for product information and where they saw or heard something about ENERGY STAR is informative. This comparison suggests future ENERGY STAR activities should aim to:

- Increase positive exposure of ENERGY STAR in newspapers, magazines, and on TV.
- Expand cooperative efforts to include ENERGY STAR materials in utility mailings or bill inserts.
- Improve the availability and accessibility of ENERGY STAR information on the Internet.
- Enhance efforts to train salespersons and contractors to actively and accurately deliver information about ENERGY STAR.

**ENERGY STAR Sources Compared With Sources Consulted**  
(Base = Recognized aided)

Sources	ENERGY STAR Sources (n=779)	Sources Consulted			
		Heating and Cooling Products (n=1067)		Home Appliance/Lighting/ Home Electronics (n=1079)	
Newspaper or magazine advertisement	19%	Consumer Reports, other product-oriented magazines	48%	Consumer Reports, other product-oriented magazines	51%
Newspaper or magazine article	7%	Newspaper	13%	Newspaper	16%
		Other magazines	8%	Other magazines	12%
TV commercial	31%		19%		24%
TV news feature story	2%				
Radio commercial	3%		8%		8%
Utility mailing or bill insert	30%		26%		15%
Internet	9%		42%		42%
Salesperson	7%		37%		45%
Contractor	3%		27%		18%
Friend, neighbor, relative, or co-worker	4%		56%		61%

## **APPENDIX A**

### **DETAILED METHODOLOGY**

From September through October 2003, the Consortium for Energy Efficiency (CEE) fielded a household survey to obtain information on consumer awareness of the ENERGY STAR label. The survey was fielded to a random sample of households that are part of a WebTV/Internet panel that is selected by random digit dial and recruited by telephone. The survey was similar to the 2002 (and 2001) WebTV/Internet survey. As in the previous three years, CEE and its sponsoring members made the survey data publicly available. In 2001, a rigorous comparative analysis of mail survey and WebTV/Internet survey results was conducted. The results from both techniques were comparable for most major indicators.<sup>5</sup> Results in that time frame were also analogous to telephone surveys with aided recognition.

This report discusses the results of the CEE 2003 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 used (or were influenced by) the label in their energy-related purchasing decisions. Research questions of interest included:

- Where do consumers see or hear about the ENERGY STAR label?
- How does increased publicity impact 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 October 13, 2003.

The remainder of Appendix A discusses the questionnaire design, sampling and weighting methodologies, data collection, and the national analysis.

#### **1 Questionnaire Design**

In 2003, CEE conducted the ENERGY STAR survey using a questionnaire designed to be delivered by WebTV/Internet. The 2003 WebTV/Internet questionnaire was used in a survey conducted via an interactive WebTV/Internet format in the homes of members of a WebTV/Internet panel. People on the panel were originally selected to participate in the panel by random digit dial and recruited by telephone. The panel is designed to be representative of the U.S. population. Panel members are provided with an Internet appliance (WebTV) and Internet service connection, and surveys are fielded to them via Internet and Web TV. Panel members who already have Internet service receive other incentives to participate in the panel. Panel members receive three to four short surveys each month, and are expected to respond to a percentage of these.

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<sup>5</sup> National Analysis of CEE 2001 ENERGY STAR® Household Surveys.

The data from this survey may be compared with data collected using the 2002 and 2001 WebTV/Internet questionnaires, for which CEE was also responsible. Sampling for the survey is discussed in Section 2, data collection is discussed in Section 3, and the national analysis is discussed in Section 4.

The committee had several broad objectives in designing the 2003 questionnaire including:

- To maintain consistency with the CEE 2000 and 2001 mail surveys and the 2001 and 2002 WebTV/Internet surveys.
- To fine-tune the questionnaire based on lessons learned from the analysis of the CEE 2000 survey, focusing on achieving the greatest value from the analysis of the CEE 2001 and 2002 surveys.

The 2003 WebTV/Internet questionnaire addressed the following:

- Respondent recognition of the ENERGY STAR label.
- Understanding of, and key messages communicated by, the ENERGY STAR label.
- Sources of information consulted about ENERGY STAR.
- Products on which respondents have seen the label.
- Products that respondents have purchased in the past year.
- Products that respondents have purchased on which they have seen the label (or on whose packaging or instructions they have seen the label).
- Influence of the presence or absence of the 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.
- Likely sources of information about product categories.
- Demographic questions. (Most of the demographic questions were not asked in the WebTV/Internet survey, because demographic characteristics of the respondents were already on file.)
- Likelihood of recommending ENERGY STAR-labeled products to a friend.
- Recognition and understanding of the yellow *EnergyGuide* labels.

The 2003 WebTV/Internet questionnaire is very similar to the 2002 questionnaire. The aided recognition questions were changed to accommodate the new ENERGY STAR label and experimental questions about how households view companies that produce or sell ENERGY STAR-labeled products was added.

To assess awareness of both the old and new ENERGY STAR labels, in the 2003, survey respondents were asked if they recognized both labels. To control for question order effects, the order in which the labels were shown was randomized. The 2003 aided recognition questions were presented as follows. (For the complete questionnaire, see Appendix C.)

- Those respondents who answered “yes” to question ES1 (“Have you ever seen or heard of the ENERGY STAR label?”) were shown one of the labels in random order and asked ES3A, and then the other label and asked ES3B:
  - ES3A: “Is this the label you have seen or heard of before?”
  - ES3B: “Have you seen or heard of this version of the ENERGY STAR label?”
- Those respondents who answered “no” to ES1 were shown one of the labels in random order and asked ES3C, and then the other label and asked ES3D:
  - ES3C: “Please look at the ENERGY STAR label on the left. Have you ever seen or heard of this label?”
  - ES3D: “Have you seen or heard of this version of the ENERGY STAR label?”
- Those respondents who answered “no” to either ES1 or both ES3B and ES4B were shown both labels and asked ES6:
  - 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?”

The experimental question (Q14) about how households view companies that produce or sell ENERGY STAR-labeled products was asked as follows: “We’re interested in how you view companies that produce or sell ENERGY STAR-labeled products. Below are phrases that some people have used to describe these companies. On the scale by each word or phrase, please indicate how strongly you agree or disagree with each.” The response scale was 1 = strongly agree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, and 5 = strongly agree. The order in which the words or phrases were presented was random. The words or phrases were:

- Responsible
- Trustworthy
- Industry leader
- Uncaring
- Impractical
- Innovative
- Behind the times

Agreement with positive characteristics (and disagreement with negative ones) can be used as a lever to encourage vendor involvement with ENERGY STAR. The answers can also help identify the positive features that are most effectively identified with ENERGY STAR.

