

American Council for an Energy-Efficient Economy

1001 Connecticut Avenue, NW • Suite 801 • Washington, DC 20036

VOICE: 202.429.8873 • FAX: 202.429.2248 • WEB: www.aceee.org

For additional information, E-MAIL: ace3_25@aceee.org



...building a sustainable energy future

May 17, 2006

Mr. Hampton Newsome
Federal Trade Commission/Office of the Secretary
Room H-135 (Annex O)
600 Pennsylvania Avenue, NW
Washington, D.C. 20580



RE: Energy Labeling Workshop – Comment, Project No. P064201

Dear Mr. Newsome:

In response to the discussion at the May 3, 2006 energy labeling workshop, we are submitting all contractor reports related to ACEEE's research project evaluating the effectiveness of the EnergyGuide label and alternate label designs. This research was conducted using a multi-method, sequential research design resulting in a series of reports covering each distinct research study or task. Additional qualitative research conducted by ACEEE is summarized in our 2002 final report on the full research project which has already been submitted to the public record.

At this time, we would like to submit the following attachments to the record. Each research study and report was completed by Shugoll Research under contract to ACEEE.

- A. A Focus Group Study to Assess Consumer Reaction to the Current FTC Energy Guide Label, August 1999
- B. A Focus Group Study to Assess Consumer Reaction to Proposed Alternatives to the FTC Energy Guide Label, February 2000
- C. A Focus Group Study to Assess Consumer Reaction to Proposed Alternatives to the FTC Energy Guide Label, Phase III, August 2000
- D. Appliance Energy Label Test: Quantitative Phase, October 2000
- E. Energy Label Design Test Using Simulated Shopping Experiment, November 2001

Sincerely,

Jennifer Thorne Amann
Senior Associate

A Focus Group Study to Assess Consumer Reaction to the Current FTC Energy Guide Label

Prepared for:

AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY
1001 Connecticut Avenue, NW
Suite 801
Washington, D.C. 20036

Prepared by:

Shugoll Research
7475 Wisconsin Avenue, Suite 200
Bethesda, Maryland 20814
(301) 656-0310

August 1999

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1.0 Overview

1.1 Background and Purpose

- The American Council for an Energy-Efficient Economy (ACEEE) contracted with Shugoll Research to conduct a focus group study to examine consumer perceptions and use of the current FTC Energy Guide Label. The research also was designed to assess how best to communicate information on the Guide to consumers so they can make informed decisions about the energy efficiency of new household appliances. ACEEE will use the results of the research as an initial step in developing an Energy Guide Label that is easy to understand and provides information on appliance energy efficiency in a format that impacts consumer purchase decisions.

1.2 Objectives

The objectives of the study are as follows:

- Examine appliance shopping behavior
- Determine how respondents evaluate various appliances on energy consumption
- Obtain reactions to alternative energy guide labels

1.3 Methodology and Study Procedures

- The focus group technique was selected to accomplish the objectives of the study. A focus group is a panel discussion with 8 to 10 representatives of a selected target market for a particular product or service category.
- The focus group technique is especially useful for gathering in-depth information on a topic or reactions to product features and benefits. A moderator who is trained in consumer behavior theories and marketing principles leads the discussion.
- Participants in the group are encouraged to relate to each other, share attitudes and provide candid opinions regarding the topics presented to them by the moderator or generated by the dynamics of the group. Consensus is not sought. The moderator is not supposed to proselytize or educate respondents. Rather, he or she uses his or her skills to question, probe and clarify responses as well as direct the flow of the conversation to cover all relevant areas of interest to the client.
- A total of six focus groups were held: three in Baltimore, MD and three in Bethesda, MD, a suburb of Washington, DC. The following shows the types of groups conducted in each market and the dates and times at which they were held.

	BETHESDA	BALTIMORE
Lower income white goods appliance shopper/purchaser	June 15, 6PM	June 16, 6PM
Higher income white goods appliance shopper/purchaser	Jun 18, Noon	June 16, 8PM
Lower income non-white goods appliance shopper/purchaser	—	June 17, 6PM
Higher income non-white goods appliance shopper/purchaser	June 15, 8PM	—

- Shugoll Research designed two recruitment screeners, one for the white goods appliance groups and one for the non-white goods appliance groups to screen and qualify participants (see Appendix B).
- The following were the recruitment criteria used for each type of group:

	TYPE OF APPLIANCE	PURCHASED OR SHOPPED	HOUSEHOLD INCOME
Lower income white goods appliance	Refrigerator, dishwasher, freezer, clothes washer or individual room air conditioner	Purchased in the last 6 months or currently shopping for a white goods appliance	Less than \$40,000
Higher income white goods appliance	Refrigerator, dishwasher, freezer, clothes washer or individual room air conditioner	Purchased in the last 6 months or currently shopping for a white goods appliance	\$40,000 or more
Lower income non- white goods appliance	Water heater or central air conditioning system	Purchased in the last 12 months or currently shopping for a non-white goods appliance	Less than \$40,000
Higher income non-white goods appliance	Water heater or central air conditioning system	Purchased in the last 12 months or currently shopping for a non-white goods appliance	\$40,000 or more

- All group respondents had to meet the following criteria:

• Be a home owner for at least three years
• Be the primary person in the household responsible for purchasing large household appliances or share equally in the responsibility
• Not be employed or have a family member employed in the field of advertising, market research, public relations, or for a household appliance manufacturer, wholesaler or retailer or a regulatory or energy-related organization.
• Not have participated in a market research discussion group within the past 6 months or ever on a topic related to household appliances or energy.
• Have basic articulation capabilities

- A mix of respondents by the following variables was achieved for each group:
 - Race
 - Gender
 - Where purchased or shopped for appliances
- Respondents were recruited mostly from computerized data banks that identify people based on income, gender, race and other demographic criteria. In Baltimore, an ad also was placed in the local newspaper to identify additional non-white goods appliance purchasers/shoppers.
- Once a potential respondent was screened and it was determined that he or she qualified, a cash honorarium of \$50 was offered to encourage participation in the evening groups and to help guarantee a show of 8 to 10 respondents. A cash honorarium of \$65 was offered to encourage participation in the day group. When a respondent agreed to participate in one of the group sessions, a confirmation letter was sent out. The letter confirmed the group session time, date, location and promised honorarium, and provided detailed directions to the focus group session. All respondents were reconfirmed by telephone the day before their assigned session.

- Shugoll Research designed a topic guide (see Appendix C) to be used by the focus group moderator when leading the discussion groups. The guide was designed to address all study objectives.
- This report documents the results of the focus groups. Findings are presented in bulleted format and organized by study objective. Verbatim comments from focus group participants have been included in this report strictly to illustrate and support key findings. The actual transcriptions from each group have been provided to ACEEE under separate cover.

1.4 Limitations

- A qualitative research methodology seeks to develop directions rather than quantitatively precise or absolute measures. Because of the limited number of respondents involved in this type of research, the study should be regarded as exploratory in nature, and the results used to generate hypotheses for marketing decision making and further testing. The non-statistical nature of qualitative research means the results cannot be generalized to the population under study with a known level of statistical precision.

2.0 Study Findings

2.1 Examine Appliance Shopping Behavior

- Respondents in each group were asked to name on an unaided basis the factors that are important to them when purchasing appliances. In two groups, the subject of energy efficient did not come up before prompting by the moderator, and in the other four groups, only one or two participants mentioned energy efficiency spontaneously as part of the discussion.
- After moderator prompting, it became clear from the resulting discussions that the importance of energy efficiency in the appliance purchase decision tends to vary by type of appliance bought. The amount of energy an appliance uses is rarely an important factor when respondents purchase white goods appliances like dishwashers, clothes washers or room air conditioners. Respondents say they can exert control over the amount of energy these appliances use by not using them as often, using cycles that vary the water levels or turning the air conditioner thermostat up. Therefore, they tend to pay less attention to energy efficiency when purchasing these appliances.

“We set the air conditioner at such a place [to save energy], and my dishwasher [has] a feature that you can change cycles [to one] that doesn’t use this much water, so it doesn’t use that much energy to heat it. So [energy efficiency] really wasn’t important to me for the dishwasher.” (Baltimore, White Goods Appliances, Higher Income)

“I think we’re concentrating on appliances that are not important as far as energy. I run the dishwasher every couple of days. What do I care?” (Bethesda, White Goods Appliances, Lower Income)

- However, energy use seemed more important as a factor in the purchase of white goods appliances like refrigerators and/or freezers. Unlike other white goods appliances, refrigerators and freezers run continuously (24 hours, 7 days a week). Therefore, respondents believe there is little they can do on a behavioral level to improve the energy efficiency of these appliances and are more likely to be concerned about their energy efficiency aspects.

“A refrigerator is constant, especially with an icemaker, especially frost-free. Then I think [energy efficiency] is important because it’s a constantly running appliance.” (Baltimore, White Goods Appliances, Lower Income)

“If you were buying a refrigerator that’s going to keep running and running constantly all day, every day, whether you have a family of 10 or one person, it makes a difference for the energy feature.” (Bethesda, White Goods Appliances, Lower Income)

- Energy use is most important to respondents when they purchase non-white goods appliances such as water heaters and central air conditioning systems. Energy use is a consideration in these types of purchases because non-white goods appliances use more energy and tend to have a significant impact on utility costs in the household.

“I bought a water heater not long ago. Basically, I was looking for energy efficiency. I wanted to make sure that the heater would not be on for long periods of time” (Bethesda, Non-White Goods Appliances, Higher Income)

“You might consider that [energy efficiency] with a heating system or an air conditioner. I would definitely think about how cost effective that would be.” (Baltimore, White Goods Appliances, Higher Income)

“You know what eats up most of your electricity in your home is the hot water heater, and also your air conditioning or your furnace in the wintertime.” (Bethesda, White Goods Appliances, Lower Income)

- A variety of factors are much more important to respondents than energy use when purchasing white goods appliances. These factors include:
 - Competitive purchase price
 - Appearance (i.e., how will it look in my kitchen)
 - Size (i.e., what will fit in the space I have available)
 - Dependability or track record (i.e., projected maintenance or service needs)
 - Capacity (i.e., how large does it have to be to meet the needs of my family)
 - Functionality or features (e.g., ice maker, china cycle, touch pads for operation, simplicity/few controls, etc.)
 - Noise level (especially important for dishwashers and room air conditioners)

“Price, of course, is always very important. Also, the way it looked [was important] because we’re redoing our kitchen.” (Baltimore, White Goods Appliances, Higher Income)

“When I looked for my refrigerator, I had a limited space so I didn’t want it to stick out too far.” (Bethesda, White Goods Appliances, Higher Income)

“The main thing I was looking for with my washing machine [was] size. I have a family of five, so mainly it [has to] take large loads.” (Bethesda, White Goods Appliances, Lower Income)

- Dependability and reliability along with reasonable purchase price also are highly important in the purchase of non-white goods appliances. Because non-white goods appliances generally are more expensive than other appliances, respondents expect them to last a long time.

“My wife and I are willing to pay a little more money if it is more reliable and also cheaper to repair.” (Bethesda, Non-White Goods Appliances, Higher Income)

“What’s important is that it works and it lasts a long time.” (Bethesda, Non-White Goods Appliances, Higher Income)

“I looked at [energy efficiency], but it really wasn’t so much an issue as the dependability, the track record [and] the price, to be affordable.” (Baltimore, Non-White Goods Appliances, Lower Income)

- Other factors mentioned as important in the purchase of both white and non-white goods appliances include brand name or reputation of the manufacturer, warranties and availability of service.

“I feel that KitchenAid is top of the line. I have nothing but good feelings about them. Sears [also] always has good appliances.” (Baltimore, White Goods Appliances, Lower Income)

“I rely more on name brands because I think they are a little bit more reliable in the long run. They tend to last longer and give you a better product.” (Bethesda, White Goods Appliances, Higher Income)

“First of all, I want to know who makes the hot water heater I’m interested in. What their track record is over the long run and what kind of guarantee they have.” (Baltimore, Non-White Goods Appliances, Lower Income)

“The warranty [is important], the length of the warranty, what it’s going to cover, how much it’s going to cost in addition to the price of the product.” (Bethesda, White Goods Appliances, Lower Income)

- A major reason that energy use is not considered more important in the appliance purchase decision is because respondents assume that similar appliances, especially those manufactured by reputable manufacturers, are about equally energy efficient. They also assume that the government dictates minimum requirements for energy efficiency to the manufacturers, thereby making all appliances on the market acceptable.

“They [appliances] are all like that [energy efficient].” (Baltimore, White Goods Appliances, Higher Income)

"I think the manufacturers deal with certain suppliers for their parts. These suppliers don't necessarily supply to one manufacturer. You have the motor - this motor may go into a number of different machines. I think they are basically about the same [in energy efficiency], depending on where they get their supplies." (Bethesda, White Goods Appliances, Higher Income)

"One of the reasons I didn't mention [energy efficiency] is because it is just built in to every [appliance now]. They are all so competitive. The technology is there. They are all energy efficient. It's almost like splitting hairs." (Baltimore, Non-White Goods Appliances, Lower Income)

"I figure the government regulates that stuff, and if it [an appliance] were too bad [regarding energy efficiency], it wouldn't even be on the market." (Baltimore, Non-White Goods Appliances, Lower Income)

- Respondents cite another reason why energy efficiency is not top-of-mind in appliance purchasing. They assume that modern technology makes any new appliance vastly better in terms of energy efficiency than their old appliance.

"The appliance that we have is so old, the worst would be ten times more efficient than what we have now. [A new appliance] could only make my electric bills better." (Baltimore, White Goods Appliances, Lower Income)

"They're probably making [new] units now that are energy efficient. It's a given. It wasn't really that vital that I needed to know exactly what was going on." (Baltimore, White Goods Appliances, Lower Income)

- Participants readily admitted that they rarely purchase the most energy-efficient model available to them. This is because the purchase price of the most energy-efficient appliance exceeds what they consider to be an acceptable purchase price. Respondents have the perception that it will take them too long to recoup the money outlayed at the time of purchase, and that the energy cost savings does not amount to enough to cover the initial purchase price. Most respondents appeared willing to trade-off some energy efficiency for price.

“I didn’t get the most energy-efficient one because it was more expensive.” (Bethesda, White Goods Appliances, Higher Income)

“Initially we were attracted to the most [energy] efficient, but I don’t think the one we got had a high [energy efficiency] number. I guess you sort of rationalize it. It’s going to cost me a certain amount of money [to get energy efficiency].” (Baltimore, White Goods Appliances, Higher Income)

“With the furnace, they [the contractor] had the 80 percent efficient and the 90 percent efficient. They said it would be maybe \$10 a month [energy cost savings] by going from the 80 percent to the 90 percent. It wouldn’t even compensate me for the additional [purchase] cost, so I decided to go with the 80 percent.” (Baltimore, Non-White Goods Appliances, Lower Income)

- There appears to be little difference between the lower income groups and the higher income groups in perceptions of the importance of energy efficiency when purchasing appliances. However, respondents in Bethesda (from the Washington, D.C. area) seemed more aware of energy efficiency issues than respondents in Baltimore. Bethesda group participants also appeared more likely than Baltimore group participants to recognize the importance of energy efficiency when purchasing appliances. Nevertheless, other factors still take precedence over energy efficiency when Bethesda respondents purchase appliances. Although consumers in Bethesda may be somewhat more likely to be aware of energy efficiency issues, this factor is not one of the most important factors considered when deciding on which appliance to purchase.

- Group participants rely on a variety of sources to obtain information about appliances before they shop for them. Consumer Reports and the Internet (e.g., manufacturer websites) are especially valuable sources of information. Consumers also look at newspaper ads and clip newspaper articles on different products and models. In addition, many rely on recommendations from friends, neighbors and sales personnel regarding the brands and models that will best meet their needs.

“My wife is really into researching these things and looking at Consumer Reports. So we went into this with a couple of ideas for the models we wanted to look at.” (Baltimore, White Goods Appliances, Higher Income)

“Recently I bought a room air conditioner. What I tried to do is first get a copy of Consumer Reports to compare prices and quality. In Consumer Reports they give a rundown on all the different brands and all the features and the prices.” (Bethesda, White Goods Appliances, Lower Income)

“I started looking at the ads in the Sunday papers, the different companies that offer them, and the capacities of electric water heaters. A [Baltimore Gas & Electric] home representative was at the neighbor’s house, so I got a little conversation going. Then I happened to meet a friend of mine who is a plumber [and I asked him about water heaters].” (Baltimore, Non-White Goods Appliances, Lower Income)

2.2 Determine How Respondents Evaluate Various Appliances on Energy Consumption

- If and when respondents look into the energy efficiency aspects of appliances, they rely mostly on advice from appliance salespeople and product literature to assist them in this area. The role of the salesperson is particularly important in the purchase of non-white goods appliances which are often purchased sight unseen, i.e., through a manufacturers' catalog or over the phone.

"The salesperson helps [me] narrow it down to one or two units, and then tells me the difference between the two, including [the energy efficiency]." (Baltimore, White Goods Appliances, Lower Income)

"You need to pick up a brochure or talk to the salesperson regarding [energy efficiency]." (Bethesda, Non-White Goods Appliances, Higher Income)

"For my furnace, I didn't go into any showroom to see a bunch of furnaces. That's something you see a brochure on and talk to someone, and they come out to deliver it. The salesperson [gave me energy efficient information]." (Bethesda, Non-White Goods Appliances, Higher Income)

- Some participants also appear to evaluate the energy consumption of appliances by the number and type of features on appliance models. Respondents have the perception that energy use increases as the complexity of the appliance increases. For example, they believe that if a refrigerator has an icemaker and water dispenser, the model will use more energy and will cost more to operate than a model without those features. Respondents also believe that the more complex machines break more often and are more costly to repair.

"Our [dishwasher] has a sani-cycle and an extra cycle, so it maybe goes through another rinse or an extra rinse. So then it's going to use more water, it's going to use more electricity." (Bethesda, White Goods Appliances, Lower Income)

“I steer away from complicated options [on appliances] because that equates to higher maintenance and lower reliability. It’s just more to break down.” (Bethesda, White Goods Appliances, Higher Income)

“The other thing you need to take into account [is that] you may wind up with more maintenance. You are getting a more [complex appliance], but [it] is going to cost you more. If you have to replace it, it is going to cost you more.” (Bethesda, White Goods Appliances, Higher Income)

- Participants had a fairly high level of awareness of the “yellow energy” labels on appliances. They know that these labels can tell them how much energy an appliance uses and how much money it will cost to operate the appliance.

“[The appliances] had stickers on them which told which were [energy efficient] and which were not.” (Bethesda, White Goods Appliances, Higher Income)

“It [the energy label] tells you how much [money] it would average out to be in use per year.” (Baltimore, White Goods Appliances, Lower Income)

“Any major appliance now comes with those energy guides on how much you’re going to pay per kilowatt and how much it is going to cost you for a day and how much energy it’s going to save you.” (Bethesda, White Goods Appliances, Lower Income)

- There is equity in the color yellow used for current energy labels. Consumers say the labels are easily noticed and the yellow color has become symbolic to them of energy efficiency. Consumers know they will find energy efficiency information on the yellow labels.

“The yellow labels they put on a refrigerator or the washer [tell] about energy efficiency.” (Baltimore, White Goods Appliances, Lower Income)

“I think that I see those big, yellow tags on the units. You know how they have the average cost of energy per unit on the big yellow stickers?” (Baltimore, Non-White Goods Appliances, Lower Income)

- Respondents say they only need to have two visible pieces of information on the energy label to understand energy efficiency. They want to know the number of kilowatt hours per year used by the appliance and the average annual cost to operate the appliance. Other information would not be read by most people and would only serve to clutter up the label with unnecessary information. Consumers also would prefer that more technical terms like BTU not be used at all or be translated into a language that a layman could understand.

“To me that label really has to say one very important thing - operating cost in terms of cents, per kilowatts. That tells the story, really.” (Baltimore, Non-White Goods Appliances, Lower Income)

“What I’m looking at is the dollars. How many dollars a year is it going to cost me to run this particular refrigerator over the one next to it and the one next to it. I [don’t want to] look at the other numbers.” (Bethesda, White Goods Appliances, Higher Income)

“I just want to see two items [on the label], that this model uses 598 kilowatts an hour, and maybe the cost that it will save you, per year.” (Baltimore, White Goods Appliances, Lower Income)

“I don’t want to have to educate myself on what a BTU is and how it applies according to the price of electricity. Most people couldn’t tell you [what a BTU is], and they don’t care.” (Baltimore, Non-White Goods Appliances, Lower Income)

- Respondents are unsure about the credibility of the information provided on the energy label. Many do not know or can not readily remember who is providing the information; the manufacturer, the government or some other source. They are not convinced that the information is derived from unbiased, third party tests.

“I’m not really sure how reliable it is [the information on the labels].” (Baltimore, White Goods Appliances, Lower Income)

“I’d be curious to know who is putting the yellow tags on. I think it’s the federal [government]. I think in the back of [my] mind it’s a requirement.” (Bethesda, White Goods Appliances, Lower Income)

"I found it [the energy guide] to be offensive. I want to know, 'Is somebody going to stand behind that? Has anybody really tested that?' How can they say how much it's going to cost me to run it?" (Baltimore, White Goods Appliances, Higher Income)

- Despite their awareness of the Energy Guide Label, few respondents seem to read or use it. Most suggest this is because:
 - The label is too cluttered or too difficult to read
 - The information is hard to understand or too technical
 - The label is one more piece of information, among many, that they have to process in the appliance purchase decision

"I ignore [the Energy Guide Labels] completely. They are confusing. I don't quite understand what it means unless the salesperson really explains it in depth." (Bethesda, White Goods Appliances, Higher Income)

"It [the label] is so technical to me. It goes on and on and on. It's really long with little print. [It should] just say it's going to be efficient in two or three sentences, not a whole book." (Baltimore, White Goods Appliances, Higher Income)

"[Appliances] all have those little decals on there that tell you how much they use. [I didn't pay attention to them]. I walk in and see those things, all that fine print. I don't want to read all that crap." (Baltimore, White Goods Appliances, Lower Income)

"I think maybe when people go shopping for appliances they see so many things with so many features and so many prices. They're inundated so much they just can't focus on energy efficiency. They're just trying to figure out what to buy, and if they throw [the energy efficiency label] into the mix, they're going to get further confused." (Baltimore, White Goods Appliances, Lower Income)

2.3 Obtain Reactions to Alternative Energy Guide Labels

- A total of five Energy Guide Labels were evaluated in the focus groups. Copies of these labels appear in Appendix D. They are:

	LETTER
The current U.S. Energy Guide Label	U
The "A-G" Energy Guide Label	R
The Star Energy Guide Label	Q
The Speedometer	S
The Thermometer	T

- The current Energy Guide Label (label U) has several strengths:
 - It is familiar to consumers and is official looking
 - Its yellow color is well-known and attracts attention
 - It contains a lot of information, particularly the specifications of the appliance evaluated on energy efficiency
 - The operating cost figure stands out because it is presented in a reverse style, meaning white writing on a black background

"It looks like the government [put it out]. They give you the impression that the government has done the tests on this." (Bethesda, Non-White Goods Appliances, Higher Income)

“The thing I like the most, it states the sources all the way up at the top, ‘based on U.S. government tests’. It does have an official aura about it.” (Baltimore, Non-White Goods Appliances, Lower Income)

“I’m more familiar with this [the current Energy Guide Label]. When I walk in the store, it’s the sort of thing I look for.” (Bethesda, White Goods Appliances, Higher Income)

“The color you can [notice] easily. It’s very easy on the eyes.” (Bethesda, White Goods Appliances, Lower Income)

“[I like the Energy Guide Label] because of the yellow [color]. It draws me to it and highlights [the information on the label].” (Bethesda, Non-White Goods Appliances, Higher Income)

“It has a little something about the appliance, the functions of the appliance...the freezer with automatic defrost and the top-mount freezer.” (Bethesda, White Goods Appliances, Lower Income)

- However, as mentioned earlier, the current Energy Guide Label (label U) has several weaknesses:
 - It is not considered easy to read or easy to understand because it is too cluttered
 - The information is considered too technical to understand
 - Respondents do not notice the graph depicted on the label
 - Respondents do not understand the graph even when it is pointed out to them

“[The Energy Guide Label] is cluttered, hard to read. The numbers are too small.” (Bethesda, White Goods Appliances, Higher Income)

“When I first started looking for a water heater, I looked at the [energy] labels. But it’s like Greek, so I talked to a salesperson.” (Bethesda, Non-White Goods Appliances, Higher Income)

"The graph is not very helpful. The graph really doesn't catch my eye, nothing jumps out at you." (Bethesda, White Goods Appliances, Lower Income)

"I don't like the graphic. At first I couldn't figure out what it was. I thought, 'What are they talking about?'" (Baltimore, White Goods Appliances, Higher Income)

- Several respondents also point out that the key information is difficult to locate on the current label and is not obvious. For example, the kilowatt-hours per year use figure is too small. In addition, the yearly operating cost figure is not clearly labeled as such and respondents recommend that the words be highlighted to reduce the likelihood that the figure will be interpreted as cost savings.

"They could make the words in Italics, or [put] the word 'cost' in a different font, to hold up by itself. Or make that a different color or different size, so [people] have to see it." (Baltimore, White Goods Appliances, Lower Income)

- The 'A-G' Energy Guide Label (label R) was the most preferred label overall. This label was liked the best because:
 - The graphics are presented simply
 - Some respondents related well to the letters as a grading system that was familiar from school
 - The variety of colors used on a white background was attention-getting

- The information on the label was formatted or blocked out which makes it easy to understand

"I think the graphics [in the 'A-G' Label] made it easily understood. The thing that struck me was that it was like the old school report card where they graded A, B, C, D. So I look at this and say, 'Oh, B is better than F'. Everybody knows that." (Baltimore, White Goods Appliances, Lower Income)

"This label is the one I liked because the higher, the better. More efficient. You look for the one toward the top. And it does have the consumption and the operating costs right there." (Bethesda, White Goods Appliances, Higher Income)

"I like the colors a lot. It's much easier on the eyes instead of having to hunt all around for where to find this information." (Bethesda, White Goods Appliances, Lower Income)

"It's clean. They used a white background with black ink. That's the cleanest you're going to get. The numbers stand out and the colors are where they have to be." (Baltimore, White Goods Appliances, Lower Income)

- Respondents also say the 'A-G' rating system makes the energy ratings for appliances easy to remember. Therefore, when they look at products in different areas of a store or in different stores, they can easily compare the ratings from one appliance to another.

"I like this [label R]. It would be easy to remember." (Baltimore, White Goods Appliances, Higher Income)

"If I'm in a store and I'm looking at appliances, I'm not going to have two signs side by side on the same sheet of paper. I'll have to go from appliance to appliance. So with [label] R I won't have to remember 598 and 794, 637. But I can remember A, B, C, D, E." (Baltimore, White Goods Appliances, Lower Income)

- A number of other respondents, however, were confused by the presentation of the information on the 'A-G' label. Because it is on a white background, many feel that the information would not catch their eye and could be overlooked. Others were distracted by the multiple colors on the label and did not feel that the colors communicated specific messages (i.e., they did not make the connection between green and a better environment or saving money, or orange/red and energy consumption). Respondents are so familiar with the bright yellow of the current labels that another color scheme to indicate energy efficiency information is unexpected. To some, use of a multicolor scheme for the energy label would make the label seem less official or scientific and it may not be taken as seriously. Some respondents also mentioned that the colors on the label would not communicate effectively to people who are color blind.

*"To me, it [the 'A-G' Label] is harder to read. The background is white. I didn't like it."
(Bethesda, White Goods Appliances, Lower Income)*

"I didn't know what those bars meant until I read the directions. I didn't notice the wording because of the colors on the bars. The colors are so distracting to me." (Baltimore, Non-White Goods Appliances, Lower Income)

"I didn't like it. It didn't catch my eye. I didn't like the different colors. I'm used to seeing [bright yellow]." (Baltimore, White Goods Appliances, Lower Income)

"I'd rather see something a little more scientific. This was just like a nice, colorful little thing, but it was just not scientific." (Bethesda, Non-White Goods Appliances, Higher Income)

- The label R that was presented to respondents showed a short arrow for the more energy efficient rating and a long arrow for the less energy efficient rating. However, some respondents feel that this presentation is misleading. They expect to see longer arrows for the more efficient ratings and shorter arrows for less efficient ratings, not the other way around. One respondent even suggested that the wording on the scale on label R should be changed to more accurately reflect the length of the arrows. Therefore, the shortest top bar should be labeled “Uses Less Energy” and the longest bottom bar should be labeled “Uses More Energy.” There was also confusion regarding the purpose of the letter markers in the right-hand column of the label as well as the A through G scale that was used.

“I think it’s backwards. The A should be sticking out much further, then the B, C and D could go in further because the more efficient should be the longest arrow, not the shortest arrow. [You could] think, ‘Oh, F is the biggest so it’s the most efficient.” (Bethesda, White Goods Appliances, Higher Income)

“If [the bar] is short, then the words up there would say ‘uses less’ so it’s a short line. But if it’s more efficient, ‘more’ should be a longer line.” (Baltimore, White Goods Appliances, Higher Income)

- Another label that was well received by some respondents was the one using the thermometer or bar graph (label T). The strengths of this label include use of the bright yellow and black that respondents already associate with the Energy Guide Label. Participants also liked the large, bold letters, especially the kilowatt per year figure. Most respondents find the bar chart or thermometer device an easy and simple way to convey energy efficiency information.

“I like the boldness and the contrast. It stands out not only because it’s bold, but the contrast between the black and yellow makes you zero in on it.” (Baltimore, Non-White Goods Appliances, Lower Income)

“This is the best for me. Nice, big black letters. It shows the graphs, gives you the numbers. It’s easy to look at. The colors are good, the black, the yellow really get to you.” (Bethesda, White Goods Appliances, Higher Income)

*"I liked it because of the simple graphic. It was easy to figure out. You didn't have to stare at it a long time to get the information. You're not going to spend a lot of time looking at these things anyway, so the quicker that you can get the information, the better."
(Baltimore, White Goods Appliances, Lower Income)*

- However, some respondents found the bar chart or thermometer difficult to read. They do not know if the viewer should look at the black space or the white space in the thermometer to determine the level of kilowatt hours per year. The thermometer is also misleading to some. For example, while respondents do not feel that there is much difference between the model that uses 598 kWh and the one using 724 kWh, the thermometers visually represent a much larger difference.

"I got confused by the black and white bar. I really had to look and say, 'Is the black what you're using or is that what you are not using?' Once you see the two [thermometers] compared, then you get it." (Bethesda, White Goods Appliances, Higher Income)

- A few respondents also do not like the position of the Energy Guide logo on the thermometer label. They say it is too distracting to have the logo running down the side of the label instead of across the top.

"The energy guide on the side is the only thing that made it a little tough. You have to tilt over to see what it is." (Baltimore, White Goods Appliances, Lower Income)

- Some respondents liked the blue color of the Speedometer label (label S). The large, highlighted kWh per year and operating cost figures were also appealing aspects of this label.

"I like the calmness of the blue. Maybe the blue would make you stop and it would catch your attention more." (Baltimore, Non-White Goods Appliances, Lower Income)

"It tells you everything that you want to know, 598 for one, 724 for the other. And here it tells you how much it's going to cost you for a year." (Baltimore, White Goods Appliances, Lower Income)

- However, the visual element of the speedometer was very weak. In fact, many respondents did not even notice the speedometer because it blends into the background. Elements of the visual that contribute to it not being noticed by many respondents include:

- The imbalance of the speedometer positions (the small lightning bolt is too far away from the low energy gauge so many respondents do not see it)
- The arrow in the Energy Guide heading that points to the speedometer is not obvious because it is presented as a shaded triangle

“I never noticed this clock thing. I thought it was just a decoration.” (Bethesda, White Goods Appliances, Higher Income)

“To me it’s just like they ran out of room to put the diagram in, so they had to kind of squash it.” (Bethesda, White Goods Appliances, Lower Income)

“They need to slow the whole thing [the speedometer]. It shouldn’t go off the paper. The lightning bolt should be more balanced. They should have kept it more geometrically aligned.” (Baltimore, Non White Goods Appliances, Lower Income)

“The arrow that’s supposed to point to [the scale looks like] a long-eared triangle. I almost had to put on my reading glasses. It needs to be a different color.” (Bethesda, White Goods Appliances, Lower Income)

- The least preferred Energy Guide label was the Star Energy Guide Label (label Q). The few strengths of this label mentioned by some respondents include familiarity with the use of stars to rate products and services in other industries (i.e., restaurants, movies, etc.) and the large, easily noticed presentation of the kWh per year figure. Respondents also feel that this label is the most honest in presenting information since it includes the statement that actual energy use and operating cost will vary depending on local utility rates and use of the product.

“I liked it from the standpoint that when I think of a four-star rating, or the higher the stars rating, the better, like a movie; you give it a four star. A restaurant has a five-star -- that type of thing.” (Baltimore, Non-White Goods Appliances, Lower Income)

"I like the way the white box in the middle is printed. It gives you the comparative energy consumption in large letters. I can just focus right in on it." (Bethesda, White Goods Appliances, Higher Income)

"To me [the label with the stars] is the most honest. It doesn't say you're going to get \$52 or \$63. It's saying that actual energy use and operating costs will vary, depending on your local utility rates. That's true." (Baltimore, White Goods Appliances, Lower Income)

- However, this label's weaknesses outweighed its strengths. There is a lot of confusion among respondents on the interpretation of the star ratings. Some think that the more stars, the more energy the appliance uses. This is because the description of how to read the scale ("The more stars the more energy efficient") is difficult to see and tends to get lost on the label. Related to this is that respondents feel the label is too wordy and cluttered and that the important information is not easy to find.

"I couldn't understand why there were so many stars. I thought all those stars meant that it used that much more energy. I was thinking that the one with only one star had less energy usage. You have to look at the little print to see, 'The more stars, the more energy efficient.'" (Bethesda, White Goods Appliances, Lower Income)

"I thought it was very busy. I had to really look to find anything in there that I could really comprehend." (Bethesda, Non-White Goods Appliances, Higher Income)

- Another important weakness of this label is the lack of operating cost information, which is one of the two key pieces of information that respondents want included on an energy label. A number of respondents also do not like the color of the label and feel it is not bold enough to attract attention.

"The only thing I don't like is that it [the Star Energy Label] doesn't have the dollars on it. It needs the dollars." (Bethesda, White Goods Appliances, Higher Income)

"It's easily overlooked. The colors don't stand out enough. There's not enough contrast." (Bethesda, Non-White Goods Appliances, Higher Income)

- Respondents participated in an exercise to evaluate how well they understood the Energy Guide Labels. In the first two groups in Bethesda, each respondent was handed a packet containing all the labels together and was asked to select which of the two refrigerators (J or K) they would buy based on the energy efficiency of each appliance presented on each label. All respondents chose the correct appliance (J), that is, the most energy efficient appliance based on the information contained in the labels. Using this method, respondents had the ability to look at all the labels and compare and contrast them. However, there was no way to discern how effective each individual label was at communicating energy efficiency. Therefore, the project team decided to change the way the labels were presented to respondents for this exercise in subsequent groups. In the four remaining groups, each participant was given only one of the alternative labels and was asked to select which appliance they would purchase based on energy efficiency. Even with this change, all but one respondent chose the correct appliance (J).

“It appears as if J costs less to operate. [The rating] also seemed to be more efficient. The higher it is, the better the efficiency rating and it’s cheaper to operate.” (Bethesda, Non-White Goods Appliances, Higher Income)

- These results suggest that all the labels have the potential to communicate correct information to consumers, if consumers can be motivated to read the labels. However, since this test was conducted in a laboratory setting (focus group discussions), it does not replicate an actual retail environment where a variety of outside stimuli could impact consumers’ attention to the label and retention of the information on it.
- After the discussion on the alternative energy guide labels, respondents were shown a depiction of the Energy Star Logo (see Appendix E) and asked for their impressions of the logo.

- Although respondents find the logo visually appealing, most do not associate it with energy efficiency. The logo's immediate message to consumers is more about the environment than about energy efficiency. A number of respondents also do not know what DOE and EPA mean. If this logo appears along with the Energy Guide Label on an appliance, few consumers would assume that the appliance was more energy efficient than the machines without the logo. The presence of the logo, however, does imply endorsement of some type and the logo creates consumer curiosity regarding what it actually means. Nevertheless, consumers do not believe the logo would impact their purchase decisions without learning more about it.

"I would say that prior to this session, it [the Energy Star Logo] would have meant nothing to me because I didn't know about it. I still really don't know what it means." (Baltimore, Non-White Goods Appliances, Lower Income)

"It [the logo] means friendly to conservation. If you buy this product, it is environmentally friendly. [But] if you didn't know what EPA or DOE mean, there's less communication." (Baltimore, White Goods Appliances, Lower Income)

"If it's on every appliance, it wouldn't mean a thing. If I were to see a refrigerator that I like, I don't care if that's on it or not. If it's a good refrigerator in a nice color, I'll take it." (Bethesda, White Goods Appliances, Lower Income)

"This means that it's been tested by the U.S. government, so it's got some test on it, a seal of approval." (Bethesda, White Goods Appliances, Lower Income)

- At the end of each group, respondents were asked the importance of a statement that translates the energy cost of an appliance to a lifetime dollar amount. This is called a life-cycle cost estimate. The statement evaluated is:

"During its lifetime, this refrigerator (or water heater in the non-white groups) will use _____ in energy. Add this figure to the sale price of the refrigerator/water heater to determine the total cost to buy and operate. This cost is an estimate, based on a 1998 U.S. Government national average cost of 8.67 cents per kWh and on the average 19 year/11 year lifetime of a refrigerator/water heater."

- Two statements were read by respondents in the white goods appliance groups, one that says the refrigerator will use \$988 in energy during its lifetime and the other that says the refrigerator will use \$1,197 in energy. The two statements in the non-white goods appliance groups included \$4,466 in energy and \$4,774 in energy (see Appendix F).
- Reactions to the life-cycle cost estimate were split. Some respondents felt it would be helpful to have this lifetime annual cost information already calculated out, while others believed that consumers can easily figure out this information by multiplying the annual operating cost figure already on the label by the number of years they expect the appliance to last. However, most would not want this information on the label if it would clutter up the label and make it more difficult and less appealing to read.

*“For some people it may make a big difference. It’s a good piece of information.”
(Baltimore, White Goods Appliances, Lower Income)*

“I think the statement gives people a guide to help them figure out what the figures mean, what the cost means. I think it greatly helps. This capsulizes how much you will be saving.” (Bethesda, White Goods Appliances, Higher Income)

*“You are almost overloaded with data here [already]. You have the cost of what you’re going to buy, you have the kWh, you have the annual cost... You somehow have to process this all. You [would] have too much information [with the life-cycle information added].”
(Bethesda, Non-White Goods Appliances, Higher Income)*

“All it’s doing is making fancy words out of the simple math you could have done in your head already.” (Baltimore, White Goods Appliances, Lower Income)

- However, many say they might disregard this statement because the average lifetime of a refrigerator or water heater may not be relevant to their situation. Some respondents will use the appliance more than 19 years (refrigerator) or 11 years (water heater) and some less, depending on their situation.

*“This is the average life of the water heater? I don’t believe it. I believe it’s a lot longer.”
(Baltimore, Non-White Goods Appliances, Lower Income)*

“If I’m buying a refrigerator, it might last me less time than it lasts someone else. If you have kids in the house, it’s being opened and closed every five minutes. So how can they say, ‘Over the 19 years...’” (Baltimore, White Goods Appliances, Lower Income)

- Another weakness of the statement is that it magnifies the insignificant difference between the lifetime energy costs of the two appliances. In other words, respondents do not feel that there is a very big difference between the \$988 refrigerator and the \$1,197 refrigerator over 19 years (or the \$4,466 water heater and the \$4,774 water heater over 11 years) and, therefore, may be even less inclined to consider energy efficiency as a factor in appliance purchase decisions after seeing how little difference there is between the two appliances over time.

“If we are going to see differences of \$2,000 to \$4,000 for the comparable kind of water heater, then it’s going to make a big difference. To me, this is no difference here. So at this level it’s not important. At a big percentage difference, then it would make a difference.” (Bethesda, Non-White Goods Appliance, Higher Income)

- Some respondents misunderstood the information in the life-cycle cost statement. They thought that the cost quoted in the statement should be added to the price of the appliance to determine the total purchase price of the appliance.

“Have you read the second sentence? Add this figure to the sales price. That’s what it’s saying, to determine the total cost to buy it. They’re giving you one price over here, this is how much the refrigerator is going to cost, and this little statement down at the bottom is saying add this figure in addition to that.” (Bethesda, White Goods Appliances, Lower Income)

- Use of “sale price” could also be misconstrued to mean buying the product on sale. Respondents suggested changing the wording to “purchase price” to eliminate some of the confusion.

“Instead of saying the sale price, because you might be buying it on sale, I would say, ‘Add the purchase price’, instead of sale price because that might be confusing.” (Bethesda, White Goods Appliances, Lower Income)

- There were few, if any, differences between the white goods appliance groups and the non-white goods appliance groups in positive and negative reactions to the alternative labels, or in reactions to the Energy Star Logo and life-cycle cost estimate. In addition, white goods appliance and non-white goods appliance group respondents did not clearly differ on their ratings of most preferred and least preferred labels. Reactions to the labels and to the Energy Star Logo and life-cycle cost estimate also did not differ by income level of respondents.
- There were no differences in label preferences by market. Although, as mentioned earlier, respondents in Bethesda appeared somewhat more aware of energy efficiency issues, they did not differ in their ratings of most and least preferred labels, in their perceptions of the strengths and weaknesses of each label, or in their reactions to the Energy Star Logo and life-cycle cost estimate.

3.0 Conclusions and Recommendations

Conclusions and Recommendations

1. Energy efficiency is not a major factor in the purchase decision process for appliances.
 - Consumers perceive that the purchase price of the most energy-efficient models is too high, and that it will take too long to recoup their money in energy savings across the lifetime of the appliance
 - Consumers assume that all appliances sold today are energy efficient or the government wouldn't let them be sold
 - Consumers assume there is relatively little difference in the energy efficiency of various models of the same type of appliance
 - Consumers do not believe white goods appliances use much energy

The energy community needs to increase consumer awareness of energy efficiency as an issue, and discuss the benefits of using more energy-efficient appliances such as personal cost savings, conservation of natural resources, improving the environment, etc. In addition, a public education program should be developed to correct current misperceptions about the energy efficiency of appliances.

2. The results of the focus group research indicate that the ideal energy guide label should:
 - Include the estimated annual operating cost highlighted so it is easily seen
 - Include the kilowatt hour usage per year highlighted so it is easily seen
 - Emphasize the words “operating cost” by use of different font type or size
 - Use the color yellow as background
 - Use a visually appealing graphic that simply and clearly communicates the kWh usage per year of each product
 - Include appliance specifications
 - Reduce the amount of unnecessary text
 - Clearly state that the data is provided by the U.S. government
 - Be able to communicate its messages simply and clearly with large, blocked out letters and words without relying on colors alone to signify more or less energy use

3. The current Energy Guide Label is familiar to consumers but apparently is not always read or used by them in making appliance purchase decisions. This is because the guide is too cluttered and the graph does not clearly convey key information. The current Energy Guide Label should be revised to:
 - Reduce the amount of unnecessary text
 - Improve the graph so that it more clearly conveys kWh usage per year
 - Clearly label and highlight the operating cost figure

4. The alternative labels tested need improvement to effectively communicate necessary energy efficiency information to consumers. The following suggestions for improving the labels tested are:

The 'A-G' Label (Label R)

- Change the scale labels to “Uses Less Energy” on the top instead of “More Efficient” and “Uses More Energy” on the bottom instead of “Less Efficient.” This will make it easier for consumers to interpret the length of the arrows
- Eliminate the letter G from the scale
- Make the annual operating cost language and figure larger
- Use yellow in the background of the label to better associate it with energy efficiency information
- Retain the multicolored arrows if the scale wording is changed to more accurately depict less and more energy use; however, the label cannot rely solely on the colors of the arrows to communicate the energy efficiency messages

The Thermometer Label (Label T)

- Redesign the thermometer to more clearly resemble a thermometer
- Reposition the Energy Guide logo across the top of the label and not down the side

The Speedometer Label (Label S)

- Reconsider use of the color blue as consumers do not associate it with energy efficiency information
- Redraw the design to more clearly resemble a speedometer with numbers on the anchor points and a needle that looks like one on a speedometer
- Redesign the speedometer graphic to be more balanced and move the lightning bolt closer to the left side of the speedometer
- Clearly label the estimated yearly operating cost

The Star Energy Guide Label (Label Q)

- Use bright yellow as the background
 - More prominently feature the star ratings and the definition of what the ratings mean (“The More Stars, the More Energy Efficient”)
 - Include and prominently display the annual operating cost figure. Remove unnecessary information and definitions from the label to focus only on the kWh year and operating cost figures
 - Attach the kWh designation to the number in the box so consumers will understand that the figure refers to kilowatt hours
5. The life-cycle cost estimate appears to be unnecessary information for most consumers since they find the yearly operating cost information currently available on the energy label sufficient. If the life-cycle cost is included on the Energy Guide Label, it must be written succinctly so as not to clutter up the label. However, use of the life-cycle cost could potentially do more harm than good if consumers perceive that there is minimal difference in lifetime operating costs between two models.
6. The Energy Star logo is not readily associated with energy-efficient appliances, and the logo’s sponsors, EPA and DOE, are not automatically identified by all consumers. Consumers need more education regarding the Energy Star logo and what it means before it will impact consumer purchase decisions. If this logo is used along with the Energy Guide Label, a consumer public education campaign will need to precede it.
7. Consumers rely heavily on salespeople for information about energy efficiency and to interpret the information on the energy label. Therefore, training materials should be developed for appliance salespeople that provide them with information on the benefits of energy-efficient appliances and educate them on how to understand and use the new Energy Guide Label when it is available.

8. The focus groups results do not indicate a difference in reactions to and preferences for the alternative energy guide labels by market, income level or by type of appliance purchased (white or non-white). Bethesda respondents did appear to be somewhat more cognizant of energy efficiency issues, although this did not translate into a greater importance placed on energy efficiency as a factor in appliance purchase. Non-white goods appliance purchasers were more likely than white goods appliance purchasers to be concerned with energy efficiency because of the large amount of energy these appliances use. However, energy efficiency was not among the most important factors considered even in purchase of non-white goods appliances. Given the qualitative nature of the research, these hypotheses will need to be substantiated through quantitative research with statistically reliable sample sizes.

Appendix A: Respondent Profile

Respondent Profile

	TOTAL (N=57)	WHITE GOODS APPLIANCE (N=39)	NON-WHITE GOODS APPLIANCE (N=18)
Owned Home			
3 to 9 years	16	13	3
10 to 20 years	22	13	9
More than 20 years	19	13	6
Responsibility of Purchasing Large Household Appliances			
Primarily Responsible	38	28	10
Share Responsibility Equally	19	11	8
Large Household Appliances Purchased*			
Refrigerator	6	6	N/A
Individual Room Air Conditioning Unit	3	3	N/A
Dishwasher	5	5	N/A
Freezer	2	2	N/A
Clothes Washer	12	12	N/A
Water Heater	6	N/A	6
Central Air Conditioning System	5	N/A	5

*For white goods appliance groups, respondents must have purchased in last 6 months. For non-white goods appliance groups, respondents must have purchased in last 12 months.

	TOTAL (N=57)	WHITE GOODS APPLIANCE (N=39)	NON-WHITE GOODS APPLIANCE (N=18)
Large Household Appliances Currently Shopping			
Refrigerator	12	12	N/A
Individual Room Air Conditioning Unit	2	2	N/A
Dishwasher	7	7	N/A
Freezer	3	3	N/A
Clothes Washer	2	2	N/A
Water Heater	4	N/A	4
Central Air Conditioning System	4	N/A	4
Total Number of Purchasers and Shoppers**			
Purchasers	39	28	11
Shoppers	34	26	8
Retail Stores Where Respondents have Purchased or Shopped for Appliances*			
Sears	31	23	8
Montgomery Wards	12	9	3
Circuit City	8	7	1
Best Buy	5	5	0
BG&E (Baltimore Gas & Electric)	5	2	3
Home Depot	5	1	4
Lowes	2	1	1
Sam's Club	1	1	0
Cummins	1	1	0
Bray & Scarff	1	1	0
American Heating	1	0	1
Hechingers	3	0	3

**Number of responses may add to more than the reflected base because multiple responses were accepted.

	TOTAL (N=57)	WHITE GOODS APPLIANCE (N=39)	NON-WHITE GOODS APPLIANCE (N=18)
Contractors Where Respondents have Purchased or Shopped for Appliances			
Dwyers'	1	N/A	1
Four Seasons Cooling & Heating	1	N/A	1
Others	4	N/A	4
Annual Household Income			
Under \$20,000	2	1	1
\$20,000 to \$29,999	5	5	0
\$30,000 to \$39,999	21	14	7
\$40,000 to \$59,999	9	8	1
\$60,000 to \$74,999	8	6	2
\$75,000 to \$100,000	7	4	3
More than \$100,000	5	1	4
Education Level			
High School Degree	10	7	3
Some College	20	14	6
College Degree	15	13	2
Some Graduate Work	3	0	3
Graduate Degree	9	5	4

	TOTAL (N=57)	WHITE GOODS APPLIANCE (N=39)	NON-WHITE GOODS APPLIANCE (N=18)
Marital Status			
Married or Partnered	35	25	10
Divorced/Separated/Widowed	14	9	5
Single	8	5	3
Children Under 18 Living at Home			
Yes	23	16	7
No	34	23	11
Race			
Caucasian	35	23	12
African American	18	13	5
Hispanic or Latino	2	1	1
Refused	2	2	0
Gender (by study design)			
Female	36	26	10
Male	21	13	8
Employment			
Full-time	37	24	13
Part-time	13	9	4
Retired	5	4	1
Not Employed	1	1	0
Full-time Student	1	1	0
Employment Location			
Outside of Home	43	27	16
At Home	7	6	1

	TOTAL (N=57)	WHITE GOODS APPLIANCE (N=39)	NON-WHITE GOODS APPLIANCE (N=18)
Occupation			
Sales	5	4	1
Accounts Payable Clerks	3	3	0
Office Managers	3	3	0
Social Worker	3	1	2
Education Monitors	2	2	0
Secretaries	2	2	0
Self-Employed	2	2	0
Teachers' Assistant/Aide	2	1	1
Senior Field Representative	1	1	0
Telecommunications Consultant	1	1	0
Service Representative	1	1	0
Administrative Officer	1	1	0
Logistics Supervisor	1	1	0
Receptionist	1	1	0
Temporary Office Representative	1	1	0
Personnel Associate	1	1	0
Medical Transcriptionist	1	1	0
Research Associate	1	1	0
Engineer	1	1	0
Project Manager	1	1	0

	TOTAL (N=57)	WHITE GOODS APPLIANCE (N=39)	NON-WHITE GOODS APPLIANCE (N=18)
Occupation (Cont'd)			
Real Estate Agent	1	1	0
Fireman	1	1	0
Cosmetologist	1	1	0
Office Assistant	1	0	1
Substitute Teacher	1	0	1
Human Services	1	0	1
Loan Officer	1	0	1
Baltimore County Health Department Manager	1	0	1
U.S. Treasury Department	1	0	1
U.S. Postal Clerk	1	0	1
Dentist	1	0	1
U.S. Public Health Service Executive Officer	1	0	1
Retail Manager	1	0	1
Auditor	1	0	1
Systems Analyst	1	0	1
Video Editor	1	0	1

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

ACE991
CIRCLE

June 15 Bethesda (High Income) 8 PM
June 17 Baltimore (Low Income) 6 PM

NON-WHITE APPLIANCE SCREENER
(FINAL 6/3/99)

RESPONDENT NAME: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
TELEPHONE: (H) _____
DATE RECRUITED: _____ RECRUITED BY: _____
CONFIRMED BY: _____ DATE CONFIRMED: _____

Hello, this is _____ calling from Shugoll Research, a national market research company. We are conducting a brief study about household appliances and would greatly value your opinions. This is strictly market research and absolutely no sales effort is involved. I'd like to ask you a few questions.

1. First, can you tell me do you own or rent your home?

	<u>CIRCLE</u>	
Own	1	→(CONTINUE)
Rent	2	→(THANK AND TERMINATE)
Refused	3	

2. Have you owned your home for: (READ LIST)

	<u>CIRCLE</u>	
Less than 3 years	1	→(THANK AND TERMINATE)
3 to 9 years	2	
10 to 20 years	3	→(CONTINUE)
OR More than 20 years	4	
(DO NOT READ) Don't know	5	→(THANK AND TERMINATE)

3. Which of the following statements reflects your involvement in purchasing or shopping for large household appliances such as water heaters and central air conditioning systems for your home? (READ LIST)

CIRCLE

<p>You are primarily responsible for purchasing these types of large household appliances</p>	1	→(CONTINUE)
<p>You share the responsibility equally for purchasing these types of large household appliances</p>	2	
<p>Someone else is responsible for purchasing large household appliances</p>	3	→(ASK TO SPEAK TO THE PERSON MOST RESPONSIBLE FOR PURCHASING OR SHOPPING FOR THESE LARGE HOUSEHOLD APPLIANCES)

- 4a. Now, thinking about large household appliances, have you purchased any of the following for your home in the last 12 months? (READ LIST)

CIRCLE ONE PER ROW

	<u>Yes</u>	<u>No</u>	<u>Don't Know</u>
Water heater	1	2	3
Central air conditioning system	1	2	3
	↓		↓
	(IF AT LEAST ONE CODE 1 CIRCLED, RECRUIT 5-6 PER GROUP AND SKIP TO Q.5)	(IF NO OR DON'T KNOW TO ALL, CONTINUE WITH Q.4b)	

- 4b. Are you now shopping for and likely to buy any of the following appliances for your home? (READ LIST)

CIRCLE ONE PER ROW

	<u>Yes</u>	<u>No</u>	<u>Don't Know</u>
Water heater	1	2	3
Central air conditioning system	1	2	3
	↓		↓
	(AT LEAST ONE CODE 1 <u>MUST</u> BE CIRCLED TO CONTINUE. RECRUIT 5-6 PER GROUP)	(THANK AND TERMINATE)	

5. Where did you buy (or have you shopped for) these types of household appliance(s)?
(DO NOT READ)

	<u>CIRCLE</u>	
Home Depot	1	
Hechingers	2	
Montgomery Wards	3	→(RECRUIT AS MANY AS POSSIBLE)
Sears	4	
Other retailer (SPECIFY) _____	5	
Builder/contractor	6	
Other (SPECIFY) _____	7	
Don't know	8	→(THANK AND TERMINATE)

6. Which of the following categories includes your total family income before taxes:
(READ LIST)

	<u>CIRCLE</u>	
Under \$20,000	1	
\$20,000 to \$29,999	2	→(RECRUIT FOR BALTIMORE GROUP)
\$30,000 to \$39,999	3	
\$40,000 to \$59,999	4	
\$60,000 to \$74,999	5	→(RECRUIT FOR BETHESDA GROUP)
\$75,000 to \$100,000	6	
OR More than \$100,000	7	
(DO <u>NOT</u> READ) Refused	8	→(THANK AND TERMINATE)

7. And, which of the following categories includes the last grade of school you completed? (READ LIST)

	<u>CIRCLE</u>
Some high school	1
High school degree	2
Vocational school	3
Some college	4
College degree	5
Some graduate work	6
OR Graduate degree	7
(DO <u>NOT</u> READ) Refused	8

8. Are you: (READ LIST)

- | | <u>CIRCLE</u> |
|-----------------------------------|---------------|
| Single | 1 |
| Married or partnered | 2 |
| OR Divorced, separated or widowed | 3 |
| (DO <u>NOT</u> READ) Refused | 4 |

9. Do you have any children under the age of 18 living at home?

- | | <u>CIRCLE</u> |
|------------|---------------|
| Yes | 1 |
| No | 2 |
| Don't know | 3 |

10a. Are you: (READ LIST)

- | | <u>CIRCLE</u> | |
|------------------------------|---------------|-----------------|
| Employed full-time | 1 | →(CONTINUE) |
| Employed part-time | 2 | |
| Not employed | 3 | →(SKIP TO Q.11) |
| A full-time student | 4 | |
| OR Retired | 5 | |
| (DO <u>NOT</u> READ) Refused | 6 | |

10b. What is your occupation? Please describe.

10c. Do you work: (READ LIST)

- | | <u>CIRCLE</u> |
|----------------------|---------------|
| From home | 1 |
| OR Outside your home | 2 |

11. And, to ensure that we have a representative sample, please tell me if you are:
(READ LIST)

	<u>CIRCLE</u>	
Caucasian	1	→(RECRUIT 8 OR 9 PER GROUP)
African American	2	
Hispanic or Latino	3	→(RECRUIT 3 OR 4 PER GROUP)
Asian	4	
OR A member of some other racial/ethnic group	5	

12. Now, thinking about your recent experiences shopping for household appliances, what aspects about shopping for these appliances did (do) you like most and like least? (WRITE VERBATIM)

NOTE TO INTERVIEWERS: IT IS EXTREMELY IMPORTANT THAT RESPONDENTS IN THIS STUDY BE ARTICULATE. IF RESPONDENT CANNOT OR WILL NOT EASILY GIVE A ONE TO TWO SENTENCE UNPROMPTED ANSWER IN WELL UNDERSTOOD ENGLISH, PLEASE TERMINATE.

13. Have you or has anyone in your immediate family ever worked in the field of advertising, market research, public relations, or for a household appliance manufacturer or sales company or a regulatory or energy-related organization?

	<u>CIRCLE</u>	
Yes	1	→(THANK AND TERMINATE)
No	2	→(CONTINUE)

14. Have you ever participated in a market research discussion group?

	<u>CIRCLE</u>	
Yes	1	→(CONTINUE)
No	2	→(SKIP TO INVITATION)

15. How long ago was the last market research discussion group you participated in?
(DO NOT READ)

	<u>CIRCLE</u>	
Within the past 6 months	1	→(THANK AND TERMINATE)
More than 6 months ago	2	→(CONTINUE)

16. What was the topic of the study you participated in? (DO NOT READ)

CIRCLE

Household appliance or energy-related	1	→(THANK AND TERMINATE)
Other	2	→(CONTINUE)

17. RECRUITER: CIRCLE GENDER

CIRCLE

Female	1	→(RECRUIT A MIX)
Male	2	

INVITATION

We are conducting a panel discussion with 10 people like yourself to discuss issues related to purchasing household appliances on June 15 (Bethesda) or June 17 (Baltimore). The discussion will take about 2 hours. A cash gift of \$50 will be given to each participant. Are you available to attend the meeting?

CIRCLE

Yes	1	→(GIVE DIRECTIONS)
No	2	→(THANK AND TERMINATE)

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

ACE991
CIRCLE

June 15 Bethesda (Low Income) 6 PM
June 18 Bethesda (High Income) Noon
June 16 Baltimore (Low Income) 6 PM
June 16 Baltimore (High Income) 8 PM

WHITE APPLIANCE SCREENER
(FINAL 6/3/99)

RESPONDENT NAME: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
TELEPHONE: (H) _____
DATE RECRUITED: _____ RECRUITED BY: _____
CONFIRMED BY: _____ DATE CONFIRMED: _____

Hello, this is _____ calling from Shugoll Research, a national market research company. We are conducting a brief study about household appliances and would greatly value your opinions. This is strictly market research and absolutely no sales effort is involved. I'd like to ask you a few questions.

1. First, can you tell me do you own or rent your home?

	<u>CIRCLE</u>	
Own	<input type="checkbox"/> 1	→(CONTINUE)
Rent	<input type="checkbox"/> 2	→(THANK AND TERMINATE)
Refused	<input type="checkbox"/> 3	

2. Have you owned your home for: (READ LIST)

	<u>CIRCLE</u>	
Less than 3 years	<input type="checkbox"/> 1	→(THANK AND TERMINATE)
3 to 9 years	<input type="checkbox"/> 2	→(CONTINUE)
10 to 20 years	<input type="checkbox"/> 3	
OR More than 20 years	<input type="checkbox"/> 4	
(DO <u>NOT</u> READ) Don't know	<input type="checkbox"/> 5	→(THANK AND TERMINATE)

3. Which of the following statements reflects your involvement in purchasing household appliances such as large kitchen appliances for your home? (READ LIST)

CIRCLE

You are primarily responsible for purchasing these types of household appliances	1	→(CONTINUE)
You share the responsibility equally for purchasing these types of household appliances	2	
Someone else is responsible for purchasing large household appliances	3	→(ASK TO SPEAK TO THE PERSON MOST RESPONSIBLE FOR PURCHASING LARGE HOUSEHOLD APPLIANCES)

4a. Now, thinking about large household appliances, have you purchased any of the following in the last 6 months? (READ LIST)

CIRCLE ONE PER ROW

	<u>Yes</u>	<u>No</u>	<u>Don't Know</u>
Refrigerator	1	2	3
Individual room air conditioning unit	1	2	3
Dishwasher	1	2	3
Freezer	1	2	3
Clothes washer	1	2	3

↓

(IF AT LEAST ONE CODE 1 CIRCLED, RECRUIT A MIX OF 5-6 PER GROUP AND SKIP TO Q.5)

(IF NO OR DON'T KNOW TO ALL, CONTINUE WITH Q.4b)

4b. Are you now shopping for and likely to buy any of the following appliances? (READ LIST)

CIRCLE ONE PER ROW

	<u>Yes</u>	<u>No</u>	<u>Don't Know</u>
Refrigerator	1	2	3
Individual room air conditioning unit	1	2	3
Dishwasher	1	2	3
Freezer	1	2	3
Clothes washer	1	2	3

↓

(AT LEAST ONE CODE 1 MUST BE CIRCLED TO CONTINUE. RECRUIT A MIX OF 5-6 PER GROUP)

(THANK AND TERMINATE)

5. Where did you buy (or have you shopped for) the household appliance(s)? (DO NOT READ)

	<u>CIRCLE</u>	
Circuit City	1	
Best Buy	2	
Montgomery Wards	3	→(RECRUIT A MIX PER GROUP)
Sears	4	
Other retailer (SPECIFY) _____	5	
Builder/contractor	6	→(THANK AND TERMINATE)
Other (SPECIFY) _____	7	→(PUT ON HOLD AND NOTIFY PROJECT MANAGER)
Don't know	8	→(THANK AND TERMINATE)

6. Which of the following categories includes your total family income before taxes: (READ LIST)

	<u>CIRCLE</u>	
Under \$20,000	1	
\$20,000 to \$29,999	2	→(RECRUIT FOR LOW INCOME GROUPS AND A MIX OF CATEGORIES)
\$30,000 to \$39,999	3	
\$40,000 to \$59,999	4	
\$60,000 to \$74,999	5	→(RECRUIT FOR HIGH INCOME GROUPS AND A MIX OF CATEGORIES)
\$75,000 to \$100,000	6	
OR More than \$100,000	7	
(DO NOT READ) Refused	8	→(THANK AND TERMINATE)

7. And, which of the following categories includes the last grade of school you completed? (READ LIST)

	<u>CIRCLE</u>
Some high school	1
High school degree	2
Vocational school	3
Some college	4
College degree	5
Some graduate work	6
OR Graduate degree	7
(DO NOT READ) Refused	8

8. Are you: (READ LIST)

	<u>CIRCLE</u>
Single	1
Married or partnered	2
OR Divorced, separated or widowed	3
(DO <u>NOT</u> READ) Refused	4

9. Do you have any children under the age of 18 living at home?

	<u>CIRCLE</u>
Yes	1
No	2
Don't know	3

10a. Are you: (READ LIST)

	<u>CIRCLE</u>	
Employed full-time	1	→(CONTINUE)
Employed part-time	2	
Not employed	3	→(SKIP TO Q.11)
A full-time student	4	
OR Retired	5	
(DO <u>NOT</u> READ) Refused	6	

10b. What is your occupation? Please describe.

10c. Do you work: (READ LIST)

	<u>CIRCLE</u>
From home	1
OR Outside your home	2

11. And, to ensure that we have a representative sample, please tell me if you are:
(READ LIST)

	<u>CIRCLE</u>	
Caucasian	1	→(RECRUIT 8 OR 9 PER GROUP)
African American	2	
Hispanic or Latino	3	→(RECRUIT 3 OR 4 PER GROUP)
Asian	4	
OR A member of some other racial/ethnic group	5	

12. Now, thinking about your recent experiences shopping for household appliances, what aspects about shopping for these appliances did (do) you like most and like least? (WRITE VERBATIM)

NOTE TO INTERVIEWERS: IT IS EXTREMELY IMPORTANT THAT RESPONDENTS IN THIS STUDY BE ARTICULATE. IF RESPONDENT CANNOT OR WILL NOT EASILY GIVE A ONE TO TWO SENTENCE UNPROMPTED ANSWER IN WELL UNDERSTOOD ENGLISH, PLEASE TERMINATE.

13. Have you or has anyone in your immediate family ever worked in the field of advertising, market research, public relations, or for a household appliance manufacturer or sales company or a regulatory or energy-related organization?

	<u>CIRCLE</u>	
Yes	1	→(THANK AND TERMINATE)
No	2	→(CONTINUE)

14. Have you ever participated in a market research discussion group?

	<u>CIRCLE</u>	
Yes	1	→(CONTINUE)
No	2	→(SKIP TO INVITATION)

15. How long ago was the last market research discussion group you participated in?
(DO NOT READ)

	<u>CIRCLE</u>	
Within the past 6 months	1	→(THANK AND TERMINATE)
More than 6 months ago	2	→(CONTINUE)

16. What was the topic of the study you participated in? (DO NOT READ)

CIRCLE

Household appliance or energy-related	1	→(THANK AND TERMINATE)
Other	2	→(CONTINUE)

17. RECRUITER: CIRCLE GENDER

CIRCLE

Female	1	→(RECRUIT A MIX)
Male	2	

INVITATION

We are conducting a panel discussion with 10 people like yourself to discuss issues related to purchasing household appliances on June 15/18 (Bethesda) or June 16 (Baltimore). The discussion will take about 2 hours. A cash gift of \$_____ will be given to each participant. Are you available to attend the meeting?

CIRCLE

Yes	1	→(GIVE DIRECTIONS)
No	2	→(THANK AND TERMINATE)

Appendix C: Moderator's Topic Guide

MODERATOR'S TOPIC GUIDE
(FINAL JUNE 15, 1999)

PROJECT: ACE991
DATE: June 15, 16 & 17, 1999
LOCATION: Washington Metropolitan Area and Baltimore, MD
TOPIC: Evaluation of Energy Guide Label

Introduction (5 minutes)

- Who am I
- What I do

Ground Rules (5 minutes)

- Audio taping and why
- Talk one at a time
- Articulate loudly enough to be heard
- Avoid side conversations
- Mirror and observers
- Videotaping and why
- Avoid peer pressure
- Be candid
- No right or wrong answers
- Need to hear from everyone
- Gratuity for your time and opinions

Respondent Introductions (10 minutes)

Tell us:

- Your name
- Family status
- Area of residence

Examine Appliance Shopping Behavior (10 minutes)

- Identify appliances purchased or shopped for recently
- Determine if respondents comparison shopped
 - If yes, explain purpose and what did they compare - prices, features, energy use
 - If no, reasons for not doing so
- Identify and prioritize what criteria are considered important when purchasing/evaluating
 - Price
 - Appearance/design
 - Durability
 - Functionality
 - Brand name
 - Reputation of manufacturer
 - Service
 - Warrantees
 - Energy use
 - Other - specify
- Identify what resources, if any, are relied on for making purchase/selection decisions for appliances (e.g., recommendations from people - who?, *Consumer Reports*, Internet - identify sites, etc.)
- Determine the relative importance of energy use versus other criteria considered when making purchase/selection decisions

Determine How Respondents Evaluate Various Appliances on Energy Consumption (15 minutes)

- Identify how, if at all, consumers find out about the energy use of various appliances
- Discuss the role of the following resources in informing shoppers about the energy use of various appliances

- Salesperson
- *Consumer Reports*
- Labels - identify/describe them visually, content/information provided, usefulness, etc.
- Product literature
- Other - specify
- Determine what information consumers want/need to know to help them make appliance purchase decisions based on energy use
- Evaluate labels as a resource for energy information
 - Determine if respondents make use of labels and, if so, how and under what circumstances; and, if not, why not
 - Ask respondents to describe what, if anything, they recall about the energy labels they see on appliances
 - Determine what respondents like/dislike about the current labels
 - Determine if respondents understand what the labels are communicating
 - Determine if the information helps them make a purchase decision based on energy use and how it helps
 - Evaluate the labels on whether or not they are easy or difficult to notice, read, understand and use to make appliance purchase decisions

Obtain Reactions to Alternative Energy Guide Labels (1 hour)

- Display alternative labels and ask respondents to evaluate them without discussing the labels with each other. Ask respondents to record on paper which appliance (J or k) they would purchase from an energy consumption point-of-view and reasons for selecting that appliance
- Ask respondents to record which label (QRSTU):
 - Is best at communicating which appliance should be purchased assuming energy use is important to you - Explain
 - Is most visually attention grabbing - Explain
 - Provides other information that is useful in determining whether or not to purchase the appliance based on energy issues (specify information)

- Is easy to read - Explain
- Have respondents share their choices and explain their reasons for selecting those labels
- Have respondents debrief each other on each label to understand:
 - What respondents like about each label
 - What respondents dislike about each label
 - Respondents' interpretations/understanding of what the information on each label means to them
 - How respondents would improve each label
- Evaluate each label on specific features including visual appeal, organization of information or format/layout, content, ease of reading, etc. Probe as follows:
 - Current US label's graphic - graphic depiction of energy use, words describing "use of energy" dollar savings, etc.
 - Australian label's star system and use of words, "energy efficient"
 - European label's use of alpha grading system, probe: how would you feel if it were a number grading system
 - Speedometer label
 - Thermometer label
- Show energy star logo
 - Determine what, if anything, the logo communicates to respondents
 - Determine if the logo is helpful or not helpful to consumers when evaluating products - how so/why not
 - Determine if the logo strongly, somewhat or hardly motivate consumers like themselves to purchase a more energy efficient product
- Show lifecycle cost statement
 - Determine what, if anything, the statement means to respondents
 - Determine how consumers feel about lifecycle costs versus annual operating costs

Appendix B: Recruitment Screeners

Based on standard U.S. Government tests

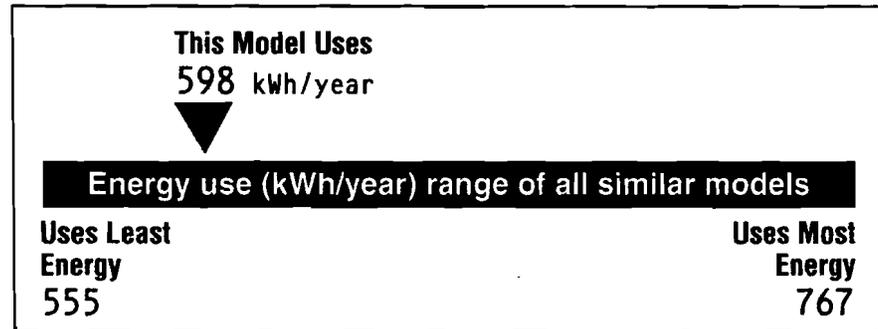
ENERGYGUIDE

Refrigerator-Freezers With Automatic Defrost With Top-Mounted Freezer Without Through-the-Door Ice Service

AMERICAN APPLIANCE
Model(s) CAM22349
CAPACITY: 20.8 CUBIC FEET



Compare the Energy Use of this Refrigerator with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 20.5 to 22.4 cubic feet and the above features are used in this scale.

Refrigerators using more energy cost more to operate. This model's estimated yearly operating cost is:

\$52

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important. Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

Based on standard U.S. Government tests

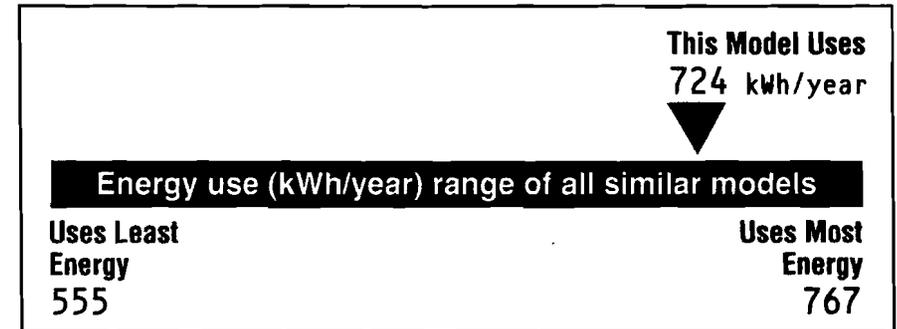
ENERGYGUIDE

Refrigerator-Freezers With Automatic Defrost With Top-Mounted Freezer Without Through-the-Door Ice Service

AMERICAN APPLIANCE
Model(s) KE031148
CAPACITY: 20.8 CUBIC FEET



Compare the Energy Use of this Refrigerator with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 20.5 to 22.4 cubic feet and the above features are used in this scale.

Refrigerators using more energy cost more to operate. This model's estimated yearly operating cost is:

\$63

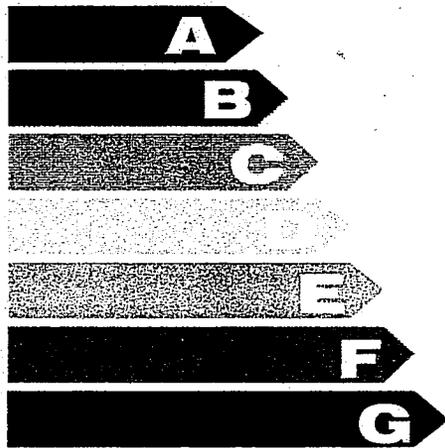
Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important. Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CAM22349
CAPACITY: 20.8 CUBIC FEET

More efficient



B

Less efficient

Energy consumption kWh/year
(based on standard U.S. Government tests)

598

Actual consumption will depend on how the appliance is used and where it is located.

Estimated annual operating cost:

\$52

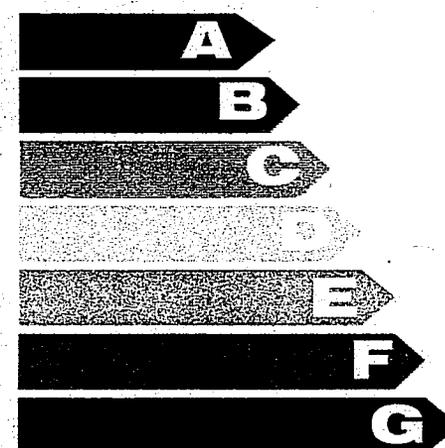
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Further information is contained in product brochures.

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) KEO031148
CAPACITY: 20.8 CUBIC FEET

More efficient



F

Less efficient

Energy consumption kWh/year
(based on standard U.S. Government tests)

724

Actual consumption will depend on how the appliance is used and where it is located.

Estimated annual operating cost:

\$63

Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Further information is contained in product brochures.

Appendix D: Energy Guide Labels Tested

- Determine if the statement is helpful or not helpful to consumers when evaluating products - how so/why not
 - Determine if the statement strongly, somewhat or hardly motivate consumers like themselves to purchase a more energy efficient product
 - Discuss preferences regarding ways to communicate energy information (e.g., operating costs, energy efficiency data, energy savings, Determine if the statement strongly, somewhat or hardly motivate consumers like themselves to purchase a more energy efficient product
- etc.)
 - Identify the type of information/ messages that would motivate consumers like themselves to purchase appliances that use less energy/are more energy efficient

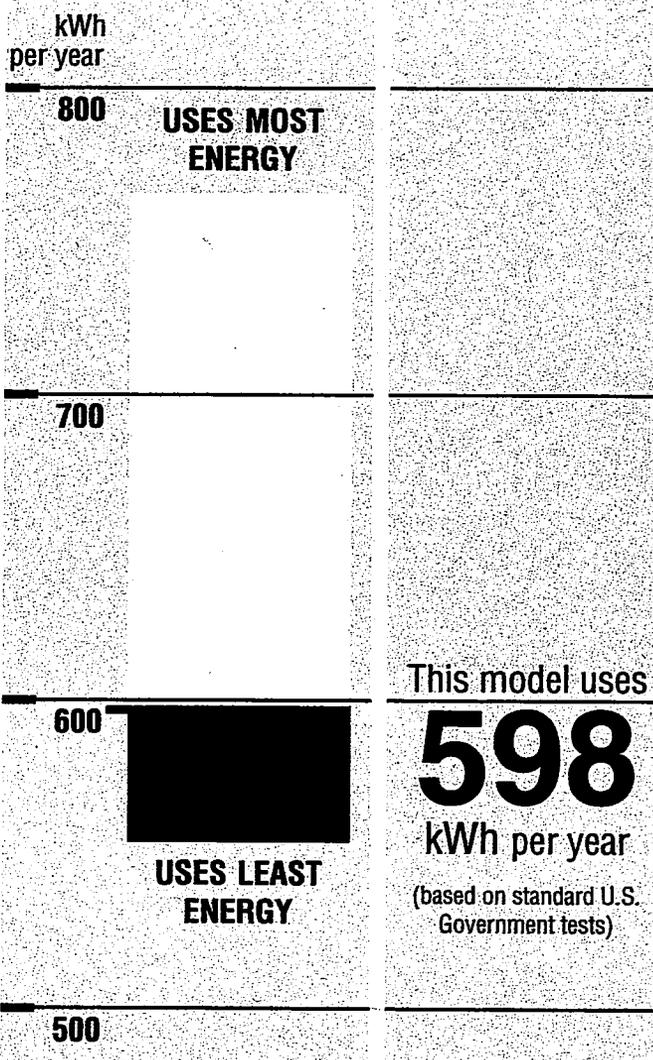
False Close (15 minutes)

- Ask respondents to design the ideal Energy Guide Label while moderator goes to back room for additional questions

Final Comments

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CAM22349
CAPACITY: 20 CUBIC FEET

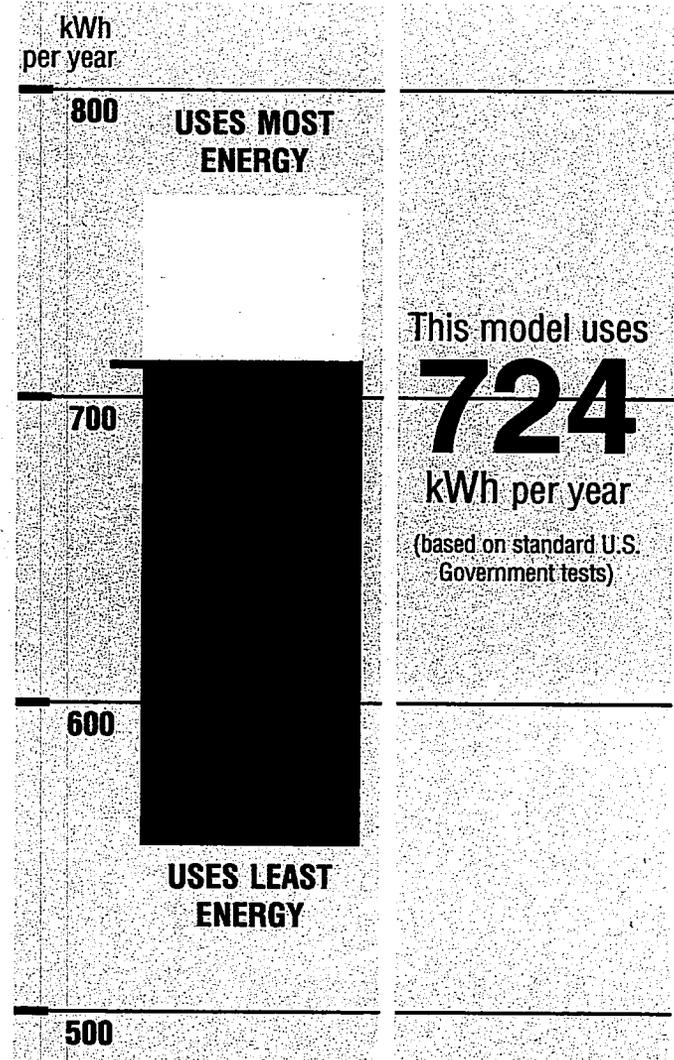


Estimated annual operating cost: **\$52**

Based on standard U.S. Government tests. Actual consumption will depend on how the appliance is used and where it is located.

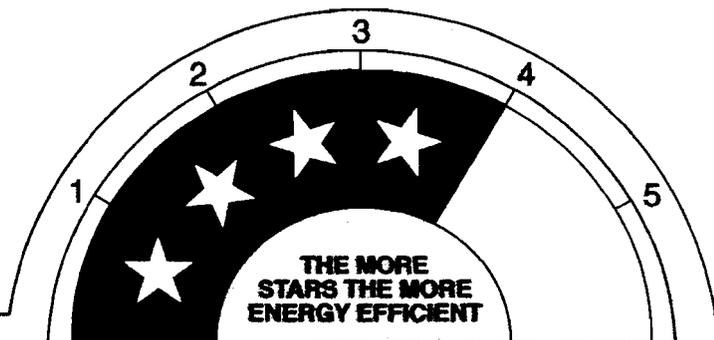
ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) KEO31148
CAPACITY: 20 CUBIC FEET



Estimated annual operating cost: **\$63**

Based on standard U.S. Government tests. Actual consumption will depend on how the appliance is used and where it is located.



ENERGYGUIDE



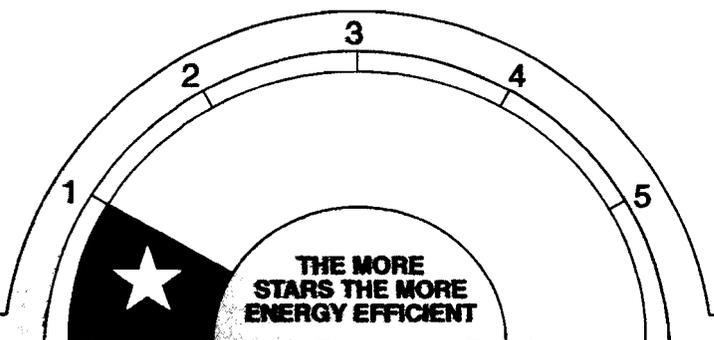
USE THIS LABEL TO COMPARE DIFFERENT MODELS

COMPARATIVE ENERGY CONSUMPTION
THIS AMERICAN APPLIANCE, MODEL CAM22349,
CAPACITY: 20.8 CUBIC FEET USES

598

kWh/PER YEAR WHEN TESTED ACCORDING
TO STANDARD U.S. GOVERNMENT TESTS

- Actual energy use and operating cost will vary depending on your local utility rates and use of the product.
- Appliance operating cost information is available from your electricity supplier.



ENERGYGUIDE



USE THIS LABEL TO COMPARE DIFFERENT MODELS

COMPARATIVE ENERGY CONSUMPTION
THIS AMERICAN APPLIANCE, MODEL KEO31148,
CAPACITY: 20.8 CUBIC FEET USES

724

kWh/PER YEAR WHEN TESTED ACCORDING
TO STANDARD U.S. GOVERNMENT TESTS

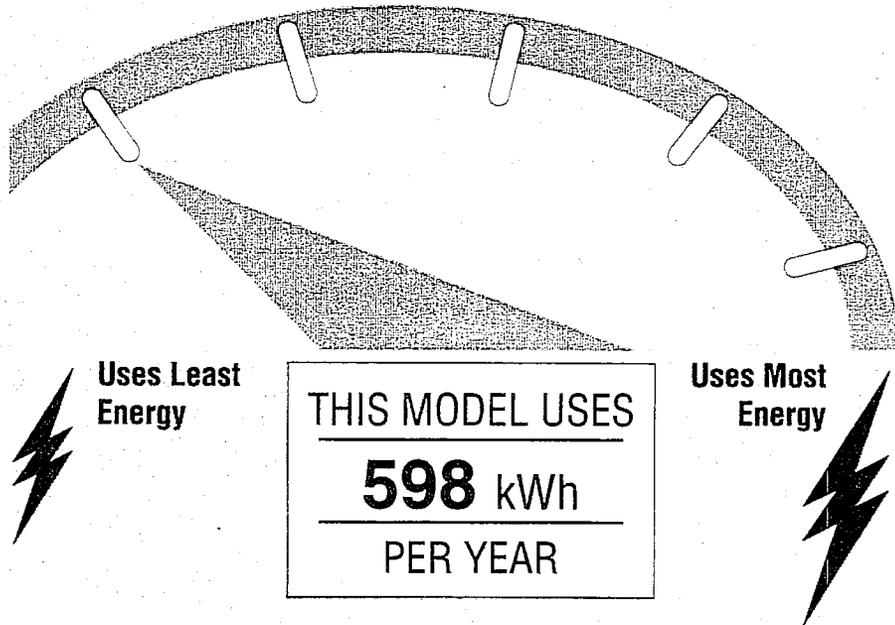
- Actual energy use and operating cost will vary depending on your local utility rates and use of the product.
- Appliance operating cost information is available from your electricity supplier.

