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NATIONAL AWARENESS OF ENERGY STAR® FOR 2005

ANALYSIS OF CEE HOUSEHOLD SURVEY

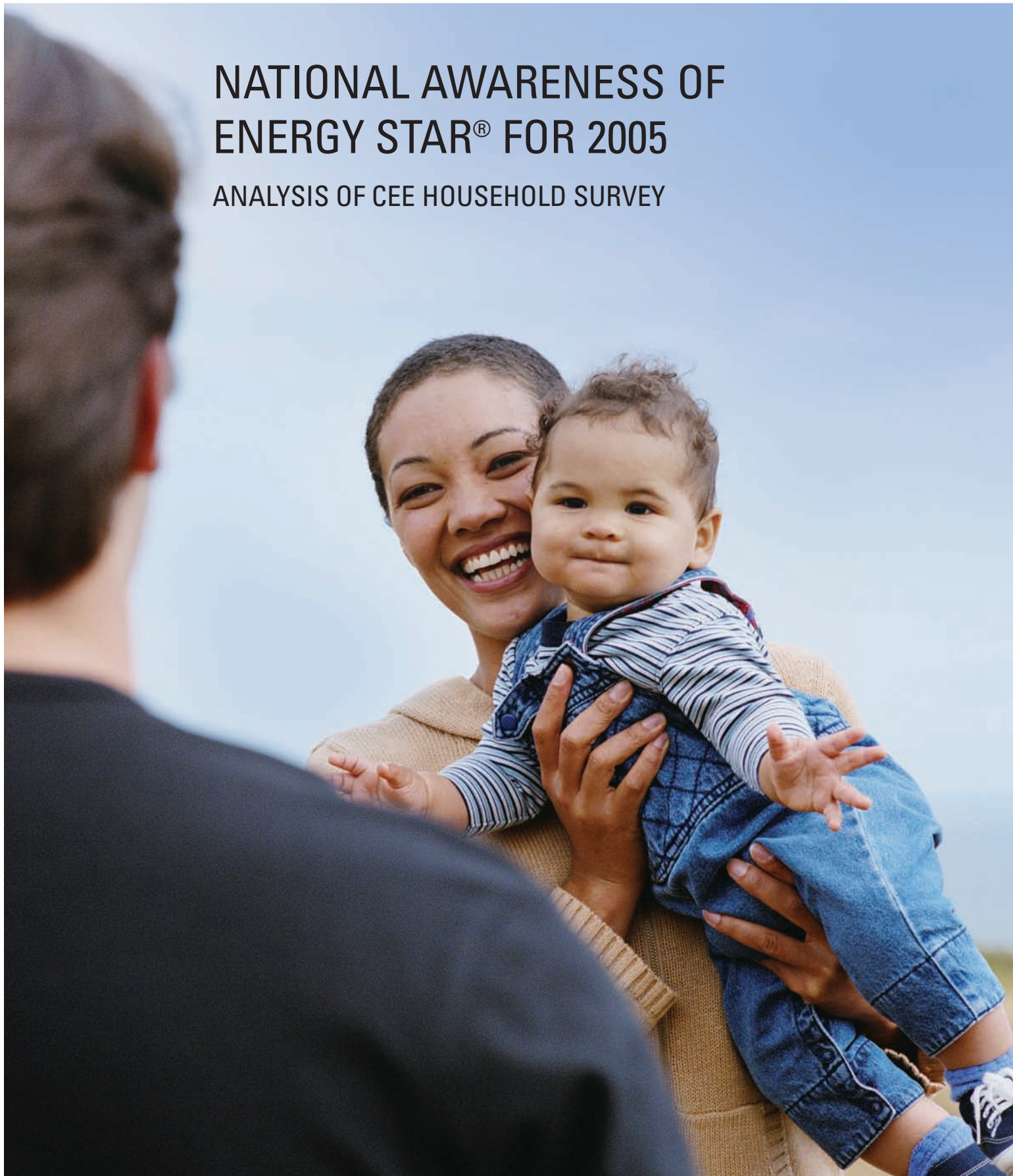


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EXECUTIVE SUMMARY

In the fall of 2005, members of the Consortium for Energy Efficiency (CEE) sponsored the sixth 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 chose to supplement the national sample in order to assess label awareness in their local service territories. In 2005, additional surveys were conducted in New Jersey. As in the five previous years, CEE and sponsoring members made the survey data publicly available.

This report discusses the results of the CEE 2005 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 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?

Key Findings at the National Level

- Sixty-three percent of households recognized the ENERGY STAR label when shown the label.
- Seventy 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 (13 percent versus 57 percent).
- Of households that recognized the ENERGY STAR label and purchased a product in a relevant product category within the past twelve months, 57 percent purchased an ENERGY STAR-labeled product.
- Among households that recognized the label and those that did not (i.e., all households), 24 percent knowingly purchased an ENERGY STAR-labeled product in the past twelve months.

- For 63 percent of the households that knowingly purchased an ENERGY STAR-labeled product the label influenced at least one of their purchase decisions “very much” or “somewhat.” For another 12 percent of these households the label influenced their purchase decisions “slightly.”
- Twelve percent of households that knowingly purchased an ENERGY STAR-labeled product received a financial incentive for doing so. Ninety-two percent of these households would have been “very likely” (43 percent) or “somewhat likely” (49 percent) to purchase the labeled product without the financial incentive.
- Seventy-six percent of households that knowingly purchased an ENERGY STAR-labeled product would be “very likely” or “somewhat likely” to recommend ENERGY STAR-labeled products to a friend, and another 19 percent would be “slightly likely.”

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, 71 percent of households in high-publicity areas recognized the label versus 53 percent in low-publicity areas. (*High-publicity areas* are areas with an active local ENERGY STAR program that has been sponsored by a utility, state agency, or other organization for two or more continuous years.)
- Among households that recognized the ENERGY STAR label (with a visual aid), a larger proportion in high- than in low-publicity areas associated the label with appliances, which are heavily promoted by regional program sponsors.
- A larger proportion of households in high- than in low-publicity areas had at least a general understanding of the label.
- A larger proportion of households in high- than in low-publicity areas associated the following messages with the ENERGY STAR label: “efficiency or energy savings” and “associating specific products with the ENERGY STAR label.”
- Among households that knowingly purchased an ENERGY STAR-labeled product, the purchase decisions of a larger proportion in high- than in low-publicity areas was influenced by the label. At all levels of influence—“very much,” “at least somewhat,” and “at least slightly”—the proportion of households in high-publicity areas was larger than in low-publicity areas.
- Considering only households that recognized the label (with a visual aid), a larger proportion of these households in high- than in low-publicity areas heard or saw something about ENERGY STAR via store displays, TV commercials, utility mailings or bill inserts, salespersons, or radio commercials.

Conclusions and Future Directions

This sixth 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 (13 percent) compared with the proportion of households that exhibit a high understanding (57 percent).
- Publicity emanating from active regional/local energy efficiency program sponsors increases recognition, understanding, and influence of the label.

The analyses of the CEE ENERGY STAR survey fielded in 2005 indicate that activities to promote the ENERGY STAR label carried out by the U.S. Environmental Protection Agency (EPA), the U.S. Department of Energy (DOE), survey sponsors, and ENERGY STAR partners in 2005 were effective.

INTRODUCTION

In the fall of 2005, members of the Consortium for Energy Efficiency (CEE) sponsored the sixth 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 chose to supplement the national sample in order to assess label awareness in their local service territories. To this end, in 2005 additional surveys were conducted in New Jersey. As in the five previous years, CEE and sponsoring members made the survey data publicly available.

This report discusses the results of the CEE 2005 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 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 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), and a copy of the 2005 questionnaire (Appendix C). Tables presenting the 2005 survey results by publicity category are available separately from EPA. The results presented in this report were in all cases weighted to obtain results applicable at the national level (please refer to Appendix A for details on the weighting methodology).

METHODOLOGY OVERVIEW

During September 2005, 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 (a paper survey only was fielded in the first year). 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 the survey included all households in the largest Nielsen Designated Market Areas® (DMAs) that together accounted for about 70 percent of U.S. television households, which in 2005 encompassed the 57 largest DMAs. In addition, CEE members may sponsor more intensive sampling (i.e., an over sample) in selected localities, referred to here as *sponsor areas*. In 2005, the state of New Jersey was a sponsor area.

To facilitate comparisons across years, the national results were based only on data collected from respondents from the top 57 DMAs. In 2005, all respondents resided in the top 57 DMAs. The only sponsor area, the state of New Jersey, contained only large DMAs. All of the top 57 DMAs that are located in the state of New Jersey were over sampled.¹ The data from these respondents, as well as from the other respondents in the top 57 DMAs, received an appropriate weight in the analysis in order to generate valid national results and comparisons against data from other years.

As in previous years' studies, the DMAs in the sampling frame were classified by publicity category so as to be able to consider the effect of publicity on national awareness. The same publicity classification procedure used in the past four years was used this year.² 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

¹ For a sponsor area, the sampling frame is not limited to the largest DMAs; it includes the entire sponsor area. However, the state of New Jersey contained only large DMAs.

² Between September 2004 and 2005, four of the top 57 DMAs changed publicity category: Albuquerque-Santa Fe, Austin, Las Vegas, and Minneapolis-St. Paul. In September 2005, Albuquerque-Santa Fe was classified as other and the remaining three DMAs were classified as high publicity. In September 2004, Albuquerque-Santa Fe was classified as low publicity and the remaining three DMAs were classified as other.

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:

- **Recent:** The two years of activity must include the time period during which the survey was in the field.
- **Sustained:** The two 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.³ There were two areas: the sponsor area (the state of New Jersey) and the area consisting of those among the top 57 DMAs located outside the sponsor area. The CEE members who fund the over sample 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 publicity categories present in a sponsor area proportional to population. In the area consisting of those among the top 57 DMAs located outside the sponsor area each publicity category was allocated approximately 333 sampling points.

This report presents the 2005 survey results at the national level and often by publicity category. The publicity category results provide evidence of the effectiveness of EPA's model for increasing 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.

³ A sponsor area is also further stratified by large versus small DMA as well as any stratification requested by the CEE member funding the over sample. In 2005, the only sponsor area (the state of New Jersey) contained only large DMAs and no additional stratification was requested.

KEY FINDINGS

RECOGNITION

In 2005, 63 percent of households recognized the ENERGY STAR label when shown the label (i.e., *aided recognition*). Forty-three percent of households correctly assessed 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 were said to recognize the ENERGY STAR label if they have seen or heard of the label before the survey. Recognition of the label was explored 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 2005 and 2004 surveys are summarized in the following table. Both aided and unaided recognition of the ENERGY STAR label were similar in 2005 and 2004.

