

# **Progress Towards Loyalty: Trends in ENERGY STAR Awareness and Brand Equity Among U.S. Households, 2000-2008**

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## **ABSTRACT**

Since 2000, CEE has fielded an annual survey of household awareness of the ENERGY STAR<sup>®</sup> label and the value accrued to the label, or brand equity. The survey is designed to yield results that can be generalized to the U.S. population. This paper explains the rationale behind each of the key indicators chosen to track ENERGY STAR brand equity, and lays out time series data for each as well as for other important indicators of ENERGY STAR label progress. It compares results from several sets of questions over the years about the sources that consumers turn to when looking for information about various products, and describes the results of new questions added to the survey in 2008.

The authors find that a comparison of results across the years yields useful insights into the value accrued to the ENERGY STAR label in the eyes of consumers over time. The continued rise in several key indicators of ENERGY STAR brand equity suggests that it may be time to rethink how some key indicators are measured.

## **Introduction**

ENERGY STAR is a government-backed labeling program designed to help businesses and individuals identify products that offer superior energy efficiency. Since its establishment in 1992, the ENERGY STAR label has emerged as a key tool for administrators of ratepayer-funded energy efficiency programs in their efforts to transform markets to favor more energy-efficient products. ENERGY STAR, which is a voluntary program, identifies and promotes energy-efficient products to reduce greenhouse gas emissions and save money for consumers and businesses. While it was established in the United States by the U.S. Environmental Protection Agency (EPA), and is administered in the U.S. by EPA and the U.S. Department of Energy (DOE), the label is also a fixture of Canadian energy efficiency programs, where it is administered by Natural Resources Canada. The label can be found on an increasingly wide variety of qualified products, from small appliances and lighting through new homes and commercial and industrial buildings.

ENERGY STAR partners with more than 8,000 private and public sector organizations, including manufacturers and retailers as well as energy efficiency program administrators, to deliver the information and tools that organizations and consumers need to choose energy-efficient solutions and management practices (ENERGY STAR 2006). The ENERGY STAR label gives efficiency program administrators a uniform platform on which to base a wide variety of efforts to reduce energy consumption among consumers and businesses within their states, provinces and service territories. Program administrators specify ENERGY STAR-labeled products in their rebate programs and encourage consumers and businesses to look for the ENERGY STAR label when purchasing energy-consuming products. By working with ENERGY STAR and its many partners to provide a simple, uniform message about high efficiency products to the marketplace, efficiency program administrators are able to leverage their program dollars.

In hitching programs to the ENERGY STAR platform, program administrators provide a wide variety of marketing support for the ENERGY STAR label. The label may appear on program administrator web sites, in their print or radio ads, in utility bill stuffers, in point-of-purchase sales materials and many other types of advertising provided by administrators. Since they are using ratepayer funding for these activities, many program administrators must report their effects to state regulators or other overseers.

Of course, with so many different ENERGY STAR partners, program administrators are not the only ones providing marketing support for the label. From the perspective of program design, this is a tremendous benefit of ENERGY STAR. From the perspective of program evaluation, however, it offers challenges. With so many different ENERGY STAR partners using the label in promotional efforts, how can the effects of marketing ENERGY STAR by one particular program be picked out from all the others?

Seeing that this question was a concern for nearly all of its members, in 2000 the Consortium for Energy Efficiency (CEE) and its members set out to address it through a survey research effort. CEE is a consortium of efficiency program administrators from across the U.S. and Canada who work together on common approaches to advancing efficiency. Each year since 2000 a number of its members have voluntarily pooled research funds to sponsor this time series, which measures key indicators of the value of the label accrued in the eyes of consumers, or brand equity<sup>1</sup>. This equity is a direct result of the promotional activities of the many ENERGY STAR partners over the years. While the survey each year is usually not large enough to separate out effects of activities among specific states or service territories, it does provide information on variation in key indicators of brand equity by the degree of label publicity that has taken place in a given area. In addition to providing feedback for program administrators' evaluation and reporting purposes, this information is helpful to the ENERGY STAR program, which can better manage its publicity campaign for the label and provide better support to partners with timely and appropriate information about the value accrued to the label.

Each year, the data collected by CEE and its members are analyzed by EPA. EPA's annual report on the survey compares the most recent data with the prior year's data. Because of budget limitations, long-term comparisons have appeared in only a few places, most recently in Nevius (2006) and U.S. EPA (2007).

This paper will describe each of the key indicators of brand equity measuring in the survey, and the rationale behind each measurement. The paper will show and discuss the trends for each indicator, which include up to nine years' worth of data in many cases. The paper will also describe the rationale behind and report the results of new questions added in 2008 regarding CFL bulb use and sources of information that shoppers are most likely to use when researching energy-using products prior to purchase.