Results were favorable for this question, with 61% of households who recognize the label having a favorable impression of companies that manufacture or sell ENERGY STAR. That is, they agreed with at least one of four positive statements. By contrast, very few, less than 9%, gave a negative response.

The question series as worded on the 2003 survey had some limitations with regard to these interpretations. One is that several of the adjectives respondents were asked to agree or disagree with are not part of the ENERGY STAR brand messaging, and do not necessarily have any association with the label one way or another. As a result, many respondents had difficulty either agreeing or disagreeing, and chose the neutral response.

Another limitation was that the questions were asked of all respondents, whether or not they recognized the label. The rate of neutral responses was much higher among non-recognizers.

On the other hand, the difference between responses for recognizers and non-recognizers is an indication of the level of meaningful associations over and above systematic response tendencies regardless of having any direct experience or association with the label. For one such comparison, the question responses were coded from -2 (strongly disagree with positive, or strongly agree with negative) to +2 (strongly agree with positive or strongly disagree with negative). On this basis, both recognizers and non-recognizers tended toward positive ratings on all questions, but the recognizer average score tended to be higher. The average score for the non-recognizers was around 0.2 across the questions, while recognizers' average scores were usually 0.5 or higher.

This comparison does indicate that the label carries positive associations for those who recognize it. Nonetheless, benchmarking against other kinds of brands would be more useful in understanding the effectiveness of the ENERGY STAR label.

In light of these considerations, CEE may wish to reassess the wording and intent of these questions. Possibly changes could be:

- Ask a single question, rating vendors on a 5-point scale from unfavorable to favorable.
- Ask this question in parallel with other questions that ask for similar ratings of other brands or institutions.
- Ask about “bundles” of vendor characteristics, some of which do and some of which do not include selling ENERGY STAR.

The interactive format of a WebTV/Internet questionnaire allows questions to be asked in a way that is not possible with a printed questionnaire. On printed questionnaires, respondents can see questions in advance. For example, while the 2000 and 2001 mail questionnaires begin by showing the ENERGY STAR label and asking about understanding and whether they recognize it before asking other questions, respondents can still potentially educate themselves in a limited way about the ENERGY STAR label by reading the survey before completing it, affecting their responses. The WebTV/Internet questionnaires (after questions about the yellow *EnergyGuide* label), however, ask respondents—without showing the 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 WebTV/Internet questionnaires then show the ENERGY STAR label(s) (which is obviously not possible with the telephone questionnaire) about understanding and recognition. Responses to this question (or these questions) should thus be comparable to those obtained through the mail survey where respondents are shown the label. Other differences between the mail questionnaires and the WebTV/Internet questionnaires are that the latter—much like a telephone questionnaire using computer-assisted telephone interviewing (CATI)—can program lines of questions based on responses to earlier questions. For example, WebTV/Internet respondents 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.

## 2 Sampling

### 2.1 Designated Marketing Areas Publicity Categories

The same publicity classification procedure used the past two years was used this year. A Nielsen Designated Marketing Area<sup>®</sup> (DMA) was classified as high publicity, low publicity, or other using the following criteria:

- **High publicity:** At least two *recent* years of *sustained* promotions and publicity from non-federal activities.
- **Low publicity:** Federal campaign activities only and no *significant* regional program sponsor activities.
- **Other:** All other DMAs.

This classification procedure identifies three publicity categories and provides clear and verifiable definitions. The key working definitions are:

- **Recent:** The two years of activity must include the time of the survey fielding.
- **Sustained:** The two years of activity must be continuous.
- **Significant:** In addition to any direct federal publicity efforts,<sup>6</sup> publicity efforts must include a deliberate and multifaceted regional program sponsor investment in ENERGY STAR programming, such as direct marketing and promotional efforts.

These definitions are sufficiently operational to be applicable to future survey efforts, and can be modified by simply increasing the duration of sustained high publicity. The publicity-level assignments are detailed in the table below, followed by a table of supplemental CEE member sponsor areas.

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<sup>6</sup> During the September 2001 to September 2003 period, EPA launched and maintained three national television Public Service Announcements (PSAs) as part of its *Change* campaign. The *Change* campaign also included continued distribution of several radio and print PSAs as a component of its overall outreach strategy.