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

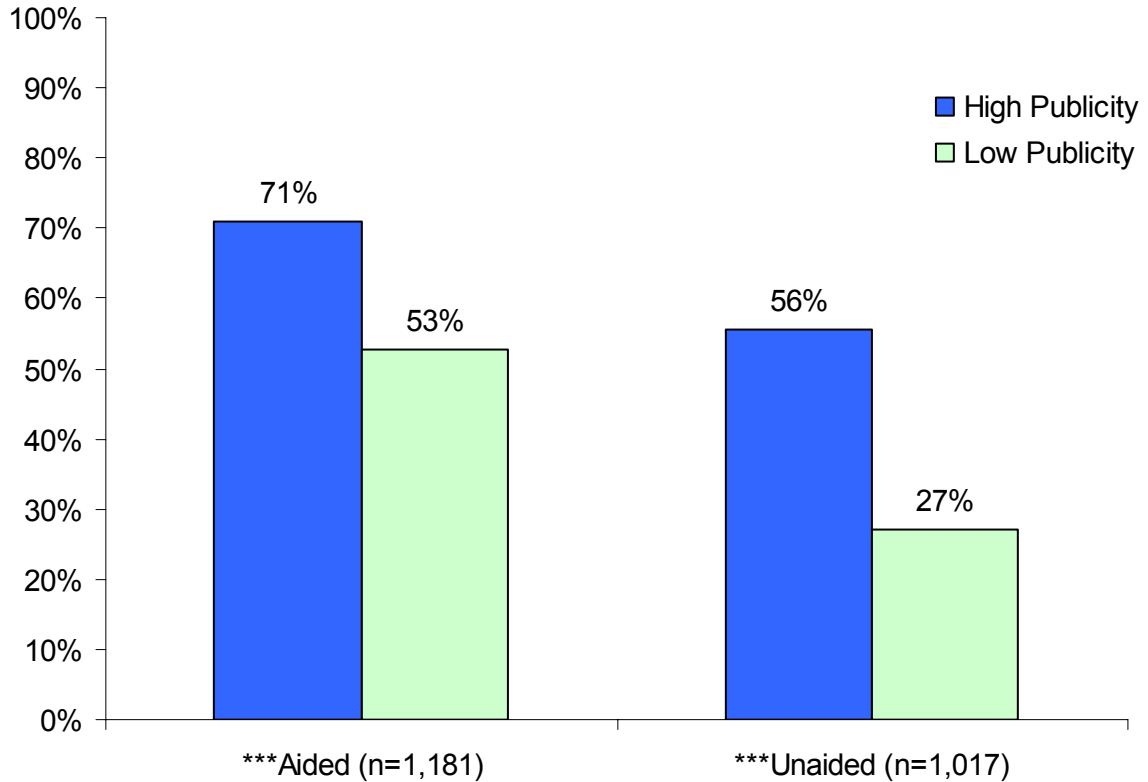
Recognize ENERGY STAR Label	2005		2004	
	Aided (n=1,181)	Unaided (n=1,017)	Aided (n=1,515)	Unaided (n=1,359)
Yes	63%	43%	64%	41%
Standard error	1.9%	2.1%	1.7%	1.8%

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

Recognition by Publicity Category

Both aided and unaided recognition were higher in high-publicity areas than in low-publicity areas. After being shown the ENERGY STAR label, 71 percent of households in high-publicity areas recognized the label versus 53 percent in low-publicity areas. Unaided recognition was 56 percent in high-publicity areas compared with 27 percent in low-publicity areas.

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

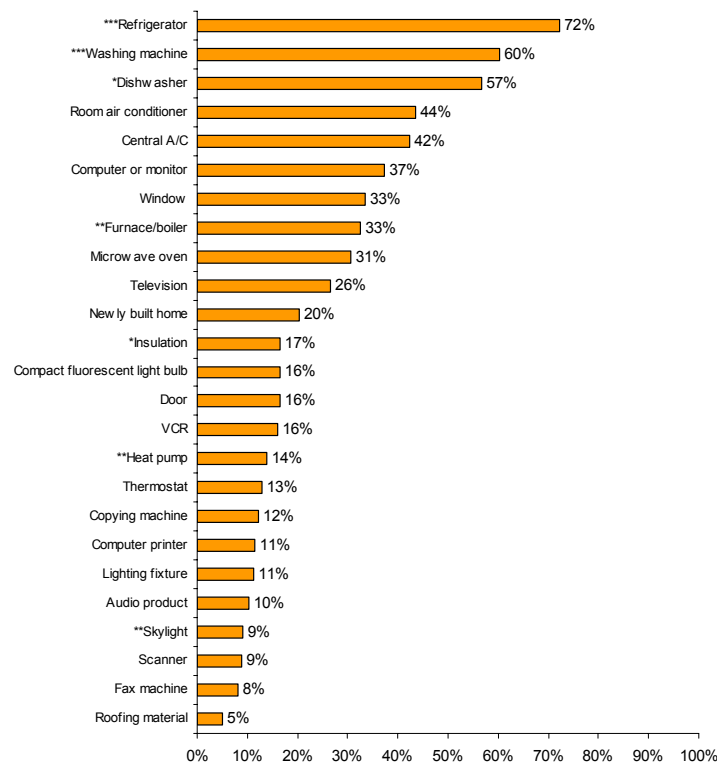


*** High- and low-publicity area proportions are statistically different from each other at the 1-percent level of significance (p-value \leq 0.01).

Product Associations

Products supported by regional energy efficiency programs (refrigerators, washing machines, dishwashers, etc.), showed strong association with the ENERGY STAR label. Seventy-two percent of households have seen the label on refrigerators. At about 60 percent, washing machines and dishwashers were the products next most commonly associated with the ENERGY STAR label. Room and central air conditioners followed with percentages in the low 40s. Thirty-one percent of households associated microwave ovens with the ENERGY STAR label, which do not in fact have an ENERGY STAR specification (although of all appliances microwave ovens were the least often associated with the label). Products that showed an increase in association with the ENERGY STAR label from 2004 to 2005 were refrigerators, washing machines, dishwashers, furnace/boilers, insulation, heat pumps, and skylights.

Product Association with the ENERGY STAR Label
(Base = Recognize label (aided), n=592)



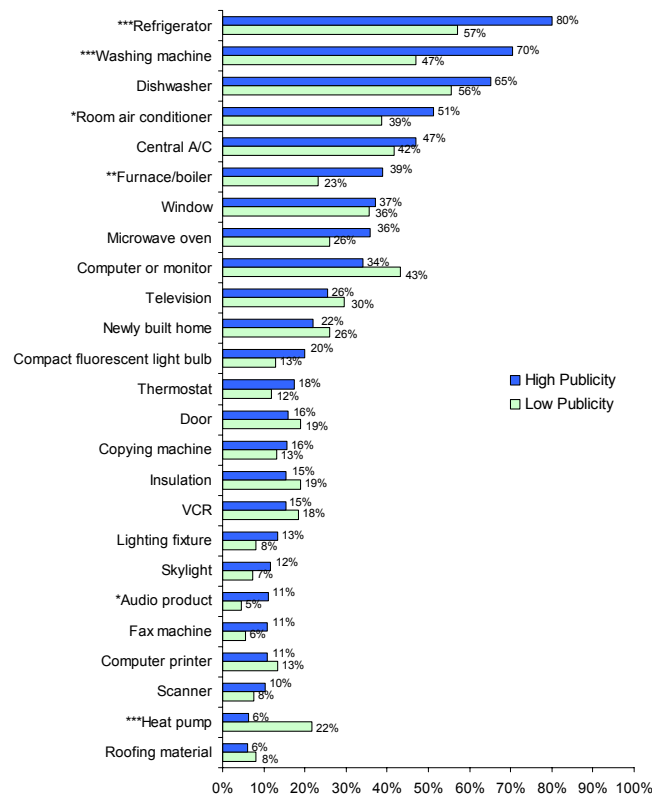
Note: Q5(a, b, and c): "Now we're going to ask you about several groups of products. As you review the list, please select each of the products, product literature, or packaging on which you have seen the ENERGY STAR label."

- *** 2005 and 2004 proportions are statistically different from each other at the 1-percent level of significance ($p\text{-value} \leq 0.01$). The proportion of households in 2005 is larger than in 2004.
- ** 2005 and 2004 proportions are statistically different from each other at the 5-percent level of significance ($p\text{-value} \leq 0.05$). The proportion of households in 2005 is larger than in 2004.
- * 2005 and 2004 proportions are statistically different from each other at the 10-percent level of significance ($p\text{-value} \leq 0.10$). The proportion of households in 2005 is larger than in 2004.

Product Associations by Publicity Category

For refrigerators, washing machines, room air conditioners, furnace/boilers, and audio products, a larger proportion of households in high- than in low-publicity areas associated a given product with the ENERGY STAR label. Regional energy efficiency program sponsors promoted refrigerators, washing machines, and room air conditioners heavily. Only for heat pumps did a smaller proportion of households in high- than in low-publicity areas associate the product with the ENERGY STAR label (p-value \leq 0.10).⁴ This result was seen for heat pumps last year (2004) as well.

Product Association with the ENERGY STAR Label by Publicity Category
(Base = Recognize label (aided), n=592)



*** 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).

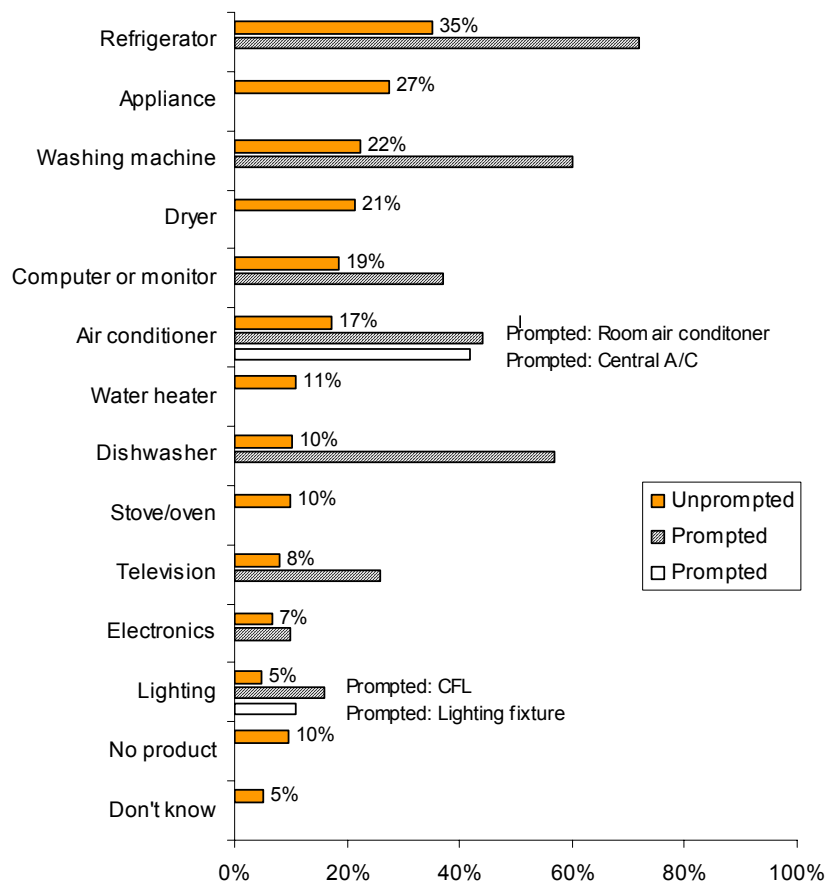
* High- and low-publicity areas proportions are statistically different from each other at the 10-percent level of significance (p-value \leq 0.10).

⁴ If the difference between the proportions of households in high- and low- publicity areas is not statistically significant at the 10 percent level (p-value \leq 0.10), we conclude the proportions are similar. That is, the difference between the two proportions is within the bounds that would be expected from chance variation in a random sample. Considering products for which the estimated proportion of households in high-publicity areas was smaller than in low-publicity areas, only for heat pumps was the difference between the two proportions statistically significant at the 10 percent level.

Product Associations Unprompted

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?” (QA). The figure below presents the results for this question (*unprompted*) as well as for the question that asked survey respondents to indicate whether or not they have seen the ENERGY STAR label on specific products (*prompted*). Unprompted, refrigerators showed the strongest association with the label at 35 percent, followed by “appliances” at 27 percent. The next most strongly associated unprompted products were washing machines, dryers, computers or monitors, and air conditioners, ranging between 17 and 22 percent. Most products that showed a strong association with the ENERGY STAR label unprompted also showed a strong association with the label prompted. However, the list of unprompted products includes several products that do not have an ENERGY STAR specification: dryers, water heaters, and stoves or ovens. In addition, when unprompted, dishwashers did not show a strong association with the ENERGY STAR label, but when prompted they were the third most commonly associated product.

Product Association with the ENERGY STAR Label Unprompted
(Base = Recognize label (aided), n=574)



UNDERSTANDING

In 2005, 70 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 was small compared with the proportion that exhibited a high understanding, 13 versus 57 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 the 2005 and 2004 surveys are provided in the following table. The proportion of households with at least a general understanding of the ENERGY STAR label was similar in 2005 and 2004 (70 percent compared with 68 percent).