## **Background and Methodology**

The CEE ENERGY STAR survey is a national survey. It is currently fielded via Internet to a panel of households that is designed to be statistically representative of the U.S. population.. The panel

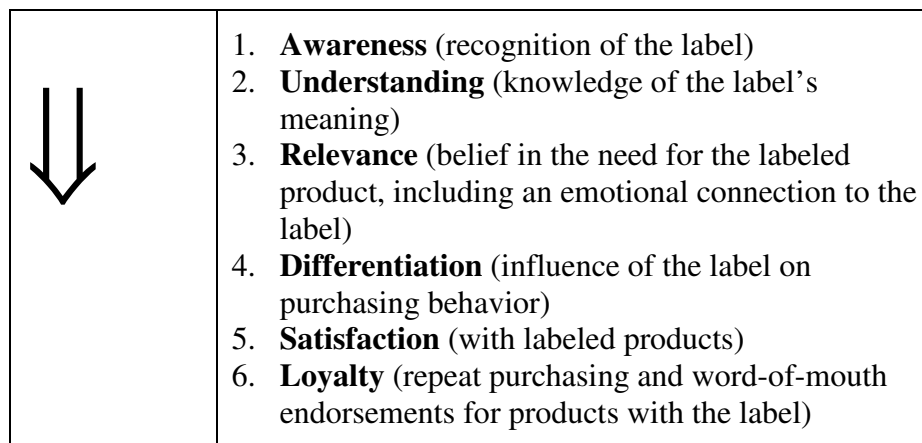
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<sup>1</sup> The following organizations have sponsored CEE ENERGY STAR Surveys: Alliant Energy, Bonneville Power Administration, Cape Light Compact, Connecticut Light & Power, Energy Center of Wisconsin, KeySpan Energy Delivery New England, Long Island Power Authority, Mid American Energy, Midwest Energy Efficiency Alliance, National Grid, Nevada Power, New Hampshire Electric Co-op, New York State Energy Research & Development Authority, NJ Board of Public Utilities, Northwest Energy Efficiency Alliance, NSTAR Electric, Pacific Gas & Electric, Sacramento Municipal Utility District, San Diego Gas & Electric, Southern California Edison, Southern California Gas, Tennessee Valley Authority, United Illuminating, Unitil Corporation, Vectren, Western Massachusetts Electric Company (NU), Wisconsin Department of Administration, Wisconsin Focus on Energy, and Xcel Energy.

uses a combination of RDD and addressed-based sampling methodologies using “known published sampling frames that cover 99 percent of the U.S. population. Sampled non-internet households are provided a laptop computer and free internet service . . . . [The panel] consists of about 50,000 U.S. residents, age 18 and older, including cell phone-only households and those who are of Hispanic origin that were selected probabilistically” (Dennis 2009).

The early surveys focused primarily on awareness and understanding of the ENERGY STAR label. Questions were informed by anticipated reporting needs of CEE members. In 2005, ENERGY STAR shared its “branding continuum” with CEE and survey sponsors. The continuum lays out the anticipated stages through which consumers are expected to go as they move from becoming aware of the label to becoming loyal, repeat purchasers of labeled products. It is essentially a logic model describing how ENERGY STAR envisions the building of equity in the ENERGY STAR brand. (There are many different definitions of brand equity [Keller 2003]. CEE interprets brand equity in the case of ENERGY STAR as the value accrued to the ENERGY STAR label in the minds of consumers.)

In 2005 CEE and the survey sponsors revised the ENERGY STAR survey instrument to ensure that the survey included questions that would serve as progress indicators for each element of the branding continuum. CEE performed additional data analysis in 2006 on the 2005 data to assess the new progress indicators, and made further revisions to fine-tune the indicators. The indicators were finalized in 2006 and are described in detail in Nevius (2006). Figure 1 shows the branding continuum for the ENERGY STAR label.



(Source: Julie Colehour, Colehour+Cohen, Seattle, WA. Used with permission of ENERGY STAR.)

**Figure 1.** ENERGY STAR Branding Continuum

The sampling frame is all households in the 57 largest Nielsen Designated Market Areas® (DMAs), which together accounted for about 70 percent of U.S. television households in 2007. The same methodology has been used to field the survey since 2001. (In 2001, the survey methodology changed from mail to internet panel. For details comparing the two methods, see U.S. EPA [2002].)

Each year’s sample was designed and weighted to result in valid national results for the current year and comparisons against previous years’ data. In each year, the sample has been stratified into categories of message saturation or publicity, including “high publicity”<sup>2</sup> and “low publicity.”<sup>3</sup> For details on the data collection methodology for 2008 and prior years, including sample sizes and response rates, and results for individual questions, see the 2000 through 2008 survey reports (U.S. EPA 2001;

<sup>2</sup> Areas in which utilities or other organizations have based a publicity or rebate program on the ENERGY STAR label, and this effort included a minimum degree of promotion for at least two years.

<sup>3</sup> Areas with no other ENERGY STAR promotions beyond the national-level efforts conducted by the EPA/DOE.

U.S. EPA 2002; U.S. EPA 2003; U.S. EPA 2004; U.S. EPA 2005; U.S. EPA 2006; U.S. EPA 2007; U.S. EPA 2008; U.S. EPA 2009).