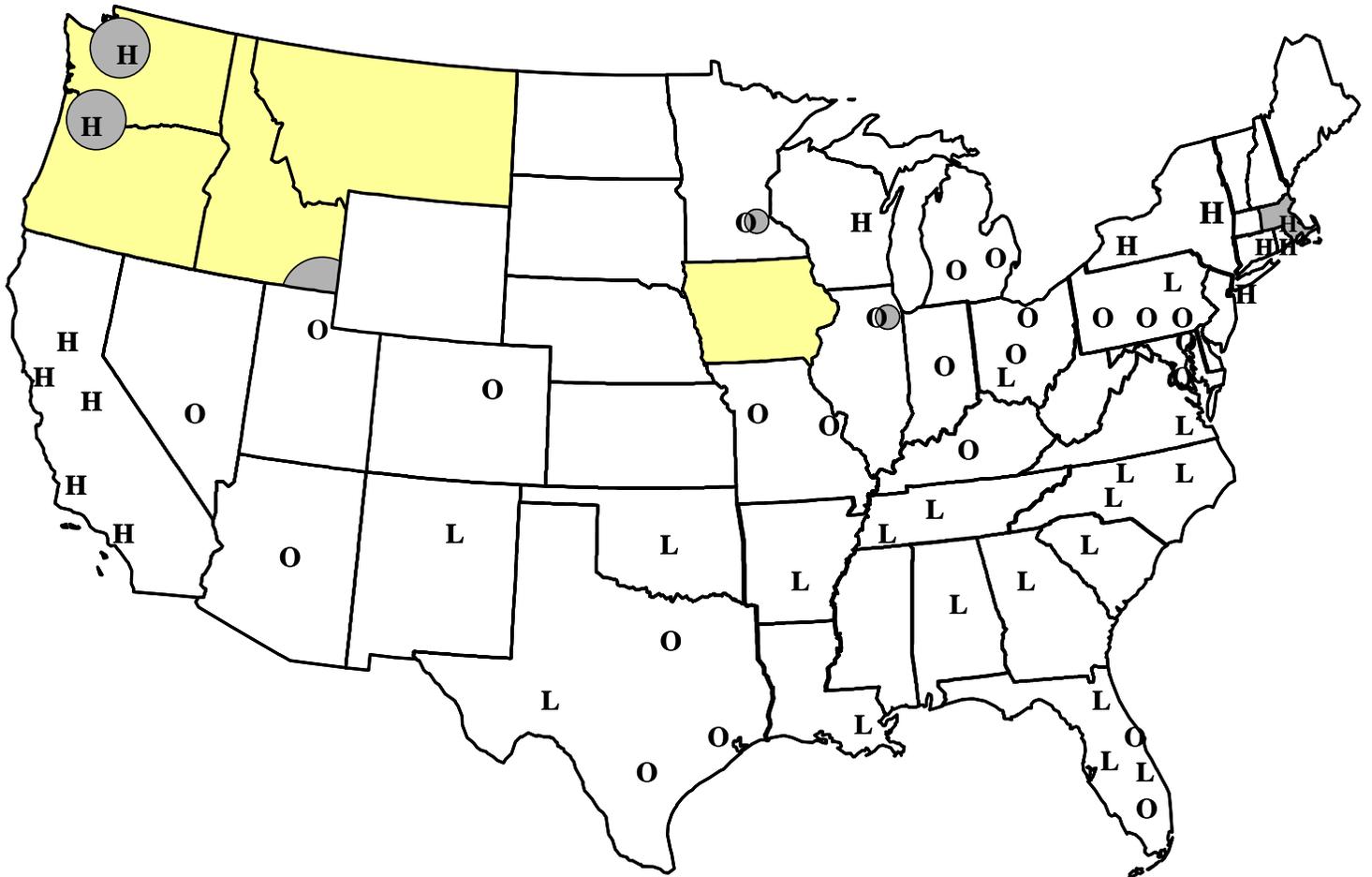
**Top 57 Designated Market Areas**

<b>Rank</b>	<b>Designated Market Area (DMA)</b>	<b># TV Households 2002-2003</b>	<b>% of US TV Households</b>	<b>Publicity Category</b>
1	New York	7,282,320	6.8%	High
2	Los Angeles	5,318,040	5.0%	High
3	Chicago	3,351,330	3.1%	Other
4	Philadelphia	2,830,470	2.7%	Other
5	San Francisco-Oak-San Jose	2,436,220	2.3%	High
6	Boston (Manchester)	2,353,500	2.2%	High
7	Dallas-Ft. Worth	2,195,540	2.1%	Other
8	Washington, DC (Hagrstwn)	2,169,230	2.0%	Other
9	Atlanta	1,971,180	1.8%	Low
10	Detroit	1,899,910	1.8%	Other
11	Houston	1,814,140	1.7%	Other
12	Seattle-Tacoma	1,659,100	1.6%	High
13	Tampa-St. Pete (Sarasota)	1,620,110	1.5%	Low
14	Minneapolis-St. Paul	1,594,740	1.5%	Other
15	Cleveland-Akron (Canton)	1,528,840	1.4%	Other
16	Phoenix	1,524,130	1.4%	Other
17	Miami-Ft. Lauderdale	1,486,860	1.4%	Other
18	Denver	1,366,250	1.3%	Other
19	Sacramnto-Stktn-Modesto	1,227,600	1.2%	High
20	Orlando-Daytona Bch-Melbrn	1,224,470	1.1%	Other
21	Pittsburgh	1,165,660	1.1%	Other
22	St. Louis	1,156,370	1.1%	Other
23	Portland, OR	1,061,080	1.0%	High
24	Baltimore	1,060,450	1.0%	Other
25	Indianapolis	1,019,870	1.0%	Other
26	San Diego	1,004,220	0.9%	High
27	Hartford & New Haven	980,410	0.9%	High
28	Charlotte	962,540	0.9%	Low
29	Raleigh-Durham (Fayetvll)	929,460	0.9%	Low
30	Nashville	880,670	0.8%	Low
31	Milwaukee	860,350	0.8%	High
32	Cincinnati	854,250	0.8%	Low
33	Kansas City	852,510	0.8%	Other
34	Columbus, OH	835,780	0.8%	Other
35	Greenvll-Spart-Ashevll-And	792,110	0.7%	Low
36	Salt Lake City	769,230	0.7%	Other
37	San Antonio	718,730	0.7%	Low
38	Grand Rapids-Kalmzoo-B.Crk	713,800	0.7%	Other
39	West Palm Beach-Ft. Pierce	700,850	0.7%	Low
40	Birmingham (Ann and Tusc)	690,030	0.6%	Low
41	Norfolk-Portsmth-Newpt Nws	677,610	0.6%	Low
42	New Orleans	658,830	0.6%	Low
43	Memphis	653,840	0.6%	Low
44	Buffalo	639,190	0.6%	High
45	Oklahoma City	636,970	0.6%	Low
46	Greensboro-H.Point-W.Salem	634,140	0.6%	Low
47	Harrisburg-Lncstr-Leb-York	626,660	0.6%	Other
48	Providence-New Bedford	624,020	0.6%	High
49	Albuquerque-Santa Fe	620,230	0.6%	Low
50	Louisville	612,300	0.6%	Other
51	Jacksonville, Brunswick	587,200	0.6%	Low
52	Las Vegas	585,440	0.5%	Other
53	Wilkes Barre-Scranton	580,290	0.5%	Low
54	Austin	552,060	0.5%	Other
55	Albany-Schenectady-Troy	532,520	0.5%	High
56	Little Rock-Pine Bluff	523,810	0.5%	Low
57	Fresno-Visalia	519,330	0.5%	High
<b>Total</b>		<b>75,126,790</b>	<b>70.4%</b>	