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

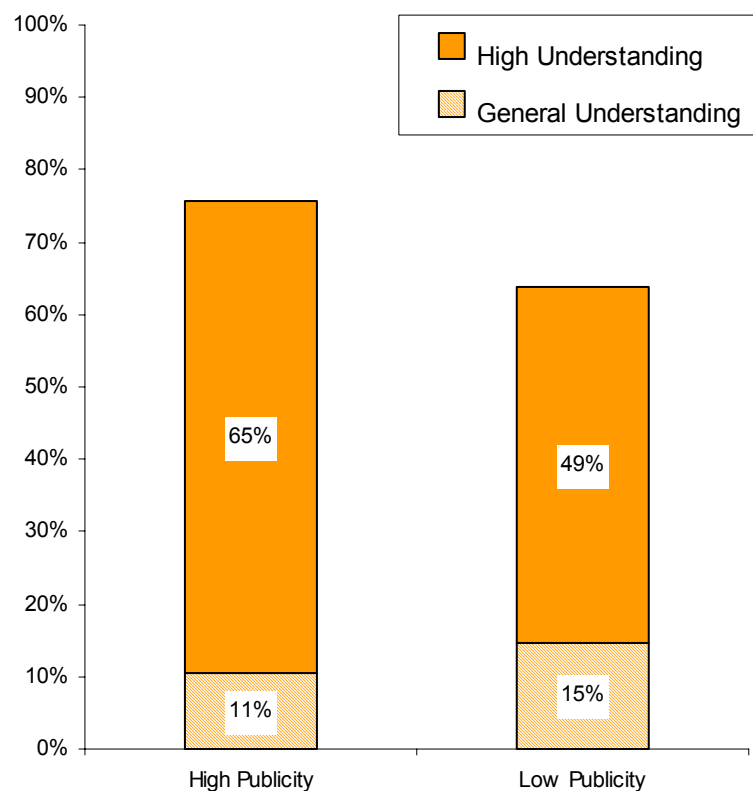
Level of Understanding of the Label	2005 (n=1,225)	2004 (n=1,579)
High understanding	57%	55%
General understanding	13%	13%
No understanding	30%	32%
Total	100%	100%

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 labels on the left. Type the messages that come to mind when you see the ENERGY STAR labels."

Understanding by Publicity Category

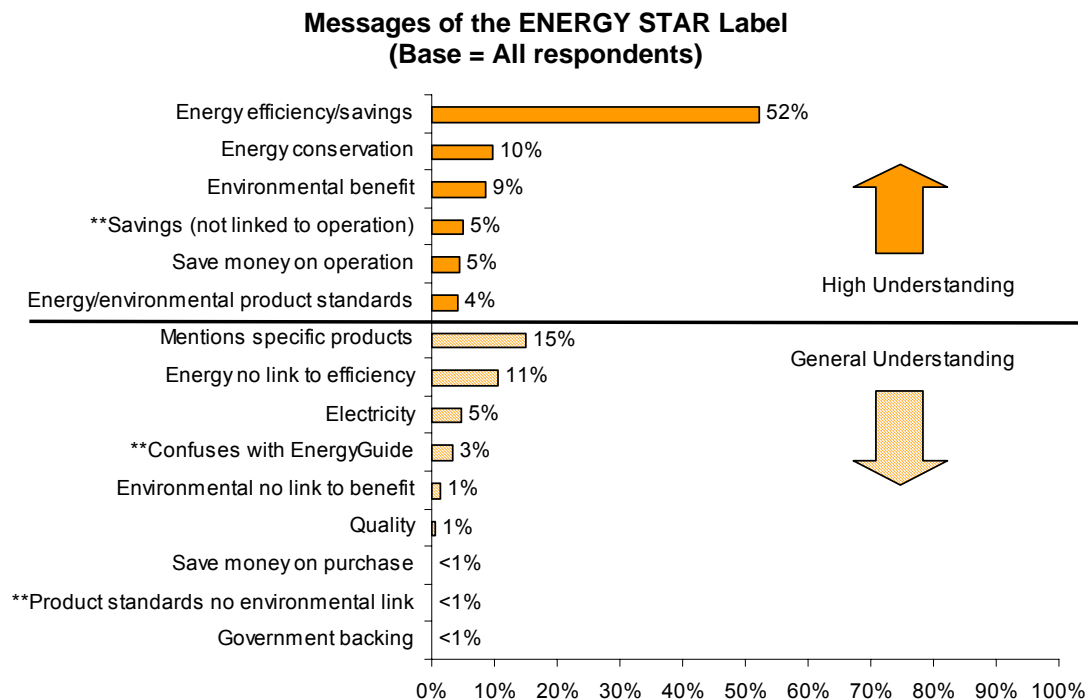
Understanding of the ENERGY STAR label was greater in high- than in low-publicity areas. Seventy-six percent of households in high-publicity areas had at least a general understanding of the label compared with 64 percent of households in low-publicity areas. (The difference is statistically significant at the 1-percent level, p-value = 0.006.) 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)



Label Messaging

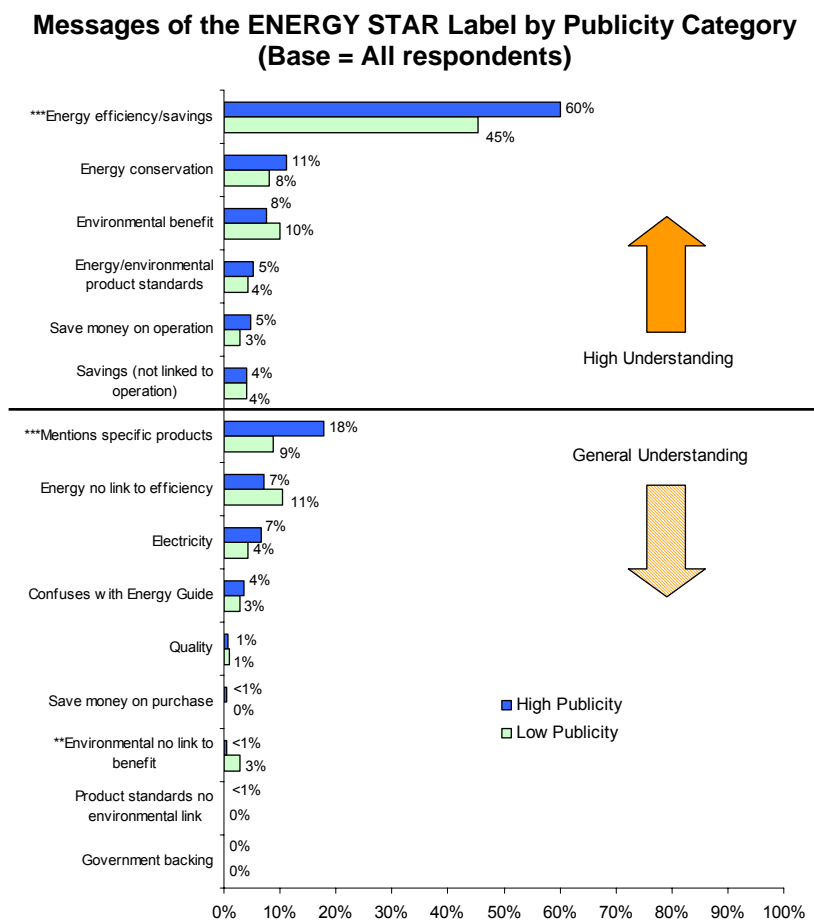
Open-ended responses to the questions on which the above analysis of the level of understanding of the ENERGY STAR label was based are also an indicator of how effectively EPA communicates its messages through the label. By far, the most common message associated with the label is “energy efficiency or energy savings,” which is considered high understanding of the label. Fifty-two percent of households surveyed associated the ENERGY STAR label with this message. The second most common message is “associating specific products with the ENERGY STAR label,” at 15 percent of households. Identification of this message with the label is considered general understanding of the label.



** 2005 and 2004 proportions are statistically different from each other at the 5-percent level of significance ($p\text{-value} \leq 0.05$). For the messages “savings (not linked to operation)” and “confuses with Energy Guide,” the proportion of households in 2005 is larger than in 2004. For the message “product standards no environmental link,” the proportion of households in 2005 is smaller than in 2004.

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 two messages, however, a larger proportion of households in high- than in low-publicity areas associated the message with the label. These two messages were “energy efficiency or energy savings” and “associating specific products with the ENERGY STAR label.” In addition, a smaller proportion of households in high- than in low-publicity areas associated the message “environmental no link to benefit” with the ENERGY STAR label. Associating “energy efficiency or energy savings” with the ENERGY STAR label is considered high understanding of the label. Associating either specific products or “environmental no link to benefit” 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 ($p\text{-value} \leq 0.01$).

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

Understanding 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 who did not recognize the label. Seventy-eight percent of households that recognized the ENERGY STAR label had at least a general understanding of the label, while among households that did not recognize the label 57 percent had at least a general understanding of it.

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

Recognize ENERGY STAR Label Aided	At Least General Understanding of Label
Yes	78%
No	57%
Difference (Yes minus No)	22%
p-value	<0.0001

INFLUENCE

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

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

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 in a product category that has an ENERGY STAR specification
- Of the households that recognized the label and purchased a product in a relevant category, the proportion that knowingly purchased an ENERGY STAR product

The result is that 24 percent of all households knowingly purchased an ENERGY STAR product in the past twelve months. This proportion is 6 percentage points lower than it was in 2004, at 24 versus 30 percent (the difference is statistically significant at the 5-percent level, $p\text{-value}=0.036$).

A decrease in the proportion of all households that knowingly purchased an ENERGY STAR product could be due to a decrease in any of the three proportions listed above between 2004 and 2005. A close look at the survey results shows that the first two of these proportions were similar in 2005 and 2004. However, the third proportion was smaller in 2005 than in 2004. In 2005, considering only households that recognized the label and purchased a product in a relevant category, 57 percent knowingly purchased an ENERGY STAR product in the past twelve months. This proportion is 10 percentage points smaller than the 67 percent proportion noted in 2004 (this 10 percentage point difference is statistically significant at the 5-percent level, $p\text{-value}=0.031$).

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

Purchased ENERGY STAR product	2005 (n=362)	2004 (n=448)
Estimate (yes)	57%	67%
Standard error	3.6%	3.2%

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 similar proportion of *all* households knowingly purchased an ENERGY STAR product in high- as in low-publicity areas, 28 and 23 percent respectively.

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

Publicity Category	% Households
High	28%
Low	23%
Difference (High minus Low)	5%
p-value	0.353

Influence of the ENERGY STAR Label

In 2005, for 63 percent of households that knowingly purchased an ENERGY STAR-labeled product the label influenced at least one of their purchase decisions "very much" or "somewhat." For another 12 percent of households the label influenced their purchase decisions at most "slightly."

The results on the influence of the ENERGY STAR label on purchasing decisions for both the 2005 and 2004 surveys are provided in the next table. In 2005, the questionnaire inquired separately about the influence of the ENERGY STAR label for each ENERGY STAR-labeled product purchased. On the other hand, in 2004, a single question was asked: "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?" Given the difference in how the data were collected in the two years, it is problematic to interpret the differences in the results.

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

Influence of the Label on Purchasing Decisions	2005 (n=186) Maximum	2004 (n=300)
Very much	31%	27%
Somewhat	32%	27%
Slightly	12%	20%
Not at all	25%	26%
Total	100%	100%

Note: In 2005, Q8: "For each ENERGY STAR-labeled product you purchased, how much did the ENERGY STAR label influence your purchase decision?" In 2004, 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

The ENERGY STAR label influenced the purchase decisions of a larger proportion of households in high- than in low-publicity areas. The purchase decisions of 39 percent of households in high-publicity areas were influenced "very much" by the label, compared to 20 percent in low-publicity areas. Adding to these proportions the proportions of households for which the ENERGY STAR label was somewhat influential in their purchase decisions, the proportion of households influenced by the label is still larger in high- than in low-publicity areas (75 versus 52 percent). Lastly, the proportion of households influenced by the ENERGY STAR label remains larger in high- than in low-publicity areas after including the proportions of households for which the label was slightly influential in their purchase decisions (84 versus 63 percent).

**Maximum Influence of the ENERGY STAR Label on Purchase Decisions
by Publicity Category
(Base = Recognize label (aided) and ENERGY STAR purchasers, n=186)**

Publicity Category	Very much	Very much or somewhat	Very much, somewhat, or slightly
High	39%	75%	84%
Low	20%	52%	63%
High-Low	19%	23%	21%
p-value	0.069	0.018	0.060

Rebate and Financing Influence

Twelve percent of households that knowingly purchased an ENERGY STAR-labeled product received rebates or reduced-rate financing. Of these households, 43 percent would have been “very likely” to purchase the ENERGY STAR product if financial incentives had not been available. Another 49 percent would have been “somewhat likely.” This leaves only 8 percent that would have been “slightly likely” (6 percent) or “not at all likely” (2 percent).