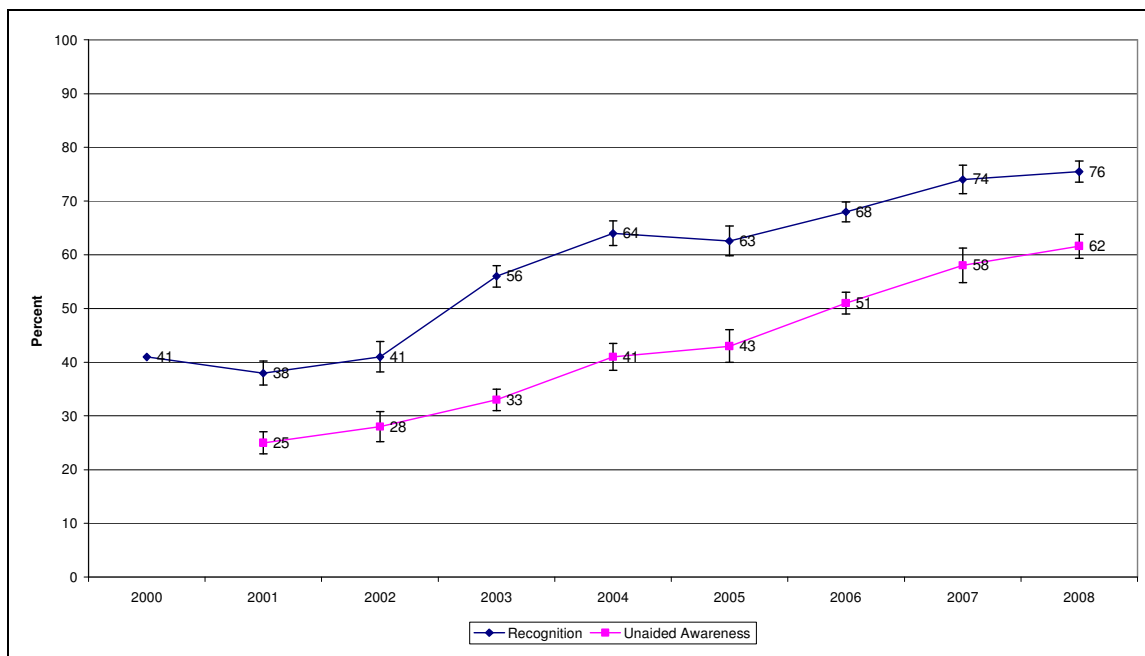
## Trends in Key Indicators of Brand Equity

Nine years' of ENERGY STAR survey data results for each indicator are reported below. These are presented in the order in which they appear in the branding continuum. They are followed by the results of questions newly added to the 2008 survey.

### Awareness

Awareness of the ENERGY STAR label is measured in two ways by the survey. Before they are shown the label, respondents are asked if they have seen or heard of the ENERGY STAR label. They are then shown the label. If they responded affirmatively to the first question, they are asked if the label shown was the one they had in mind. This question yields "unaided awareness." Respondents who did not answer affirmatively to unaided awareness are then asked if they have seen or heard of the ENERGY STAR label shown. Combining the results of this second question with the first yields label awareness, also known as "aided awareness" or recognition.

Figure 2 shows both aided awareness and unaided awareness for the entire sample. Aided awareness has risen from a low of 38 percent in 2001 to 76 percent in 2008; unaided awareness has risen from 25 percent to 62 percent during this same period.



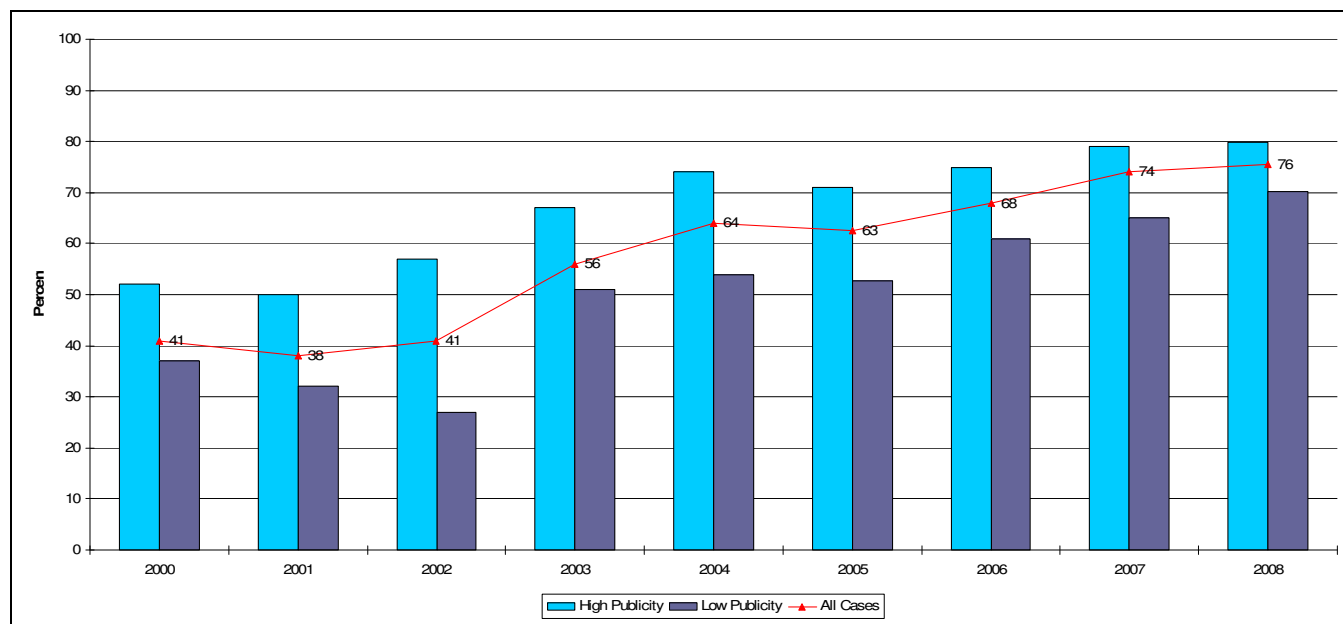
(Error bars indicate 95% Confidence Interval.)