Based on standard U.S. Government tests

ENERGYGUIDE



AMERICAN APPLIANCE
MODEL(s) CAM22349
CAPACITY: 20.8 CUBIC FEET



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 20.5 to 22.4 cubic feet are used in this scale.

**Refrigerators using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$52

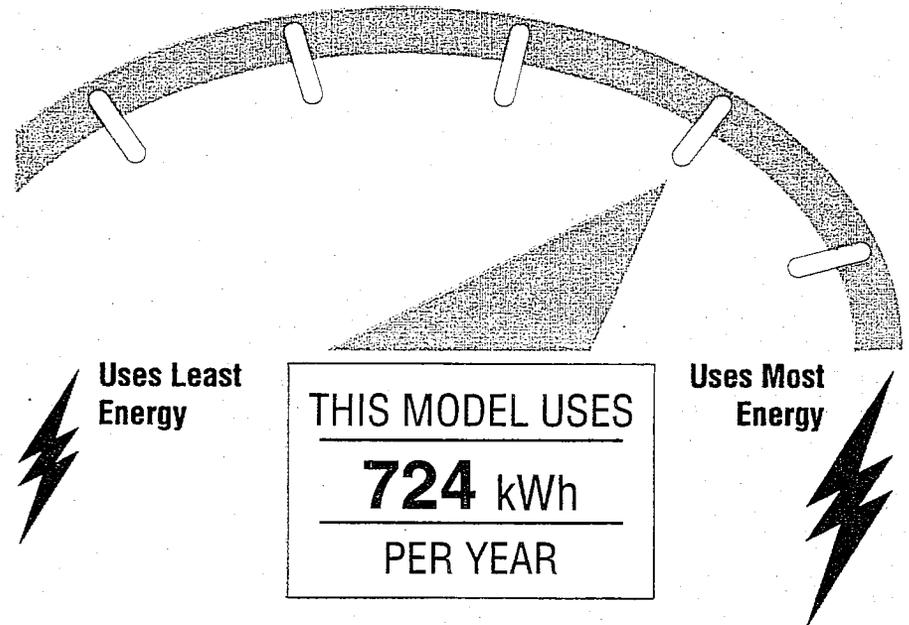
Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates.

Based on standard U.S. Government tests

ENERGYGUIDE



AMERICAN APPLIANCE
MODEL(s) KE031148
CAPACITY: 20.8 CUBIC FEET



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 20.5 to 22.4 cubic feet are used in this scale.

**Refrigerators using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$63

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates.

Based on standard U.S. Government tests

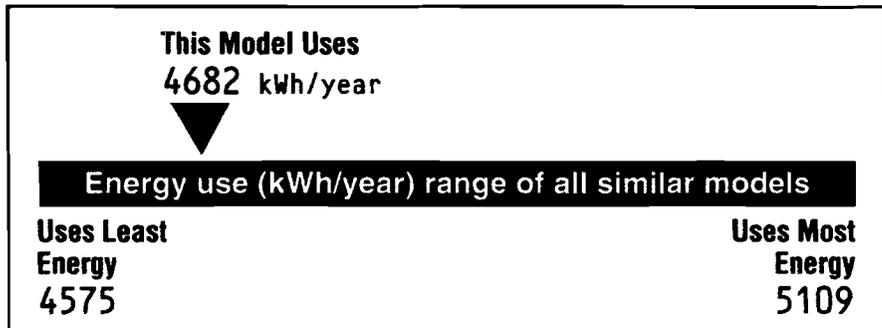
ENERGYGUIDE

Water Heater—Electric
Capacity (first hour rating):
45 gallons



AMERICAN APPLIANCE
Model(s) GNM51150

Compare the Energy Use of this Water Heater with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 41 to 47 gallons are used in this scale.

Electric water heaters using more energy cost more to operate. This model's estimated yearly operating cost is:

\$406

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

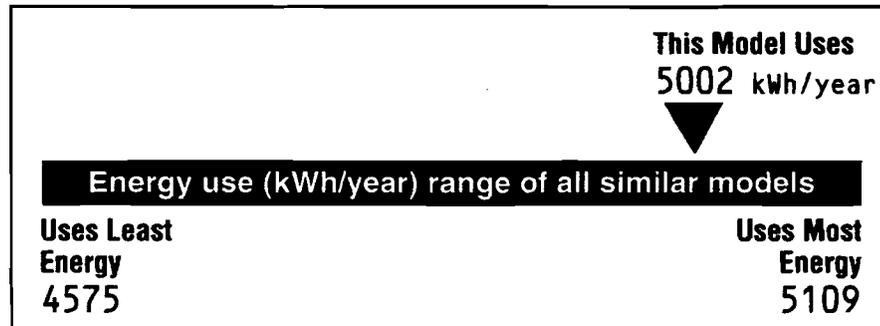
ENERGYGUIDE

Water Heater—Electric
Capacity (first hour rating):
45 gallons



AMERICAN APPLIANCE
Model(s) CWL010752

Compare the Energy Use of this Water Heater with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 41 to 47 gallons are used in this scale.

Electric water heaters using more energy cost more to operate. This model's estimated yearly operating cost is:

\$434

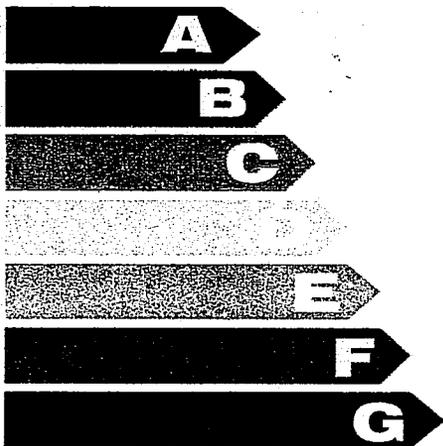
Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

ENERGYGUIDE

AMERICAN APPLIANCE
 MODEL(s) GNM51150
 CAPACITY (first hour rating):
 45 GALLONS

More efficient



B

Less efficient

Energy consumption kWh/year
 (based on standard U.S. Government tests)

4682

Actual consumption will depend on how the appliance is used and where it is located.

Estimated annual operating cost:

\$406

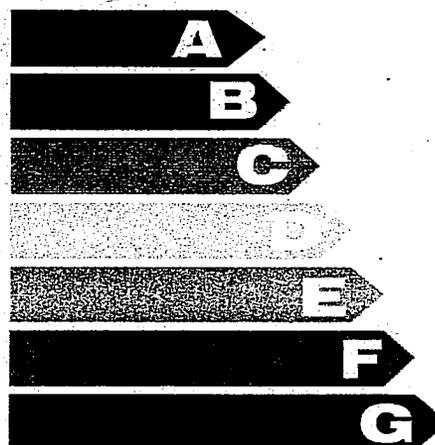
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Further information is contained in product brochures.

ENERGYGUIDE

AMERICAN APPLIANCE
 MODEL(s) CWL010752
 CAPACITY (first hour rating):
 45 GALLONS

More efficient



F

Less efficient

Energy consumption kWh/year
 (based on standard U.S. Government tests)

5002

Actual consumption will depend on how the appliance is used and where it is located.

Estimated annual operating cost:

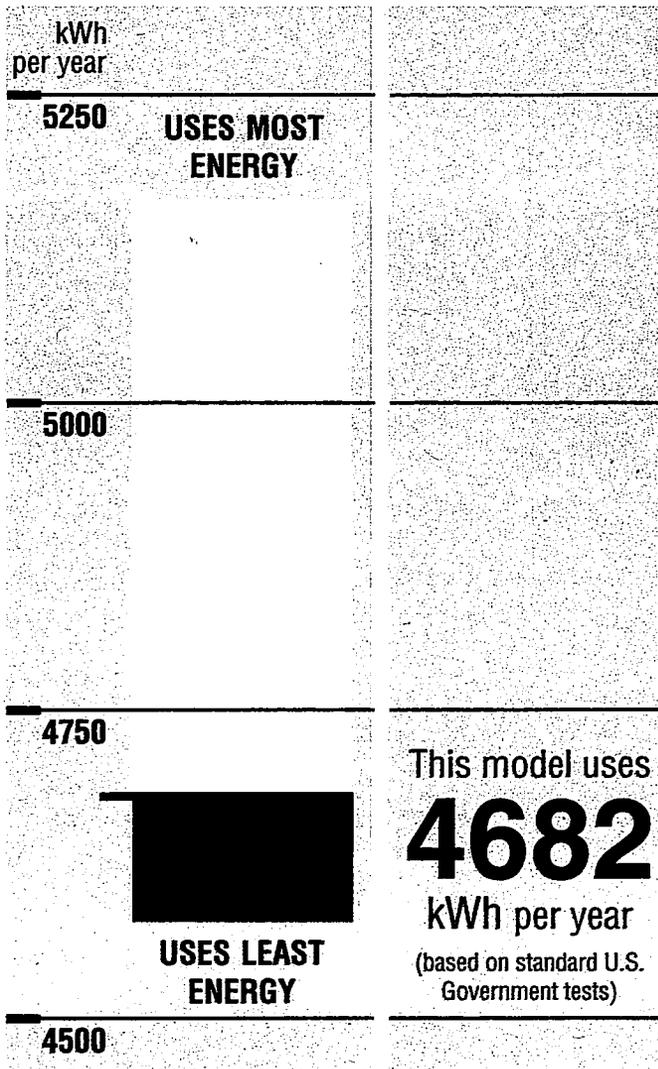
\$434

Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Further information is contained in product brochures.

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) GNM51150
CAPACITY (first hour rating):
45 GALLONS

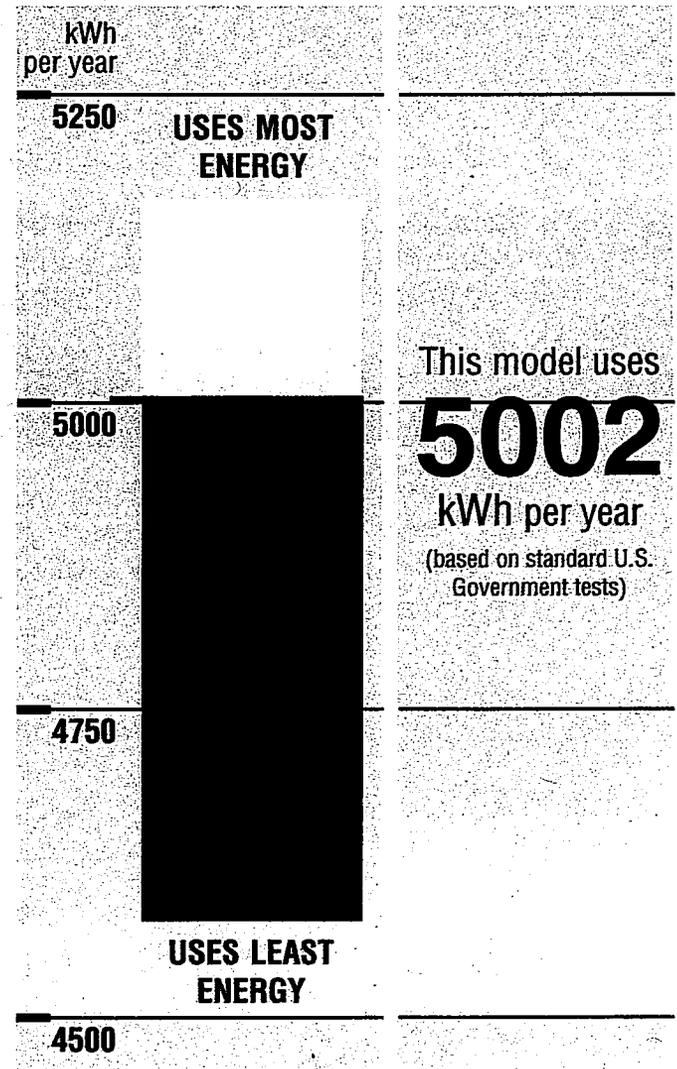


Estimated annual operating cost: **\$406**

Based on standard U.S. Government tests. Actual consumption will depend on how the appliance is used and where it is located.

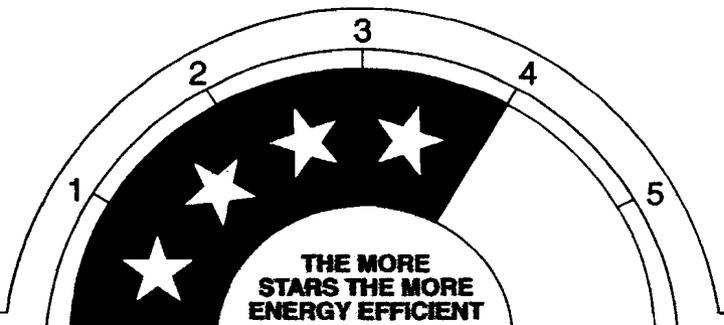
ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL0110752
CAPACITY (first hour rating):
45 GALLONS



Estimated annual operating cost: **\$434**

Based on standard U.S. Government tests. Actual consumption will depend on how the appliance is used and where it is located.



THE MORE
STARS THE MORE
ENERGY EFFICIENT

ENERGYGUIDE

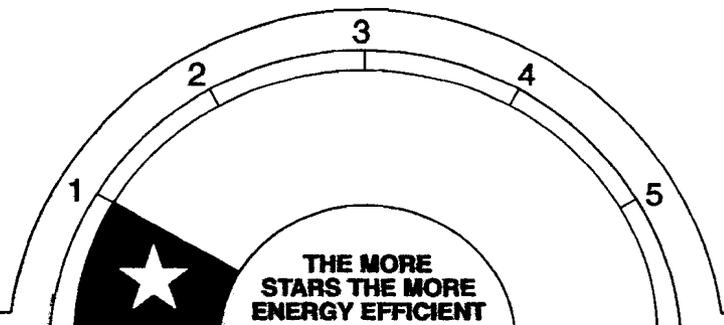


COMPARATIVE ENERGY CONSUMPTION
THIS AMERICAN APPLIANCE, MODEL GNM51150.
CAPACITY (first hour rating): 45 GALLONS USES

4682

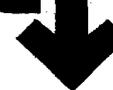
kWh/PER YEAR WHEN TESTED ACCORDING
TO STANDARD U.S. GOVERNMENT TESTS

- Actual energy use and operating cost will vary depending on your local utility rates and use of the product.
- Appliance operating cost information is available from your electricity supplier.



THE MORE
STARS THE MORE
ENERGY EFFICIENT

ENERGYGUIDE



COMPARATIVE ENERGY CONSUMPTION
THIS AMERICAN APPLIANCE, MODEL CWL010752.
CAPACITY (first hour rating): 45 GALLONS USES

5002

kWh/PER YEAR WHEN TESTED ACCORDING
TO STANDARD U.S. GOVERNMENT TESTS

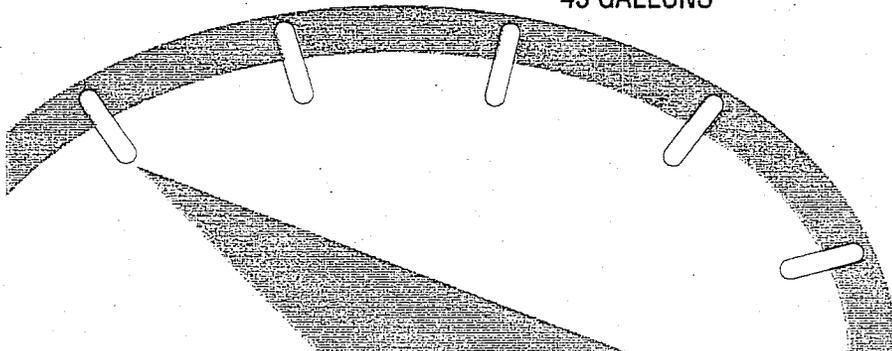
- Actual energy use and operating cost will vary depending on your local utility rates and use of the product.
- Appliance operating cost information is available from your electricity supplier.

Based on standard U.S. Government tests

ENERGYGUIDE



AMERICAN APPLIANCE
MODEL(s) GNM51150
CAPACITY (first hour rating):
45 GALLONS



 Uses Least
Energy

THIS MODEL USES
4682 kWh
PER YEAR

Uses Most
Energy 

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 41 to 47 gallons are used in this scale.

Electric water heaters using more energy cost more to operate. This model's estimated yearly operating cost is:

\$406

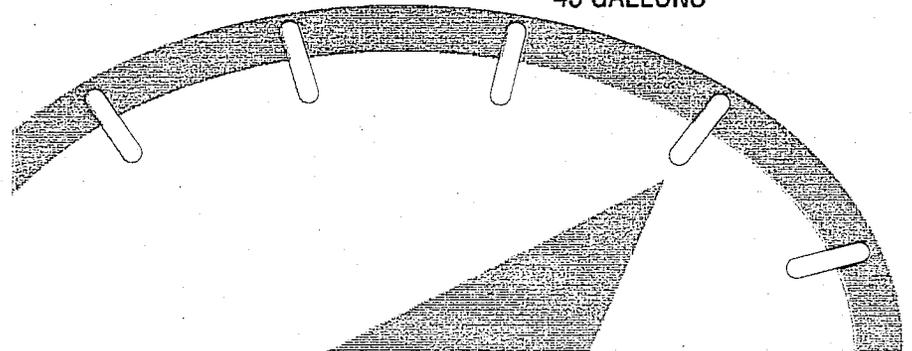
Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates.

Based on standard U.S. Government tests

ENERGYGUIDE



AMERICAN APPLIANCE
MODEL(s) CWL010752
CAPACITY (first hour rating):
45 GALLONS



 Uses Least
Energy

THIS MODEL USES
5002 kWh
PER YEAR

Uses Most
Energy 

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only models with 41 to 47 gallons are used in this scale.

Electric water heaters using more energy cost more to operate. This model's estimated yearly operating cost is:

\$434

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates.

Appendix F: Life-Cycle Cost Estimates

During its lifetime, this water heater will use \$4,466 in energy.

Add this figure to the sale price of the water heater to determine the total cost to buy and operate. This cost is an estimate, based on a 1998 U.S. Government national average cost of 8.67 cents per kWh and on the average 11 year lifetime of a water heater.

During its lifetime, this water heater will use \$4,774 in energy.

Add this figure to the sale price of the water heater to determine the total cost to buy and operate. This cost is an estimate, based on a 1998 U.S. Government national average cost of 8.67 cents per kWh and on the average 11 year lifetime of a water heater.

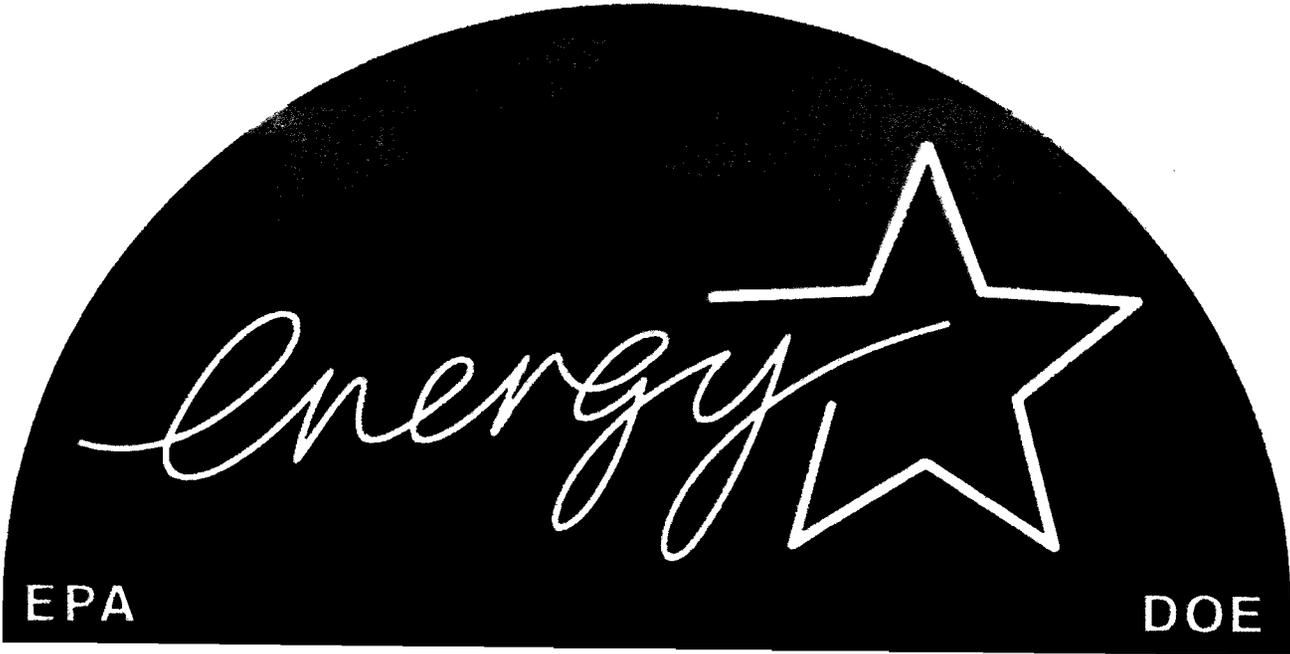
During its lifetime, this refrigerator will use \$988 in energy.

Add this figure to the sale price of the refrigerator to determine the total cost to buy and operate. This cost is an estimate, based on a 1998 U.S. Government national average cost of 8.67 cents per kWh and on the average 19 year lifetime of a refrigerator.

During its lifetime, this refrigerator will use \$1,197 in energy.

Add this figure to the sale price of the refrigerator to determine the total cost to buy and operate. This cost is an estimate, based on a 1998 U.S. Government national average cost of 8.67 cents per kWh and on the average 19 year lifetime of a refrigerator.

Appendix E: Energy Star Logo



**A Focus Group Study to
Assess Consumer Reaction to Proposed
Alternatives to the FTC Energy Guide Label**

Prepared for:

AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY
1001 Connecticut Avenue, NW
Suite 801
Washington, DC 20036

Prepared by:

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

February 2000

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1.0 Overview

1.1 Background and Purpose

- The American Council for an Energy-Efficient Economy (ACEEE) contracted with Shugoll Research to conduct a focus group study to examine creative executions of several proposed energy guide labels among single family homeowners. The findings of the focus groups will allow ACEEE to select and finalize an Energy Guide Label that is easy for consumers to understand and is formatted to optimize the role of energy efficiency in consumer decision-making.

1.2 Objectives

- The objectives of the study are as follows:
 - Identify appliances purchased and factors influencing selection of appliances
 - Obtain reactions to base labels
 - Evaluate all executions of each label concept
 - Determine attitudes towards specific labeling issues

1.3 Methodology and Study Procedures

- The focus group technique was selected to accomplish the objectives of the study. A focus group is a panel discussion with 8 to 10 representatives of a selected target market for a particular service or product.
- The technique is especially useful for gathering in-depth information on a topic or reactions to creative concepts. The discussion is led by a moderator who is trained in consumer behavior theories and marketing principles.
- Participants in the group are encouraged to relate to each other, share attitudes and provide candid opinions regarding the topics presented to them by the moderator or generated by the dynamics of the group. Consensus is not sought. The moderator is not supposed to proselytize or educate respondents. Rather, he or she uses his or her skills to question, probe and clarify responses as well as direct the flow of the conversation to cover all relevant areas of interest to the client.
- Six focus groups were conducted with homeowners in two different markets. Three groups were held in Chicago, Illinois on February 7 and 8, 2000 (two groups on Feb. 7 at 6 and 8 PM and one group on Feb. 8 at 6 PM). Three groups were also held in Ft. Lauderdale, Florida on February 9 and 10, 2000 (two groups on Feb. 9 at 6 and 8 PM and one group on Feb. 10 at 6 PM).
- Shugoll Research designed a recruitment screener (see Appendix A) to screen and qualify participants. In order to qualify for participation in the groups, respondents had to:
 - Own a home and be a homeowner for at least 3 years
 - Be primarily responsible or share the responsibility equally for purchasing household appliances.
 - Be recent purchasers (in the last 6 months) or current shoppers for a refrigerator, freezer, air conditioning unit/system, dishwasher, clothes washer or water heater from a retail store.

- A mix of respondents was recruited on:
 - The types of household appliances bought or now shopping for
 - Retail stores used for purchasing or shopping
 - Income
 - Gender
 - Ethnicity
- A respondent profile appears in Appendix B.
- Respondents who are employed or who have a family member who is employed for a household appliance manufacturer or sales company, a regulatory or energy-related organization, an advertising agency or market research firm were terminated for occupation security reasons. Respondents who have participated in a group discussion within the past 6 months, or have ever participated in one about household appliances or energy also were not allowed to participate in the study to meet past participation requirements.
- Respondents were recruited from computerized data banks in each market that identify local residents based on income, gender, race and other demographic criteria. Once a potential respondent was screened and it was determined that he or she qualified, a cash honorarium of \$60 was offered to encourage participation in the study and to help guarantee a show of 8 to 10 respondents. When a respondent agreed to participate in one of the group sessions, a confirmation letter was sent out. The letter confirmed the group session time, date, location, and promised honorarium, and provided detailed directions to the focus group session. All respondents were reconfirmed by telephone the day before their assigned session.
- Shugoll Research designed a topic guide (see Appendix C) to be used by the focus group moderator when leading the discussion groups. The guide was designed to address all study objectives. ACEEE provided all of the creative executions that were used in this study (see Appendix D).

1.4 Limitations

- A qualitative research methodology seeks to develop directions rather than quantitatively precise or absolute measures. Because of the limited number of respondents involved in this type of research, the study should be regarded as exploratory in nature, and the results used to generate hypotheses for marketing decision making and further testing. The non-statistical nature of qualitative research means the results cannot be generalized to the population under study with a known level of statistical precision.

2.0 Summary of Findings

2.1 Identify Appliances Purchased and Factors Influencing Selection of Appliances

- As previously noted, respondents were screened to ensure that they made a large household appliance purchase in the past six months or are currently shopping for such an appliance. The chart below details the types of appliances respondents could speak about in the focus groups.

Table 1: Number of Respondents Who Have Purchased or Plan to Purchase Appliances

APPLIANCE	PURCHASED	PLAN TO PURCHASE	TOTAL
Refrigerator	14	8	22
Clothes Washer	6	9	15
Air Conditioner	8	5	13
Water Heater	8	5	13
Dishwasher	7	3	10
Freezer	1	3	4

- Respondents were asked to name, on an unaided basis, the most important influences on their decision to buy a specific appliance. They were most likely to report factors such as cost, features, space requirements, brand name and reliability.
- A number indicated that they are primarily motivated by certain features that are non-negotiable (i.e., icemaker, adjustable racks and shelves, etc.). Others set a budget for the appliance and are reluctant to exceed this figure.

"I want the features. To heck with [anything else]." (Chicago, 8 PM)

"It doesn't have energy savings, it's not real efficient. It was just the cheapest." (Ft. Lauderdale, 6 PM)

- Interestingly, a few respondents perceive that the most desirable features are unlikely to be available on energy efficient appliances. Consumers seem to understand that the presence of certain features and certain model types potentially impact energy efficiency.

"I don't see anything wrong with having something [with] lower [energy efficiency]. If [you are] buying something with [all of the] bells and whistles, you make that decision knowing that the energy efficiency is a little lower." (Chicago, 8 PM)

"I want water in the door [on] a side-by-side, even though the up and down [freezer on the top model] might be more efficient." (Ft. Lauderdale, 6 PM)

- Many participants also noted that they are constrained by space requirements when they replace an appliance. The replacement appliance must fit into the same space as the old appliance.

"We just re-did the kitchen and we weren't going to re-haul the whole job again just because the range [we looked at] didn't fit there. So the size of the unit was the primary thing." (Chicago, 6 PM)

- A few respondents mentioned energy savings, on an unaided basis, as an influence on their decision to purchase a particular appliance. However, they are most likely to be concerned about the energy use of non-white goods, such as water heaters and central air conditioners than white goods.
- The majority of respondents indicated that energy efficiency is not an important consideration. According to some, the savings on utility bills that can be achieved by using more efficient appliances are minimal. Further, a number of respondents perceive that the most energy efficient appliances are more expensive and that they would need many years to recover the additional costs through savings on utility bills.

"[If an appliance] costs \$30 per year [to operate] and [another] is \$35 per year and you like it better, what difference does the five dollars make as long as its bigger or works the way you want it to work?" (Chicago, 6 PM)

"It's not going to make that much difference in my electric bill anyway." (Ft. Lauderdale, 8 PM)

"Energy efficiency played zero part in it. If it's five or ten dollars more, who cares? If you divide that cost over [a number of years], it's not that much of a difference and it's not a selling tool by any means." (Chicago, 8 PM)

"[Energy efficiency] doesn't matter. Although I wouldn't drive a car that gets five miles to a gallon, that's different. As far as a refrigerator is concerned, how much more can it realistically cost [to operate] in dollars and cents?" (Chicago, 6PM)

- Additionally, a few respondents remarked that energy efficiency is constantly improving. They believe that any new appliance purchased today to replace an older model will be more efficient.

"[I didn't pay much attention to energy efficiency because] everything that you buy now is so much better than it was before." (Chicago, 8PM)

2.2 Obtain Reactions to Base Labels

- Respondents first were asked to complete a written exercise to evaluate a total of four base energy guide concepts. The appliance rated on each of the four labels was either a clothes washer or a room air conditioner. Three groups received the clothes washer concepts (two in Chicago and one in Ft. Lauderdale) and three groups received the room air conditioner concepts (two in Ft. Lauderdale and one in Chicago). Copies of the concepts appear in Appendix D. The concepts included the *current line graph label*, *star label*, *letters label* and *thermometer label*. The moderator rotated the presentation of the labels in random order across the six focus groups to avoid order bias. Respondents rated each concept on five attributes (see Table 2). After all of the consumers rated the concepts, the moderator initiated a discussion of each.

Table 2: Mean Rating of Base Label Concepts*

ATTRIBUTE	CURRENT (LINE GRAPH)	STAR LABEL	LETTERS LABEL	THERMOMETER LABEL
	(N=55)**			
Overall appeal	5.3	5.9	6.3	5.8
Ease of reading	6.4	6.8	7.2	7.1
Effectiveness of graphic	6.2	6.3	6.9	6.8
Attention grabbing	5.2	6.7	7.8	6.3
Contains information consumers need to make an energy efficient decision	6.7	6.3	6.5	7.0

*Scale ranged from 1 to 10, where 1 is the lowest possible rating for the attribute and 10 is the highest possible rating for the attribute.

**Due to the small sample size, results should be regarded as directional.

- Respondents rated the *letters label* higher for overall appeal, than the other three concepts. According to their ratings, they found the *star* and *thermometer labels* about equally appealing and they gave the *current line graph label* the lowest rating for overall appeal.

- Consumers also gave the *letters label* the highest rating for ease of reading and effectiveness of graphic, although their ratings for the *thermometer label* were similar to the *letters label* on these two attributes.
- When they rated the four labels for attention grabbing ability, the results indicate that consumers found the *letters label* had much more stopping power than the other three concepts. They are least likely to give the *current line graph label* high ratings for attention grabbing capabilities.
- Consumers found very little difference between the labels when rating them on having the information that shoppers need to make an energy efficient decision. Although they gave the *thermometer label* somewhat higher ratings on this attribute, they give the *current line graph*, *letters* and *star labels* almost equally high ratings. This is worth noting because the *current line graph label* is the only base label that contains extensive text.

Current Energy Guide Label (Line Graph)

- The main strengths of the *current line graph label* are that consumers find it very informative, view it as more “objective” and professional than other labels and they are accustomed to seeing it on appliances. Although respondents readily admitted that they often ignore the *current line graph label* and frequently cited the volume of information contained on the label, as well as its lack of visual appeal, for not using it more often, they also noted they like having all of the information at their disposal. Many participants noted that the current Energy Guide label provides a definition of kilowatt hours that they find useful.
- Consumers also indicated that the *current line graph label* allows them greater choice in deciding which information to use or weigh more heavily in their selection of an appliance. Further, they noted that the *current line graph label* is respectful of the consumer’s intelligence and does not assume that the average consumer will be overwhelmed by the information provided.

“I thought the [current Energy Guide] conveyed more information. I felt more as if it were dealing with me as an adult purchaser.” (Chicago, 6 PM)

"I want to feel that I can make the decision based on more information." (Chicago, 6 PM)

"It is simply more informational than the others." (Ft. Lauderdale, 6PM)

"I like the fact that it tells you what a kilowatt hour is...It seems like it's treating the consumer with some respect." (Chicago, 6PM)

- Some participants reported that they prefer the *current line graph label* because it presents the yearly operating cost figures in two reverse color text boxes. They feel this highlights important information on the label and makes it easy to read.
- Several consumers agreed that the *current line graph label* is the best choice because it is familiar to most shoppers and they note that adopting any new system would mean a period of education and adjustment for consumers.

"Anybody who has shopped for an appliance is familiar with it. We know what it means. The others would be adapting, changing and interpreting. That takes a little bit of time." (Ft. Lauderdale, 8 PM)

"I think the good part is we're so accustomed to it. This is a very used label and I think it answers all of the questions." (Chicago, 8 PM)

- The main weaknesses consumers noted about the *current line graph label* mostly related to the labels lack of visual appeal. They said that the label is not attention grabbing and seems too laden with verbiage. In fact, some reported that there is too much information in the label and that consumers are likely to ignore it because it seems technical. Additionally, a few group members observed that the graph in the *line graph label* does not stand out enough from the text.

"When I see a lot of verbiage and a lot of small letters, I just skim over the top. There is no reason to read it. It's too monotone." (Chicago, 6PM)

"What this little graph is trying to tell you blends in with all of the background text and it doesn't convey the message that it's trying to tell you." (Chicago, 6PM)

"It should be simple. Not everybody is that educated. When you go to buy a refrigerator, you shouldn't have to [be college-educated] to buy it." (Ft. Lauderdale, 6 PM)

- Respondents suggested improving the current Energy Guide by making the graphic more noticeable. Specifically, a few participants noted that the use of color would add to the overall visual appeal of the label, in addition to helping the line graph stand out more from the text.

"This needs something that will jump out and draw people to look at it. It must be [colorful]." (Ft. Lauderdale, 6 PM)

- Several group members noted that it is unnecessary to advise consumers to compare the energy use of appliances before they buy and others believe that it is obvious that appliances using more energy cost more to operate. While a few pointed out that the label must appeal to the "lowest common denominator," others found that these statements add to the "cluttered" look of the current Energy Guide.

"[The label does not need to state 'compare the energy use before you buy' because] anyone who goes out and buys an appliance, especially a big appliance like the ones we've been talking about, they are going to compare. Obviously, they are going to compare. I think that's just a given." (Chicago, 6 PM)

- Although the methodology for this research did not include having respondents evaluate the individual information elements of the current Energy Guide, in a few cases, respondents discussed each text point of the label. The discussion revealed that participants perceive that every element of the current Energy Guide text (except for the points noted above) is important. Group members were generally unable to identify portions of the text they believed should be eliminated.

Star Label

- Respondents gave the *star label* its high ratings on the following attributes:
 - Overall appeal
 - Attention grabbing quality

- Proponents of the *star label* pointed out that consumers commonly use star-based systems to evaluate consumer products and services such as restaurants, hotels, movies, etc. They also noted that the text “the more stars the more energy efficient” makes the graphic very easy to interpret.

“It’s a commonality. It’s a rating system that we’re all used to, the five star system.” (Ft. Lauderdale, 6 PM)

“I don’t get into all this technical stuff, but I knew right off with this label. That was easy.” (Ft. Lauderdale, 8 PM)

“There was no confusion. I didn’t have to read a thing and the [graphic] was to the point.” (Chicago 6 PM)

“It’s idiot proof.” (Ft. Lauderdale, 8 PM)

- However other consumers were less impressed by the *star label’s* readability and the effectiveness of the graphic. Participants also gave the base *star label* (low verbiage) the lowest rating for containing the type of information consumers need to make an energy efficient choice.
- Among group members who are unfavorable to the *star label*, many noted that the lack of a range or scale makes it difficult to determine how the energy use of a specific appliance compares with similar models. These participants also indicated that the label could cause confusion because some consumers may mistakenly assume that the energy efficiency rating is related to the overall quality of the appliance. A few did not like this label because it seems immature or lacks detail.

“On the star label, the fact that this model uses a certain number of kilowatt hours a year is just a fact that stands by itself. That doesn’t tell me what it means. Is that a lot [compared to similar models] or is that a little?” (Chicago, 6 PM)

“I think it’s too gimmicky. It just reminds me of school.” (Ft. Lauderdale, 6 PM)

“It could work great for an advertiser, too. Advertisers could say ‘our appliance is top rated, five stars. We’re the top of the line. We’ve got more stars than anybody.’ [Consumers] could buy into that.” (Ft. Lauderdale, 6 PM)

Letters label

- Overall, the base *letters label* was rated favorably. In fact, consumers gave this label the highest scores on every attribute except one, contains the type of information consumers need to make an energy efficient decision. The ratings also show that respondents initially perceive this label to be the most attention grabbing and the easiest to read of all the concepts presented.
- Many cited the visual appeal of the label to explain why they liked it. According to some respondents, the color scheme is eye-catching and represents commonly understood concepts (i.e. red for high use/overheating and green for conservation/environmental friendliness). Others noted that the lettering system is familiar, since it is used for grading schoolwork.

“This label is actually showing that it is a warmer unit. It will run warmer and it will spin your meter a little bit quicker.” (Ft. Lauderdale, 6 PM)

“The color jumps right out at you and it’s easy to read.” (Ft. Lauderdale, 6 PM)

“There’s too much to read and figure out on the [current Energy Guide], but I love the letters label because it’s showing you right there--A,B,C,D and E. You don’t have to sit and read to figure out where you are [in terms of energy efficiency].” (Chicago, 6 PM)

“[It is not] difficult to [understand] based on the fact that the average person can figure out A,B,C and D.” (Ft. Lauderdale, 8 PM)

- Although some consumers found the *letters label* easy to understand, many respondents found the label confusing because:
 - The direction of the scale is counterintuitive because graphs typically have the lowest point of the scale (i.e. uses least energy) at the bottom of the scale and the highest point (i.e. uses most energy) at the top

“Usually when I think of a graph, the lower numbers are on the bottom and the higher numbers are at the top. So I am thinking it is using little energy on the bottom and more energy at the top. I was thinking that you want it to be lower [to demonstrate greater energy efficiency].” (Chicago, 6 PM)

- The length of the bars cannot be interpreted literally (i.e., longer bars connote better performance and shorter bars connote worse performance)

"The longer the bar, the worse it is. They have it reversed." (Ft. Lauderdale, 8 PM)

- The black arrow is not aligned with the bars

"It's not exactly saying anything [because the arrow is not perfectly lined up with the letter]." (Ft. Lauderdale, 8 PM)

- Other criticisms of the *letters label* include:

- Too colorful or busy

"[The colors] make a more attractive poster, but I think it confuses the issue. There is no reason for those colors [on the bars] to be different. I think it makes the label less straightforward." (Chicago, 8 PM)

"I didn't like it that much at all. There are too many colors for me." (Ft. Lauderdale, 6PM)

- Complicated or confusing

"I think the letters are a bit complicated for the general public to understand." (Chicago, 6 PM)

"There's a whole bunch of junk for a very simple thing." (Ft. Lauderdale, 8 PM)

- Lack of information

"There is really no information until you go all the way to the bottom [for the text]." (Ft. Lauderdale, 6 PM)

"This label doesn't tell me anything except letters. It looks great, but what does it tell you?" (Chicago, 8 PM)

Thermometer Label

- Overall, consumers' response to the base *thermometer label* was somewhat positive. The label's three best characteristics are: it is easy to read, contains the information consumers need to make an energy efficient decision and has an effective graphic.
- The main strengths of the *thermometer label* are its eye-catching graphic and its simplicity. Some respondents noted that the label clearly conveys the information about energy use and a few others said a thermometer seems more relevant than other graphic symbols.

"...The points are like the temperature control [on] a hot water heater, a refrigerator or an air conditioner. [The thermometer label] kind of relates to that same subject." (Ft. Lauderdale, 6 PM)

"It didn't take a lot of knowledge to go along and read it. It was really simple for me." (Chicago, 6 PM)

- Respondents who did not like it primarily said that the label is dull and confusing. They noted that the scale is counterintuitive because they expect that superior energy performance would be reflected at the top of the scale, while this label connotes better energy performance at the bottom of the scale.

"If you were looking at it, you would think that the higher the temperature would be, the better it would be for you. But this is opposite. It's like a temperature. The higher it is, the worse it is for you. You would have to think backwards." (Chicago, 8 PM)

"When I see the thermometer, I think of those United Way charts. When you are getting to the top, it's good. But here, when it uses the most energy, it's at the top and that's not good." (Chicago, 6 PM)

"The scale is reversed. That means its going to confuse the living daylight out of you." (Ft. Lauderdale, 6 PM)

- Interestingly, a few participants said that the *thermometer label* is merely the current Energy Guide with a bar graph instead of a line graph. Further, they do not believe that changing the current Guide to the thermometer is worthwhile because the thermometer is less straightforward and does not add any information.

“The thermometer is what we already have and this isn’t worth changing the label. It’s really just [the same graph] and making a thermometer out of it is what confuses the issue.” (Ft. Lauderdale, 6 PM)

2.3 Evaluate All Executions of Each Label Concept

- Respondents evaluated alternative executions of the *current line graph label* (2 executions), *star label* (3 executions) and *letters label* (6 executions). In addition, the three clothes washer groups each evaluated three executions of the *thermometer label* and the three air conditioner groups each evaluated five executions of the *thermometer label*. The order in which the labels were presented was rotated by the moderator.

Current (Line Graph) Label - High Verbiage and Low Verbiage

- Consumers rated two versions of the *line graph label*, a high verbiage (current Energy Guide) execution and a low verbiage execution. The strengths and weakness of the high verbiage base label were presented in the previous section of this report.

Low Verbiage

- Consumers who were favorable to the modified *line graph label* liked it because it has a cleaner look and because it eliminates much of the text that consumers are unlikely to read. A few respondents noted that it simplifies the information and makes it easier to understand.

"If you're shopping, you don't want to waste a lot of time. This is right to the point." (Ft. Lauderdale, 6 PM)

"I have to think less when I read it. I can do a fast comparison more quickly." (Chicago, 6 PM)

- Even though participants noted that they find the amount of text in the current Energy Guide cumbersome, their main complaint about the low verbiage version is that it takes away information. In fact, some consumers appear to resent the fact that the low verbiage line graph attempts to simplify the information for them.

"I like more spelling out [like in the high text line graph]. I think that's something that helps you. It should tell me everything..." (Chicago, 6 PM)

"It really makes no sense to go to this [low text version], to remove information from it." (Ft. Lauderdale, 6 PM)

Star Label

- Respondents reacted to a total of three executions of the *star label*:
 - Base label
 - Range end-points
 - High verbiage

Range End-Points

- The range end-points on this label were either kilowatt hours (clothes washer) or EER (air conditioner). Respondents feel, for the most part, that this version combines the simple, eye-catching graphic they like with just enough verbiage to be informative. Group members reported here, as they have previously, that star ratings are in widespread use and therefore, are intuitive to consumers.

- Respondents also were very favorable to the use of the actual values as endpoints. Many noted that this gives them the information they need to make an informed choice.

“I like the star label with range end-points because it is concise. It adds two of the range end-points that didn’t appear on the base label...If I look at this, I have enough information to make a somewhat informed decision, whereas the [base label did not give me] enough information. To me, the points and range made a difference.” (Chicago, 6 PM)

- However, there are some concerns about the range end-points. A few participants noted that the display of the appliance’s energy use (kWh) or efficiency (EER) should be accompanied by a scale or text that clarifies the range. Although the range is contained as the scale in the graphic, consumers want to see it appear directly above or below the actual rating.

“...If they’d just let you know that the most efficient is 12.0 down here somewhere under your EER’s, that would let you know that 9.5 is kind of low on the scale, which would give you your one-star rating.” (Ft. Lauderdale, 6 PM)

- Consumers were less favorable to the high verbiage version of the *star label*, although some strongly suggested that this version, revised to include the range end-points, represents the optimal label. According to proponents of this version, the label accommodates both shoppers who want an “at-a-glance” method of comparison and those who prefer more detailed comparisons.

“The [star label with the verbiage] represents to me the best option because it offers all things to all people. If I as a consumer choose not to read it and [just] go with the visuals, the two things that stand out here are obviously the stars and the box that says how many kilowatt hours it uses. On the other hand, if [a consumer] likes the fine print, it’s there for him.” (Chicago, 6 PM)

Letters Label

- Consumers evaluated a total of five executions of the *letters label*. In addition to the base label, respondents reacted to the following executions:
 - Range end-points (kilowatt hours for clothes washer and EER for room air conditioner)
 - A-F only (NO G)
 - High verbiage
 - Colored end-points
 - Gray Bars
- The *base label* of the letters concept was well-received by consumers initially because it is highly attention-grabbing. However, their ratings of the subsequent executions, which followed the discussion of the *base label*, were generally less favorable because ultimately, consumers found the *letters* concept difficult to interpret and too busy.

Range End-Points

- Respondents who preferred the range end-points said that it is eye catching, but they were most favorable to this execution because they perceived that the values explain the meaning of the letter grades and give consumers a context for evaluating the appliance's EER rating or kilowatt use.

"Without the [end-point range] numbers, it doesn't mean a thing." (Chicago, 6PM)

- The primary criticism of the range label comes from the air conditioner groups. Some members of these groups remarked that the scale is more difficult to interpret because the higher scale end-point (12 EER) is labeled uses least energy. Although a few understood that “uses least energy is” the equivalent of “most energy efficient”, some participants still found the labeling less straightforward.

“Here they show ‘uses the least energy’ at the top and ‘uses the most energy at the bottom’ and [it should have been the other way around].” (Ft. Lauderdale, 8PM)

- A few respondents indicated that the range label could be improved by giving a range of kilowatt use or EER for each letter. This notation would give consumers an idea of the efficiency range for each letter.

“The label just gives you the low and gives you the high, but it doesn’t tell you [the range for] A is- from 294 to whatever. That’s the first thing I thought of.” (Chicago, 8 PM)

A-F Only

- The A-F Only label is viewed favorably in part because it corresponds to a grading system with which respondents are familiar. However, respondents mostly found this execution appealing because removing the “G” bar increases its visual attractiveness. Specifically, the A-F Only label:

- Has thicker bars

“The [A to F only execution] sticks out to me because the bars are larger.” (Chicago, 8 PM)

“I like the colors, plus I like the bigger bars.” (Ft. Lauderdale, 6 PM)

- Appears less cluttered and busy

“There’s less to look at. There’s less color.” (Chicago, 6 PM)

- The primary reason that consumers liked this version is because the arrow that points to the appliance's rating is lined up more precisely with the bars than in any other version. Consumers indicated that the graphic is easier to interpret because the arrow points directly to a bar.

"This has to be the label because the F lines up." (Chicago, 6 PM)

- In fact, the misalignment of the arrow causes significant confusion about the actual grade despite the clear labeling of the grade on the arrow. Some consumers perceived that the misalignment is intentionally deceptive and others perceived that it means "half-grades", such as F+ or D- exist.

"The one thing that I noticed was that the F on this one is pointing directly at the F bar, whereas on every single other one, the F is pointing between F and G. To me, as a consumer, that's confusing. Is it F or is it G? I think I like this one better because it's telling me plainly to my face that it's an F. It's not in between and it's not trying to fudge." (Chicago, 6 PM)

Colored End-Points

- Respondents who viewed the colored end-points label favorably mostly indicate that they like the symbolic meaning of the colors. To these study participants, green is positive and red represents "warning."

"I like that it says 'uses least energy in green' and 'uses most energy' in red. Red is like a flare usually." (Ft. Lauderdale, 6 PM)

"I like the colors here because we go from cool, being ecologically-minded, down to the hot zone. (Chicago, 6 PM)

- While respondents found the colored end-points visually appealing, they noted that it seems less informative compared to other label concepts. The most frequently suggested improvements for this label include adding the definitions of kilowatt hour and EER and including the range end-points.

"I like the [colored end-points], but I'd like to add the [kilowatt hours] scale. So then you can find where it is on the numeric scale." (Chicago, 8 PM)

“If we could push up the [graphic] a little bit and put the [definitions] at the bottom, then I think you have a good graph.” (Ft. Lauderdale, 6 PM)

High Verbiage

- Almost all respondents reacted negatively to this execution of the *letters label*. They noted that the letter graph is already busy because of the different colors and bar lengths and that when the text is added, it is very difficult to make sense of the label.

“It’s absolutely confusing. All I see is color and even with all [this text], it doesn’t give the same information, [such as] cost per load, etc. It’s a lot of copy and a lot of color and that’s all. I have completely changed my view from the start.” (Ft. Lauderdale, 6 PM)

Gray Bars

- Consumers’ response to the gray bars was by far the most negative of any *letters label* executions. Nearly all participants reported that the gray bars have no eye appeal and seem drab. The only positive comment anyone made was that the colored end-points added some visual appeal to an otherwise drab label.

“The words ‘uses most energy’ in red is kind of nice.” (Chicago, 8 PM)

- In fact, there was almost no discussion of this execution because group members’ reactions were nearly unanimously unfavorable and the project team decided to eliminate the execution from consideration.

Thermometer Label - Clothes Washer

- Respondents in the three clothes washer groups rated the base *thermometer label* and 2 alternative executions, high verbiage and bulbless.
- Overall, the *thermometer* executions are not well received, in spite of the fact that consumers gave the base model relatively high ratings during their initial evaluation.

High Verbiage

- Consumers perceived the high verbiage execution of the *thermometer label* somewhat more favorably than the other *thermometer* executions. The main strengths of the high verbiage execution include the detailed information provided and the clear delineation between the text and graphic areas.

"I like the one that breaks down what a kilowatt hour is..." (Ft. Lauderdale, 6 PM)

"There are some people who prefer text and some who prefer graphics. I think this label does a good job separating the two. If I'm a graphics person, I look [at the thermometer]. If I'm a text guy, I look [along the side]. On the other [label concepts] where you've melded the two together, there is no clear separation." (Chicago, 6 PM)

- Many respondents noticed that the text on the high verbiage execution of the *thermometer label* includes a description of the number of washloads. They were very favorable to this information because it gives them a context in which to evaluate the cost of operating the washing machine. Very few participants noted that the text specifies 'standard size, top-loading clothes washers' are used in the comparison.

"This is the first one that telling you it's based on eight loads per week. The others said 'based in 1998 average costs', but it doesn't say whether [costs] were based on one load, five loads or ten loads." (Ft. Lauderdale, 6 PM)

- On the other hand, critics of the high verbiage *thermometer* execution reported that the label is cluttered and busy. They believe the clutter detracts from the label's visual appeal.

"There is simply too much to read." (Chicago, 6 PM)

"I like the extra information. The information is superb, but it just [looks] kind of yuck." (Ft. Lauderdale, 6 PM)

Bulbless

- According to consumers, the main strength of the *bulbless* execution is that the graphic is easier to read. They said the graph is a simple bar graph and makes the label appear less cluttered.

“It doesn’t have as much information, so [it seems] less cluttered.” (Chicago, 6 PM)

- Although consumers complained that the high verbiage *thermometer label* was too cluttered and contained too much information, almost all react negatively to the simplified version without the bulb. Some noted that the graphic is unappealing, because without a bulb, it resembles a stick or a syringe.

“I’ve never seen a thermometer without a bulb on the bottom. It’s disconcerting.” (Chicago, 8 PM)

Thermometer Labels - Air Conditioner

- Respondents in the air conditioner groups evaluated a total of five executions of the *thermometer label*. The base label and four alternative executions were evaluated, namely:
 - EER with Inverted Scale
 - Kilowatt Hours, not EER
 - Bulbless
 - High Verbiage

EER with Inverted Scale

- Not surprisingly, given their general dissatisfaction with the labeling of the thermometer concepts' scaling, participants viewed the execution with the inverted EER scale more favorably than the other thermometer executions. Most indicated that this label is a logical way of presenting the information and that it clears up the confusion by representing superior energy performance (most efficient) at the top of the scale and the least energy efficient models at the bottom.

"It appeals to common sense. (Ft. Lauderdale, 8 PM)

"Of all the [thermometer] labels, I find the one that says most efficient/least efficient—with the least efficient being on the bottom—to be most accurate. It's the one with the least surprises. I don't look at it and think 'Oh, that's not what I thought it meant.'" (Chicago, 6 PM)

- There are two major weaknesses of this label. They include consumers' lack of familiarity with EER and the bulbless graphic.

"I'm not used to seeing...EER." (Chicago, 6 PM)

"This one I nicknamed the syringe, you lose the concept of it being a thermometer." (Chicago, 6 PM)

Kilowatt Hours, not EER

- Consumers also responded positively to the *thermometer label* that uses kilowatt hours. The primary appeal of this label appears to be that it uses kilowatt hours instead of EER. Consumers reported that they understand kilowatt hours as a unit of measurement and the majority acknowledged that they had never heard of EER until the focus group discussion.

"This is the most logical way to look at that kind of thing. Starting with the kilowatt hour, [which] is supposed to be a universal measure. We get out of the universe of kilowatts when we [change to] EER." (Chicago, 6 PM)

"When you do kilowatt hours, it is better because you don't have to think about [how it compares] to EER." (Ft. Lauderdale, 6PM)

- Other group members were negative toward this thermometer execution because although they liked having the energy use reported in kilowatt hours, they found the inverse scaling counterintuitive and confusing. Some could not understand that it is impossible to have both the highest kilowatt hour usage and superior efficiency at the top of the scale.

"It's still very misleading." (Ft. Lauderdale, 8 PM)

"I like kilowatt hours but I would like it better if it [had most efficient at the top and least efficient at the bottom.]" (Ft. Lauderdale, 6 PM)

Bulbless

- Respondents in the air conditioner groups were as unfavorable to the bulbless thermometer execution as participants in the clothes washer groups. Those who liked the bulbless execution primarily reported that it was easier to think about the graphic as a bar graph than a thermometer.

"Right from the get-go I didn't like the thermometer. To me, this [bulbless thermometer] is just a bar graph turned the other way. I found the bar easier to read than the thermometer." (Ft. Lauderdale, 6 PM)

- However, the majority of participants in these groups were negative to the bulbless thermometer because they did not find the graphic visually appealing. In addition, they feel that the scale is counterintuitive, with poor performance represented at the top of the graph and better performance at the bottom.

"No matter what you did to the thermometer, I'd rather have stars. This label is too confusing." (Ft. Lauderdale, 6 PM)

"I like the bulb. When I looked at it without the bulb, I just didn't like it." (Chicago, 6 PM)

High Verbiage

- Respondents were only somewhat favorable to the high verbiage *thermometer label*. Those who were positive to the label reported that they liked having all of the text and that the side-by-side layout made the text more attractive.

“I like the additional text...It’s a lot better with the added information.” (Ft. Lauderdale, 6 PM)

- However, the majority found the label confusing. Most respondents noted that the scale is counterintuitive.

“They’re beating a dead horse with [this label]. This [the scale with poor performance at the top] is confusing.” (Ft. Lauderdale, 8 PM)

- After the discussion of all label executions was completed, the moderator instructed respondents to select the execution they preferred for each of the four concepts. The results of this exercise for the clothes washer groups reveal that:
 - Respondents were most likely to select the high verbiage execution of the *line graph label*, as opposed to the low verbiage alternative, as their most preferred line graph execution
 - Participants expressed a clear preference for the range end-points execution of the *star label* over the basic and high verbiage executions
 - Group members were about equally likely to prefer the colored end-points and range end-points executions of the *letters label*
 - Respondents also were about evenly divided in selecting the high verbiage and base executions of the *thermometer label* as their most preferred executions

Table 4: Summary of Preferred Executions for Clothes Washer Groups

	NUMBER OF RESPONSES		
	CHICAGO (N=19)	FT. LAUDERDALE (N=9)	TOTAL (N=28)
CURRENT LABEL			
High verbiage	10	7	17
Low verbiage	9	2	11
STARS LABEL			
High verbiage	6	2	8
Basic	5	0	5
KWh end-points	8	7	15
LETTERS LABEL			
High verbiage	2	0	2
Basic	0	1	1
Range end-points	5	6	11
A-F only (NO G)	5	0	5
Colored end-points	7	2	9
Grey Bars	0	0	0
THERMOMETER LABEL			
High verbiage	9	5	14
Basic	9	3	12
Without bulb	1	1	2

- Respondents in the air conditioner groups also completed the previously described exercise to determine their most preferred execution of each of the four label concepts. The results show that:
 - Respondents strongly preferred the current, high verbiage Energy Guide to the low verbiage alternative execution
 - Participants were most likely to select the range-end-points execution of the *star label* over other executions of the *star* concept as their most preferred execution
 - Respondents strongly favor the EER with inverted scale execution of the *thermometer label* over other executions presented for the *thermometer* concept
 - Respondents' preferences for the *letters label* is less clear because a similar number of participants most preferred the A-F only, colored end-points and kilowatt hours endpoints

Table 5: Summary of Preferred Executions for Air Conditioner Groups

	NUMBER OF RESPONSES		
	CHICAGO (N=9)	FT. LAUDERDALE (N=18)	TOTAL (N=27)
CURRENT LABEL			
High verbiage	8	13	21
Low verbiage	1	5	6
STARS LABEL			
High verbiage	5	2	7
Basic	3	1	4
EER end-points	1	15	16
LETTERS LABEL			
High verbiage	1	1	2
Basic	2	0	2
Range end-points	2	4	6
A-F only (NO G)	3	7	10
Colored end-points	1	6	7
Grey Bars	0	0	0
THERMOMETER LABEL			
High verbiage	1	0	1
Basic	1	0	1
Without bulb	1	2	3
KWh, not EER	1	7	8
EER with inverted scale	5	9	14

- After selecting their preferred execution for each of the four label concepts, the moderator asked respondents to think about the execution of each label that they liked best and to indicate which concept they think performs best on each attribute. The results of this exercise are reported below.
- Generally, respondents reported that the *star label* performs best on all attributes except providing the information they need to make an energy efficient purchase decision where it comes in a close second to the current Energy Guide Label. They were most likely to rate it the most preferred label overall, the most effective and the easiest to read and having the most effective graphic.

Table 3: Summary of Preferred Concepts

	LINE GRAPH LABEL	STARS LABEL	LETTERS LABEL	THERMOMETER LABEL
Overall appeal	15	25	12	3
Most effective at helping consumers select an energy efficient appliance*	17	27	7	3
Least effective at helping consumers select an energy efficient appliance ***	6	4	18	24
Most attention grabbing	2	27	24	2
Easiest to read*	14	27	10	3
Contains the types of information I need to make an energy efficient purchase decision	22	18	10	5
Most effective graphic	10	30	12	3

*One person did not rank this category

***Three people did not rank this category

2.4 Determine Attitudes Toward Specific Labeling Issues

High Versus Low Verbiage/Format

- For the most part, consumers appear to be favorable to high verbiage executions, such as the current label and the high verbiage *star label*. Although they initially reported that too much text makes a label look cluttered, they reacted negatively to iterations that remove text. Respondents apparently place a premium on having as much information as possible at their disposal so that they have a choice in deciding what to read and what to ignore.
- This suggests that consumers' reactions to low verbiage executions may have been negatively influenced by their initial exposure to and recall of the current Energy Guide. The discussions revealed that consumers feel a sense of "entitlement" to information once it is presented to them and that they resent what they perceive as attempts to "deprive" them of information. This visceral reaction to what respondents perceived as "taking something away" may play a larger role in their dislike of the low verbiage executions than any objective flaws (i.e., exclusion of vital information, format, etc.) in the low text labels.
- Some respondents also noted that they prefer high verbiage labels formatted so that the text appears on the right side of the graphic. Several participants noted that this layout both breaks up the page, giving the overall label a cleaner look and makes it easier to focus on the text and the graphic individually.

"[Having the text positioned vertically] breaks it apart. It separates it." (Ft. Lauderdale, 8 PM)

- However, dissenters pointed out that integrating the text and graphic makes it more likely that consumers will read the information. Additionally, some feel that the vertical presentation of the text is confusing because readers are more accustomed to processing information from left to right.

“With the information side by side, you don’t even read it.” (Chicago, 6 PM)

“We read horizontally in the English language. We don’t read vertically.” (Chicago, 6 PM)

Preferences for kWh/year versus EER

- For the purpose of the focus group study, versions of the *thermometer label* were designed to test consumer reactions to EER versus kWh. Therefore, thermometers were graphed using both kWh and EER for air conditioners. This was the only label for which both a kWh and EER graph were developed. Therefore, these data may or may not reflect consumer attitudes about EER vs. kWh for other label designs. However, general group conversation suggested consumer preference for kWh overall.
- Consumers expressed far greater support for the use of kilowatt hours than EER when evaluating the *thermometer labels*. While they appreciate the fact that the EER is intuitive when presented on a scale, with higher performance represented at the top or right side of the scale, most indicated that they prefer kilowatt hours because it is a more familiar unit of measurement (i.e., they see it on their energy bills). Several also said that using kilowatt hours on the label allows them to determine their individual operating costs more accurately.

“I didn’t even know what EER meant [before tonight].” (Chicago, 8 PM)

“Kilowatt hours is just an easier concept. You can take your electric bill and compare it to how much you are using in your refrigerator.” (Ft. Lauderdale, 6 PM)

“I don’t like the EER stuff. I like the kilowatt hours because I can at least look at my electric bill and get some kind of match up. I can’t figure out the EER stuff.” (Ft. Lauderdale, 8 PM)

- Conversely, when it comes to the graphing of kilowatt hours (uses most energy and uses least energy) and EER (most efficient and least efficient), respondents prefer EER. Again, they preferred the most efficient/least efficient label largely because it is intuitive when represented graphically. However, some group members noted that the optimal solution is finding a way to scale kilowatt hours to reflect superior performance at the top or right side of the scale. This clearly suggests that consumers find it difficult to conceptualize the inverse relationship between use and efficiency.

“Can you [make the scale read lower numbers on the bottom and higher numbers on the top] with kilowatt hours and still get the most efficient at the top?” (Ft. Lauderdale, 6 PM)

Reactions to Operating Costs Versus Cost Savings

- Nearly all respondents preferred that the labels represent operating costs, instead of cost savings. Consumers cited their belief that the calculation of savings is dependent on such a wide range of highly variable factors that it is nearly impossible to compute it precisely. A few participants also indicated that it is not clear to what standard the appliance’s costs are being compared to determine savings.

“[Since] your yearly operating costs will vary depending on your local utility rate and your use of the product, whatever they are estimating your savings would not necessarily be accurate.” (Chicago, 6 PM)

“Cost savings is too ambiguous.” (Chicago 6 PM)

“Cost of operation is what people really want to know. What’s it going to cost me to operate it.” (Chicago, 6 PM)

“I think it’s too hard to say how much you are going to save, so [I’d rather have] cost to operate.” (Ft. Lauderdale, 6 PM)

- However, some respondents noted that it is easier to attract consumer attention by emphasizing savings. They also said that the same factors that make the estimate of savings inaccurate, diminish the accuracy of the cost of operation calculation.

“[Savings] would be more eye-catching. You’re looking to save money.” (Ft. Lauderdale, 6 PM)

Reactions to Dual Operating Costs

- There is little disagreement among consumers on the issue of presenting gas and electric operating costs. They overwhelmingly support showing both figures on the label. Although some note that only one cost is applicable to any given consumer, they understand that it is more efficient to use a standard label that reports both costs.

"[It's important to have cost to operate with both electric and gas] because while Florida uses so much electric, it's different in other parts of the country. You have to satisfy all 50 states." (Ft. Lauderdale, 6 PM)

Reactions to Two End Points for the 5-star Rating (Option One and Option Two)

- Respondents were asked if they would prefer Energy Guide labels to give an appliance a 5-star rating based on the fact that it is the most efficient model available today (Option 1) or based on the most efficient model likely to be available in the next few years (Option 2). Participants were nearly unanimous in their preference for the first option. According to consumers, ratings should be based on currently available offerings because technology changes too quickly to have the ratings keep up with advances. Moreover, they indicated that shoppers are accustomed to annual ratings and are unlikely to be confused by comparisons across model years.

"[I prefer Option 1 because] it's like a computer. The day you walk out of the store with a computer, it's obsolete. Obsolescence is a product of our time." (Chicago, 6 PM)

"It should definitely be Option 1. The reason being is that I am out there looking for an appliance now. I'm not going to sit around waiting for this 5-star to come out." (Ft. Lauderdale, 6 PM)

"I think it [should be] Option 1, based on the year the product was released. You know, there are auto magazines that give 5-star ratings to a Lincoln, and they had a Lincoln in 1928. We're not going to compare the two." (Chicago, 6 PM)

3.0 Conclusions and Recommendations

Conclusions and Recommendations

Conclusions

1. Energy efficiency continues to be a low priority for consumers when selecting appliances. Many believe that the most efficient appliances are cost-prohibitive or that it will take many years to recoup their investment through reduced energy bills. Further, consumers' most common reaction to the use of energy efficient appliances, particularly white appliances, is "why bother" since they believe that the dollar amount of both cost of operation and potential savings are negligible between the most and the least efficient appliances. Clearly, the case for buying energy efficient appliances is not persuasive to consumers when built solely on costs or savings available currently.
2. Consumers appear to have some misconceptions about energy efficient appliances: These results suggest that consumers expect more efficient appliances to cost much more, to offer fewer features and to be less powerful. Thus, the low priority shoppers place on energy efficiency may be the result of both perceptions that the financial benefit is modest and that these appliances are less desirable (reduced cooling/heating output, fewer features, etc.).
3. Respondents view the *star label* most favorably. The star graphic is very consumer-friendly because it is simple to interpret and most consumers are already familiar with the concept of using stars to connote performance. Many respondents note that the star graphic easily and effectively communicates the energy efficiency concept to consumers.

However, although the majority of consumers find the star graphic highly effective at communicating the intended message, many note that the basic version is not very informative. Thus, most group members prefer executions that increase the amount of information available on the label. Specifically, respondents note that range end-points are important pieces of information because the scale anchors give consumers a context in which to evaluate the meaning of the stars.

Also, consumers are generally favorable to the high verbiage execution of the *star label*. This may suggest that the star graphic is most capable of supporting high verbiage executions because the star rating system does not lose its attention-grabbing capabilities or effectiveness at communicating the energy efficiency message at-a-glance, with the inclusion of additional text.

4. Consumers note that they like the level of information contained in the current Energy Guide, in spite of the fact that the graphic is relatively ineffective. Further, they indicate that they are familiar with the label and believe it is easily recognized by consumers. This suggests the current label has considerable equity with shoppers. However, it is important to acknowledge that while consumers report that they like having the maximum amount of information, they also say that they do not like the cluttered appearance of high verbiage labels. Some note that they often ignore the current Energy Guide altogether because there is too much text. Consumers appear to have conflicting, and perhaps mutually exclusive, demands of the label. Specifically, on one hand, they indicate the energy label should be high verbiage and informative, while on the other hand they do not want the label to appear cluttered or busy.
5. Consumers' favorable evaluation of the *letters labels* was due almost solely to the fact that they find it colorful and visually appealing. A few respondents also appreciated the symbolism implied by the color of the endpoints (red-warning/overheating, green-conservation). However, for the most part, discussion of the *letters label* revealed significant confusion about the interpretation of the label. Further, most respondents found the length of the bars (longer bars means less energy efficient) and the misalignment of the arrow misleading or counterintuitive.

Although the discussion reveals that consumers do not like much about the label, except its visual appeal, it is also important to note that none of the alternative executions of the *letters label* represented a combination of the elements of the label that consumers prefer (i.e., logical bar length, aligned arrow, range endpoints, etc.). Thus, it is not clear how consumers would evaluate an execution that addresses the shortcomings that they noted in this research.

6. Respondents' reactions to the *thermometer label* were unambiguously negative. In particular, consumers find the scaling counterintuitive (better energy performance at the bottom of the scale) and are very unfavorable to the bulbless executions because they find them visually unappealing. Group members are moderately favorable to the inverted EER scale execution because the EER (better energy performance represented at the top of the scale) seems logical. However, the negatives of this label far outweigh this modestly positive evaluation of this specific execution.
7. Generally, respondents find it difficult to understand the inverse nature of the relationship between kilowatt use and efficiency. Thus, while they prefer that energy use be reported in terms of kilowatt hour usage, rather than EER, they also want the label to reflect better performance (i.e., most efficient) at the top or right of the scale and lower performance (i.e., least efficient) at the bottom or left of the scale. This finding suggest that it will be very difficult for ACEEE to satisfy consumers' demands for a scale measure that they are both familiar with and find intuitive.

Recommendations

1. Respondents do not find a savings message compelling because the dollar value of savings possible with even the most efficient appliances are not particularly impressive to consumers. Until larger savings are possible, the energy community may want to enhance the costs/savings message with environmental messages that focus on the positive impact energy efficient purchase decisions will have on future generations, in order to heighten consumers' interest.
2. In order to maximize consumer interest in energy savings and the appeal of energy efficient appliances, Shugoll Research recommends that ACEEE evaluate the feasibility of initiating a broad consumer education effort. It is apparent from this research that consumers' negative perceptions about energy efficiency are related, in part, to their reluctance to use the most energy efficient appliances rather than significant confusion about the meaning of energy labels. Therefore, we believe that combining efforts to improve the label with a public awareness campaign designed to improve consumer attitudes about energy efficiency may represent an optimal strategy.
3. The *star label* emerged as the label consumers find most compelling in terms of visual appeal and effectiveness in communicating the energy efficiency message. Therefore, Shugoll Research recommends that ACEEE include the *star label* in upcoming quantitative research with consumers in order to verify the findings of the focus group study.
4. Although consumers often underutilize the current Energy Guide, they find it appealing because it contains more information and because it is familiar. Shugoll Research recommends that ACEEE include revised executions of the current label in upcoming quantitative research with consumers in order to determine if there is an optimal execution of the current energy guide that includes enough information to satisfy consumers' demands, but is formatted so that the *line graph label* is more attention-grabbing, the label is more colorful and the text appears less cluttered.

5. Several questions were raised in this focus group research. Specifically, further research is needed to determine the value and impact of varying information items and the use of color. Shugoll Research recommends that ACEEE conduct further quantitative research with consumers to explore:
 - The impact of the graphic alone and its ability to communicate the energy efficiency message
 - The impact of color on consumers' ability to notice and interpret the graphic
 - The optimal level of verbiage (high, medium or low)
 - The value of kilowatt hours versus EER as the unit of measurement
 - The value of individual information items, including "comparisons based on eight loads of clothes per week", "compare the energy use of this washer with others before you buy", etc.
6. Consumers' positive response to the *letters label* is based, for the most part, on its visual appeal (i.e., colorful, pretty, etc.). However, consumers expressed confusion when they attempted to interpret the graph and most find it ineffective in communicating the energy efficiency message. Given the high negatives associated with this label and the fact that the *star label* and the current Energy Guide are perceived much more favorably, Shugoll Research recommends that ACEEE exclude the *letters label* from further consideration.
7. Additionally, the response to the *thermometer label* was overwhelmingly negative. Consumers did not find the concept compelling and almost all said that the scaling was counterintuitive. Shugoll Research therefore recommends that this concept be excluded from any further consideration.
8. Since the relationship between kilowatt hour usage and energy efficiency is inverted, consumers often found it difficult to interpret graphics that refer to energy usage because poor performance is associated with a higher number. However, although EER is logically scaled, so that higher EER connotes higher energy efficiency, consumers were unfavorable to the term because they are unfamiliar with its meaning. The agency might consider the desirability of undertaking a public education campaign to increase public familiarity with and use of EER.

Appendix A: Screener

SHUGOLL RESEARCH
 7475 Wisconsin Avenue
 Suite 200
 Bethesda, Maryland 20814
 (301) 656-0310

ACE0001

CIRCLE

February 7 (Chicago) 6 PM
 February 7 (Chicago) 8 PM
 February 8 (Chicago) 6 PM
 February 9 (Ft. Lauderdale) 6 PM
 February 9 (Ft. Lauderdale) 8 PM
 February 10 (Ft. Lauderdale) 6 PM

APPLIANCE SCREENER

(FINAL 1/25/00)

RESPONDENT NAME: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP: _____
 TELEPHONE: (H) _____
 DATE RECRUITED: _____ RECRUITED BY: _____
 CONFIRMED BY: _____ DATE CONFIRMED: _____

Hello, this is _____ calling from Shugoll Research, a national market research company. We are conducting a brief study about household appliances and would greatly value your opinions. This is strictly market research and absolutely no sales effort is involved. I'd like to ask you a few questions.

1. First, can you tell me do you own or rent your home?

	<u>CIRCLE</u>	
Own	1	→(CONTINUE)
Rent	2	→(THANK AND TERMINATE)
Refused	3	

2. Have you owned your home for: (READ LIST)

	<u>CIRCLE</u>	
Less than 3 years	1	→(THANK AND TERMINATE)
3 to 9 years	2	→(CONTINUE)
10 to 20 years	3	
OR More than 20 years	4	
(DO <u>NOT</u> READ) Don't know	5	→(THANK AND TERMINATE)

3. Which of the following statements reflects your involvement in purchasing household appliances such as large kitchen appliances for your home? (READ LIST)

	<u>CIRCLE</u>	
You are primarily responsible for purchasing these types of household appliances	1	→(CONTINUE)
You share the responsibility equally for purchasing these types of household appliances	2	
Someone else is responsible for purchasing large household appliances	3	→(ASK TO SPEAK TO THE PERSON MOST RESPONSIBLE FOR PURCHASING LARGE HOUSEHOLD APPLIANCES)

4a. Now, thinking about large household appliances, have you purchased any of the following from a retail store in the last 6 months? (READ LIST)

CIRCLE ONE PER ROW

	Yes	No	Don't Know
Refrigerator	1	2	3
Freezer	1	2	3
Individual room air conditioning unit/ Central air conditioning system	1	2	3
Dishwasher	1	2	3
Clothes washer	1	2	3
Water heater	1	2	3

↓

(IF AT LEAST ONE CODE 1 CIRCLED, RECRUIT A MIX OF 5-6 PER GROUP AND SKIP TO Q.5)

↓

(IF NO OR DON'T KNOW TO ALL, CONTINUE WITH Q.4b)

4b. Are you now shopping for and likely to buy any of the following appliances from a retail store? (READ LIST)

CIRCLE ONE PER ROW

	Yes	No	Don't Know
Refrigerator	1	2	3
Freezer	1	2	3
Individual room air conditioning unit/ Central air conditioning system	1	2	3
Dishwasher	1	2	3
Clothes washer	1	2	3
Water heater	1	2	3

↓

(AT LEAST ONE CODE 1 MUST BE CIRCLED TO CONTINUE. RECRUIT A MIX OF 5-6 PER GROUP)

↓

(THANK AND TERMINATE)

RECRUIT (Q.4a & Q.4b) :

4 REFRIGERATOR/FREEZER PURCHASERS/SHOPPERS

3 ROOM AIR CONDITIONER/CENTRAL AIR PURCHASERS/SHOPPERS

3 DISHWASHER/CLOTHES WASHER PURCHASERS/SHOPPERS

2 WATER HEATER PURCHASERS/SHOPPERS

5. Where did you buy (or have you shopped for) the household appliance(s)? (DO NOT READ)

	<u>CIRCLE</u>	
Circuit City	1	
Best Buy	2	
Montgomery Wards	3	→(RECRUIT A MIX PER GROUP)
Sears	4	
Home Depot	5	
Other retailer (SPECIFY)	6	
<hr/>		
Builder/contractor	7	→(THANK AND TERMINATE)
Other (SPECIFY)	8	→(PUT ON HOLD AND NOTIFY PROJECT MANAGER)
<hr/>		
Don't know	9	→(THANK AND TERMINATE)

6. Which of the following categories includes your total family income before taxes: (READ LIST)

	<u>CIRCLE</u>	
Under \$20,000	1	
\$20,000 to \$29,999	2	
\$30,000 to \$39,999	3	
\$40,000 to \$59,999	4	→(RECRUIT A MIX)
\$60,000 to \$74,999	5	
\$75,000 to \$100,000	6	
OR More than \$100,000	7	
(DO NOT READ) Refused	8	→(THANK AND TERMINATE)

7. And, which of the following categories includes the last grade of school you completed? (READ LIST)

	<u>CIRCLE</u>
Some high school	1
High school degree	2
Vocational school	3
Some college	4
College degree	5
Some graduate work	6
OR Graduate degree	7
(DO NOT READ) Refused	8

8. Are you: (READ LIST)

	<u>CIRCLE</u>
Single	1
Married or partnered	2
OR Divorced, separated or widowed	3
(DO NOT READ) Refused	4

9. Do you have any children under the age of 18 living at home?

	<u>CIRCLE</u>
Yes	1
No	2
Don't know	3

10a. Are you: (READ LIST)

	<u>CIRCLE</u>	
Employed full-time	1	→(CONTINUE)
Employed part-time	2	
Not employed	3	
A full-time student	4	→(SKIP TO Q.11)
OR Retired	5	
(DO NOT READ) Refused	6	

10b. What is your occupation? Please describe.

10c. Do you work: (READ LIST)

	<u>CIRCLE</u>
From home	1
OR Outside your home	2

11. And, to ensure that we have a representative sample, please tell me if you are:
(READ LIST)

	<u>CIRCLE</u>	
Caucasian	1	→(RECRUIT 8 OR 9 PER GROUP)
African American	2	
Hispanic or Latino	3	→(RECRUIT 3 OR 4 PER GROUP)
Asian	4	
OR A member of some other racial/ethnic group	5	

12. Now, thinking about your recent experiences shopping for household appliances, what aspects about shopping for these appliances did (do) you like most and like least? (WRITE VERBATIM)

NOTE TO INTERVIEWERS: IT IS EXTREMELY IMPORTANT THAT RESPONDENTS IN THIS STUDY BE ARTICULATE. IF RESPONDENT CANNOT OR WILL NOT EASILY GIVE A ONE TO TWO SENTENCE UNPROMPTED ANSWER IN WELL UNDERSTOOD ENGLISH, PLEASE TERMINATE.

13. Have you or has anyone in your immediate family ever worked in the field of advertising, market research, public relations, or for a household appliance manufacturer or sales company or a regulatory or energy-related organization?

CIRCLE

- Yes 1 →(THANK AND TERMINATE)
No 2 →(CONTINUE)

14. Have you ever participated in a market research discussion group?

CIRCLE

- Yes 1 →(CONTINUE)
No 2 →(SKIP TO INVITATION)

15. How long ago was the last market research discussion group you participated in? (DO NOT READ)

CIRCLE

- Within the past 6 months 1 →(THANK AND TERMINATE)
More than 6 months ago 2 →(CONTINUE)

16. What was the topic of the study you participated in? (DO NOT READ)

CIRCLE

- Household appliance or energy-related 1 →(THANK AND TERMINATE)
Other 2 →(CONTINUE)

17. RECRUITER: CIRCLE GENDER

CIRCLE

- Female 1 →(RECRUIT A MIX)
Male 2

INVITATION

We are conducting a panel discussion with 10 people like yourself to discuss issues related to purchasing household appliances on February 7/8 (Chicago) or February 9/10 (Ft. Lauderdale). The discussion will take about 2 hours. A cash gift of \$ _____ will be given to each participant. Are you available to attend the meeting?