### Sponsor Areas

Sponsor Area	Publicity Category	Top 57/Other DMAs
Chicago	Other	Top 57: Chicago DMA (Rank 3)
Idaho	Other	Top 57: parts of Salt Lake City DMA (Rank 36) Other: parts of Spokane DMA (Rank 79)
	Low	Other: *parts of Boise DMA (Rank 124) *parts of Idaho Falls-Pocatello DMA (Rank 165) *Twin Falls DMA (Rank 191)
Iowa	Low	Other: parts of *Des Moines-Ames DMA (Rank 72) *Omaha DMA (Rank 78) *Cedar Rapids-Wtrlo-IWC&Dub DMA (Rank 88) *Davenport-R.Island-Moline DMA (Rank 92) *Sioux Falls(Mitchell) DMA (Rank 112) *Sioux City DMA (Rank 140) *Rochestr-Mason City-Austin DMA (Rank 152) *Quincy-Hannibal-Keokuk DMA (Rank 164) *Ottumwa-Kirksville DMA (Rank 198) *Mankato DMA (Rank 199)
Massachusetts	High	Top 57: parts of *Boston DMA (Rank 6) *Providence-New Bedford (Rank 48) *Albany-Schenectady-Troy DMA (Rank 55) Other: Springfield-Holyoke DMA (Rank 106)
Minneapolis St. Paul	Other	Top 57: Minneapolis-St. Paul DMA (Rank 14)
Montana	Other	Other: parts of Spokane DMA (Rank 79)
	Low	Other: *parts of Minot-Bismarck-Dickinson DMA (Rank 155) *parts of Billings DMA (Rank 170); *Missoula DMA (Rank 169) *parts of Rapid City DMA (Rank 175) *Great Falls DMA (Rank 187) *Butte-Bozeman, MT DMA (Rank 195) *Helena DMA (Rank 207) *Glendive DMA (Rank 210)
Oregon	High	Top 57: parts of Portland, OR DMA (Rank 23)
	Other	Other: *parts of Spokane DMA (Rank 79) *Eugene DMA (Rank 121) *parts of Yakima-Pasco-RchInd-Knnwck DMA (Rank 127)
	Low	Other: *parts of Boise DMA (Rank 124) *parts of Medford-Klamath Falls DMA (Rank 141) *Bend, OR DMA (Rank 201)
Washington	High	Top 57: *Seattle-Tacoma DMA (Rank 12) *parts of Portland, OR DMA (Rank 23)
	Other	Other: *parts of Spokane DMA (Rank 79) *parts of Yakima-Pasco-RchInd-Knnwck DMA (Rank 127)

# Map of Top 57 DMAs and Sponsor Areas by Publicity Category<sup>7</sup>



H “High” publicity category  
 L “Low” publicity category  
 O “Other” publicity category  
 ■ CEE sponsor area (ranking in Top 57 DMAs)  
 ■ CEE sponsor area (not ranking in Top 57 DMAs)

<sup>7</sup> Neither Alaska nor Hawaii contained DMAs ranking in the Top 57 DMAs.

## 2.2 Sample Design

The sample is a national sample. The sampling frame is all households in the 57 largest DMAs. In 2003, the 57 largest DMAs accounted for approximately 70 percent of U.S. television households. In addition, some CEE members sponsored more intensive sampling (i.e., oversample) for various states and metropolitan areas, which are referred to as “sponsor areas.” Two of the sponsor areas were among the largest DMAs and the remaining sponsor areas were states. For each sponsor area that is a state, the frame was not limited to the large DMAs, but included the entire state. Thus, the complete frame for the study was the combination of the 57 largest DMAs and any portion of the sponsor areas that fell outside these DMAs.

The sample is stratified by area and within an area by publicity category. There are nine areas, comprising eight sponsor areas plus one area consisting of the largest or parts of the largest DMAs that were not in a sponsor area. Further stratifying each eight sponsor area by publicity category results in 12 strata.<sup>8</sup> Further stratifying the remaining area by publicity category results in 3 strata, for a total of 15 strata.

The CEE members who funded the oversample for a sponsor area determined the number of sampling points allocated to the area as a whole. This total number of sampling points was then allocated across publicity categories present in a sponsor area proportional to population. In the single area consisting of the largest or parts of the largest DMAs that were not in a sponsor area, each publicity category was allocated approximately 333 sampling points. For each stratum, a larger sample was selected to receive the survey to allow for nonresponse.

## 2.3 Weighting Procedures

The weights used in the analysis are the weights developed by Knowledge Networks, the company that provides the WebTV/Internet survey service. Knowledge Networks begins with a typical sampling weight that also accounts for differences between the WebTV/Internet panel and the U.S. population of households. This adjustment is based on geographic and demographic characteristics known for both the panel and the population. It is designed to scale up the groups that are under-represented in the panel and scale down the groups that are over-represented in the panel so that they are more closely aligned with the basic demographic characteristics of the U.S. population of households.

The typical sampling weight is then corrected for survey nonresponse. The correction for survey nonresponse is analogous to the adjustment for differences in the WebTV/Internet panel from the U.S. population of households. The correction for survey nonresponse is based on geographic and demographic characteristics known for both the sample of panel completes and the entire frame for the study. It scales up the under-represented groups and scales down the over-represented groups in the sample of panel completes.

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<sup>8</sup> Montana was not further stratified by publicity category because 95 percent of Montana households are in low-publicity DMAs and the number of sampling points to be allocated across all of Montana was only about 50.

### 3 Data Collection

#### 3.1 Survey Implementation

The survey began on September 17 and closed on October 13, 2003.

#### 3.2 Response Rates

For WebTV/Internet, the *return rate* is the ratio of the number of survey questionnaires completed to the number of panel members who were asked to complete the survey. For the CEE 2003 ENERGY STAR household survey, the return rate was 80 percent. While this number is quite high, it must be adjusted by the *recruitment rate*, that is, the number of households that agreed to participate in the WebTV/Internet panel as a proportion of the number of households asked to participate. Thus, the WebTV/Internet response rate is the product of the survey-specific return rate and the recruitment rate of 37 percent. This product is equivalent to the ratio of the number of surveys completed to the number of households that were offered the opportunity to be in the study. For the CEE 2003 ENERGY STAR household survey the response rate was 30 percent. This level of response is typical for a WebTV/Internet survey fielded to the Knowledge Networks panel.

Survey Response Rate

Sendout/requested	2,745
Completed	2,206
Return rate	80%
Recruitment rate	37%
Response rate	30%

### 4 National Analysis

To facilitate comparisons across years, the national results are based only on data collected from all respondents in the 57 largest DMAs. Data collected from respondents not in the 57 largest DMAs, but in a sponsor area, are not included in the national 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 the appropriate weight in the analysis to generate valid national results.