**Figure 2.** Recognition/Aided Awareness & Unaided Awareness, 2000-2008

This has been accomplished with the support of many ENERGY STAR partners, including prominent manufacturers and large national and regional retailers. As shown in previous research (Nevius et al. 2002; U.S. EPA 2004), the efforts of program administrators using ENERGY STAR in their program promotions have had a measurable effect on ENERGY STAR awareness over the years,

as shown through comparisons between high- and low-publicity areas. Figure 3 shows recognition/aided awareness by publicity level from 2000-2008. The differences in recognition between high- and low-publicity areas have been statistically significant (to at least the  $p < .10$  level) in each year of the survey. In 2008, households in high-publicity areas—that is, areas where efficiency program administrators have been the most consistently active for the longest periods—demonstrated label recognition of nearly 80 percent.

In the summer immediately before the survey was fielded, energy efficiency was prominent in the news. U.S. gasoline prices reached an average of over \$4.00 per gallon (EIA 2009) and tips on saving energy seemed to appear in every local newspaper—often, it seemed to the authors, including the exhortation to look for the ENERGY STAR when purchasing appliances and energy efficiency.



**Figure 3.** Percent Recognition (Aided Awareness) of ENERGY STAR Label, by Publicity Level

Given this degree of publicity, it may not be realistic to expect much further growth in aided awareness, especially in high-publicity areas, without a very large marketing push. In fact, the gap in aided awareness between high- and low-publicity areas has narrowed in recent years. Between 2007 and 2008 alone, it dropped from 14 to 10 percentage points. At the same time, the number of states in which ratepayer-funded energy efficiency programs are offered, and the related program budgets, have been growing (EPA 2009). It is good news for the ENERGY STAR label that awareness of the label is so high even in areas that receive less publicity. However, this news poses regulatory reporting challenges to both long-established and newer program administrators. Even without the increased media attention being paid to energy efficiency, the gap between high- and low-publicity areas is likely to continue narrowing. Several factors are likely to contribute to this, including the likelihood that the number of ENERGY STAR partners may increase as label recognition rises, and partners may choose to do more with ENERGY STAR as they see growing equity in the brand. Given the continued regulatory reporting needs of program administrators, in coming years it may be more fruitful to focus on the trajectory of unaided awareness in order to assess changes in label awareness. It may also be worth investigating other ways of calculating or measuring awareness, or ways of grouping locations for purposes of comparison that are more sensitive to differences in publicity activities. Some possibilities include:

**Calculating awareness differently.** The current approach to calculating the percentage of aided and unaided awareness excludes from the denominator those respondents who did not answer the question or who answered “don’t know.” Including these respondents in the denominator could buy some time. However, it may not be a long-term solution to the need of program administrators to assess the relative effects of their publicity efforts.

**Changing the subgroups being compared to give greater weight to longevity of publicity activities.** High publicity areas are currently defined as areas with an “Active local ENERGY STAR program *recently* sponsored by a utility, state agency, or other organization for two or more *continuous* years,” including the two years prior to the survey. “The activities must include *sustained* promotions and publicity from non-federal sources” (italics added). The “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.” Low publicity areas are defined as those with “Federal campaign activities only and no significant regional program sponsor activities” (EPA 2008: 3). Areas that do not fit either of these definitions are categorized as “Other.”

There are currently many geographic areas in the “Other” category. These areas have been conducting promotions with ENERGY STAR but may not have done so as comprehensively as efforts in high publicity areas, or as recently. Segmenting the sample so as to allow comparisons by the length of time that a utility, state agency, or other organization has conducted ENERGY STAR publicity in an area—for example, 10 years, 5 years, and 2 years—might prove to be more sensitive to differences in awareness going forward.