CIRCLE

- | | | |
|-----|---|------------------------|
| Yes | 1 | →(GIVE DIRECTIONS) |
| No | 2 | →(THANK AND TERMINATE) |

Appendix B: Respondent Profile

Respondent Profile

	CHICAGO (N=28)	FT. LAUDERDALE (N= 27)	TOTAL (N=55)
LENGTH OF OWNERSHIP OF HOUSE			
3 to 9 years	7	13	20
10 to 20 years	12	10	22
More than 20	9	4	13
HOUSEHOLD APPLIANCES PURCHASED IN THE LAST 6 MONTHS			
Refrigerator	7	7	14
Freezer	1	0	1
Air conditioning unit/system	5	3	8
Dishwasher	6	1	7
Clothes washer	5	1	6
Water heater	7	1	8
HOUSEHOLD APPLIANCES CURRENTLY SHOPPING FOR AND LIKELY TO BUY			
Refrigerator	4	4	8
Freezer	3	0	3
Air conditioning unit/system	3	2	5
Dishwasher	1	2	3
Clothes washer	6	3	9
Water heater	3	2	5

	CHICAGO (N=28)	FT. LAUDERDALE (N= 27)	TOTAL (N=55)
RETAIL STORES HOUSEHOLD APPLIANCES ARE SHOPPED FOR			
Circuit City	4	4	8
Best Buy	5	3	8
Montgomery Wards	5	0	5
Sears	11	11	22
Home Depot	3	0	3
Brandsmart	0	7	7
ABT	7	0	7
Air Temp	0	1	1
Appliance Discount	0	1	1
Armstrong	0	1	1
Triple H Modern Air	0	1	1
L & L Appliance	1	0	1
ABC	2	0	2
TOTAL ANNUAL HOUSEHOLD INCOME			
Under \$20,000	0	1	1
\$20,000 to \$29,999	1	1	2
\$30,000 to \$39,999	3	5	8
\$40,000 to \$59,999	9	9	18
\$60,000 to \$74,999	6	7	13
\$75,000 to \$100,000	6	3	9
More than \$100,000	3	1	4

	CHICAGO (N=28)	FT. LAUDERDALE (N= 27)	TOTAL (N=55)
EDUCATION			
Some high school	0	0	0
High school degree	5	4	9
Vocational school	0	1	1
Some college	6	13	19
College degree	12	7	19
Some graduate work	1	0	1
Graduate degree	4	2	6
MARITAL STATUS			
Single	1	0	1
Married or partnered	26	23	49
Divorced, separated or widowed	1	4	5
EMPLOYMENT			
Employed full-time	20	16	36
Employed part-time	4	6	10
Not employed	3	0	3
A full-time student	0	0	0
Retired	1	5	6
ETHNICITY			
Caucasian	23	19	42
African-American	4	6	10
Asian	1	0	1
Hispanic	0	2	2
GENDER			
Male	9	13	22
Female	19	14	33

Appendix C: Moderator's Guide

MODERATOR'S TOPIC GUIDE
(FINAL-FEBRUARY 4, 2000)

PROJECT: ACE0001
DATE: February 7 & 8, 2000 (Chicago) and February 9 & 10, 2000 (Ft. Lauderdale)
LOCATION: Chicago, Illinois and Ft. Lauderdale, Florida
TOPIC: Energy Label Evaluation

Introduction

- Who am I
- What I do

Ground Rules

- Audio taping and why
- Talk one at a time
- Articulate loudly enough to be heard
- Avoid side conversations
- Mirror and observers
- Videotaping and why
- Avoid peer pressure
- Be candid
- No right or wrong answers
- Need to hear from everyone
- Gratuity for your time and opinions

Respondent Introductions

Tell us:

- Your name
- Area of residence
- Family status

Examine Appliance Shopping Behavior

- Identify appliances purchased or shopped for recently
- Identify the factors that most influenced which appliance(s) were purchased/evaluated
 - Price
 - Appearance/design
 - Durability
 - Functionality
 - Brand name
 - Reputation of manufacturer
 - Service
 - Warrantees
 - Energy use
 - Other - specify

Obtain Reactions to All Base Labels

- Display all base labels. Before discussion ask respondents to respond to a series of questions (Repeat for current, star, letters and thermometer)
- On a scale of 1 to 10 :
 - Where 1 is not at all attention grabbing and 10 is extremely attention grabbing, how attention grabbing is this label
 - Where 1 is difficult to read and 10 is easy to read
 - Where 1 represents does not contain the type of information I need to make an energy efficient purchase decision and 10 represents contains the type of information I need to make an energy efficient purchase decision
 - Where 1 is has a graphic that does not effectively communicate the energy efficiency of the appliance and 10 is has a graphic that effectively communicates the energy efficiency of the appliance.
 - Where 1 is do not like much overall and 10 is like a lot overall

Evaluate Each Base Label Label (Rotate Discussion Order in Each Group for Current, Star, Letters and Thermometer

- Identify what, in particular, respondents like best/strengths about Label ___
- Identify what, in particular, respondents like least/weaknesses about Label ___
- Probe respondents feelings/reactions to particular features of Label ___
- Summarize suggestions for improving Label ___

Evaluate (On a Rotating Basis) All Executions of Each Label Concept (In Chicago, We Will Present Clothes Washer Versions in 2 Groups and AC Versions in 1 Group. In Ft Lauderdale, We Will Present AC Versions in 2 Groups and Clothes Washer Versions in 1 Group

- Discuss all executions of Current Label
 - Probe feelings about current label (*no changes-high verbiage*) versus alternative (*low verbiage*)
 - (For AC version) - Probe use of word "model" in scale anchor points and probe use of words "Least Efficient" and "Most Efficient" versus "uses less energy and use most energy"
 - (For AC version) - see note below about probe for understanding of *EER* versus *kWh/yr.* and higher number being better/lower number worse
- Discuss all executions of Star Label
 - *Base Case* - probe understanding of range/comparison scale and on AC version probe as to whether it would be better/worse or make no difference if the words "a higher number is better" to the definition of *EER*
 - *Stars with range end-points* - probe for comments about end-points and logic/understanding of numerical values (i.e., perceptions about whether 1231 kWh/yr. left side of scale is better or worse than 294 kWh/yr. right side of scale and understanding the concept that less rather than more is better in this case)
 - *Stars - High verbiage*
- Discuss all versions of Letters Label
 - *Base case*
 - *Only A - F* (no G)
 - *Colored end - points* (Top is green - best and bottom is red - worst)

- *Grey Bars* - "Uses Least Energy" - green and "Uses Most Energy" - red
- *End-points/range provided*
- *High verbiage*
- Discuss all versions of thermometer label
 - *Base case*
 - *High verbiage* - probe for feelings about presenting data in column format (i.e. left to right) versus (up and down) the way it is presented in letters label/current label/star label
 - (For AC version) - change to *kWh/yr.* from *EER*
 - *Thermometer without bulb*
 - (For AC version) -*EER* with scale inverted

Identify Preferred Executions for Each Label Concept

- Ask respondents to take another look at all the executions for each label concept and to select their preferred execution for each label concept
- Ask respondents to explain their selection

Identify Preferred Label Concept

- (Ask respondents to look at their preferred execution for each label concept). Determine which concept respondents prefer overall
- Determine which label respondents believe would be *most* effective at helping consumers to select a more energy efficient appliance and why
- Determine which label respondents believe would be *least* effective at helping consumers select a more energy efficient appliance and why
- Identify the label respondents believe would be most *attention grabbing* and why
- Identify the label respondents believe is *easiest to read* and why
- Identify the label respondents believe *contains the type of information they need* to make an energy efficient purchase decision and why
- Identify the label respondents believe contains *the most effective graphic* (i.e., a graphic that effectively communicates how energy efficient the appliance is) and why

Explore Consumer Perceptions of Key Messages During Concept Evaluation

- Explore attitudes about having two operating costs provided with clothes washer labels (i.e., one for use with an electric water heater and one for use with a natural gas water heater)
- (When evaluating AC Concepts) Explore attitudes toward *EER* versus kWh/yr. measurement
 - Probe for feelings about scale - when scale is low, it's bad (i.e., least efficient) and when scale is high, it is good (i.e., most efficient)
- Explore consumer opinions regarding the "savings message" versus "cost of operation"
 - For those who would like to see "savings message" should it be presented in comparison to the "least efficient" model on the market or the "average"
- Explore how consumers feel about the star range representing "what is available today"(i.e., currently you will never see 5 stars) or whether it should represent future potential (i.e., model you bought today might be a 4, but be a 5 in a couple of years or visa versa) (client to write a brief paragraph to explain the concept)

False Close

Final Comments

Appendix D: Creative Executions

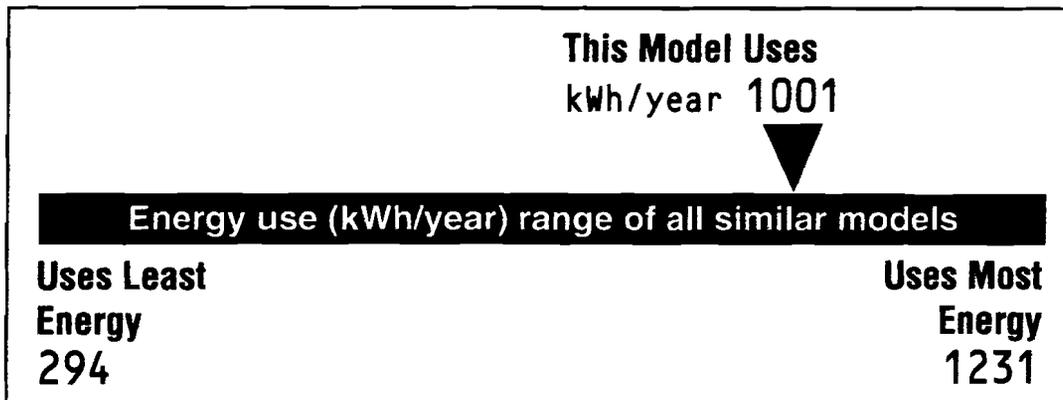
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard
Top-Loading

AMERICAN APPLIANCE
Model(s) CWL010752

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size top-loading clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$87

when used with an electric water heater

\$32

when used with a natural gas water heater

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

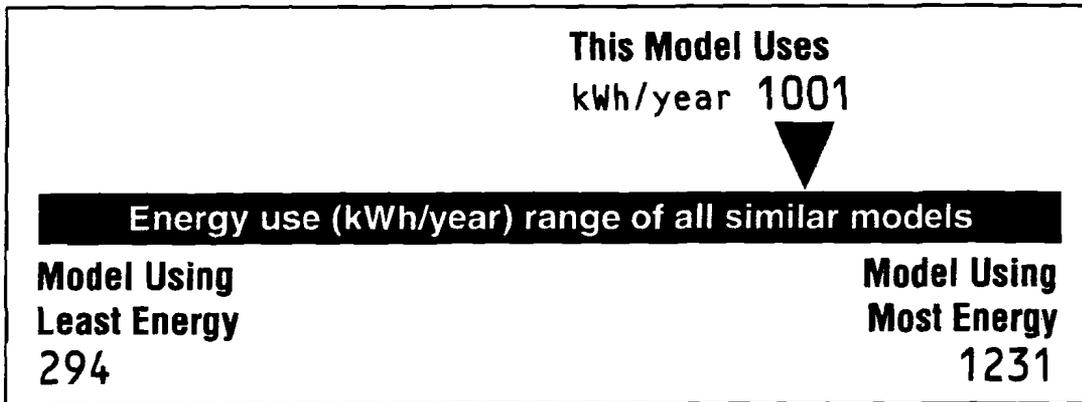
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard
Top-Loading

AMERICAN APPLIANCE
Model(s) CWL010752



Based on a comparison of similar models.

Estimated Yearly Operating Cost:

\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

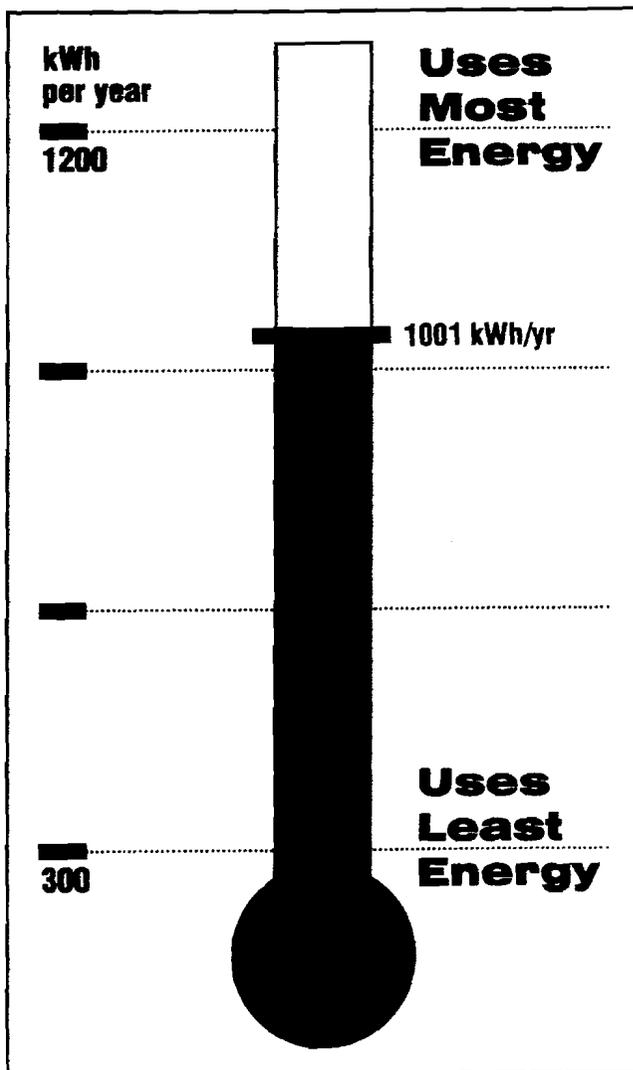
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading



THIS MODEL USES

1001 kWh

PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

ESTIMATED YEARLY OPERATING COST:

\$87

when used with electric water heater

\$32

when used with gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

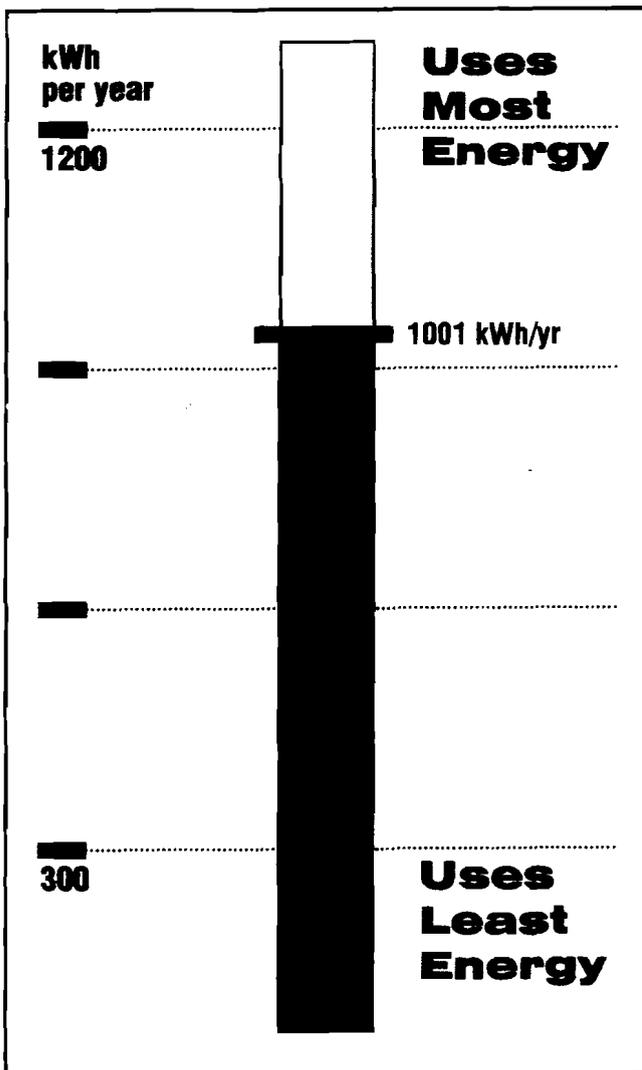
Based on a comparison of similar models.

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading



THIS MODEL USES
1001 kWh
PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

ESTIMATED YEARLY OPERATING COST:

\$87
when used with
electric water heater

\$32
when used with
gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

Based on a comparison of similar models.

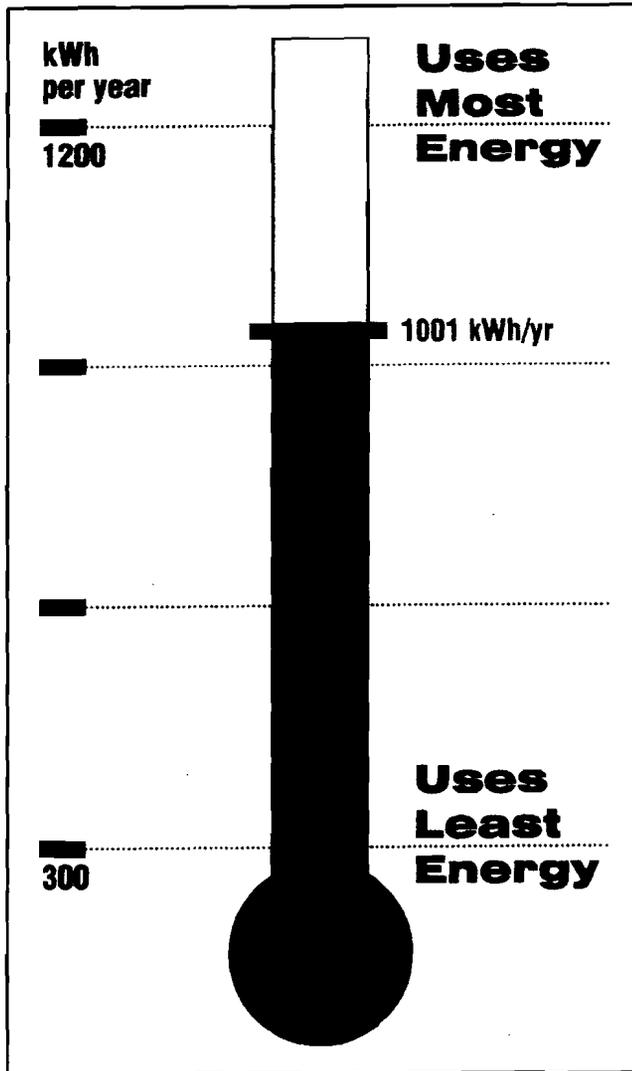
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

Compare the Energy Use of this Clothes Washer with Others Before You Buy



THIS MODEL USES

1001 kWh
PER YEAR

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size, top-loading clothes washers are used in this scale.

ESTIMATED YEARLY OPERATING COST:

\$87

when used with electric water heater

\$32

when used with gas water heater

Based on eight loads of clothes a week and a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

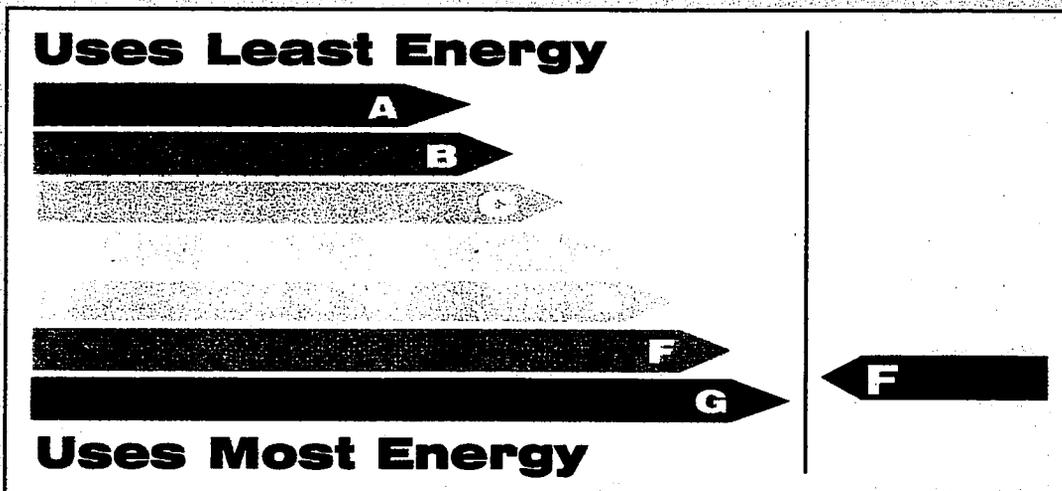
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



THIS MODEL USES **1001** kWh PER YEAR

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size top-loading clothes washers are used in this scale.

Estimated Yearly Operating Cost:
\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

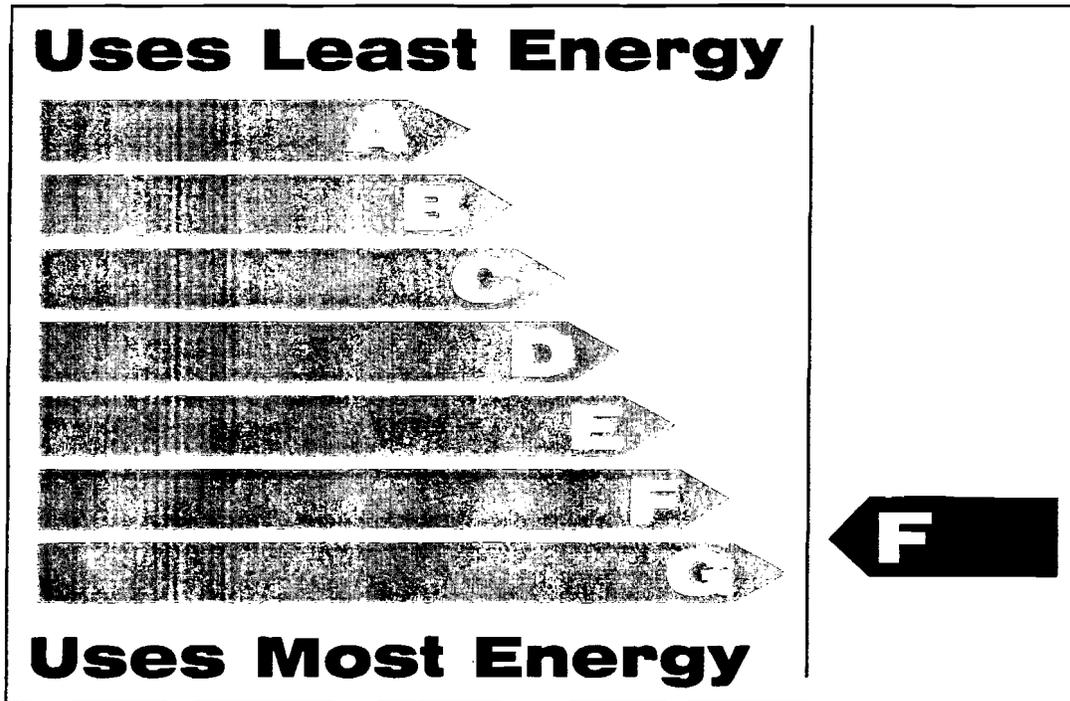
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading



Based on a comparison of similar models.

THIS MODEL USES **1001** kWh PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

Estimated Yearly Operating Cost:
\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

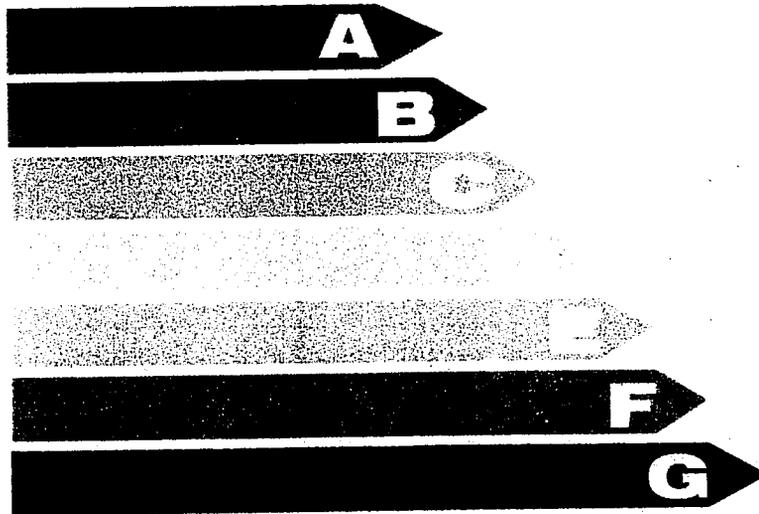
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

Uses Least Energy



Uses Most Energy



Based on a comparison of similar models.

THIS MODEL USES **1001** kWh PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

Estimated Yearly Operating Cost:

\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

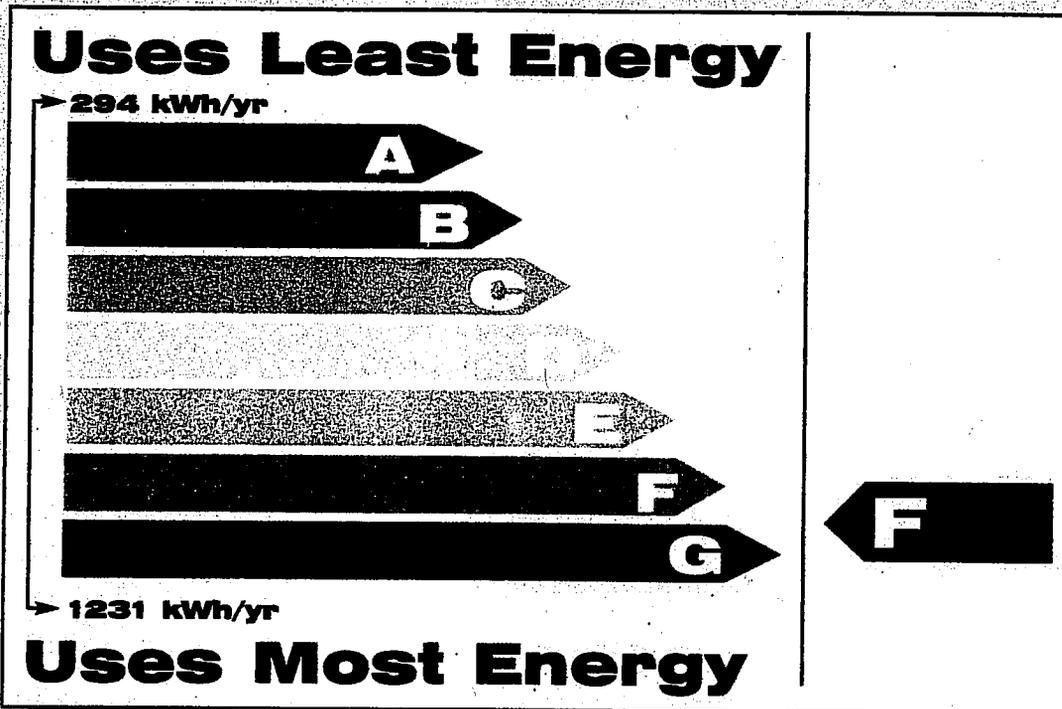
Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading



Based on a comparison of similar models.

THIS MODEL USES **1001** kWh PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

Estimated Yearly Operating Cost:

\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

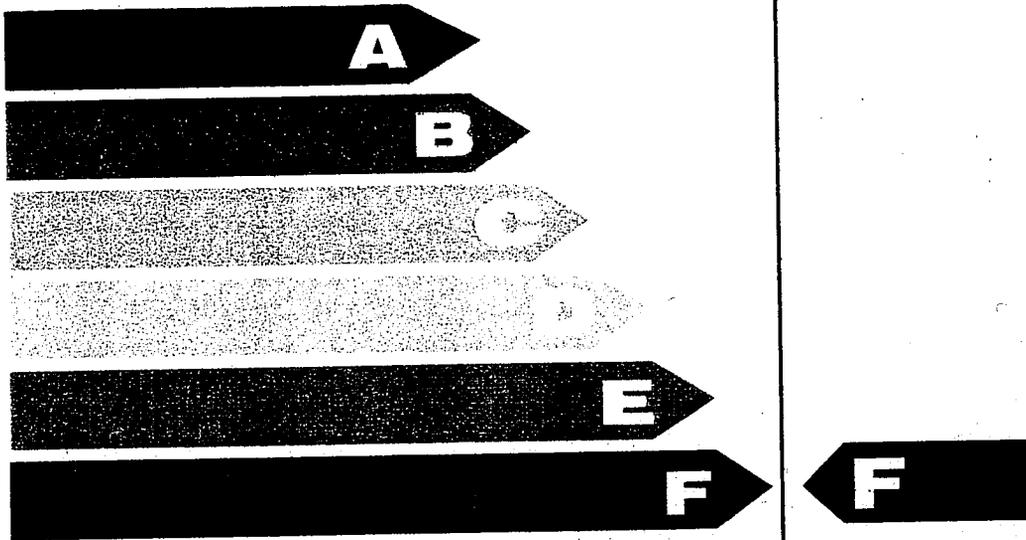
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

Uses Least Energy



Uses Most Energy

Based on a comparison of similar models.

THIS MODEL USES **1001** kWh PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

Estimated Yearly Operating Cost:

\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

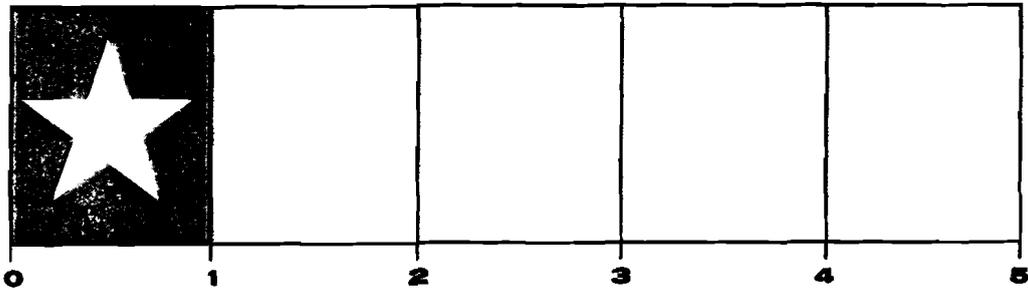
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

The More Stars the More Energy Efficient



Based on a comparison of similar models.

THIS MODEL USES

1001 kWh

PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

Estimated Yearly Operating Cost:

\$87 when used with an
electric water heater

\$32 when used with a
natural gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity
and 60¢ per therm for natural gas.

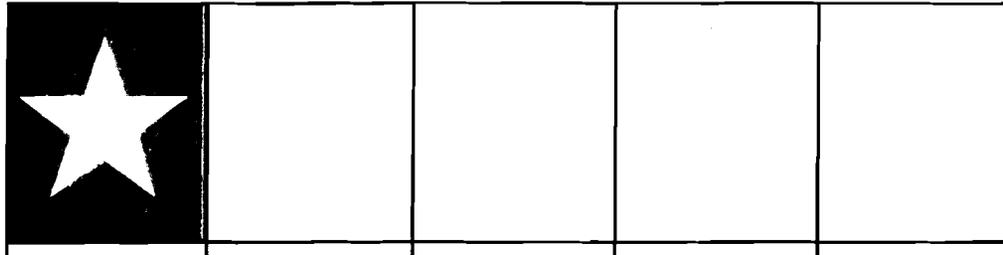
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

The More Stars the More Energy Efficient



1231
kWh/yr

294
kWh/yr

Based on a comparison of similar models.

THIS MODEL USES

1001 kWh

PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

Estimated Yearly Operating Cost:

\$87 when used with an electric water heater

\$32 when used with a natural gas water heater

Based on a 1998 national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas.

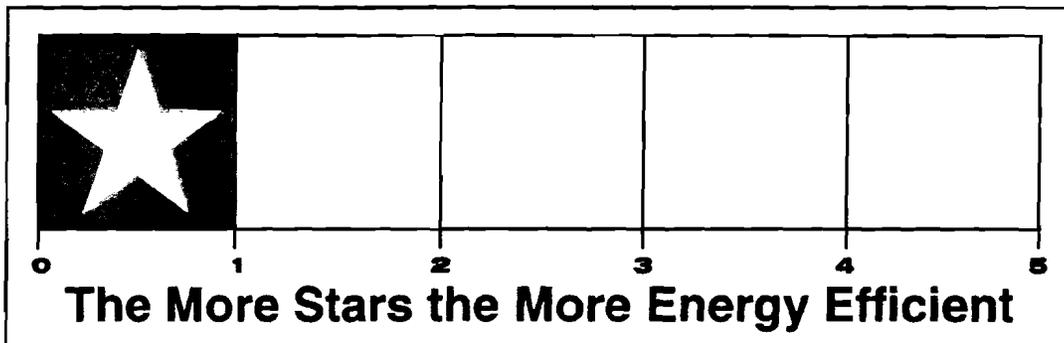
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard
Top-Loading

**Compare the Energy Efficiency
of this Clothes Washer with Others Before You Buy.**



THIS MODEL USES

1001 kWh PER YEAR

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size top-loading clothes washers are used in this scale.

Estimated Yearly Operating Cost:
\$87 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

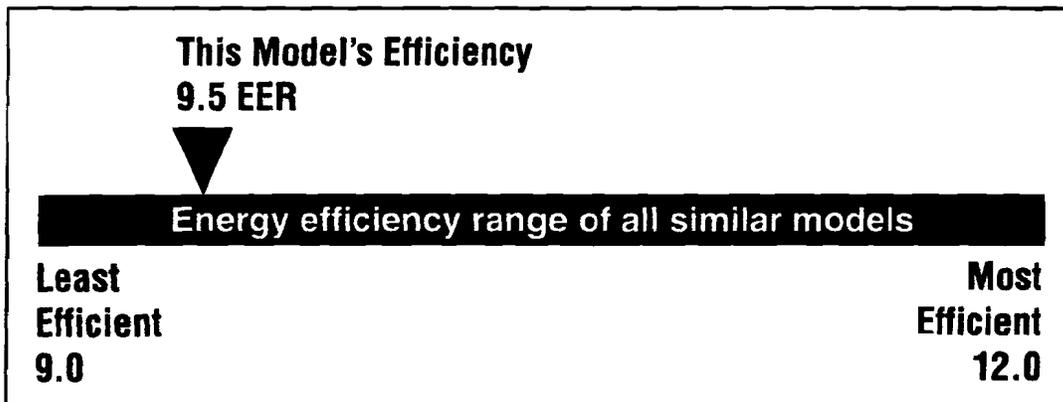
Based on standard U.S. Government tests

ENERGYGUIDE

Room Air-Conditioner
Without Reverse Cycle
With Louvered Sides

COOLAIR APPLIANCE
MODEL 122345
CAPACITY: 13,000 BTUs

**Compare the Energy Efficiency of this Air Conditioner
with Others Before You Buy.**



EER, the Energy Efficiency Ratio, is the measure of energy efficiency for room air conditioners. Only models between 8,000 and 13,999 BTUs with the above features are used in this scale.

More efficient air conditioners cost less to operate. This model's estimated yearly operating cost is:

\$84

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity and 60¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

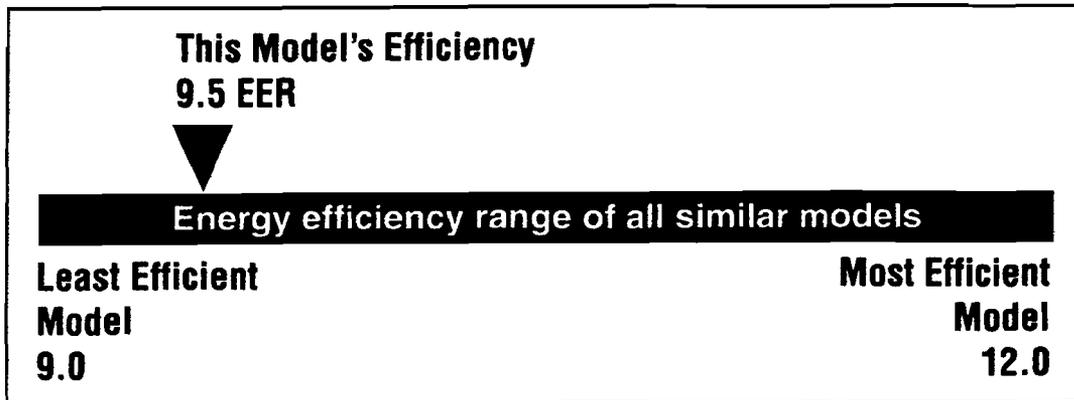
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

**Room Air-Conditioner
Without Reverse Cycle
With Louvered Sides**

**COOLAIR APPLIANCE
MODEL 122345
CAPACITY: 13,000 BTUs**



EER is a measure of energy efficiency. Based on a comparison of similar models.

Estimated Yearly Operating Cost:

\$84

Based on a 1998 U.S. Government national average cost of 8.67¢ per kWh for electricity.

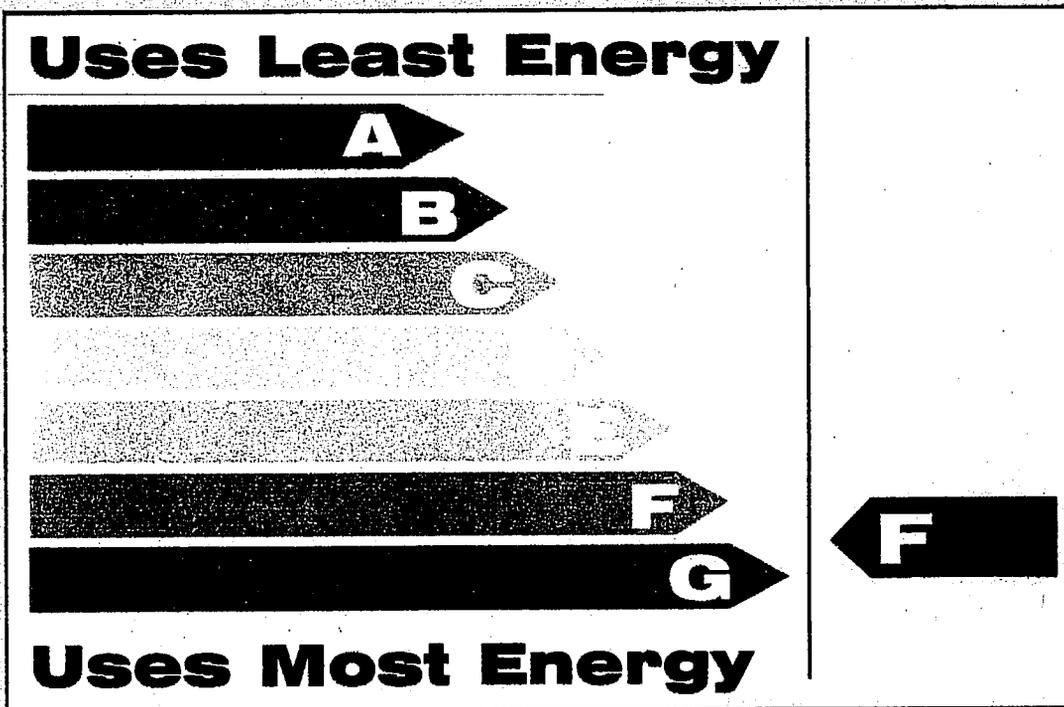
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY IS **9.5** EER.

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

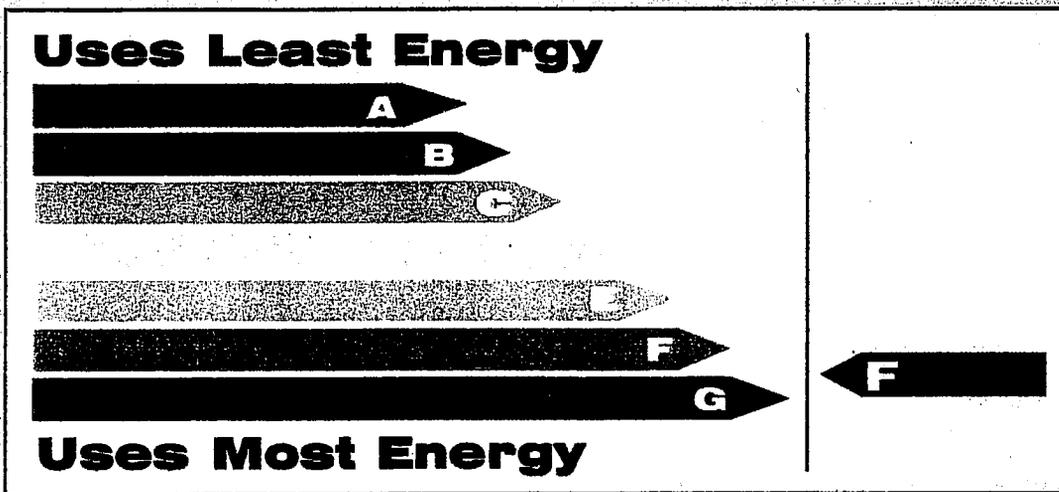
Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides

**Compare the Energy Efficiency of this
Air-Conditioner with Others Before You Buy.**



THIS MODEL'S EFFICIENCY IS **9.5** EER

EER, the Energy Efficiency Ratio, is the measure of energy efficiency for room air-conditioners. Only models between 8,000 and 13,999 BTUs with the above features are used in this scale.

ESTIMATED YEARLY OPERATING COST: \$84

Based on a 1998 national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

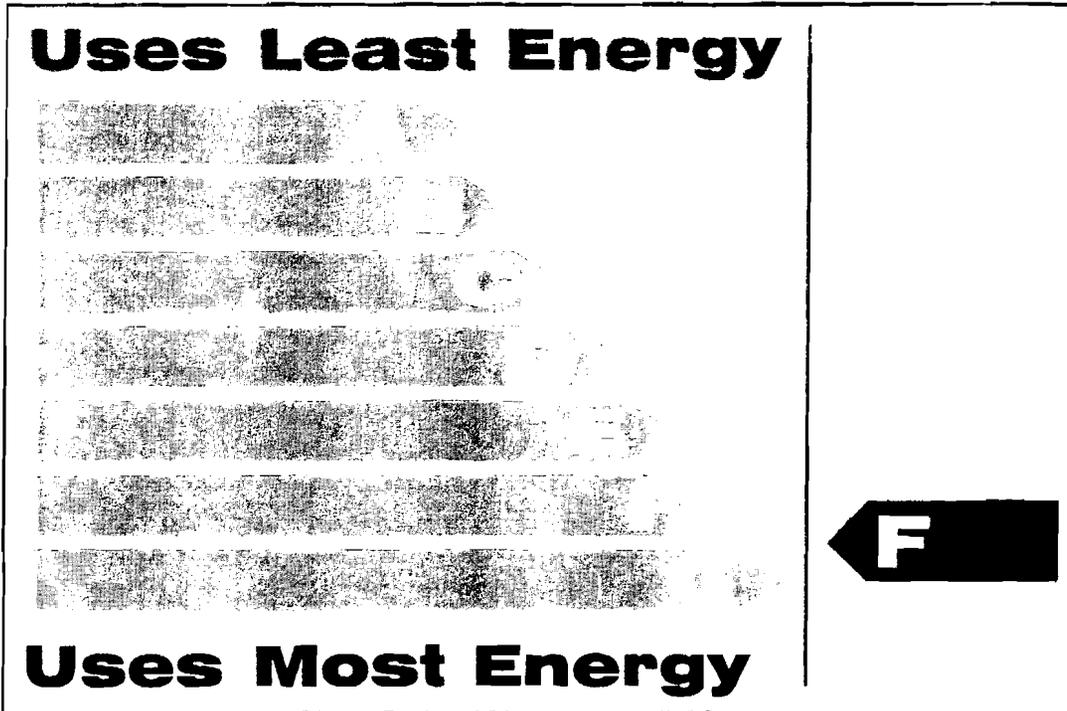
Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY IS **9.5** EER

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

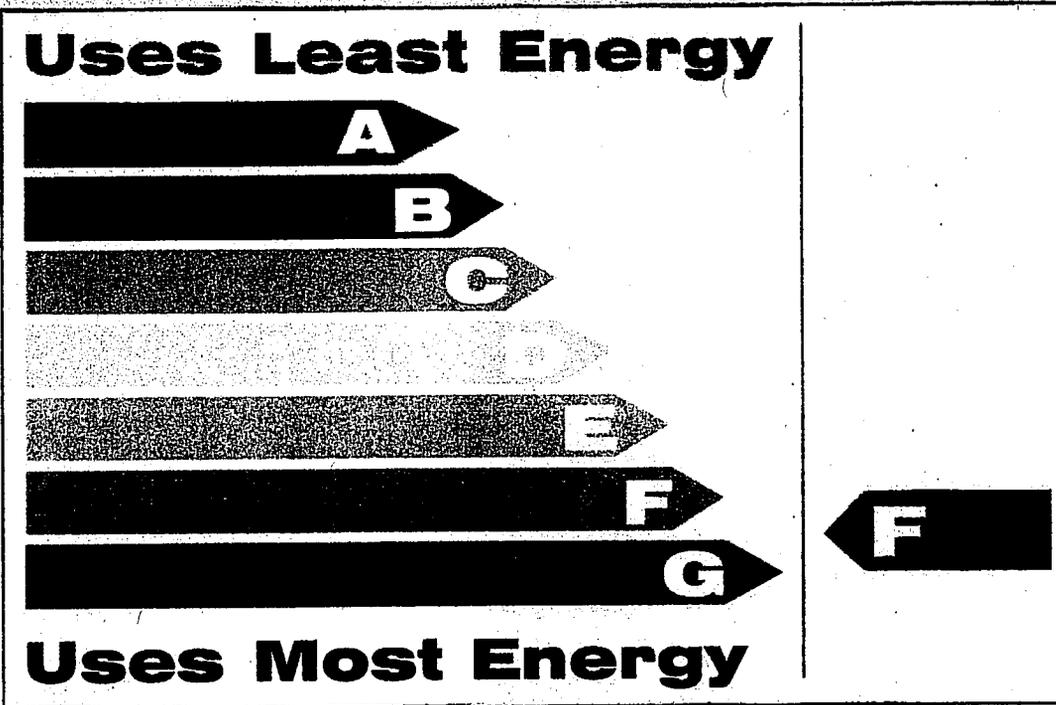
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY IS **9.5** EER

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

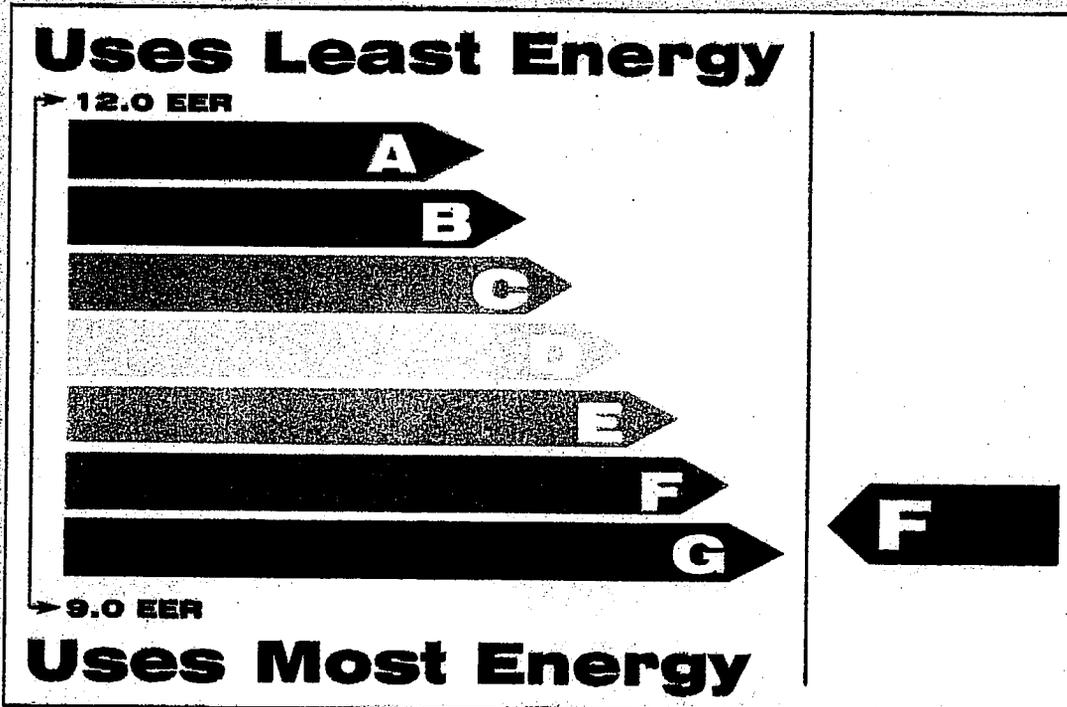
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY IS **9.5** EER

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

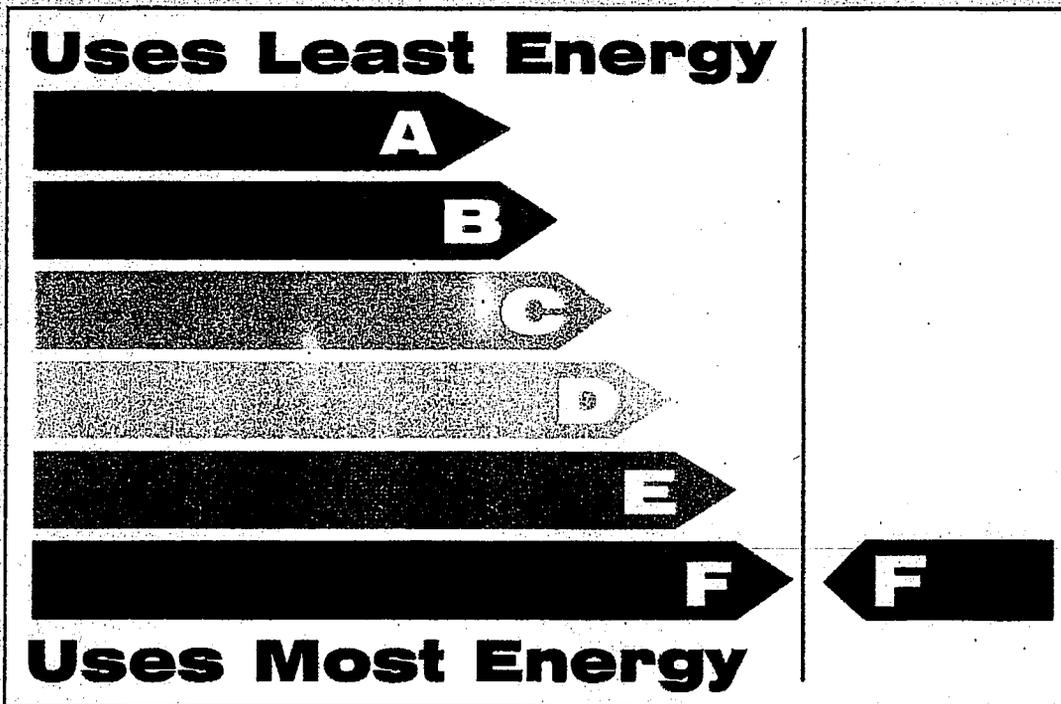
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY IS **9.5** EER

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

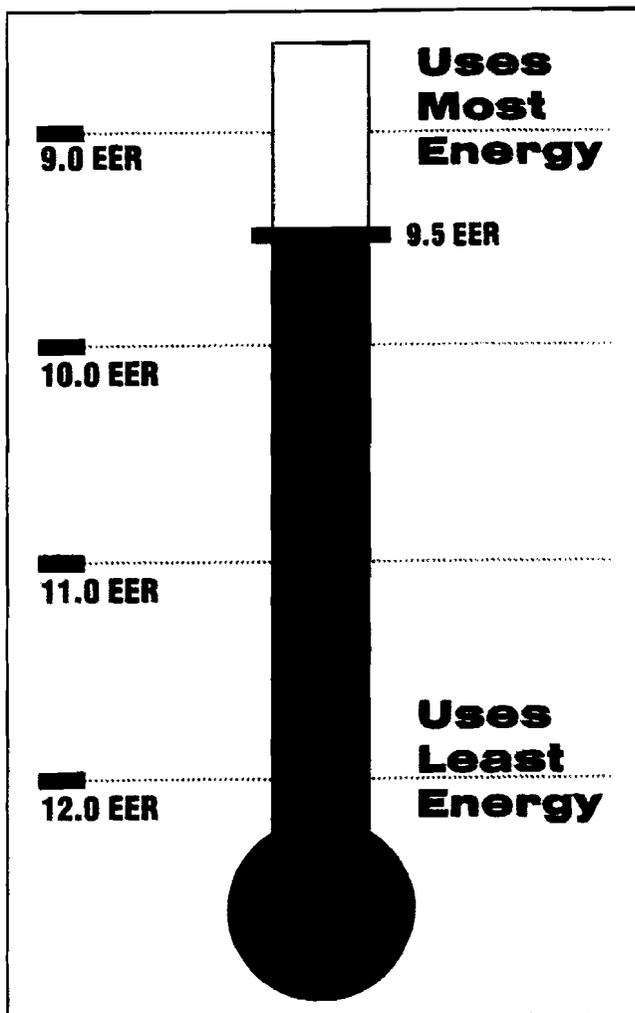
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



THIS MODEL'S
EFFICIENCY IS
9.5 EER

EER is a measure of
energy efficiency.

**ESTIMATED YEARLY
OPERATING COST:
\$84**

Based on a 1998 national
average cost of 8.67¢ per kWh
for electricity.

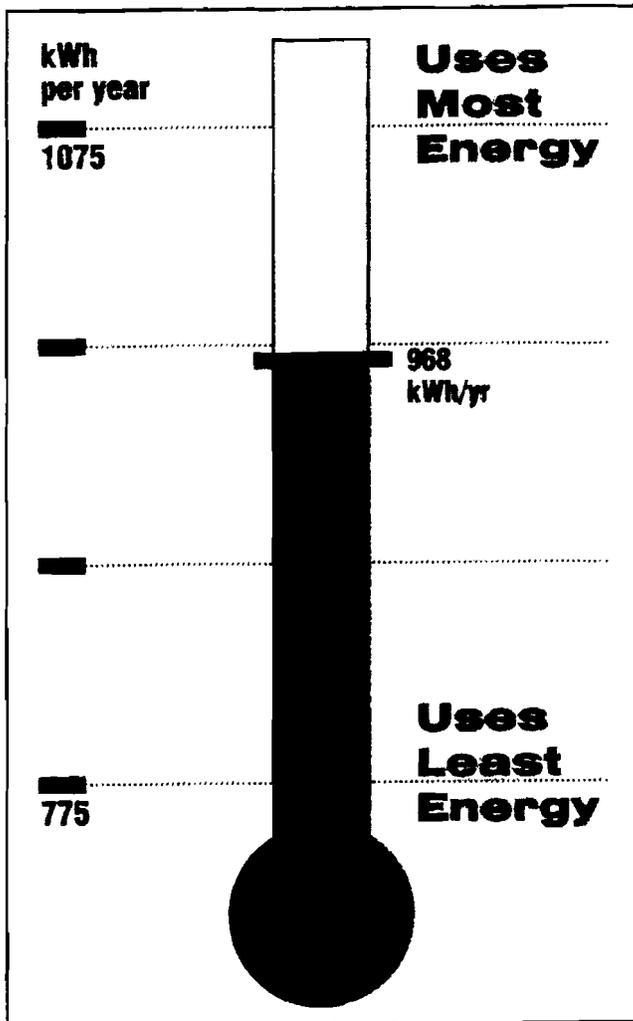
Based on a comparison of similar models.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



THIS MODEL USES
968 kWh
PER YEAR

Actual consumption will depend on how the appliance is used and where it is located.

ESTIMATED YEARLY OPERATING COST:
\$84

Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Based on a comparison of similar models.

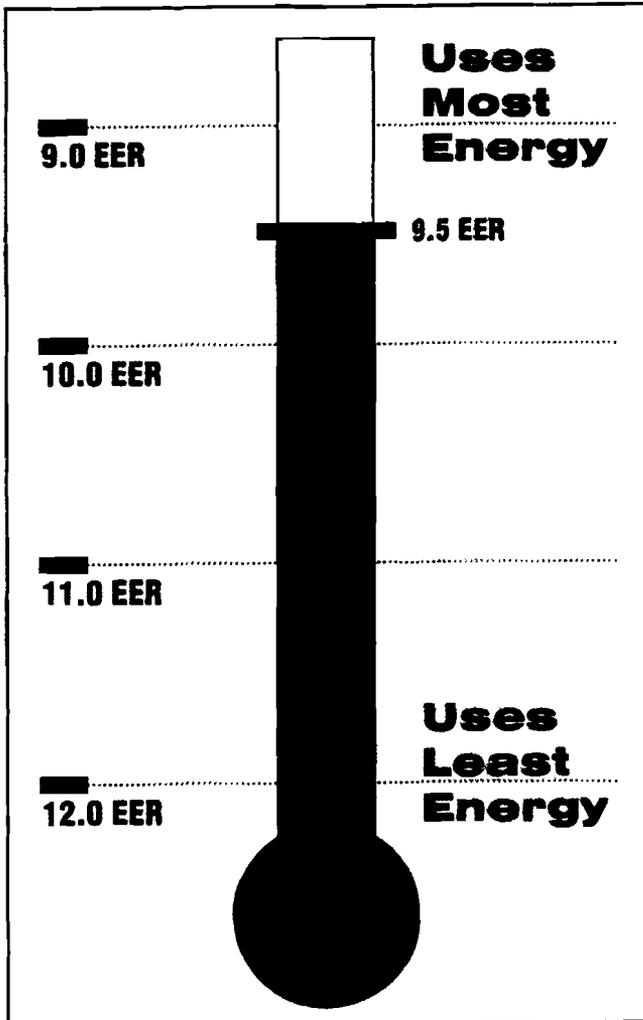
Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides

Compare the Energy Use of this Air-Conditioner with Others Before You Buy



Based on a comparison of similar models.

THIS MODEL'S
EFFICIENCY IS

9.5 EER
(968 kWh/yr)

EER, the Energy Efficiency Ratio, is the measure of energy efficiency for room air-conditioners. Only models between 8,000 and 13,999 BTUs with the above features are used in this scale.

**ESTIMATED YEARLY
OPERATING COST:
\$84**

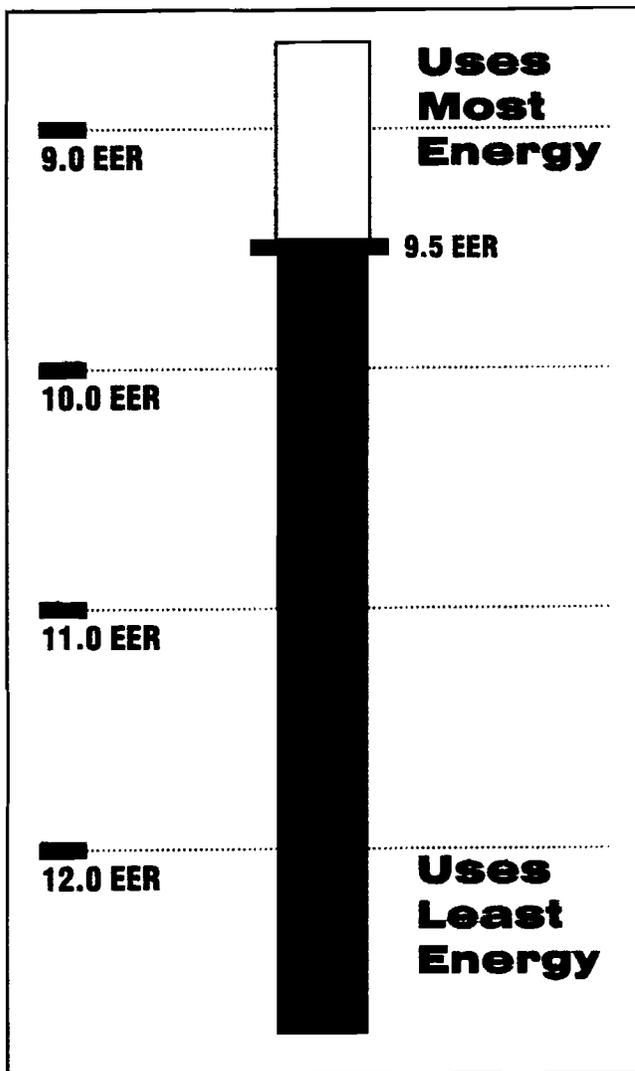
Based on a 1998 national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



THIS MODEL'S
EFFICIENCY IS

9.5 EER

EER is a measure of
energy efficiency.

**ESTIMATED YEARLY
OPERATING COST:
\$84**

Based on a 1998 national
average cost of 8.67¢ per kWh
for electricity.

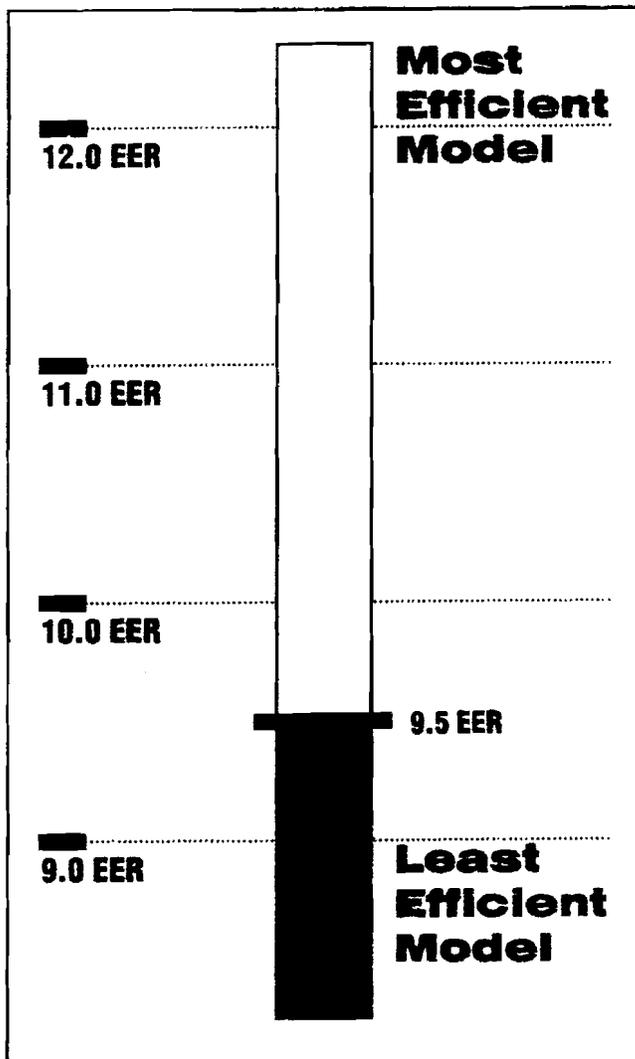
Based on a comparison of similar models.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



THIS MODEL'S
EFFICIENCY IS

9.5 EER

EER is a measure of
energy efficiency.

**ESTIMATED YEARLY
OPERATING COST:
\$84**

Based on a 1998 national
average cost of 8.67¢ per kWh for
electricity.

Based on a comparison of similar models.

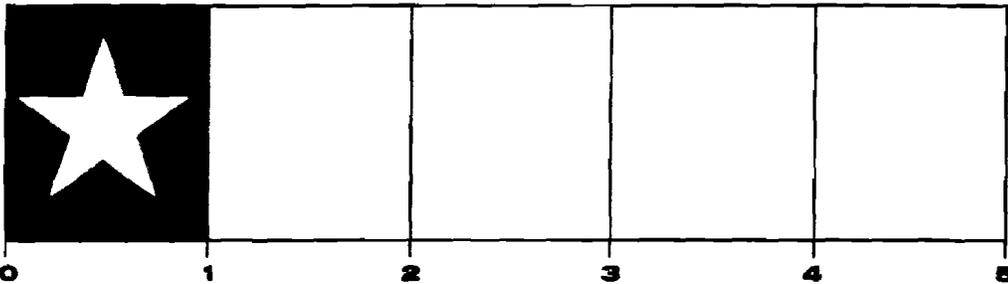
Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides

The More Stars the More Energy Efficient



Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY

9.5 EER

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

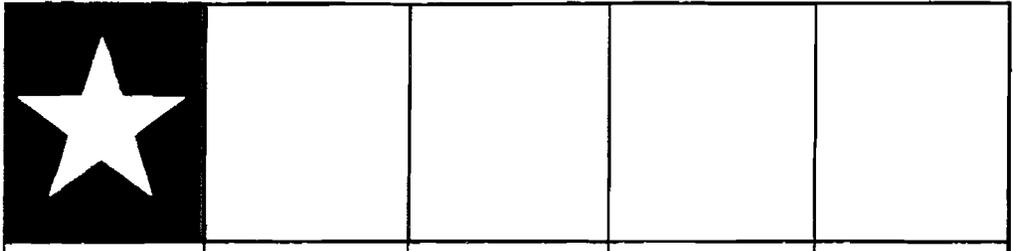
Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY: 13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides

The More Stars the More Energy Efficient



9.0
EER

12.0
EER

Based on a comparison of similar models.

THIS MODEL'S EFFICIENCY

9.5 EER

EER is a measure of energy efficiency.

ESTIMATED YEARLY OPERATING COST: \$84

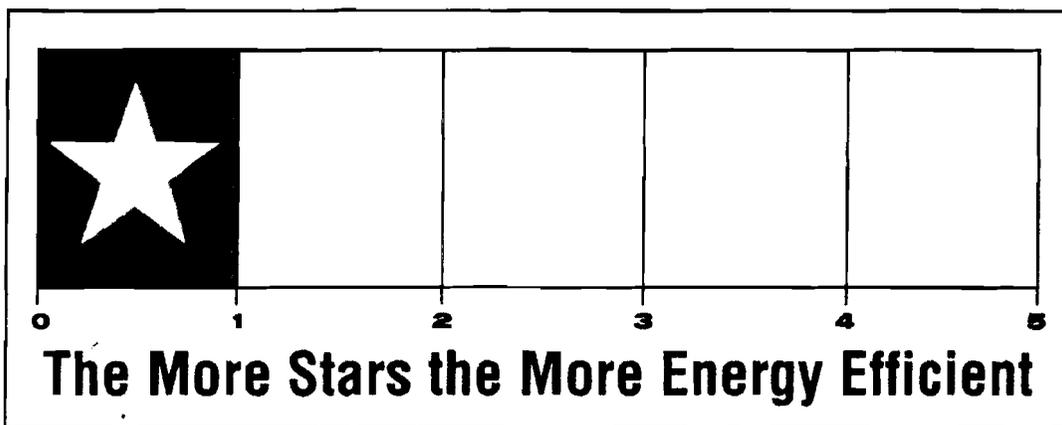
Based on a 1998 national average cost of 8.67¢ per kWh for electricity.

Based on standard U.S. Government tests

ENERGYGUIDE

COOLAIR APPLIANCE
MODEL(s) 122345
CAPACITY:13,000 BTUs

Room Air-Conditioner
Without Reverse Cycles
With Louvered Sides



THIS MODEL'S EFFICIENCY

9.5 EER

EER, the Energy Efficiency Ratio, is the measure of energy efficiency for room air-conditioners. Only models between 8,000 and 13,999 BTUs with the above features are used in this scale.

ESTIMATED YEARLY OPERATING COST: \$84

Based on a 1998 national average cost of 8.67¢ per kWh for electricity. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

**A Focus Group Study to Assess
Consumer Reaction to Proposed Alternatives
to the FTC Energy Guide Label**

Phase III

Prepared for:

AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY
1001 Connecticut Avenue, NW, Suite 801
Washington, DC 20036

Prepared by:

SHUGOLL RESEARCH
7475 Wisconsin Avenue, Suite 200
Bethesda, Maryland 20814
(301) 656-0310

August, 2000

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1.0 Overview

1.1 Background and Purpose

The American Council for an Energy-Efficient Economy (ACEEE) contracted with Shugoll Research to conduct a focus group study with single family homeowners to evaluate several proposed energy guide labels. This is the third phase of qualitative research conducted with consumers in order to obtain their reactions to alternative label designs. The findings from the focus groups will be used as input into designing a quantitative, follow-up phase of market research. The findings from all phases of research will be used to determine what changes, if any, need to be made to the current Energy Guide Label.

1.2 Objectives

The objectives of the study are as follows:

- Evaluate alternative continuous energy efficiency rating concepts for the Energy Guide Label
- Evaluate alternative categorical energy efficiency rating concepts for the Energy Guide Label
- Determine the preferred level of content for the Energy Guide Label
- Obtain consumer reactions to the Energy Star logo including:
 - Interpretation of the Energy Star logo
 - The ideal placement location of the Energy Star logo on the Energy Guide Label
 - What relationship there is, if any, between the Energy Star logo and each of the categorical rating concepts

1.3 Methodology and Study Procedures

- The focus group technique was selected to accomplish the objectives of the study. A focus group is a panel discussion with 8 to 10 representatives of a selected target market for a particular service or product.
- The focus group technique is especially useful for gathering in-depth information on a topic or reactions to creative concepts. The discussion is led by a moderator who is trained in consumer behavior theories and marketing principles.
- Participants in the groups are encouraged to relate to each other, share attitudes and provide candid opinions regarding the topics presented to them by the moderator or generated by the dynamics of the group. Consensus is not sought. The moderator is not supposed to proselytize or educate respondents. Rather, he or she uses his or her skills to question, probe and clarify responses as well as direct the flow of the conversation to cover all relevant areas of interest to the client.
- Four focus groups were conducted with homeowners in two different markets. Specifically, two groups were held in Charlotte, North Carolina on June 14, 2000 at 6PM and 8PM. Charlotte was selected to represent a relatively low-level media market for public service advertising on Energy Star. Two groups also were held in Syracuse, New York on June 29 at 6PM and 8 PM. Unlike Charlotte, Syracuse was selected because theoretically it represents a high-level media market for public service advertising on Energy Star.
- Shugoll Research designed a recruitment screener (see Appendix A) to screen and qualify participants. In order to qualify for participation in any group, respondents had to meet the following criteria:
 - Own a home and be a homeowner for at least 3 years
 - Be primarily responsible for purchasing household appliances or share that responsibility equally with another household member
 - Be recent purchasers (in last 6 months) or current shoppers for a refrigerator, freezer, air conditioning unit/system, dishwasher, clothes washer or water heater from a retail store

- A mix of respondents was recruited based on:
 - Types of household appliances bought or being shopped
 - Retail stores used for purchasing or shopping
 - Income
 - Gender
 - Ethnicity
 - Household size
 - Education
- Respondents who are employed or who have a family member who is employed for a household appliance manufacturer or sales company, a regulatory or energy-related organization, an advertising agency or market research firm were terminated for occupation security reasons. Respondents who have participated in a group discussion within the past 6 months, or have ever participated in one about household appliances or energy were not allowed to participate in the study to meet past participation requirements.
- Respondents were recruited from computerized data banks in each market that identify local residents based on income, gender, race, and other demographic criteria. Then these consumers are screened on all qualifying questions. Once it is determined that a potential respondent qualifies, a cash honorarium of \$50 is offered to encourage participation in the study and to help guarantee a show of 8 to 10 respondents. When a respondent agrees to participate in one of the group sessions, a confirmation letter is sent out. The letter confirms the group session time, date, location, and promised honorarium and provides detailed directions to the focus group session. All respondents are reconfirmed by telephone the day before their assigned session.
- Shugoll Research designed a topic guide (see Appendix B) to be used by the focus group moderator when leading the discussion groups. The guide was designed to meet the study objectives. ACEEE reviewed and approved the topic guide prior to the group discussions.
- ACEEE provided the alternative label designs that were tested in this study (see Appendix C). The type of graph (continuous versus categorical) first shown to respondents was rotated in each group as were the specific executions within graph type to minimize order bias. In addition, ACEEE provided label designs depicting alternative placement locations for the Energy Star logo (see Appendix D).

1.4 Limitations

- A qualitative research methodology seeks to develop directions rather than quantitatively precise or absolute measures. Because of the limited number of respondents involved in this type of research, the study should be regarded as exploratory in nature, and the results used to generate hypotheses for marketing decision making and further testing. The non-statistical nature of qualitative research means the results cannot be generalized to the population under study with a known level of statistical precision.

1.5 Respondent Profile

	CHARLOTTE (N=20)	SYRACUSE (N=17)	TOTAL (N=37)
HAVE OWNED HOME FOR			
3 to 9 years	12	4	16
10 to 20 years	6	9	15
More than 20 years	2	4	6
RESPONSIBILITY OF PURCHASING APPLIANCES			
Primary	12	7	19
Shared Responsibility	8	10	18
APPLIANCES PURCHASED FROM A RETAIL STORE IN THE LAST SIX MONTHS			
Refrigerator	5	2	7
Clothes Washer	4	3	7
Room Air Conditioner/Central Air	3	3	6
Dishwasher	5	1	6
Water heater	2	2	4
Freezer	1	1	2

	CHARLOTTE (N=20)	SYRACUSE (N=17)	TOTAL (N=37)
ARE NOW SHOPPING OR MOST LIKELY TO BUY AN APPLIANCE FROM A RETAIL STORE			
Refrigerator	5	3	8
Room Air Conditioner/Central Air	4	3	7
Freezer	1	4	5
Clothes Washer	3	1	4
Dishwasher	2	1	3
Water Heater	—	2	2
RETAIL STORES APPLIANCES WERE PURCHASED FROM (OR SHOPPED FOR)			
Sears	8	11	19
Other	4	6	10
Best Buy	2	6	8
Lowe's	5	—	5
Circuit City	3	1	4
Home Depot	3	1	4
Queens City Appliances (Charlotte)	4	—	4
Chase Pitkin (Syracuse)	—	2	2
ANNUAL HOUSEHOLD INCOME			
Under \$20,000	—	—	—
\$20,000 to \$29,000	2	3	5
\$30,000 to \$39,999	2	2	4
\$40,000 to \$59,999	3	4	7
\$60,000 to \$74,999	7	3	10
\$75,000 to \$100,000	5	4	9
More Than \$100,000	1	1	2

	CHARLOTTE (N=20)	SYRACUSE (N=17)	TOTAL (N=37)
LAST GRADE OF SCHOOL COMPLETED			
Some High School	—	—	—
High School Degree	2	5	7
Vocational School	—	—	—
Some College	6	5	11
College Degree	6	3	9
Some Graduate Work	2	—	2
Graduate Degree	4	4	8
MARITAL STATUS			
Married or Partnered	16	15	31
Single	3	1	4
Divorced, separated or widowed	1	1	2
CHILDREN UNDER 18 YEARS OLD LIVING IN HOME			
Yes	14	10	24
No	6	7	13
EMPLOYMENT STATUS			
Employed Full-Time	16	12	28
Employed Part-Time	2	2	4
Not Employed	2	3	5
A Full Time Student	—	—	—
Retired	—	—	—

	CHARLOTTE (N=20)	SYRACUSE (N=17)	TOTAL (N=37)
OCCUPATION*			
Accountant	3	—	3
Administrative Assistant	1	1	2
Engineer	1	1	2
Homemaker	2	—	2
Management	1	1	2
Mortgage Loan Officer	1	1	2
Retail	1	1	2
Auditor	—	1	1
Banker	1	—	1
Bill Collector	1	—	1
Consignment Representative	1	—	1
Furniture Installer	1	—	1
Health Care	—	1	1
Minister	1	—	1
Painter	—	1	1
Photo lab manager	—	1	1
Production Supervision	—	1	1
Psychologist	—	1	1

*Three respondents refused to answer this question in Syracuse.

	CHARLOTTE (N=20)	SYRACUSE (N=17)	TOTAL (N=37)
OCCUPATION (CONT'D)*			
Residential Director	1	—	1
Social Worker	1	—	1
Tax Analyst	1	—	1
Teacher	—	1	1
Toolmaker	—	1	1
Truck Driver	1	—	1
Typist	—	1	1
Waitress	1	—	1
WORK LOCATION*			
Outside of Home	18	11	29
From Home	3	3	6
RACE			
Caucasian	15	13	28
African American	5	1	6
Hispanic or Latino	—	2	2
Asian	—	1	1
GENDER			
Female	11	9	20
Male	9	8	17

*Three respondents refused to answer this question in Syracuse.

2.0 Summary of Findings

2.1 Evaluate Alternative Continuous Energy Efficiency Rating Concepts for the Energy Guide Label

Four alternative continuous rating concepts were presented to study participants. The continuous graphs tested include: the line graph (current graph), the bar graph (with scale markers), the gradation graph (amount of ink increases along the graph as use of energy increases), and the slope graph (Refer to Appendix C). The order in which the concepts were presented was rotated to minimize order bias. Respondents were asked to think about each label concept based on:

- Its ability to attract consumer attention
- How easy or difficult it is to read
- How easy or difficult it is to understand the information provided
- Whether or not it influences consumers to think about purchasing a more energy efficient appliance

Line Graph (Current Label)

- In this third phase of research, unlike in Phases I and II, the line graph was not introduced to respondents as the current graph on the Energy Guide Label. Therefore, it is interesting to note that relatively few respondents in Charlotte or Syracuse recognized the line graph label as the current appliance label. In general, respondents do not find the current label attention grabbing or easy to read or understand. Very few respondents had actually read or used the label when appliance shopping.

"I definitely don't like it. No wonder we haven't been reading it." (Syracuse, NY)

"The graph doesn't mean anything to me. I'd have to stand there and really process what the heck it's trying to say." (Charlotte, NC)

"I've never really read one before." (Charlotte, NC)

"It's too bland." (Syracuse, NY)

This doesn't tell me anything." (Syracuse, NY)

"Everything is fine with this except the understanding. It's a little hard for me; like Sergei said, you look at it and you say well who are they trying to kid?" (Syracuse, NY)

- For some consumers, the current label does not clearly communicate an important piece of information. The dollar amount on the label, which is cost to operate information, is thought by some people to be savings information.

"I'm not really used to seeing that operating cost. I'm used to seeing the estimated savings from energy. So I would automatically think that I was saving either \$37 or \$20, not what it was costing to run it."
(Syracuse, NY)

- The major problem with the current Energy Guide label appears to be the graph. In fact, some consumers do not even recognize the line graph as a graph. These individuals believe that the line graph is simply a black box with white text imbedded inside. Few notice or understand that the arrow and accompanying kWh/year number indicates a specific point on the line graph, and, therefore, that the label communicates where a particular appliance rates on energy efficiency in comparison to similar models.

"It's just not as clear." (Charlotte, NC)

"I don't have any kind of line or anything to give me some kind of point to work with." (Charlotte, NC)

"I agree, it's just sitting there. If you weren't looking at these other ones, you wouldn't know what that triangle is there. It just doesn't do anything for me." (Charlotte, NC)

"Oh, it's a graph! I didn't even see it was a graph." (Charlotte, NC)

"Also there are words in the black part so it didn't really look like a graph. It looks like it's pointing down to the words there. They shouldn't have any words in that place." (Charlotte, NC)

"What's the arrow pointing at?" (Syracuse, NY)

"They did a poor job. They should have the number right by the line, first of all, if it's going to be a true line graph." (Syracuse, NY)

"It's not letting me get a true, honest look at how it compares to others." (Syracuse, NY)

- Another complaint about the line graph is that there are no demarcations or line markers between points on the scale. Study participants indicate that such marking devices aid them in reading a graph and increase their confidence in being able to read the graph accurately.

"I've got a suggestion. On either side of this triangle, in order to draw attention to it and to show that it is a graph, a black dotted line all the way across with a large ending point and a large beginning point would help. Then it draws your attention to it, and no matter where it is on the scale you know that you're going to have something on the scale between these two numbers. So then you know it's a graph." (Charlotte, NC)

"There's nothing there to differentiate." (Syracuse, NY)

"It doesn't tell me anything. It doesn't give me a reference point. It just gives me a number. I don't know if that's high, low, middle." (Syracuse, NY)

- Opinions are somewhat mixed about the amount of text included in the current line graph label. Although consumers agree they would rather have more information than too little information, they admit that the amount of text on the current label is intimidating and that they don't read it. Consumers want to see the definition of kWh/year and the operating costs, but suggest that it is unnecessary to state the obvious such as:
 - Compare the Energy Use of this Clothes Washer with Others Before you Buy.
 - Clothes washers using more energy cost more to operate.
 - Your actual operating cost will vary depending on your local utility rates and your use of the product.

"...I would take out all the stuff underneath that sign and just make it the graph, that price [cost to operate] and call it quits." (Charlotte, NC)

"For some of us that are not very familiar with kilowatts, it goes into a little bit more detail. But it's not too lengthy. It's straight to point. It gives you a definition and you move on." (Charlotte, NC)

"It wouldn't catch my attention because it's too much stuff to read." (Charlotte, NC)

"There's too much reading, too much to think about." (Charlotte, NC)

"You see compare and clothes washed and the energy costs. These are kind of like givens." (Charlotte, NC)

"Some of the stuff that's on here is a given to me." (Charlotte, NC)

"...It's a big mumble-jumble." (Syracuse, NY)

Bar Graph

- The bar graph was well rated by respondents in all focus groups and was almost universally selected as the most preferred continuous Energy Guide label concept. Study participants recognize the graph as a bar graph, find it visually appealing and as such believe it is more likely to catch their attention than the current line graph. They strongly believe that the bar graph makes it easier for them to understand what the label is conveying. Specifically, the arrow is a more traditional arrow than the carrot device used on the current label. Also, on the bar graph, respondents clearly understand where the 466 kWh/year falls on the continuum between 156 kWh/year and 1154 kWh/year.

"I like this a lot. This is exactly what I think is better, because it's clear, you can see it's a graph, which is what I wanted to see." (Charlotte, NC)

"I love this one. This one is my favorite. I like everything about it." (Charlotte, NC)

"Of all the gradient ones, I like this one [bar graph] the best." (Syracuse, NY)

"It [the bar graph] definitely stands out..." (Syracuse, NY)

- A strength of the bar graph is the demarcations or line markers along the scale. As previously mentioned, respondents like to see marking devices used on a graph because they make it easier to read and interpret the information on the graph.

"It's more explanatory. You've got a scale to go up." (Charlotte, NC)

"But the scale is good on there." (Charlotte, NC)

"It shows exactly where you're at." (Charlotte, NC)

"This [marker] is showing you more precisely." (Charlotte, NC)

- In addition to preferring the graphic design on the bar graph label, respondents commented that the label looks less cluttered. Having less text makes the label more visually appealing and easier to read.

"Everything's right there for you in the white block; you can see the black block where it says 466. It just seems simpler to focus on the label." (Syracuse, NY)

"Has the right amount of information." (Syracuse, NY)

"I think people tend to get bored if they're overburdened with information and this is much cleaner. To the point." (Syracuse, NY)

Gradation Graph

- Study participants immediately rejected the gradation graph saying it is unattractive and difficult to read and understand. Respondents feel that the graphing concept is ambiguous and imprecise in comparison to the bar graph label.

"I don't like it. It doesn't explain anything to me." (Charlotte, NC)

"I don't like it either. If nothing else, it needs a scale on it." (Charlotte, NC)

"I don't like it. I think if you're not paying attention anyway, this is definitely not going to get your attention. I think it would take more energy to try to figure out what this is saying." (Charlotte, NC)

"It's too confusing." (Charlotte, NC)

"It doesn't have any kind of bars, and obviously the color, you can't hardly tell that. There's no start or stopping point like the others have." (Charlotte, NC)

"But I don't like the graph part of it. I can't relate to that. It's not as eye-catching. Plus, you've got to figure out, is it in the gray, is it in the white, is it in the black. What is that? (Charlotte, NC)

"It doesn't say anything. It just says that you can look at gray or you can look at black, but it doesn't mean anything. You go from white up, but it doesn't tell you anywhere on the scale, really. There's no clear definition." (Charlotte, NC)

"I wish it had a grid to it, like the second one with the ticks." (Charlotte, NC)

"This one sucks." (Syracuse, NY)

"It's terrible." (Syracuse, NY)

"Just shades of gray." (Syracuse, NY)

"It's not telling you anything." (Syracuse, NY)

"It seems like the boldness should be the opposite way. It should be darker up to the point of 466. I think it would be better to understand than this way." (Syracuse, NY)

"I don't understand it." (Syracuse, NY)

Slope Graph

- As with the gradation graph concept, study participants immediately rejected the slope graph concept. They find the design unattractive and have difficulty interpreting the information.

"I would have to study this. What are they trying to tell me here? And I don't think people want to put their mind to that when they're shopping for appliances." (Charlotte, NC)

"I hate it. I don't see the need for the wedge. It doesn't tell me anything." (Charlotte, NC)

"It's one straight line. You still have to look and see where you actually fall on the chart. I want it in peaks. I want the least to be down here, the high to be down here, and then a peak where it falls." (Charlotte, NC)

"It looks like a flashlight, with the light going up and out. I would see that and not look at it." (Charlotte, NC)

"In order to do this ramp, so to speak, you need some figures underneath these dotted lines." (Charlotte, NC)

"Yeah, one dimensional. What you're trying to do here is two dimensions and you're not measuring anything up. You're measuring across." (Charlotte, NC)

"If they're trying to draw your eye to it and give you a quick reference, these aren't the way to do it." (Syracuse, NY)

"First looking at this, the only people that are going to be attracted to this are people that are interested in mathematical graphs. The average person is not going to be drawn to this." (Syracuse, NY)

"There's no key." (Syracuse, NY)

"It's not clear like the previous graph; it shows you a start point and an end point, but it doesn't show you clearly where this model lies." (Syracuse, NY)

"This is more confusing." (Syracuse, NY)

"It's uncomfortable on your eyes." (Syracuse, NY)

"You're searching for a focus point." (Syracuse, NY)

"What is it telling me? No information at all. There is so much ink here but it's not telling me anything." (Syracuse, NY)

"It's deceptive." (Syracuse, NY)

- Respondents believe that some shoppers will not read the end points on the slope graph and, therefore, might end up buying an appliance that graphs closest to the top of the slope. This type of misinterpretation would reflect the opinions of some people who believe more or higher is better, when, in fact, just the opposite is true in this case.

"I guess because the little thing is the best thing. The 'uses less energy' is good, but it's so tiny. So that confused me." (Charlotte, NC)

"From far away you wouldn't know which way to take it. You could look at all the black thinking it's the best." (Syracuse, NY)

"This one is not as easy to read, because if you're comparing it to another model and it's over here, that's not an easy comparison." (Syracuse, NY)

"I'm used to thinking that more means better, so you think that the right end...it should be the other way around if they're going to do the slope." (Syracuse, NY)

2.2 Evaluate Alternative Categorical Energy Efficiency Rating Concepts for the Energy Guide Label

Three categorical rating concepts were tested in the study: stars, checks and letters. Again, the order in which the concepts were presented was rotated to minimize order bias. The rotation of categorical labels was particularly important because the order in which they were presented initially had an impact on preference. Typically, consumers preferred the label they saw first. However, after evaluating all the categorical labels together, most consumers felt stars was the most effective rating system. Overall, the categorical label concepts were considered better than continuous graphing concepts at capturing consumer attention, making it easier for consumers to read the labels, making it easier for consumers to understand the message the Energy Guide label is intended to deliver and motivating consumers to think about energy use when purchasing appliances.

Stars Label

- The stars categorical design concept is attention grabbing, much more attention grabbing than any of the continuous graphing concepts tested including the preferred bar concept. Consumers believe that the stars label could be seen from across an appliance store floor and that it will be easy to zero in on machines that are better rated such as those with three or more stars.
 - “So if you’re just real quickly looking, you could see the three or four stars and that might be quicker.” (Charlotte, NC)*
 - “But the stars are very prominent and easy to remember. It’s a lot simpler for me.” (Charlotte, NC)*
 - “It’s catchier than the other ones.” (Charlotte, NC)*
 - “To me it’s easy to read. Stars usually stand out.” (Charlotte, NC)*
 - “I sort of like it. If I’m looking at a lot of them, and there are 2 stars, I would probably walk away and focus more on the four or five stars. That would be easier to designate for me.” (Charlotte, NC)*
- Study participants believe that a star rating system would be easy to understand. A star rating system would enable consumers to judge, without reading the fine print, which models are more energy efficient than others. In other words, because the star rating system is a familiar rating system (it is used by other industries such as movies, hotels, restaurants, etc.) and because people understand “the more stars the better”, consumers will know at a glance what the label is trying to communicate.