## APPENDIX B

### DEMOGRAPHICS

The analysis presented in this appendix suggests the weighted survey results are a reasonable representation of the study population, which is 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. However, in any survey effort, the persons who respond to the survey tend to be different from those who do not respond. While Knowledge Networks, the company that maintains the WebTV/Internet panel, strives to create a representative panel for its WebTV/Internet frame, the respondent base will contain subjects and their associated biases that are receptive to the WebTV/Internet incentive-for-service tradeoff.

The weights used in the analysis attempt to account for differences between the WebTV/Internet panel and the U.S. population of households and for survey nonresponse. To the extent this effort is successful, the distribution of various demographic characteristics based on the weighted survey data will be similar to the distribution based on national Census data. For most demographic characteristics, the two distributions are similar. This suggests the weighted survey results are a reasonable representation of the study population. A summary of the demographic characteristics compared is provided in the table below, and the detailed comparisons are provided in the tables at the end of this appendix.

**Summary of Distribution Comparisons**

<b>Demographic Characteristic</b>	<b>Largest Difference (Absolute Value): Survey Estimate Minus Census %</b>	
Number of persons in household	One	-7.3%
Householder/respondent age	65 or older	-6.7%
Householder/respondent gender	Gender	+/-1.0%
Dwelling type	Apt. bldg.	-6.7%
Own/rent	Own/rent	+/-3.5%
Household annual income	\$25,000-\$49,000	4.5%

The largest differences (in absolute value) between the weighted survey data and the national Census data are all about 7 percentage points and concern the number of persons in a household, householder/respondent age, and dwelling type. The difference between the weighted survey data and the national Census data is about 7 percentage points for: one-person households, 19 versus 26 percent; householders 65 years or older, 14 versus 20 percent; and households living in apartment buildings, 15 versus 22 percent. Neither the under-representation of one-person households, householders 65 years or older, nor households living in apartment buildings is expected to bias the survey results in a particular direction. For the remaining demographic characteristics, the largest differences between the weighted survey data and the national Census data range between 1 and 5 percent.

### Household Size Distribution

Number of Persons in Household	Census % Dwelling Units <sup>a</sup>	Survey Estimate Minus Census % Dwelling Units
One	26%	-7.3%
Two	33%	4.8%
Three	16%	1.7%
Four	15%	0.0%
Five or more	10%	0.7%
<b>Total (%)</b>	100%	
<b>Total (1,000s)</b>	106,261	

<sup>a</sup> U.S. Census Bureau, American Housing Survey: 2001, Table 2-9.

### Age Distribution

Householder/ Respondent Age	Census % Householders <sup>a</sup>	Survey Estimate Minus Census % Householders
18-24 <sup>b</sup>	6%	4.5%
25-34	17%	4.4%
35-44	22%	-0.8%
45-54	20%	-0.9%
55-64	15%	-0.4%
65 or older	20%	-6.7%
<b>Total (%)</b>	100%	
<b>Total (1,000s)</b>	111,278	

<sup>a</sup> U.S. Census Bureau, Current Population Reports, Income in the United States: 2002, Table 3.

<sup>b</sup> Census, 15 – 24 years; WebTV/Internet 2003, 18 – 24 years.

### Gender Distribution

Householder/ Respondent Gender	Census % Population <sup>a</sup>	Survey Estimate Minus Census % Population
Female	51%	1.0%
Male	49%	-1.0%
<b>Total (%)</b>	100%	

<sup>a</sup> U.S. Census Bureau, Census 2000.

### Dwelling Type Distribution

Dwelling Type	Census % Dwelling Units <sup>a</sup>	Survey Estimate Minus Census % Dwelling Units
Single-family, unattached	60%	3.4%
Single-family, attached	7%	5.7%
Apt. bldg. (>=2 units) <sup>b</sup>	22%	-6.7%
Mobile home	6%	-1.4%
Other	5%	-0.9%
<b>Total (%)</b>	100%	
<b>Total (1,000s)</b>	111,577	

<sup>a</sup> U.S. Census Bureau, American Housing Survey: 2001, Table 2-1.

<sup>b</sup> Census, 2 or more units; WebTV/Internet 2002, 4 or more units.

### Own/Rent Distribution

Own/Rent	Census % Households <sup>a</sup>	Survey Estimate Minus Census % Households
Own	68%	-3.5%
Rent	32%	3.5%
<b>Total (%)</b>	100%	
<b>Total (1,000s)</b>	106,261	

<sup>a</sup> U.S. Census Bureau, American Housing Survey: 2001, Table 2-1.