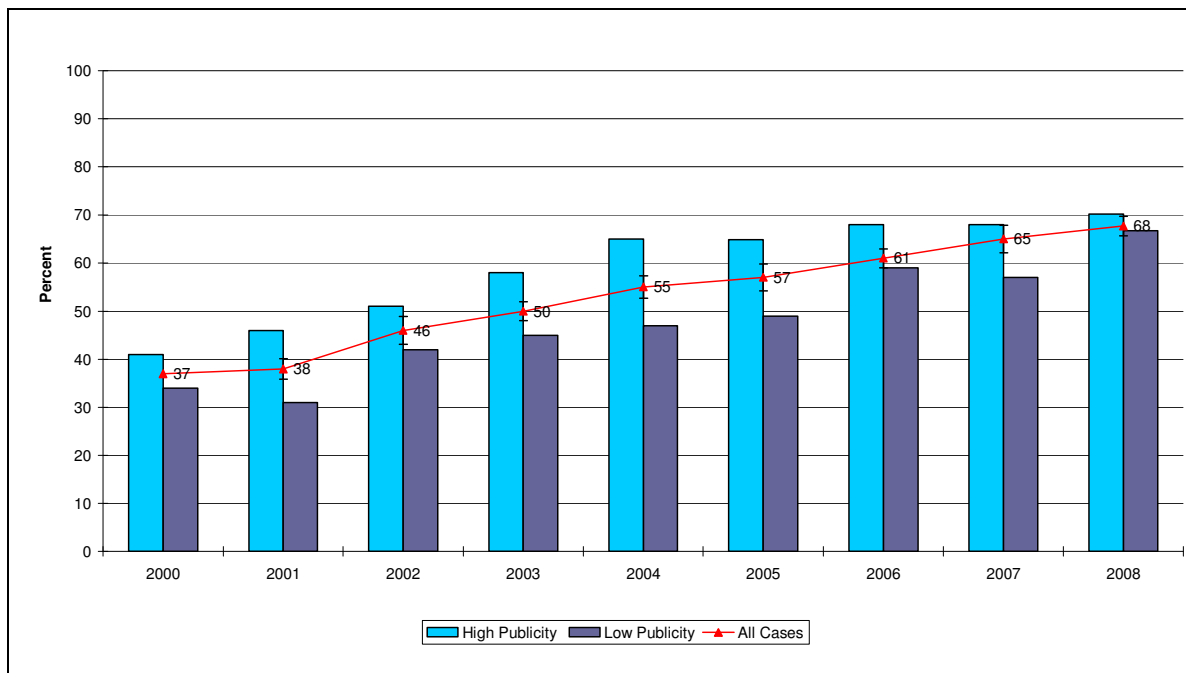
**Changing how awareness is measured.** Another more stringent way to measure brand awareness is to ask about brand recall. This approach requires respondents to remember the brand when probed or given a cue (Keller 2003). Awareness levels are likely to be lower in all publicity areas using this measurement approach.

## **Understanding**

Since 2000, understanding the meaning of the ENERGY STAR label is measured as an open-ended question, “What does the ENERGY STAR label mean to you?” Responses are back-coded into three categories: “high,” “general,” and “other.” As Figure 4 shows, the percent of respondents exhibiting a “high” understanding of the label has risen steadily since 2000. As with awareness, the gap in understanding between high and low publicity areas has narrowed over time. Between 2007 and 2008, it dropped from 11 percentage points to 3 percentage points, and the difference in understanding between the two groups is not statistically significant. Like the narrowing gap in awareness, this is an indicator of increased brand equity that is good news for the ENERGY STAR label but presents challenges to program administrators required to report progress to regulators. This measurement of understanding is already quite robust and the authors can think of no obvious way to improve its sensitivity. Changing the subgroups being compared to give greater weight to longevity of publicity activities may help in providing program administrators with a way to differentiate the effects of their publicity efforts on understanding of the label.

## **Relevance**

Relevance (belief in the need for the labeled product, including an emotional attachment to the label) is measured by a series of attitudinal questions asked of respondents who recognized the ENERGY STAR label. Answer categories ranged from 1 (“strongly disagree”) to 5 (“strongly agree”),



(Error bars indicate 95% Confidence Interval.)

**Figure 4.** Percent High Understanding of ENERGY STAR Label, by Publicity Level

**Table 1.** Means of Responses to Relevance Questions by Purchasing, 2005-2008

		2008 Purchased an ENERGY STAR Product in Previous Year?		2007 Purchased an ENERGY STAR Product in Previous Year?		2006 Purchased an ENERGY STAR Product in Previous Year?		2005 Purchased an ENERGY STAR Product in Previous Year?	
		Yes	No	Yes	No	Yes	No	Yes	No
1	ENERGY STAR-labeled products provide me with more benefits than products without the ENERGY STAR-label.	Mean 3.80	3.33 ***	3.69	3.49 ***	3.53	3.26 ***	Not asked	
		N 568	917	272	461	475	1077		
2	ENERGY STAR-labeled products offer better value than products without the label.	Mean 3.59	3.32 ***	3.69	3.35 ***	3.54	3.21 ***	Not asked	
		N 568	916	272	463	470	1079		
3	If I cannot find the kind of product I am looking for with an ENERGY STAR label, I will shop elsewhere rather than buy a product that does not qualify for the label.	Mean 3.15	2.83 ***	3.14	2.78 ***	2.84	2.70 *	Not asked	
		N 568	914	270	463	479	1081		
4	Buying ENERGY STAR-labeled products makes me feel like I'm helping to protect the environment for future generations.	Mean 3.93	3.56 ***	4.04	3.69 ***	3.84	3.47 ***	3.94	3.55 ***
		N 568	912	273	463	479	1080	197	513
5	Buying ENERGY STAR-labeled products makes me feel like I'm contributing to society.	Mean 3.76	3.38 ***	3.81	3.53 ***	3.60	3.25 ***	3.67	3.39 ***
		N 568	917	272	463	478	1078	197	509
6	Buying ENERGY STAR-labeled products makes me feel like I'm spending extra money for nothing.	Mean 2.28	2.48 ***	2.26	2.49 ***	2.16	2.49 ***	2.23	2.64 ***
		N 568	913	273	461	479	1079	195	511
7	I consider my self loyal to ENERGY STAR-labeled products.	Mean 3.39	2.91 ***	3.39	3.07 ***	3.21	2.80 ***	3.29	3.02 ***
		N 568	913	273	463	479	1079	195	509
8	It seems like most products have the ENERGY STAR label these days.	Mean 3.47	3.17 ***	3.38	3.28	3.33	3.12 ***	Not asked	
		N 568	912	273	461	477	1081		
9	If I see the ENERGY STAR label, I know I'm getting a more energy-efficient product.	Mean 4.22	3.72 ***	4.23	3.91 ***	4.20	3.74 ***	Not asked	
		N 568	917	273	462	475	1078		
10	When I buy a product with the ENERGY STAR label, I can always be sure it's high quality.	Mean 3.46	3.20 ***	3.42	3.24 *	3.37	3.10 ***	Not asked	
		N 568	917	268	460	479	1080		