Influence of Rebates and Financing on Purchasing Decisions
(Base = Recognize label (aided), ENERGY STAR purchaser, and received an incentive, n=22)

Likelihood Purchase ENERGY STAR Product Without Financial Incentive	% Households
Very likely	43%
Somewhat likely	49%
Slightly likely	6%
Not at all likely	2%
Total	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

In 2005, 76 percent of households that knowingly purchasing an ENERGY STAR-labeled product would be “very likely” or “somewhat likely” to recommend ENERGY STAR products to a friend. Only 5 percent would be “not at all likely.”

The results on loyalty to the ENERGY STAR label for both the 2005 and 2004 surveys are shown in the next table. The proportion of households at least “somewhat likely” to recommend ENERGY STAR products to a friend was similar in 2005 and 2004, 76 and 73 percent, respectively.

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

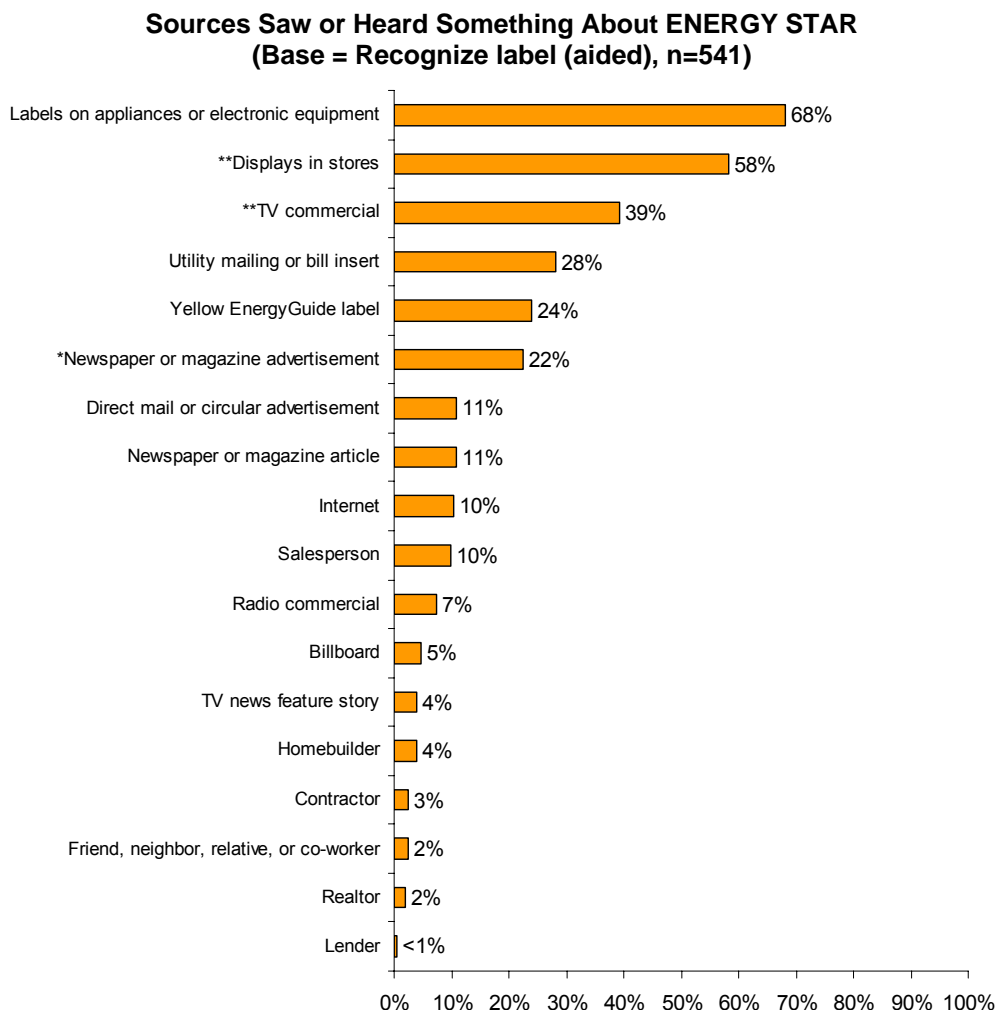
Likelihood Recommend ENERGY STAR Products	2005 (n=187)	2004 (n=268)
Very likely	39%	41%
Somewhat likely	37%	32%
Slightly likely	19%	18%
Not at all likely	5%	9%
Total	100%	100%

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

INFORMATION SOURCES

Sources Seen

Sixty-eight percent of households have seen something about ENERGY STAR on appliance or electronic equipment labels, followed by store displays at 58 percent. Thirty-nine percent of households heard or saw something about ENERGY STAR on TV commercials. Between 22 and 28 percent of households saw something about ENERGY STAR on or in utility mailings or bill inserts, Energy Guide labels, or in newspaper or magazine advertisements. A larger proportion of households in 2005 than in 2004 saw something about ENERGY STAR on store displays or in newspaper/magazine advertisements, or heard or saw something about ENERGY STAR on TV commercials.



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

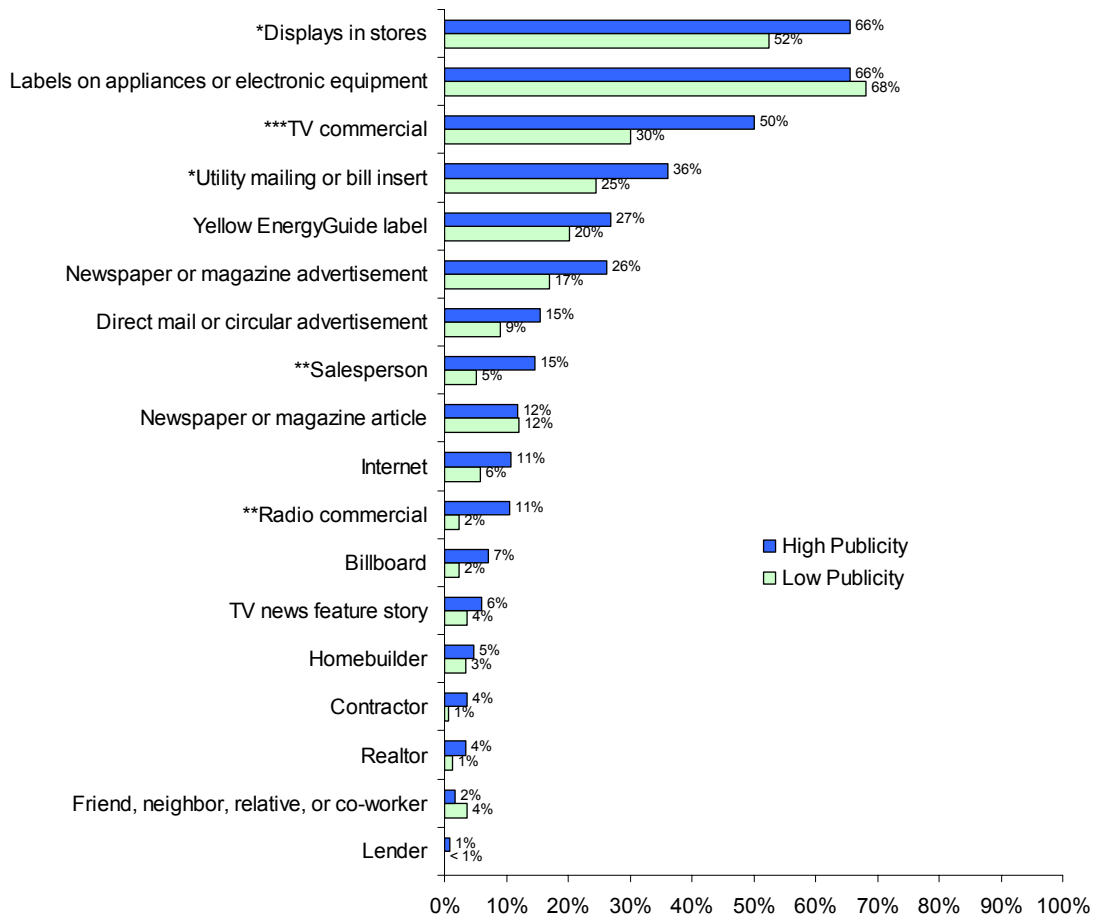
** 2005 and 2004 proportions are statistically different from each other at the 5-percent level of significance (p-value \leq 0.05). The proportion of households in 2005 is larger than in 2004.

* 2005 and 2004 proportions are statistically different from each other at the 10-percent level of significance (p-value \leq 0.10). The proportion of households in 2005 is larger than in 2004.

Sources seen by Publicity Category

For several sources, the proportion of households that heard or saw something about ENERGY STAR was larger in high- than in low-publicity areas. This was the case for store displays, TV commercials, utility mailings or bill inserts, salespersons, and radio commercials. Three of these five sources are means of mass communication, and the remaining two involve stores.

Sources Saw or Heard Something About ENERGY STAR by Publicity Category
(Base = Recognize label (aided), n=541)



*** 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).

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

APPENDIX A: DETAILED METHODOLOGY

During September 2005, the Consortium for Energy Efficiency (CEE) fielded a questionnaire to obtain information at the national level on consumer awareness of the ENERGY STAR label. The questionnaire was similar to the Internet/WebTV questionnaires fielded in previous years (2001, 2002, 2003, 2004). As in the five previous years, CEE and its sponsoring members made the survey data publicly available. In 2001, a rigorous comparative analysis of the results obtained via a mail versus an Internet/WebTV survey was conducted. The results from the two survey methods were comparable for most major indicators.⁵ Results from that time frame were also analogous to telephone surveys with aided recognition.

This report discusses the results of the CEE 2005 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 13 through September 27, 2005.

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

1 QUESTIONNAIRE DESIGN

In 2005, 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 random digit dial and recruited by telephone. Participants in this survey were down-selected from the entire panel by random digit dial and also 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 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

⁵ National Analysis of CEE 2001 ENERGY STAR Household Surveys.

Internet and WebTV. They receive three to four short questionnaires each month, and are expected to respond to a certain percentage of them.

Data collected using the 2005 Internet/WebTV questionnaire may be compared with data collected using the Internet/WebTV questionnaires fielded in previous years, for which CEE was also responsible. Additional results from questions added to the survey for 2005 are discussed in Section 2 of this appendix, sampling in Section 3, data collection in Section 4, and the national analysis in Section 5.

CEE had several broad objectives in designing the 2005 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 2005 survey against those from the 2004 CEE survey.

The 2005 Internet/WebTV questionnaire addressed the following:

- Respondent recognition of the ENERGY STAR label
- Understanding of and key messages communicated by the ENERGY STAR label
- Products on which respondents have seen the label
- Products that respondents have shopped for or 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
- 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.)
- Likelihood of recommending ENERGY STAR-labeled products to a friend
- Recognition and understanding of the yellow *Energy Guide* labels

The 2005 Internet/WebTV questionnaire is very similar to the 2004 questionnaire, although there were a few changes. In 2005 the questions addressing sources of heating and cooling product information and sources of information about other types of energy-using products were dropped. Questions were added that address:

- The types of products and services consumers think of when they think of the ENERGY STAR label (new QA)
- Who consumers think decides if a product deserves the ENERGY STAR label (new QB)
- Consumer satisfaction with the energy-using products they recently purchased (new QC)

The phrasing of a number of questions was also changed from previous years. For example, in 2005 the influence of the ENERGY STAR label on consumers' purchase decisions was asked separately for each ENERGY STAR-labeled product purchased (i.e., "For each ENERGY STAR-labeled product(s) you purchased") versus as a single question (i.e., "For any ENERGY STAR-labeled product(s) you purchased").