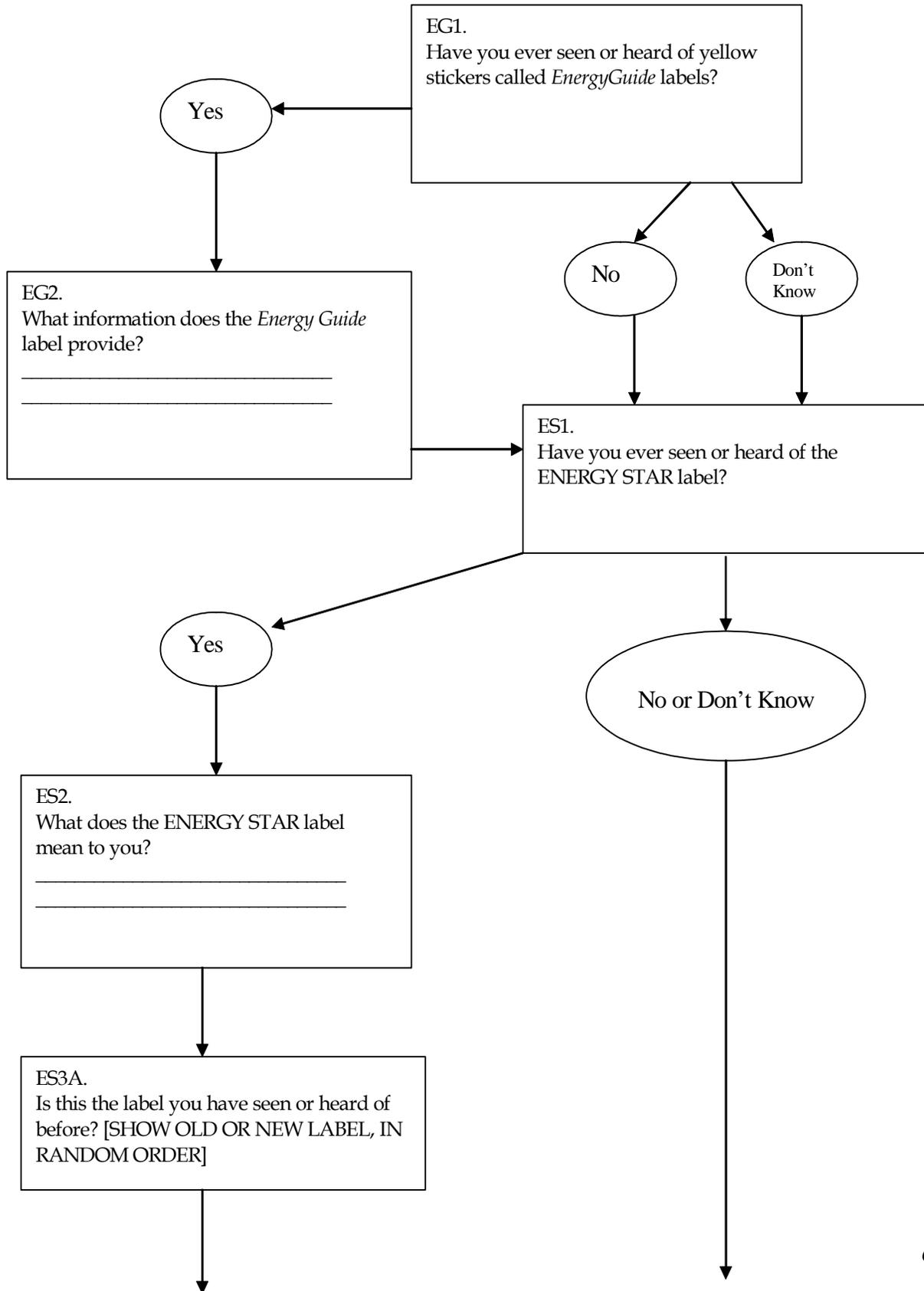
### Income Distribution

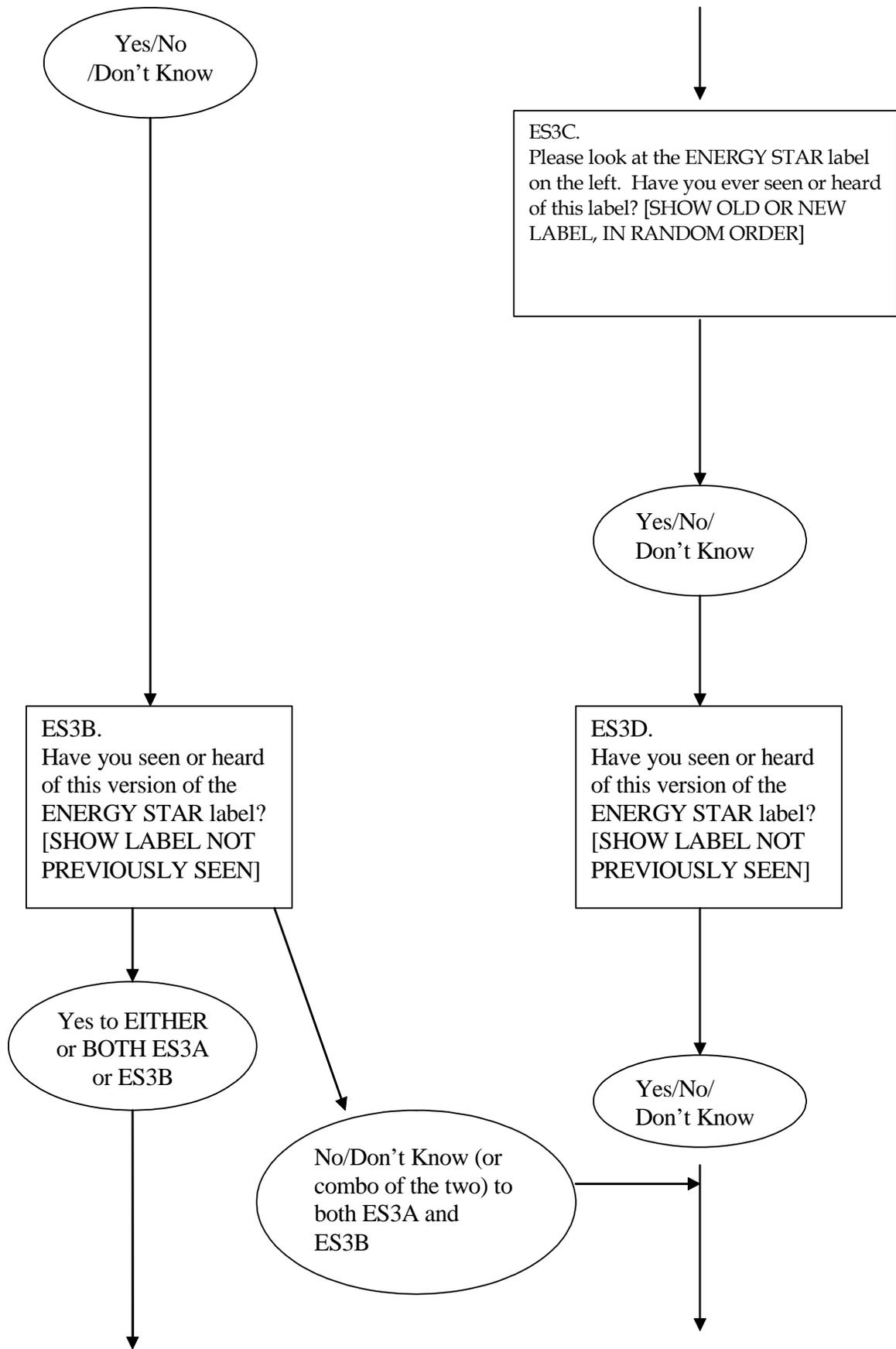
Total Household Annual Income (before taxes)	Census % Households <sup>a</sup>	Survey Estimate Minus Census % Households
Less than \$15,000	16%	-3.0%
\$15,000-\$24,999	13%	-2.6%
\$25,000-\$49,999	27%	4.5%
\$50,000-\$74,999	18%	3.7%
\$75,000 and over	25%	-2.7%
<b>Total (%)</b>	100%	
<b>Total (1,000s)</b>	111,278	

<sup>a</sup> U.S. Census Bureau, Current Population Reports, Income in the United States: 2002, Table A-1.