"Very simple. It's easy to understand." (Charlotte, NC)

"They use these on other things, like cars and hotels and movies. When you look at ratings you see stars." (Charlotte, NC)

"I think it's what you're used to. Because if you do like Consumer Reports, a lot of different things are on the star system. So it's something you're familiar with, rated four stars." (Syracuse, NY)

"Like they rate hotels and restaurants. We're all familiar with that." (Syracuse, NY)

"It's self explanatory." (Syracuse, NY)

"The stars will communicate." (Syracuse, NY)

"...The stars are better to the average masses." (Syracuse, NY)

- Consumers feel that the energy community needs to do a more effective job making consumers understand the importance of buying energy efficient appliances. They believe that using a star rating system might positively impact consumer decisions in this regard. Respondents think people perceive stars as special and that they will want to know that the appliance they are buying has received stars. In fact, consumers admit they are conditioned to paying attention to the number of stars a product or service receives and typically, if they can afford it, want to purchase the product that has garnered the greatest number of stars. Therefore, study participants believe the star rating system would, more than any other label tested, influence consumers to think about buying a more energy efficient appliance.

"I like it. It's very efficient. They give it four stars out of five, and that's real high." (Charlotte, NC)

"It would sway you into purchasing it." (Charlotte, NC)

"To me it's easy to read. And I also think industry-wide it's going to cause more appliances to become more energy efficient, because everyone is going to know one star versus three stars. Stars usually stand out, so I think it's going to make companies become more competitive as far as energy efficiency." (Charlotte, NC)

"It makes you think that it's a better product because it's got the star." (Charlotte, NC)

"The stars mean quality, and I think isn't that kind of their goal? To say that because it's more energy efficient that it gets more stars?" (Charlotte, NC)

"I think after awhile you wouldn't even look at that because you would just know, going to look at appliances, you want the one with the most stars. If an appliance could only get five and you got an appliance with five stars on it, you'd say I got the best possible technology that there is." (Syracuse, NY)

“Four stars means good and so forth. So we might be thinking we’re getting a better item. I think people want to feel they’re getting a better machine.” (Syracuse, NY)

- Respondents are interested in knowing whether the star rating system could employ half stars. Some consumers feel that the rating system would be more accurate if half stars could be used.

“Okay, do you have fractional stars or what? (Charlotte, NC)

“Would they put one with half a star, like three and a half stars?” (Syracuse, NY)

- A weakness of the stars label for some consumers is that they have to get the appliance model’s kWh information from an area outside the rating system box. In other words, they have to refer to the white box on the bottom half of the label to learn that the four star clothes washer model in question uses 466 kWh/year. These individuals do not like having to look in two places to get the whole picture. However, other respondents say it is enough for them to know that the machine has earned four stars.

“To me, the number along with the graph is a better concept because it gives you all the information in one centered place. I don’t have to go and look for 466 somewhere else.” (Syracuse, NY)

“In this box here, all the information is right there. From the low to the high, the efficiency level. Here you’ve got it in two boxes.” (Syracuse, NY)

- A few respondents, especially those who saw the continuous graphs first, do not understand why the end points of the scale are reversed on the stars label. In other words, it seems counterintuitive to them to see the higher number of kWh/year (1154) on the left side of the scale and the lower kWh/year (156) on the right side of the scale.

“I could be wrong here, but over to the left it says 1154. Maybe that’s the highest usage. And the 156 is the low usage. And that’s where the 400 comes in. It’s going from the highest usage down to the lowest.” (Charlotte, NC)

“I don’t understand. Why do they have the numbers...is that deliberate or accidental? They’ve got the high number to the left and the lower number to the right. That’s backwards to me.” (Charlotte, NC)

- Consumer interpretation of the star label could yield both positive and negative results for the energy community and appliance manufacturers alike. On one hand, consumer attention to the issue of energy efficiency is likely to increase with the use of stars because the symbol alone signals that people should pay attention and should look for more stars since more stars instinctively means better. On the other hand, some people also are likely to take the star rating scale a step beyond energy efficiency and interpret it to be a scale of quality. This ultimately could result in some consumers purchasing a more energy efficient appliance, but not necessarily because of energy efficiency related reasons.

“Like you just said, the star symbol itself means better. Rated better.” (Charlotte, NC)

“Looking at the stars in this way I’m thinking of quality.” (Charlotte, NC)

“Well, for me the stars would just be an indicator of quality.” (Charlotte, NC)

“To be perfectly honest, as I look at this and I hear you talk, I’m away from energy now and I’m rating the appliance. I’m looking at the stars and I’m rating the performance, not the energy.” (Syracuse, NY)

Check Marks Label

- The majority of respondents did not like the check marks label, although they see it as being almost identical to the stars label. Most respondents found the check marks label less visually appealing than the stars label.

“The check marks just don’t look good.” (Charlotte, NC)

“I think it looks more professional, the stars.” (Charlotte, NC)

“Well, the stars are more eye catching. They give a better first impression more than the check marks.” (Charlotte, NC)

“The checks are ugly.” (Charlotte, NC)

“Different symbol, same concept.” (Charlotte, NC)

“It’s the exact same thing as the stars.” (Syracuse, NY)

“It’s six of one, half dozen of the other.” (Syracuse, NY)

“Comparing the stars with the check marks, it’s the same thing.” (Syracuse, NY)

- One group in Syracuse preferred the check marks categorical label over the stars label because, in their view, it is more unique. In other words, some of these individuals think the star rating system is overused.
 - "I think it [check marks] stands out more." (Syracuse, NY)*
 - "What is going to stand out is the checks." (Syracuse, NY)*
- However, respondents do not believe that the check marks rating concept will be as influential as the stars rating concept. Study participants think that people will interpret the check marks to mean that certain steps have been followed or tasks have been accomplished. However, they do not believe that the check mark rating system conveys excellence or a sense of importance about the energy issue to the same degree the star rating system does.
 - "Maybe it was going back to when you're in school. You get the stars when you do excellent, but you get the check marks when it's wrong." (Charlotte, NC)*
 - "To me the check marks meant nothing." (Syracuse, NY)*
 - "Checks are for things that are done, are accomplished. They're not necessarily a good thing or a bad thing, they're just done." (Syracuse, NY)*
 - "I'm saying it doesn't create a sense of value." (Syracuse, NY)*
- Respondents also do not think the check mark rating system can implement a half check mark as well as the star rating system can implement a half star. In other words, study participants did not think that a half check mark could be executed effectively and, therefore, preferred the stars categorical labeling system.
 - "I don't know, with the stars you can get like 3-1/2 stars, but if you have that with the check marks it's going to look funny. So I like the stars better." (Charlotte, NC)*
 - "A half a star would look better than a half a check." (Syracuse, NY)*
- As was seen with the stars label, some respondents questioned why the end points of the rating scale were reversed. They're confused about why the low kWh use appears on the right and why high kWh use appears on the left.
 - "Flip-flops the scale." (Syracuse, NY)*
 - "Shouldn't have put it backwards, though." (Syracuse, NY)*

"We read from left to right, so reading the most now instead of the least is backwards." (Syracuse, NY)

"The check marks would really fool you. You would think that 1154 was the most efficient." (Syracuse, NY)

"You would misinterpret. You'd reverse it." (Syracuse, NY)

Letters Concept

- The letters concept was by far the most controversial of the categorical labels tested. A minority of respondents preferred this concept. This is because it would be easy for consumers to determine which machines were more energy efficient than others. Consumers would assume that an A machine would be more energy efficient than a B machine, which would be better than a C machine, and so forth.

"But this is actually telling you what you're seeing. What you're using, with A being the least, going up to E. And you're getting a B rating on this, which is pretty good. But this is pretty self explanatory as far as the energy. It's better than the other ones. It is focusing on the energy. It's not focusing on the appliance. It's really just focusing on the energy." (Charlotte, NC)

"I picked the letters, and I liked it better than the current one, because it just shows you exactly where it stands with other models." (Charlotte, NC)

"I think people can identify with the letters. And, they say, this appliance here is a B, they're comfortable with it." (Syracuse, NY)

"I think it's also easier to compare from store to store. I saw four B's and two A's at that store and three C's and two D's at this store, or whatever. It's easier to know you're comparing apples to apples." (Syracuse, NY)

- In comparison to the stars or check marks labels, however, the letters label was not as visually appealing to most study participants. They were concerned that the highlighted letter would not stand out as clearly as the number of stars or check marks would and that it would be necessary to read the fine print on the label to understand how the particular appliance model in question rated in comparison to others available.

"I liked the stars. I just thought it looked the best." (Charlotte, NC)

"I think you have to really read it all in order to understand it better." (Syracuse, NY)

"But visually, I like the check marks. Because, like you said, from across the room, it's easier to see if it has two, four, whatever." (Syracuse, NY)

"I don't think you'd see that [letters] from across the room." (Syracuse, NY)

"I'd have to interpret it. I'd have to think about numbers first." (Syracuse, NY)

- Some respondents assumed the letters concept was a grading system (others were not sure what the letters meant) and, therefore, did not understand why the scale used the letter "E" as opposed to the more traditional "F". For some, use of a "school-like" grading system seemed confusing and inappropriate for measuring energy use, although these individuals admitted that such a rating system might be influential in persuading consumers to buy a more energy efficient machine. After all, they surmised, who would want to buy a machine that received a "bad" grade? As with the stars label, the letters label is interpreted by some as a measurement of quality in addition to energy efficiency.

"But here when I see letters, you've got five different symbols. And in my mind, even though I know what you're doing here, the first thing I thought was, what do each of these letters mean? And I realize they don't mean anything." (Charlotte, NC)

"It would be more like a grade, they're grading the actual product." (Charlotte, NC)

"I'd think it's the model and how good it is." (Charlotte, NC)

"It's unclear to me. Really, what does A, B, C, D mean? What do they mean, what are they based on? There's not any measurement or anything. You can't think of grades when you're rating an appliance for energy efficiency." (Charlotte, NC)

"So, is E excellent?" (Syracuse, NY)

"To me it looks like a report card." (Syracuse, NY)

"Well, I would look at the A machine as being the best, period." (Syracuse, NY)

"It's just misleading. We're only talking about energy use here. We're not talking about the machine's ability to clean, quietness, durability." (Syracuse, NY)

"Psychologically, I just think the whole thing's foolish myself. This whole idea is foolish." (Syracuse, NY)

"I think, if the intent of this guide is to make people think in terms of energy efficiency, it's diluted. It doesn't do its job." (Syracuse, NY)

"I think it's going to be very confusing." (Syracuse, NY)

2.3 Determine the Preferred Level of Content for the Energy Guide Label

Respondents were exposed to the line graph which contains a high level of text and to all other label concepts which contain a medium-high level of text. They were asked which level of text they prefer and find most useful.

- Opinions were somewhat mixed regarding level of text for the Energy Guide Label. More respondents seemed to prefer the medium-high level of text over the high level of text.
- Those who prefer the medium-high level of text over the high level of text feel the label gives them the information they need to make an educated purchase decision without creating a label that is cluttered, intimidating or visually unappealing.

“Very neat appearing. It draws your attention and it’s very easily readable.” (Syracuse, NY)

“I have come to believe over time, that if you can convey the most with the least it is less confusing.” (Syracuse, NY)

“What I’m saying is without this extra information, this can tell you a complete story.” (Syracuse, NY)

- Some respondents preferred a high level of text over the medium-high level of text because they do not want to be denied access to all the information available. However, a majority of these same consumers admit they had never read the text on the current label before participating in this study. In other words, they say they want all the information, but they don’t find the current label attention grabbing, easy to read or easy to understand. It does not appear that study participants ever read or used the high level of text information provided on the current label.

“How many people read these things, anyway.” (Charlotte, NC)

“I never really paid attention to this before.” (Syracuse, NY)

2.4 Obtain Reactions to the Energy Star Logo

Study participants were shown samples of the line graph label, stars label and check marks label with the Energy Star logo. The purpose of presenting the Energy Star logo within the context of the labels was to:

- Determine how consumers interpret the Energy Star logo, in general
 - Determine the ideal placement location of the Energy Star logo on the current Energy Guide Label
 - Determine what relationship there is, if any, between the Energy Star logo and each of the categorical rating concepts
- The vast majority of consumers participating in the focus group study were unfamiliar with the Energy Star logo. This is particularly worth noting because the Project Team was under the assumption that a significant amount of public service advertising had been conducted in Syracuse, New York.
 - “You don’t see it all the time so it’s not recognizable yet.” (Charlotte, NC)*
 - “It means nothing to me.” (Charlotte, NC)*
 - “I don’t have any of the history behind it. I don’t know how reliable it is or who did it.” (Charlotte, NC)*
 - “I have seen it, but I don’t know on what.” (Syracuse, NY)*
 - “I’ve never seen it.” (Syracuse, NY)*
 - “I don’t place it.” (Syracuse, NY)*
 - Respondents were shown two labels side-by-side where one contained the Energy Star logo and the other did not contain the logo. Then respondents were asked what the Energy Star logo might mean to them if they were to see the logo on one appliance label and not another. Respondents interpreted the logo to be the equivalent of the “The Good Housekeeping Seal of Approval.” In other words, they assume appliances have to undergo certain tests and that the appliance with the Energy Star logo has earned the Energy Star logo by meeting or exceeding a set of standards, while the appliance without the Energy Star logo has not met or exceeded those standards.
 - “It catches my eye, and I would probably think that it was better because of it.” (Charlotte, NC)*

*"I think it would have to go through some phases, some testing, to even be able to get this star."
(Charlotte, NC)*

"The energy people are approving of it." (Syracuse, NY)

"One has been endorsed and the other has not." (Syracuse, NY)

"I'd say, 'oh, this is energy efficient'. I should consider the ones with the star and without the star I wouldn't even consider them." (Syracuse, NY)

"Well, it tells you what it says, symbol of energy efficiency, but is it the old "Good Housekeeping Seal of Approval" and people were educated and really looked for it." (Syracuse, NY)

"I would see the seal of approval and think it would be better." (Syracuse, NY)

- According to respondents, an appliance is likely to get the Energy Star logo if it scores above average on the standardized tests. At first, respondents thought it might be possible to receive the Energy Star logo if the appliance received an average score (i.e., a "C" on the letters concept or three stars on the stars concept, and about 500 kWh/year on a continuous rating scale). After some thought, however, respondents felt that an appliance would have to score above average (i.e., a "B" on the letters concept, three and a half or four stars on the star rating system, and above 500 kWh/year on a continuous scale) to earn the honor of receiving an Energy Star logo.

"Three and a half or more." (Syracuse, NY)

"Three would be just average. Two would be below average and four is above average." (Syracuse, NY)

- Next, respondents were shown the current line graph with the Energy Star logo in three different locations: directly on top of the line graph within the box; directly below the line graph within the box; and in the bottom right hand corner of the label. The bottom right hand corner of the label is the most preferred Energy Star logo location.
- If the logo appears anywhere within the line graph box, it clutters up the graph and makes the label more difficult to read and understand. In fact, a couple of respondents weren't sure if the Energy Star logo was being used as a graphing device and if it would move along the continuous scale depending on the level of kilowatt hours used per year by the appliance.

"I dislike it. It's too jumbled." (Charlotte, NC)

"It takes away from the graph." (Charlotte, NC)

"You still have to read in there. It's just more stuff to read in there [the graph box]." (Syracuse, NY)

"It [star logo] gets lost [inside the graph]." (Syracuse, NY)

"You can't see it when it's in the graph." (Syracuse, NY)

"It's already cluttered enough." (Syracuse, NY)

"I don't like it right here [inside the graph]. Anywhere in the box is just in the way." (Charlotte, NC)

"It's in amongst the graph and it doesn't belong there." (Charlotte, NC)

"...we're already trying to figure out the graph, and I'm looking at this, and it has this stuff, and I'm trying to read the stuff in here. It's too much. The graph needs to be a lot clearer. The logo could be a side thing, anywhere, up or down, I liked it not being in the business of the words." (Charlotte, NC)

"You still have to read in there. It's just more stuff to read in there." (Syracuse, NY)

"It gets lost." (Syracuse, NY)

"It's already cluttered enough." (Syracuse, NY)

"That's where it would add to clutter, whereas if it's down in the separate box it's not." (Syracuse, NY)

- According to respondents, when the Energy Star logo is placed in the bottom right hand corner of the label it is more noticeable. Therefore, they believe the logo will be more effective if it is placed in the corner of the label.

"I like it less [inside the graph]. It stood out more to me down in that corner." (Charlotte, NC)

"When it's down in that corner it stands out, the contrast between the white and the yellow." (Charlotte, NC)

"At the bottom. It stands out more." (Syracuse, NY)

"You're not going to notice it as much any place else. You're going to be drawn to that missing spot." (Syracuse, NY)

- Respondents were asked what relationship there is, if any, between the Energy Star logo and each of the categorical concepts. Respondents believe that the Energy Star logo and the stars, check marks or letters rating systems reinforce or complement one another, rather than work against each other.

"I think it gives it credibility." (Charlotte, NC)

"It supports it." (Charlotte, NC)

"It would be a plus." (Syracuse, NY)

"It enhances it." (Syracuse, NY)

"It's good whatever you use it with." (Syracuse, NY)

"They reinforce each other." (Syracuse, NY)

- Consumers seemed to easily distinguish the Energy Star logo from the categorical rating systems. The Energy Star logo is seen as an endorsement, while the rating systems are scales used to compare the energy use of one machine versus another. Respondents believe that appliances which have met a prescribed set of standards for energy efficiency will receive the logo and that appliances which have not met those standards will not receive the logo.

The moderator asked respondents the following hypothetical question. "When one machine has four stars or four checks and an Energy Star logo, and another machine has one star or one check and no Energy Star logo; does the logo communicate degrees of Energy Star to you?"

"No, I think once the symbol is on there it just means it has met standards at a minimum or better level." (Syracuse, NY)

"If its five stars or four stars and the Energy Star logo is on both, it's not going to sway me to take the five star. The logo is on both. If the four star machine is good enough for them, it's good enough for me." (Syracuse, NY)

3.0 Conclusions and Recommendations

Conclusions and Recommendations

Conclusions and recommendations are based on the study findings and the interpretation of those findings by the project analyst. As a result, these recommendations may or may not reflect the opinions of the American Council for an Energy-Efficient Economy.

Conclusions

1. Based on the findings from this focus group study, as well as the findings from the two previous phases of qualitative research, the current Energy Guide label requires consumers to work too hard to get the energy efficiency information they need to make an informed purchase decision. The label fails to:
 - Capture consumers' attention in the first place
 - Motivate consumers to read the label
 - Communicate in an easy to understand, consumer-friendly format the information the label is trying to convey
 - Present a graph that looks like a graph or that communicates to consumers that they are looking at the energy efficiency of a particular appliance model in comparison to all similar models available
 - Communicate the information consumers say they need in an expeditious manner (i.e., text is overwhelming/intimidating)
 - Communicate clearly that the cost information on the label refers to cost to operate rather than savings
 - Convince consumers that energy efficiency is an issue they should consider when selecting appliances
2. Among the four continuous graphing concepts tested (i.e., line or current, bar, slope and gradation graphs; the bar graph appears to be the most promising continuous graphing concept because it has the potential to:
 - Increase consumer attention to the label
 - Communicate energy efficiency information in a continuous graphing format that seems preferred over the current line graph

- Improve comprehension goals

However, the bar graph does not appear to be any better than the current line graph at holding consumers' attention or encouraging consumers to consider energy efficiency when selecting appliances.

3. On the whole, categorical rating concepts seem more effective than continuous rating concepts at:
 - Capturing consumer attention
 - Making it easier for consumers to read the labels from a distance or at a glance (i.e., require less work on the part of the consumer to get the message)
 - Making it easier for consumers to understand that the energy efficiency ratings of appliances vary (i.e., categorical labels are better at communicating the idea of "comparison", since consumers only have to notice the different number of stars, checks or letters to get the energy efficiency message rather than look for or analyze the kWh/year usage figures)
4. Among the categorical labels tested, the stars rating concept seems to be more preferred than the other categorical labels. It is more effective than alternative rating systems at increasing consumer awareness of the energy efficiency issue and convincing them that it is an issue worth thinking about. In addition, the stars system seems more effective than alternatives at potentially motivating consumers to purchase a more energy efficient appliance, if they can afford one, since consumers are conditioned to think of stars as a rating system and to interpret the rating system to mean "the more stars the better".
5. Some consumers may misinterpret the stars rating concept to mean quality performance, and not just energy efficiency; although other consumers clearly interpret the stars rating system as only an energy efficiency measurement. Any misinterpretation of the stars rating system may result in some consumers purchasing more energy efficient appliances, but not for the reason intended by the Energy Guide label. Therefore, quantitative research is being conducted to measure the proportion of the population who is at risk of misinterpreting the stars rating system.
6. If consumers happen not to see/read the heading on the stars rating label (i.e., "The More Stars the More Energy Efficient"), and notice only the kWh/year numbers, they may get confused because the kWh/year scale is inverted. In other words, the smaller kWh/year figure is on the right side (as the number of stars increase) and the larger kWh/year figure is on the left side (as the number of stars decrease). This may seem counterintuitive to those consumers who believe the kWh/year numbers should increase moving from left to right along a scale.

7. In comparing a high level text label to a medium-high level text label, it appears that medium-high level text meets the information needs of consumers. In addition to meeting the information needs of appliance purchasers, the medium-high text label communicates the energy efficiency message without making the label look too cluttered and too intimidating or too difficult to read.
8. The Energy Star logo is perceived as being an endorsement by EPA and DOE. It communicates to consumers that a particular appliance has met or exceeded a set of standards for energy efficiency that other appliances (without the logo) have not reached. The logo reinforces or compliments the rating concepts whether the labels are using a continuous or categorical rating system. Consumers participating in the focus groups did not confuse the Energy Star logo with the star rating system. In other words, they did not think that the star symbol and Energy Star logo stood for the same thing. However, they understood that if a particular appliance had received a certain number of stars (e.g., 3 ½ or 4) that it would be endorsed by DOE and EPA and receive the Energy Star logo.
9. Consumers strongly prefer that the Energy Star logo be placed in the bottom right hand corner of the Energy Guide label rather than anywhere inside the graphing/rating system used on the label. This is because placing the Energy Star logo within the graph/rating system area makes it more difficult for consumers to understand what the graph or rating system communicates. In addition, consumers seem to notice the logo more readily when it is located in the bottom right hand corner of the Energy Guide Label because it stands out and does not get lost in the clutter of other information.

Recommendations

1. Include the current line graph Energy Guide Label as one of the alternative label designs in the follow-up phase of quantitative research to test the hypotheses generated about the current label from the three phases of qualitative research conducted thus far. The results of the survey will indicate whether the current label should continue to be used to communicate energy efficiency messages to appliance purchasers.
2. Include the bar graph, as an alternative continuous graphing concept, in the follow-up phase of quantitative research. The results of the survey will determine whether or not the bar graph has the potential to out-perform the current continuous graphing label.
3. Eliminate the slope and the gradation graphs from the follow-up phase of quantitative research. These alternatives tested very poorly in the focus group research.

4. Include categorical label concepts in the follow-up quantitative study because they appear to be more effective than continuous graphing label concepts at capturing consumer attention, making it easier for consumers to read the labels from a distance or at a glance, making it easier for consumers to understand the message that energy efficiency ratings of appliances vary.
5. Include the stars label categorical concept in the follow-up phase of quantitative research. The stars label should be included because it was the best rated label concept tested in the focus groups.
6. Include alternative categorical labels (e.g., check marks and letters) in the follow-up quantitative research to address concerns identified about the stars label. Specifically, test check marks to see what proportion of consumers prefer that symbol over stars, and to reduce the possibility that consumers might interpret the categorical rating system to mean performance quality and not just energy efficiency. Also test the letters label to gauge consumer concerns voiced about the inverted scale used in both the stars and checks label executions.
7. Test the high and medium-high text levels for the Energy Guide in the follow-up quantitative research to verify findings from the focus group research that suggest a medium-high level of text is more likely to appeal to consumers and more efficiently delivers the energy efficiency message. Use the current line graph (high level text) as the control label, and use the alternative energy guide labels to test the medium-high level of text.
8. Verify findings from the focus groups about the meaning of the Energy Star logo in the follow-up quantitative research. Use the results of the survey to determine how consumers interpret the logo and whether or not the logo enhances or confuses consumers when interpreting the Energy Guide label. In addition, determine if the interpretation of the Energy Star logo varies based on the type of rating system used (continuous or categorical).

Appendix A: Recruitment Screener

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

ACE0003
CIRCLE

June 14, 2000 (Charlotte, NC) 6 PM
June 14, 2000 (Charlotte, NC) 8 PM
June 29, 2000 (Syracuse, NY) 6 PM
June 29, 2000 (Syracuse, NY) 8 PM

APPLIANCE SCREENER
(FINAL 5/31/00)

RESPONDENT NAME: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
TELEPHONE: (H) _____
DATE RECRUITED: _____ RECRUITED BY: _____
CONFIRMED BY: _____ DATE CONFIRMED: _____

Hello, this is _____ calling from Shugoll Research, a national market research company. We are conducting a brief study about household appliances and would greatly value your opinions. This is strictly market research and absolutely no sales effort is involved. I'd like to ask you a few questions.

1. First, can you tell me do you own or rent your home?

	<u>CIRCLE</u>	
Own	1	→(CONTINUE)
Rent	2	→(THANK AND TERMINATE)
Refused	3	

2. Have you owned your home for: (READ LIST)

	<u>CIRCLE</u>	
Less than 3 years	1	→(THANK AND TERMINATE)
3 to 9 years	2	→(CONTINUE)
10 to 20 years	3	
OR More than 20 years	4	
(DO NOT READ) Don't know	5	→(THANK AND TERMINATE)

3. Which of the following statements reflects your involvement in purchasing household appliances such as large kitchen appliances for your home? (READ LIST)

	<u>CIRCLE</u>	
You are primarily responsible for purchasing these types of household appliances	1	
You share the responsibility equally for purchasing these types of household appliances	2	→(CONTINUE)
Someone else is responsible for purchasing large household appliances	3	→(ASK TO SPEAK TO THE PERSON MOST RESPONSIBLE FOR PURCHASING LARGE HOUSEHOLD APPLIANCES)

4a. Now, thinking about large household appliances, have you purchased any of the following from a retail store in the last 6 months? (READ LIST)

	<u>CIRCLE ONE PER ROW</u>		
	<u>Yes</u>	<u>No</u>	<u>Don't Know</u>
Refrigerator	1	2	3
Freezer	1	2	3
Individual room air conditioning unit/ Central air conditioning system	1	2	3
Dishwasher	1	2	3
Clothes washer	1	2	3
Water heater	1	2	3

↓
(IF AT LEAST ONE CODE
1 CIRCLED, RECRUIT A
MIX OF 5-6 PER GROUP
AND SKIP TO Q.5)

↓
(IF NO OR DON'T KNOW
TO ALL,
CONTINUE WITH Q.4b)

6. Which of the following categories includes your total family income before taxes: (READ LIST)

		<u>CIRCLE</u>	
	Under \$20,000	1	
	\$20,000 to \$29,999	2	
	\$30,000 to \$39,999	3	
	\$40,000 to \$59,999	4	→(RECRUIT A MIX)
	\$60,000 to \$74,999	5	
	\$75,000 to \$100,000	6	
OR	More than \$100,000	7	
(DO <u>NOT</u> READ)	Refused	8	→(THANK AND TERMINATE)

7. And, which of the following categories includes the last grade of school you completed? (READ LIST)

		<u>CIRCLE</u>
	Some high school	1
	High school degree	2
	Vocational school	3
	Some college	4
	College degree	5
	Some graduate work	6
OR	Graduate degree	7
(DO <u>NOT</u> READ)	Refused	8

8. Are you: (READ LIST)

		<u>CIRCLE</u>
	Single	1
	Married or partnered	2
OR	Divorced, separated or widowed	3
(DO <u>NOT</u> READ)	Refused	4

9. Do you have any children under the age of 18 living at home?

		<u>CIRCLE</u>
Yes	1	
No	2	
Don't know	3	

10a. Are you: (READ LIST)

	<u>CIRCLE</u>	
Employed full-time	1	→(CONTINUE)
Employed part-time	2	
Not employed	3	
A full-time student	4	→(SKIP TO Q.11)
OR Retired	5	
(DO <u>NOT</u> READ) Refused	6	

10b. What is your occupation? Please describe.

10c. Do you work: (READ LIST)

	<u>CIRCLE</u>
From home	1
OR Outside your home	2

11. And, to ensure that we have a representative sample, please tell me if you are: (READ LIST)

	<u>CIRCLE</u>	
Caucasian	1	→(RECRUIT 8 OR 9 PER GROUP)
African American	2	
Hispanic or Latino	3	→(RECRUIT 3 OR 4 PER GROUP)
Asian	4	
OR A member of some other racial/ethnic group	5	

12. Now, thinking about your recent experiences shopping for household appliances, what aspects about shopping for these appliances did (do) you like most and like least? (WRITE VERBATIM)

NOTE TO INTERVIEWERS:

IT IS EXTREMELY IMPORTANT THAT RESPONDENTS IN THIS STUDY BE ARTICULATE. IF RESPONDENT CANNOT OR WILL NOT EASILY GIVE A ONE TO TWO SENTENCE UMPROMPTED ANSWER IN WELL UNDERSTOOD ENGLISH, PLEASE TERMINATE.

13. Have you or has anyone in your immediate family ever worked in the field of advertising, market research, public relations, or for a household appliance manufacturer or sales company or a regulatory or energy-related organization?

CIRCLE

Yes 1 →(THANK AND TERMINATE)
No 2 →(CONTINUE)

14. Have you ever participated in a market research discussion group?

CIRCLE

Yes 1 →(CONTINUE)
No 2 →(SKIP TO INVITATION)

15. How long ago was the last market research discussion group you participated in? (DO NOT READ)

CIRCLE

Within the past 6 months 1 →(THANK AND TERMINATE)
More than 6 months ago 2 →(CONTINUE)

16. What was the topic of the study you participated in? (DO NOT READ)

CIRCLE

Household appliance or energy-related 1 →(THANK AND TERMINATE)
Other 2 →(CONTINUE)

17. RECRUITER: CIRCLE GENDER

CIRCLE

Female	1	→(RECRUIT A MIX)
Male	2	

INVITATION

We are conducting a panel discussion with 10 people like yourself to discuss issues related to purchasing household appliances on June 14 (Charlotte) or June 29 (Syracuse). The discussion will take about 2 hours. A cash gift of \$_____ will be given to each participant. Are you available to attend the meeting?

CIRCLE

- | | | |
|-----|---|------------------------|
| Yes | 1 | →(GIVE DIRECTIONS) |
| No | 2 | →(THANK AND TERMINATE) |

Appendix B: Moderator's Guide

MODERATOR'S TOPIC GUIDE
(FINAL 6/13/00)

PROJECT: ACE0003

DATE: June 13, 2000

LOCATION: Charlotte, NC (6/14/00) and Syracuse, NY (6/29/00)

TOPIC: Energy Guide Label Evaluation

Introduction

- Who am I
- What I do

Ground Rules

- Audio taping and why
- Talk one at a time
- Articulate loudly enough to be heard
- Avoid side conversations
- Mirror and observers
- Videotaping and why
- Avoid peer pressure
- Be candid
- No right or wrong answers
- Need to hear from everyone
- Gratuity for your time and opinions

Respondent Introductions

Tell us:

- Your name
- Area of residence
- Family status
- Appliances - shopped for and purchased in the past 6 months

Evaluate Line Graph Label and Continuous Graphing Variations

- Show line graph label as is and obtain top-of-mind consumer reactions to the label
- Discuss if the line graph label:
 - Would catch their attention in the store - if yes, what would catch their eye and if no, why not
 - Is easy or difficult to understand and reasons for feeling as they do
 - Has too little or too much information - identify the information that is most needed/helpful and the information that is unnecessary
 - Uses a graphic that makes the intent of the label more or less clear
- Show respondents the gradation scale bar and obtain top-of-mind reactions to this concept
- Determine if the gradation scale bar:
 - Is preferred more or less than the line graphic and reasons for feeling as they do
 - Makes it easier or more difficult to determine how energy efficient an appliance is
 - Makes the label easier or more difficult to read
 - Is more or less easily noticed than the line graphic and why
- Show respondents the rising (curve) scale bar and obtain top-of-mind reactions to it
- Determine if the rising (curve) scale bar:
 - Is preferred more or less than the other graphics and reasons for feeling as they do
 - Makes it easier or more difficult to determine how energy efficient an appliance is
 - Makes the label easier or more difficult to read
 - Is more or less easily noticed than the other graphic alternatives and why
- Show respondents the tick mark scale bar and obtain top-of-mind reactions to it

- Determine if the tick mark scale bar:
 - Is preferred more or less than the other graphics and reasons for feeling as they do
 - Makes it easier or more difficult to determine how energy efficient an appliance is
 - Makes the label easier or more difficult to read
 - Is more or less easily noticed than the other graphic alternatives and why

Determine Preferred Placement Position of the Energy Star Logo on the Continuous Scale Labels

- Determine if respondents have ever seen the Energy Star logo and if they know what it means
- Show alternative placement positions of the Energy Star logo and obtain consumer reactions to them. Probe to determine:
 - Which position placement is most preferred and why
 - Which position placement is least preferred and why
 - What impact the position placement has on consumers' ability to: read the label, understand the label and make an energy efficient purchase decision

Obtain Reactions to Energy Star Tagline

- Ask respondents to read the tagline to provide their reactions to it
 - Determine what the tagline means to respondents
 - Determine if the tagline complements or opposes the alternative graphic elements in the labels and how so

Obtain Reactions to Categorical Energy Label Variations

- Present star label and obtain top-of-mind consumer reactions to the label
- Discuss if the star label:
 - Would catch their attention in the store - if yes, what would catch their eye and if no, why not
 - Is easy or difficult to understand and reasons for feeling as they do

- Has too little or too much information - identify the information that is most needed/helpful and the information that is unnecessary
- Uses a graphic that makes the intent of the label more or less clear
- Compare the star label with the line graph label, gradation bar, rising (curve) scale graph, tick mark graph and discuss which label consumers believe would be most effective in influencing consumers to purchase an energy efficient appliance and why
- Present letters label and obtain top-of-mind consumer reactions to the label
- Discuss if the letters label:
 - Would catch their attention in the store - if yes, what would catch their eye and if no, why not
 - Is easy or difficult to understand and reasons for feeling as they do
 - Has too little or too much information - identify the information that is most needed/helpful and the information that is unnecessary
 - Uses a graphic that makes the intent of the label more or less clear
- Compare the letters label with the line graph, gradation bar, rising (curve) scale graph, tick graph and the star graph and discuss which label consumers believe would be most effective at influencing consumers to purchase an energy efficient appliance
- Present check mark label and obtain top-of-mind consumer reactions to the label
- Discuss if the check mark label:
 - Would catch their attention in the store - if yes, what would catch their eye and if no, why not
 - Is easy or difficult to understand and reasons for feeling as they do
 - Has too little or too much information - identify the information that is most needed/helpful and the information that is unnecessary
 - Uses a graphic that makes the intent of the label more or less clear
- Compare the check mark label with the line graph, gradation bar, rising (curve) scale graph, tick graph, star label, letters label and discuss which label consumers believe would be most effective at influencing consumers to purchase an energy efficient appliance

Determine Preferred Placement Position of the Energy Star Logo in a Categorical Label Design

- Determine what the energy star logo means when used in conjunction with a categorical label
 - Specifically with the star label
 - Specifically with the check label
 - Specifically with the letters label

False Close

- Determine if the meaning of the Energy Star logo is diluted or enhanced when used in conjunction with the:
 - Star label
 - Check mark label

And probe why respondents feel as they do

Final Comments

Appendix C: Alternative Label Designs

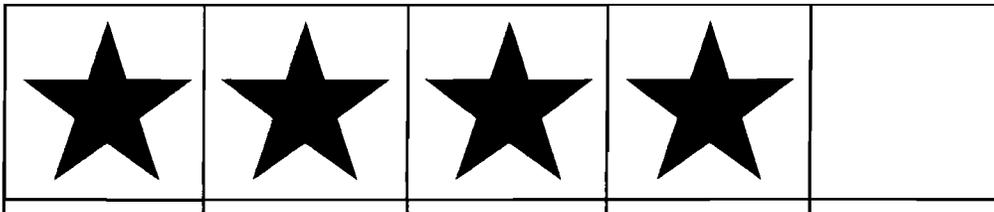
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154
kWh/yr

Based on a comparison of similar models.

156
kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

THIS MODEL USES

466 kWh

PER YEAR

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater

\$20 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

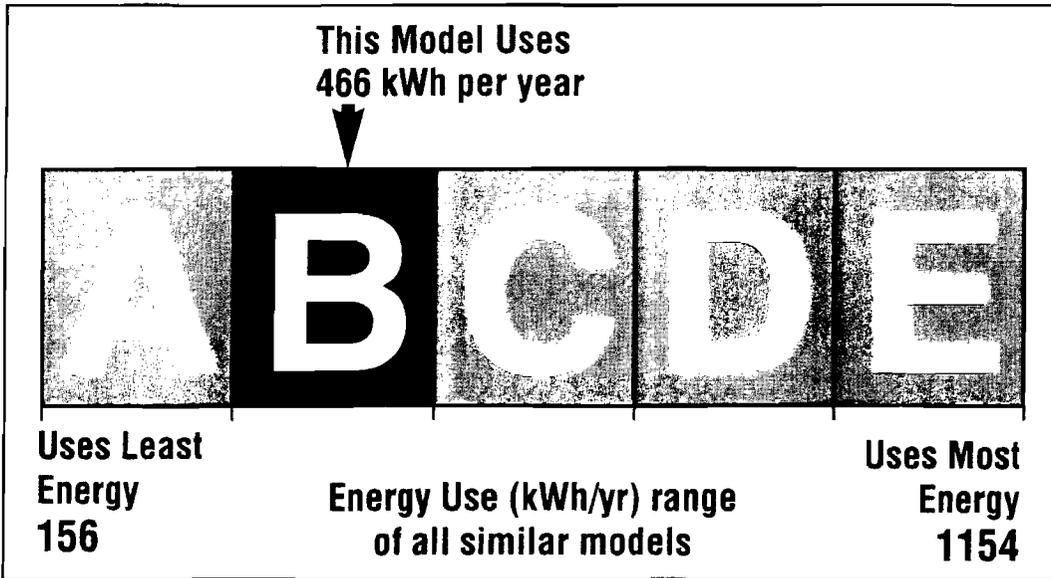
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

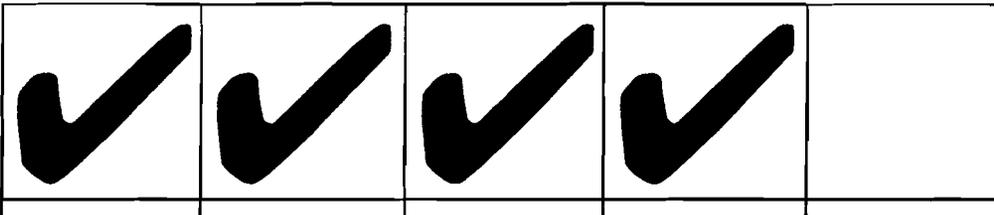
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154
kWh/yr

Based on a comparison of similar models.

156
kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

THIS MODEL USES

466 kWh

PER YEAR

Estimated Yearly Operating Cost:

\$37

when used with an
electric water heater

\$20

when used with a
natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

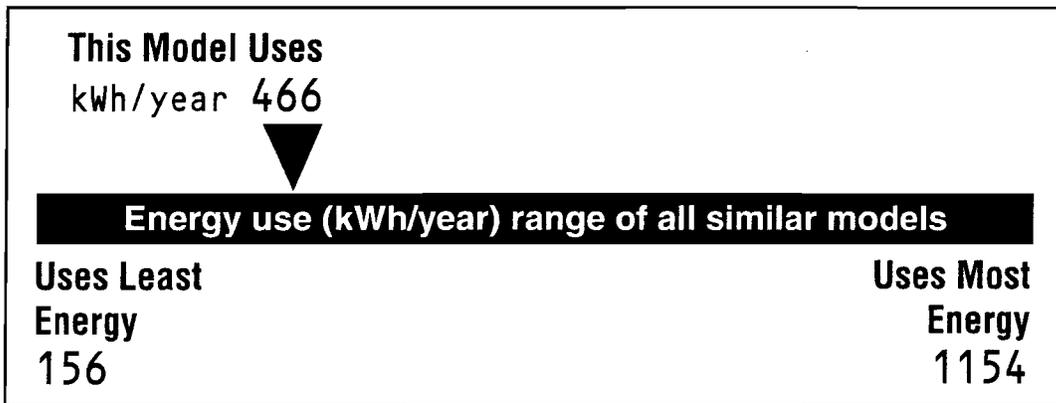
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$37

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

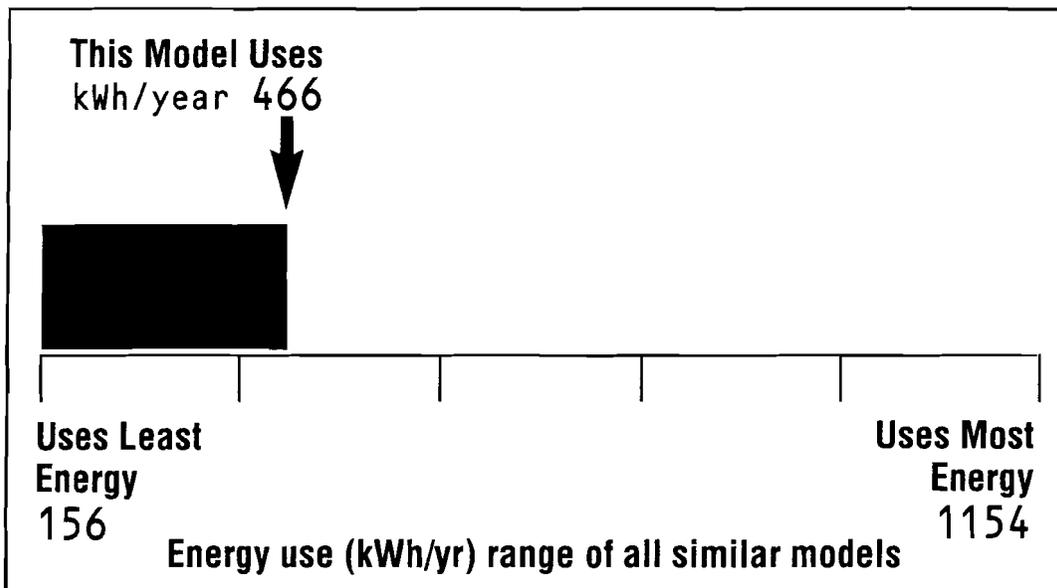
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

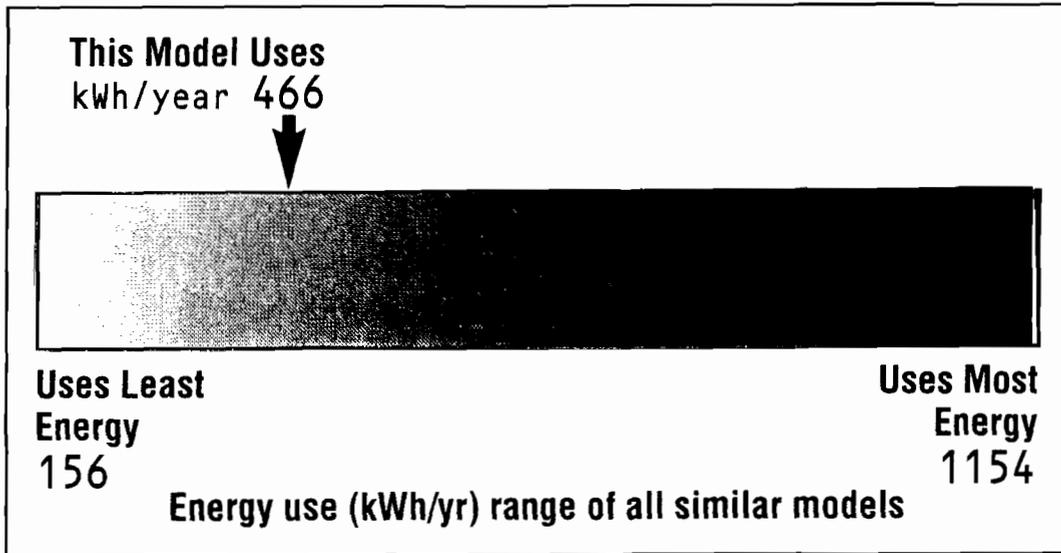
Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

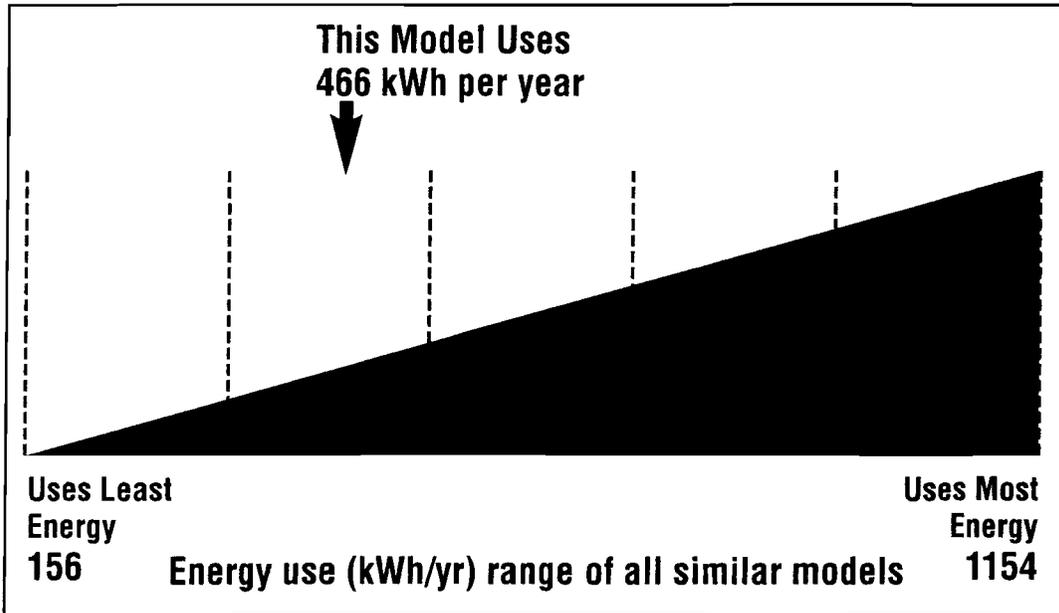
Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

**Appendix D: Alternative Placement Locations
for the Energy Star Logo**

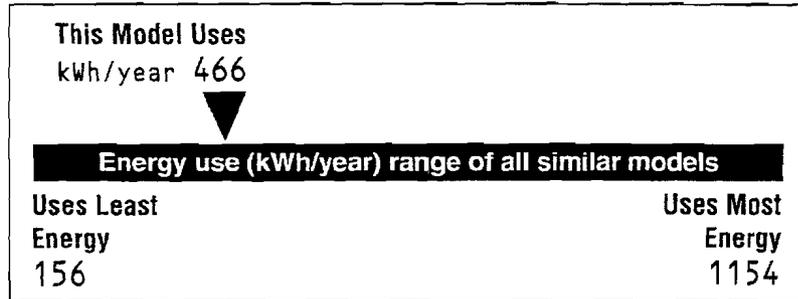
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752

Compare the Energy Use of this Clothes Washer with Others Before You Buy.

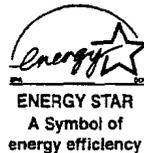


kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate. This model's estimated yearly operating cost is:

\$37	\$20
when used with an electric water heater	when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.



Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

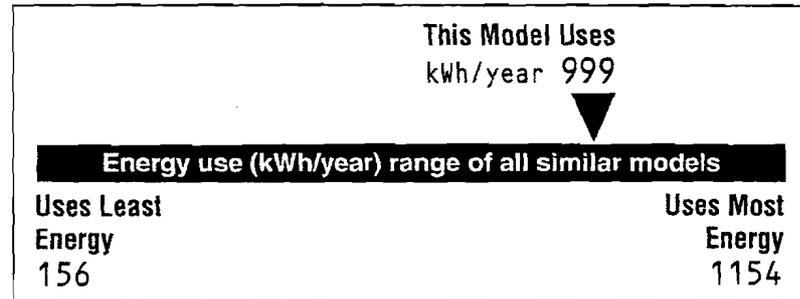
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL022349

Compare the Energy Use of this Clothes Washer with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate. This model's estimated yearly operating cost is:

\$83	\$30
when used with an electric water heater	when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

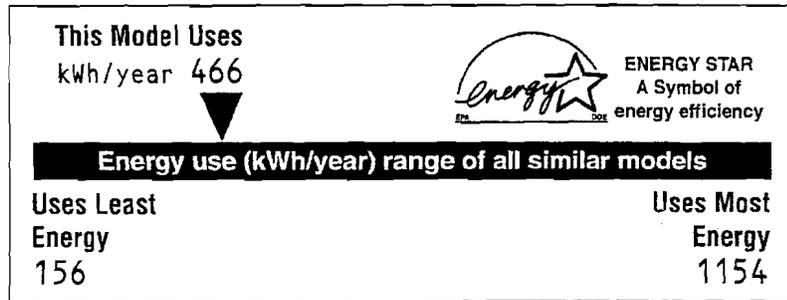
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$37

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

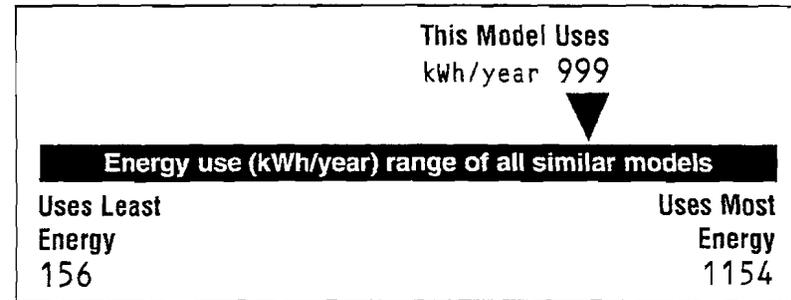
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL023449

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$83

when used with an electric water heater

\$30

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

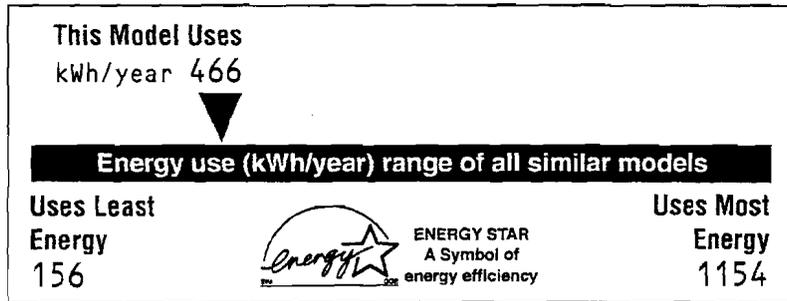
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752

Compare the Energy Use of this Clothes Washer with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate. This model's estimated yearly operating cost is:

\$37

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

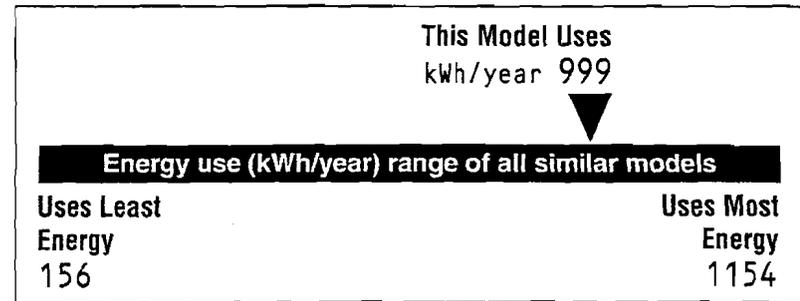
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL023449

Compare the Energy Use of this Clothes Washer with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate. This model's estimated yearly operating cost is:

\$83

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Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

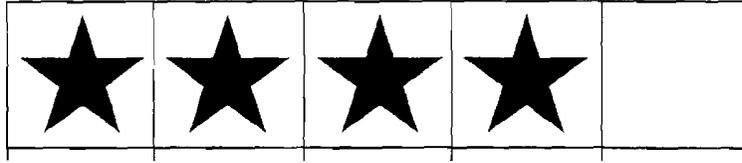
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

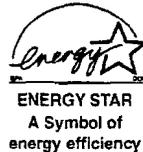
kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **466** kWh per year

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.



Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

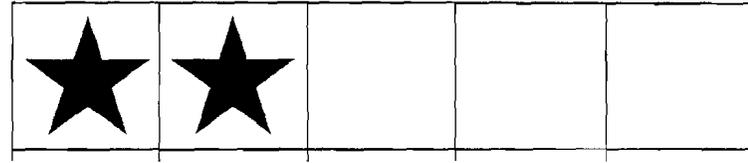
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL022349

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **999** kWh per year

Estimated Yearly Operating Cost:

\$83 when used with an electric water heater **\$30** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

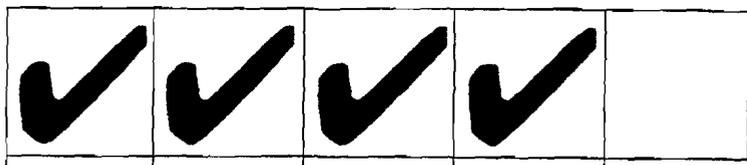
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **466** kWh per year

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.



ENERGY STAR
A Symbol of
energy efficiency

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

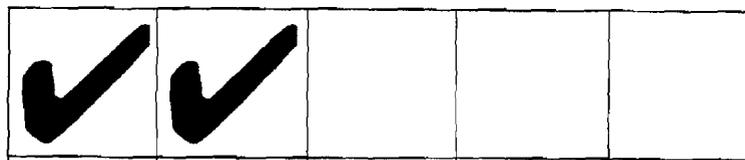
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL022349

Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **999** kWh per year

Estimated Yearly Operating Cost:

\$83 when used with an electric water heater **\$30** when used with a natural gas water heater

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Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)

Appliance Energy Label Test: Quantitative Phase

Prepared for:

AMERICAN COUNCIL FOR AN ENERGY EFFICIENT ECONOMY (ACEEE)
1001 Connecticut Avenue, NW
Suite 801
Washington, DC 20036

Prepared by:

SHUGOLL RESEARCH
7475 Wisconsin Avenue, Suite 200
Bethesda, Maryland 20814
(301) 656-0310
www.shugollresearch.com

October 2000

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1.0 Study Overview

1.1 Background and Purpose

As part of an ongoing effort to provide input into the optimal design for an energy guide label, the American Association for an Energy Efficient Economy (ACEEE) contracted with Shugoll Research to evaluate various executions of potential energy labels. The current phase of this project consisted of 500 in-person interviews conducted in mall interviewing facilities across the U.S. This phase follows three phases of focus group research which were used to refine the labels to be tested in the current study. The results of the current study will be used to determine which label executions, if any, best communicate information about appliance's energy efficiency level to consumers.

1.2 Objectives

- The objectives of this study are as follows:
 - Describe consumer use of current Energy Guide Label
 - Determine comprehension level of different label executions
 - Determine how motivating each label execution is in making consumers consider energy efficiency when purchasing household appliances
 - Determine consumers' perception of the different labels in terms of ease of understanding, believability and ability to grab attention

1.3 Methodology and Study Procedures

- Mall intercept interviews were conducted to achieve the goals of this study. Five hundred interviews were split equally across five metropolitan areas (100 per market). In some markets, more than one mall interviewing facility was used to gain access to consumers of diverse demographic backgrounds. The markets included in this study are:
 - New York
 - Atlanta
 - Milwaukee
 - Phoenix
 - San Francisco
- All respondents are homeowners who are primarily or jointly responsible for purchasing major household appliances for their home. None could work in a sensitive industry (market research, public relations, appliance manufacturer or sales company, utility, regulatory agency or energy-related organization). All had to be at least 18 years of age and able to read and understand English.
- Within each market and overall, guidelines were set to ensure that the mix of respondents would match national characteristics on key demographics. These guidelines were set for:
 - Gender (60% female and 40% male, in keeping with the profile of the typical appliance purchaser)
 - Race/ethnicity (75% Caucasian and 25% minority)
 - Education level (50% high school diploma or less, 25% some college or technical school, and 25% college degree or more)
- Interviews averaged 20 minutes each. A copy of the recruitment screener and questionnaire used in the interviewing process appears as Appendix A of this report.

- Each respondent saw and evaluated five label executions. These label executions are shown in Appendix B and include the following designs:
 - Categorical design using letters (J)
 - Categorical design using checks (k)
 - Categorical design using stars (L)
 - Current Energy Guide Label (M)
 - Continuous design using bar with scale (N)
- All individual label executions describe the same model of a washing machine that uses 466 kWh. This level of energy use is considered to be quite good and garners a 4-star, a 4-check or a “B” rating on the categorical scales. It is also a level of energy efficiency that is high enough to make it eligible for the Energy Star Logo.
- Half of the respondents saw and evaluated the five labels without the Energy Star Logo, and half saw and evaluated the five labels with the Energy Star Logo placed in the bottom right corner of the label. This was done to determine the impact, if any, of the Energy Star Logo on key evaluative criteria. The placement of the Energy Star Logo in the bottom right corner of the labels came out of prior focus group research on the preferred placement of this logo.
- The order in which the labels were shown was systematically varied across respondents so that each label (with or without the Energy Star Logo) was seen and evaluated in each position an equal number of times overall and within each market. Each of ten rotations (see Appendix C) was seen by 50 respondents or 10 respondents in each market.
- In addition to seeing and evaluating each of the five label executions individually, respondents saw three versions of each label execution at one time, where each version represented a different level of energy efficiency. This was done to test whether consumers could identify the most efficient and least efficient appliance in a side-by-side comparison. The values used to represent high, medium and low energy use levels varied across label executions, as did the position on the page (left, center or right) of each level. An example of the set of three labels shown to one respondent appears in Appendix D of this report. The position of each label on the page for each label execution and for each market is shown in Appendix C. Please note that if the consumer was evaluating labels including the Energy Star Logo, the Energy Star Logo would only appear on labels for qualifying appliances in the set of three labels. If the consumer was not evaluating labels with the Energy Star Logo, no Energy Star Logos would appear on the set of three labels, not even the labels for qualifying appliances.

1.4 Analysis

- The sample size of 500 is reliable within plus or minus 4.5 percentage points at the 95 percent confidence level. Subgroups are less reliable, as shown in the following table:

SAMPLE SIZE	CELL DESCRIPTION	RELIABILITY AT 95% CONFIDENCE LEVEL
250	Energy Star/No Energy Star total	+/-6%
100	Label Executions total	+/-10%
50	Label Executions by Energy Star/No Energy Star; Label seen in first position	+/-14%

- Cross-tabulations were run by each label execution in total, with and without the Energy Star Logo, and when it was seen in the first position. Also, cross-tabulations show ratings of all labels with and without the Energy Star Logo combined across label executions. These data are intended to show differences in ratings across label executions.
- Cross-tabulations were also run for key demographic subgroups, including market, education, age, race/ethnicity and past experience shopping for an appliance and exposure to the Energy Guide Label. All data tables have been delivered to ACEEE under separate cover.
- Multiple measures were collected in an attempt to fully understand the performance of each label execution. These measures included:
 - Ratings of each label on a 1 to 10 Likert scale based on respondent perceptions of the label's performance
 - Ability to correctly judge energy efficiency level of appliance described in label when each label seen individually
 - Ability to correctly identify most and least energy efficient appliance from set of three versions of same label execution

- Ability to correctly understand that each label does not convey information about the appliance quality
- Forced choice selection of one label that meets certain criteria when all five label executions are viewed at one time
- For the Likert-scaled questions, the percentage rating each label in the top three boxes (8, 9 or 10), the bottom three boxes (1, 2 or 3) and the mean ratings were examined for each label. P-tests were used to evaluate differences in top three box scores and bottom three box scores between all possible pairs of labels. Similarly, t-tests were used to test for differences across means for all possible pairs of labels. Additionally, analysis of variance (ANOVA) was used to determine if the null hypothesis that all five label executions received the same mean score could be rejected. To take into account the fact that the ratings for each label are not independent because the same respondents rated each, the repeat measures analysis of variance was used.
- To test label comprehension, variables tested included the mean number correctly identified as most or least efficient when compared across labels (0-2), the percentage correctly identifying the energy efficiency level of the appliance depicted when each label was shown individually and the percentage correctly understanding that the label provides no information about appliance quality. P-tests (for percentages) and t-tests (for means) were used to test differences between each pair of labels. Similar analysis of variance tests were used to determine the ability of each label execution to correctly communicate information about the energy efficiency level of the appliance. The null hypothesis was that all means are equal or that each label communicates energy efficiency equally well. Again, repeat measures analysis of variance was used since the means are not completely independent of each other given that respondents who get one right are more likely to get the others right.
- For the forced choice selections of a label execution, a chi-square test was used to determine if the distribution observed is significantly different from what would be expected by chance, assuming no difference between label executions. If there was no difference in consumer preference of the label executions on the variables tested (likelihood of reading, ability to communicate information about appliance energy efficiency and ability to motivate to consider energy use in appliance purchase), an equal number of respondents could be expected to choose each label execution in a forced choice exercise. Thus, the observed distribution is compared against this expected distribution in an attempt to test the null hypothesis of no differences across labels. Comparisons of the percentage choosing each label execution was also conducted using p-tests among all pairs of labels to clarify the most and least effective labels.

- Statistical significance of all differences is tested at a 95 percent confidence level. All differences reported as significantly different are statistically significant at the 95 percent confidence level.

1.5 Respondent Profile

- A profile of survey respondents appears in Table 1. As dictated by study design, the characteristics of survey respondents largely matches national demographics of homeowners. For most characteristics, there are no significant differences across markets. Exceptions to this general rule are as follows:
 - Milwaukee respondents are older (mean of 47 years) than respondents in all other markets
 - While the percentage of minority representation is similar across markets (25%), Atlanta is more heavily African American (23%) than Phoenix or San Francisco, which include more Hispanics (19% in Phoenix and 16% in San Francisco) than other markets
 - Average household size is larger in New York (mean of 3.5) and San Francisco (mean of 3.7) than in Milwaukee (2.8) or Phoenix (3.0).
 - Average household income is significantly higher in New York (mean of \$81,000) than in all other markets.

RESPONDENT PROFILE							
	U.S. HOMEOWNERS	TOTAL (N=500)	NEW YORK (N=100)	MILWAUKEE (N=100)	ATLANTA (N=100)	PHOENIX (N=100)	SAN FRANCISCO (N=100)
INVOLVEMENT IN PURCHASING HOUSEHOLD APPLIANCES							
Primarily Responsible	NA	57%	52%	46%	48%	69%	72%
Share Responsibility	NA	43%	48%	54%	52%	31%	28%
AGE							
18 to 24	1%	17%	21%	5%	28%	9%	20%
25 to 34	13%	23%	14%	18%	21%	29%	34%
35 to 44	24%	22%	24%	25%	15%	16%	30%
45 to 54	22%	19%	20%	20%	19%	27%	9%
55 to 64	15%	12%	13%	17%	12%	11%	6%
65 or older	25%	7%	8%	15%	5%	8%	1%
Mean	51 years	41 years	41 years	47 years*	38 years	42 years	35 years
RACE							
Caucasian	79%	73%	73%	74%	74%	70%	75%
African American	13%	15%	18%	18%	23%	11%	4%
Hispanic or Latino	8%	10%	7%	8%	0%	19%	16%
Asian	NA	1%	0%	0%	1%	0%	4%
Other	NA	1%	2%	0%	2%	0%	1%
GENDER							
Female	60%	60%	53%	66%	60%	60%	60%
Male	40%	40%	47%	34%	40%	40%	40%

*Denotes a significant difference from all subgroups at the 95 percent confidence level

**Data for total annual household income in the U.S. Homeowners column does not reflect U.S. Homeowners and is of the total U.S. population.

RESPONDENT PROFILED							
	U.S. HOMEOWNERS	TOTAL (N=500)	NEW YORK (N=100)	MILWAUKEE (N=100)	ATLANTA (N=100)	PHOENIX (N=100)	SAN FRANCISCO (N=100)
EDUCATION							
Some H.S.	10%	8%	5%	13%	11%	6%	5%
H.S. degree	33%	38%	35%	39%	35%	37%	45%
Vocational school	3%	3%	2%	6%	3%	4%	2%
Some College	23%	25%	33%	15%	26%	29%	23%
College degree	17%	17%	14%	18%	19%	16%	18%
Some graduate	NA	2%	3%	2%	2%	1%	1%
Graduate degree	10%	7%	8%	7%	4%	7%	6%
NUMBER OF PEOPLE LIVING IN HOUSEHOLD							
One	20%	11%	13%	17%	7%	14%	3%
Two	35%	26%	18%	31%	27%	37%	19%
Three	17%	21%	17%	21%	28%	17%	22%
Four	17%	23%	26%	20%	19%	12%	36%
Five	7%	9%	13%	5%	8%	11%	8%
Six or more	4%	9%	9%	6%	11%	9%	10%
Refused	0%	1%	4%	0%	0%	0%	2%
Mean	3 people	3 people	4 people	3 people	3 people	3 people	4 people
TOTAL ANNUAL HOUSEHOLD INCOME**							
Under \$20,000	15%	5%	4%	4%	6%	7%	5%
\$20-\$29,999	12%	10%	3%	12%	7%	14%	15%
\$30-\$39,999	12%	15%	7%	21%	15%	19%	13%
\$40-\$59,999	20%	23%	20%	27%	21%	26%	25%
\$60-\$74,999	12%	14%	10%	9%	19%	13%	17%
\$75-\$100,000	13%	14%	17%	15%	15%	11%	13%
More than \$100,000	16%	10%	20%	4%	11%	5%	8%
Refused	NA	9%	19%*	8%	6%	5%	4%
Mean	\$41,000	\$62,000	\$81,000*	\$54,000	\$65,000	\$53,000	\$59,000

*Denotes a significant difference from all subgroups at the 95 percent confidence level

**Data for total annual household income in the U.S. Homeowners column does not reflect U.S. Homeowners and is of the total U.S. population.

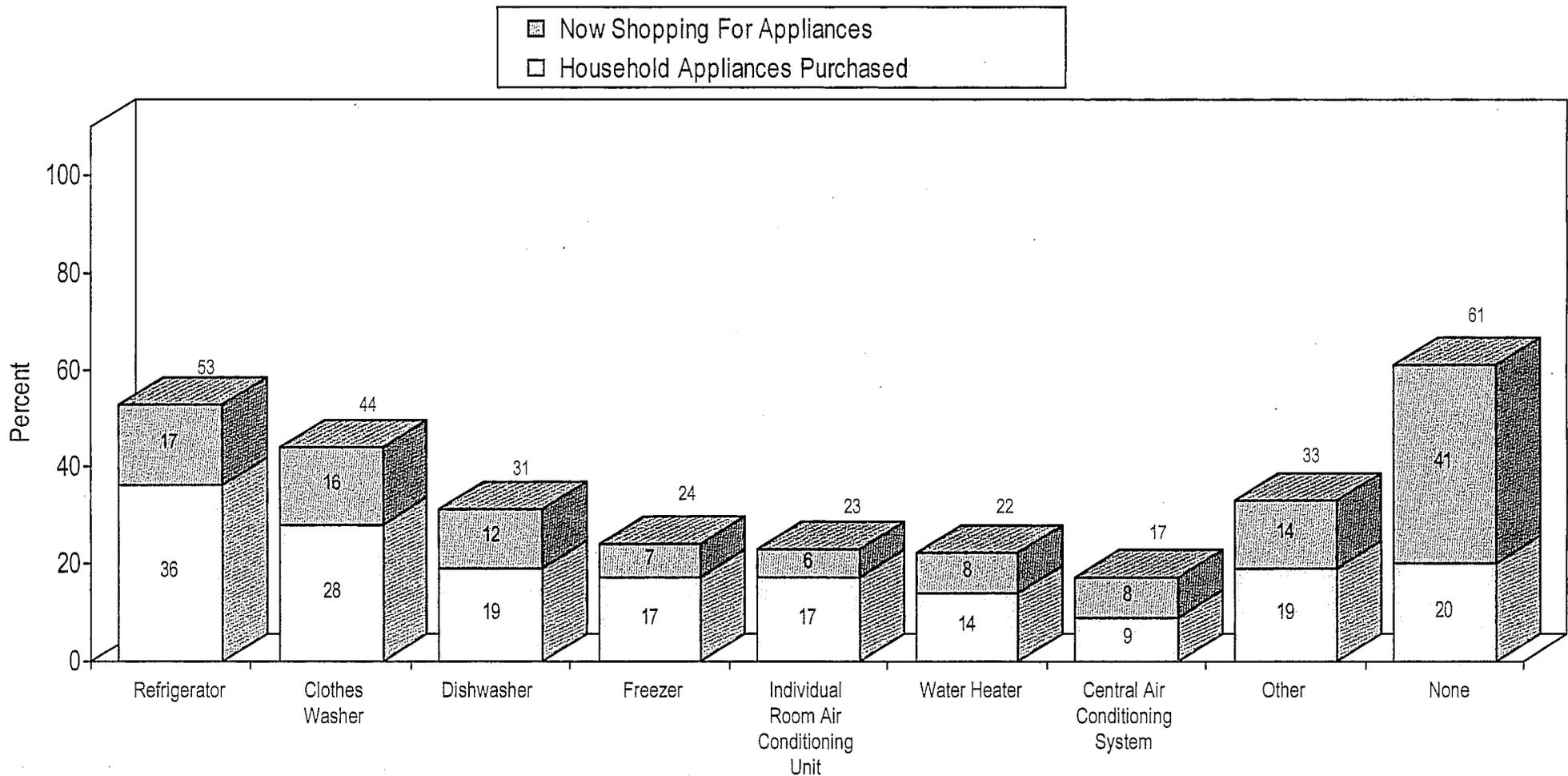
2.0 Study Findings

2.1 Describe Consumer Use of Current Energy Guide Label

- Most respondents (80%) report purchasing a large household appliance within the past 2 years, and nearly all of these purchased at least one appliance that would carry the current Energy Guide Label (only 19% purchased a non-qualifying appliance). The appliances purchased most often include refrigerators (36% purchased), clothes washers (28%), dishwashers (19%), freezers (17%) and individual room air conditioning units (17%). Purchased less often are water heaters (14%) and central air conditioning systems (9%). This is shown in Figure 1. Many respondents purchased multiple appliances within the past 2 years, as evidenced by an average of just over two appliances named per respondent who purchased any appliances.
- Respondents 55 years or older are least likely to have purchased a large household appliance in the past 2 years (58% have). Perhaps related to this, Milwaukee respondents (68%) are least likely to have recently purchased a household appliance.
- Most respondents also are either currently shopping for major household appliances or planning to purchase one of these appliances in the next 2 years (61%). The types of appliances that they plan to purchase parallel those recently purchased: refrigerators most often (17%), followed by clothes washers (16%) and dishwashers (12%). This is also shown in Figure 1.
- Combining those planning to purchase a major household appliance in the next 2 years with those who recently purchased one, 86 percent of respondents have been exposed recently or should have exposure soon to the current energy label.
- Given this level of appliance shopping, it should not be surprising that four fifths of respondents say they recall seeing labels on household appliances that indicate the amount of energy that the appliance uses (80%), as shown in Figure 2. It is interesting to note that the incidence of recalling energy labels is significantly lower in San Francisco (62%) than in all other markets (80%-88%). Further, recall of the current energy label is lower among those under the age of 35 (74%), non-whites (74%) and those with a high school education or less (78%) than among other demographic segments.

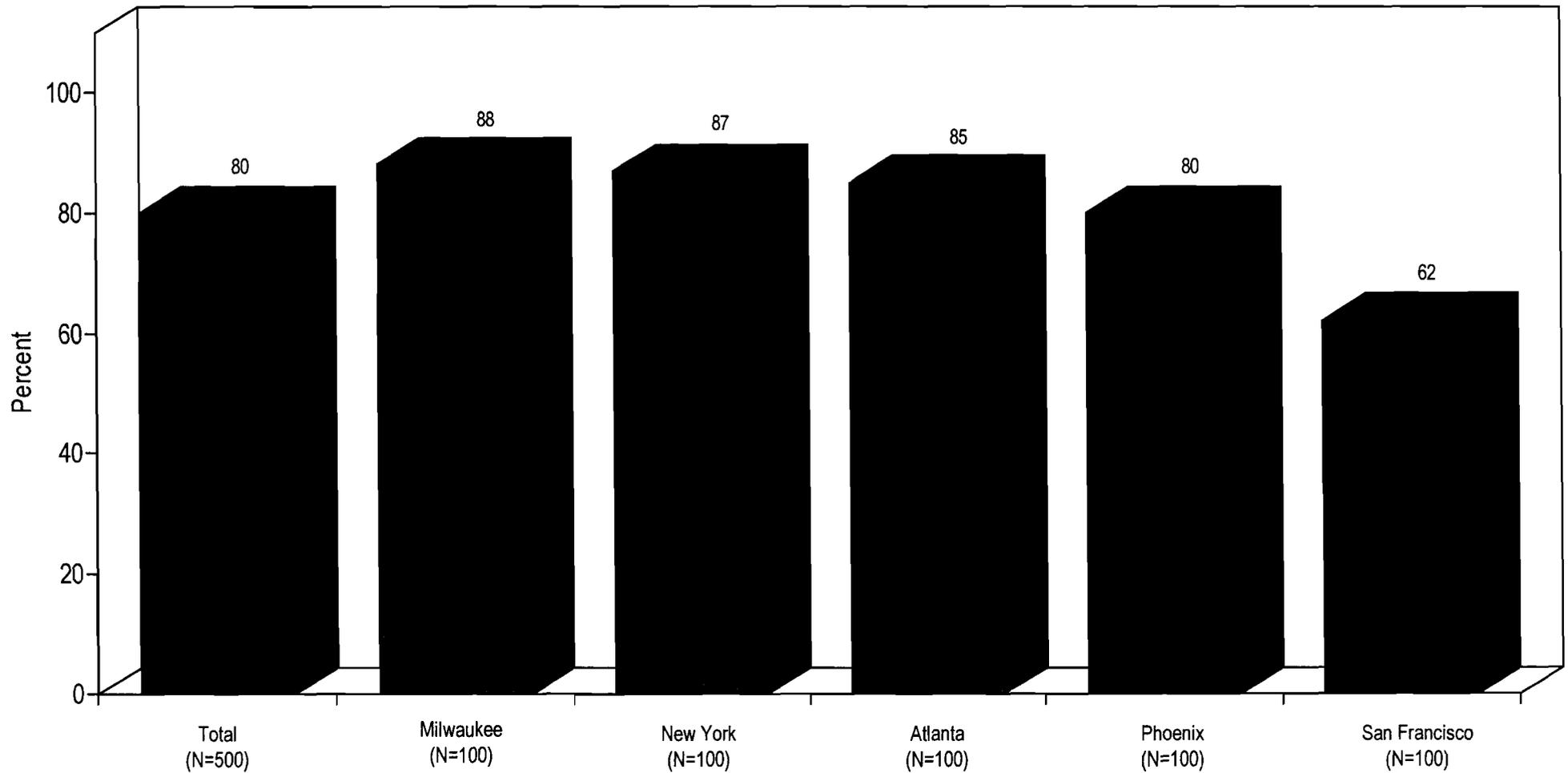
- Of those who recall seeing the current energy label, about two thirds say they used the information from the energy label very much or somewhat in deciding which appliance model to purchase (65%), including 30 percent who say they used the information on the energy label very much (see Figure 3). Just under a third (31%) did not use the information much at all or at all, including 18 percent who did not use it at all. It is interesting to note that San Franciscans used the current energy label significantly less than respondents from all other markets (42% did not use at all). Similarly, those under 35 years of age used the label less (25% did not use at all) than older respondents, and non-whites used it less (24% did not use at all) than whites.
- Those who say that they used the information from the current energy label in making their appliance selection were asked on an unaided basis how they used the information. Their responses appear in Figure 4. The most common responses are to see how much energy it took to run the appliance (24% named), to help make the final choices after other factors such as features have been used to narrow down the models considered (21%) and to see which model is most energy efficient (20%). Related to these uses, some say that they used the label to find out which one requires the least amount of energy to use (14%), to estimate the amount of money it will take to run the appliance (14%) and to determine which will be most cost efficient to operate (8%). The way that the current Energy Guide Label is used varies little by market or by demographic subgroup.
- After evaluating all of the label executions and when all five label executions were placed in front of the respondent at one time, respondents were asked which, if any, of the tested labels are currently in use. Recognition of the current Energy Guide Label is very low: only 12 percent correctly identify it (see Figure 5). Further, recognition of the current label is equally poor among those who report that they recall seeing the energy label on appliances previously (12% correct) and among those who recently purchased or shopped for an appliance (12%). There are no significant differences in the ability to correctly recognize the current label by market, and the only demographic difference is that those with some college or vocational degree correctly recognize the current label more often than those with a high school education or less (16% vs. 9%).
- Most are unable to venture a guess as to which of the tested labels correspond to the current label (43% respond don't know). Respondents are equally likely to identify the label with checks as the current label (12% each), and, in fact, even a few more of those who say they recall seeing the label before say the checks label is currently in use than the current label (13% vs. 12%). The star label and the continuous bar label are believed to be currently in use almost as much as these two (10% each). The letters label is less often wrongly identified as the current label (7%). A few (7%) also say that none of the tested labels are ones currently in use.

Figure 1: Household Appliances Purchased in the Last 2 Years or Currently Shopping For



Base: Total respondents (N=500)

Figure 2: Awareness of Energy Labels on Household Appliances



Base: Total respondents

Figure 3: Extent of Use of Information From the Energy Label in Deciding Which Appliance Model to Purchase

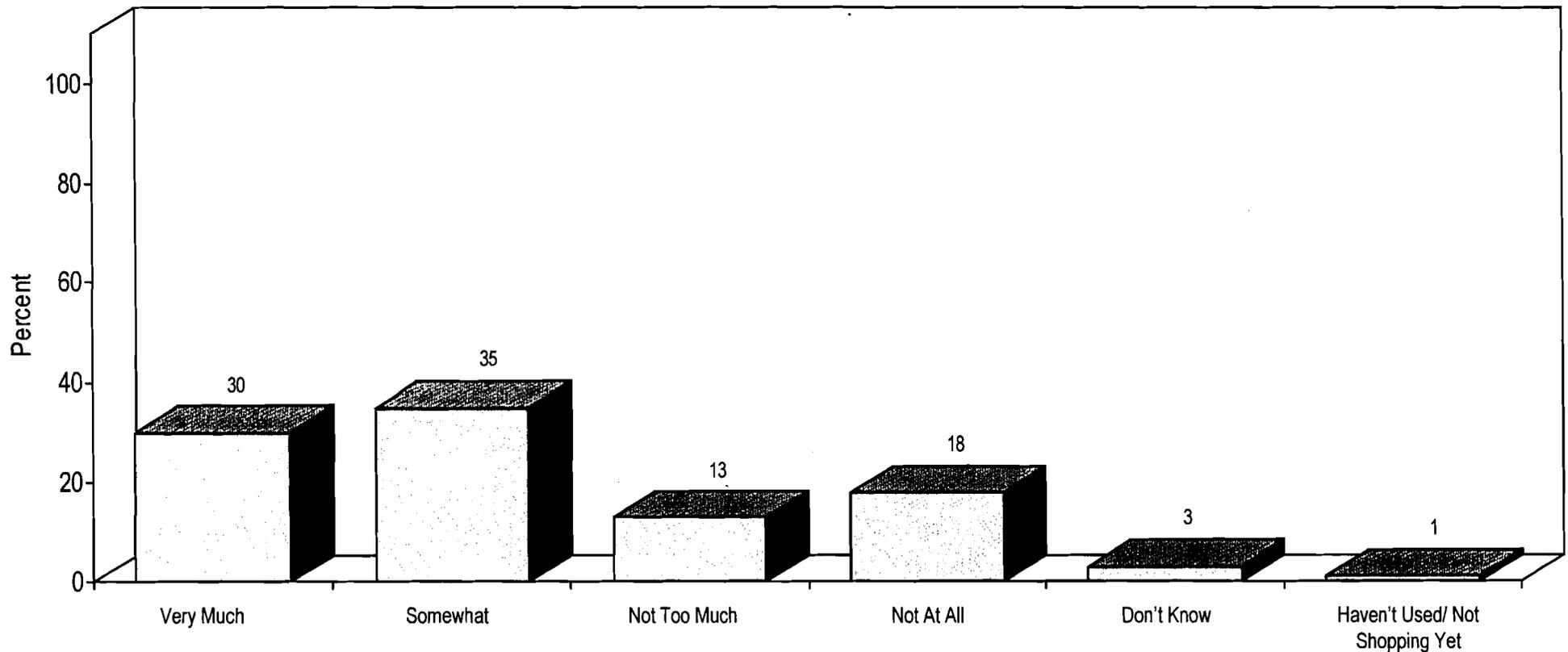
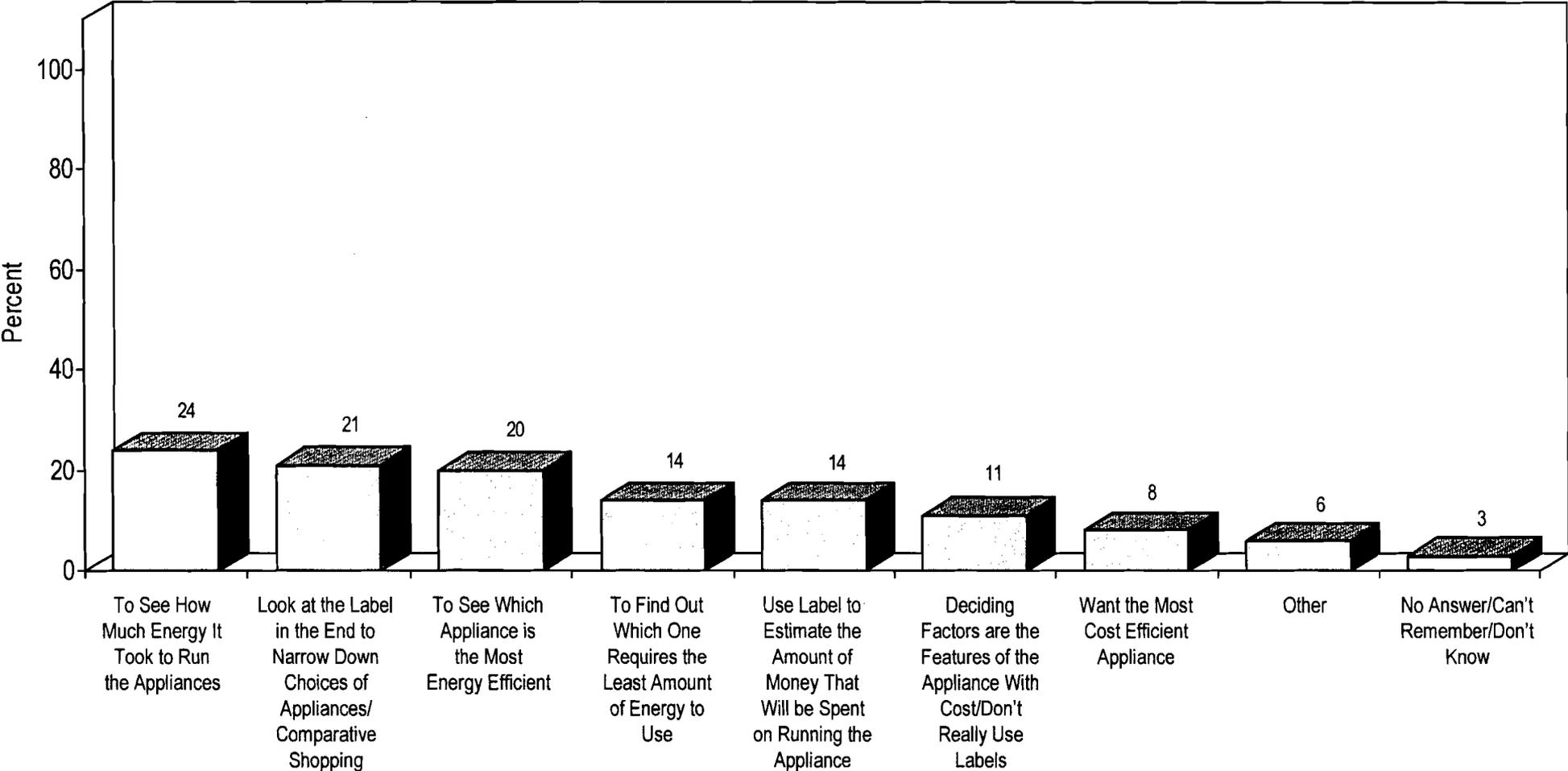
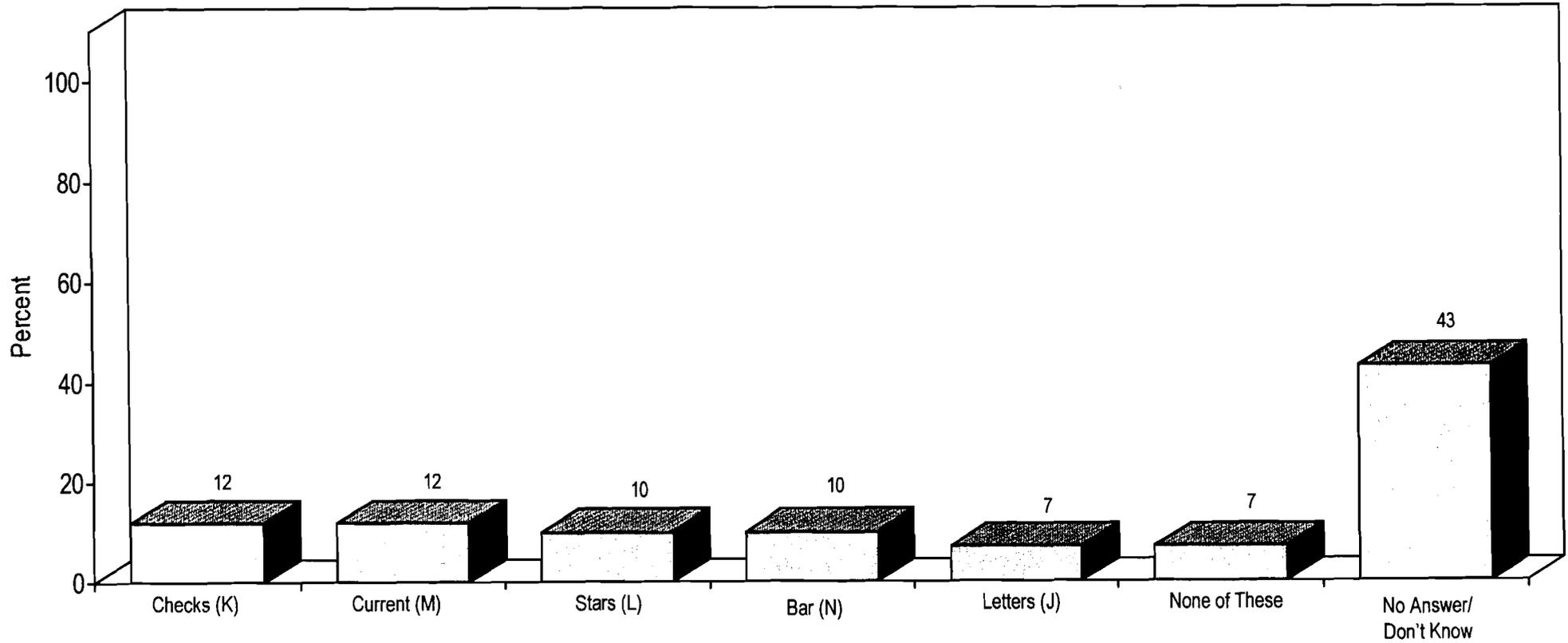


Figure 4: Ways of Energy Label Was Used (Unaided)



Base: Respondents answering very much, somewhat, or not too much on the extent to which they used information from energy label (N=315).