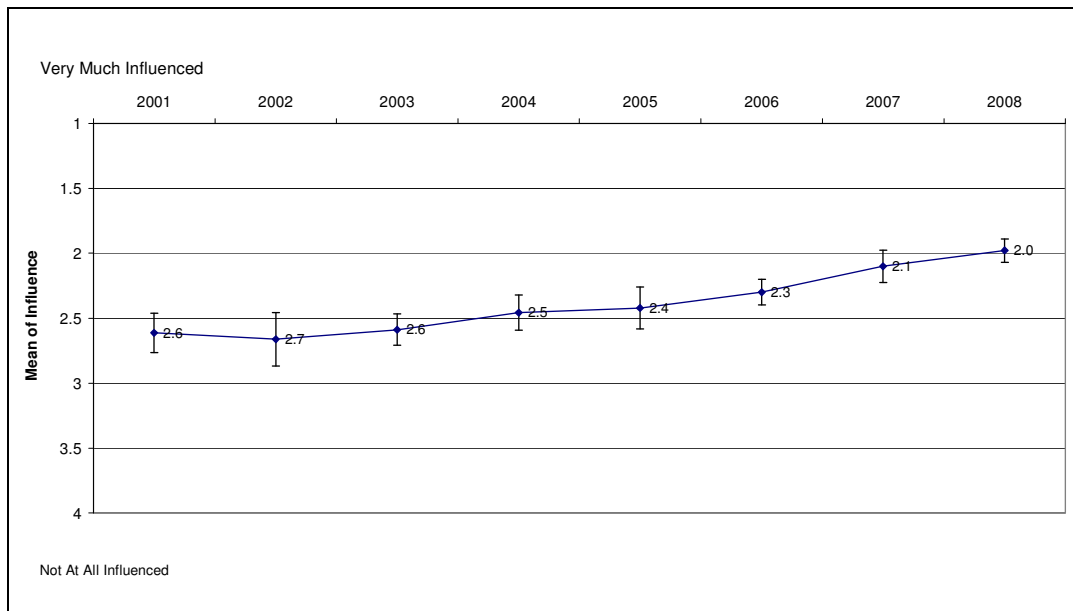
\* p<.05; \*\* p<.005; \*\*\* p<.0005

so the higher the mean, the more agreement with the statement. Results comparing means of agreement with attitudinal statements for two groups of respondents, those who had purchased an ENERGY STAR product in the 12 months prior to the survey and those that had not, are shown below in Table 1. For all questions in nearly all years, the mean response of respondents who had purchased a labeled product in the year prior to the survey was slightly more favorable toward the ENERGY STAR label than of those who had not. As the confidence intervals show, the values between years overlap. The responses to these questions have remained relatively unchanged over the years that they have been asked.

The results show that purchasers of labeled products exhibit a greater level of belief in the need for the labeled product(s) and emotional connection to the label. This suggests that the messaging around the label is performing as desired—at least for those who have purchased labeled products. However, a scan of the results suggests that there has been no statistically significant change in response to the measures of relevance over the years.

### Differentiation

Differentiation is measured as self-reported influence of the label on purchasing decisions. Respondents who reported purchasing an ENERGY STAR-labeled product in the 12 months prior to the survey are asked “For each ENERGY STAR-labeled product you purchased, how much did the ENERGY STAR label influence your purchasing decision?” The mean of these responses is then calculated for each respondent and for the sample. The range of answers to this question is from 1 (“very much influenced”) to 4 (“not at all influenced”). Figure 6 shows that since 2002, the mean response to this question for all products purchased has increased nearly 3/4 of a point on the four-point scale. While the differences between adjacent years are not necessarily statistically significant, the lack of overlap between confidence intervals in early and later years suggests that the differences between the early years and later years are statistically significant, and points to respondents increasingly perceiving the ENERGY STAR label as having more influence on their purchasing decisions.



(Error bars indicate 95% Confidence Interval.)