APPENDIX C

2003 WebTV/Internet QUESTIONNAIRE, 8/11/03





SO1.  
Where did you see or hear something about ENERGY STAR? Please mark all that apply.  
[checkbox]

- Newspaper or magazine advertisement
- Newspaper or magazine article
- TV commercial
- TV news feature story
- Radio commercial
- Billboard
- Utility mailing or bill insert
- Direct mail or circular advertisement
- Labels on appliances or electronic equipment
- Yellow *EnergyGuide* label
- Displays in stores
- Internet
- Salesperson
- Contractor
- Friend, neighbor, relative, or co-worker
- Other (please specify) [text box]
- Don't know

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

ES4a1.  
Please look at the ENERGY STAR labels on the left. Type the messages that come to mind when you see the ENERGY STAR labels.  
[SHOW LABEL]  
\_\_\_\_\_

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?

Yes

No or Don't Know

Skip to Q6a

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

Heating and Cooling Products:

- |                         |                        |
|-------------------------|------------------------|
| Central air conditioner | Home Office Equipment  |
| Computer or monitor     | Furnace or boiler      |
| Computer printer        | Heat pump              |
| Copying machine         | Thermostat             |
| Fax machine             | Room air conditioner   |
| Scanner                 | None of these products |

Q5(b). Please continue reviewing the lists of products below, and select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.

Home Appliances/Lighting:

- |                                |                  |
|--------------------------------|------------------|
| Home Electronics               | Dishwasher       |
| Television                     | Refrigerator     |
| VCR                            | Lighting fixture |
| Audio product                  | Washing machine  |
| Compact fluorescent light bulb | Microwave oven   |
| None of these products         |                  |

Q5(c). Finally, please review the last of the product lists below and select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label.

Building Materials:

- |                  |          |                        |
|------------------|----------|------------------------|
| Buildings        | Window   | Newly built home       |
| Door             | Skylight | Insulation             |
| Roofing material |          | None of these products |

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?

- Yes
- No
- Don't know

Heating and Cooling Products

- Central air conditioner
- Furnace or boiler
- Heat pump
- Thermostat
- Room air conditioner

Home Office Equipment

- Computer or monitor
- Computer printer
- Copying machine
- Fax machine
- Scanner

Home Appliances/Lighting

- Dishwasher
- Refrigerator
- Lighting fixture
- Washing machine
- Compact fluorescent light bulb
- Microwave oven

Home Electronics

- Television
- VCR
- Audio product

Building Materials

- Window
- Door
- Skylight
- Insulation
- Roofing material

Q6b

Have you or someone else in your household been shopping for a newly built home in the last 12 months?"

- Yes
- No
- Don't know

↓

**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.**

Heating and Cooling Products:

Central air conditioner	Home Office Equipment
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.**

Home Appliances/Lighting:

Home Electronics	Dishwasher
Television	Refrigerator
VCR	Lighting fixture
Audio product	Washing machine
Compact fluorescent light bulb	Microwave oven
None of these products	