Figure 5: Identification of Current Label From Tested Label Executions



2.2 Determine Comprehension Level of Different Label Executions

Ability to Correctly Identify Energy Efficiency Level of Appliance when Each Label is Presented One at a Time

- The first measure used to evaluate how well the energy efficiency level of the appliance is communicated by each label execution was to ask each respondent to indicate the energy efficiency level of the appliance on a 5-point scale based on the information contained in the label when each label is presented by itself. The scale consisted of one of the best, above average, about average, below average and one of the worst. Given that all of the label executions described a model using 466 kWh, the most correct answer is above average, although above average or one of the best could both be considered as a correct answer. Figure 6 shows the percentage of respondents who give the correct answer for each label execution using both possible answer possibilities.
- Using either correct answer possibility, the stars label and the checks label have the highest rates of correctly communicating the energy efficiency level of the appliance they describe (46% each say above average and 61%-65% rate it as above average or one of the best). These percentages are significantly higher than the correct answer rate for any other label execution in pair-wise comparisons using either response option as being correct. Analysis of variance results also indicate that the null hypothesis of no differences across labels in the percentage getting the correct answer can be rejected using either correct response option. Thus, the stars and the checks labels most clearly communicate the energy efficiency level of the appliance described. There is no significant difference between the stars and the checks labels on this measure, but both communicate desired information at a higher rate than all other labels. There are no significant differences between the bar, letters and current labels on this measure.
- Rank orderings in terms of the ability to correctly identify the energy efficiency level of the appliance described is as follows:
 - Stars (46% above average; 65% above average or one of the best)
 - Checks (46% and 61%)
 - Bar with scale (37% and 51%)
 - Letters (37% and 48%)
 - Current (35% and 46%)

- The presence or absence of the Energy Star Logo does not appear to impact respondents' ability to correctly identify the energy efficiency level of the appliance, as described in each label execution. The ability to correctly identify the correct answer is almost identical for labels with the Energy Star Logo and without it, when results are combined across label executions. Similarly, the ability to give the correct answer do not differ significantly for any label execution when shown with and without the Energy Star Logo.
- There are also no significant differences in the ability to give the correct answer when each label is shown in the first position. This is the most stringent test since prior learning of the correct answer has not occurred (recall that all label executions use the same kWh level). See Figure 7 for these results.
- While not consistently significant across all label executions, the following segments appear to get the correct answer most often and across most label executions:
 - Milwaukee respondents
 - 35 to 54 year olds
 - Those with more than a high school education
 - Caucasians

Ability to Correctly Identify Most and Least Energy Efficient Appliance from Set of Three Labels

- The next test of comprehension involved presenting respondents with three versions of the same label execution (see Appendix D), each with a different kWh level, and asking them to identify which one they would be most likely and least likely to recommend to a friend, assuming each model had similar features and operating costs were important. Under this scenario, which is considered to be the easiest test since three versions of the same label are presented side by side, most respondents are able to correctly identify the most and least energy efficient model for all label executions. In fact, more than three quarters of respondents get both answers correct for every label (77%-82% correct).
- Because comprehension measures on this test are so high across the board, there are no significant differences across each pair of labels when compared in terms of the percentage with both correct. However, respondents are more able to correctly identify the most efficient model using the checks label than the letter label (87% vs. 82% correct), and respondents more often have no correct answers with the bar with scale label than the stars label (11% vs. 8%). Further, when analysis of variance is run to determine whether the number of correct answers is the same for all label executions, the null hypothesis of no differences is rejected. Thus, while differences are minor, they are more than would be expected by chance.

- The rank ordering of label executions in terms of correct identification of the most and least energy efficient from a set of three are:
 - Checks (82% get both correct)
 - Stars (81%)
 - Current (79%)
 - Bar with scale (78%)
 - Letters (77%)
- The Energy Star Logo improves comprehension as measured by this test, as shown in Figure 9. Respondents are significantly more likely to identify the most energy efficient model when the Energy Star Logo appears on it, regardless of which label execution is used (86% vs. 83% correct). More also get both answers correct when the Energy Star Logo is present (82% vs. 77%). All label executions are at least slightly more likely to be interpreted correctly when the Energy Star Logo is present. For the stars label, this difference is statistically significant (85% vs. 77%).
- All label executions also perform well under the more difficult situation when they are presented first. Ratings under this scenario remain highest for the stars (80% get both correct) and checks (75% both correct) label executions. Correct identification of both the most and least energy efficient model is slightly lower for the letters label (81%), the current label (82%) and the bar label (73%). Note that the stars label does significantly better than the bar label when presented first.
- While not always significant, several subgroups tend to be able to correctly identify the most and least energy efficient models most often. These include those with some education beyond high school relative to high school graduates or less, those 35 or older relative to those under 35 and caucasians relative to non-whites. Perhaps related to these demographic differences, Phoenix respondents most often correctly identify the most and least efficient models.

Ability to Correctly Recognize that Labels Do Not Communicate Information about Appliance Quality

- The third comprehension measure involved asking respondents what information about appliance quality each label communicated when the labels were presented one at a time. The choices included better quality, not necessarily better quality and no information about product quality, where not necessarily better quality and no information about product quality are considered correct answers. The responses to this question are the opposite of other comprehension questions, suggesting that the better that a label communicates energy efficiency, the more it also communicates quality. Relevant answers to open-ended questions seem to confirm that, for some respondents, there is an assumption that a more energy efficient model is a better built model.
- The ability to correctly understand that the Energy Guide Label does not communicate information about product quality varies across label executions (see Figure 10). The bar label and the current label are not believed to communicate information about product quality significantly more often than the stars and the checks labels. The letters label also communicates no information about product quality more often than the stars label. Analysis of variance tests further indicate that the degree to which the different labels communicate information about product quality is not the same for all label executions.
- The percentage of respondents who correctly understand that the labels communicate no information about product quality are as follows for each label execution:
 - Bar with scale (80% correct)
 - Current (79%)
 - Letters (77%)
 - Checks (71%)
 - Stars (69%)
- Respondents are more likely to correctly understand that the labels do not communicate information about product quality when the Energy Star Logo is not present on the label. Combined across all label executions, respondents are more likely to correctly say that the labels communicate no information about quality when the Energy Star Logo is not present (77% correct) than when it appears (73% correct). For each label execution, the one without the Energy Star Logo has equal or higher levels of correct responses on this measure, although not at large enough margins to be considered statistically significant. See Figure 11 for these findings.

- This same pattern holds when the percentage correct is examined for each label when shown in the first position. The current and the bar labels have the highest percentage of correct answers (79% and 76%, respectively), followed by the letters label (70% correct). The checks and the stars labels are least likely to communicate that the label says nothing about product quality (64% and 57%, respectively). These findings are not statistically significant due to the small sample sizes involved (N=50).
- The ability to know that the energy labels communicate nothing about product quality is best understood by respondents 35 to 54 years of age and those with some college or vocational education.

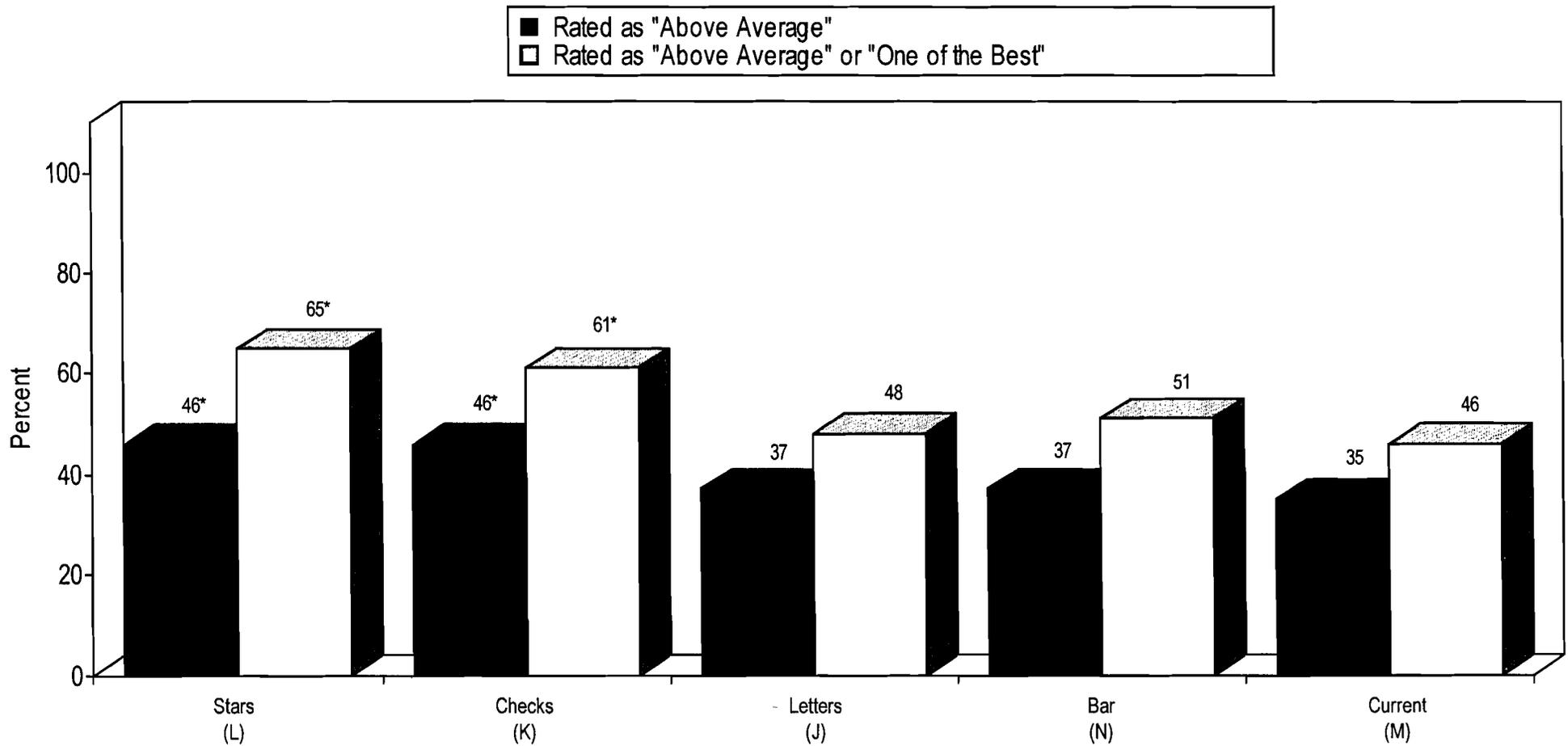
Understanding of the Meaning of the Energy Star Logo

- Most respondents correctly understand that the Energy Star Logo represents a type of endorsement or “seal of approval”. Respondents who were shown labels with the Energy Star Logo were asked on an unaided basis what the Energy Star Logo means to them after viewing the first label. The three most common responses are:
 - Endorsement that the appliance is energy efficient (30%)
 - Appliance is above average for energy efficiency (25%)
 - Meets government standards for energy efficiency (21%)
- The only other comments made by more than 1 percent are that the appliance is recommended (6%) and that it verifies that energy efficiency tests have been done (2%). On an unaided basis, only 1 percent incorrectly believe that the energy star label communicates product quality overall, saying that it indicates a good, legitimate or top-of-the-line product. See Figure 12 for these results.
- The degree that the Energy Star Logo correctly communicates the idea of an endorsement is similar for all label executions. Interestingly, the Energy Star Logo is more often associated with government standards when it appears with the checks label and the current label. Further, the incorrect perception that the Energy Star Logo connotes quality occurs most often with the letters label (4%), although not significantly more often than with other labels.

Reasons for Choosing Selected Label from Set of Three as Most Energy Efficient Model

- When asked on an unaided basis why they selected the label they did from the set of three labels, most respondents give a reason directly related to the energy use or energy efficiency level of the appliance or the amount of money it costs to operate the appliance. Specifically, the most common reasons include the following:
 - It uses the least amount of energy (34%)
 - It is the most energy efficient (20%)
 - It's cheaper to run this machine (21%)
 - It has a low operating cost (20%)
 - It uses the least kWh (12%)
 - It saves more money on operating costs (6%)
- Some respondents, although fewer, use visual cues on the label to help them to identify the most energy efficient model. These cues include the number of stars or checks (10%) and the presence of the Energy Star Logo (3%).
- It is interesting to note that the comments of some respondents suggest that they use factors other than the information on the energy label, such as price, brand name, and appearance, to determine which model they would recommend. This is because other factors, such as price, are more important to them than energy use and/or they believe that all models are about the same. A few also give comments that suggest that highly efficient models are expected to be better quality models.
- There are few differences across label executions in the reasons associated with the selected label being chosen (see Figure 13). Not surprisingly, visual cues in terms of the number of stars or checks occur exclusively for the checks and stars labels. Similarly, the visual cue of the Energy Star Logo occurs with that version of the labels. Specific comments about the labels themselves indicate that respondents find the current label easier to read and understand than the letters or bar labels, but others like the bar label because it is more clearly written and the chart clarifies the use of energy.

Figure 6: Comprehension: Ability to Correctly Identify Appliance's Energy Efficiency Level for Each Label Execution in Total

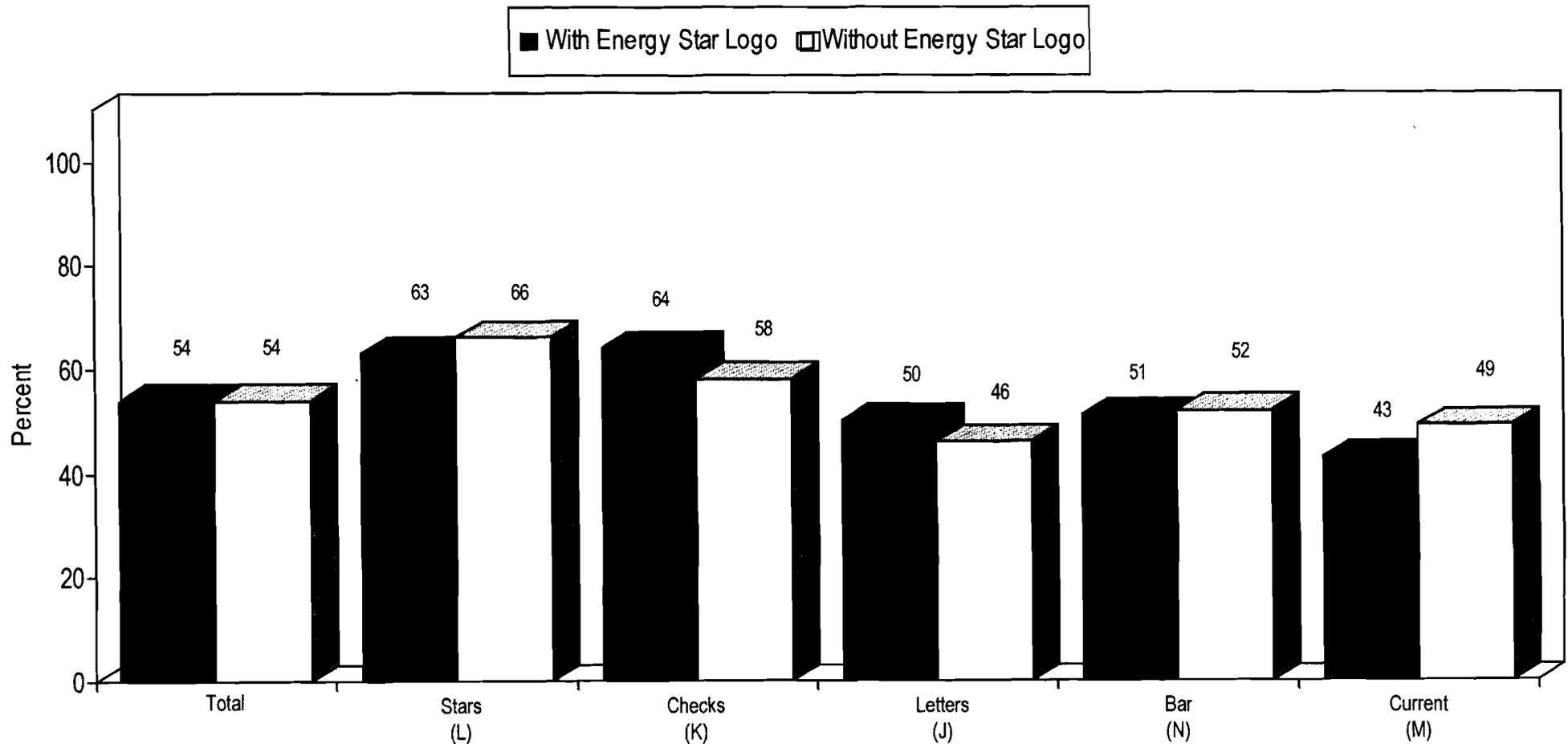


Base: Total respondents (N=500)

Note: Percentages shown are possible correct answers to the question, "Based on the information contained in this label, how would you say the clothes washer that this label describes is in the terms of energy efficiency?" Choices included: one of the best, above average, about average, below average or one of the worst

*Denotes percentages significantly higher than all non-starred percentages at 95 percent confidence level

Figure 7: Comprehension: Ability to Correctly Identify Appliance's Energy Efficiency Level by Presence of Energy Star Logo

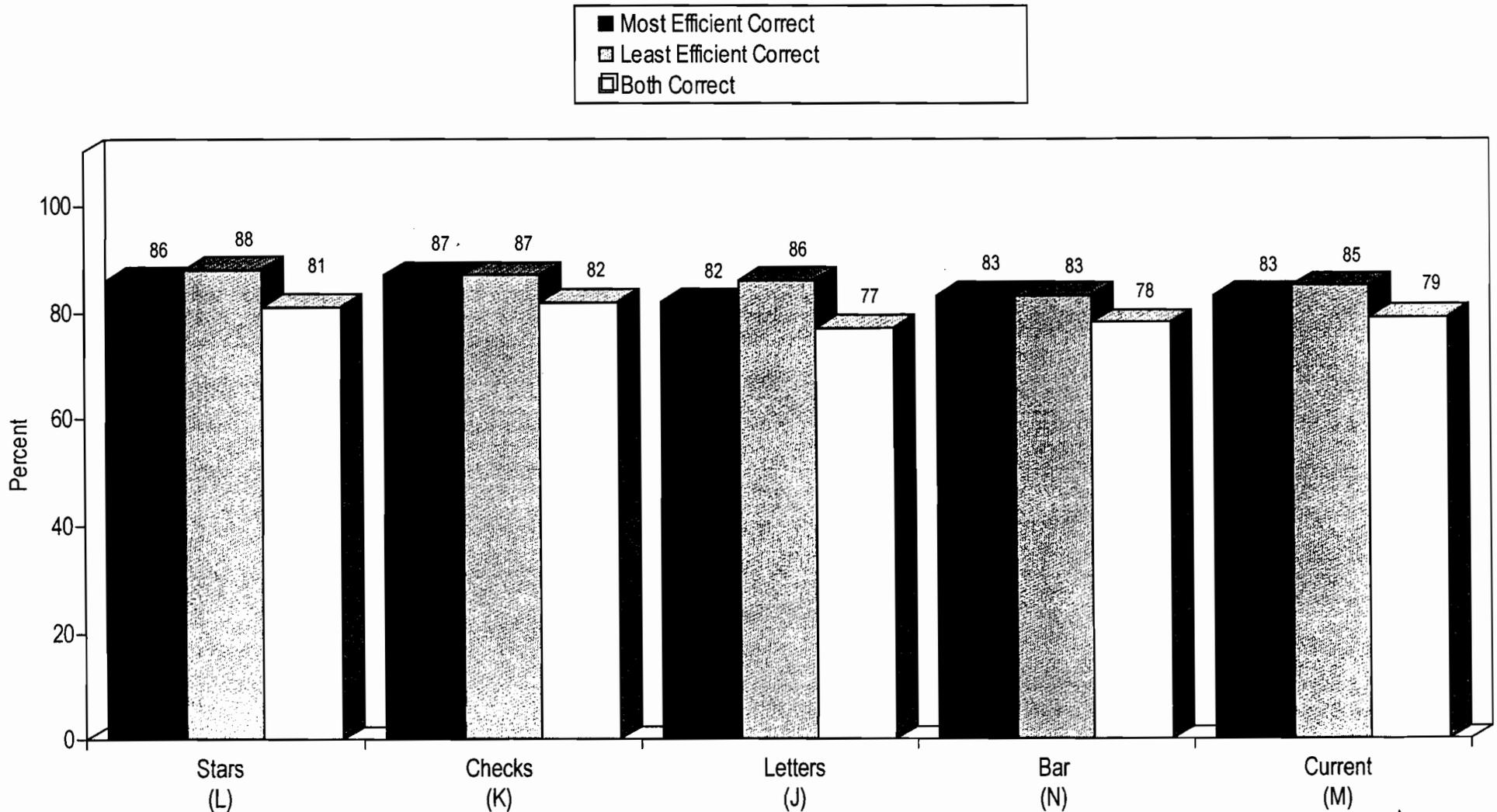


Base: Total respondents (N=1250 for Total cell and 250 for each label execution)

Note: Percentages shown are "Above Average", or "One of the Best" answers to the question, "Based on the information contained in this label, how would you say the clothes washer that this label describes is in the terms of energy efficiency?" Choices included: one of the best, above average, about average, below average or one of the worst.

*Denotes percentages significantly higher than Energy Star Logo percentages at 95 percent confidence level

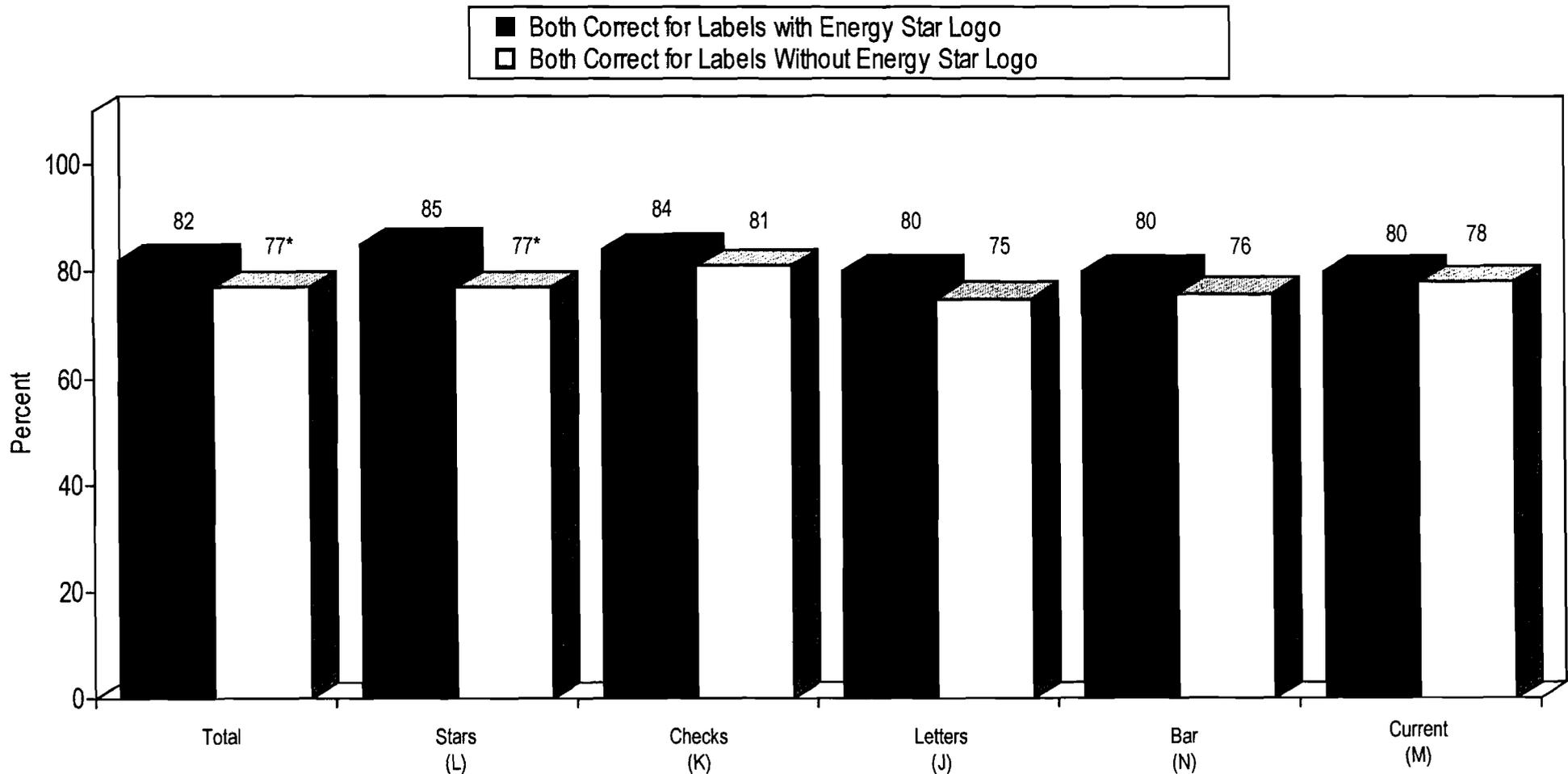
Figure 8: Comprehension: Ability to Correctly Identify Most and Least Energy Efficient Models from Set of Three Labels for Each Label Execution in Total*



Base: Total respondents (N=500)

*ANOVA indicates significant difference in the number correct by label at the 95 percent confidence level.

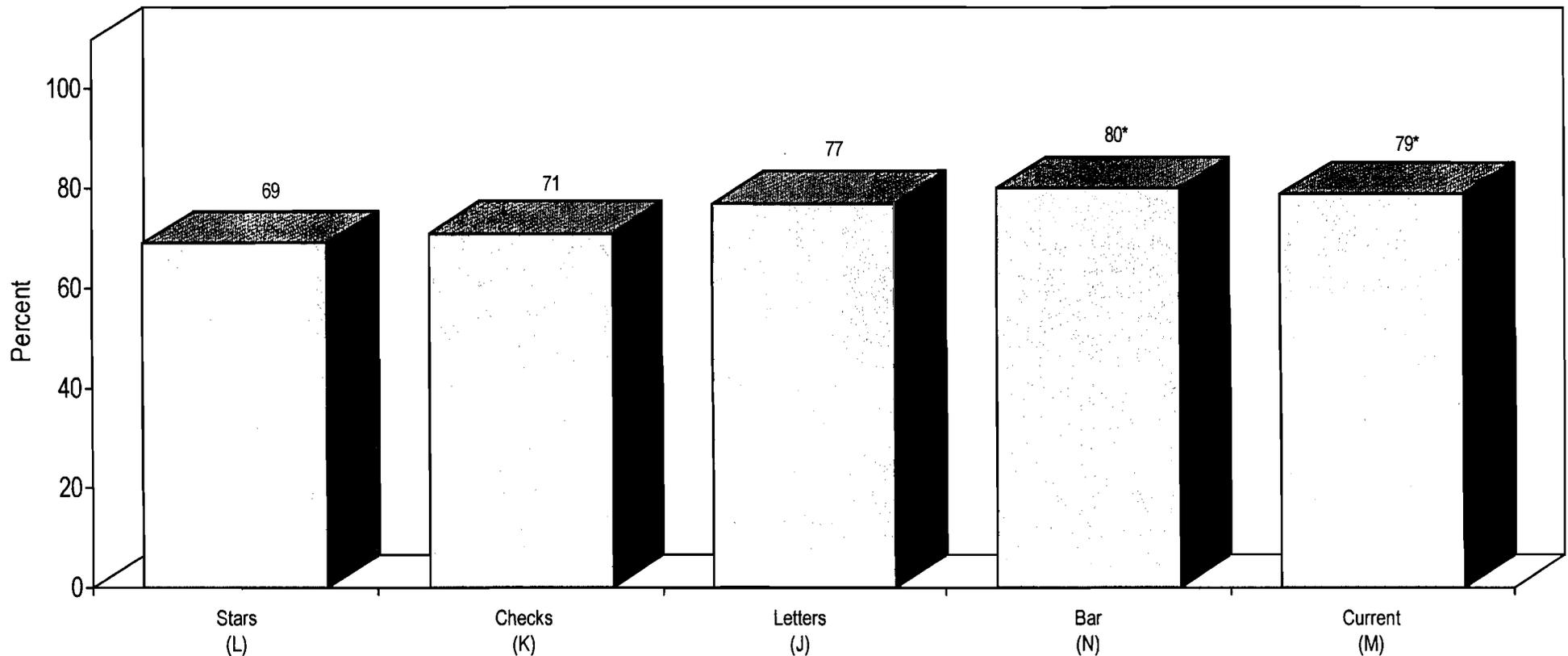
Figure 9: Comprehension: Ability to Correctly Identify Most and Least Energy Efficient Models from Set of Three Labels by Presence of Energy Star Logo



Base: Total respondents (N=1250 for Total cell and 250 for each label execution)

*Denotes significant difference from Energy Star Logo percentages at 95 percent confidence level

Figure 10: Comprehension: Correct Perception of Appliance Quality Communicated by Label for Each Label Execution in Total

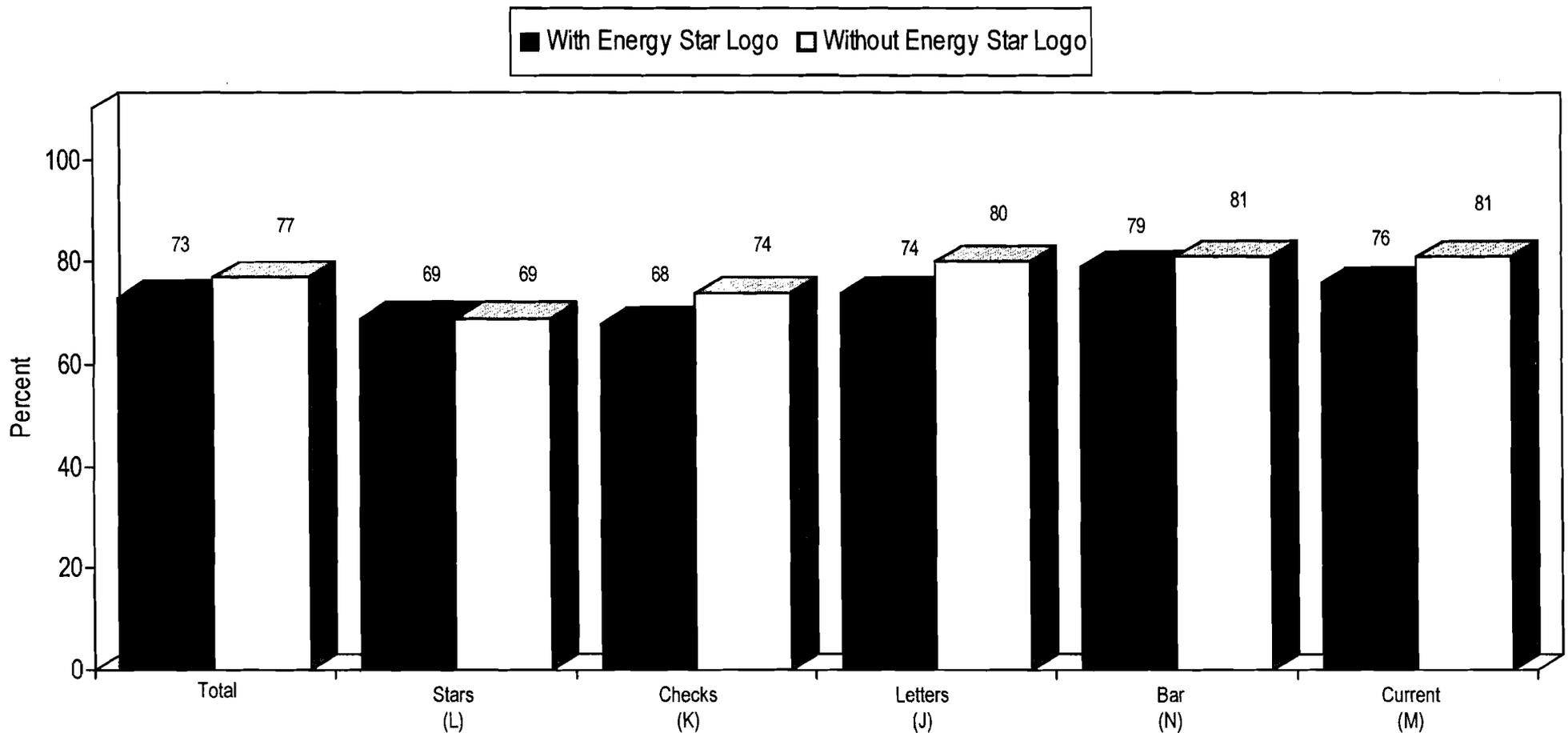


Base: Total respondents (N=500)

Note: Percentages are based on those saying "Not necessarily better quality" or "No information about product quality" when asked "What, if anything does this label tell you about the quality of this clothes washer?"

*Denotes percentages significantly higher than labels L and K at the 95 percent confidence level

Figure 11: Comprehension: Correct Perception of Appliance Quality Communicated by Label by Presence of Energy Star Logo



Base: Total respondents (N=1250 for Total cell and 250 for each label execution)

Note: Percentages are based on those saying "Not necessarily better quality" or "No information about product quality" when asked "What, if anything does this label tell you about the quality of this clothes washer?"

*Denotes percentages significantly higher than Energy Star Logo percentages at the 95 percent confidence level

Figure 12: Meaning of the Energy Star Logo to Consumers (Unaided)

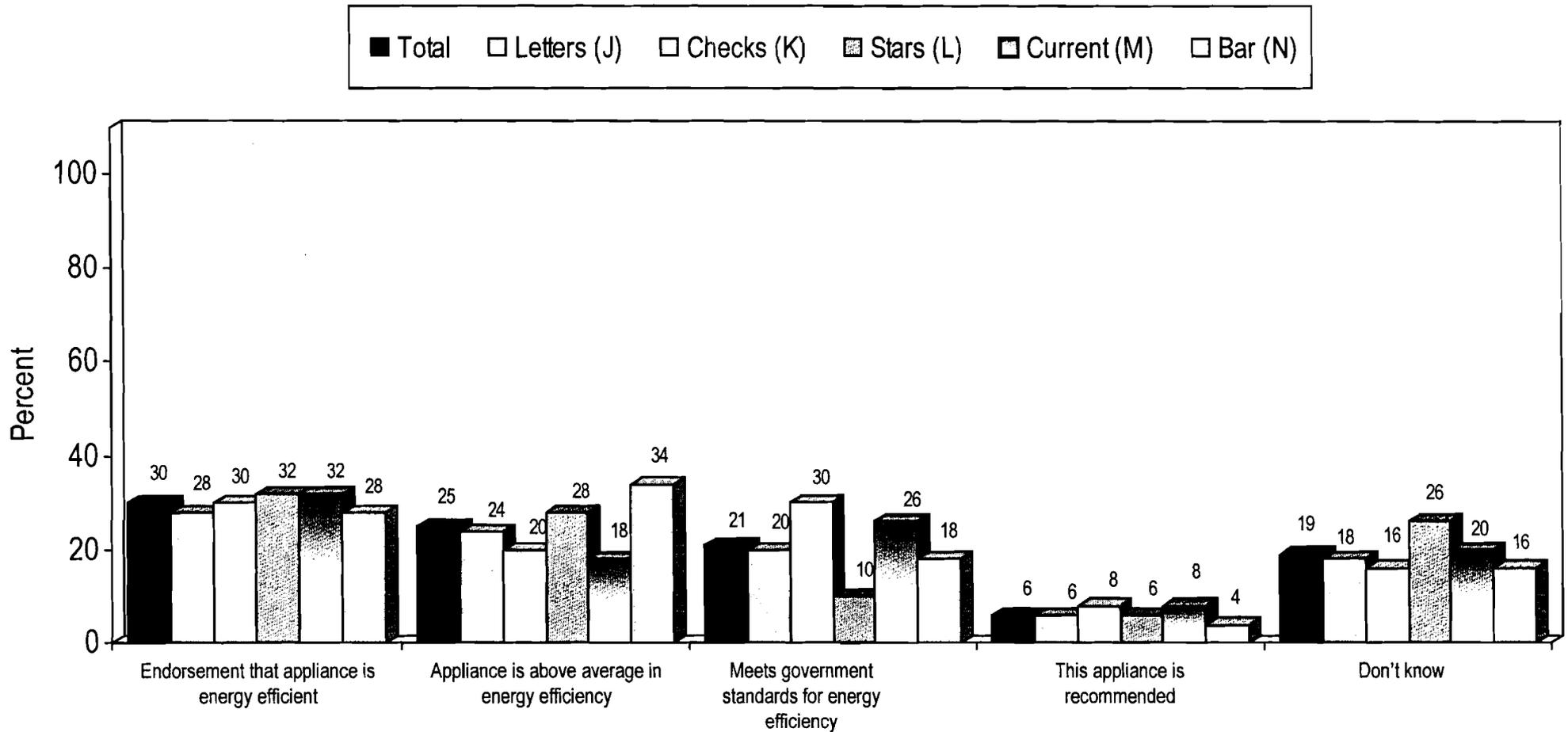
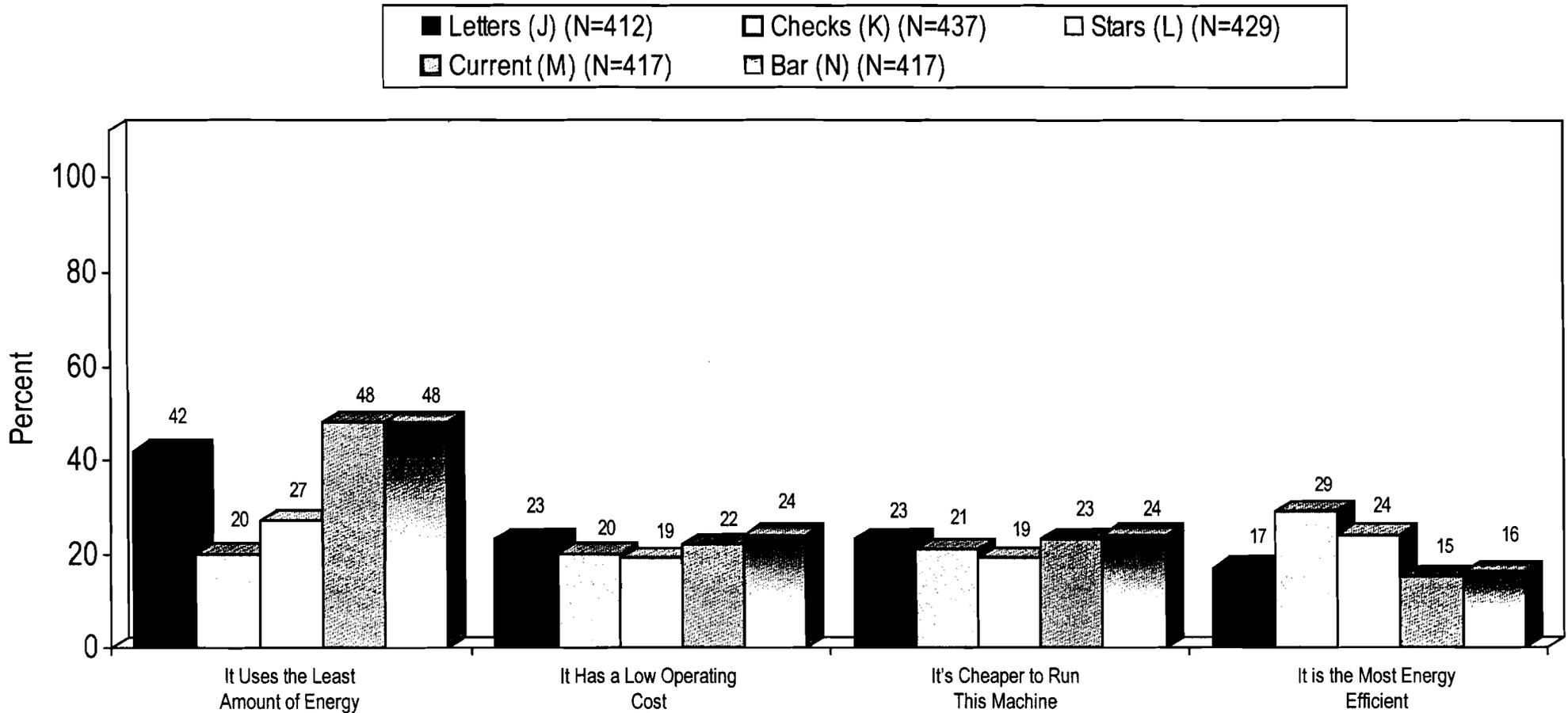


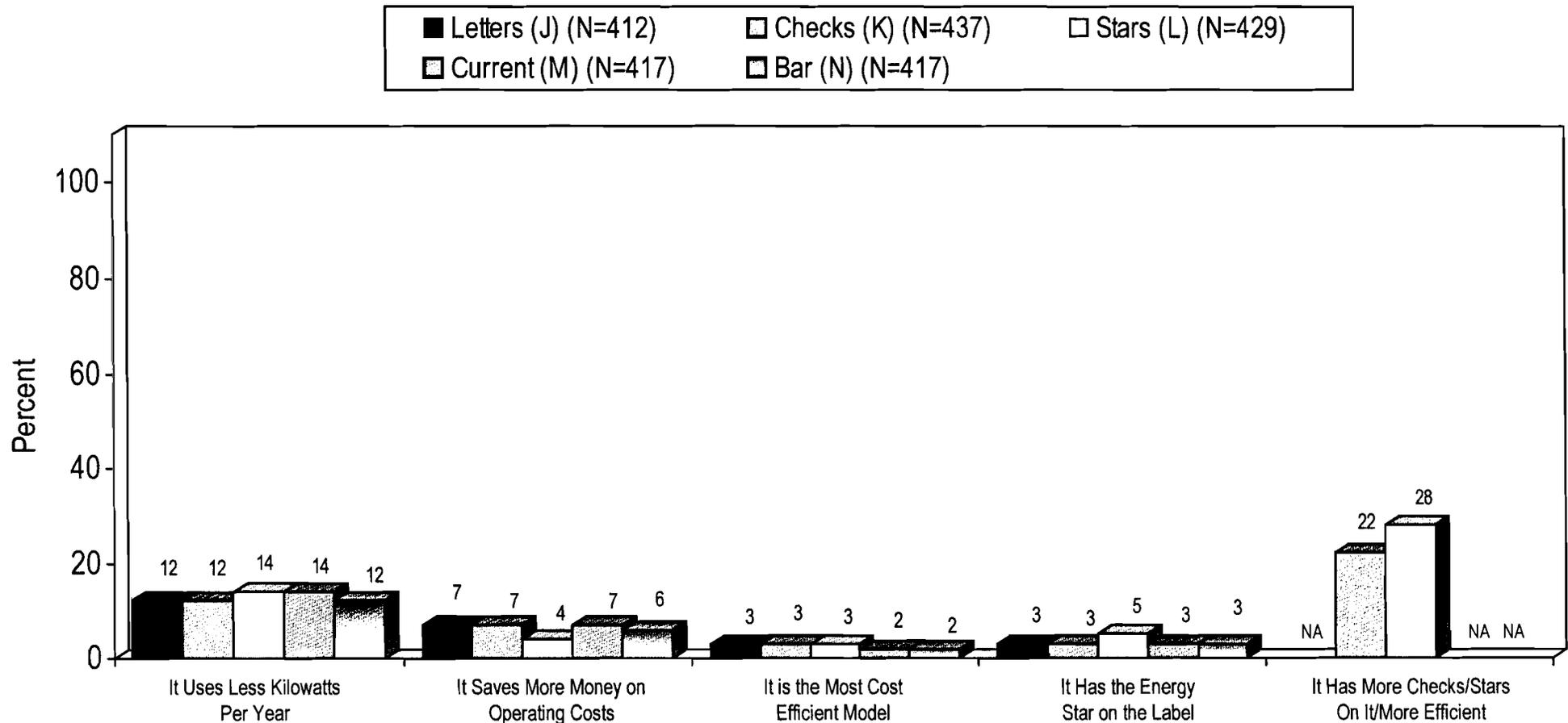
Figure 13: Comprehension: Reasons for Correctly Identifying Most Energy Efficient Model From Set of Three Labels for Each Label Execution in Total (Unaided)



Base: Respondents correctly identifying the most energy saving model.

(Cont'd on next page)

Figure 13: Comprehension: Reasons for Correctly Identifying Most Energy Efficient Model From Set of Three Labels for Each Label Execution in Total (Cont'd)



Base: Respondents correctly identifying the most energy saving model.

2.3 Determine How Motivating Each Label Execution is in Making Consumers Consider Energy Efficiency When Purchasing Household Appliances

Perception of Making One Consider Energy Use in Purchase Decision

- All respondents evaluated each label execution, one at a time, on making them consider energy use in their purchase decision using a 10-point scale where 1 is not at all and 10 is extremely strongly positive (8, 9 or 10) and strongly negative (1, 2 or 3) ratings for each label execution are shown in Figure 14. Ratings for the stars and checks labels are significantly better than for all other label executions, based on the percentage rating each favorably (8, 9 or 10). The bar label also rates better than the current label. Further, when ANOVA is used to compare the mean ratings of all five labels, the F-ratio indicates that the ratings are significantly different from each other.
- The stars and the checks labels rate significantly better than all other labels, but not significantly different from each other. Similarly, the letters and the current label and the letters and the bar labels are not rated significantly differently from each other. The ratings for each label are as follows, in order of positive ratings (8, 9 or 10):
 - Stars (64%)
 - Checks (60%)
 - Bar with scale (52%)
 - Letters (50%)
 - Current (45%)
- The stars label continues to rate significantly better than the letters, bar and current labels when it is seen with the Energy Star Logo and without the logo. However, the checks label is rated as significantly better than the letters and current labels when seen without the Energy Star Logo and better than the current label only when seen with the Energy Star Logo. The letters and bar labels are also rated significantly better than the current label when seen with the Energy Star Logo but not when seen without the logo. This is shown in Figure 15.

- The Energy Star Logo increases the motivating power of the labels (see Figure 15). Combined together across all label executions, labels with the Energy Star Logo rate better on making respondents consider energy use (56% rate an 8, 9 or 10) than when the Energy Star Logo is not present (52%).

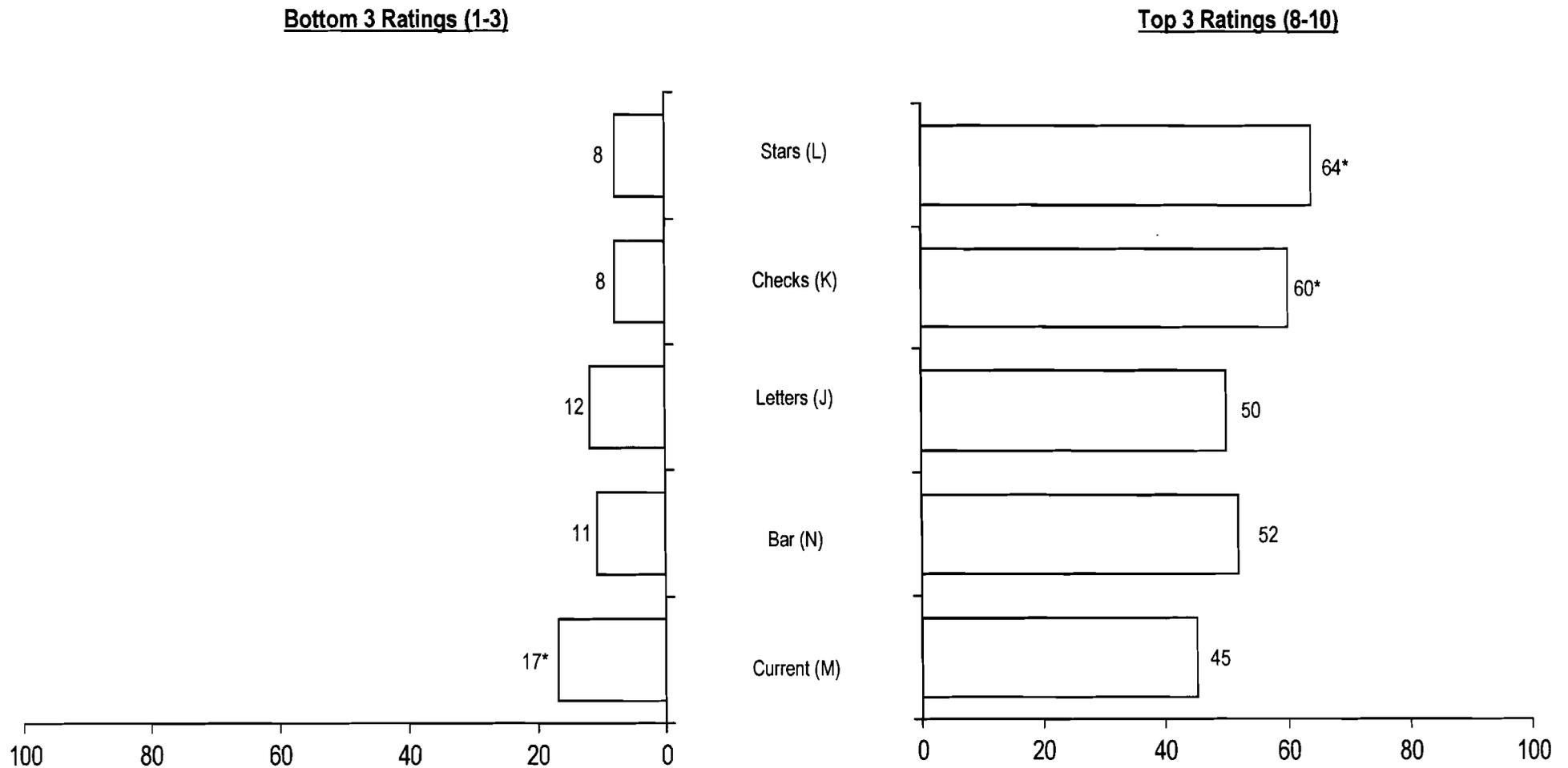
Most and Least Motivating to Consider Energy Use in Appliance Purchase Decision

- After rating each label one at a time on a number of attributes, all five label executions were placed before each respondent at the same time in the order (left to right) that the respondent originally evaluated the five labels. Then, the respondent was asked to choose which one label would most motivate them to consider energy use in their appliance purchase, and, then, which would least motivate them. Results appear in Figure 16. In order of frequency of mention, respondents indicate the following as most motivating:
 - Stars (45% most motivating, 2% least motivating)
 - Checks (20% most, 6% least)
 - Bar with scale (14% most, 19% least)
 - Letters (12% most, 23% least)
 - Current (4% most, 43% least)
- A chi-square analysis of the distribution of these selections indicates that all labels are not felt to be equally motivating.
- The presence of the Energy Star Logo does not impact the order in which these labels are found to be most motivating (see Figure 17). However, the bar label is selected as most motivating more often when it appears without the Energy Star Logo (15%) than when it is seen with the logo (12%). (Figure 17)
- The degree to which each label is found to be most and least motivating is similar across all consumer subgroups. The only significant differences across subgroups in the degree to which any label is found to be most or least motivating is that respondents with some vocational or college education find the bar label to be most motivating more often (18%) than respondents with a high school education or less (10%) and those with a college education or more find the letters label least motivating more often than high school educated respondents (32% vs. 19%).

Reasons for Finding Labels Most and Least Motivating

- After selecting the one label that would most motivate each respondent to consider energy use in the appliance purchase, all respondents were asked why they found that label most motivating. Regardless of which label execution is found to be most motivating, the major reasons for selecting the one that they did include that it is eye-catching or catches their attention (28%), it is easier to understand (22%) and it is easier to read (19%). Other reasons are named less often and are often to specific to one label execution (see Figure 18).
- Several responses are associated more often with a preference for a particular label execution more than others. For the stars label, these include that it is eye-catching or attention grabbing (43% who find this label most motivating name this reason), the stars motivate the purchase (17%) and the more stars indicate that the appliance is more energy efficient (13%). For the checks label, the reasons named more often include that it is easier to read than other labels (26%) and that they like the use of checks (26%). For the letters label, respondents more often say that it is easier to understand (40%) and they prefer letters because they stand for grades (19%). For the bar label, respondents more often say that they like the way that the chart explains the use of energy and it is the most energy efficient (9%). For the current label, respondents find it appealing to look at (13%), they are used to seeing it (9%) and it has the most information (9%).
- The major reasons for choosing a particular label as least motivating, across all label executions and on an unaided basis, are that it is not attention getting or is boring (25%), it is confusing (18%), the graphs and numbers are too difficult to understand (15%) and it is not easy to read (13%). The current and the bar labels are most often associated with being boring or not attention-grabbing (34%) and that the graphs and numbers make it difficult to understand (17-18%). The current label is also associated more often than any other label with being confusing (19%, along with the letters label) and being difficult to read (21%). Some respondents complain about the letters label because they find it confusing (21%) and they dislike the letters because they do not mean anything (41%). Unique to the checks label is a complaint that checks are harder to associate with energy ratings (25%), while the stars label is found to be least credible (27%). This is shown in Figure 19.

Figure 14: Motivating Ability: Ratings for Each Label in Total On Making You Consider Energy Use in Your Purchase Decision

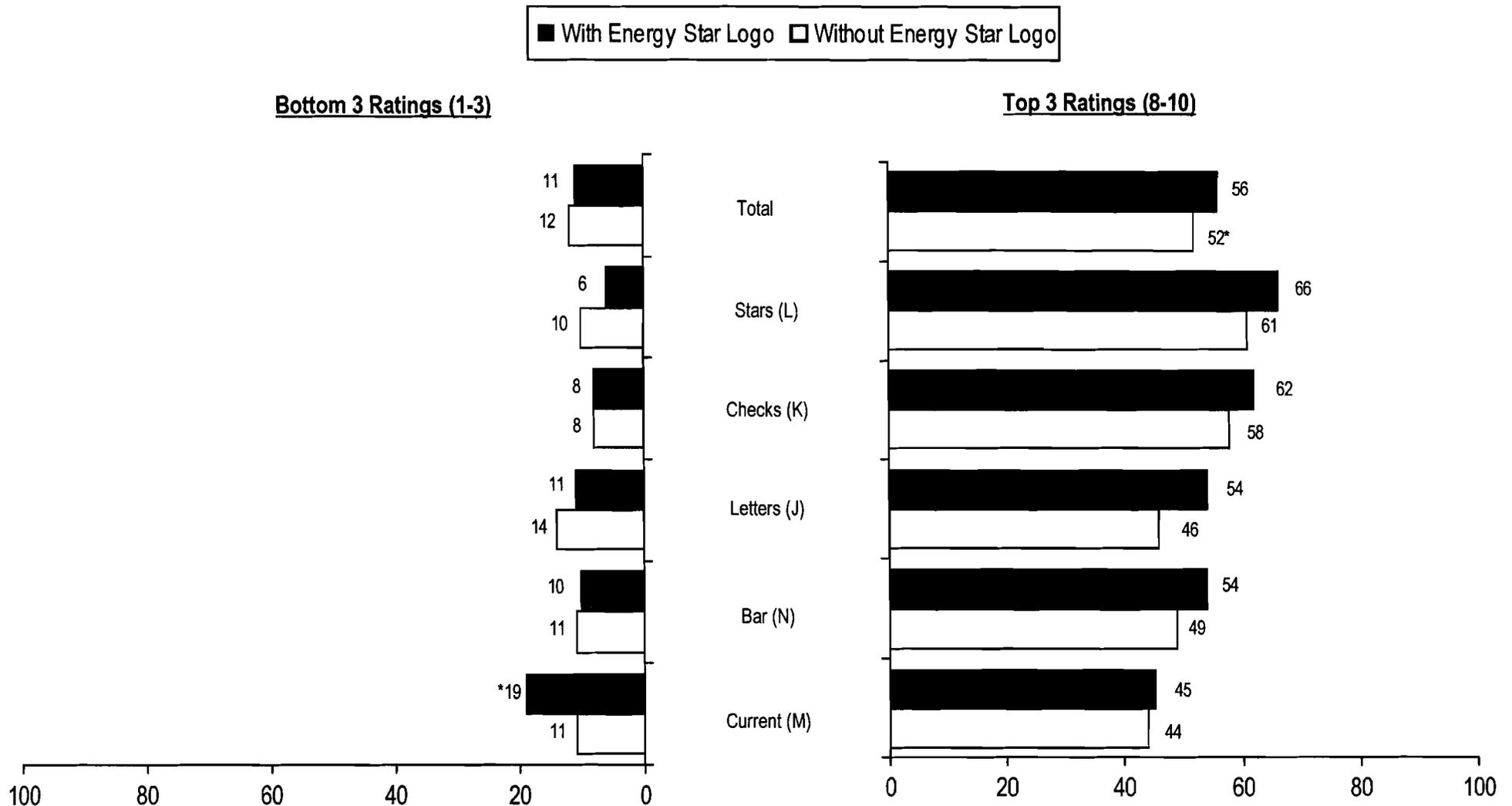


Base: Total respondents (N=500)

Note: Based on 10-point scale where 1 is respondents "Not at all" and 10 represents "Extremely"

* Denotes percentages significantly higher than all non-starred percentages at 95 percent confidence level. ANOVA indicates significant differences in mean ratings at 95 percent confidence level.

Figure 15: Motivating Ability: Ratings for Each Label in Total On Making You Consider Energy Use in Your Purchase Decision by Presence of Energy Star Logo

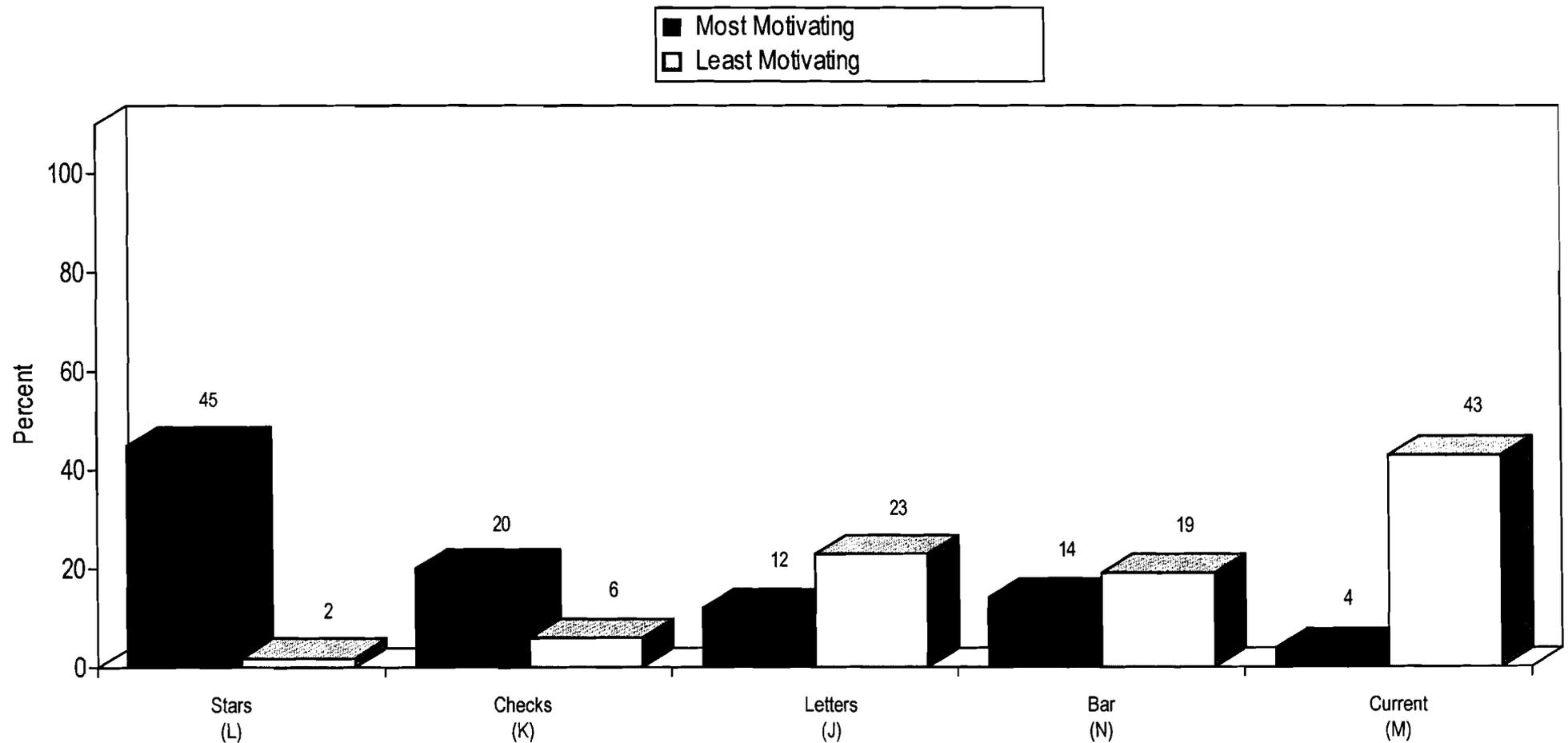


Base: Total respondents (N=1250 for Total cell and 250 for each label execution)

Note: Based on 10-point scale where 1 is respondents "Not at all" and 10 represents "Extremely"

* Denotes percentages significantly higher than Energy Star Logo percentages at 95 percent confidence level.

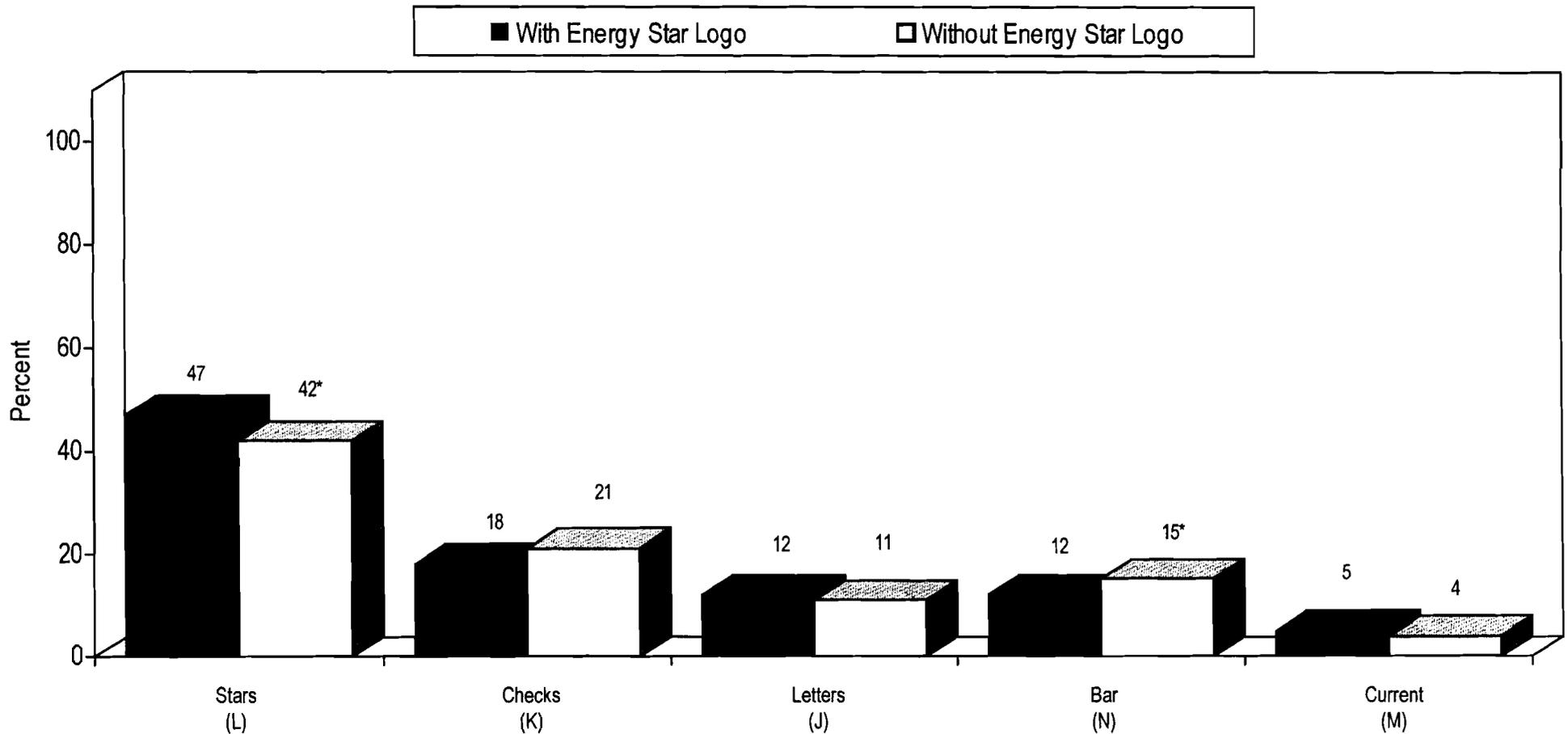
Figure 16: Motivating Ability: Forced Choice of Most and Least Motivating to Consider Energy Use in Appliance Purchase for Each Label Execution in Total*



Base: Total respondents (N=500)

*Chi-square indicates significant difference across labels at 95 percent significance level

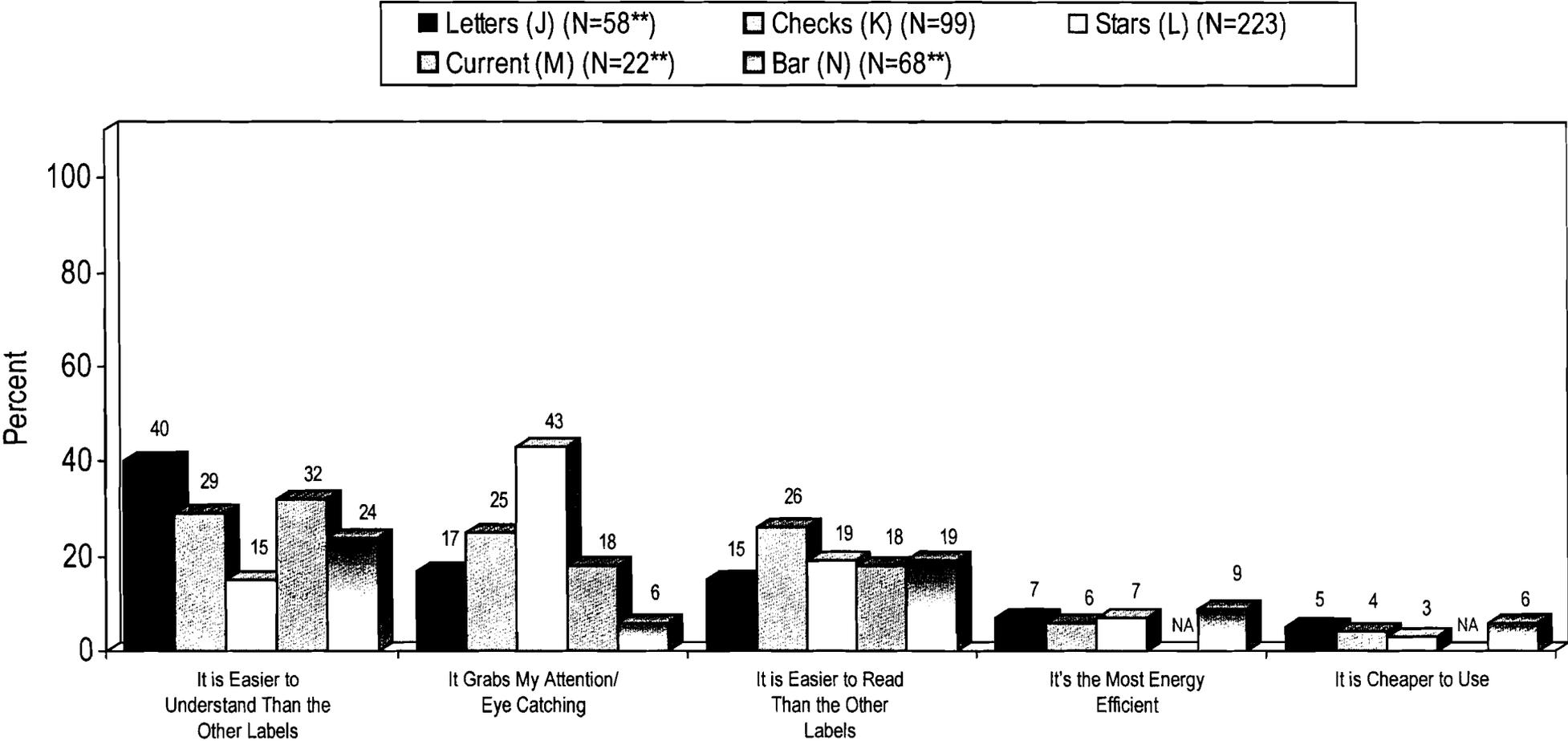
Figure 17: Motivating Ability: Forced Choice of Most Motivating to Consider Energy Use in Appliance Purchase by Presence of Energy Star Logo



Base: Total respondents

*Denotes significant differences from Energy Star Logo percentage at 95 percent confidence level.

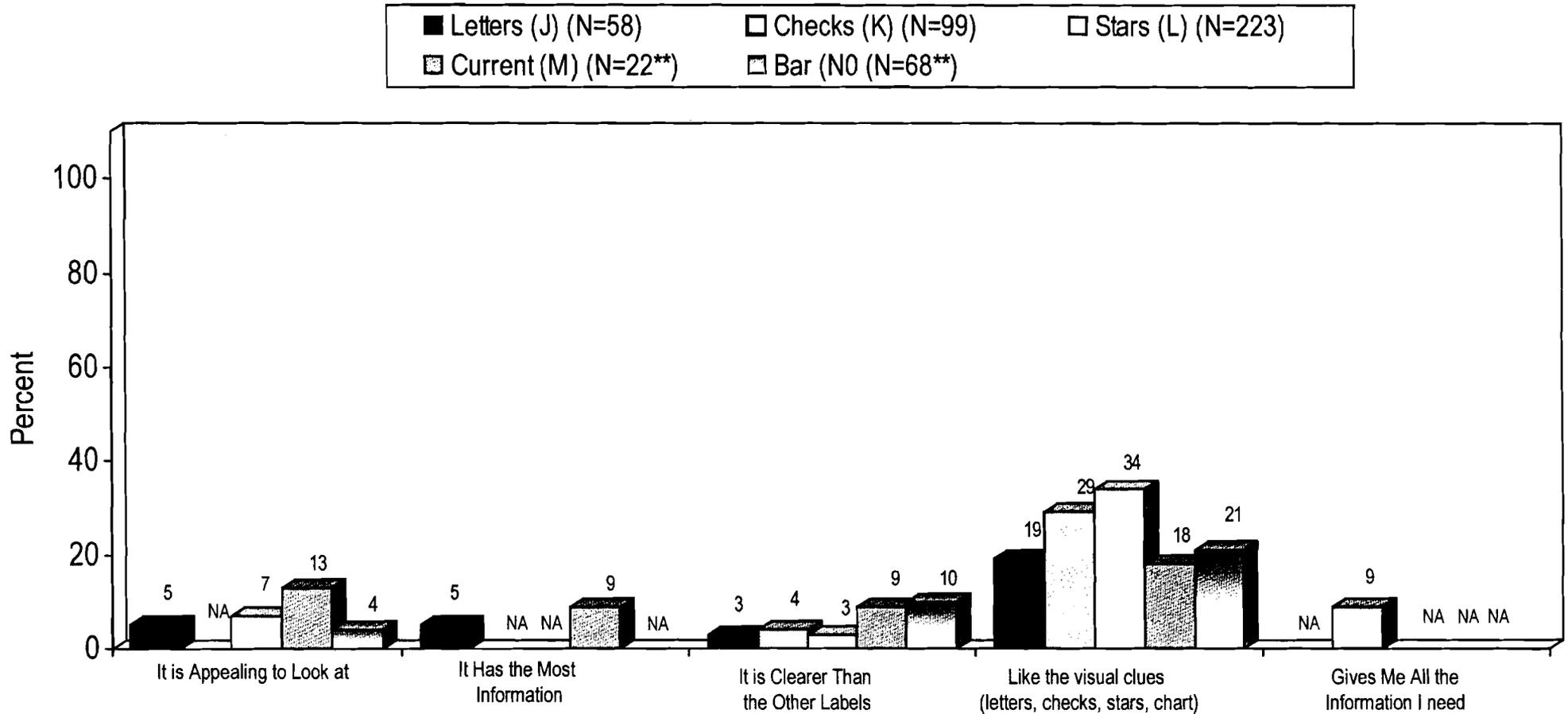
Figure 18: Motivating Ability: Reasons for Choosing Most Motivating Label to Consider Energy Use in Appliance Purchase



Base: Those respondents choosing specific label as most motivating label to consider energy use in appliance purchase.

**Warning: Small base

Figure 18: Motivating Ability: Reasons for Choosing Most Motivating Label to Consider Energy Use in Appliance Purchase (Cont'd)

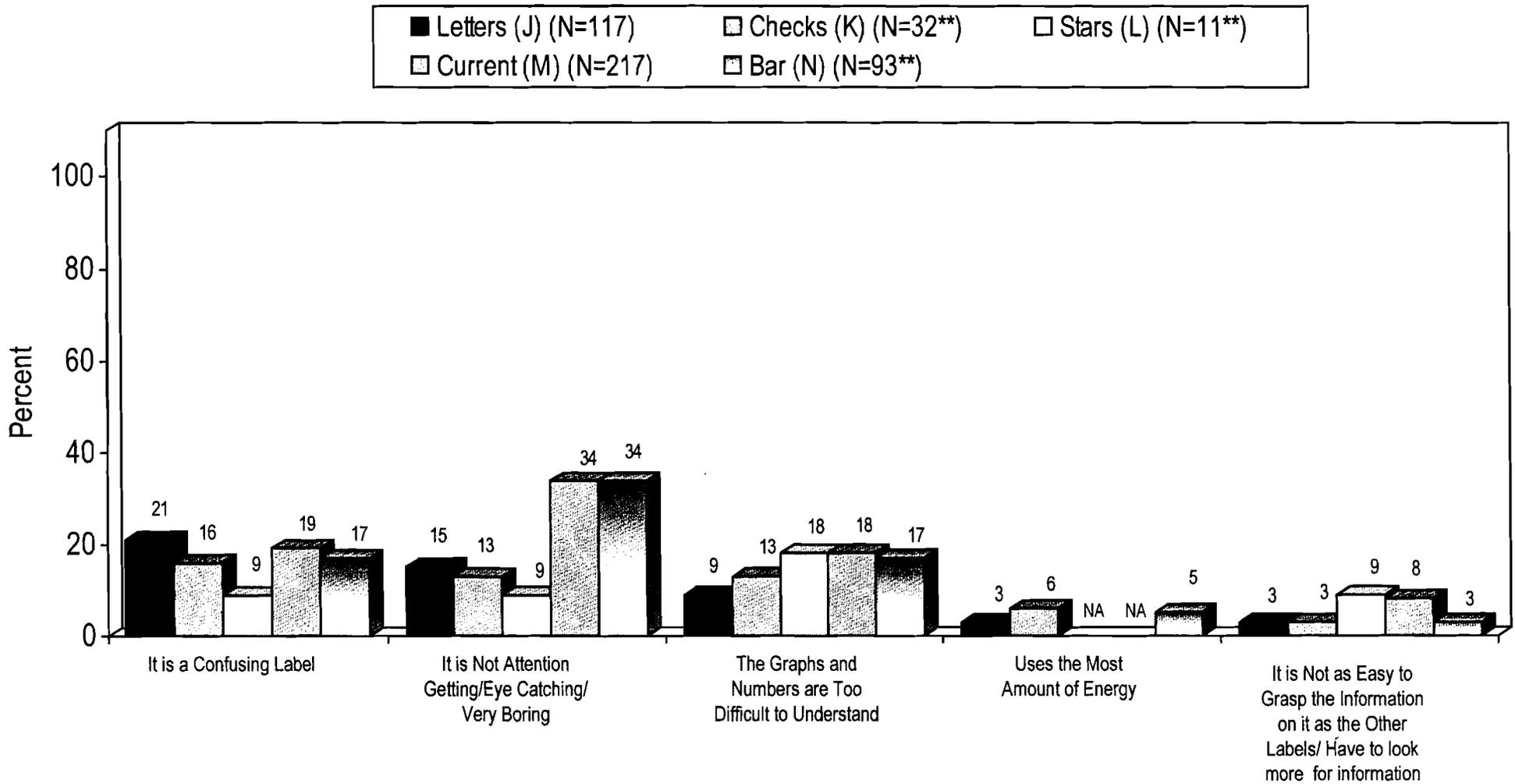


Base: Those respondents choosing specific label as most motivating label to consider energy use in appliance purchase.

**Warning: Small base

(Cont'd on next page)

Figure 19: Motivating Ability: Reasons for Choosing Least Motivating Label to Consider Energy Use in Appliance Purchase

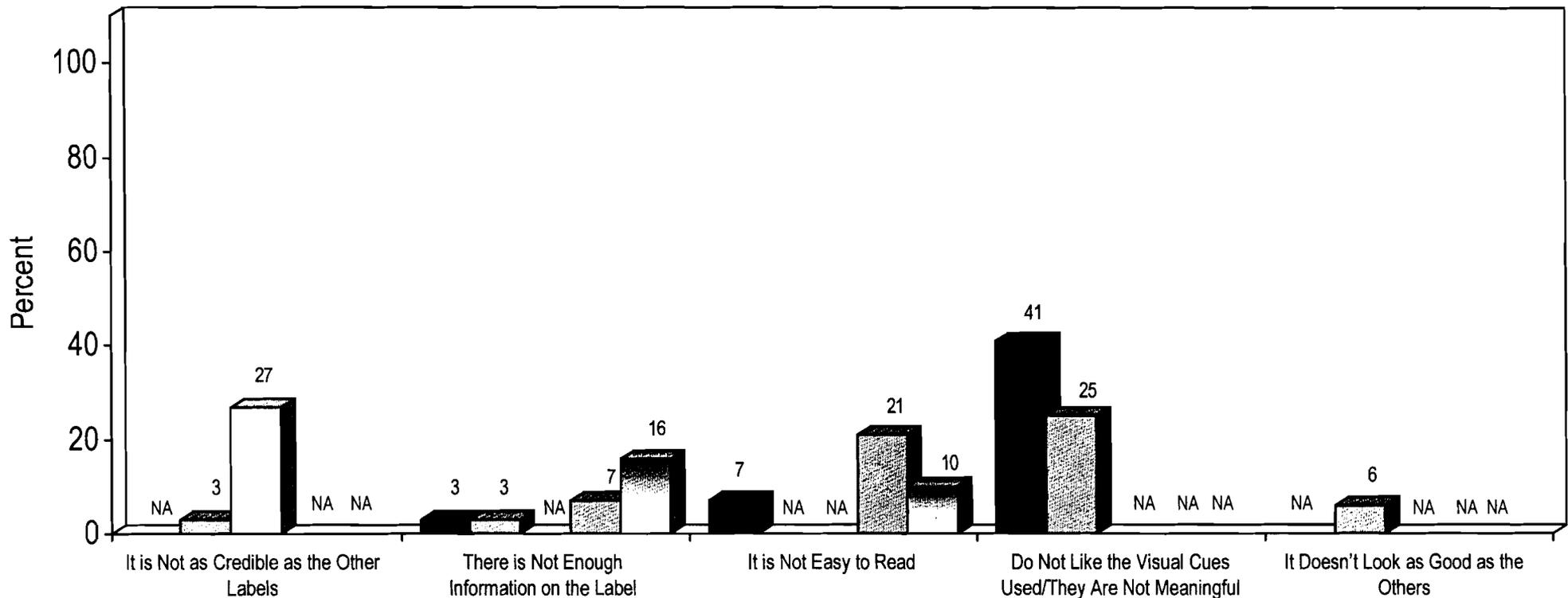
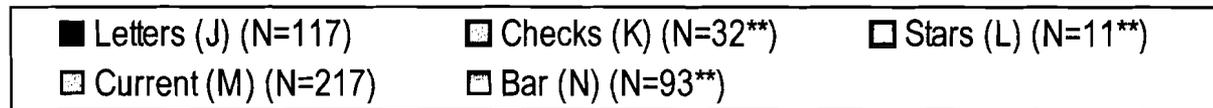


Base: Those respondents choosing specific label as least motivating label to consider energy use in appliance purchase.