**Figure 6.** Means of Self-Reported Influence of the Label on All ENERGY STAR Purchases

## Satisfaction

Respondents are asked about their satisfaction with each product purchased, and whether or not it is ENERGY STAR-labeled. The question is worded “In general, how satisfied are you with each of the following products you purchased?” Response categories vary from 1 (“Very Dissatisfied”) to 5 (“Very Satisfied”). In 2008, there was no statistically significant difference in the means of respondent satisfaction with all products purchased, whether or not the respondent was a purchaser of an ENERGY STAR-labeled product (the means were 4.1 and 4.0 for purchasers of labeled products and unlabeled products, respectively). This is not surprising, given that for most labeled products, many other characteristics are more likely to affect product satisfaction than energy efficiency. The means of satisfaction were calculated for ENERGY STAR-labeled versus unlabeled products purchased. Unfortunately, the relatively small size of this sample means that few products are purchased frequently enough by respondents to allow for meaningful comparisons of satisfaction between labeled and unlabeled products.<sup>4</sup> One notable exception is CFLs. The mean response to the satisfaction question was 4.1 for the respondents who reported purchasing a labeled CFL, significantly higher than the mean of 3.4 for respondents who reported purchasing an unlabeled CFL ( $p < .01$ ). This suggests that the label is accomplishing its job in the eyes of consumers in this challenging product category, for which energy efficiency is a highly salient characteristic. Other products with sufficient respondents to make meaningful comparisons and statistically significant differences between purchasers of labeled and unlabeled products were scanners and copiers. Unlike CFLs, in both cases purchasers of labeled products reported lower mean satisfaction than purchasers of unlabeled products. Purchasers of labeled scanners reported a mean satisfaction score of 3.5 versus 4.4 ( $p < .10$ ); of labeled copiers, 3.0 versus 4.6 ( $p < .01$ ). This is similar to findings for both product categories in 2006, when there were also enough respondents in each subgroup to make meaningful comparisons. This finding suggests there could be quality issues with ENERGY STAR-labeled office products purchased for home use that warrant further investigation.

## Loyalty

Loyalty was measured from 2001 to 2005 using the question “How likely are you to recommend ENERGY STAR-labeled products to a friend?” The answer categories in this period ranged from 1 (very likely) to 4 (not at all likely). The results for this measure of loyalty were reported in Nevius (2006), and showed little change across the five-year period during which loyalty was measured in this fashion. In 2006 the survey sponsors changed how loyalty was measured in order to improve the sensitivity of the index. While the question wording is the same, the analysis is now based on the approach advocated by Reichheld (2003), which involves tracking “net promoters” using a slightly different scale from that of past surveys. The rationale behind this decision is described in Nevius (2006).

The survey now uses an 11-point response scale rather than a 4-point scale. Respondents are coded into “promoters,” “passively satisfied,” and “detractors” depending on their answers to the question. The value tracked, “net promoters,” is the percentage of promoters minus the percentage of detractors among those who reported having purchased labeled products. As Table 2 shows, the percentage of “net promoters” increased substantially between 2006 and 2008, from nearly 17 percent to nearly 30 percent of self-reported purchasers of ENERGY STAR-labeled products. This suggests that

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<sup>4</sup> Interpreted here as at least 25 cases for each subgroup. Subgroups were comprised of those who recognized the ENERGY STAR label and had purchased a listed product in the 12 months prior to the survey.

substantial progress has been made in consumer loyalty to the label over the last three years of promotional efforts by ENERGY STAR and its partners.

**Table 2.** Percentage of Net Promoters Among ENERGY STAR Product Purchasers

National Sample Results for ENERGY STAR Purchasers	2006	2007	2008
Net Promoters	16.8	28.5	29.9

## New Lighting Questions

The 2008 survey sponsors saw the opportunity to find out more about what respondents have done with the CFL bulbs they purchased. In particular, sponsors wondered whether newly purchased CFL bulbs were replacing CFL or incandescent bulbs. There also wondered about the rate at which bulbs were being put into sockets, given anecdotal evidence that CFLs are increasingly being sold in multi-packs. The results showed that among respondents who reported having purchased a CFL in the year prior to the survey, the overwhelming majority of bulbs purchased (96%) were installed in a socket. However, nearly one-quarter (24%) of respondents reported that the new CFLs were installed in sockets that already held CFLs rather than incandescent bulbs.

## Sources of Product Information

Several previous CEE ENERGY STAR surveys have asked about the sources that respondents were most like to use to obtain product information. This question series was last fielded in 2004. With the prevalence of home Internet connections, sponsors wondered if the sources of information that respondents were most likely to use to obtain product information might have changed since 2004, so the series was added back in to the survey in 2008. The series asks respondents about source(s) of information separately for heating and cooling products and home appliances, lighting and electronics products. Respondents who indicate that they are likely to use the Internet as a source of product information are also asked about the type of Internet sources they are most likely to rely on.

As Table 3 shows, between 2004 and 2008 there was a slight decrease in respondents reporting that they would use all of the information sources listed, with one exception, the Internet. The increase in reported reliance on the Internet for product information is statistically significant for home appliances, lighting, and electronics. In 2004, 33 percent of respondents indicated that they would turn to the Internet for information about these products; in 2008, 38 percent indicated this.

Presumably respondents who had shopped for relevant products in the year prior to the survey would be able to provide more reliable input than those who had not. Dividing the sample into “shoppers” and “non-shoppers” yields some useful insights into the sources of information shoppers use and how these sources have changed since 2004. Table 3 shows that shoppers are significantly more likely than non-shoppers to turn for information on both product categories to Consumer Reports or other product-oriented magazines, their electric or gas utility, contractors, friends, neighbors or relatives, and the internet. Of these, again only the Internet was cited more frequently as a likely information source in 2008 than in 2004.

Given that non-shoppers become shoppers when they actually begin to research products, it seems prudent to focus on how shoppers report their reliance on different types of websites when visiting the Internet. Compared to 2004, in 2008 shoppers reported being more likely to rely on websites of product manufacturers and retailer (moving from 35.7 percent to 45.1 percent for heating/cooling products, and from 42.3 percent to 57.0 percent for home appliances/lighting/electronics).