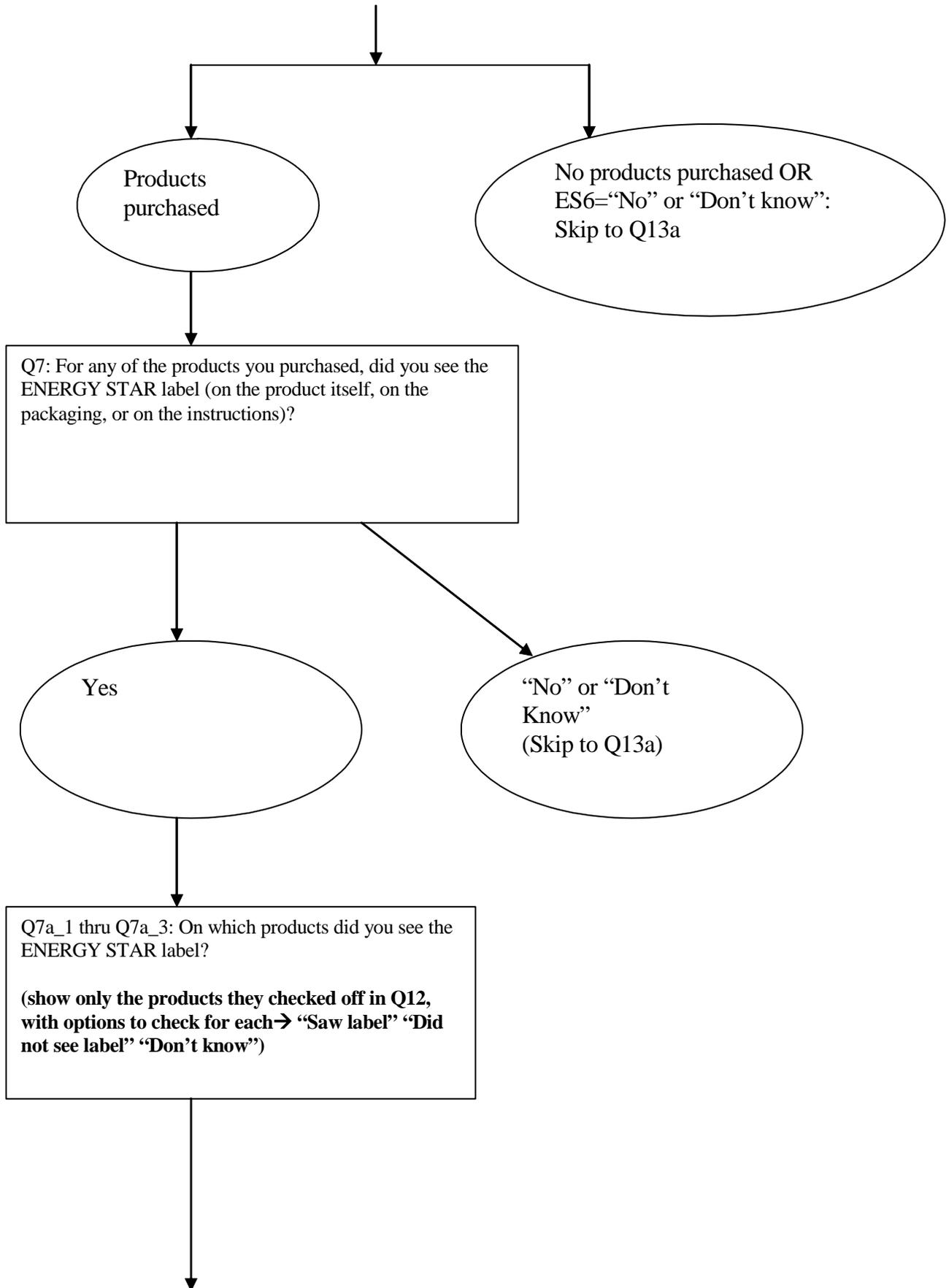
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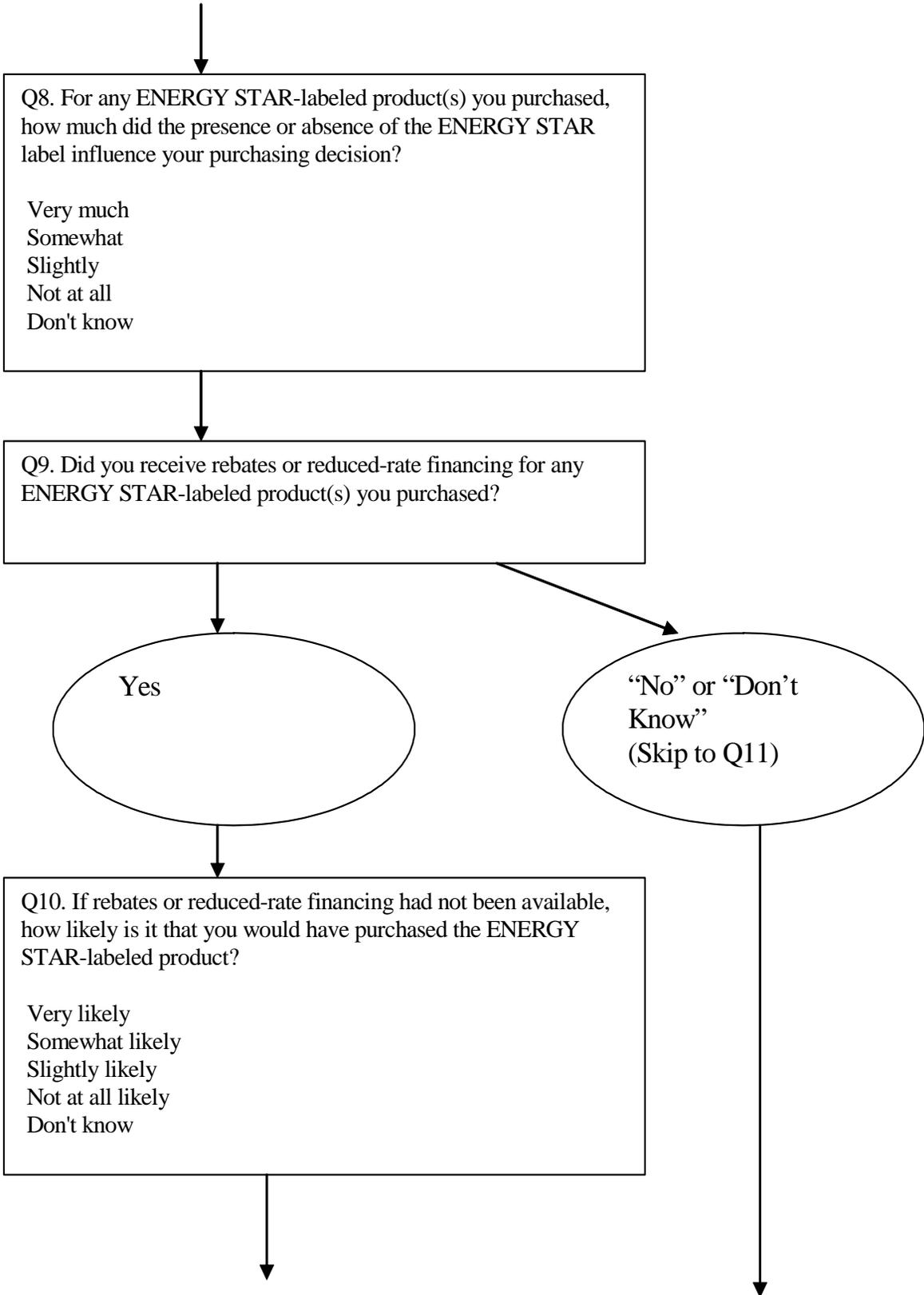
**Q12(c). Finally, please review the last of the product lists below. Which of these products have you purchased in the last 12 months? Please check all that apply.**

Building Materials:

Buildings	Window	Newly built home
Door	Skylight	Insulation
Roofing material	None of these products	

↓





↓

↙

**Q11.** How likely are you to recommend ENERGY STAR-labeled products to a friend?

Very likely  
 Somewhat likely  
 Slightly likely  
 Not at all likely  
 Don't know

↓

**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
Advice from retailers or salespersons	Newspapers
Advice from a friend, neighbor, relative, or co-worker	Advice from contractors
Television	Radio
Electric or gas utility	Internet
	Other _____
	Don't know

↓

**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
Advice from retailers or salespersons	Newspapers
Advice from a friend, neighbor, relative, or co-worker	Advice from contractors
Television	Radio
Electric or gas utility	Internet
	Other _____
	Don't know

↓



We're interested in how you view companies that produce or sell ENERGY STAR-labeled products. Below are phrases that some people have used to describe these companies. On the scale by each word or phrase, please indicate how strongly you agree or disagree with each.

(Note to programmer: present q14a through g in random order for each respondent.)

	Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree
<b>Q14a.</b> Responsible	1	2	3	4	5
<b>Q14b.</b> Uncaring	1	2	3	4	5
<b>Q14c.</b> Trustworthy	1	2	3	4	5
<b>Q14d.</b> Industry leader	1	2	3	4	5
<b>Q14e.</b> Impractical	1	2	3	4	5
<b>Q14f.</b> Innovative	1	2	3	4	5
<b>Q14g.</b> Behind the times	1	2	3	4	5



Go to demographic and closing questions.