In 2005 the survey once again contained an experimental section presenting a series of statements with which respondents were asked how strongly they agree or disagree. This section is designed to measure consumers' perceptions of ENERGY STAR-labeled products (Q16a-Q16m). Respondents were asked to rate on a five-grade scale how strongly they agreed or disagreed with the following statements:

- ENERGY STAR-labeled products provide me with more benefits than products without the ENERGY STAR label.
- All new products use energy just as efficiently whether or not they have the ENERGY STAR label.
- ENERGY STAR-labeled products offer better value than products without the label.
- I prefer to purchase ENERGY STAR-labeled products whenever I can.
- I would not go out of my way to purchase ENERGY STAR-labeled products.
- Buying ENERGY STAR-labeled products makes me feel like I'm helping to protect the environment for future generations.
- Buying ENERGY STAR-labeled products makes me feel like I'm acting responsibly.

- Buying ENERGY STAR-labeled products makes me feel like I'm contributing to society.
- Buying ENERGY STAR-labeled products makes me feel like I'm spending extra money for nothing.
- ENERGY STAR-labeled products deliver what they promise.
- ENERGY STAR-labeled products do not meet my needs.
- I consider myself loyal to ENERGY STAR-labeled products.
- I don't find any real difference in performance between products with the ENERGY STAR label and those without the label.

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. For example, although the 2000 and 2001 mail questionnaires begin by showing the ENERGY STAR label and asking about understanding and recognition of the label before asking other questions, respondents who read the entire questionnaire before completing it can potentially educate themselves in a limited way about the ENERGY STAR label, which may affect their responses.

The Internet/WebTV questionnaires (after questions about the yellow *Energy Guide* 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 obviously not possible with a telephone survey) and ask again about recognition and understanding. Responses to these questions should thus be comparable to those obtained through a mail survey where respondents are shown the label.

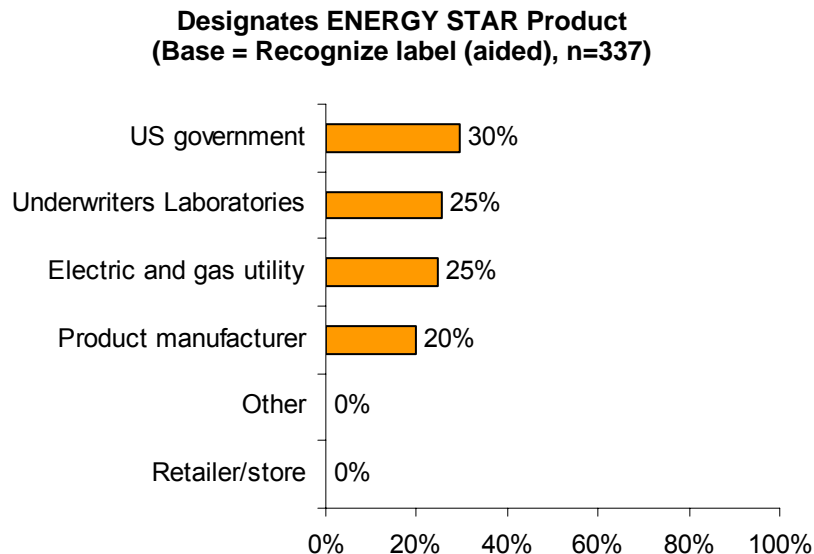
Another difference between a mail questionnaire and an Internet/WebTV questionnaire is that the latter—like a telephone questionnaire using computer-assisted telephone interviewing (CATI)—can program lines of questions based on responses to earlier questions. For example, respondents to an Internet/WebTV 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.

2 ADDITIONAL RESULTS FROM QUESTIONS ADDED TO THE SURVEY FOR 2005

2.1 ENERGY STAR Designation

Thirty percent of households that recognized the ENERGY STAR label (aided) thought that the U.S. Government decides if a product deserves the label. Between 20 percent and 25 percent of households thought Underwriters Laboratories, electric and gas utilities, or product manufacturers make this decision.

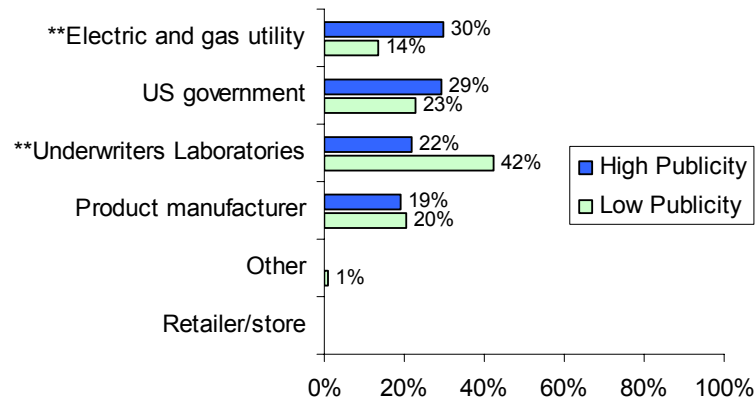


Note: QB: "As far as you know, who decides if a product deserves the ENERGY STAR label?"

ENERGY STAR Designation by Publicity Category

A similar proportion of households in high- and low-publicity category areas thought that the U.S. Government decides if a product deserves the ENERGY STAR label, 29 or 23 percent. At the same time, a larger proportion of households in high- than in low-publicity areas thought that electric and gas utilities make this decision, 30 percent compared with 14 percent. This result is not surprising given the role electric and gas utilities often play in promoting ENERGY STAR products in high-publicity areas. On the other hand, a larger proportion of households in low- than in high-publicity areas thought that Underwriters Laboratories decides if a product deserves the ENERGY STAR label (42 percent compared with 22 percent).

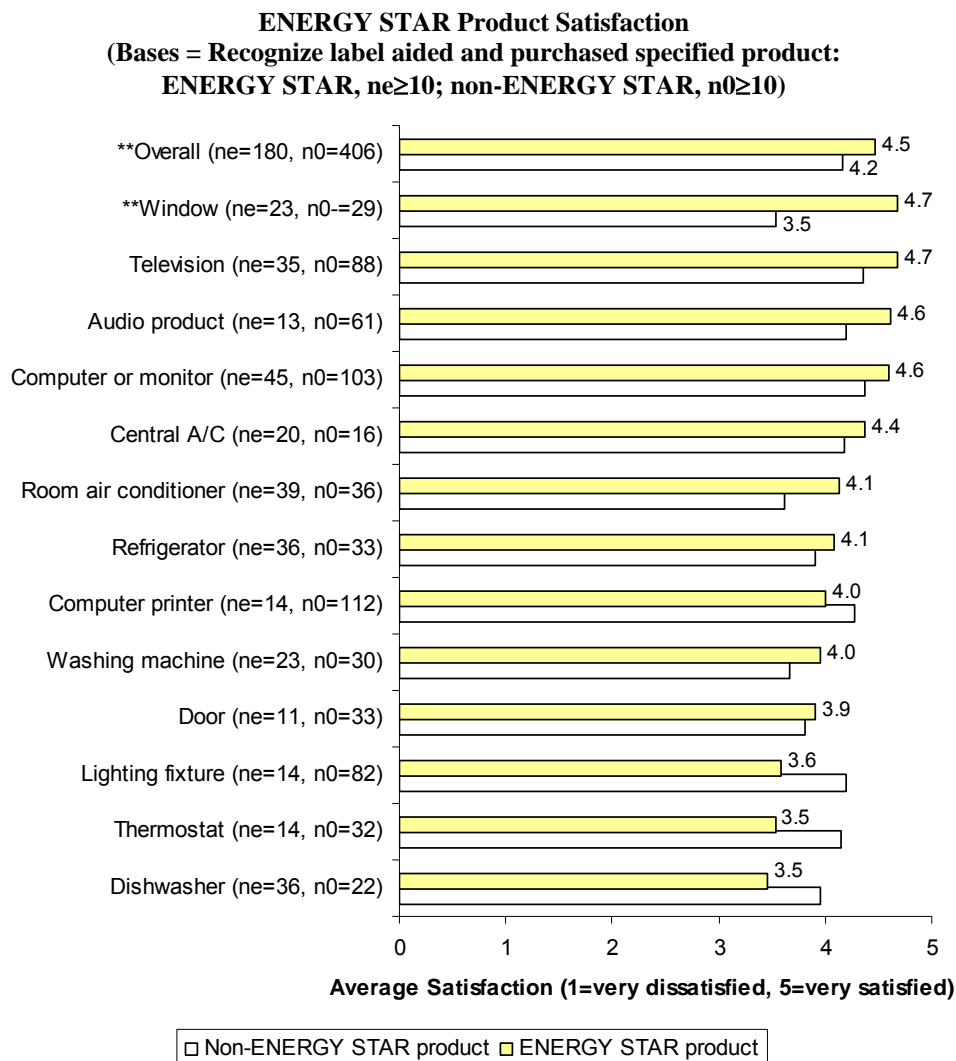
Designates ENERGY STAR Product by Publicity Category
(Base = Recognize label (aided), n=337)



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

2.2 ENERGY STAR Product Satisfaction

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 ($p\text{-value} \geq 0.10$). There was one notable exception to this general trend: households that knowingly purchased windows with an ENERGY STAR label were more satisfied than households that purchased windows without the label. On a scale of 1 to 5, where 1 means “very dissatisfied” and 5 means “very satisfied,” ENERGY STAR-labeled windows had an average satisfaction rating of 4.7 compared with windows without the label at 3.5. However, considering products in relevant categories overall, households that knowingly purchased a product with an ENERGY STAR label were slightly more satisfied than households that purchased a product without the label, with average ratings of 4.5 and 4.2 respectively.



2.3 Consumer Perceptions

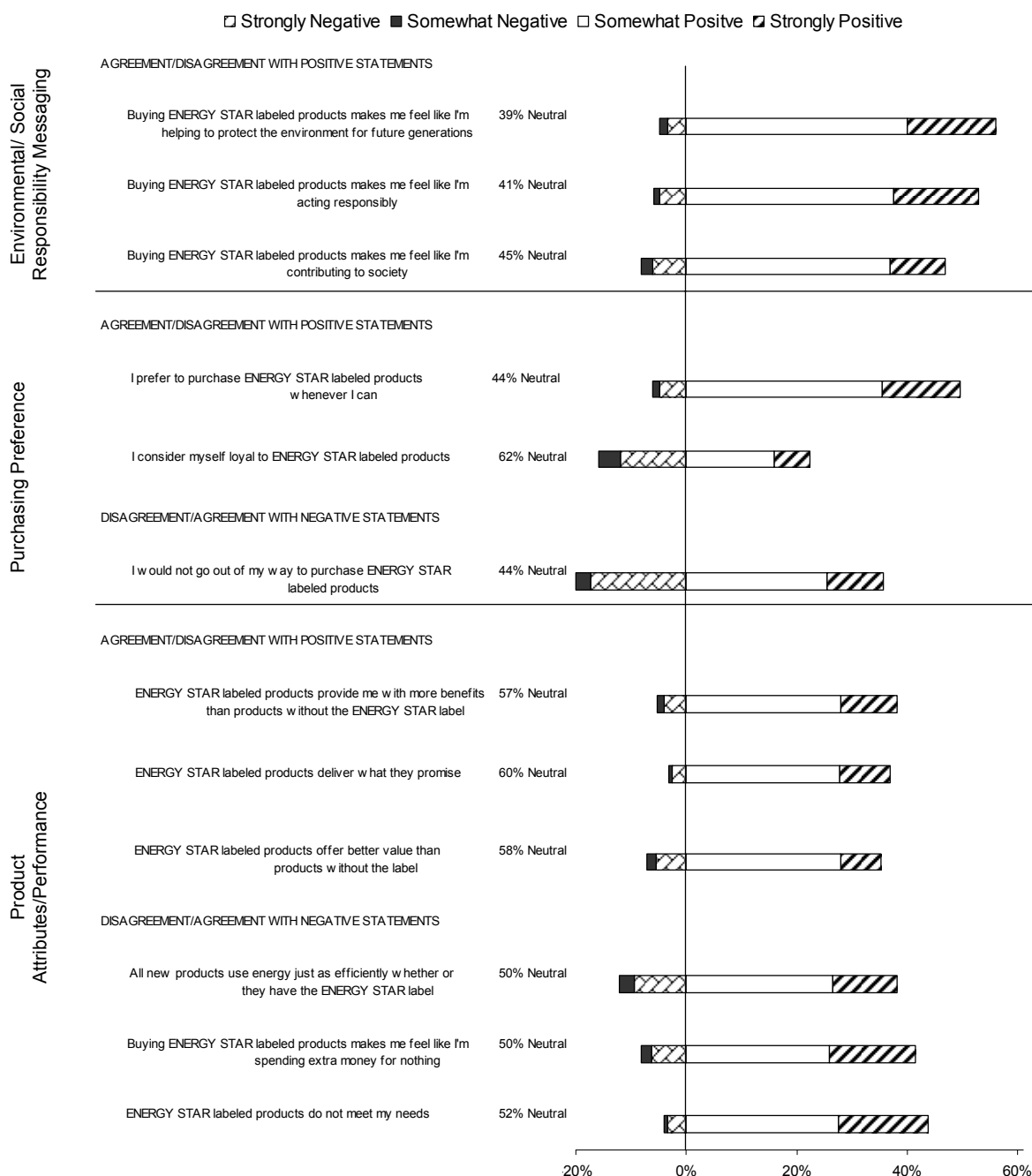
Survey respondents that recognized the ENERGY STAR label (aided) were asked to indicate how strongly they agreed or disagreed with various positive and negative statements about ENERGY STAR-labeled products.⁶ The statements were shown to respondents in random order; however, for discussion purposes they can be grouped into three categories:

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

As shown in the figure below, few statements elicited “very” strong agreement or disagreement with either positive or negative statements. Respondents offered neutral (“neither agree nor disagree”) responses to statements at rates between 39 and 62 percent. However, the figure shows that in general respondents tended to somewhat agree with positive statements about the ENERGY STAR label and somewhat disagree with negative statements about the ENERGY STAR label.