**Warning: Small base

(Cont'd on next page)

Figure 19: Motivating Ability: Reasons for Choosing Least Motivating Label to Consider Energy Use in Appliance Purchase (Cont'd)



Base: Those respondents choosing specific label as least motivating label to consider energy use in appliance purchase.

**Warning: Small base

2.4 Determine Consumers' Perception of the Different Labels in Terms of Ease of Understanding, Believability and Ability to Grab Attention

Perception of Ease of Understanding

- Respondents rated each of the five labels, one at a time, on being easy to understand using a 10-point scale where 1 is not at all and 10 is extremely. By far, respondents believe that the stars and checks labels are easier to understand than all other labels (see Figure 20). Further, the letters and the bar labels are rated as being significantly easier to understand than the current label. This is indicated by significantly higher levels of top three ratings (8, 9 or 10) in pair-wise comparisons, as well as F-ratio results from ANOVA tests that indicate that the mean ratings are significantly different from each other.
- It is worth noting that ratings for the stars and checks are not significantly different from each other, and the ratings for the letters and bar labels are not significantly different from each other. In order of perceived ease of understanding, positive ratings (8, 9 or 10) for each label execution are:
 - Stars (68%)
 - Checks (63%)
 - Bar with scale (49%)
 - Letters (46%)
 - Current (36%)
- Presence of the Energy Star Logo increases perceptions that the energy labels are easy to understand. Specifically, significantly more respondents rate the label as an 8, 9 or 10 in terms of being easy to understand when it has an Energy Star Logo (55%) than when it does not (49%), when aggregated across all label executions. This is shown in Figure 21.
- The stars and the checks labels also significantly outperform all other labels in terms of consumer perception of being easy to understand when presented with and without the Energy Star Logo. The letters and bar labels also are rated as significantly easier to understand than the current label when they appear without the Energy Star Logo, but only the letter label does not outperform the current label when evaluated with the Energy Star Logo.

- Perceptions of being easy to understand are consistent with respondent's ability to accurately assess which models are most energy efficient for some, but not all, label executions. For the stars, checks and letters labels, respondents who correctly identify both the most and least energy efficient model give the highest ratings on being easy to understand, and ratings decrease as the number of correct answers decreases. For stars and checks, the differences in ratings for ease of understanding are significantly different between respondents getting both answers correct and those getting both answers incorrect. However, for the current and the bar labels, ratings on being easy to understand are not related to respondent's ability to correctly identify the most and least energy efficient model. In fact, for the current label, those who correctly identify both the most and least efficient rate the ease of understanding lowest. This means that for the bar and the current labels, ratings are not only lower overall but also indicate that even when respondents are able to correctly identify the most efficient appliance model, they do not necessarily have confidence that they have chosen the right one.

Perception on Having Right Amount of Information

- All five labels were rated, one at a time, on having the right amount of information using a 1 to 10 scale where 1 is not at all and 10 is extremely. The stars and checks labels again rate significantly better than the letters, bar or current labels in pair-wise comparisons of the percent rating each positively (8, 9 or 10). This is shown in Figure 22. Further, the F-ratio for the ANOVA indicates that the mean scores are significantly different from each other.
- The stars and the checks labels do not rate significantly differently from each other, and the letters, bar and current labels do not rate significantly differently from each other, as also shown in Figure 22. In order of top three box ratings (8, 9 or 10), the percentage rating each label execution as having the right amount of information is:
 - Stars (66%)
 - Checks (61%)
 - Letters (51%)
 - Bar with scale (50%)
 - Current (47%)

- The stars and checks labels rate significantly better than the letters, bar and current labels when seen with the Energy Star Logo and without the logo. Further, when combined across all label executions, labels with the Energy Star Logo rate significantly better in terms of having the right of information (58% rate an 8, 9 or 10) than labels without the Energy Star Logo (52%). See Figure 23 for these findings.

Best Communicates Energy Efficiency Level of Appliances

- After rating each label one at a time on a number of attributes, all five label executions were placed before each respondent at the same time in the order (left to right) that the respondent originally evaluated the five labels. Then, the respondent was asked to choose which one label they feel best communicates the energy efficiency level of appliances to them, and which is second best. Overall, the stars label is identified most often as best communicating the energy efficiency level of appliances to respondents, followed by the checks label (see Figure 24). The degree to which each is mentioned as being best and as being best or second best are as follows:
 - Stars (42% best, 65% best or second best)
 - Checks (19% best, 58% best or second best)
 - Bar with scale (17% best, 27% best or second best)
 - Letters (11% best, 22% best or second best)
 - Current (6% best, 16% best or second best)
- A chi-square analysis of the distribution of the percentage believing each label execution is best at communicating energy efficiency information indicates that the five label executions are not perceived as communicating this information equally well.
- The presence of the Energy Star Logo does not change the degree to which any of these labels are chosen as best communicating information about appliance energy efficiency as shown in Figure 25. Additionally, the findings do not change significantly when one examines the one selected as best among only those shown in the first position. Thus, the order in which the labels were shown does not impact this evaluation.

- While perceptions of the label execution that best communicates the energy efficiency level of appliances does not vary across subgroups, the extent to which each label is felt to be best varies somewhat by consumer segment. Specifically, the bar label is chosen as best more often by males than females (23% vs. 12%) and by those with more than a high school education than by those with a high school education or less (22% vs. 11%). Females feel that the stars label communicates to them more than it communicates to males (47% v. 34% choose stars as best). San Francisco respondents also choose the check label as best more often than respondents in all other markets.

Perceptions on Being Credible or Believable

- All five labels were rated, one at a time, on being credible or believable using a 1 to 10 scale where 1 is not at all and 10 is extremely. The stars and checks labels again rate significantly better than the letters, bar or current labels in pair-wise comparisons of the percent rating each positively (8, 9 or 10). This is shown in Figure 26. Further, the F-ratio for the ANOVA indicates that the mean scores are significantly different from each other.
- The stars and the checks labels do not rate significantly different from each other, and the letters, bar and current labels do not rate significantly differently from each other. In order of positive ratings (8, 9 or 10), the ratings on credibility or believability are:
 - Stars (60%)
 - Checks (59%)
 - Letters (50%)
 - Bar with scale (50%)
 - Current (45%)
- The Energy Star Logo does not enhance the credibility or believability of the labels to which it is attached. Combined across all label executions, those with the Energy Star Logo rate slightly, but not significantly, higher than those without the logo (55% vs. 51%). See Figure 27 for these results.

- This may be because the Energy Star Logo interacts differently with different label executions. The stars and the checks labels continue to rate significantly better than all other label executions when there is no Energy Star Logo present. However, when the Energy Star Logo is present, the stars label rates significantly better than the letters and current labels, but no longer significantly better than the bar label. Further, the checks label with the Energy Star Logo rates significantly better than the current and bar labels, while all three are rated similarly when the Energy Star Logo is not present. Thus, the presence of the Energy Star Logo makes the letter and the bar labels more credible so that the differences between label executions are not so great.

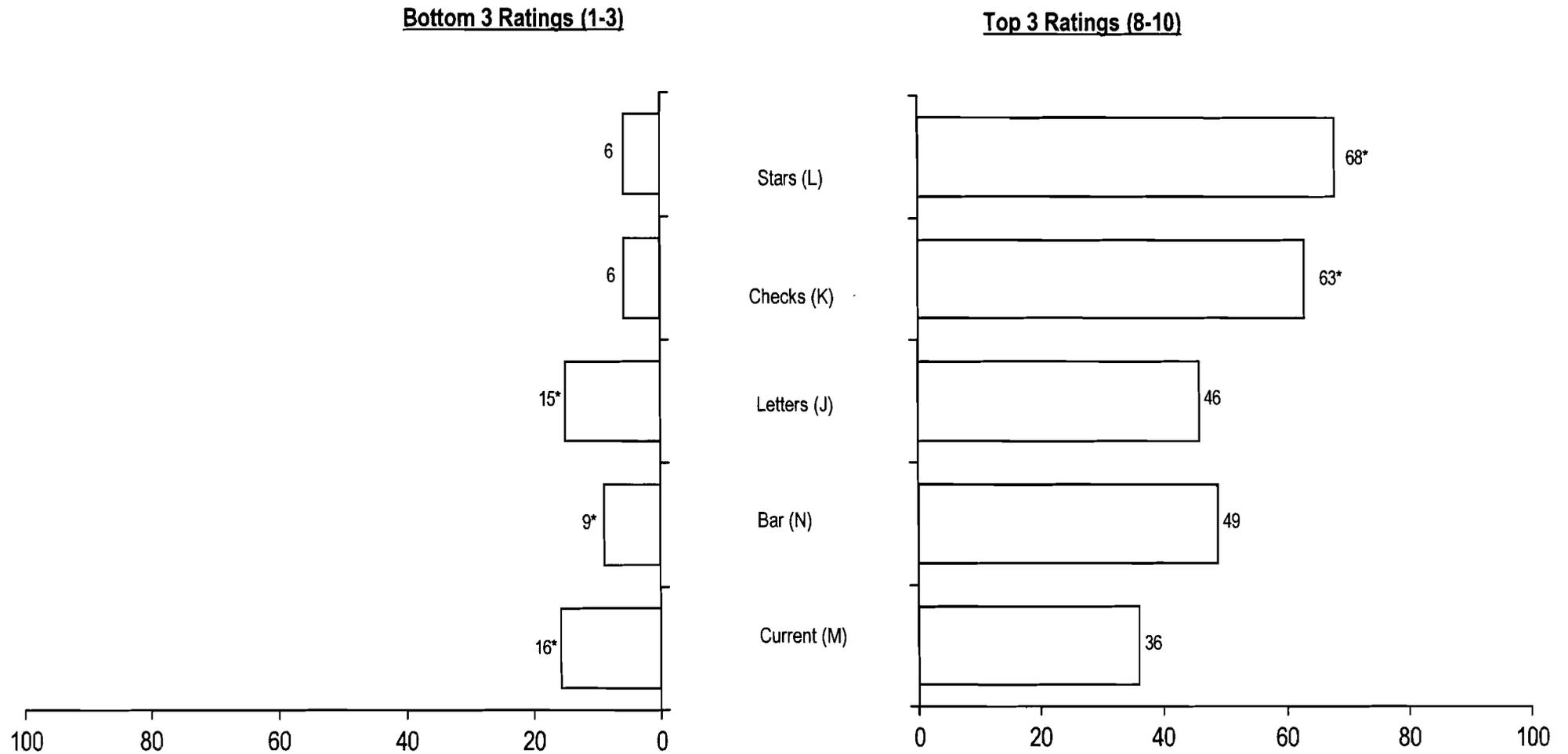
Perception of Being Able to Grab Consumers' Attention

- All five labels were rated, one at a time, on being able to grab the respondent's attention using a 1 to 10 scale where 1 is not at all and 10 is extremely. The stars and checks labels again rate significantly better than the letters, bar or current labels in pair-wise comparisons of the percent rating each positively (8, 9 or 10). The letters and the bar labels also rate significantly better on this measure than the current label (see Figure 28). Further, the F-ratio for the ANOVA indicates that the mean scores are significantly different from each other.
- The stars and the checks labels do not rate significantly different from each other, and the letters and bar labels do not rate significantly differently from each other. As previously reported, the current label rates significantly lower than all other labels. In order of positive ratings (8, 9 or 10), the ratings on ability to grab one's attention are:
 - Stars (69%)
 - Checks (63%)
 - Letters (47%)
 - Bar with scale (42%)
 - Current (35%)
- The presence of the Energy Star Logo contributes to the labels' ability to grab respondents' attention (see Figure 29). Overall, across all label executions, labels with the Energy Star Logo score significantly better on attention-grabbing ability (54% rate and 8, 9 or 10) than those without the logo (49%).
- The stars and checks labels continue to rate significantly better than all other label executions when they appear with and without the Energy Star Logo, as also shown in Figure 29. Both the letters and the bar labels score significantly better than the current label when the Energy Star Logo is present, but only the letters label scores better than the current label with the Energy Star Logo is not present.

Label Most and Least Likely to Read

- After rating each label one at a time on a number of attributes, all five label executions were placed before each respondent at the same time in the order (left to right) that the respondent originally evaluated the five labels. Then, the respondent was asked to choose which one label they would be most likely to read and which they would be least likely to read. Overall, the stars label is identified most often by a wide margin as being the one that they would be most likely to read, while the current label clearly emerges as the one that would be least likely to be read (see Figure 30). The degree to which each are mentioned as being most or least likely to be read are as follows:
 - Stars (47% most likely, 4% least likely)
 - Checks (21% most likely, 7% least likely)
 - Letters (14% most likely, 21% least likely)
 - Bar with scale (11% most likely, 18% least likely)
 - Current (3% most likely, 47% least likely)
- A chi-square analysis of the distribution of the percentage saying that they would be most likely to read each label execution indicates that the five label executions are not perceived as equally likely to be read.
- The likelihood of each label execution being read does not change based on the presence or absence of the Energy Star Logo, as shown in Figure 31. However, the letters label is more likely to be read most often when the Energy Star Logo is present on it (17%) than when it is not (12%).
- While the rank ordering of the five labels in terms of their likelihood to be read does not change across consumer subgroups, there are some differences in the degree to which some labels are likely to be read by consumer segment. Females are most likely to read the stars label even more than males (52% vs. 41%), while males are more likely to read the bar label than females (17% vs. 7%). Education level also impacts which label execution is most likely to be read, with college educated respondents stating a higher likelihood of reading the checks and letters labels and high school educated respondents stating a higher likelihood for reading the stars label. Respondents with vocational training or some college say they would read the bar label more often.

Figure 20: Ease of Understanding: Ratings of Each Label in Total



Base: Total respondents (N=500)

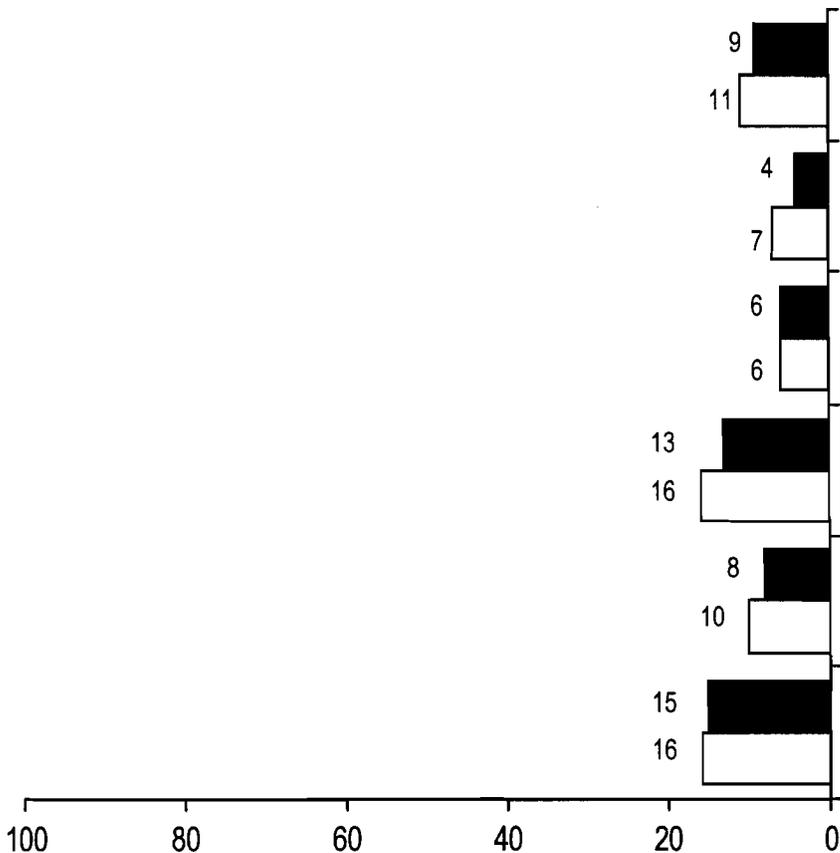
Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

* Denotes percentages significantly higher than all non-starred percentages at 95 percent confidence level. ANOVA indicates significant differences in mean ratings at 95 percent confidence level

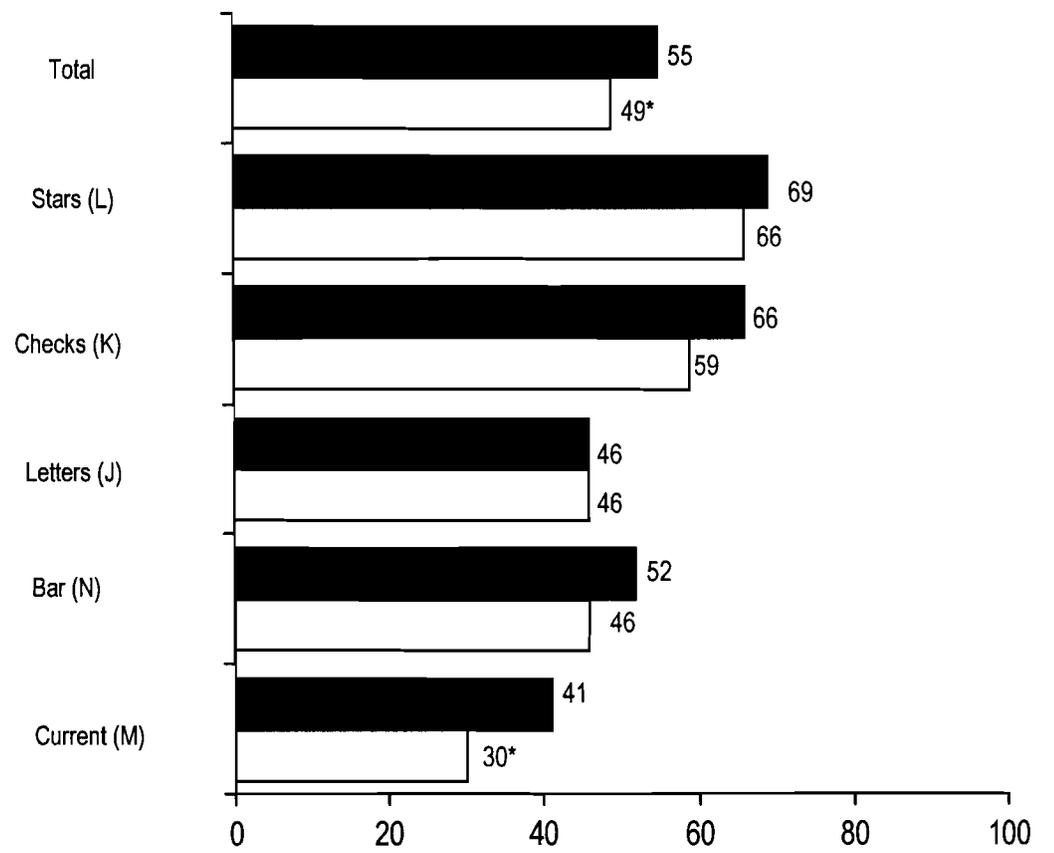
Figure 21: Ease of Understanding: Ratings of Each Label by Presence of Energy Star Logo

■ With Energy Star Logo □ Without Energy Star Logo

Bottom 3 Ratings (1-3)



Top 3 Ratings (8-10)

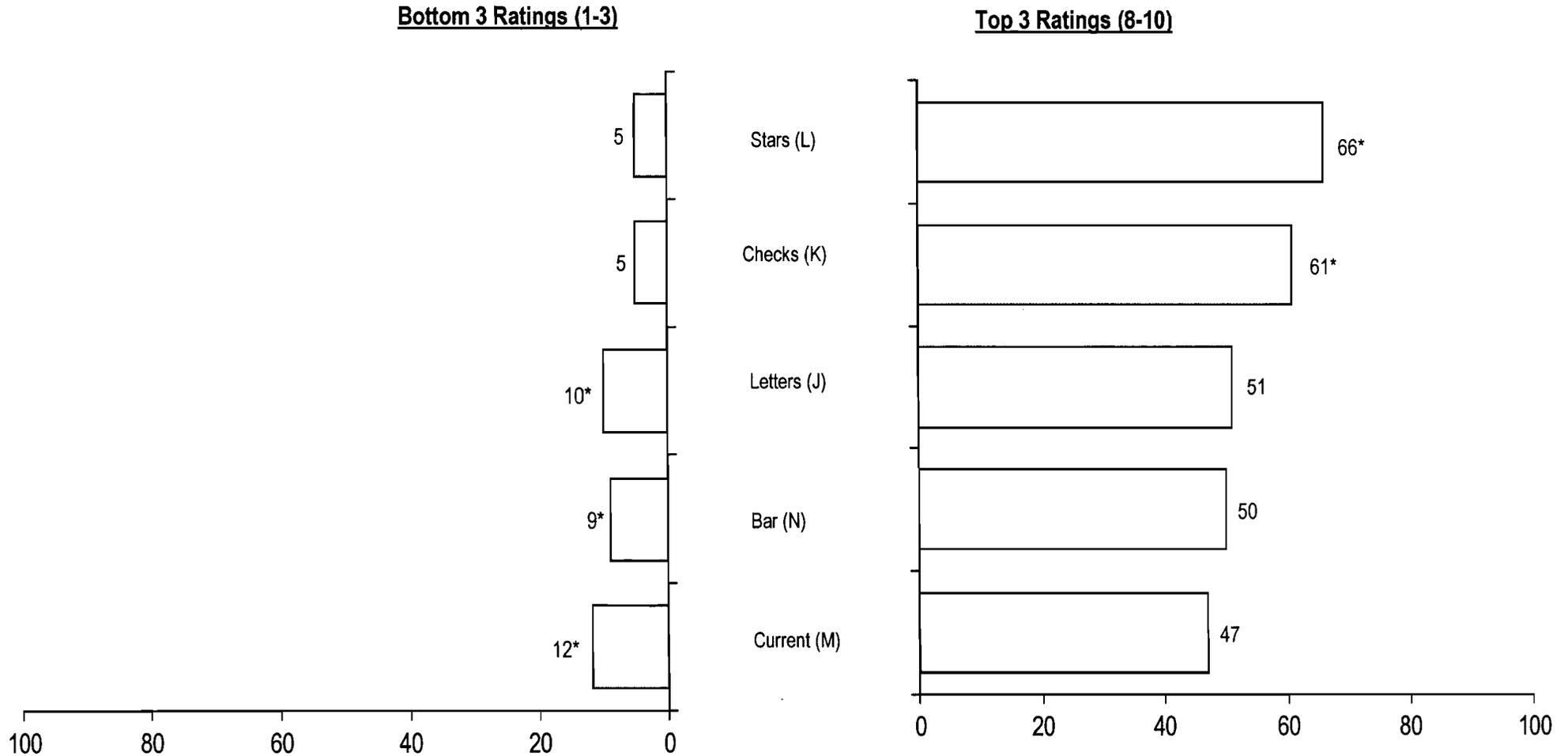


Base: Total respondents

Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

* Denotes percentages significantly higher than Energy Star Logo percentages at 95 percent confidence level.

Figure 22: Having the Right Amount of Information: Ratings of Each Label in Total

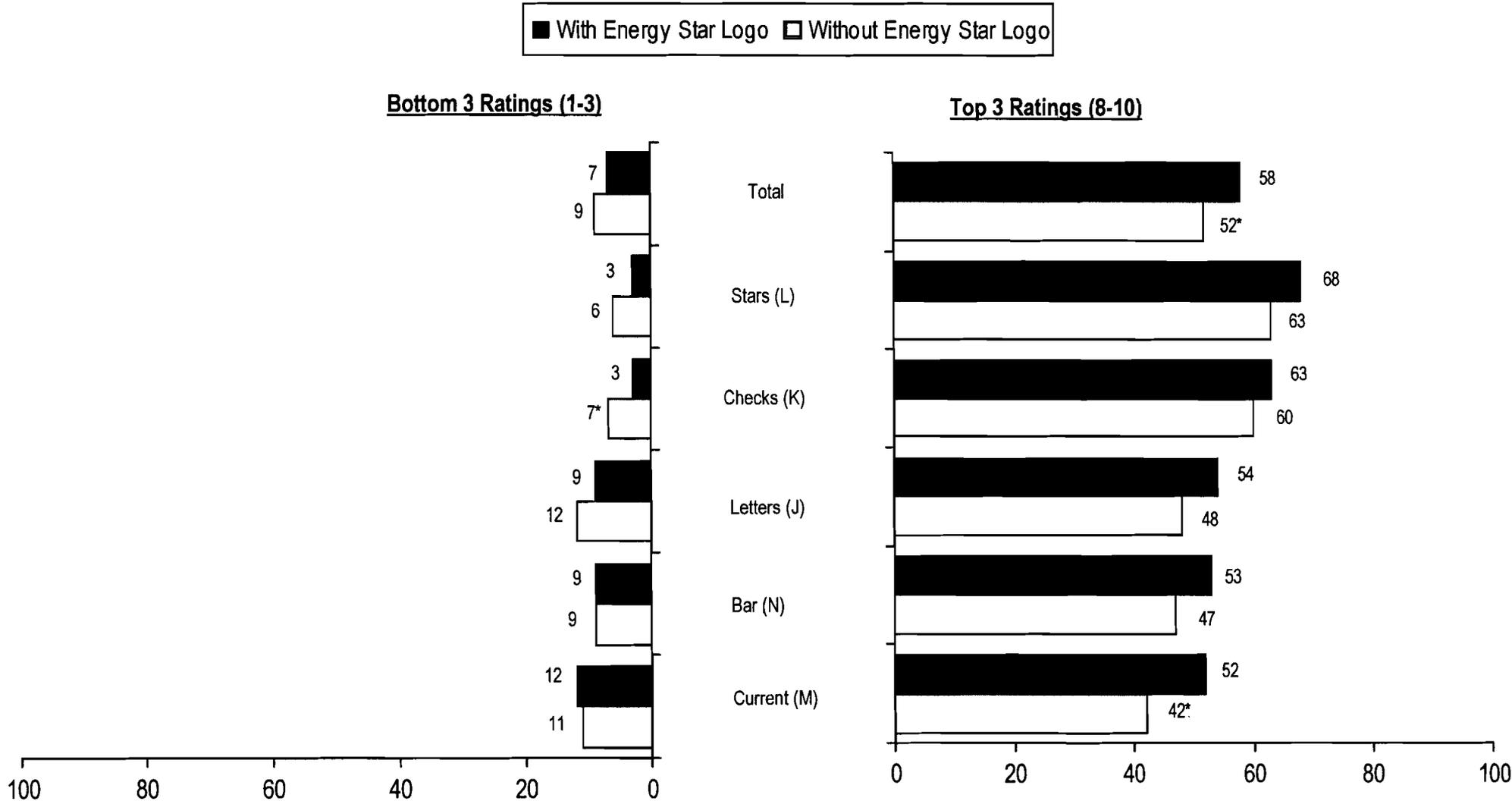


Base: Total respondents (N=500)

Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

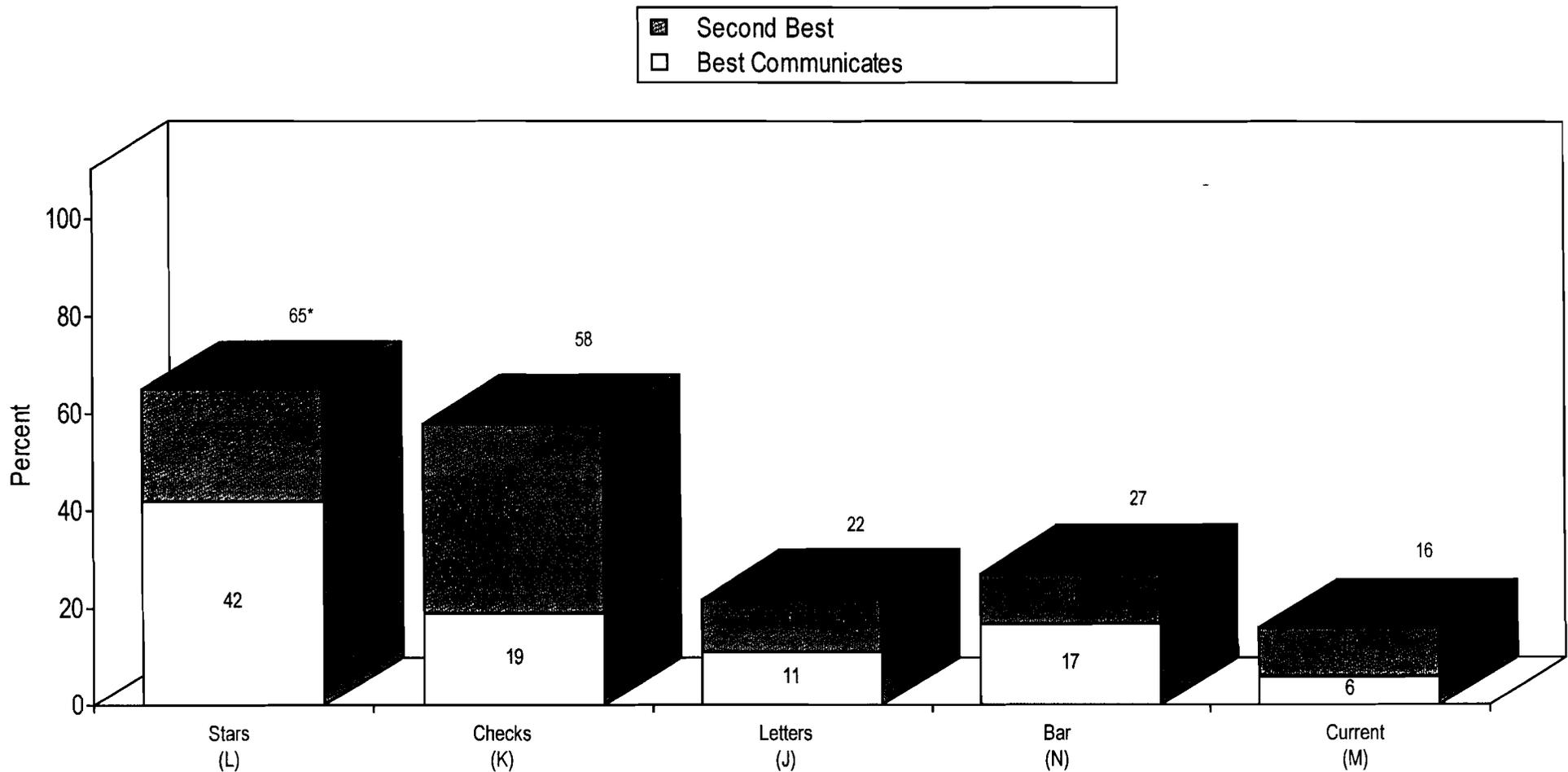
* Denotes percentages significantly higher than all non-starred percentages at 95 percent confidence level. ANOVA indicates significant differences in mean ratings at 95 percent confidence level.

Figure 23: Having the Right Amount of Information: Ratings of Each Label by Presence of Energy Star Logo



Base: Total respondents (N=1250 for Total; N=250 for each label execution).
 Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"
 * Denotes percentages significantly higher than Energy Star Logo percentages at 95 percent confidence level.

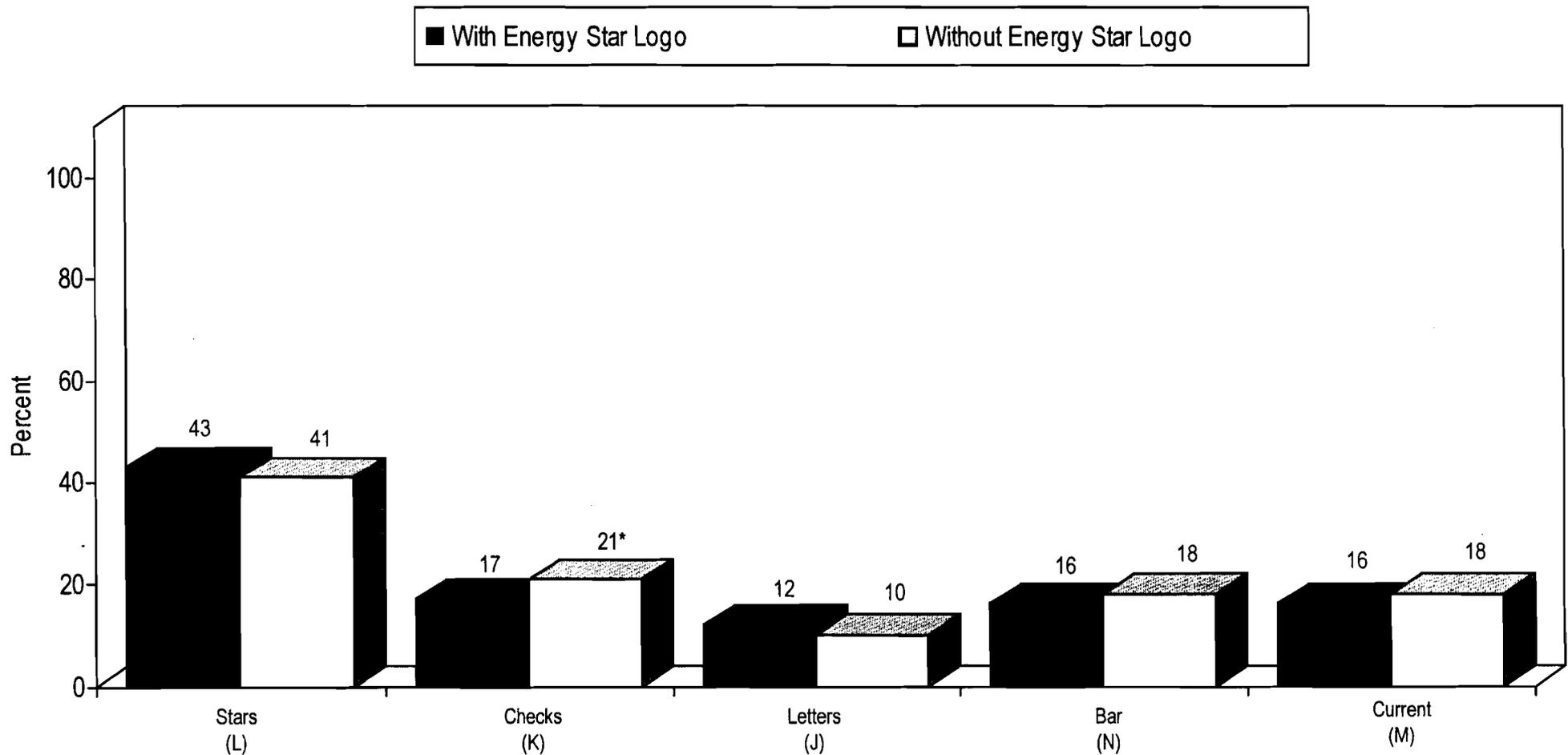
Figure 24: Forced Choice of Best and Second Best in Communicating the Energy Efficiency Level of Appliance for Each Label Execution in Total*



Base: Total respondents (N=500)

*Chi-square indicates significant difference across labels at 95 percent confidence level

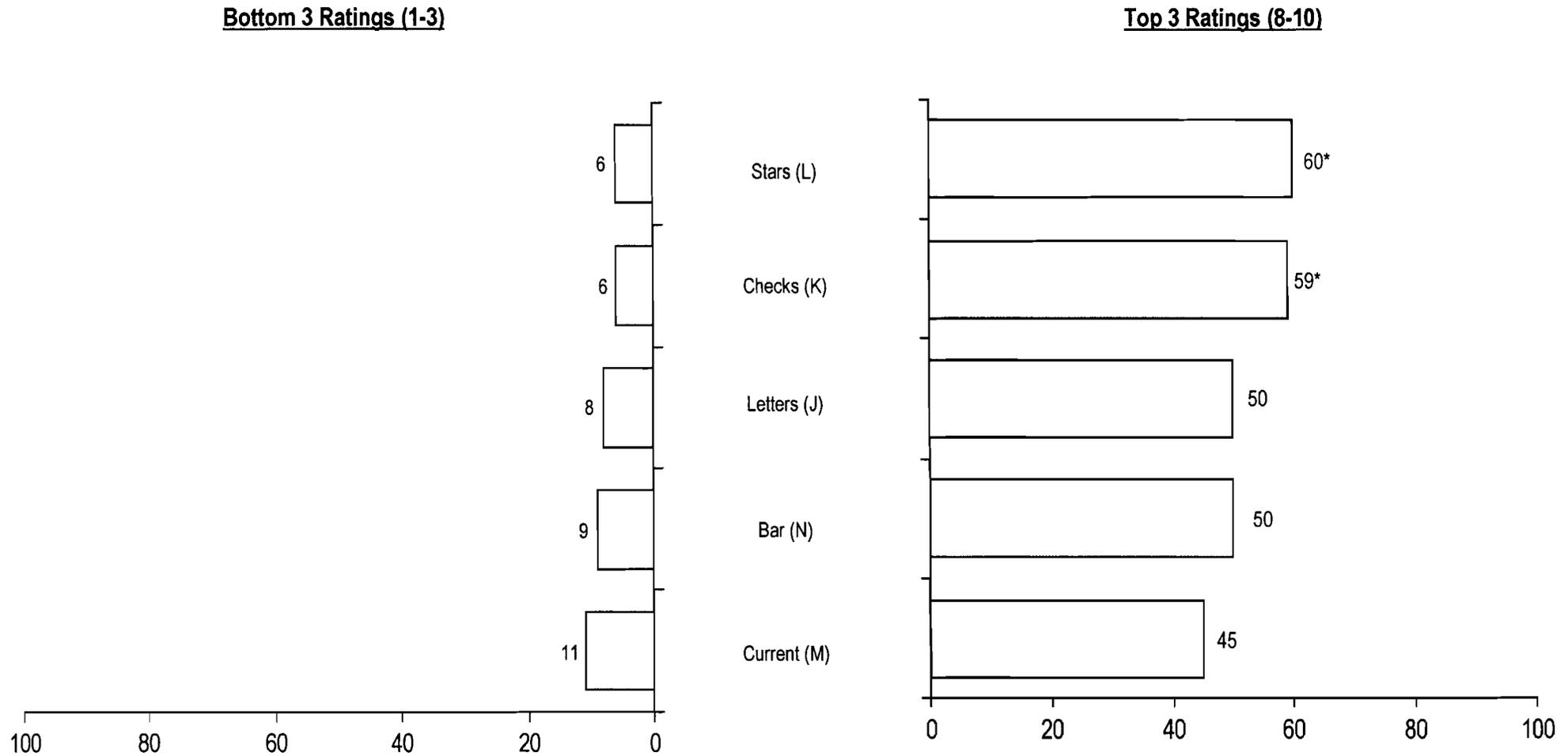
Figure 25: Forced Choice of Best in Communicating the Energy Efficiency Level of Appliance by Presence of Energy Star Logo



Base: Total respondents (N=1250 for Total; N=250 for each label execution).

*Denotes significant difference from Energy Star Logo percentages at 95 percent confidence level

Figure 26: Credibility and Believability: Ratings of Each Label in Total

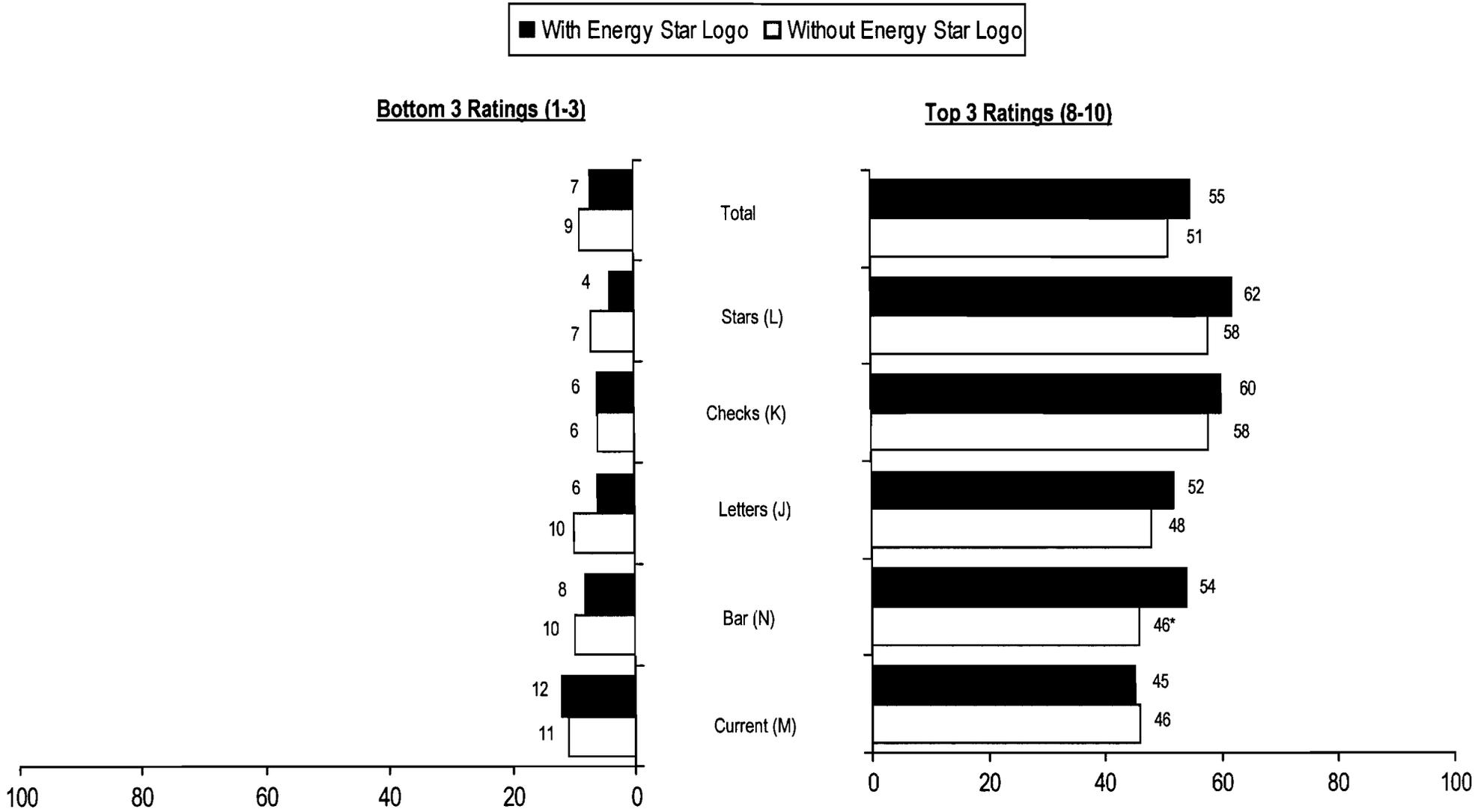


Base: Total respondents (N=500)

Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

*Denotes percentages significantly higher than all non-starred percentages at 95 percent confidence level. ANOVA indicates significant differences in mean ratings at 95 percent confidence level

Figure 27: Credibility and Believability: Ratings of Each Label by Presence of Energy Star Logo



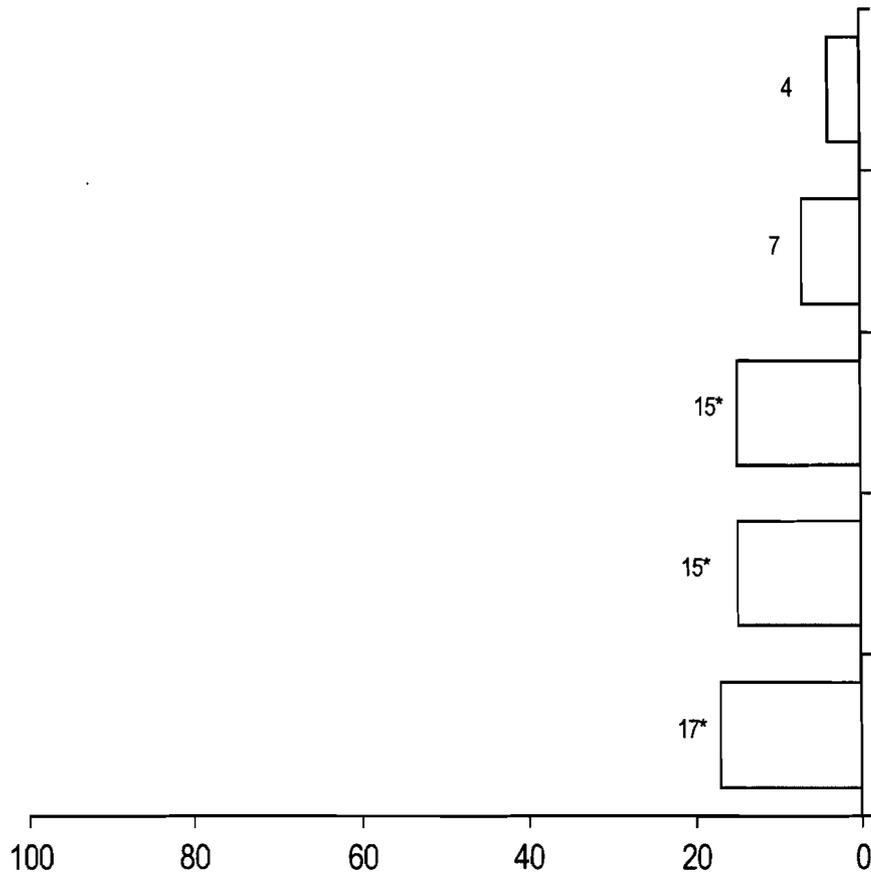
Base: Total respondents (N=1250 for Total; N=250 for each label execution).

Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

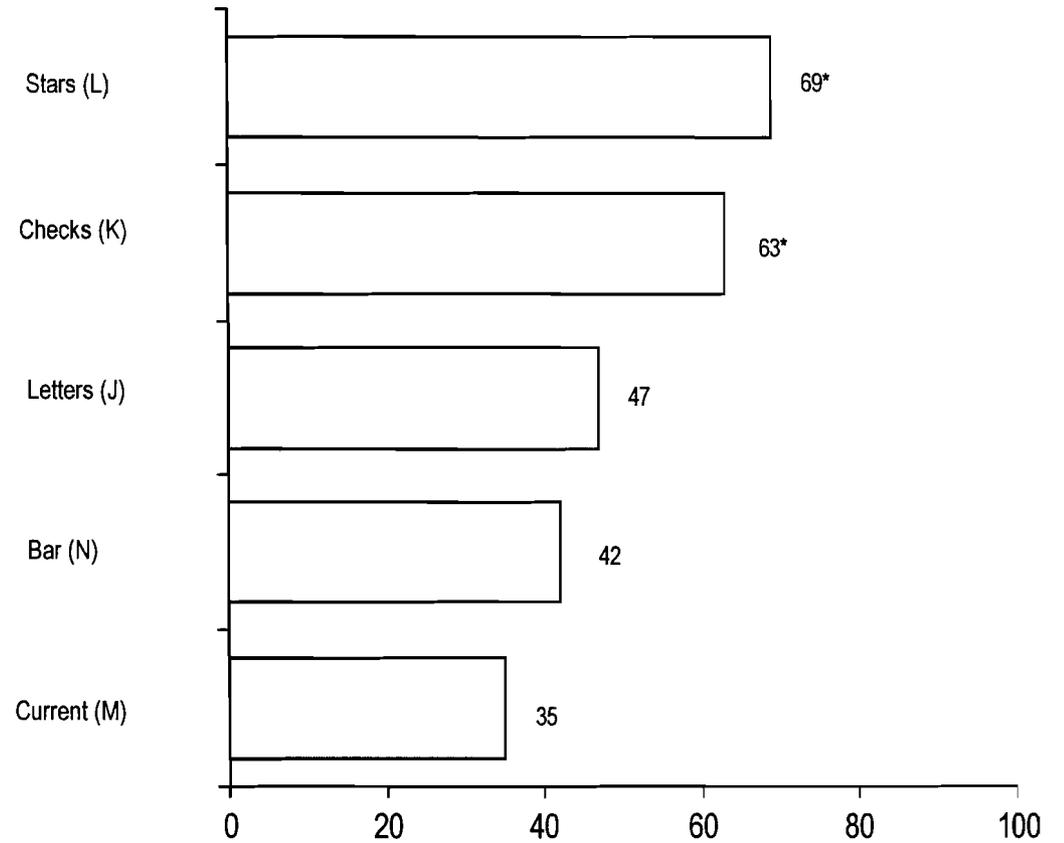
*Denotes percentages significantly higher than Energy Star Logo percentages at 95 percent confidence level.

Figure 28: Ability to Grab Attention: Ratings of Each Label

Bottom 3 Ratings (1-3)



Top 3 Ratings (8-10)



Base: Total respondents (N=500)

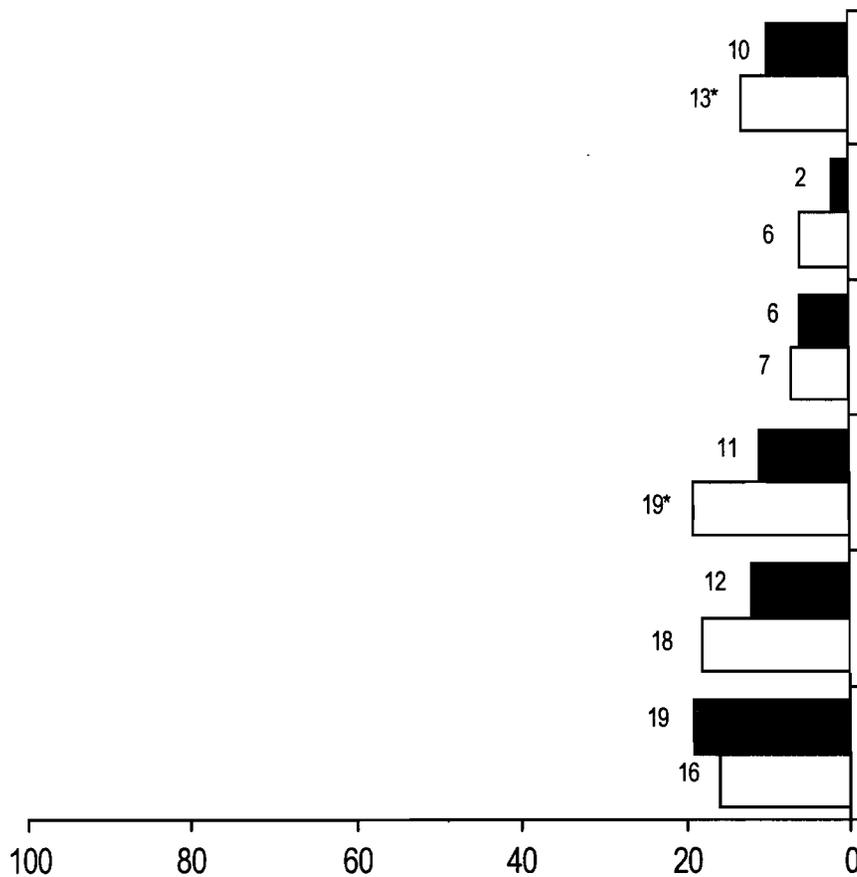
Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

*Denotes percentages significantly higher than all non-starred percentages at 95 percent confidence level. ANOVA indicates significant differences in mean ratings at 95 percent confidence level

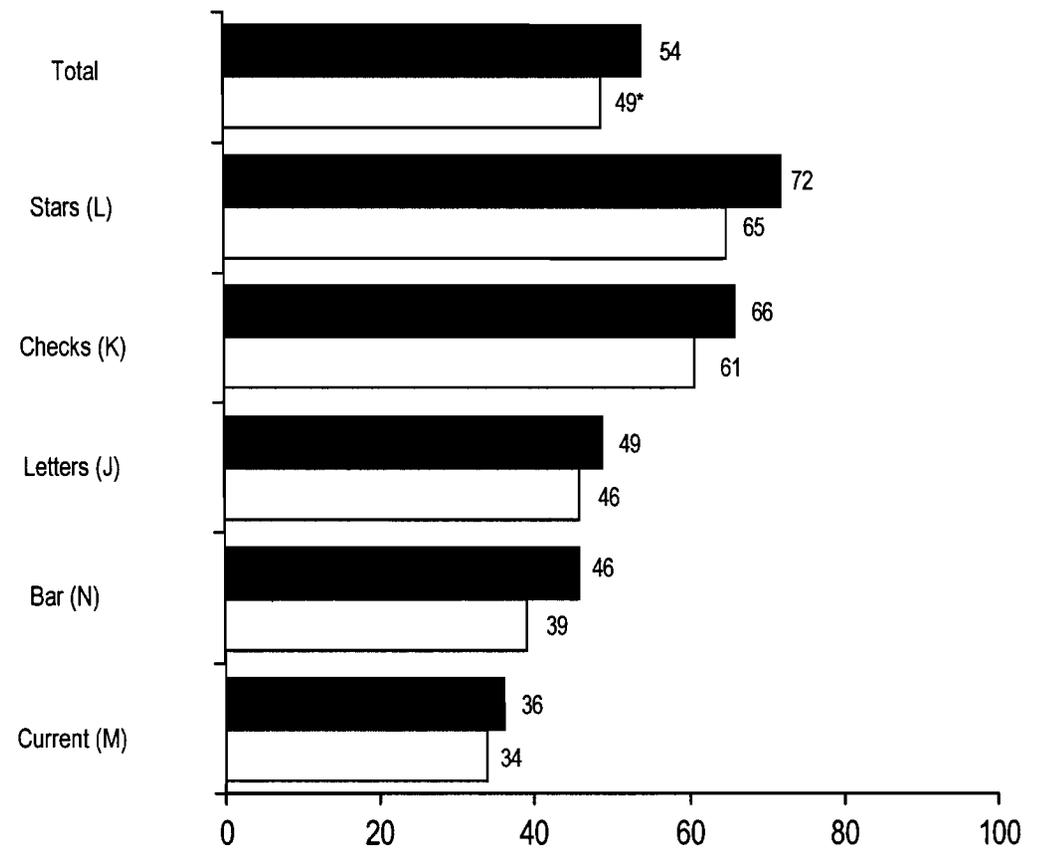
Figure 29: Ability to Grab Attention: Ratings of Each Label by Presence of Energy Star Logo

■ With Energy Star Logo □ Without Energy Star Logo

Bottom 3 Ratings (1-3)



Top 3 Ratings (8-10)

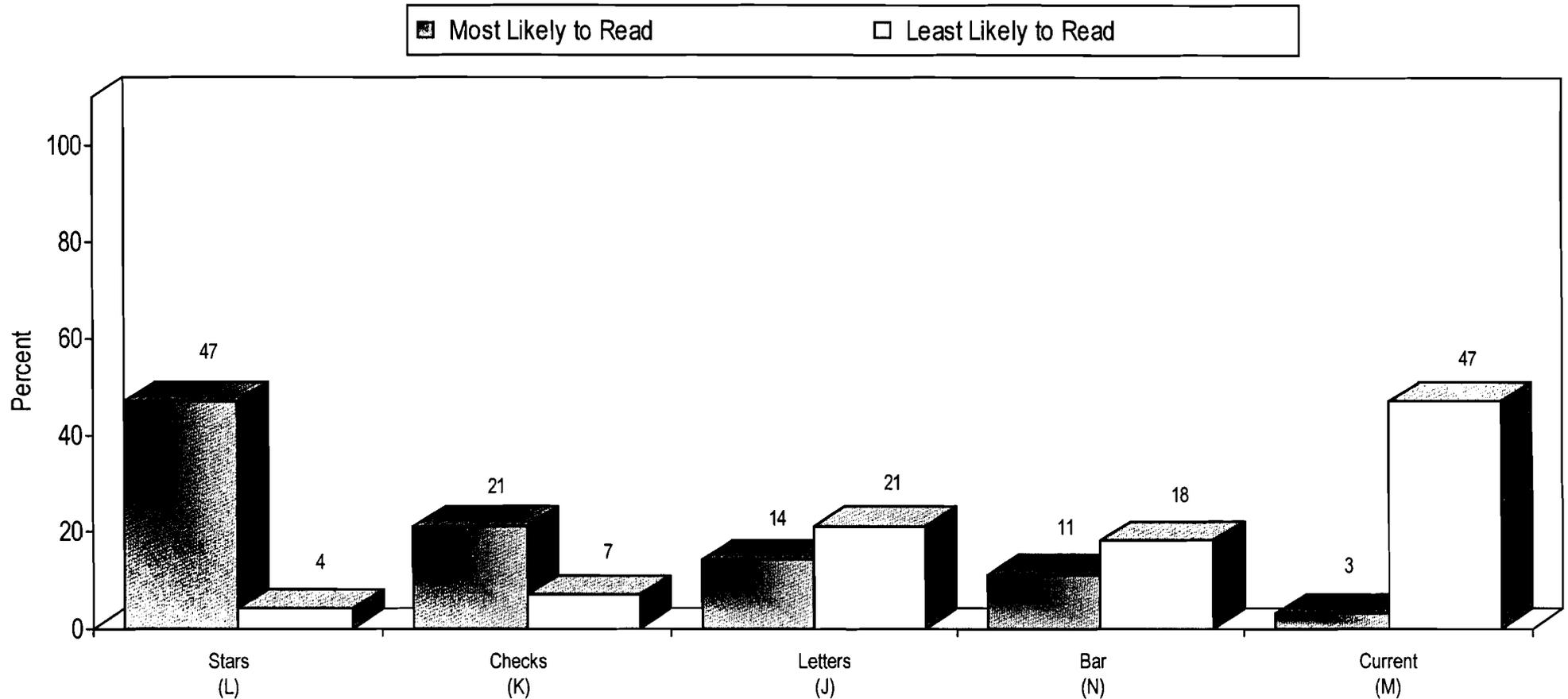


Base: Total respondents (N=1250 for Total; N=250 for each label execution).

Note: Ratings based on a 10-point scale where 1 represents "Not at all" and 10 represents "Extremely"

*Denotes percentages significantly higher than Energy Star Logo percentages at 95 percent confidence level.

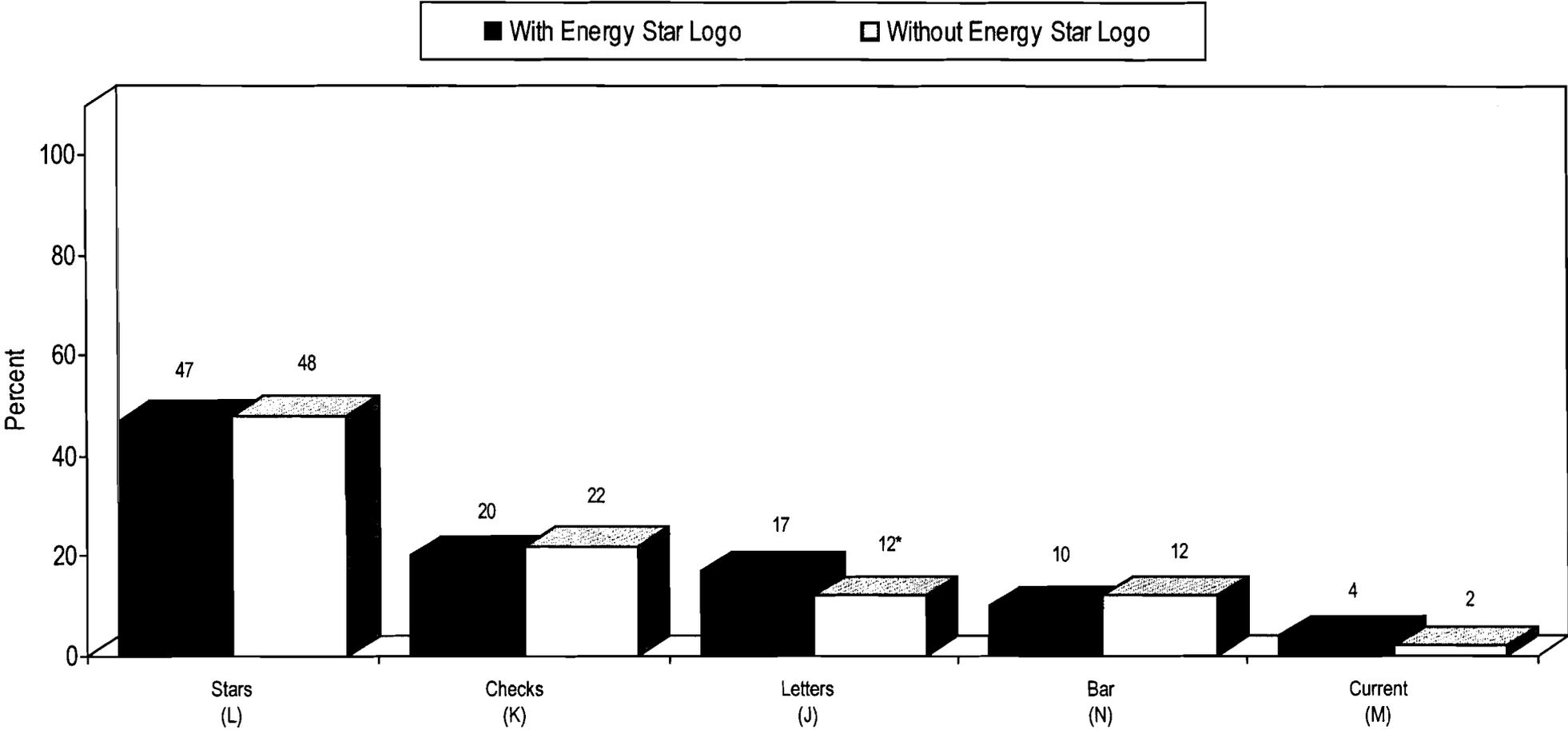
Figure 30: Forced Choice of Most and Least Likely to Read by Each Label Execution in Total*



Base: Total respondents (N=500)

*Chi-square indicates significant difference across labels at 95 percent confidence level

Figure 31: Ability to Grab Attention: Forced Choice of Most Likely to Read by Presence of Energy Star Logo



Base: Total respondents (N=1250 for Total; N=250 for each label execution).

*Denotes significant difference from Energy Star Logo percentages at 95 percent confidence level.

3.0 Conclusions and Implications

Conclusions and Implications

These conclusions and implications are based on the study findings and the interpretation of these findings by the project analyst. Thus, the implications do not necessarily represent the views of ACEEE.

- All four “test” label executions perform better than the current Energy Guide Label. Thus, it appears that appliance energy labeling would be more effective if a new label design was used. Measures on which all four “test” label executions perform significantly better than the current label include:
 - Consumer ratings of being able to grab their attention
 - Consumer ratings of being easy to understand
 - Most likely to be read
 - Most likely to motivate consumers to consider energy use in appliance purchases
 - Consumer perception of best communicating energy efficiency level of appliance

Conclusions and Implications (Cont'd)

- For almost all measures, the stars and the checks labels rate best and significantly better than all other label executions. Thus, these two label executions appear to be the optimal designs, based on consumer feedback on the five designs tested. The stars label tends to rate slightly but not significantly better than the checks label on nearly all measures. Thus, the stars label appears to be best, but the checks label is an acceptable substitute. Areas on which the stars and checks labels rate significantly better than all other labels include:
 - Correct comprehension of appliance energy use based on information in label when presented individually
 - Consumer ratings of being able to grab their attention
 - Consumer ratings of being easy to understand
 - Consumer ratings of having the right amount of information
 - Consumer ratings on credibility or believability
 - Consumer ratings on making them consider energy use in appliance purchase decision

Conclusions and Implications (Cont'd)

- Most likely to be read
- Most likely to motivate consumers to consider energy use in appliance purchases
- Consumer perception of best communicating energy efficiency level of appliance
- The only shortcoming identified for the stars and checks labels is that these labels are more likely to communicate information about product quality to consumers when, in fact, no quality differences exist. This appears to occur, at least in part, because some consumers assume that a more energy efficient appliance is a better quality appliance.

Conclusions and Implications (Cont'd)

- The Energy Star Logo enhances the performance of the energy label, regardless of which label execution is used. While the Energy Star Logo has greater impact on some measures when used with particular label executions, it significantly improves performance on the following measures when evaluated across all label executions:
 - Correct comprehension of which appliance is most and least energy efficient when three examples of label are presented together
 - Consumer ratings of being able to grab their attention
 - Consumer ratings of being easy to understand
 - Consumer ratings of having the right amount of information
 - Consumer ratings on making them consider energy use in appliance purchase decision

Conclusions and Implications (Cont'd)

- The only weakness of the Energy Star Logo, as tested, is that consumers are more likely to believe that an appliance is of higher quality when the Energy Star Logo is present than when it is not, even if all other information is the same. This occurs because a few see the Energy Star Logo as an indicator of product quality.
- The current Energy Guide Label is not well recognized by consumers, even by the large number of consumers who report having seen and used the Energy Guide Label in making recent appliance purchases. Thus, any benefits of maintaining the current label because it is familiar and accepted can expected to be minimal.
- The ability of each of the five label executions to communicate information about energy efficiency does not vary significantly across different consumer segments defined by age, gender, race, education level or region of the country. There are some differences in the degree to which some of the label executions are preferred by selected segments, but the rank ordering of ratings and preferences is the same across all segments. Thus, concerns about the ability of the labels to communicate information to selected segments should not impact which label executions are considered for future development.

Summary of Key Findings

	Stars (L)	Checks (K)	Letters (J)	Bar (N)	Current (M)	Energy Star Logo	No Energy Star Logo
Evaluation of appliance's energy efficiency based on label shown	√	√					
Perception of appliance quality based on label shown				√	√		√
Ability to identify most and least energy efficient model from set of 3 labels						√	
Ease of understanding (Likert scale)	√	√				√	
Right amount of information (Likert scale)	√	√				√	
Forced choice selection of one that best communicates energy efficiency level of appliances	√						
Believability and credibility (Likert scale)	√	√					
Ability to grab attention (Likert scale)	√	√				√	
Forced choice selection of one most likely to read	√						
Makes you consider energy use in purchase decision (Likert scale)	√	√				√	
Forced choice selection of one that most motivates to consider energy use in appliance purchase	√						
Recognition as currently used label							

Appendix A: Screener and Questionnaire

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

ACE0002

CIRCLE
New York 1
Milwaukee 2
Atlanta 3
Phoenix 4
San Francisco 5

APPLIANCE LABEL SCREENER

(PRETEST 7/25/00)

RESPONDENT NAME: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
TELEPHONE: (H) _____
START TIME: _____ END TIME: _____
INTERVIEW LENGTH: _____ DATE: _____
INTERVIEWER: _____ MONITORED BY: _____ CHECKED BY: _____

(APPROACH ADULTS MEETING RACE/GENDER/EDUCATION QUOTAS PROVIDED)

Hello, we are conducting a brief study today about household appliances and would greatly value your opinions. This is strictly market research and absolutely no sales effort is involved. I'd like to ask you a few questions.

1. First, can you tell me do you own or rent your home?

CIRCLE
Own 1 →(CONTINUE)
Rent 2 →(THANK AND TERMINATE)
Refused 3

2. Which of the following statements reflects your involvement in purchasing household appliances such as large kitchen appliances for your home? (READ LIST)

CIRCLE
You are **primarily responsible** for purchasing these types of household appliances 1 →(CONTINUE)
You **share** the responsibility **equally** for purchasing these types of household appliances 2
Someone else is responsible for purchasing large household appliances 3 →(THANK AND TERMINATE)

3. Have you or has anyone in your immediate family ever worked in the field of marketing research, public relations, or for a household appliance manufacturer or sales company or a utility, regulatory or energy-related organization?

CIRCLE

Yes 1 →(THANK AND TERMINATE)
 No 2 →(CONTINUE)

4. These next few questions are for classification purposes only. Which of the following numbers corresponds to the category including your age? (SHOW RESPONDENT CARD A)

CIRCLE ONE

Under 18 1 →(THANK AND TERMINATE)
 18 to 24 2
 25 to 34 3
 35 to 44 4
 45 to 54 5
 55 to 64 6
 65 or older 7
 Refused 8

5. INTERVIEWER RECORD BASED ON OBSERVATION.

CIRCLE

Caucasian	1	→(QUALIFIES FOR WHITE QUOTA)
African American	2	
Hispanic or Latino	3	
Asian	4	→(QUALIFIES FOR NON-WHITE QUOTA)
OR A member of some other racial/ethnic group	5	

6. INTERVIEWER: CIRCLE GENDER

CIRCLE

Female	1	→(CHECK QUOTAS)
Male	2	

7. And, which number corresponds with the last grade of school you completed? (HAND RESPONDENT CARD B)

		<u>CIRCLE</u>	
Some high school	1		→(QUALIFIES FOR LESS THAN HIGH SCHOOL EDUCATED QUOTA)
High school degree	2		→(QUALIFIES FOR HIGH SCHOOL EDUCATED QUOTA)
Vocational school	3		
Some college	4		→(QUALIFIES FOR COLLEGE EDUCATED QUOTA)
College degree	5		
Some graduate work	6		
OR Graduate degree	7		
(DO NOT READ) Refused	8		→(THANK AND TERMINATE)

8. And, would you describe your ability to read and understand English as: (READ LIST)

		<u>CIRCLE</u>	
Very strong	4		
Fairly strong	3		
Fairly weak	2		
OR Very weak	1		→(THANK AND TERMINATE)
(DO NOT READ) Don't know/refused	5		

INVITATION

We are conducting a study on household appliances and would greatly value your participation. We would like to conduct a 20-minute interview with you in our mall office. A cash gift of \$_____ will be given to each participant. Are you available now to complete this interview?

		<u>CIRCLE</u>	
Yes	1		→(SHOW BACK TO OFFICE)
No	2		→(ATTEMPT TO SCHEDULE APPOINTMENT FOR INTERVIEW)

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
BETHESDA, Maryland 20814

ACE0002
Rotation: 1

VERSION	<u>CIRCLE</u>
Star	1
No Star	2

APPLIANCE LABEL QUESTIONNAIRE
(FINAL 7/26/00)

RESPONDENT NAME: _____

Background Information

- 1a. First, thinking about large household appliances, have you purchased any of the following from a retail store in the last 2 years? (SHOW CARD 1. CIRCLE ALL THAT APPLY UNDER COLUMN FOR Q.1a)
- 1b. Are you now shopping for or planning to buy any of the following appliances from a retail store within the next 2 years? (REFER RESPONDENT TO CARD 1. CIRCLE ALL THAT APPLY UNDER COLUMN FOR Q.1b)

	<u>Q.1a</u>	<u>Q.1b</u>
Refrigerator	1	1
Freezer	2	2
Individual room air conditioning unit	3	3
Central air conditioning system	4	4
Dishwasher	5	5
Clothes washer	6	6
Water heater	7	7
Other	8	8
None	9	9

- 2a. Do you recall ever seeing labels on household appliances that tell you how much energy each one uses?

	<u>CIRCLE</u>	
Yes	1	→(CONTINUE)
No	2	→(SKIP TO BOX BEFORE Q.3)
Don't know/not sure	3	

2b. To what extent did you use the information from the energy label in deciding which appliance model to purchase? (READ LIST)

		<u>CIRCLE ONE</u>	
	Very much	4	→(CONTINUE)
	Somewhat	3	
	Not too much	2	
OR	Not at all	1	→(SKIP TO BOX BEFORE Q.3)
(DO NOT READ)	Don't know	5	
(DO NOT READ)	Haven't used/not shopping yet	6	

2c. How did you use the information from these labels? (PROBE AND CLARIFY FULLY)

Evaluation of First Label

INTERVIEWER: HAND RESPONDENT **LABEL "J"**. LET RESPONDENT READ AND EXAMINE LABEL BEFORE ASKING QUESTIONS. READ THE FOLLOWING STATEMENT WHILE RESPONDENT IS EXAMINING LABEL:

Today, we will be evaluating several possible versions of an energy label that would be attached to a clothes washer. Similar labels would be attached to other major appliances being sold in retail stores. For each, please take a moment to look at the label, and then I will ask you some questions about it. Your input will help us decide which one version will appear in stores.

3. Using a 1 to 10 scale, where 1 is not at all and 10 is extremely, please tell me how you would rate this label in terms of: (READ LIST)

	<u>CIRCLE ONE NUMB PER ROW</u>										
	<u>Not at All</u>									<u>Extremely</u>	<u>DK</u>
Being able to grab your attention	1	2	3	4	5	6	7	8	9	10	11
Being easy to understand	1	2	3	4	5	6	7	8	9	10	11
Having the right amount of information	1	2	3	4	5	6	7	8	9	10	11
Being credible or believable	1	2	3	4	5	6	7	8	9	10	11
Making you consider energy use in your purchase decision	1	2	3	4	5	6	7	8	9	10	11

Comprehension of First Label

- 4a. Based on the information contained in this label, how would you say the clothes washer that this label describes is in terms of energy efficiency? (READ LIST)

	<u>CIRCLE ONE</u>
One of the best	5
Above average	4
About average	3
Below average	2
OR One of the worst	1
(DO <u>NOT</u> READ) Don't know	6

- 4b. What, if anything, does this label tell you about the quality of this clothes washer? (READ LIST)

	<u>CIRCLE ONE</u>
Better quality overall	1
Not necessarily better quality	2
OR No information about product quality	3
(DO <u>NOT</u> READ) Don't know	4

4c. (STAR VERSION ONLY) What does the energy star logo, as shown in the bottom right corner, mean to you? (DO NOT READ. PROBE FULLY)

	<u>CIRCLE ALL MENTIONS</u>
Endorsement that appliance is energy efficient	1
Meets government standards for energy efficiency	2
Appliance is above average in energy efficiency	3
This appliance is recommended	4
Other (SPECIFY) _____	
Don't know	5

Comprehension of First Set of Labels

INTERVIEWER: REMOVE FIRST LABEL. REPLACE WITH BOARD OF 3 LABELS WITH SAME LETTER.

5a. If a friend were buying a new clothes washer, which of these three models would you recommend to him or her, assuming that each model had similar features and operating costs are an important consideration? (READ IF NECESSARY)

	<u>CIRCLE ONE</u>
Right	1
Middle	2
OR Left	3
(DO <u>NOT</u> READ) Don't know	4

5b. Why do you say that? (PROBE AND CLARIFY)

5c. And which would you be least likely to recommend? (READ IF NECESSARY)

- CIRCLE ONE
- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

Evaluation of Second Label

INTERVIEWER: TAKE BACK BOARD WITH 3 LABELS. HAND RESPONDENT **LABEL "K"**. LET RESPONDENT READ AND EXAMINE LABEL BEFORE ASKING QUESTIONS.

6. Using a 1 to 10 scale, where 1 is not at all and 10 is extremely, please tell me how you would rate this label in terms of: (READ LIST)

	<u>CIRCLE ONE NUMBER PER ROW</u>												
	<u>Not at All</u>										<u>Extremely</u>	<u>DK</u>	
Being able to grab your attention	1	2	3	4	5	6	7	8	9	10	11		
Being easy to understand	1	2	3	4	5	6	7	8	9	10	11		
Having the right amount of information	1	2	3	4	5	6	7	8	9	10	11		
Being credible or believable	1	2	3	4	5	6	7	8	9	10	11		
Making you consider energy use in your purchase decision	1	2	3	4	5	6	7	8	9	10	11		

Comprehension of Second Label

7a. Based on the information contained in this label, how would you say the clothes washer that this label describes is in terms of energy efficiency? (READ LIST)

- CIRCLE ONE
- | | |
|---------------------------------|---|
| One of the best | 5 |
| Above average | 4 |
| About average | 3 |
| Below average | 2 |
| OR One of the worst | 1 |
| (DO <u>NOT</u> READ) Don't know | 6 |

7b. What, if anything, does this label tell you about the quality of this clothes washer?
(READ LIST)

CIRCLE ONE

- | | |
|---|---|
| Better quality overall | 1 |
| Not necessarily better quality | 2 |
| OR No information about product quality | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

Comprehension of Second Set of Labels

INTERVIEWER: REMOVE SECOND LABEL. REPLACE WITH BOARD OF 3 LABELS WITH SAME LETTER.

8a. If a friend were buying a new clothes washer, which of these three models would you recommend to him or her, assuming that each model had similar features and operating costs are an important consideration? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

8b. Why do you say that? (PROBE AND CLARIFY)

8c. And which would you be least likely to recommend? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

Evaluation of Third Label

INTERVIEWER: REMOVE BOARD WITH 3 LABELS. HAND RESPONDENT **LABEL "L"**. LET RESPONDENT READ AND EXAMINE LABEL BEFORE ASKING QUESTIONS.

9. Using a 1 to 10 scale, where 1 is not at all and 10 is extremely, please tell me how you would rate this label in terms of: (READ LIST)

	<u>CIRCLE ONE NUMBER PER ROW</u>										
	<u>Not at All</u>									<u>Extremely</u>	<u>DK</u>
Being able to grab your attention	1	2	3	4	5	6	7	8	9	10	11
Being easy to understand	1	2	3	4	5	6	7	8	9	10	11
Having the right amount of information	1	2	3	4	5	6	7	8	9	10	11
Being credible or believable	1	2	3	4	5	6	7	8	9	10	11
Making you consider energy use in your purchase decision	1	2	3	4	5	6	7	8	9	10	11

Comprehension of Third Label

10a. Based on the information contained in this label, how would you say the clothes washer that this label describes is in terms of energy efficiency? (READ LIST)

	<u>CIRCLE ONE</u>
One of the best	5
Above average	4
About average	3
Below average	2
OR One of the worst	1
(DO <u>NOT</u> READ) Don't know	6

10b. What, if anything, does this label tell you about the quality of this clothes washer? (READ LIST)

	<u>CIRCLE ONE</u>
Better quality overall	1
Not necessarily better quality	2
OR No information about product quality	3
(DO <u>NOT</u> READ) Don't know	4

Comprehension of Third Set of Labels

INTERVIEWER: REMOVE THIRD LABEL FROM RESPONDENT. REPLACE WITH BOARD OF 3 LABELS WITH SAME LETTER.

11a. If a friend were buying a new clothes washer, which of these three models would you recommend to him or her, assuming that each model had similar features and operating costs are an important consideration? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

11b. Why do you say that? (PROBE AND CLARIFY)

11c. And which would you be least likely to recommend? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

Evaluation of Fourth Label

INTERVIEWER: REMOVE BOARD WITH 3 LABELS FROM RESPONDENT. HAND RESPONDENT LABEL "M". LET RESPONDENT READ AND EXAMINE LABEL BEFORE ASKING QUESTIONS.

12. Using a 1 to 10 scale, where 1 is not at all and 10 is extremely, please tell me how you would rate this label in terms of: (READ LIST)

	<u>CIRCLE ONE NUMBER PER ROW</u>										
	<u>Not at All</u>									<u>Extremely</u>	<u>DK</u>
Being able to grab your attention	1	2	3	4	5	6	7	8	9	10	11
Being easy to understand	1	2	3	4	5	6	7	8	9	10	11
Having the right amount of information	1	2	3	4	5	6	7	8	9	10	11
Being credible or believable	1	2	3	4	5	6	7	8	9	10	11
Making you consider energy use in your purchase decision	1	2	3	4	5	6	7	8	9	10	11

Comprehension of Fourth Label

13a. Based on the information contained in this label, how would you say the clothes washer that this label describes is in terms of energy efficiency? (READ LIST)

	<u>CIRCLE ONE</u>
One of the best	5
Above average	4
About average	3
Below average	2
OR One of the worst	1
(DO NOT READ) Don't know	6

13b. What, if anything, does this label tell you about the quality of this clothes washer? (READ LIST)

	<u>CIRCLE ONE</u>
Better quality overall	1
Not necessarily better quality	2
OR No information about product quality	3
(DO NOT READ) Don't know	4

Comprehension of Fourth Set of Labels

INTERVIEWER: REMOVE FOURTH LABEL FROM RESPONDENT. REPLACE WITH BOARD OF 3 LABELS WITH SAME LETTER.

14a. If a friend were buying a new clothes washer, which of these three models would you recommend to him or her, assuming that each model had similar features and operating costs are an important consideration? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

14b. Why do you say that? (PROBE AND CLARIFY)

14c. And which would you be least likely to recommend? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

Evaluation of Fifth Label

INTERVIEWER: REMOVE BOARD WITH 3 LABELS FROM RESPONDENT. HAND RESPONDENT LABEL "N". LET RESPONDENT READ AND EXAMINE LABEL BEFORE ASKING QUESTIONS.

15. Using a 1 to 10 scale, where 1 is not at all and 10 is extremely, please tell me how you would rate this label in terms of: (READ LIST)

	<u>CIRCLE ONE NUMBER PER ROW</u>										
	<u>Not at All</u>									<u>Extremely</u>	<u>DK</u>
Being able to grab your attention	1	2	3	4	5	6	7	8	9	10	11
Being easy to understand	1	2	3	4	5	6	7	8	9	10	11
Having the right amount of information	1	2	3	4	5	6	7	8	9	10	11
Being credible or believable	1	2	3	4	5	6	7	8	9	10	11
Making you consider energy use in your purchase decision	1	2	3	4	5	6	7	8	9	10	11

Comprehension of Fifth Label

16a. Based on the information contained in this label, how would you say the clothes washer that this label describes is in terms of energy efficiency? (READ LIST)

	<u>CIRCLE ONE</u>
One of the best	5
Above average	4
About average	3
Below average	2
OR One of the worst	1
(DO <u>NOT</u> READ) Don't know	6

16b. What, if anything, does this label tell you about the quality of this clothes washer? (READ LIST)

	<u>CIRCLE ONE</u>
Better quality overall	1
Not necessarily better quality	2
OR No information about product quality	3
(DO <u>NOT</u> READ) Don't know	4

Comprehension of Fifth Set of Labels

INTERVIEWER: REMOVE FIFTH LABEL FROM RESPONDENT. REPLACE WITH BOARD OF 3 LABELS WITH SAME LETTER.

17a. If a friend were buying a new clothes washer, which of these three models would you recommend to him or her, assuming that each model had similar features and operating costs are an important consideration? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

17b. Why do you say that? (PROBE AND CLARIFY)

17c. And which would you be least likely to recommend? (READ IF NECESSARY)

CIRCLE ONE

- | | |
|---------------------------------|---|
| Right | 1 |
| Middle | 2 |
| OR Left | 3 |
| (DO <u>NOT</u> READ) Don't know | 4 |

Comparison of All Labels Together

INTERVIEWER: REMOVE BOARD WITH 3 LABELS. PLACE ALL FIVE LABELS, J-N, IN FRONT OF RESPONDENT IN ORDER LEFT TO RIGHT THAT THEY ORIGINALLY SAW LABELS.