**Table 3. Most Likely Sources of Information by Shopping Status**

	Heating & Cooling Products						Home Appliances, Lighting, Electronics							
	2008			2004			2008			2004				
	Non-Shoppers	Shoppers	All	Non-Shoppers	Shoppers	All	Non-Shoppers	Shoppers	All	Non-Shoppers	Shoppers	All		
Please select the source(s) of information you are most likely to use to obtain information about this product type.														
Consumer Reports and other														
product-oriented magazines	26.0	44.5	38.6 ***	42.0	49.9	47.2 **	√√	26.3	45.3	39.2 ***	42.4	51.0	48.1 **	√√
Other magazines	4.8	7.4	6.5 *	4.9	9.1	7.7 **		4.9	10.1	8.5 ***	13.8	13.9	13.9	√√
Newspapers	11.5	12.7	12.3	14.0	16.7	15.8		16.3	15.4	15.7	17.5	18.1	17.9	
Radio	4.8	5.4	5.2	6.8	6.9	6.8		4.3	3.9	4.0	6.2	7.2	6.9	
Television	15.5	16.9	16.5	21.6	20.1	20.6	√√	19.4	18.5	18.8	21.6	26.8	25.0 *	√√
Electric or gas utility	14.7	23.2	20.5 ***	20.0	30.0	26.6 ***	√√	9.8	14.8	13.2 **	14.2	18.0	16.7	
Advice from retailers or salespersons	31.3	37.4	35.4 **	42.2	42.9	42.7	√√	33.0	40.2	37.9 **	49.6	47.5	48.2	√√
Advice from contractors	14.3	24.9	21.5 ***	25.9	30.4	28.8	√√	8.8	15.7	13.5 ***	17.1	18.8	18.3	√√
Advice from a friend, neighbor, relative, or co-worker	35.2	48.2	44.0 **	57.8	56.4	56.9	√√	44.9	49.0	47.6	55.6	62.4	60.1 *	√√
Internet	23.0	43.6	37.0 ***	30.9	39.5	36.6 **	▶	21.9	45.5	38.0 ***	26.1	37.1	33.4 ***	▶
Other	2.9	2.5	2.6	3.1	1.8	2.3		1.7	1.7	1.7	0.8	2.2	1.7	
Don't know	23.3	7.2	12.3 ***	21.1	10.3	14.3 ***		20.6	6.8	11.2 ***	21.2	7.6	12.7 ***	
Please select the type of Internet source(s) you are most likely to rely on to obtain information about this product type.														
Local utility website	31.3	30.1	30.3	32.0	35.7	34.6		17.5	21.3	20.6	30.2	24.8	26.2	
State or Federal government website	28.7	28.4	28.5	21.1	27.2	25.5		18.2	19.2	19.0	16.5	17.1	16.9	
Product manufacturers website	58.7	67.7	65.9 *	60.5	75.2	71.0 **	▶	54.2	62.0	60.6	55.1	72.4	67.8 **	▶
Retailer website	47.7	45.1	45.6	43.5	35.7	37.9	▶	50.0	57.0	55.7	55.9	42.3	45.9 **	▶
Consumer organization website (e.g., Consumer Reports)	53.3	68.8	65.7 **	65.3	68.7	67.7		50.0	68.2	64.9 ***	63.5	69.6	68.0	
Other	4.7	5.3	5.2	3.4	4.1	3.9		8.5	3.5	4.4 *	8.7	4.6	5.6	

\* T-test for Equality of Means (2-tailed) shows differences between shoppers and non-shoppers within year, p<.05; \*\* p<.005; \*\*\* p<.0005.  
√ The 90% Confidence Intervals do not overlap between the two years (base=all respondents).  
√√ The 95% Confidence Intervals do not overlap between the two years (base=all respondents).  
▶ The 95% Confidence Intervals do not overlap between the two years (base=shoppers only).

## Conclusions

Comparing survey results across the years yields useful insights into the value accrued to the ENERGY STAR label in the eyes of consumers over the last nine years. The increasing degree of awareness of the label and understanding of its meaning, label influence on purchasing, and loyalty to the label of those who report having purchased labeled products are all testaments to the equity built into the label over the last nine years. New data on the disposition of CFLs by households and on the sources of product information shoppers are most likely to turn to should be useful in program design and evaluation.

The continued rise in several key indicators of ENERGY STAR brand equity suggests that it may be time to rethink how some key indicators are measured. Changing the way that awareness is measured to be more sensitive, or changing the way that publicity categories are defined so that they better differentiate among promotional activities of different durations, could help maintain the usefulness of this key indicator going forward. The latter approach could also help in differentiating understanding in future surveys.

If changes are made to key indicators or to the definitions of publicity categories, CEE and future survey sponsors will need to build in to the survey and sample design ways to enable comparisons between the different measurement methods. One way to do this would be to split the sample. In the case of a new way of operationalizing an indicator, one portion of the sample could be randomly assigned to receive the previous version of the question while the other portion receives the new version. In the case of stratifying the sample by new definitions of the publicity categories, the survey could be fielded to two different samples, one selected using the old publicity definitions and the other using the new publicity definitions. In either situation, increasing the sample size over previous years to allow for robust comparisons between groups needs to be given serious consideration.

The nine years of survey data offer so many opportunities for analysis that it was difficult for the authors to decide what to include in this short paper. There is much more information to be gleaned from these that may prove useful to ENERGY STAR and to program administrators, and this rich data set deserves further analysis.

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