⁶ Questions Q16a through Q16m.

Response to Categorical Statements Regarding Messaging, Purchasing, and Product Attributes (Base = Recognize label (aided), n=706)



Respondents were asked whether they strongly disagreed, somewhat disagreed, neither agreed nor disagreed, somewhat agreed, or strongly agreed with both positive and negative statements regarding the ENERGY STAR label. To facilitate visual comparison across both positive and negative statements, this chart presents agreement with positive statements and disagreement with negative statements as a positive perception of the ENERGY STAR label and disagreement with positive statements and agreement with negative statements as a negative perception of the ENERGY STAR label.

Those responding "neither agree nor disagree" to both the positive and negative statements are considered to have a neutral perception of the ENERGY STAR label; in the chart above percentages for this category are shown as text and not depicted in the bar graph.

The three statements addressing environmental/social responsibility messaging had the highest positive ratings, ranging between 47 percent and 56 percent (means ranging from 3.5 to 3.7 using a five-point scale, with 5 being the most favorable rating for this series of questions).⁷ Environmental/social responsibility messaging is a strong focus and intended message of national ENERGY STAR education campaign. In addition, high publicity areas showed slightly more positive ratings than low publicity areas for each of these statements ($p\text{-value}\leq.05$ in all three cases).

In statements regarding ENERGY STAR as a purchasing preference, the statement “I prefer to purchase ENERGY STAR-labeled products whenever I can” had a high positive rating at 50 percent (with a mean of 3.6 on the five-point scale, with 5 being the most favorable rating for this question). Increasing consumer purchasing preference for ENERGY STAR is an intended outcome of the national campaign. High publicity areas showed stronger positive ratings than low publicity areas for this statement ($p\text{-value}\leq.05$). Respondents were more neutral in their response to a statement about their loyalty to the ENERGY STAR label; respondents were also split in their willingness to go out of their way to purchase ENERGY STAR qualifying products, possibly indicating that product features, convenience, and availability remain important purchasing considerations.

Of the statements regarding product attributes and performance, the statement “All new products use energy just as efficiently whether or not they have the ENERGY STAR label” is of most direct relevance to the national campaign (one goal of which is to show that ENERGY STAR qualifying products are more efficient than non-qualifying models). Respondents disagreed with this statement 39% of the time and agreed with the statement 12% of time (50% neither agreed nor disagreed), indicating that more respondents than not consider that ENERGY STAR qualifying products use energy more efficiently than non-qualifying models.

It is difficult to categorize responses to the statement “I don’t find any real difference in performance between products with the ENERGY STAR label and those with out the label” as the statement itself is somewhat ambiguous. Lack of a difference in performance could be considered positively or negatively (i.e., could be interpreted that efficient features are not hampering overall product performance or could be interpreted that the difference in energy performance is not observed by the respondent). As such, this statement is not included in the figure below. If this question is used in future surveys, its intent could be made less ambiguous by wording it as follows: “I don’t find any real difference in *energy* performance between products with the ENERGY STAR label and those with out the label.”

Respondents’ reactions to other questions may be more dependent on the specific products purchased and manufacturer and/or other third-party market positioning

⁷ The positive rating is the proportion of households that recognize the ENERGY STAR label that agreed—either somewhat or strongly—with a positive statement, or the proportion of households that recognize the ENERGY STAR label that disagreed—either somewhat or strongly—with a negative statement.

and claims. For example, it is difficult to know whether the statement “ENERGY STAR-labeled products deliver what they promise” would be interpreted by respondents to mean energy performance claims or broader product claims by the manufacturer. Similarly, whether or not a respondent paid a price premium in purchasing an ENERGY STAR qualifying product is a factor of both the product purchased and whether the manufacturer bundled energy saving features with other premium features.

A forthcoming paper by Nevius (2006) discusses in greater detail the intended purpose and findings of this series of questions.⁸

3 SAMPLING

3.1 Designated Marketing Areas’ Publicity Categories

The same publicity classification procedure used in the past four years was used this year. A Nielsen Designated Marketing Area® (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 procedure was designed to identify three publicity categories and provide clear and verifiable definitions. The key working definitions are:

- **Recent:** The two years of activity must include the time period during which the survey was in the field.
- **Sustained:** The two 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.

⁸ Nevius, Monica J. 2006. "Steps on the Path to Loyalty: An Assessment of ENERGY STAR Brand Equity Indicators." In *Proceedings of the ACEEE Summer Study*, (forthcoming). Washington, D.C.: American Council for an Energy-Efficient Economy.

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.

3.2 Sample Design

The sample was a national sample. The sampling frame included all households in the largest DMAs that together accounted for about 70 percent of U.S. television households, which in 2005 encompassed the 57 largest DMAs. In addition, CEE members may sponsor more intensive sampling (i.e., an over sample) in selected localities, which are referred to here as *sponsor areas*. In 2005, the state of New Jersey was a sponsor area.⁹

The sample was stratified by area and within an area by publicity category.¹⁰ There were two areas: the sponsor area (the state of New Jersey) and the area consisting of those among the top 57 DMAs outside the sponsor area. This sample design resulted in five strata.

The CEE members who fund the over sample 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 publicity categories present in a sponsor area proportional to population. In the area consisting of the top 57 DMAs outside the 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 non-response.

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

⁹ For a sponsor area, the sampling frame is not limited to the large DMAs, but includes the entire sponsor area. However, the state of New Jersey contained only large DMAs.

¹⁰ A sponsor area is also further stratified by large versus small DMA as well as any stratification requested by the CEE member funding the over sample. In 2005, the only sponsor area (the state of New Jersey) contained only large DMAs and no additional stratification was requested.

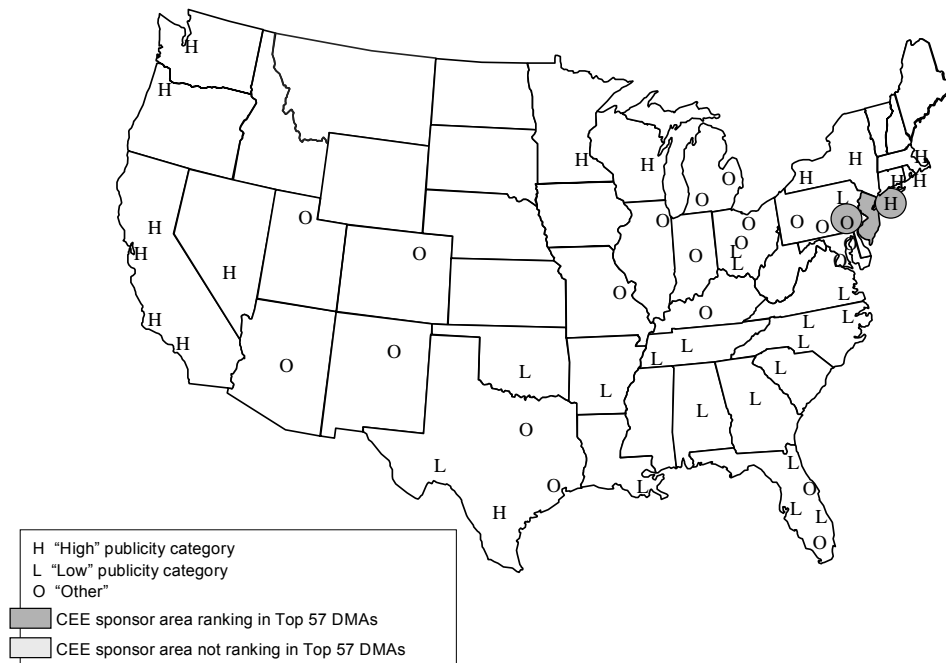
Large (Top 57) DMAs

Rank	DMA	TV Households 2004-2005		Publicity Category
		Number	% of US	
1	New York	7,355,710	6.712	High
2	Los Angeles	5,431,140	4.956	High
3	Chicago	3,417,330	3.118	Other
4	Philadelphia	2,919,410	2.664	Other
5	Boston (Manchester)	2,391,840	2.183	High
6	San Francisco-Oak-San Jose	2,359,870	2.153	High
7	Dallas-Ft. Worth	2,292,760	2.092	Other
8	Washington, DC (Hagrstwn)	2,241,610	2.045	Other
9	Atlanta	2,059,450	1.879	Low
10	Detroit	1,943,930	1.774	Other
11	Houston	1,902,810	1.736	Other
12	Seattle-Tacoma	1,690,640	1.543	High
13	Tampa-St. Pete (Sarasota)	1,671,040	1.525	Low
14	Minneapolis-St. Paul	1,665,540	1.52	High
15	Phoenix (Prescott), AZ	1,596,950	1.457	Other
16	Cleveland-Akron (Canton)	1,556,670	1.42	Other
17	Miami-Ft. Lauderdale	1,496,810	1.366	Other
18	Denver	1,401,760	1.279	Other
19	Sacramnto-Stktn-Modesto	1,315,030	1.2	High
20	Orlando-Daytona Bch-Melbrn	1,303,150	1.189	Other
21	St. Louis	1,216,700	1.11	Other
22	Pittsburgh	1,186,010	1.082	Other
23	Baltimore	1,087,730	0.993	Other
24	Portland, OR	1,086,900	0.992	High
25	Indianapolis	1,053,020	0.961	Other
26	San Diego	1,025,730	0.936	High
27	Hartford & New Haven	1,017,530	0.928	High
28	Charlotte	1,004,440	0.917	Low
29	Raleigh-Durham (Fayetvle)	966,720	0.882	Low
30	Nashville	916,170	0.836	Low
31	Kansas City	894,580	0.816	Other
32	Milwaukee	886,770	0.809	High
33	Cincinnati	883,230	0.806	Low
34	Columbus, OH	867,490	0.792	Other
35	Greenvll-Spart-Ashevl-And	813,210	0.742	Low
36	Salt Lake City	800,000	0.73	Other
37	San Antonio	748,950	0.683	Low
38	Grand Rapids-Kalmzoo-B.Crk	732,600	0.668	Other
39	West Palm Beach-Ft. Pierce	729,010	0.665	Low
40	Birmingham (Ann and Tusc)	717,300	0.655	Low
41	Norfolk-Portsmth-Newpt Nws	707,750	0.646	Low
42	Harrisburg-Lncstr-Leb-York	702,590	0.641	Other
43	New Orleans	675,760	0.617	Low
44	Memphis	658,250	0.601	Low
45	Oklahoma City	655,250	0.598	Low
46	Buffalo	651,970	0.595	High
47	Albuquerque-Santa Fe	649,680	0.593	Other
48	Greensboro-H.Point-W.Salem	648,860	0.592	Low
49	Providence-New Bedford	644,980	0.589	High
50	Louisville	637,680	0.582	Other
51	Las Vegas	614,150	0.56	High
52	Jacksonville, Brunswick	613,000	0.559	Low
53	Wilkes Barre-Scranton	592,560	0.541	Low
54	Austin	567,870	0.518	High
55	Albany-Schenectady-Troy	555,640	0.507	High
56	Dayton	537,710	0.491	Low
57	Little Rock-Pine Bluff	531,770	0.485	Low
Total		77,293,010	70.529	

Sponsor Area

Sponsor Area	Publicity Category	DMA (Large and Small)
New Jersey	High	Large: parts of New York DMA (Rank 1)
	Other	Large: parts of Philadelphia DMA (Rank 4)

Large (Top 57) DMAs and Sponsor Area by Publicity Category¹¹



¹¹ There were no large DMAs or sponsor areas in either Alaska or Hawaii.