18a. If each of these labels were attached to an appliance in a retail store, which would you be most likely to read? (DO NOT READ)

CIRCLE ONE

- Label J 1
- Label K 2
- Label L 3
- Label M 4
- Label N 5
- None of these 6
- Don't know 7

18b. And, if each of these labels were attached to an appliance in a retail store, which would you be least likely to read? (DO NOT READ)

CIRCLE ONE

- Label J 1
- Label K 2
- Label L 3
- Label M 4
- Label N 5
- None of these 6
- Don't know 7

19a. Which one of these labels best communicates the energy efficiency level of appliances to you? (DO NOT READ. CIRCLE ONE)

CIRCLE ONE

- Label J 1
- Label K 2
- Label L 3
- Label M 4
- Label N 5
- None 6
- Don't know 7

19b. Which is second best? (DO NOT READ. CIRCLE ONE)

CIRCLE ONE

- | | |
|------------|---|
| Label J | 1 |
| Label K | 2 |
| Label L | 3 |
| Label M | 4 |
| Label N | 5 |
| None | 6 |
| Don't know | 7 |

19c. Still assuming that these labels appeared on different appliances in a retail store, which one would most motivate you to consider energy use in your appliance purchase? (DO NOT READ)

CIRCLE ONE

- | | |
|---------------|---|
| Label J | 1 |
| Label K | 2 |
| Label L | 3 |
| Label M | 4 |
| Label N | 5 |
| None of these | 6 |
| Don't know | 7 |

19d. Why do you say that? (PROBE AND CLARIFY FULLY)

19e. And, which label would be least likely to motivate you to consider energy use in your appliance purchase? (DO NOT READ)

CIRCLE ONE

- | | |
|---------------|---|
| Label J | 1 |
| Label K | 2 |
| Label L | 3 |
| Label M | 4 |
| Label N | 5 |
| None of these | 6 |
| Don't know | 7 |

19f. Why do you say that? (PROBE AND CLARIFY FULLY)

19g. Can you tell me which of these labels, if any, is currently in use? (DO NOT READ)

CIRCLE ONE

- | | |
|---------------|---|
| Label J | 1 |
| Label K | 2 |
| Label L | 3 |
| Label M | 4 |
| Label N | 5 |
| None of these | 6 |
| Don't know | 7 |

Demographics

20. These last two questions are for classification purposes only. How many people live in your household? (RECORD)

99=DK/Refused

21. Which number corresponds to the following category that includes your total family income before taxes? (SHOW CARD 2)

CIRCLE

- | | |
|------------------------------|---|
| Under \$20,000 | 1 |
| \$20,000 to \$29,999 | 2 |
| \$30,000 to \$39,999 | 3 |
| \$40,000 to \$59,999 | 4 |
| \$60,000 to \$74,999 | 5 |
| \$75,000 to \$100,000 | 6 |
| OR More than \$100,000 | 7 |
| (DO <u>NOT</u> READ) Refused | 8 |

THANK RESPONDENT AND GIVE RESPONDENT GRATUITY. COMPLETE INFORMATION ON PAGE 1 OF SCREENER. STAPLE SCREENER TO FRONT OF QUESTIONNAIRE.

Appendix B: Individual Label Executions

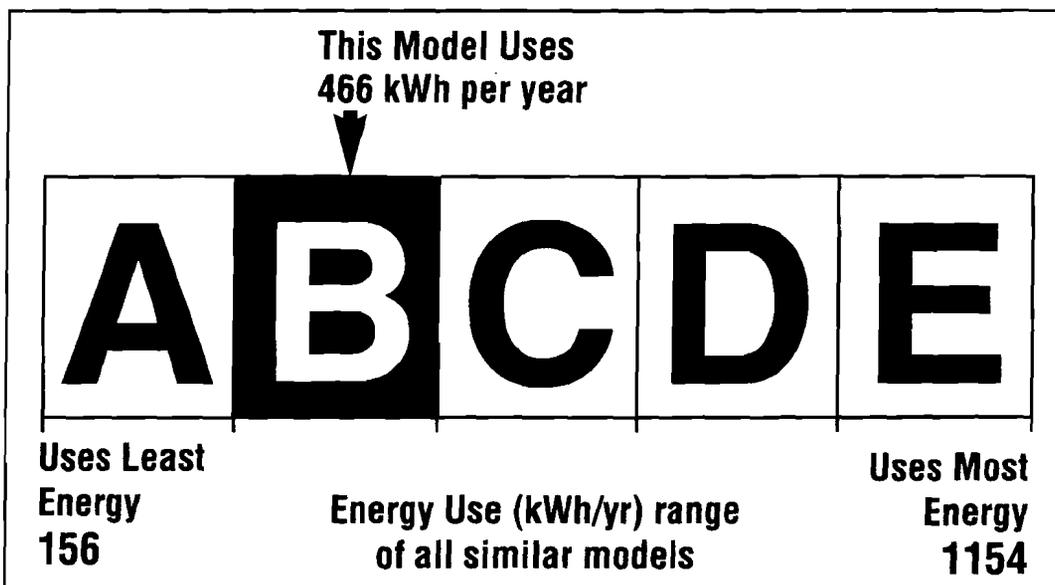
J

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:
\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)



ENERGY STAR
A Symbol of
energy efficiency



Based on standard U.S. Government tests

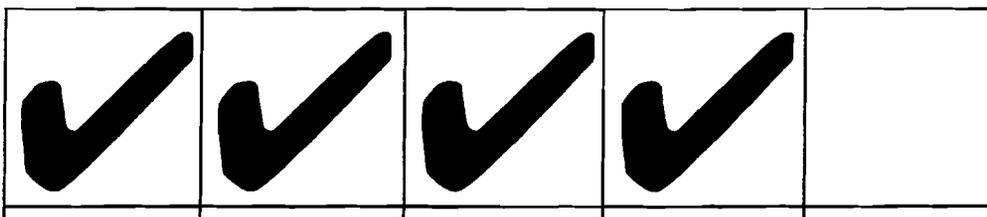
ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752



Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154
kWh/yr

Based on a comparison of similar models.

156
kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **466** kWh per year

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater

\$20 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.



ENERGY STAR
A Symbol of
energy efficiency

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)



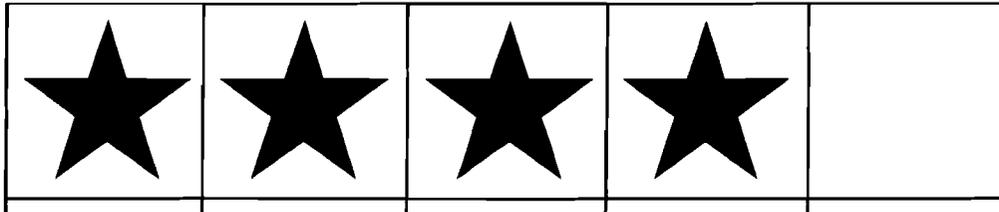
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154
kWh/yr

Based on a comparison of similar models.

156
kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **466** kWh per year

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater

\$20 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.



ENERGY STAR
A Symbol of
energy efficiency

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)



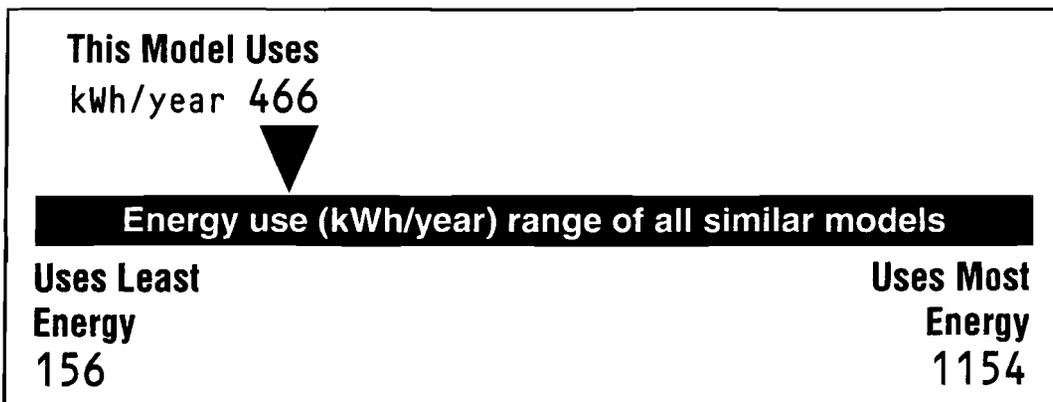
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$37

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)



ENERGY STAR
A Symbol of
energy efficiency

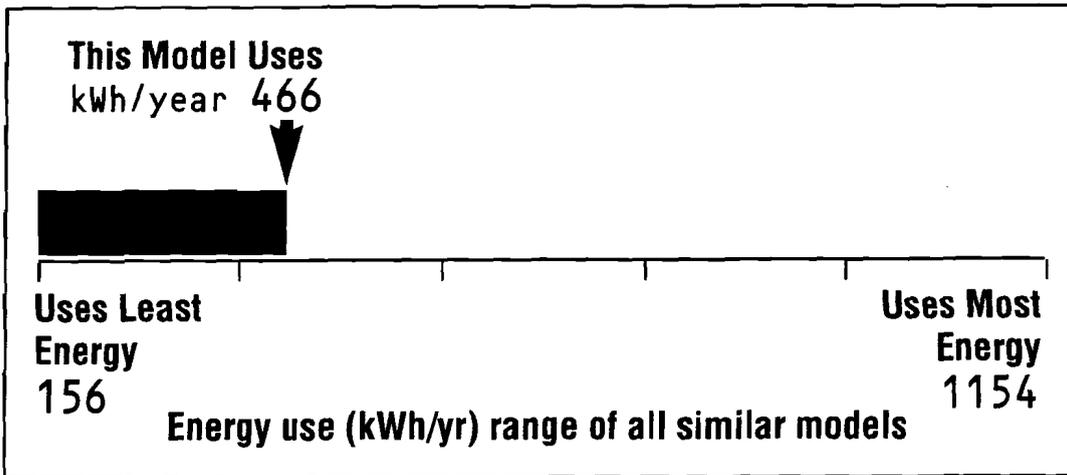


Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)



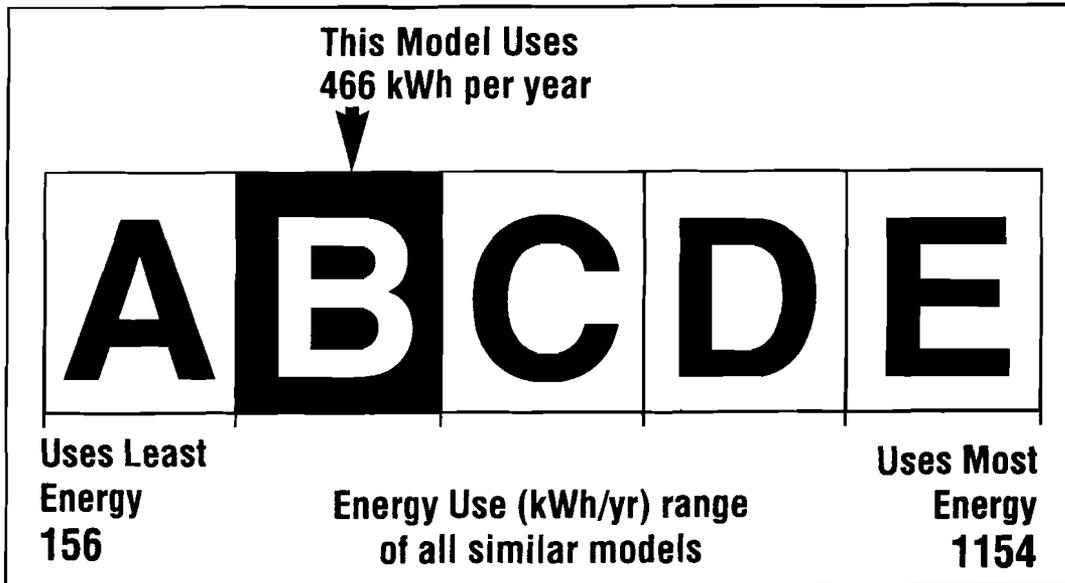
J

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)



Based on standard U.S. Government tests

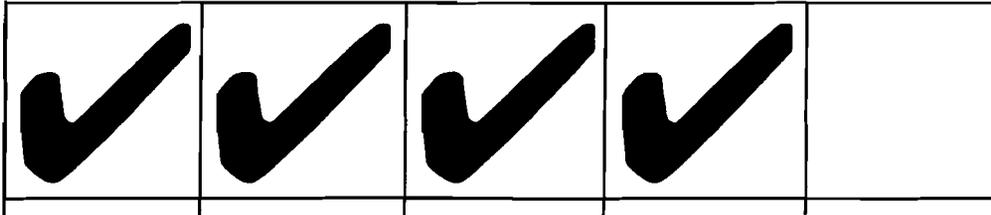
ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752



Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154
kWh/yr

Based on a comparison of similar models.

156
kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **466** kWh per year

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater

\$20 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42 U.S.C. 8302)



Based on standard U.S. Government tests

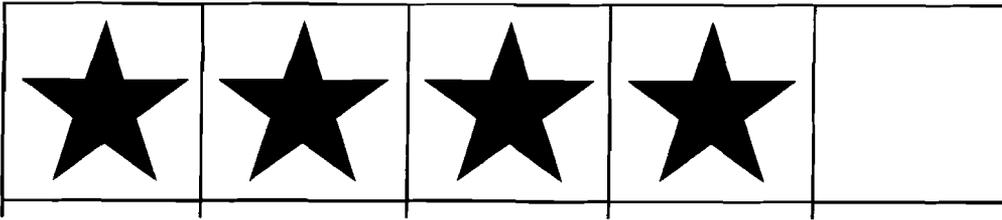
ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(s) CWL010752

Clothes Washer
Capacity: Standard



The More Stars the More Energy Efficient



1154
kWh/yr

Based on a comparison of similar models.

156
kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **466 kWh** per year

Estimated Yearly Operating Cost:

\$37

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)



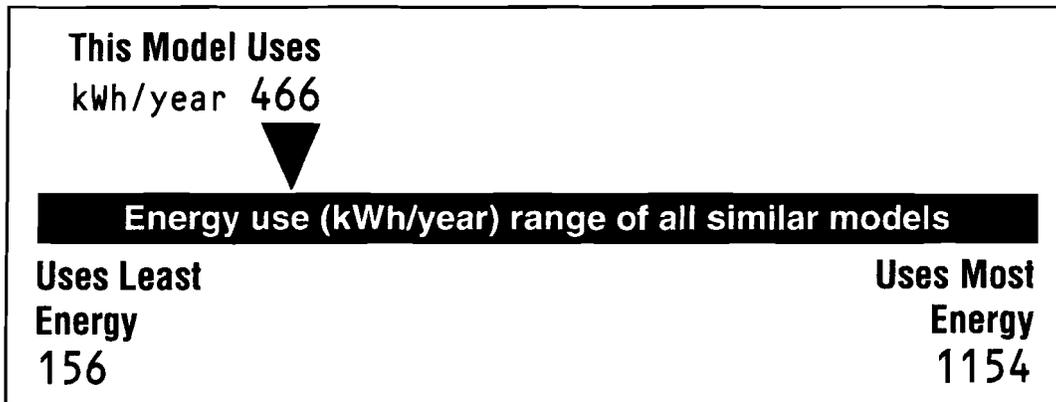
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752

**Compare the Energy Use of this Clothes Washer
with Others Before You Buy.**



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

**Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:**

\$37

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

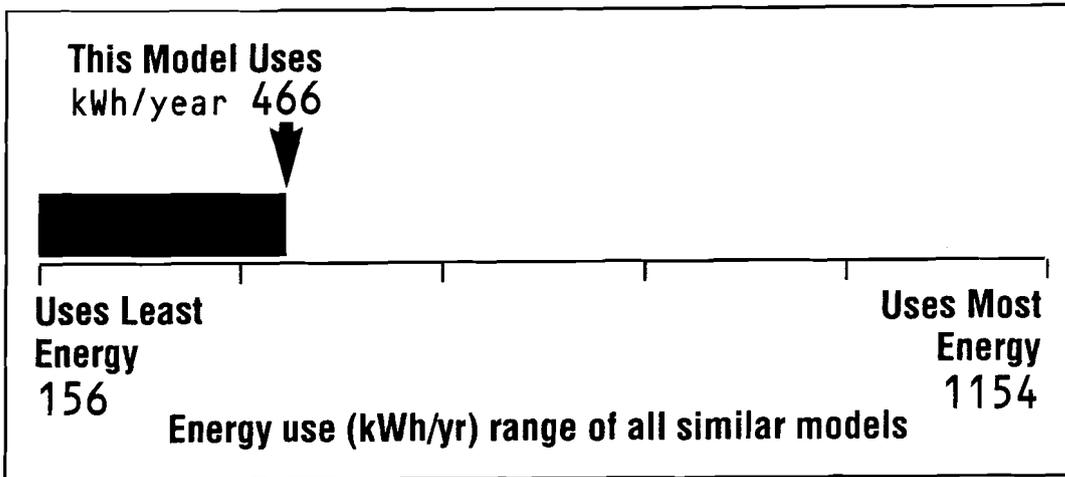


Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) CWL010752



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$37 when used with an electric water heater **\$20** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Important: Removal of this label before consumer purchase is a violation of Federal law (42.U.S.C. 8302)

Appendix C: Grid for Label Rotations and Orderings

Position	Rotation									
	1	2	3	4	5	6	7	8	9	10
1 st	J	N	M	L	K	N	J	K	L	M
2 nd	K	J	N	M	L	M	N	J	K	L
3 rd	L	K	J	N	M	L	M	N	J	K
4 th	M	L	K	J	N	K	L	M	N	J
5 th	N	M	L	K	J	J	K	L	M	N

GRIDS FOR RANK ORDER COMPARISONS

Star Execution

Market	Left	Middle	Right
New York	High	Low	Medium
Milwaukee	Low	High	Medium
Atlanta	High	Medium	Low
Phoenix	Low	Medium	High
San Francisco	Medium	High	Low

Check Execution

Market	Left	Middle	Right
New York	Low	High	Medium
Milwaukee	High	Medium	Low
Atlanta	Low	Medium	High
Phoenix	Medium	High	Low
San Francisco	High	Low	Medium

Letter Execution

Market	Left	Middle	Right
New York	High	Medium	Low
Milwaukee	Low	Medium	High
Atlanta	Medium	High	Low
Phoenix	High	Low	Medium
San Francisco	Low	High	Medium

Current Execution

Market	Left	Middle	Right
New York	Low	Medium	High
Milwaukee	Medium	High	Low
Atlanta	High	Low	Medium
Phoenix	Low	High	Medium
San Francisco	High	Medium	Low

Bar Execution

Market	Left	Middle	Right
New York	Medium	High	Low
Milwaukee	High	Low	Medium
Atlanta	Low	High	Medium
Phoenix	High	Medium	Low
San Francisco	Low	Medium	High

Appendix D: One Set of Label Trios

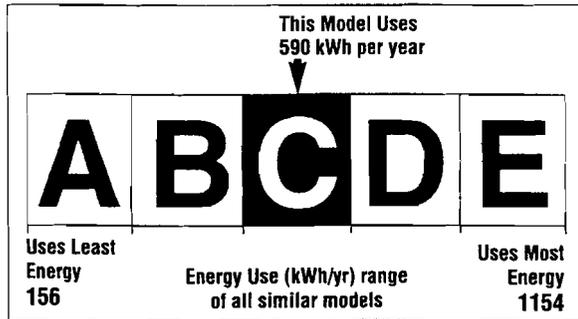
J

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CVE010753

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$49 when used with an electric water heater **\$19** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 58.8¢ per therm for natural gas

Model(s) shown are the most energy efficient model(s) available for this category as of 10/1/2007.

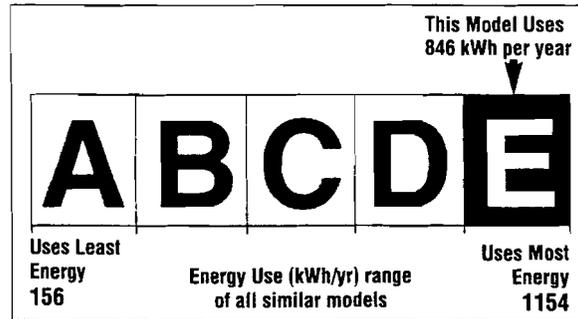
Left

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CVE010755

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$70 when used with an electric water heater **\$32** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 58.8¢ per therm for natural gas

Model(s) shown are the most energy efficient model(s) available for this category as of 10/1/2007.

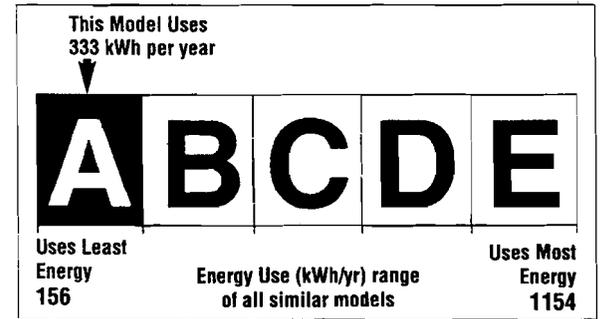
Center

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CVE010751

Clothes Washer
Capacity: Standard



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$28 when used with an electric water heater **\$10** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 58.8¢ per therm for natural gas

Model(s) shown are the most energy efficient model(s) available for this category as of 10/1/2007.



Right



Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CWM050755

Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **241** kWh per year

Estimated Yearly Operating Cost:

\$20 when used with an electric water heater **\$8** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas



Model Number: CWM050755

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CWM310753

Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **785** kWh per year

Estimated Yearly Operating Cost:

\$65 when used with an electric water heater **\$28** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas

Model Number: CWM310753

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CWM110751

Clothes Washer
Capacity: Standard

The More Checks the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **1132** kWh per year

Estimated Yearly Operating Cost:

\$94 when used with an electric water heater **\$40** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas

Model Number: CWM110751

Left

Center

Right



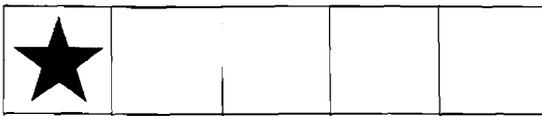
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CWL010751

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **1001** kWh per year

Estimated Yearly Operating Cost:

\$83 when used with an electric water heater **\$37** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CWL010753

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **600** kWh per year

Estimated Yearly Operating Cost:

\$50 when used with an electric water heater **\$19** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.

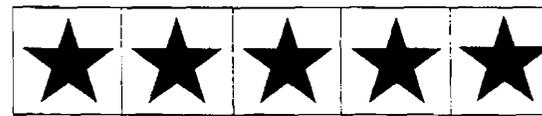
Based on standard U.S. Government tests

ENERGYGUIDE

AMERICAN APPLIANCE
MODEL(S) CWL010755

Clothes Washer
Capacity: Standard

The More Stars the More Energy Efficient



1154 kWh/yr Based on a comparison of similar models. 156 kWh/yr

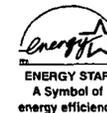
kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

This model uses **314** kWh per year

Estimated Yearly Operating Cost:

\$26 when used with an electric water heater **\$12** when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas.



Left

Center

Right



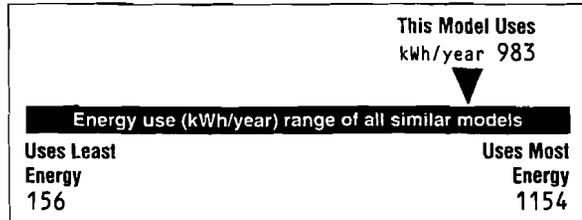
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) RRB010751

Compare the Energy Use of this Clothes Washer
with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:

\$82

when used with an electric water heater

\$35

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Model(s) removed if this label is being purchased outside the United States. © 2000 U.S. EPA.

Left

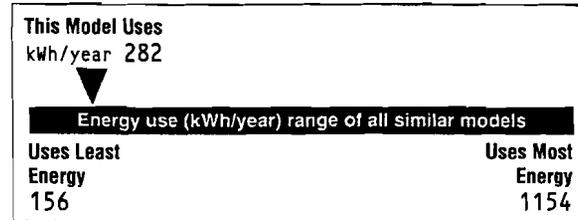
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) RRB010755

Compare the Energy Use of this Clothes Washer
with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:

\$23

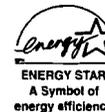
when used with an electric water heater

\$11

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Model(s) removed if this label is being purchased outside the United States. © 2000 U.S. EPA.



Center

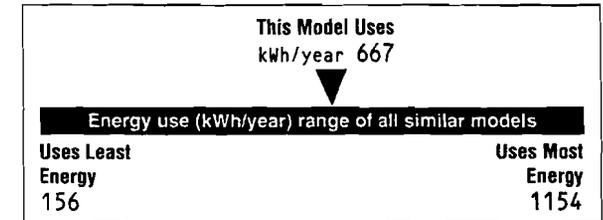
Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) RRB010753

Compare the Energy Use of this Clothes Washer
with Others Before You Buy.



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Clothes washers using more energy cost more to operate.
This model's estimated yearly operating cost is:

\$55

when used with an electric water heater

\$20

when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas. Your actual operating cost will vary depending on your local utility rates and your use of the product.

Model(s) removed if this label is being purchased outside the United States. © 2000 U.S. EPA.

Right

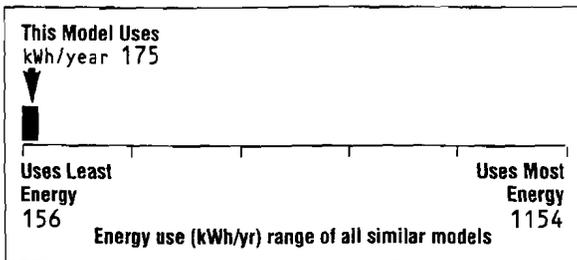


Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) DM010755



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$15 when used with an electric water heater \$6 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas



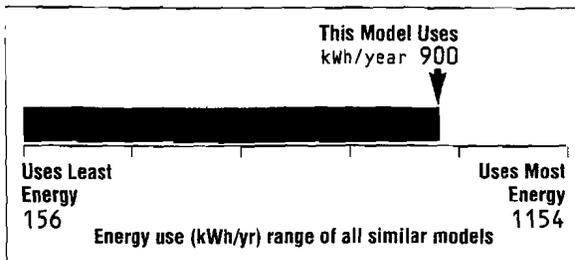
Left

Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) DM010751



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$75 when used with an electric water heater \$32 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas

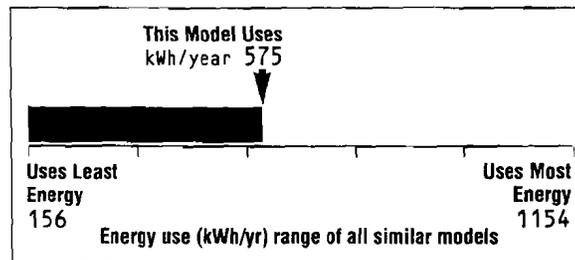
Center

Based on standard U.S. Government tests

ENERGYGUIDE

Clothes Washer
Capacity: Standard

AMERICAN APPLIANCE
Model(s) DM010753



kWh/year (kilowatt-hours per year) is a measure of energy (electricity) use. Your utility company uses it to compute your bill. Only standard size clothes washers are used in this scale.

Estimated Yearly Operating Cost:

\$48 when used with an electric water heater \$18 when used with a natural gas water heater

Based on eight loads of clothes a week and a 2000 U.S. Government national average cost of 8.03¢ per kWh for electricity and 68.8¢ per therm for natural gas

Right

Energy Label Design Test Using Simulated Shopping Experiment

Prepared for:

ACEEE
1001 Connecticut Avenue, NW
Suite 801
Washington, DC 20036

Prepared by:

SHUGOLL RESEARCH
7475 Wisconsin Avenue, Suite 200
Bethesda, Maryland 20814
(301) 656-0310
www.shugollresearch.com

November 2001

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1.0 Management Summary

Management Summary - Background and Methods

- Previous market research involving multiple rounds of focus groups and a quasi-experimental mall intercept survey indicate that many new energy label designs outperform the current energy label in terms of grabbing consumers' attention, communicating energy-related information, being easy to understand and motivating consumers to consider energy efficient appliances. Categorical labels tended to outperform all continuous labels on ability to grab attention, ease of understanding and ability to communicate desired information. However, because there was some concern that the star label (the highest rated categorical label) might incorrectly signal product quality, this study was designed to test the impact of different energy label designs on perceptions of product quality and value, as well as on likely purchase decisions.
- Since all previous research occurred in environments where consumers were completely focused on the energy labels being tested, this past research represents "best case" scenarios where the level of consumer understanding is maximized. To more realistically portray the impact of different energy labels on purchase decision when multiple distractions are present, ACEEE conducted a simulated shopping experiment where energy labels were systematically varied. This research approximates real-life shopping behavior and, thus, more clearly shows the likely impact of energy labels on appliance selection.
- All previous research showed new test labels clearly outperforming the current energy label. Thus, in conducting the simulated shopping experiment, only new improved labels, and not the current label, were tested. This is consistent with prior findings that the current label should be changed regardless of which label design is used. The labels tested include the best-rated categorical label, the optimized star label, and the best continuous label, the optimized continuous bar label.
- In a simulated shopping experiment involving 8 washing machine models and 5 water heater models, 204 homeowners selected the models of each appliance that they would be most likely to purchase and their reasons for these choices. Each respondent saw one appliance group with the optimized star energy label design on each model and the other appliance group with the optimized continuous bar energy label design on each model. The appliance category on which each label design was seen and the order in which each appliance category was evaluated was varied systematically across respondents. Their responses offer insights into the impact that these different energy label designs have on appliance purchase decisions.

Management Summary - Key Findings

- Based on this research technique, the type of energy label design has little or no impact on appliance purchase decisions. There are no significant differences at the 95 percent confidence level in the appliance models most likely to be purchased based on the energy label design appearing on the models. However, using a more liberal statistical test (90% confidence), the optimized star label increases the chances that the most efficient model is purchased.
- For the most part, the different energy label designs communicate similar levels of performance in terms of appliance quality and value for the money. There are no systematic significant differences in the models perceived to be above average or below average in terms of quality or value at the 95 percent confidence level. However, considering differences at the 90 percent confidence level, the optimized star label does a better job of communicating poor value and quality for relatively inefficient models. The label shown does not impact the factors differentiating above average and below average performance for quality or value in any systematic way.
- Both label designs do a good job of communicating the energy efficiency levels of the appliance models they describe. The vast majority of respondents can easily distinguish the highly efficient models from the less efficient ones, and both energy label designs perform similarly in their ability to communicate this information.
- The most efficient appliance model is not the model most likely to be purchased for either appliance category. This is because other factors are important considerations in choosing which model to purchase. These other factors include features, price and capacity, and possibly reputation for reliability, reputation for cleaning ability, style and warranty, for washing machines. Energy efficiency is a more important consideration for water heaters, but warranty, price and possibly capacity and reputation for reliability, are also important. Since energy efficiency is at least a moderately important factor in choosing a model in each appliance category, the models selected most often were fairly efficient and the most efficient in their price category.

2.0 Study Overview

2.1 Background and Purpose

- Over the past 2 years, the American Council for an Energy Efficient Economy (ACEEE) has tested a number of new designs for appliance energy labels. These new label designs can be grouped into two major categories:
 - Continuous designs that show the exact level of energy use for each appliance on a continuous scale. Examples include a bar, ruler, thermometer, speedometer, etc. The current energy label is an example of the continuous design.
 - Categorical designs that indicate the relative level of energy efficiency by grouping appliances with similar energy use levels into the same set. Examples include letters/grades, stars, checks, diamonds, etc.
- Previous research with consumers, in the form of focus groups and mall intercept interviews using a quasi-experimental design, indicate that all test designs perform significantly better than the current energy label. Of the test designs, the optimized star label design is most preferred and the highest performing in terms of:
 - Ability to grab consumer attention
 - Ease of understanding
 - Correctly communicating an appliance's energy use
 - Credibility or believability
 - Motivating consumers to read energy label
 - Motivating consumers to consider energy use when making an appliance purchase

2.1 Background and Purpose

- A revised optimized continuous bar label also performed significantly better than the current energy label in terms of being attention grabbing, being easy to read, being easy to understand, motivating consumers to consider energy use in their purchase decision and communicating the energy use of the appliance.
- As a final test of the designs, a simulated shopping experiment was conducted to evaluate the impact of different executions of the energy label on consumer purchase decisions. For this phase of the research, the optimized star design and an optimized continuous bar design were tested. Only these two designs were tested because prior research has indicated that these are the optimal designs.

2.2 Objectives

- The overall purpose of the research is to determine the impact of different energy label designs on consumer perceptions of appliances and, ultimately, their purchase decisions.
- The primary objectives are to:
 - Determine Impact of Energy Label Design on Appliance Purchase Decision
 - Determine Impact of Energy Label Design on Perceptions of Overall Appliance Quality and Value
- Additional secondary objectives are to:
 - Determine Ability of Energy Labels to Correctly Communicate Energy Efficiency of Household Appliances
 - Describe Factors Considered When Purchasing Household Appliances, Including the Role of Energy Efficiency

2.3 Methodology, Study Procedures and Limitations

- The simulated shopping experiment was conducted to closely approximate how consumers react to appliance energy labels in a real-world setting. Previous work in simulated shopping experiments suggest that they come closer to predicting future purchase behavior than surveys, and their ability to predict future behavior increases the more the simulated shopping environment and purchase decisions approximate real life. For this reason, multiple brands of appliances and multiple models within brand were used in the shopping experiment. Prices used represented average retail prices found in a set of stores. Marketing materials, including point of purchase displays, were also present on all models. All of this meant that there were numerous visual stimuli for consumers to examine in addition to the energy label.
- Research was conducted in Tampa, Florida among 204 homeowners. Tampa was selected because it includes a broad cross-section of consumer demographics and it provides geographical diversity from markets where previous rounds of research were conducted. All study participants were recruited to ensure that they are homeowners who are primarily or jointly responsible for appliance purchase decisions in their household. In addition, all had to be at least 18 years of age, not work or have an immediate family member who worked in a sensitive industry and have a strong ability to read and understand English. Further, a mix by race, education level and gender was obtained. Of the 204 respondents, 49 were married couples who completed a single questionnaire between them. A copy of the screening questionnaire used to recruit qualified respondents appears as Appendix A of this report.
- Consumers were recruited to a central facility set up to approximate an appliance showroom floor as much as possible. Eight models of washing machines and 5 models of water heaters were displayed, including manufacturer point-of-purchase display materials, a product/feature description and price tag and an energy label. Appendix C shows a sample of the product/feature description cards and the energy labels placed on the appliance models.

2.3 Methodology, Study Procedures and Limitations

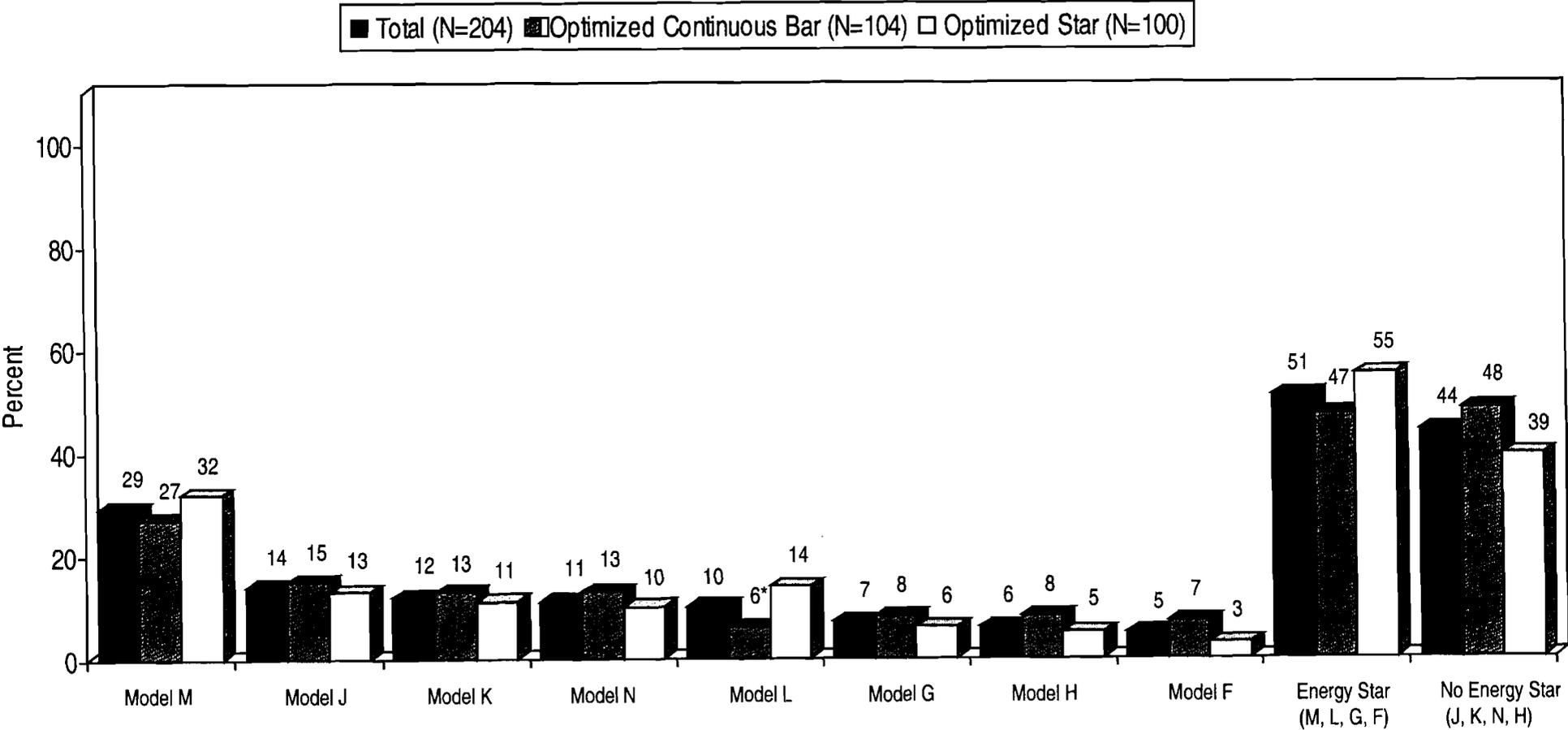
- Each respondent saw one set of appliances (washing machines or water heaters) all with energy labels displaying the optimized star design and the other set of appliances all with energy labels displaying the optimized continuous bar design. Half of the consumers saw the optimized star label on the washing machines, and half saw the optimized star label on the water heaters. The order in which the appliances were “shopped” was also rotated across consumers so that half of consumers saw the optimized star labels first and half saw the optimized continuous bar label first. This was done to remove order bias as a factor and to test whether there is a “learning effect” that makes a label more effective if it is seen after exposure to another label.
- Consumer behavior was observed and purchase decisions were recorded for the 204 homeowners who participated in the simulated shopping experiment for washing machines and water heaters. Consumers were asked to complete a series of questions about each appliance category (see questionnaire copy in Appendix B) focusing on purchase intentions, reasons for purchase intentions and perceptions of the various appliance models. Consumers were not alerted to the fact that the energy labels were the focus of the study, nor did the questions in the survey focus on energy labeling. The typical consumer “shop”, including completion of all survey questions, was 52 minutes.
- All data were analyzed overall and by label seen on each appliance category. Additional analysis was conducted that examined order effect (which label was seen first) within each appliance category. Statistical testing was performed to determine if any of the differences by label or by order seen significantly impacted perceptions of appliance quality, value and/or purchase intentions. Statistical testing was run at both the 95 percent and 90 percent confidence levels.
- There are no significant differences between the consumers who saw the optimized star label on the washing machines/optimized continuous bar label on the water heaters and those who saw the optimized continuous bar label on the washing machines/optimized star label on the water heaters. Within each group, there was also no difference between the consumers who saw the optimized star label first and those who saw the optimized continuous bar label first. A profile of study participants, overall and by the labels evaluated, appears as Appendix D to this report.

3.0 Study Findings by Objective

**Primary Objective 1: Determine Impact of Energy
Label Design on Appliance Purchase Decision**

- There are no significant differences at the 95 percent confidence level for either washing machines (see Figure 1) or water heaters (see Figure 2) in the likelihood of purchasing each appliance model based on which energy label was attached to the appliance. Model L, the most efficient washing machine model, is more likely to be purchased when seen with the optimized star label than with the optimized continuous bar label at the 90 percent confidence level. Thus, in this shopping situation, which is illustrative of appliance shopping experiences in general, the type of energy label used does not appear to strongly impact purchase decisions. To the extent that the energy label has any impact, the optimized star label increases the chances that a highly efficient product is chosen.
- Further, the models of washing machines and water heaters that are most likely to be purchased do not vary based on which label (the optimized star or the optimized continuous bar) was seen first. Thus, there does not appear to be any “learning effect” or order bias for either of these label designs.
- The models that respondents are most likely to purchase tend to be relatively energy efficient, but not necessarily the most energy efficient. For washing machines, the most preferred model, Model M, is the third most efficient overall and the most efficient of the mid-priced models. The most efficient models, Models L and G, are preferred by few respondents, as are the least efficient models, Models K and H. For water heaters, the most preferred model, Model V, is the second most energy efficient model and most efficient among the lower priced models. The most efficient model, Model T, is preferred second most often, despite the fact that it is significantly more expensive than all other models. The models chosen least often are also the least energy efficient.
- When asked on an unaided basis why they chose the models that they did, energy efficiency is the most frequently named reason for choosing the water heater they did, with warranty and price also named frequently as considerations (see Figure 4). For washing machines, energy efficiency is named fourth most often, behind features, price and capacity (see Figure 3). The degree to which energy efficiency is named on an unaided basis as a reason for purchasing the model selected does not vary by the label seen or the order in which the labels are seen. This confirms that the design of the label does not appear to have a major impact on purchase decisions.

Figure 1: Washing Machine Most Likely to Purchase

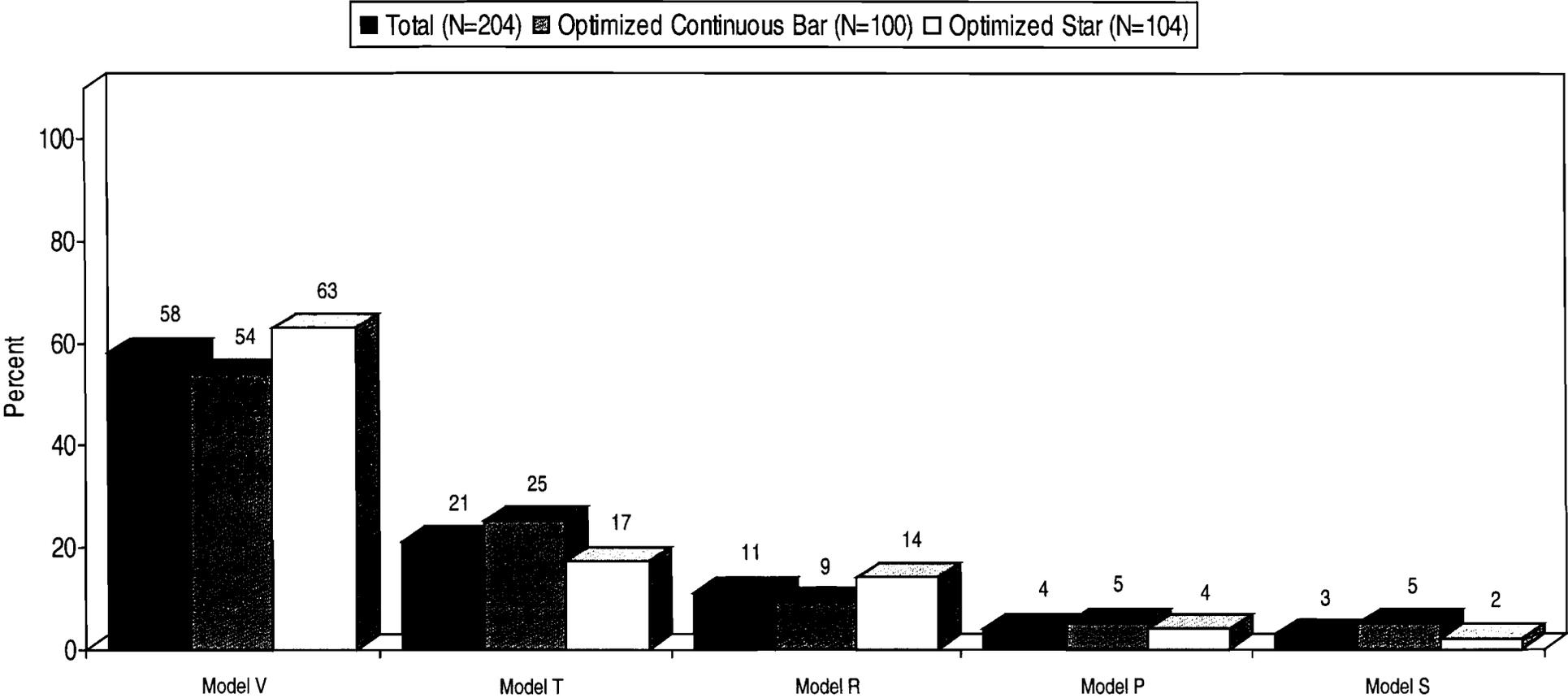


Base: Total respondents

Note: Balance of total respondents answered "None of These"

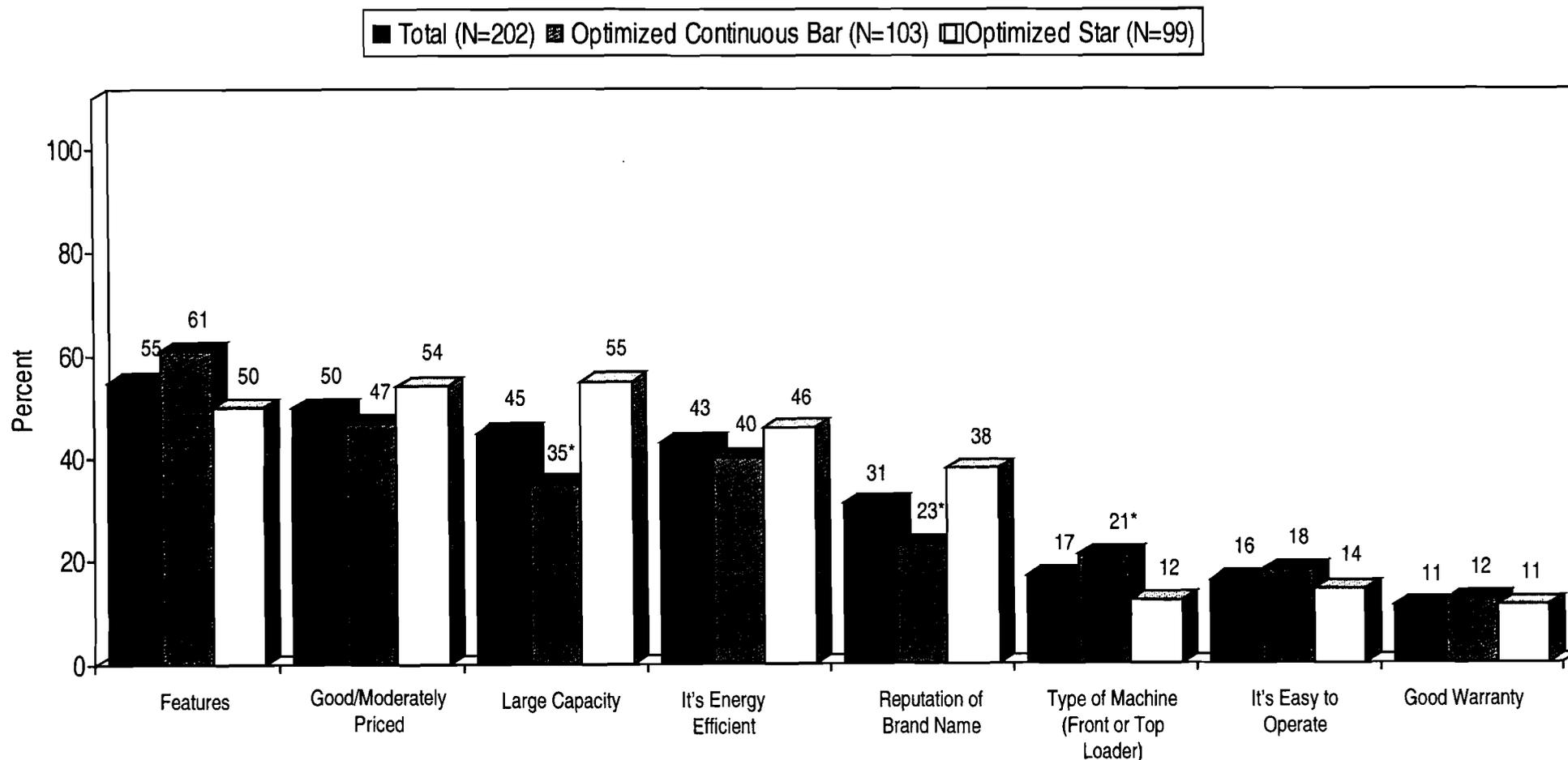
*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 2: Water Heater Most Likely to Purchase



Base: Total respondents
Note: Balance of total respondents answered "None of These"

Figure 3: Reason for Purchasing Washing Machine (Unaided)



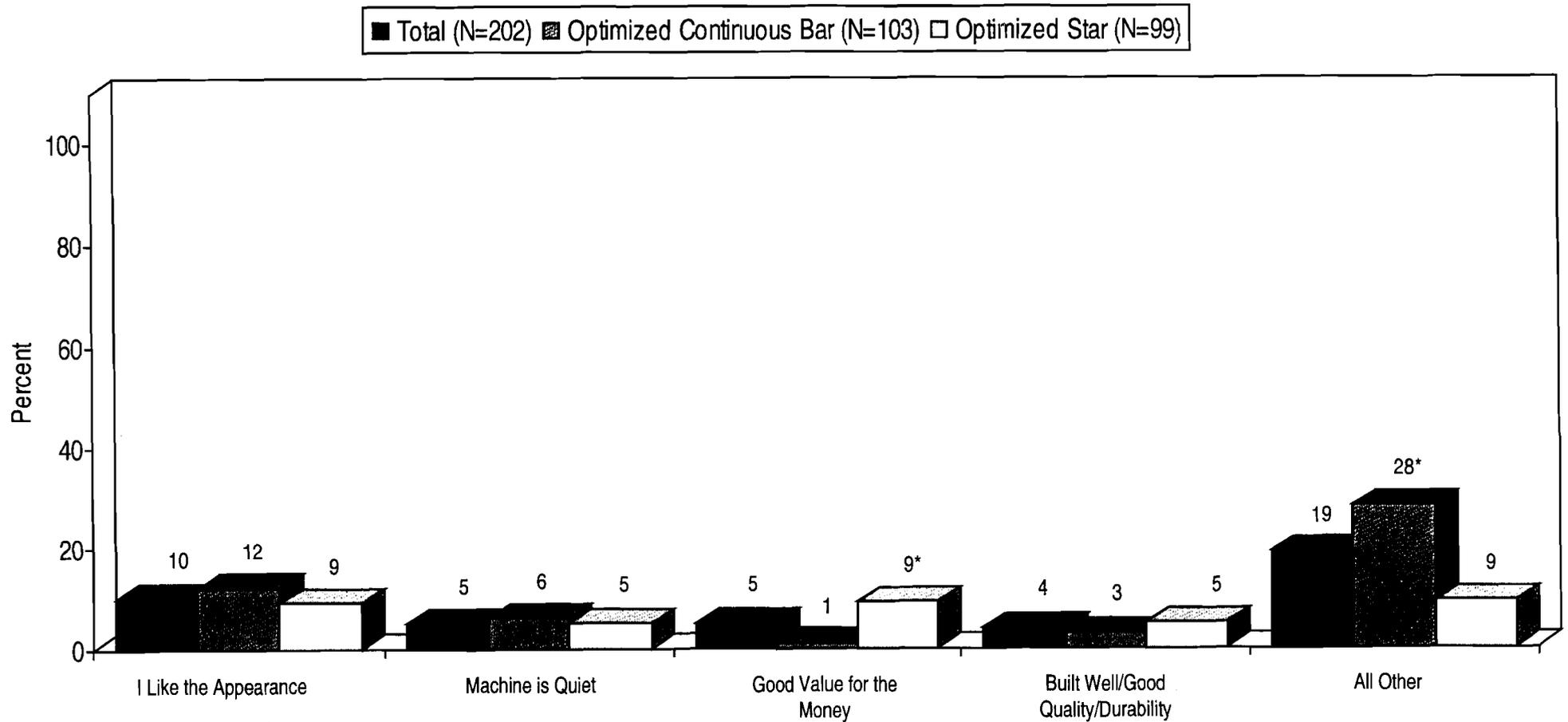
Base: All respondents who choose a model most likely to purchase

Note: Percentages may add to more than 100 percent because multiple responses were accepted.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

(Cont'd on next page)

Figure 3: Reason for Purchasing Washing Machine (Unaided) (Cont'd)



Base: All respondents who choose a model most likely to purchase

Note: Percentages may add to more than 100 percent because multiple responses were accepted.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 4: Reasons for Purchasing Water Heater (Unaided)

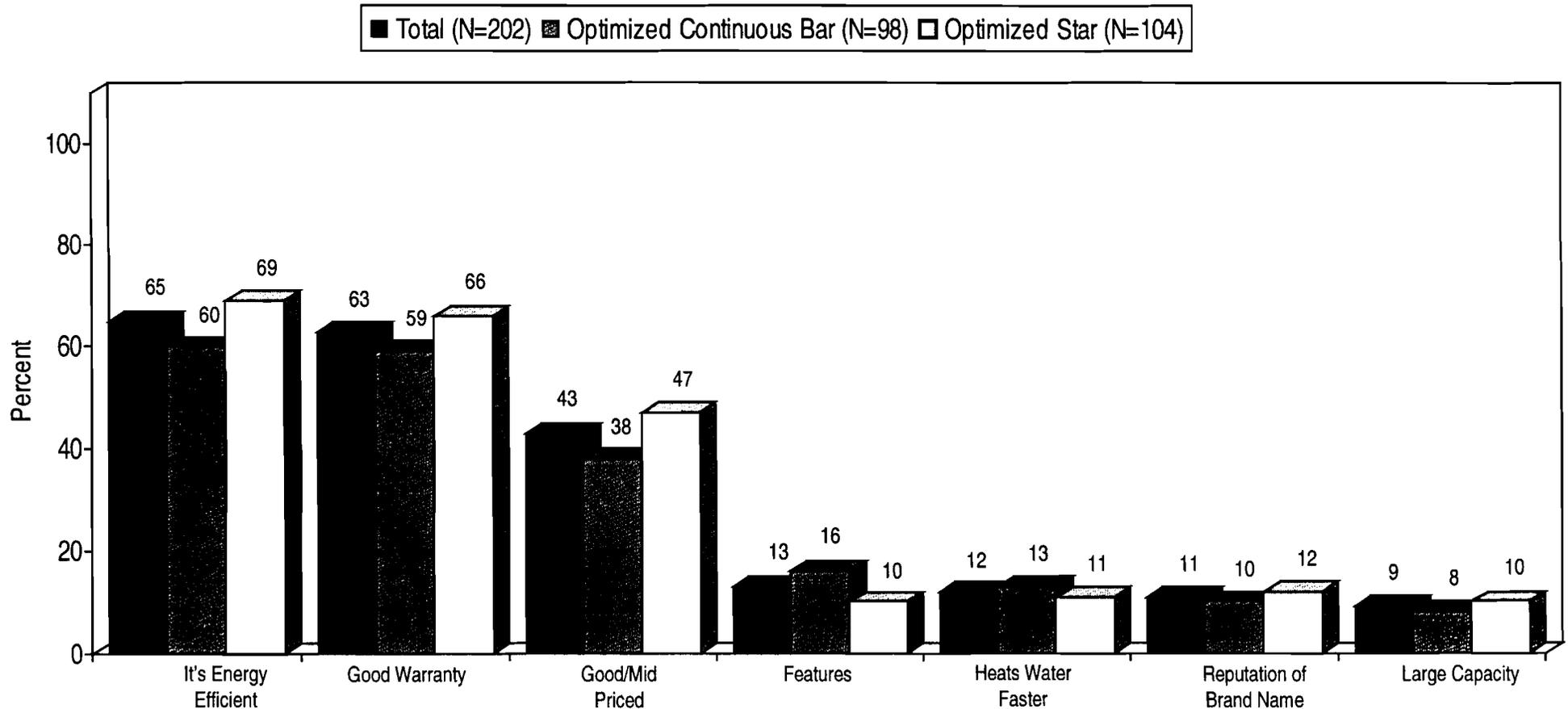
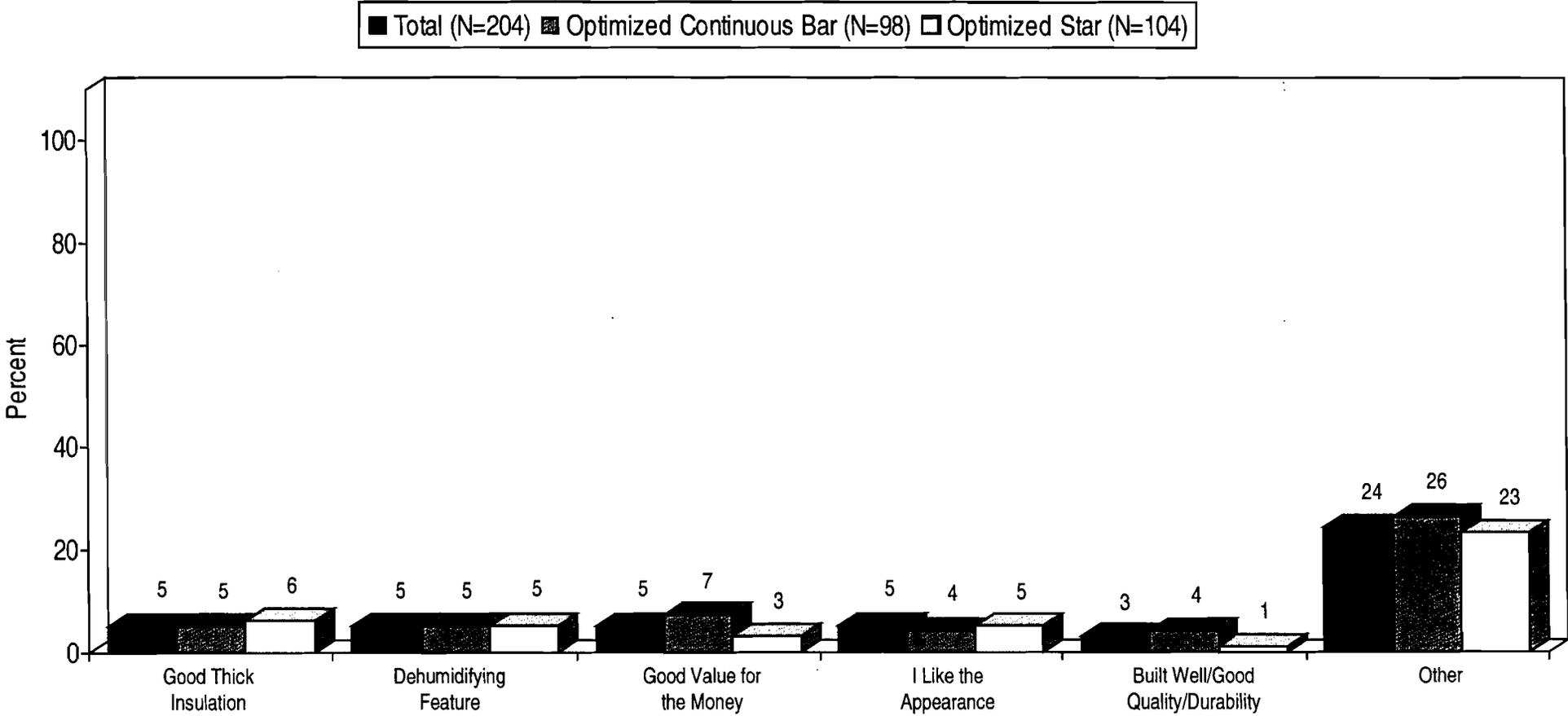


Figure 4: Reasons for Purchasing Water Heater (Unaided) (Cont'd)



Base: Total respondents

**Primary Objective 2: Determine Impact of Energy
Label Design on Perceptions of Appliance Quality
and Value**

- Perceptions of appliance quality are largely unaffected by the energy label appearing on the appliance at the time of evaluation. There are no significant differences at the 95 percent confidence level in perceptions of which water heaters are above average quality and below average quality between those seen with the optimized star label and the optimized continuous bar label (see Figure 6), although Model V, the second most efficient model, is perceived to be of higher quality at the 90 percent confidence level when seen with the optimized continuous bar label. For washing machines, Model M, an Energy Star Model, is perceived to be of significantly higher quality at the 95 percent confidence level when evaluated with the optimized star label than with the optimized continuous bar label, and Model H, the least efficient model, is perceived as being of below average quality more often (at the 90% confidence only) when seen with the optimized star label. However, no other models are perceived differently based on which energy label was shown on it, including groupings of energy efficient models (those with the Energy Star) and less efficient models (without the Energy Star). This is shown in Figure 5.
- The order in which the two labels were seen also does not appear to have a systematic impact on which appliance models are perceived as higher quality. For washing machines, the optimized star label design communicates higher quality when it is seen first for Model M only, while the optimized continuous bar label design communicates higher quality when seen first for Models J and K. For water heaters, Model V is perceived better when the optimized continuous bar label is seen in the first rather than the second position, but the order in which the optimized star label is seen does not impact quality perceptions of any models. Thus, the order in which the two labels are seen does not, in itself, seem to impact perceptions of appliance quality.
- Energy efficiency is a relatively important factor in evaluating appliance quality, and the frequency with which energy efficiency is named as a differentiator of quality is similar regardless of which label is seen. For washing machines, energy efficiency is the second most frequently named aspect, behind appliance features, that differentiates above average quality models from below average quality models. The price/value of what you get for the money paid and the design or appearance of the models are also frequently named factors that differentiate high quality from low quality washing machine models. For water heaters, energy efficiency is the most frequently named aspect that differentiates high quality from low quality models. This is followed by length of warranty and price/value. These factors used to identify appliance quality are the same regardless of which energy label is on the appliance when it is evaluated. The only differences in evaluative criteria related to energy label design are that operating costs are considered more often with the optimized continuous bar label than with the optimized star label, while design or appearance is considered more often with the optimized star label design for washing machines, but total consideration of energy efficiency (including operating cost) does not vary based on label design. This is shown in Figures 7 and 8.

- The energy label seen with each appliance also has minimal impact on perceptions of appliance value. For water heaters, there are no differences at the 95 percent or 90 percent confidence level in perceptions of which models offer above average value and which offer below average value for the money based on which label appeared on the water heater (see Figure 10). For washing machines, Model N, a relatively inefficient model, is seen as offering above average value significantly more often at the 95 percent confidence level with the optimized continuous bar label than with the optimized star label, and Models M, the least efficient of the Energy Star Models, and Model K, a relatively inefficient model, are perceived as offering below average value (at 90% confidence level) when seen with the optimized star label. These data confirm earlier findings that if any differences can be attributed to energy labels, the optimized star design encourages consideration of energy efficient models. See Figure 9.
- There are no systematic differences in value ratings for any water heater or washing machine models based on the order in which each energy label design was seen.
- Energy efficiency has more impact on perceptions of value than with perceptions of quality or intentions to purchase. Energy efficiency/use is the most frequently named reason for perceiving that both washing machines and water heaters offer above average and below average value, and this reason for value perceptions does not vary by the energy label shown (see Figures 11-14). Features and price are the other major determinants of value perceptions in washing machines. Warranty length and price are the other major determinants of value in water heaters. Features are a more important determinant of value for washing machines when the optimized continuous bar label is shown than when the optimized star label is shown, but, otherwise, there are no significant differences in the reasons for value perceptions for either appliance.

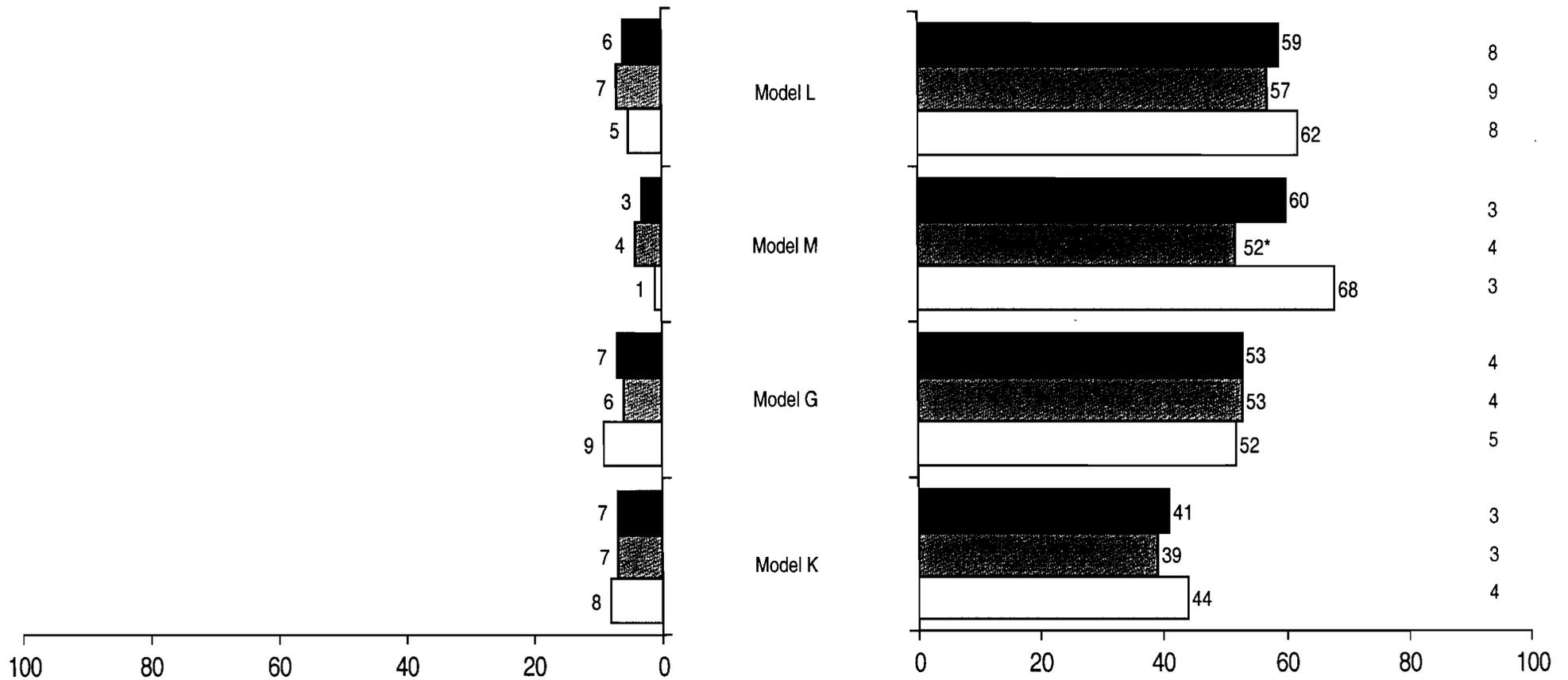
Figure 5: Quality of Washing Machines

■ Total (N=204) ■ Optimized Continuous Bar (N=104) □ Optimized Star (N=100)

Below Average Quality

Above Average Quality

Can't Tell



Base: Total respondents

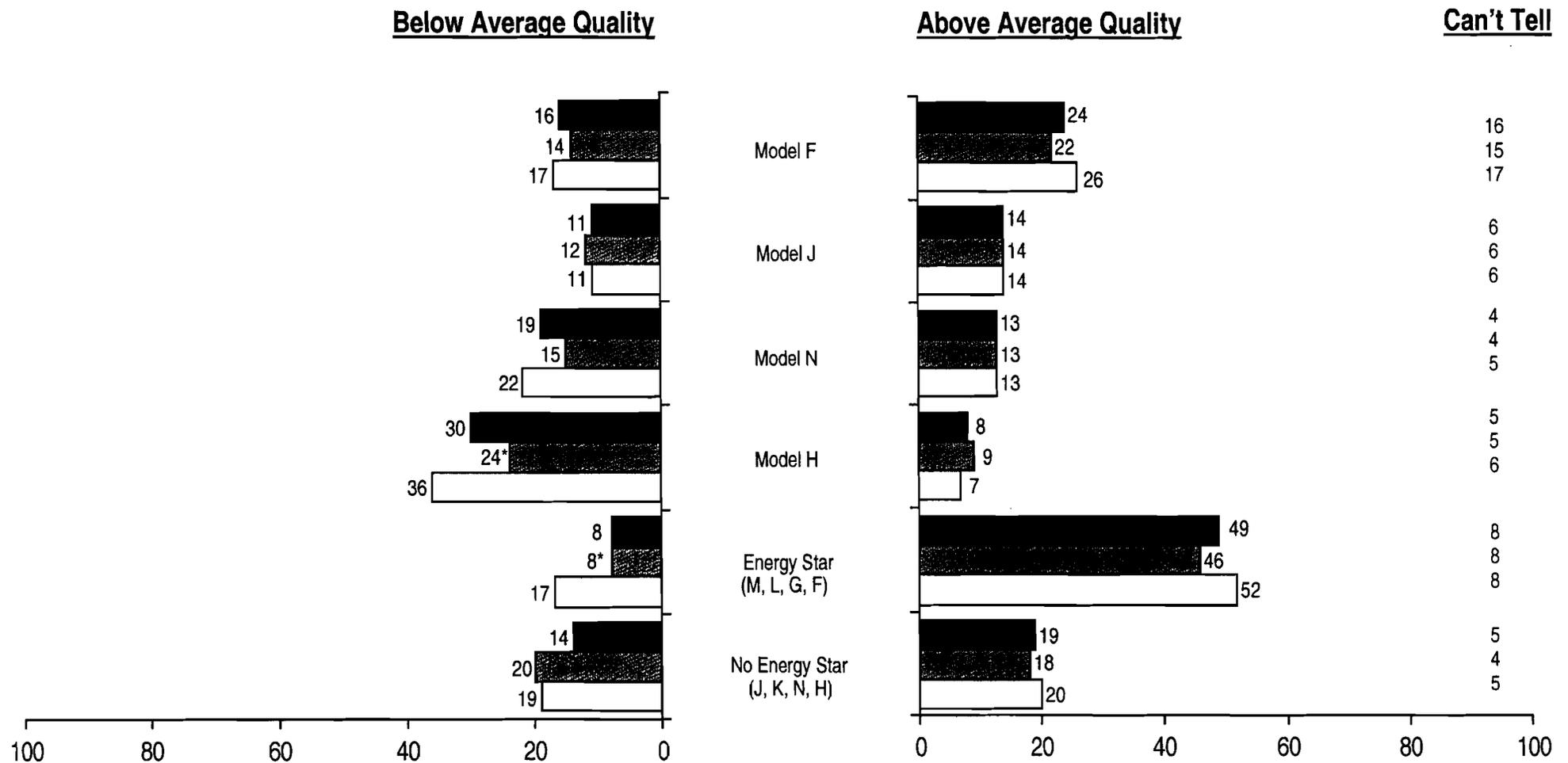
Note: Balance of total respondents answered "About Average Quality"

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

(Cont'd on next page)

Figure 5: Quality of Washing Machines (Cont'd)

■ Total (N=204) ■ Optimized Continuous Bar (N=104) □ Optimized Star (N=100)



Base: Total respondents

Note: Balance of total respondents answered "About Average Quality"

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

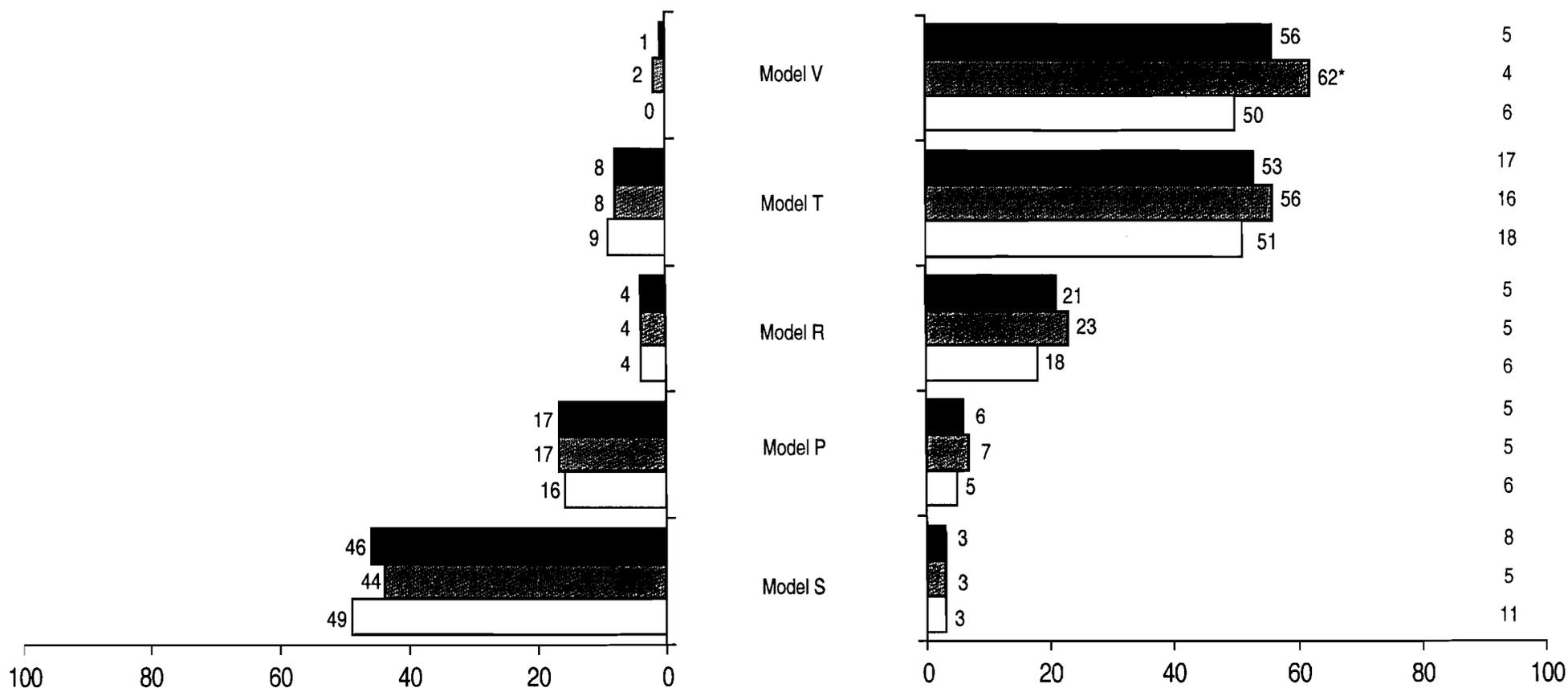
Figure 6: Quality of Water Heaters

■ Total (N=204) ■ Optimized Continuous Bar (N=100) □ Optimized Star (N=104)

Below Average

Above Average

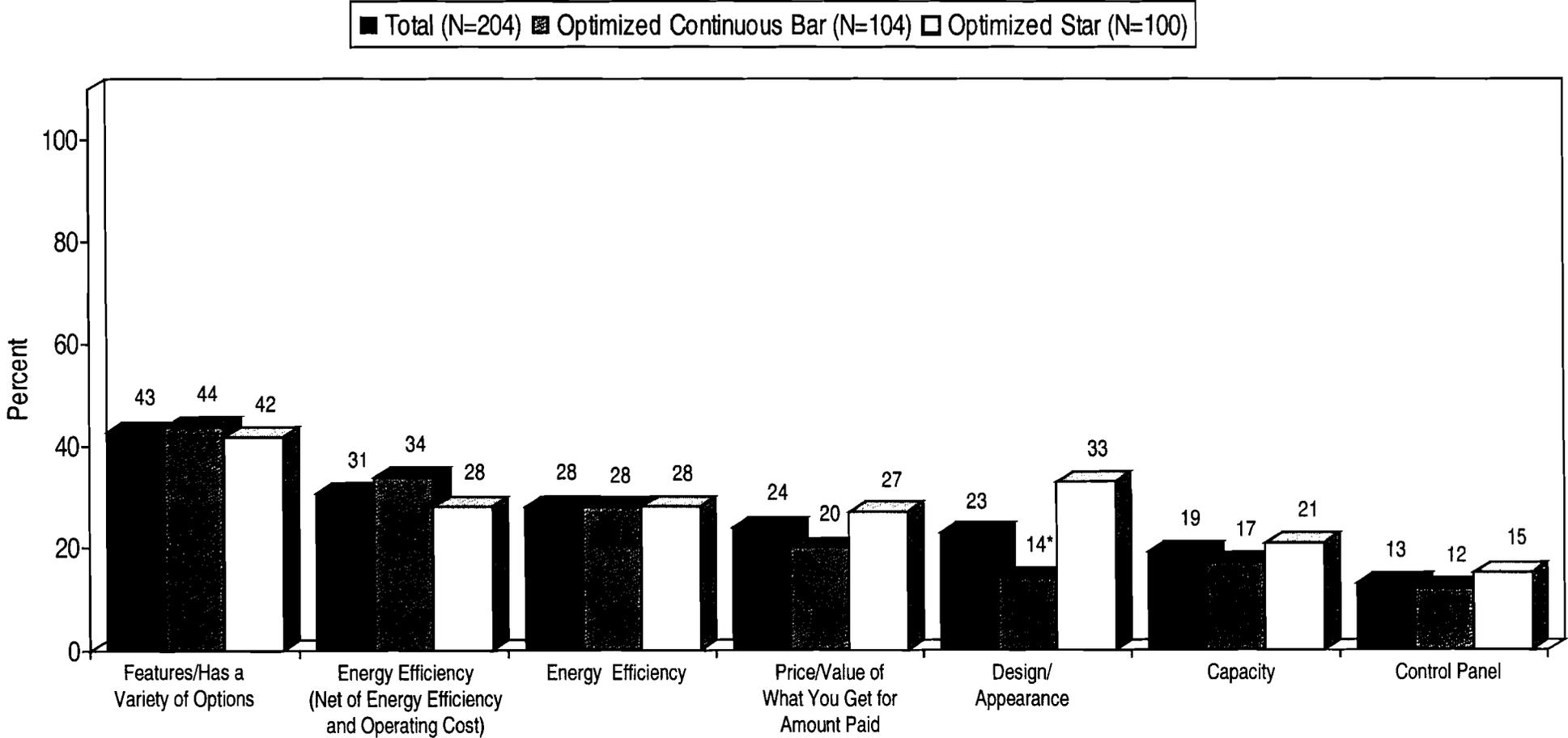
Can't Tell



Base: Total respondents

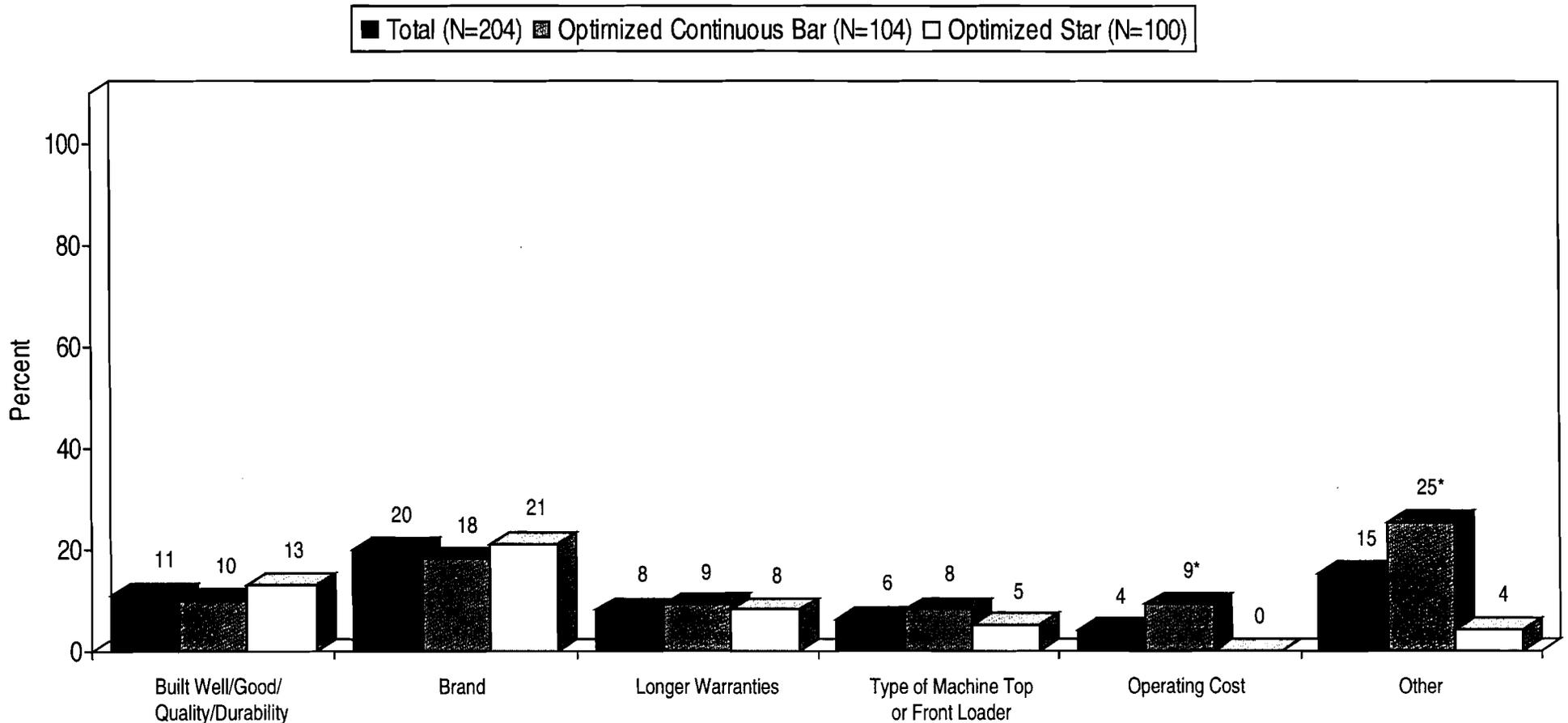
Note: Balance of total respondents answered "About Average Quality"

Figure 7: Attributes that Differentiate Between Washing Machines that Are Above Average Quality and Below Average Quality (Unaided)



Base: Total respondents
 Note: Only respondents with 3 percent or more mentions are presented.
 *Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 7: Attributes that Differentiate Between Washing Machines that Are Above Average Quality and Below Average Quality (Unaided) (Cont'd)

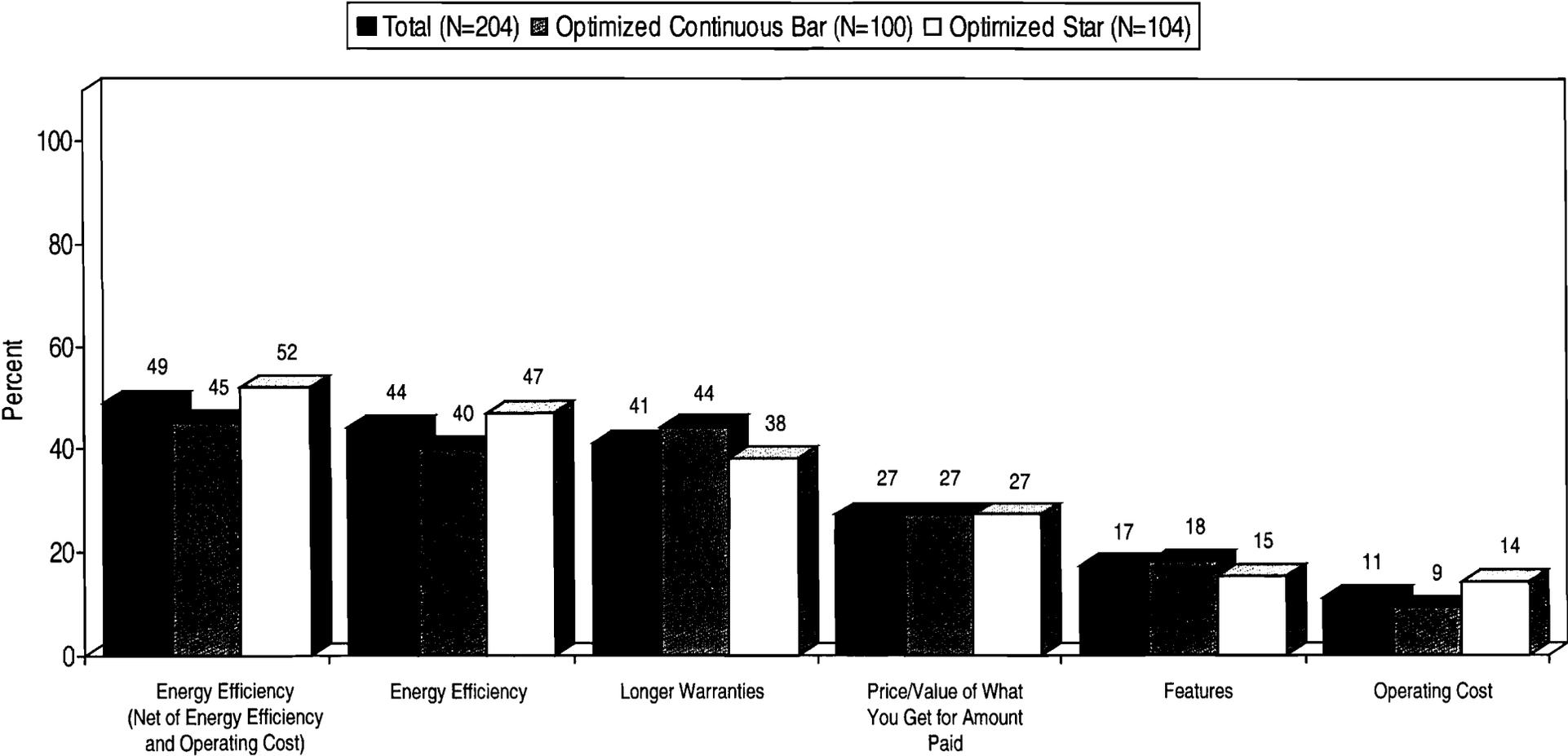


Base: Total respondents

Note: Only respondents with 3 percent or more mentions are presented.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 8: Attributes that Differentiate Between Water Heaters that Are Above Average Quality and Below Average Quality (Unaided)