3.3 Weighting Procedures

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

This sampling weight was then corrected for survey non-response. The correction for survey non-response is analogous to the adjustment for differences in the Internet/WebTV panel from the population of U.S. households. 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 groups and scaled down over-represented groups in the sample of panel survey completes. This more closely aligned the sample of survey completes with the basic demographic characteristics of the entire sampling frame for the study.

4 DATA COLLECTION

4.1 Survey Fielding Period

The survey began on September 13 and closed on September 27, 2005.

4.2 Response Rate

The response rate was 22 percent for the CEE 2005 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 2005 ENERGY STAR Household Survey, the return rate was 76 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 29 percent. Thus, the response rate for the CEE 2005 ENERGY STAR Household survey was the product of the survey-specific return rate of 76 percent and the recruitment rate of 29 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	1,618
Completed	1,225
Return rate	76%
Recruitment rate	29%
Response rate	22%

5 NATIONAL ANALYSIS

5.1 DMAs Included

To facilitate comparisons across years and to ensure national results, the analyses presented in this report were based only on data collected from respondents from the 57 largest DMAs. In 2005, all respondents resided in the top 57 DMAs. The only sponsor area, the state of New Jersey, contained only large DMAs. All of the top 57 DMAs that are in the state of New Jersey were over sampled. The data from these respondents, as well as from 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.

5.2 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 to that question or refusals to answer that question. In other words, 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. This approach essentially assumes that “don’t know” responses and refusals are uninformative (i.e., if those who responded “don’t know” to a given question or refused to answer had instead provided a valid response to the question, the distribution of households over the valid set of responses would not change).

5.3 Aided Recognition

As the note following the table that presented the results for aided recognition of the ENERGY STAR label indicates, the determination of *aided* recognition was based on the responses to five questions. Specifically:

- If a respondent answered ES3A, ES3B, ES3C, ES3D, or ES6 “yes,” then they were considered to recognize the ENERGY STAR label (aided).
- If a respondent did not answer ES3A, ES3B, ES3C, or ES3D “yes” and they answered ES6 “no,” they were considered not to recognize the label (aided).

- If a respondent did not answer ES3A, ES3B, ES3C, or ES3D “yes” and they answered ES6 “don’t know,” or they refused to answer ES6, they were not included in the analysis of aided recognition. That is, in this analysis their data were set to missing.

APPENDIX B: DEMOGRAPHICS

The analysis presented in this appendix outlines how the weighted survey demographic data corresponds to 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 Internet/WebTV panel, strives to create a panel that is representative of all U.S. households, the panel will contain subjects and their associated biases that are receptive to the Internet/WebTV incentive-for-service tradeoff.

The weights used in the analysis attempted to account for differences between the Internet/WebTV panel and the population of U.S. households and for survey non-response. 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 detailed comparisons are provided in tables at the end of this appendix.

Summary of Distribution Comparisons

Demographic Characteristic	Largest Difference (Absolute Value): Survey Estimate Less Census %	
Number of persons in household	One	-7.6%
Householder/respondent age	65 or older	-6.5%
Householder/respondent gender	Gender	+/- 1.1%
Dwelling type	Single-family, attached	3.4%
Own/rent	Own/rent	+/- 5.6%
Household annual income	\$25,000-\$49,000	4.2%

The largest difference (in absolute value) between the weighted survey data and the national Census data is about 8 percentage points for one-person households (19 versus 27 percent). Householders 65 years or older who own/rent are not far behind with maximum differences of 7 and 6 percentage points, respectively, between the weighted survey data and the national Census data. The combined under-representation of one-person households and householders 65 years or older and the inaccurate mix of own/rent should not bias the survey results in a particular direction. For the remaining demographic characteristics, the largest difference between the weighted survey data and the national census data range between 1 and 4 percentage points.

Household Size Distribution

Number of Persons in Household	Census % Dwelling Units ^a	Survey Estimate Minus Census % Dwelling Units
One	27%	-7.6%
Two	33%	1.5%
Three	16%	3.6%
Four	14%	1.4%
Five or more	10%	1.0%
Total (%)	100%	
Total (1,000s)	105,842	

^a U.S. Census Bureau, American Housing Survey, 2003, Table 2-9.

Age Distribution

Householder/ Respondent Age	Census % Householders ^a	Survey Estimate Minus Census % Householders
18-24 ^b	6%	2.9%
25-34	17%	3.2%
35-44	21%	1.8%
45-54	21%	-0.5%
55-64	15%	-1.0%
65 or older	21%	-6.5%
Total (%)	100%	
Total (1,000s)	113,148	

^a U.S. Bureau of Labor Statistics and the Census, Annual Demographic Survey (or March CPS Supplement), Selected Characteristics of Households, by Total Money Income in 2004, Table HINC-01.

^b Census, 15-24 years; Internet/WebTV, 18-24 years.

Gender Distribution

Householder/ Respondent Gender	Census % Population ^a	Survey Estimate Minus Census % Population
Female	51%	1.1%
Male	49%	-1.1%
Total (%)	100%	

^a U.S. Census Bureau, Census 2000.

Dwelling Type Distribution

Dwelling Type	Census % Dwelling Units ^a	Survey Estimate Minus Census % Dwelling Units
Single-family, unattached	61%	-1.1%
Single-family, attached	6%	3.4%
Apt. bldg. (>=2 units) ^b	22%	0.9%
Mobile home	6%	-1.4%
Other	5%	-1.9%
Total (%)	100%	
Total (1,000s)	111,122	

^a U.S. Census Bureau, American Housing Survey, 2003, Table 2-1.

^b Census, 2 or more units; Internet/WebTV, 4 or more units.

Own/Rent Distribution

Own/Rent	Census % Households ^a	Survey Estimate Minus Census % Households
Own	68%	-5.6%
Rent	32%	5.6%
Total (%)	100%	
Total (1,000s)	105,842	

^a U.S. Census Bureau, American Housing Survey, 2003, Table 2-1.

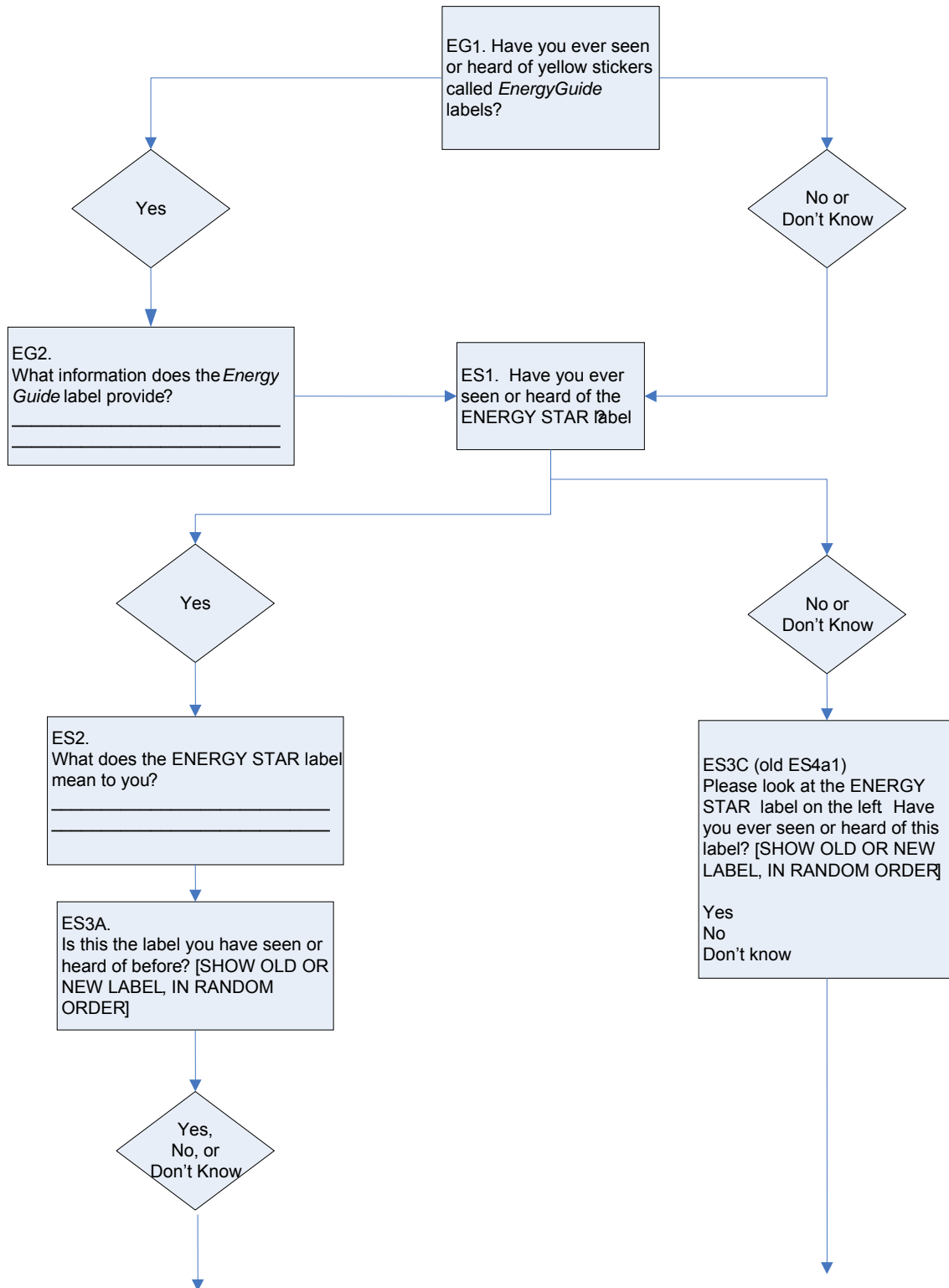
Income Distribution

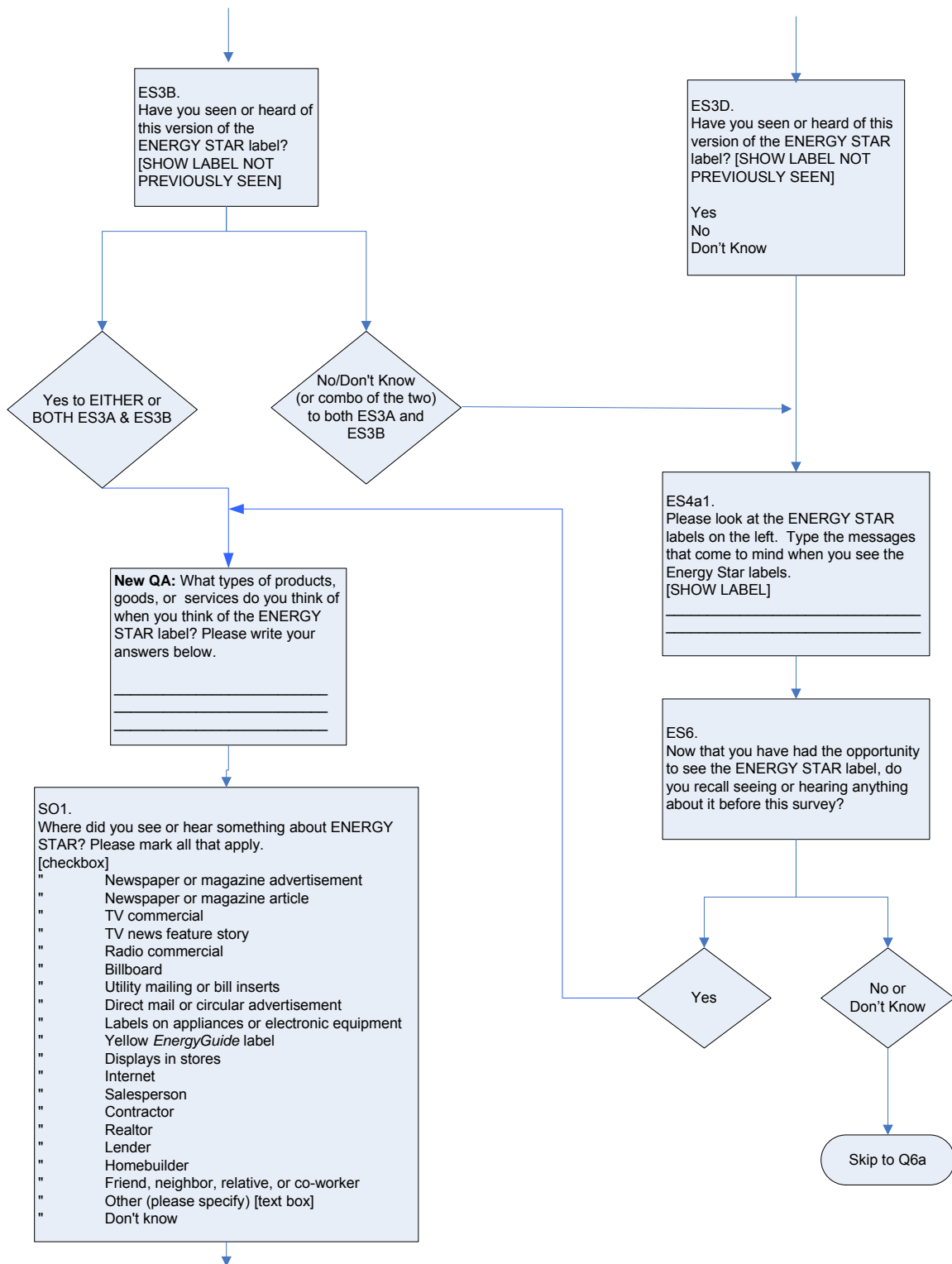
Total Household Annual Income (before taxes)	Census % Households ^a	Survey Estimate Minus Census % Households
Less than \$15,000	15%	-1.7%
\$15,000-\$24,999	13%	-1.9%
\$25,000-\$49,999	27%	4.2%
\$50,000-\$74,999	18%	3.2%
\$75,000 and over	27%	-3.9%
Total (%)	100%	
Total (1,000s)	113,146	

^a U.S. Bureau of Labor Statistics and the Census, Annual Demographic Survey (or March CPS Supplement), Selected Characteristics of Households, by Total Money Income in 2004, Table HINC-01.

APPENDIX C: 2005 SURVEY QUESTIONS AND FLOW CHART

2005 ENERGY STAR SURVEY





SO2.
What did you see or hear about Energy Star? Please be specific.

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

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

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

<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	

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.

<u>Home Appliances/Lighting</u>	<u>Home Electronics</u>
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.

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

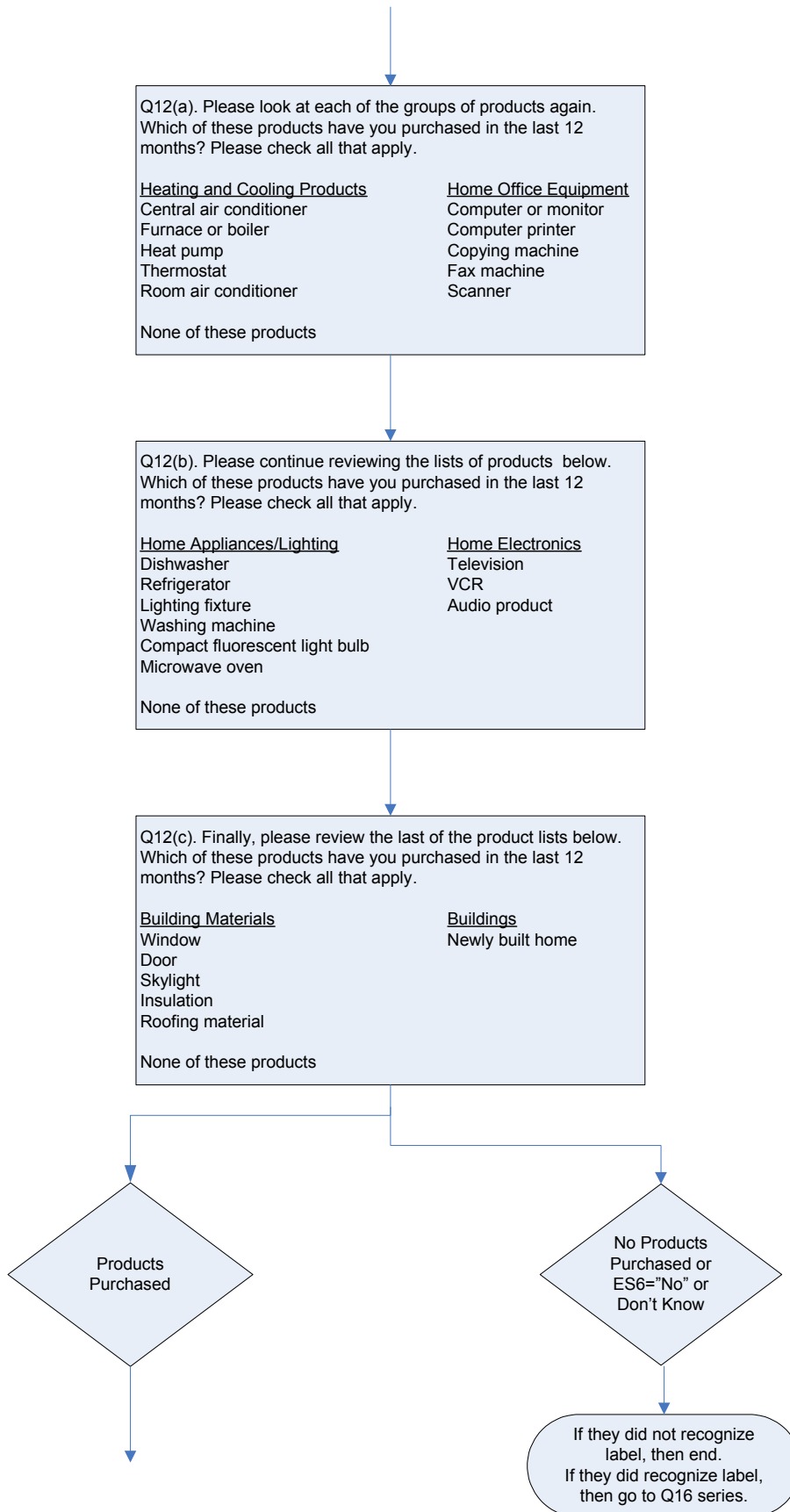
Q6a
Have you or someone else in your household been shopping in a store in the last 12 months for any of the products listed below?

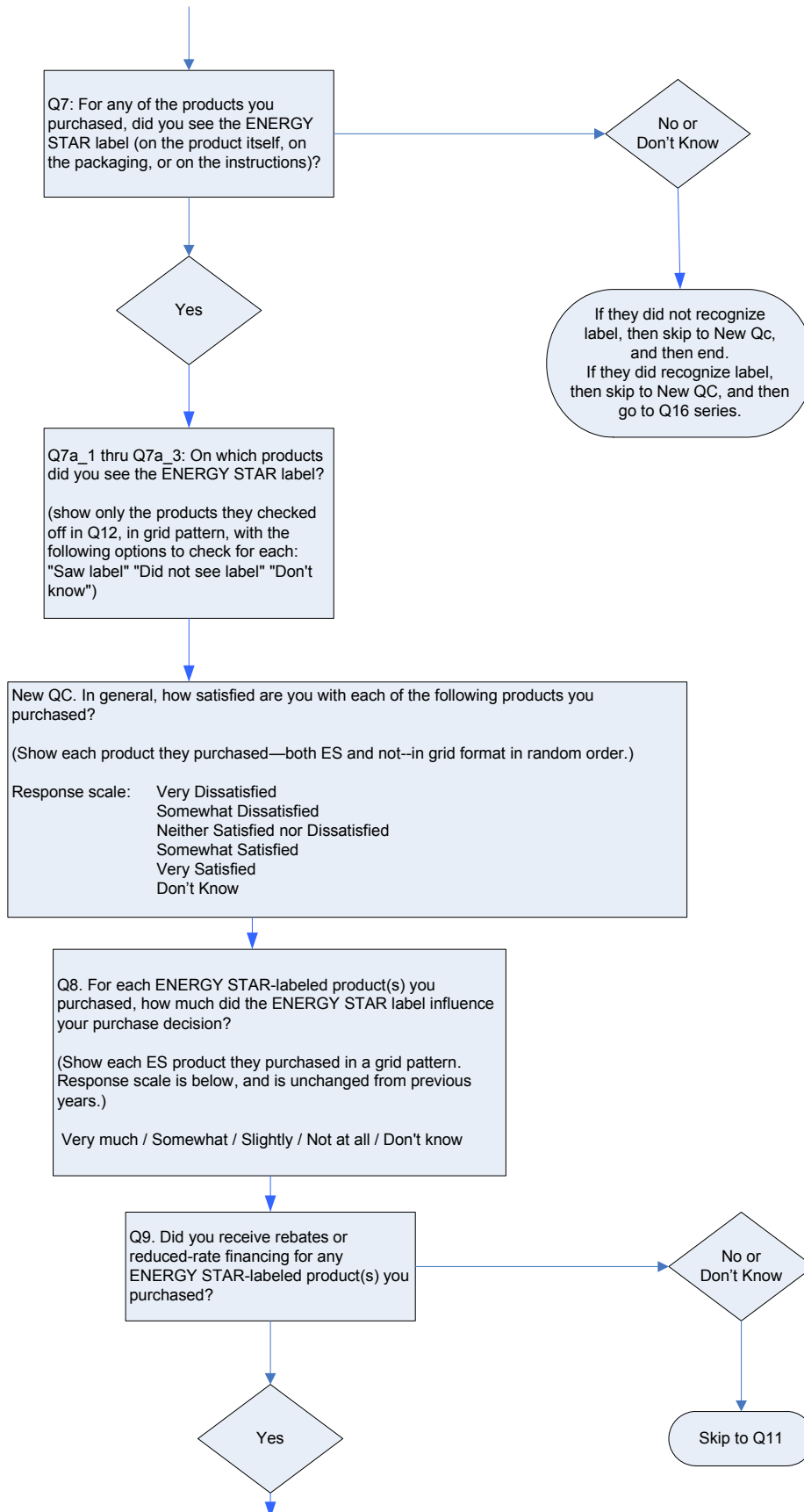
Yes
No
Don't know

Heating and Cooling Products
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 central air conditioner, furnace or boiler, heat pump or newly built home in the last 12 months?

Yes
No
Don't know





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?

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

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

On the scale by each statement, please indicate how strongly you agree or disagree with the statement.

(Note to programmer: present q16a through h 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
Q16b. All new products use energy just as efficiently, whether or not they have 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. I prefer to purchase ENERGY STAR-labeled products whenever I can.	1	2	3	4	5
Q16e. I would not go out of my way to purchase ENERGY STAR-labeled products.	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
Q16g. Buying ENERGY STAR-labeled products makes me feel like I'm acting responsibly.	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
Q16j. ENERGY STAR-labeled products deliver what they promise.	1	2	3	4	5
Q16k. ENERGY STAR-labeled products do not meet my needs.	1	2	3	4	5
Q16l. I consider myself loyal to ENERGY STAR-labeled products.	1	2	3	4	5
Q16m. I don't find any real difference in performance between products with the ENERGY STAR label and those without the label.	1	2	3	4	5

Go to demographic
questions and closing