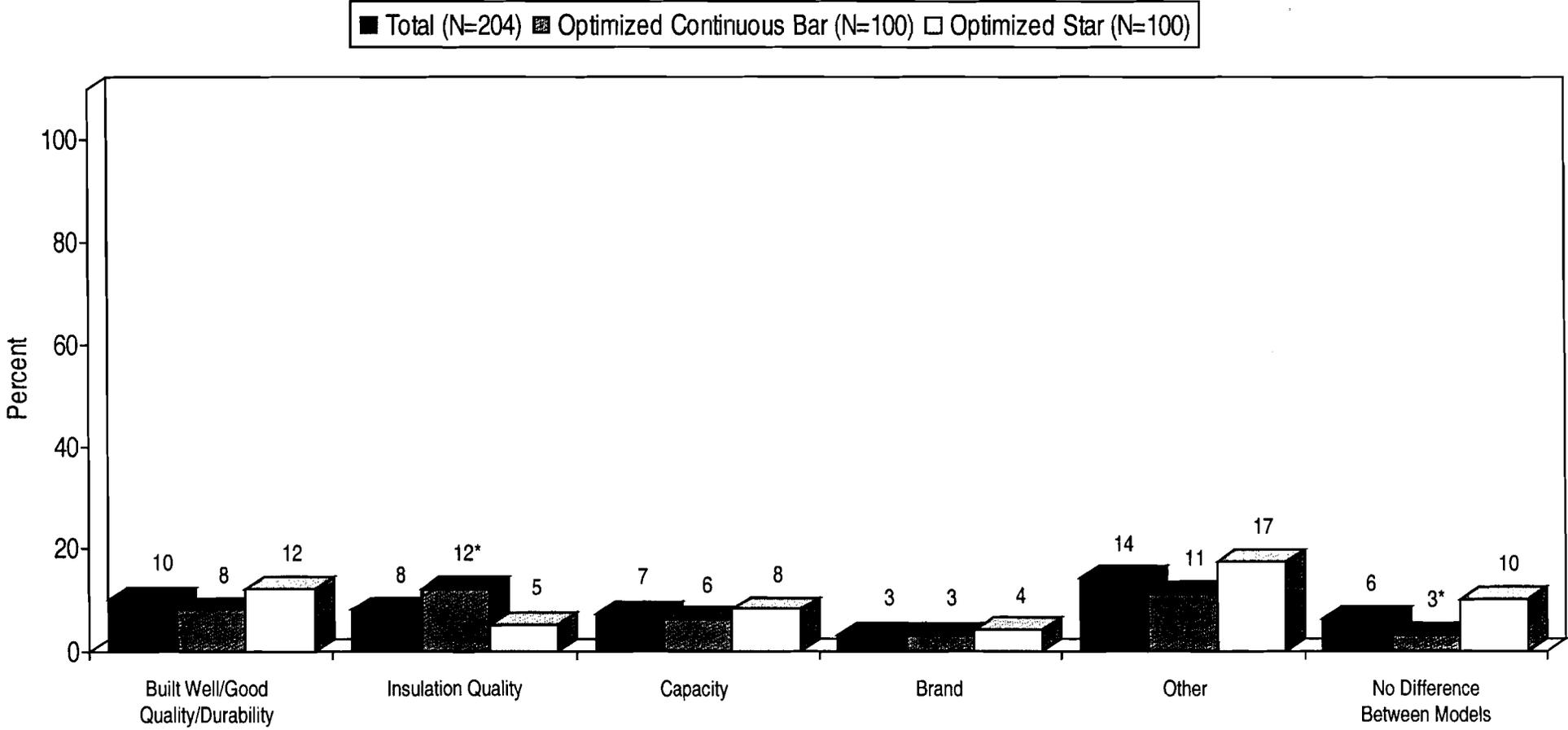
Base: Total respondents

Note: Only responses with 3 percent or more mentions are presented.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

(Cont'd on next page)

Figure 8: Attributes that Differentiate Between Water Heaters that Are Above Average Quality and Below Average Quality (Unaided) (Cont'd)



Base: Total respondents

Note: Only responses with 3 percent or more mentions are presented.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

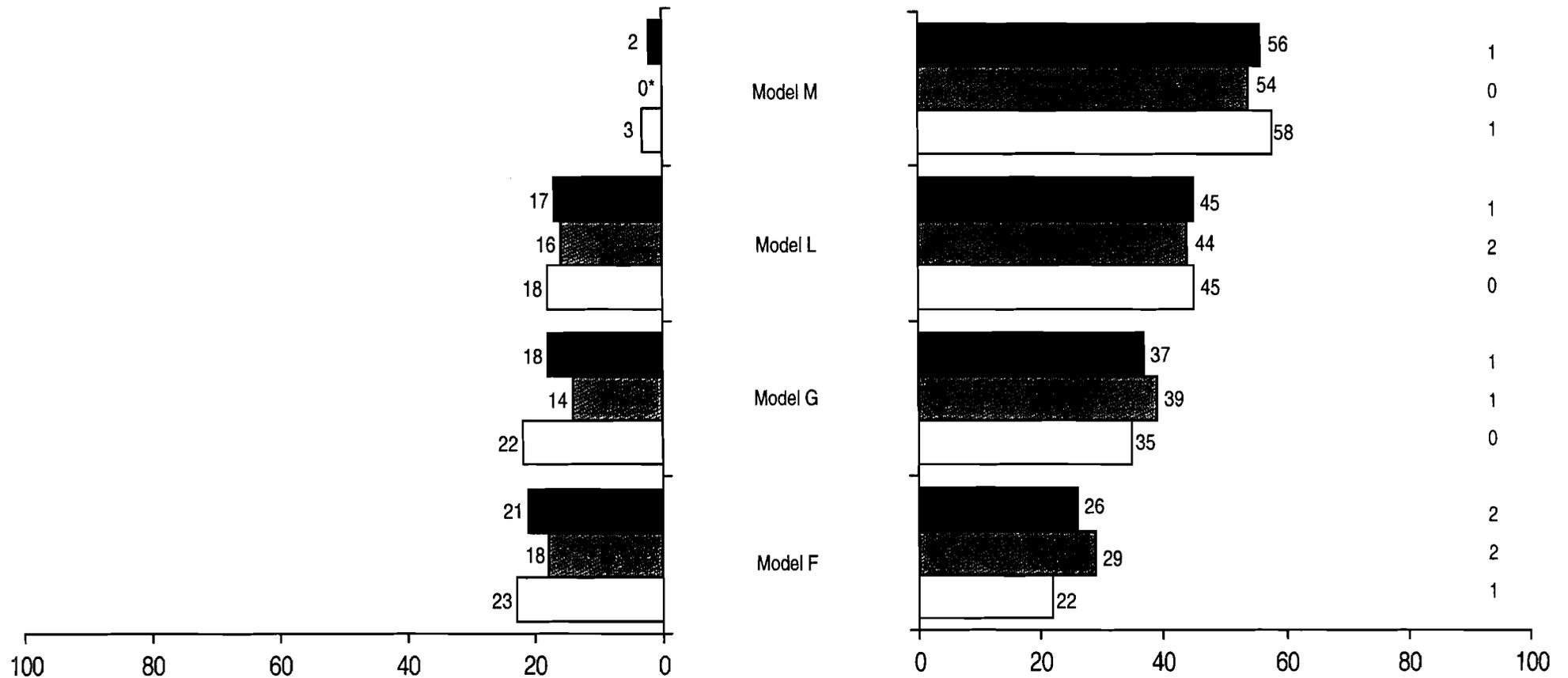
Figure 9: Overall Value of Washing Machines

■ Total (N=204) ■ Optimized Continuous Bar (N=104) □ Optimized Star (N=100)

Below Average

Above Average

Can't Tell



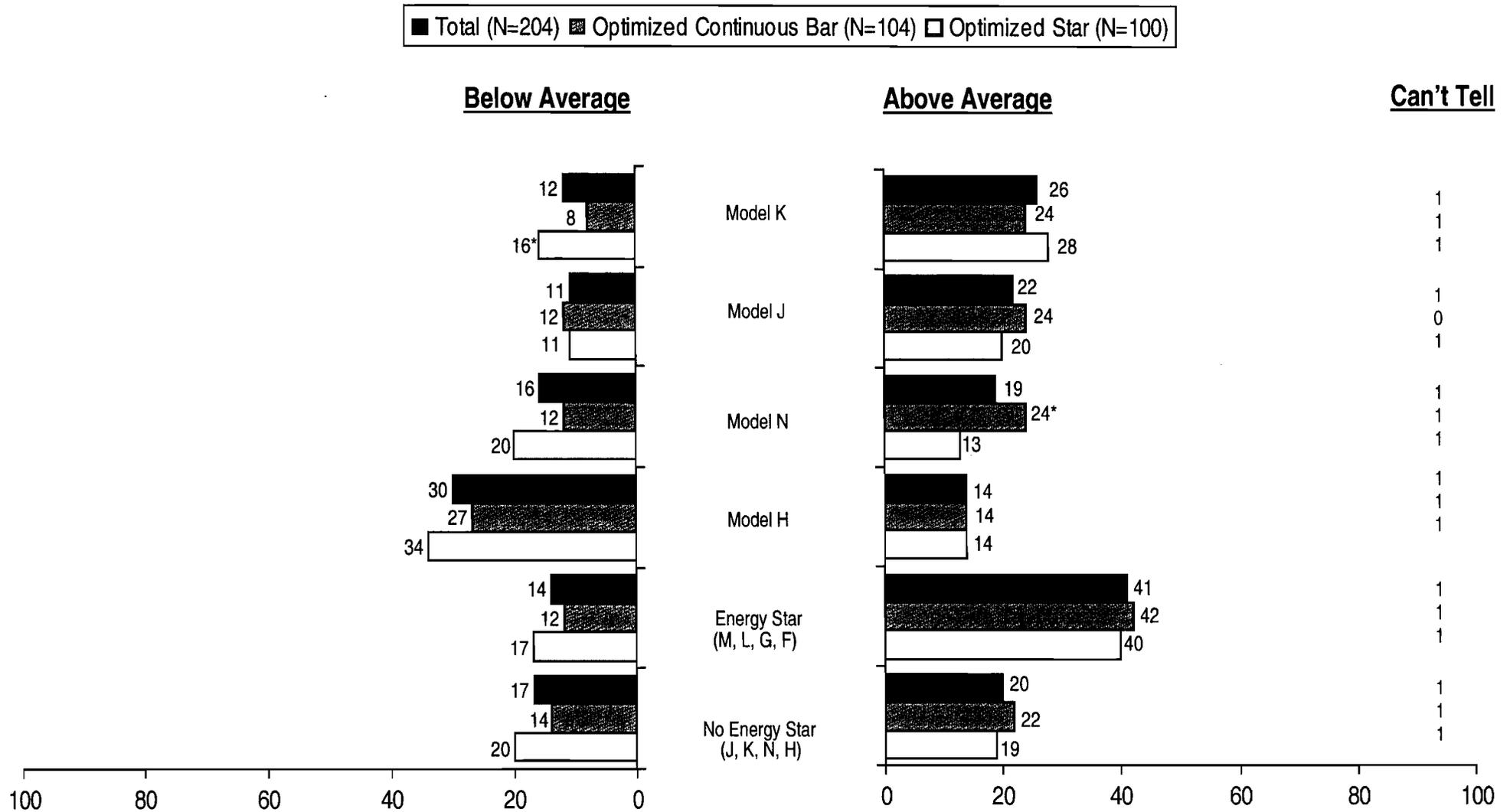
Base: Total respondents

Note: Balance of total respondents answered "About Average Value"

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

(Cont'd on next page)

Figure 9: Overall Value of Washing Machines (Cont'd)



Base: Total respondents

Note: Balance of total respondents answered "About Average Value"

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

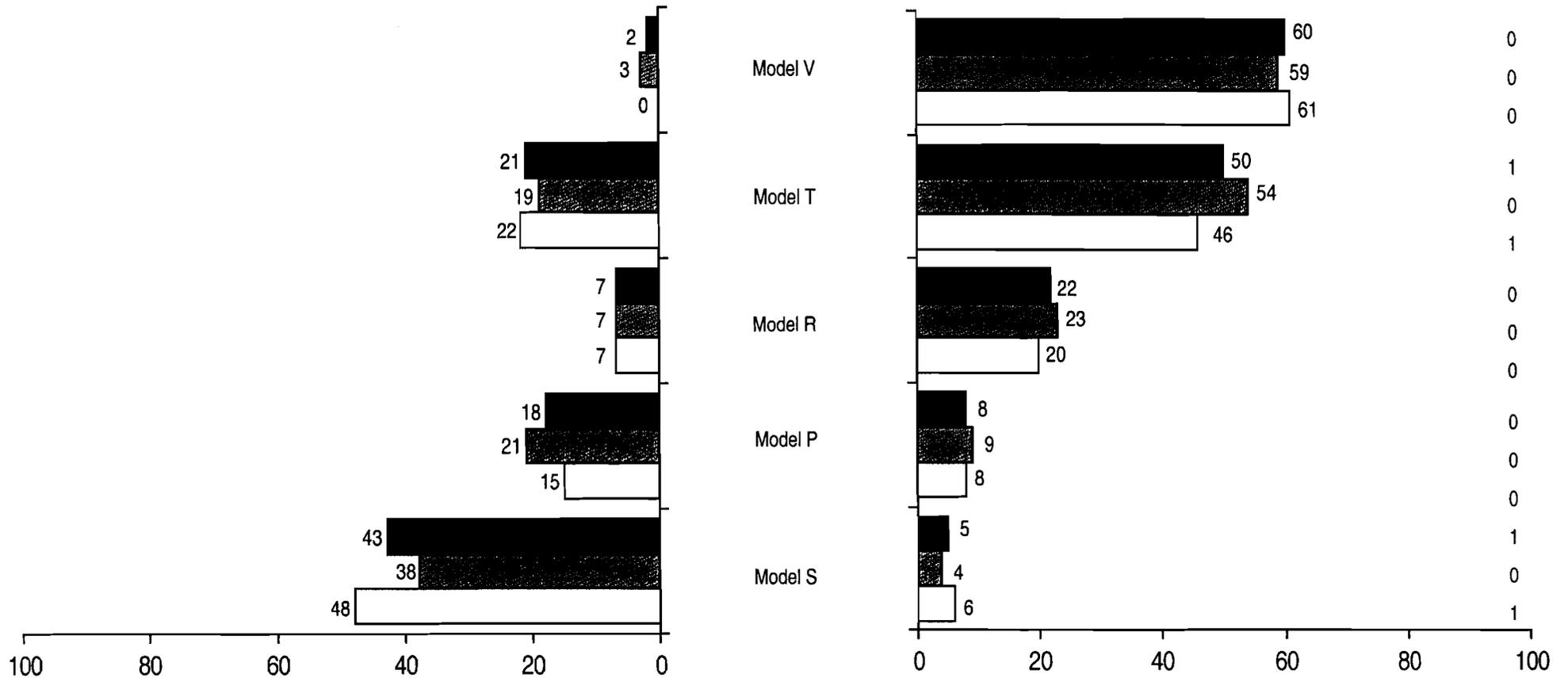
Figure 10: Overall Value of Water Heaters

■ Total (N=204) ■ Optimized Continuous Bar (N=100) □ Optimized Star (N=104)

Below Average

Above Average

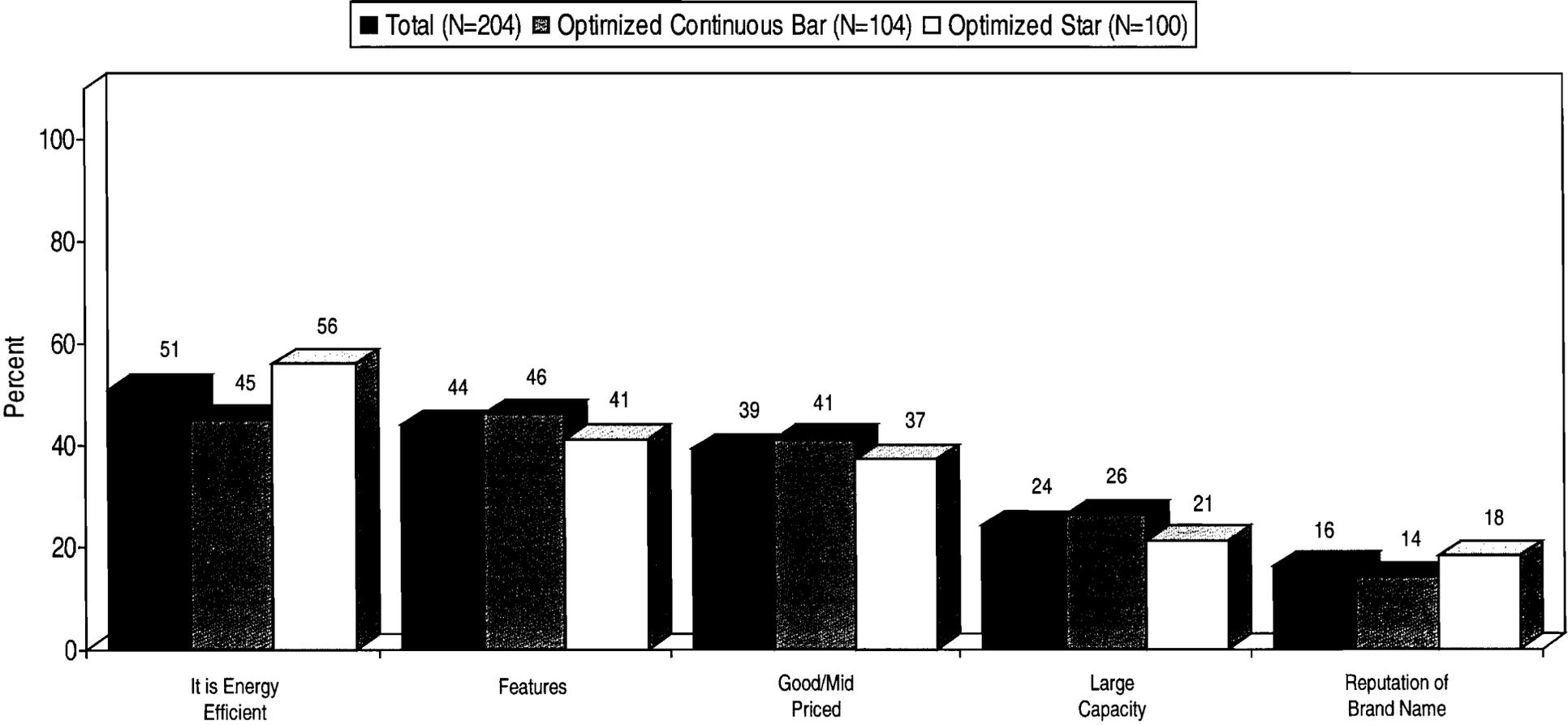
Can't Tell



Base: Total respondents

Note: Balance of total respondents answered "About Average Value"

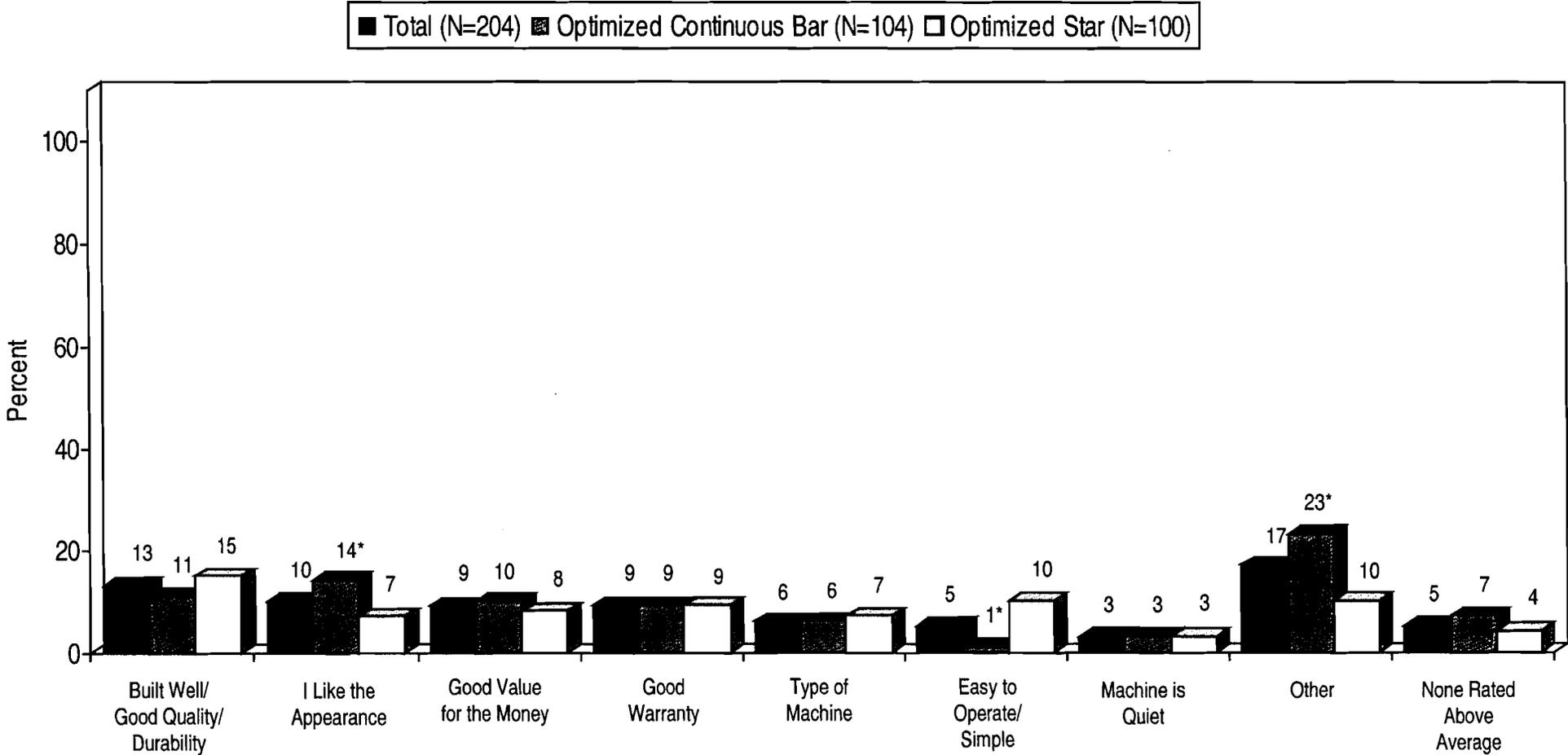
Figure 11: Reasons Washing Machines Are Rated Above Average Value (Unaided)



Base: Total respondents

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

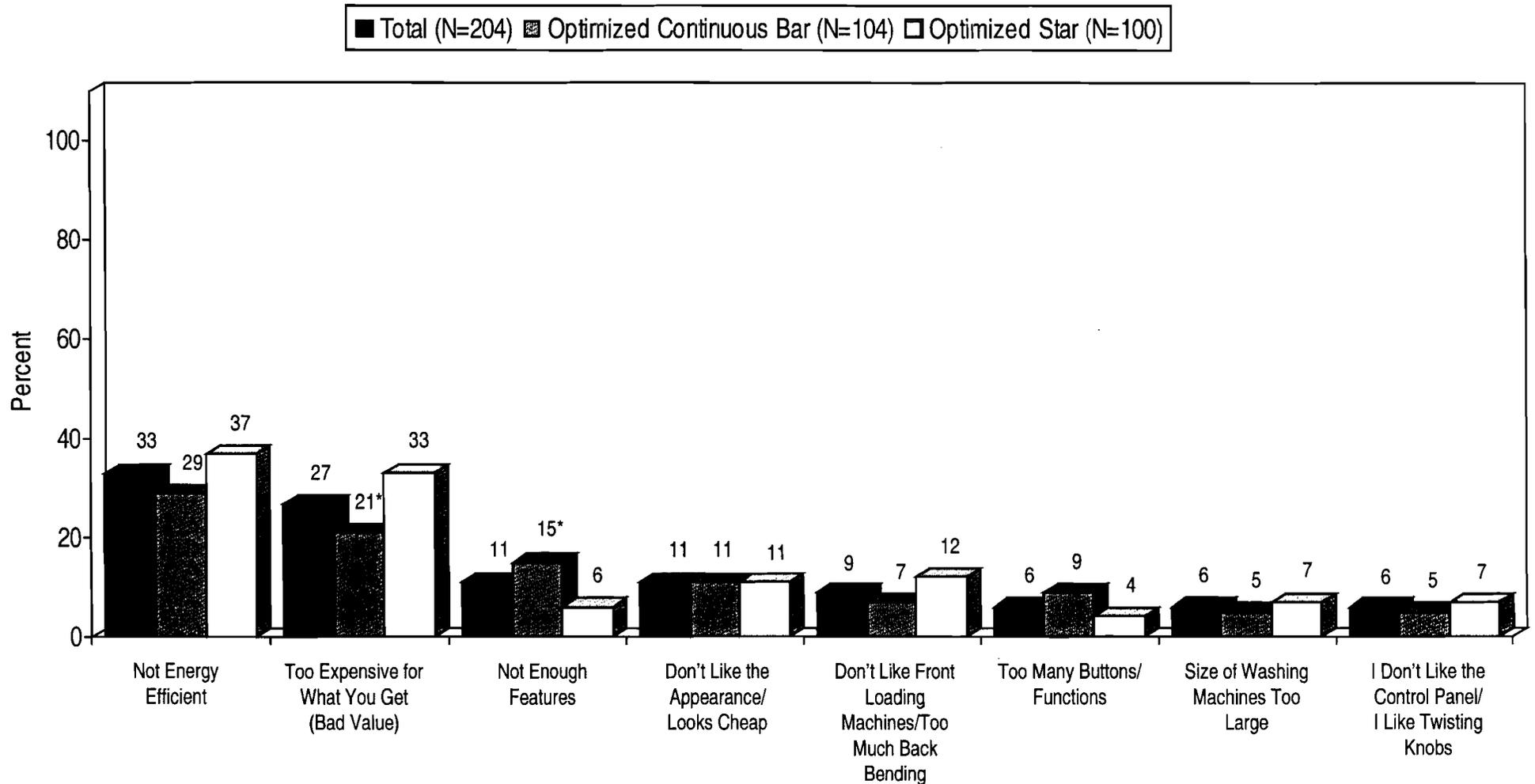
Figure 11: Reasons Washing Machines Are Rated Above Average Value (Unaided) (Cont'd)



Base: Total respondents

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 12: Reasons Washing Machines Are Rated Below Average Value (Unaided)

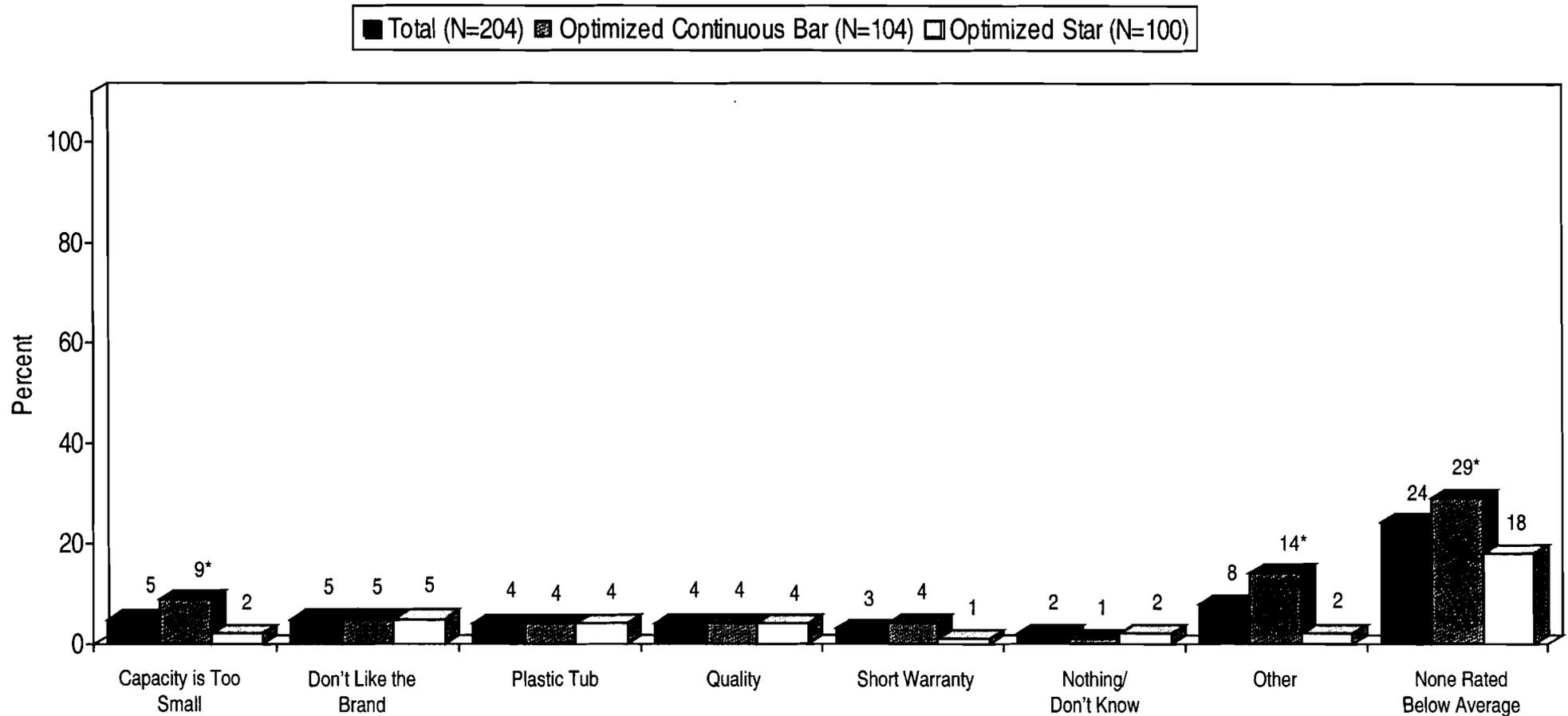


Base: Total respondents

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

(Cont'd on next page)

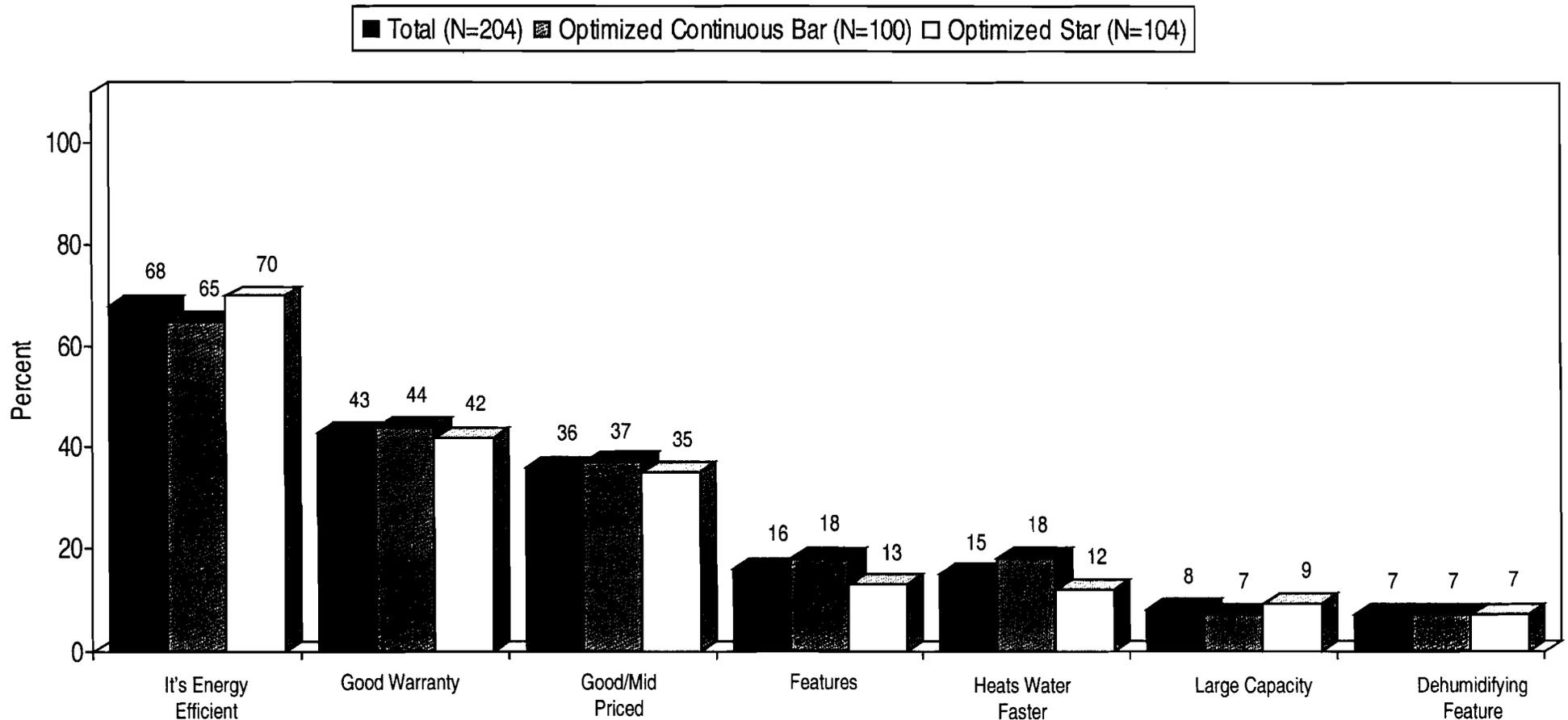
Figure 12: Reasons Washing Machines Are Rated Below Average Value (Unaided) (Cont'd)



Base: Total respondents

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 13: Reasons Water Heaters Are Rated Above Average Value (Unaided)



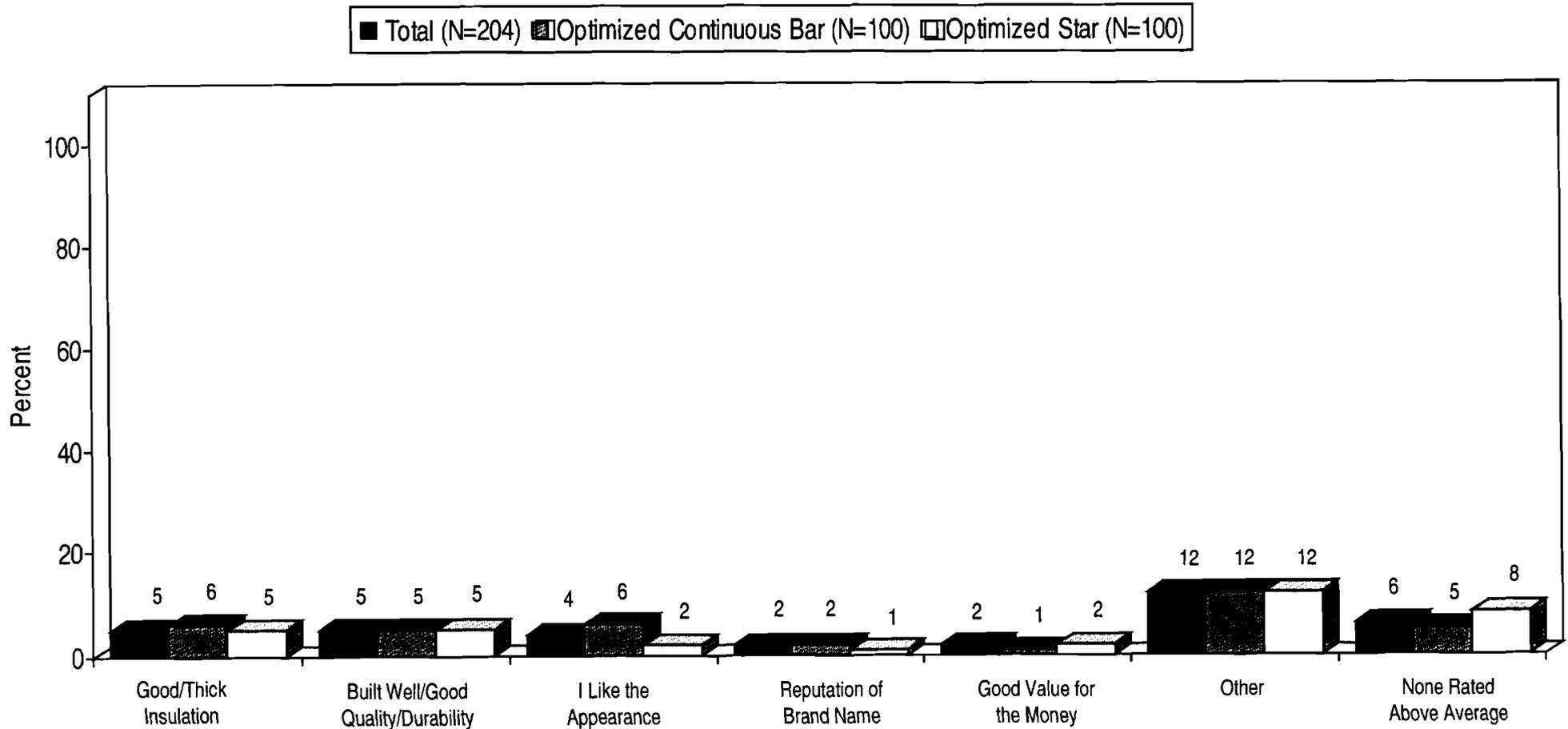
Base: Total respondents

Note: Only responses with 2 percent or more mentions are presented.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

(Cont'd on next page)

Figure 13: Reasons Water Heaters Are Rated Above Average Value (Unaided) (Cont'd)

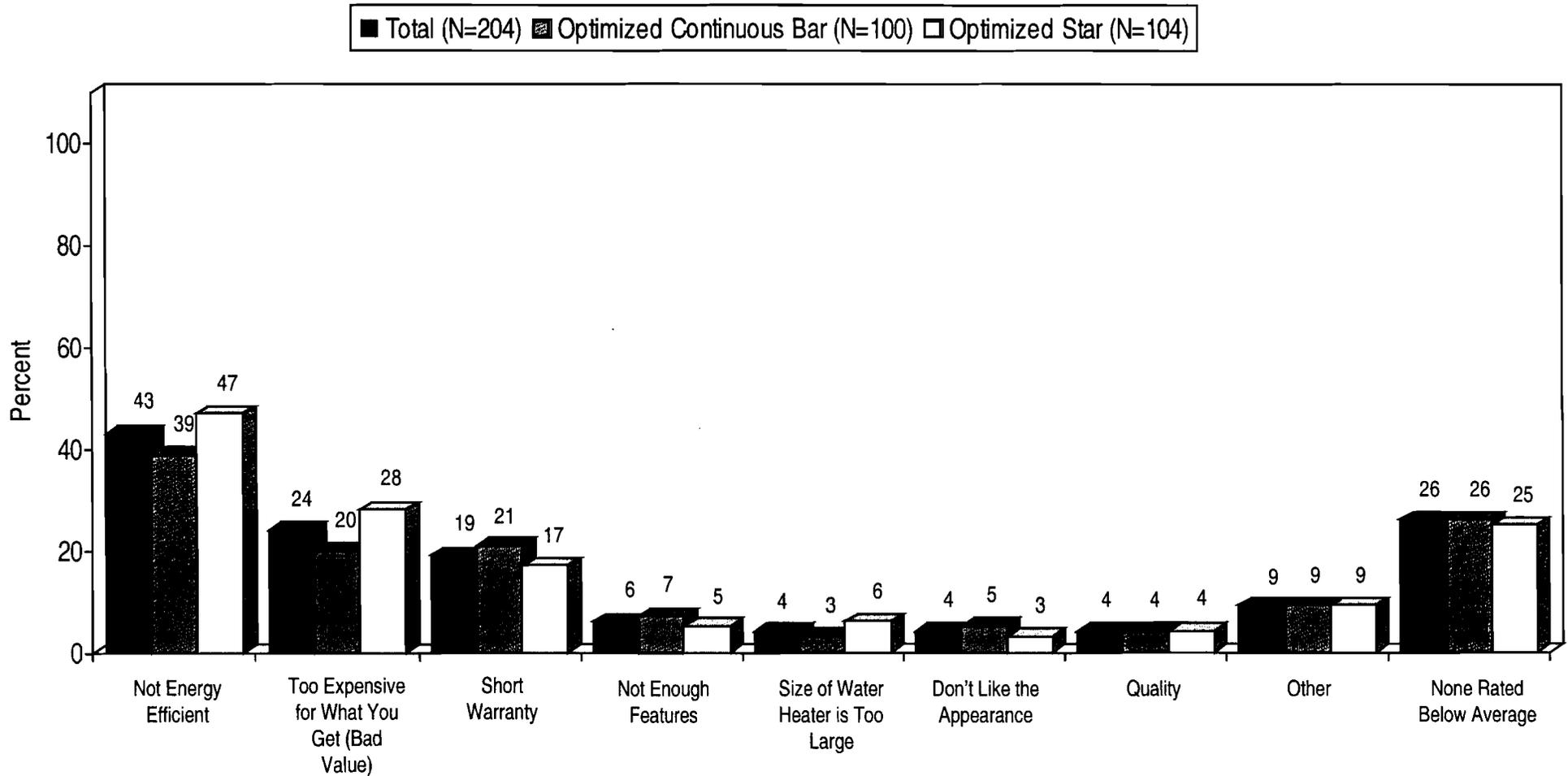


Base: Total respondents

Note: Only responses with 2 percent or more mentions are presented.

*Indicates a significant difference from optimized Star label at the 90 percent confidence level.

Figure 14: Reasons Water Heaters Are Rated Below Average Value (Unaided)



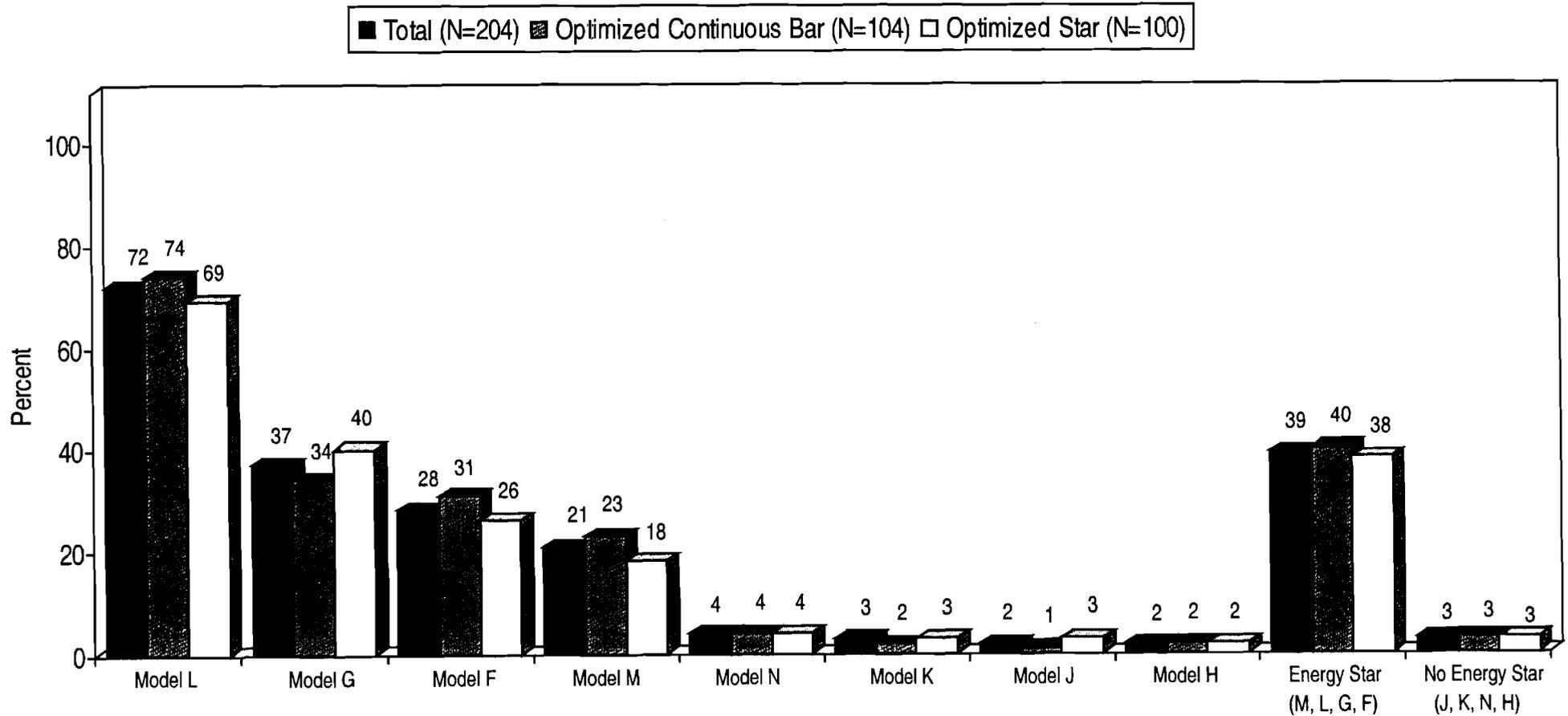
Base: Total respondents

Note: Only responses with 3 percent or more mentions are presented.

**Secondary Objective 1: Determine Ability of
Energy Labels to Correctly Communicate Energy
Efficiency of Household Appliances**

- The vast majority of respondents are able to correctly identify the most efficient washing machines (see Figure 15) and water heaters (see Figure 16). There are also no significant differences in perceptions of energy efficiency based on the energy label design appearing on each appliance or the order in which each label was seen. Thus, both label designs tested do an equally effective job of communicating energy efficiency information and no learning curve is observed.
- Over two thirds of respondents correctly identify the most efficient model as being among the most efficient appliance models. More correctly identify the most efficient water heater (87%), where differences in energy efficiency across models are large, than for washing machines (72% correct), where several models are highly efficient. Data indicate that respondents do a very good job of distinguishing the highly efficient models from the highly inefficient models, as indicated by the mean rate of choosing an Energy Star model compared to a non-Energy Star model as among the most efficient. However, respondents sometimes fail to distinguish between models with a similar level of energy efficiency either at the top or bottom end of the scale.

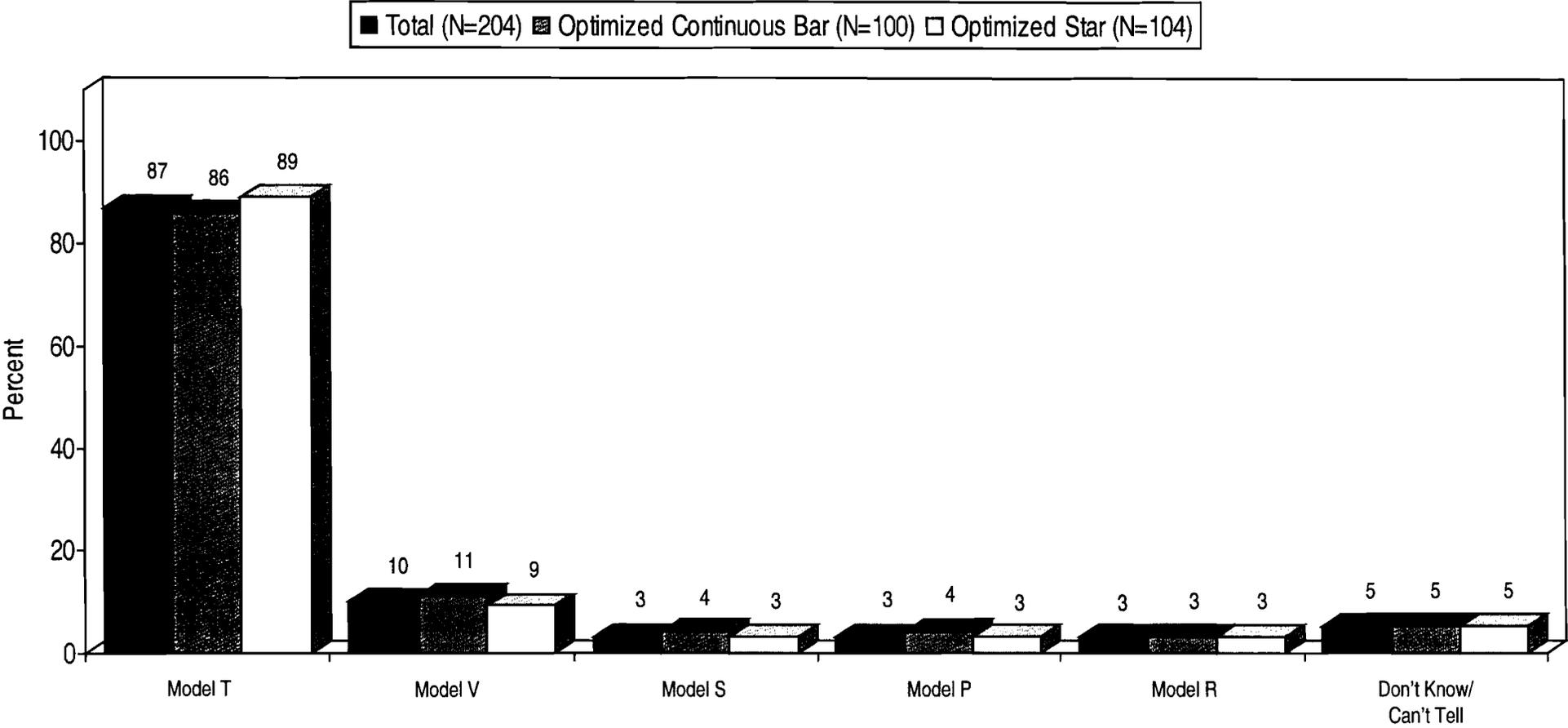
Figure 15: Washing Machines that Cost the Least to Operate



Base: Total respondents

Note: Percentages may add to more than 100 percent because multiple responses were accepted.

Figure 16: Water Heaters that Cost the Least to Operate



Base: Total respondents
Note: Percentages may add to more than 100 percent because multiple responses were accepted.

**Secondary Objective 2: Describe Factors
Considered When Purchasing Household
Appliances, Including the Role of Energy Efficiency**

- Before viewing specific models of washing machines or water heaters in the simulated shopping environment, respondents were asked to indicate the relative importance of various features in their decisions about which model they would purchase. Their responses, which are shown in Figure 17 for washing machines and Figure 18 for water heaters, indicate that a number of considerations are more important than energy efficiency. For washing machines, these include reputation for reliability, capacity, reputation for cleaning ability, warranty, style and price. For water heaters, these include capacity and reputation for reliability. It is interesting to note that the relative importance of energy efficiency in determining appliance quality (see Figures 7 and 8) or value (see Figures 11-14) are much higher in the actual shopping environment than in the survey responses given before seeing actual models.
- These findings confirm earlier findings from this study that energy efficiency is a more important consideration for water heaters than for washing machines. However, they identify some factors as highly important that did not show up as major reasons for choosing the model respondents were most likely to purchase and did not include all factors frequently given as reasons for purchasing selected models. Other findings, after the various models were examined, indicate that reputation for reliability, warranty, style and reputation for cleaning ability are less important for washing machines than respondents say or that there are few perceived differences across the models evaluated to make these determining criteria. Appliance features showed up as the primary reason for selecting the washing machine model chosen, even though respondents claim features are relatively unimportant before evaluating specific models. For water heaters, energy efficiency was the primary reason for selecting the model chosen in the simulated shopping experience, followed by warranty and price. Reputation for reliability and capacity did not emerge as major reasons for choosing the selected model, perhaps because a lack of difference on these factors among the models tested. Still, regardless of which measure is used, energy efficiency emerges as an important criteria in choosing a water heater and a moderately important criteria in choosing a washing machine.

Figure 17: Factors Important in Choosing a Washing Machine

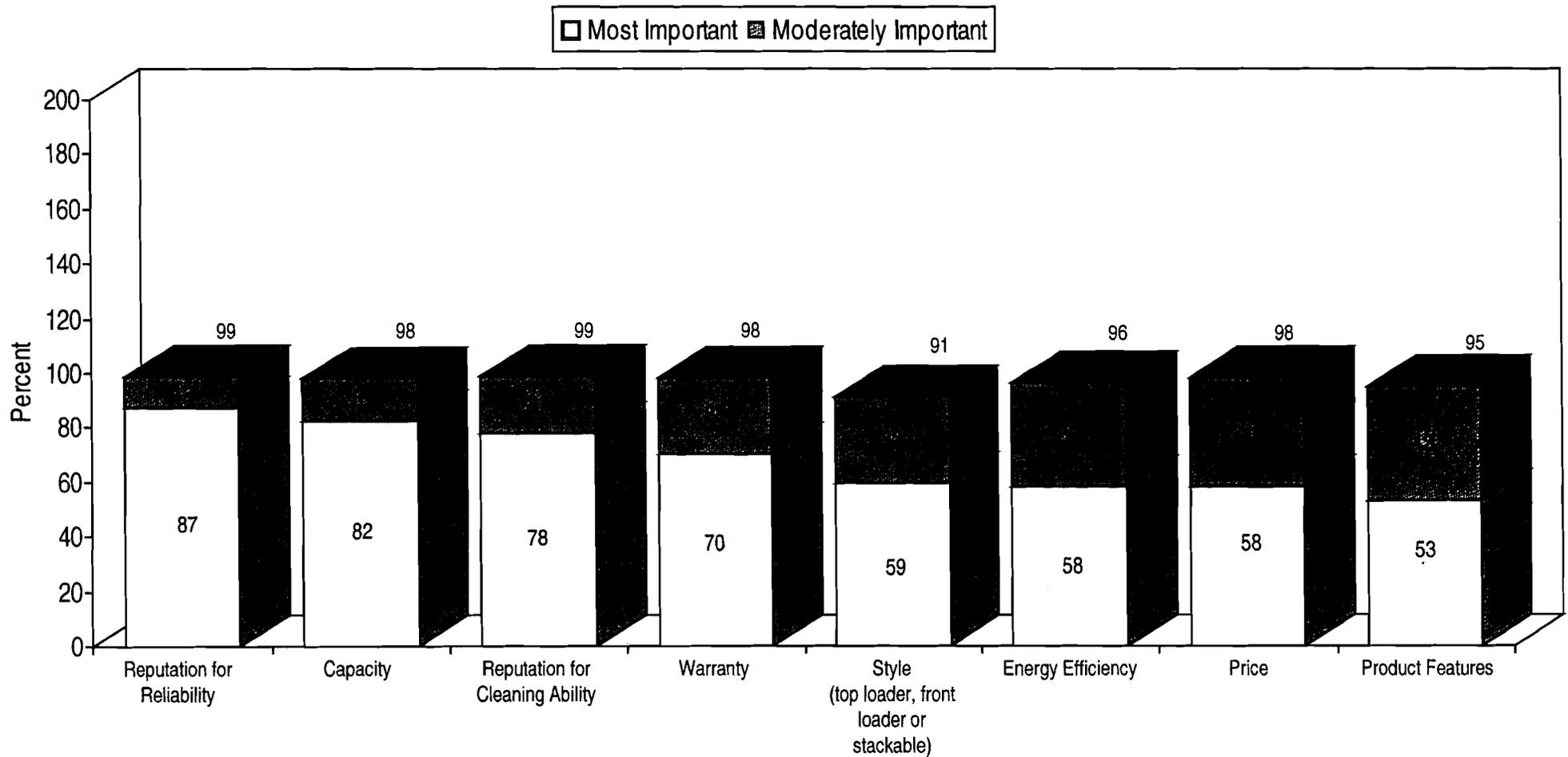


Figure 17: Factors Important in Choosing a Washing Machine (Cont'd)

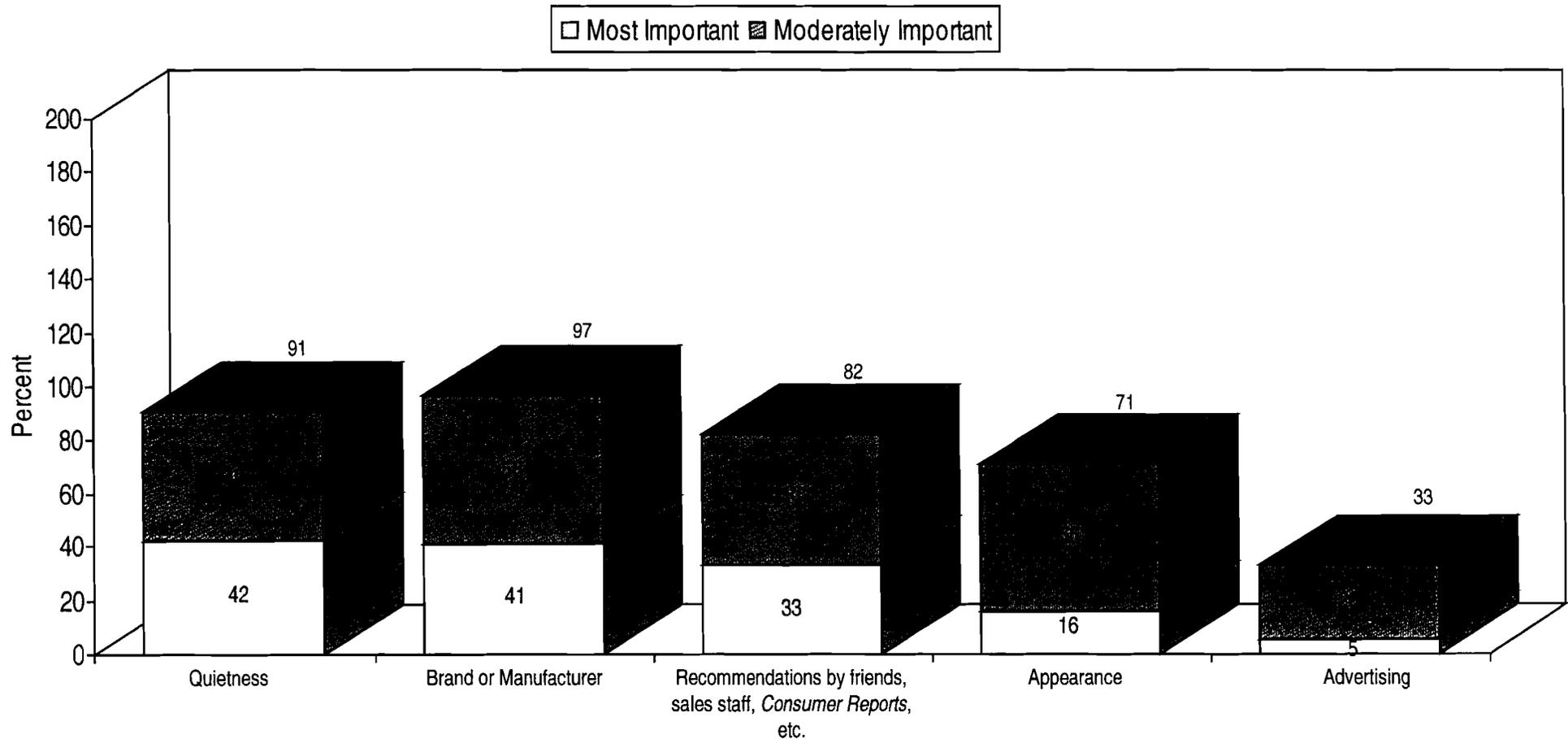


Figure 18: Factors Important in Choosing a Water Heater

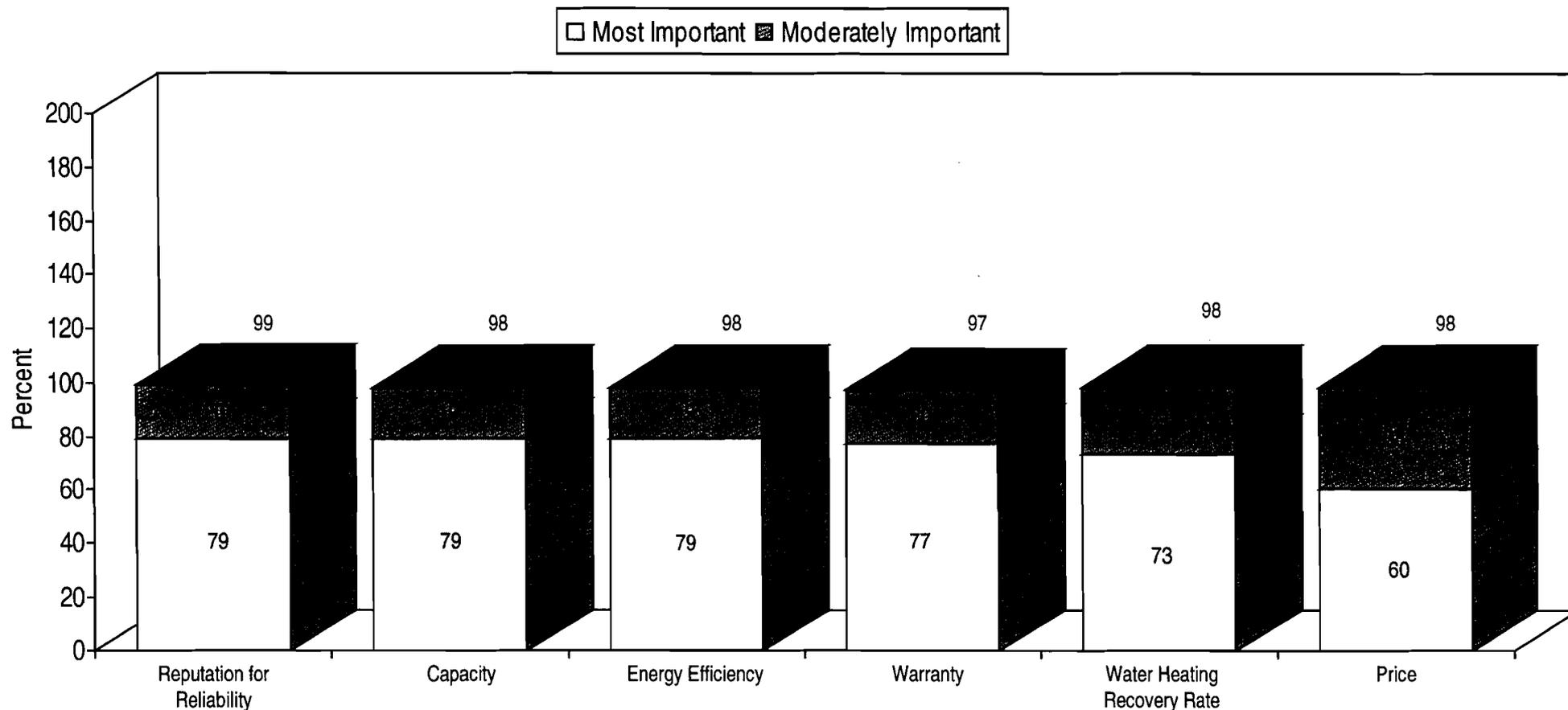
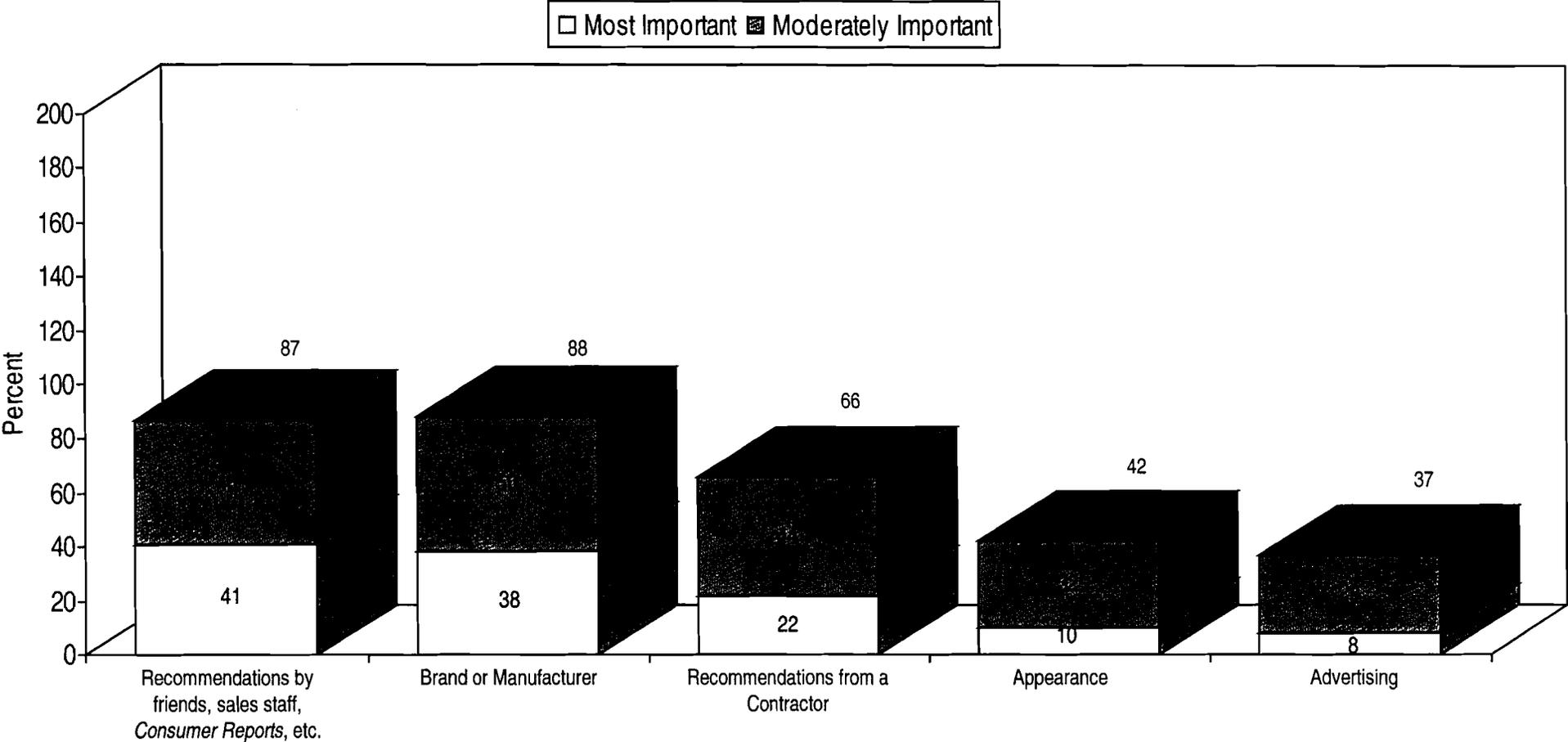


Figure 18: Factors Important in Choosing a Water Heater (Cont'd)



Base: Total respondents (N=204)

**Appendix A:
Screening Questionnaire**

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

ACE0101

APPLIANCE LABEL SCREENER
(REVISED 4/25/01)

RESPONDENT NAME: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____
TELEPHONE: (H) _____
RECRUITED BY: _____ CONFIRMED BY: _____
INTERVIEW DATE: _____ INTERVIEW TIME: _____

(CALL HOMEOWNERS FROM DATA BANK MEETING RACE/GENDER/EDUCATION QUOTAS PROVIDED)

Hello, I'm _____, calling from Herron Group. Today we are conducting a brief survey about household appliances and would greatly value your opinions. This is strictly market research and absolutely no sales effort is involved. I'd like to ask you a few questions.

1. First, can you tell me do you own or rent your home?

	<u>CIRCLE</u>	
Own	<input type="text" value="1"/>	→(CONTINUE)
Rent	<input type="text" value="2"/>	→(THANK AND TERMINATE)
Refused	<input type="text" value="3"/>	

2. Which of the following statements reflects your involvement in purchasing household appliances such as large kitchen appliances for your home? (READ LIST)

	<u>CIRCLE</u>	
You are primarily responsible for purchasing these types of household appliances	<input type="text" value="1"/>	→(CONTINUE)
You share the responsibility equally for purchasing these types of household appliances	<input type="text" value="2"/>	
Someone else is responsible for purchasing large household appliances	<input type="text" value="3"/>	→(THANK AND TERMINATE AND ASK TO SPEAK TO PERSON WHO IS RESPONSIBLE)

3. When did you last purchase a major household appliance? (DO NOT READ)

	<u>CIRCLE</u>	
Within past year	1	→(RECRUIT AS MANY AS POSSIBLE)
More than 1 up to 2 years	2	
More than 2 up to 3 years	3	
More than 3 years up to 5 years	4	
More than 5 years	5	
Don't know/remember	6	

4. Have you or has anyone in your immediate family ever worked in the field of marketing research, public relations, or for a household appliance manufacturer or sales company or a utility, regulatory or energy-related organization?

	<u>CIRCLE</u>	
Yes	1	→(THANK AND TERMINATE)
No	2	→(CONTINUE)

5. These next few questions are for classification purposes only. Please stop me when I reach the category that includes your age. (READ LIST)

	<u>CIRCLE ONE</u>	
Under 18	1	→(THANK AND TERMINATE)
18 to 24	2	
25 to 34	3	
35 to 44	4	
45 to 54	5	
55 to 64	6	
65 or older	7	
Refused	8	

6. And which of the following best describes your ethnic or racial background? (READ LIST)

	<u>CIRCLE</u>	
Caucasian	1	→(QUALIFIES FOR WHITE QUOTA)
African American	2	
Hispanic or Latino	3	
Asian	4	→(QUALIFIES FOR NON-WHITE QUOTA)
OR A member of some other racial/ethnic group	5	

7. INTERVIEWER: CIRCLE GENDER

	<u>CIRCLE</u>	
Female	1	→(CHECK QUOTAS)
Male	2	

8. How many adults and how many children under the age of 18 currently live in your household? (RECORD NUMBER FOR EACH, INCLUDING "0" FOR NONE)

_____adults _____children

9. And, what is the last grade of school you completed? (DO NOT READ)

	<u>CIRCLE</u>	
Some high school	1	
High school degree	2	→(QUALIFIES FOR HIGH SCHOOL OR LESS QUOTA)
Vocational school	3	
Some college	4	→(QUALIFIES FOR SOME COLLEGE QUOTA)
College degree	5	
Some graduate work	6	→(QUALIFIES FOR COLLEGE OR MORE QUOTA)
OR Graduate degree	7	
(DO NOT READ) Refused	8	→(THANK AND TERMINATE)

10. And, would you describe your ability to read and understand English as: (READ LIST)

CIRCLE

- | | | |
|----------------------------------|---|------------------------|
| Very strong | 4 | |
| Fairly strong | 3 | |
| Fairly weak | 2 | →(THANK AND TERMINATE) |
| OR Very weak | 1 | |
| (DO NOT READ) Don't know/refused | 5 | |

INVITATION

We are conducting a study on household appliances and would greatly value your participation. We would like to conduct a 1-hour interview with you at our offices in _____ where you will be shown a number of appliance models. A cash gift of \$40 will be given to each participant. Are you available for a 1-hour period on May 23 or 24 to complete this interview?

CIRCLE

- | | | |
|-----|---|--|
| Yes | 1 | →(SCHEDULE INTERVIEW TIME AND SEND DIRECTIONS) |
| No | 2 | →(THANK AND TERMINATE) |

Appendix B: Questionnaires

SHUGOLL RESEARCH
7475 Wisconsin Avenue
Suite 200
Bethesda, Maryland 20814
(301) 656-0310

ACE0101

<u>Date</u>	<u>CIRCLE</u>
May 23	1
May 24	2
<u>Appliance Order</u>	
Washing machines first	1
Water heaters first	2

APPLIANCE SHOPPING SURVEY

(FINAL 5/18/01)

RESPONDENT NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

TELEPHONE: _____ CHECKED BY: _____

START TIME: _____ END TIME: _____

LENGTH: _____ DATE: _____

APPLIANCE CATEGORY: WASHING MACHINES

Background Questions

1a. Do you currently own a washing machine?

CIRCLE ONE

- | | |
|-----|---|
| Yes | 1 |
| No | 2 |

1b. Approximately how many loads of laundry does your household run in a typical week?

CIRCLE ONE

- | | |
|-------------|---|
| Less than 1 | 1 |
| 1 | 2 |
| 2 | 3 |
| 3 | 4 |
| 4 | 5 |
| 5 or more | 6 |

2. When did you last purchase a washing machine?

CIRCLE ONE

- | | |
|----------------------------------|---|
| Within past year | 1 |
| More than 1 up to 2 years | 2 |
| More than 2 up to 3 years | 3 |
| More than 3 years up to 5 years | 4 |
| More than 5 years up to 10 years | 5 |
| More than 10 years ago | 6 |
| Never | 7 |
| Don't know/remember | 8 |

3. How likely are you to purchase a new washing machine in the next 2 years?

CIRCLE ONE

- | | |
|-------------------|---|
| Very likely | 1 |
| Somewhat likely | 2 |
| Not too likely | 3 |
| Not at all likely | 4 |

4. When your household needs a new washing machine, what role do you expect to play in deciding which model to purchase?

CIRCLE ONE

- Primary decision maker 1
- Joint decision maker 2
- Not the decision maker 3

5. Please rate how important each of the following is to you when choosing a washing machine.

	CIRCLE ONE NUMBER PER ROW		
	<u>Most Important</u>	<u>Moderately Important</u>	<u>Least Important</u>
Brand or manufacturer	1	2	3
Product features (for example, number and types of cycles and options)	1	2	3
Style (whether top-loading, front loading or stackable)	1	2	3
Capacity	1	2	3
Reputation for reliability	1	2	3
Reputation for cleaning ability	1	2	3
Price	1	2	3
Warranty	1	2	3
Quietness	1	2	3
Advertising	1	2	3
Energy efficiency	1	2	3
Appearance	1	2	3
Recommendations by friends, sales staff, Consumer Reports, etc.	1	2	3
Other (SPECIFY) _____			

PLEASE ENTER THE SALES FLOOR AREA AND EXAMINE THE WASHING MACHINES ON DISPLAY. PLEASE PRETEND THAT YOU ARE LOOKING TO REPLACE YOUR CURRENT WASHING MACHINE AND THAT ALL MODELS SHOWN ARE EQUALLY AVAILABLE FOR DELIVERY. TAKE AS MUCH TIME AS YOU NEED TO LOOK AT THE AVAILABLE MODELS. IF YOU NEED ASSISTANCE, THERE IS A STAFF PERSON IN THE ROOM WHO IS AVAILABLE TO ANSWER QUESTIONS THAT YOU MIGHT ASK A SALES PERSON.

6. If you were going to replace your current washing machine, which of these models would you be most likely to purchase?

CIRCLE ONE

- | | | |
|---------------|----|---------------------|
| Model F | 1 | |
| Model G | 2 | |
| Model H | 3 | |
| Model I | 4 | |
| Model J | 5 | |
| Model K | 6 | |
| Model L | 7 | |
| Model M | 8 | |
| Model N | 9 | |
| None of these | 10 | →(GO TO QUESTION 8) |

7. Why would you be most likely to buy that model? (PLEASE BE SPECIFIC)

8. Which other models, if any, would you consider purchasing?

CIRCLE ALL
THAT APPLY

- | | | |
|---------------|----|----------------------|
| Model F | 1 | |
| Model G | 2 | |
| Model H | 3 | |
| Model I | 4 | |
| Model J | 5 | |
| Model K | 6 | |
| Model L | 7 | |
| Model M | 8 | |
| Model N | 9 | |
| None of these | 10 | →(GO TO QUESTION 10) |

9. What is it about these models that makes them desirable to you? (PLEASE BE SPECIFIC)

10. And which models, if any, would you not consider purchasing?

CIRCLE ALL
THAT APPLY

- | | | |
|---------------|----|----------------------|
| Model F | 1 | |
| Model G | 2 | |
| Model H | 3 | |
| Model I | 4 | |
| Model J | 5 | |
| Model K | 6 | |
| Model L | 7 | |
| Model M | 8 | |
| Model N | 9 | |
| None of these | 10 | →(GO TO QUESTION 12) |

11. What is it about these models that makes them undesirable to you? (PLEASE BE SPECIFIC)

12. Please rate the relative quality of these models.

CIRCLE ONE NUMBER PER ROW

	<u>Above Average Quality</u>	<u>About Average Quality</u>	<u>Below Average Quality</u>	<u>Can't Tell</u>
Model F	1	2	3	4
Model G	1	2	3	4
Model H	1	2	3	4
Model I	1	2	3	4
Model J	1	2	3	4
Model K	1	2	3	4
Model L	1	2	3	4
Model M	1	2	3	4
Model N	1	2	3	4

13. What attributes differentiate between the models that are above average quality and those that are below average quality? (PLEASE BE SPECIFIC)

14. Which of these models do you think cleans clothes the best?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|----|
| Model F | 1 |
| Model G | 2 |
| Model H | 3 |
| Model I | 4 |
| Model J | 5 |
| Model K | 6 |
| Model L | 7 |
| Model M | 8 |
| Model N | 9 |
| None | 10 |
| Don't know/can't tell | 11 |

15. Which of these models do you expect would need the fewest repairs?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|----|
| Model F | 1 |
| Model G | 2 |
| Model H | 3 |
| Model I | 4 |
| Model J | 5 |
| Model K | 6 |
| Model L | 7 |
| Model M | 8 |
| Model N | 9 |
| None | 10 |
| Don't know/can't tell | 11 |

16. Which of these models do you expect to last the longest?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|----|
| Model F | 1 |
| Model G | 2 |
| Model H | 3 |
| Model I | 4 |
| Model J | 5 |
| Model K | 6 |
| Model L | 7 |
| Model M | 8 |
| Model N | 9 |
| None | 10 |
| Don't know/can't tell | 11 |

17. Which of these models costs the least to operate?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|----|
| Model F | 1 |
| Model G | 2 |
| Model H | 3 |
| Model I | 4 |
| Model J | 5 |
| Model K | 6 |
| Model L | 7 |
| Model M | 8 |
| Model N | 9 |
| None | 10 |
| Don't know/can't tell | 11 |

18. Considering purchase price, performance, reliability, operating cost and other factors of importance to you, please rate the relative value of each model.

CIRCLE ONE NUMBER PER ROW

	<u>Above Average Value</u>	<u>About Average Value</u>	<u>Below Average Value</u>
Model F	1	2	3
Model G	1	2	3
Model H	1	2	3
Model I	1	2	3
Model J	1	2	3
Model K	1	2	3
Model L	1	2	3
Model M	1	2	3
Model N	1	2	3

19. Thinking about the model(s) with above average value, what is it about these models that indicates above average value? (PLEASE BE SPECIFIC)

20. Thinking about the models with below average value, what is it about these models that indicates below average value? (PLEASE BE SPECIFIC)

THAT COMPLETES THE QUESTIONS ON WASHING MACHINES. PLEASE TURN TO THE NEXT PAGE FOR ADDITIONAL QUESTIONS, OR, IF NO NEXT PAGE, GO TO THE EXIT INTERVIEWER BY THE MAIN ENTRANCE.

APPLIANCE CATEGORY: WATER HEATERS

Background Questions

1. Do you currently own a water heater?

CIRCLE ONE

- | | |
|------------|---|
| Yes | 1 |
| No | 2 |
| Don't know | 3 |

2. When did you last purchase a water heater?

CIRCLE ONE

- | | |
|----------------------------------|---|
| Within past year | 1 |
| More than 1 up to 2 years | 2 |
| More than 2 up to 3 years | 3 |
| More than 3 years up to 5 years | 4 |
| More than 5 years up to 10 years | 5 |
| More than 10 years ago | 6 |
| Never | 7 |
| Don't know/remember | 8 |

3. How likely are you to purchase a new water heater in the next 2 years?

CIRCLE ONE

- | | |
|--|---|
| Very likely | 1 |
| Somewhat likely | 2 |
| Not too likely | 3 |
| Not at all likely | 4 |
| Don't know/will replace
when water heater fails | 5 |

(THERE IS NO QUESTION 4 FOR THIS VERSION.)

5. Please rate how important each of the following is to you when choosing a water heater.

	<u>CIRCLE ONE NUMBER PER ROW</u>		
	<u>Most Important</u>	<u>Moderately Important</u>	<u>Least Important</u>
Recommendations from contractor	1	2	3
Brand or manufacturer	1	2	3
Capacity	1	2	3
Water heating recovery rate	1	2	3
Reputation for reliability	1	2	3
Price	1	2	3
Warranty	1	2	3
Advertising	1	2	3
Energy efficiency	1	2	3
Appearance	1	2	3
Recommendations by friends, sales staff, Consumer Reports, etc.	1	2	3
Other (SPECIFY) _____			

PLEASE ENTER THE SALES FLOOR AND EXAMINE THE WATER HEATERS ON DISPLAY. PLEASE PRETEND THAT YOU ARE LOOKING TO REPLACE YOUR CURRENT WATER HEATER AND THAT YOU NEED TO PURCHASE AN ELECTRIC WATER HEATER. PLEASE NOTE THAT ALL MODELS OF WATER HEATER SHOWN ARE ALSO AVAILABLE IN A VARIETY OF OTHER SIZES/CAPACITY. PLEASE ASSUME THAT ALL MODELS ARE AVAILABLE IN THE SIZE AND CAPACITY YOU WANT AND THAT ALL MODELS SHOWN ARE EQUALLY AVAILABLE FOR DELIVERY. TAKE AS MUCH TIME AS YOU NEED TO LOOK AT THE AVAILABLE MODELS. IF YOU NEED ASSISTANCE, THERE IS A STAFF PERSON IN THE ROOM AVAILABLE TO ANSWER QUESTIONS THAT YOU MIGHT ASK A SALESPERSON.

6. If you needed to replace your current water heater, which of these models would you be most likely to purchase?

CIRCLE ONE

- Model P 1
- Model R 2
- Model S 3
- Model T 4
- Model V 5
- None of these 6 →(GO TO QUESTION 8)

7. Why would you be most likely to buy that model? (PLEASE BE SPECIFIC)

8. Which other models, if any, would you consider purchasing?

CIRCLE ALL
THAT APPLY

- Model P 1
- Model R 2
- Model S 3
- Model T 4
- Model V 5
- None of these 6 →(GO TO QUESTION 10)

9. What is it about these models that makes them desirable to you? (PLEASE BE SPECIFIC)

10. And which models, if any, would you not consider purchasing?

CIRCLE ALL
THAT APPLY

- | | | |
|---------------|---|----------------------|
| Model P | 1 | |
| Model R | 2 | |
| Model S | 3 | |
| Model T | 4 | |
| Model V | 5 | |
| None of these | 6 | →(GO TO QUESTION 12) |

11. What is it about these models that makes them undesirable to you? (PLEASE BE SPECIFIC)

12. Please rate the relative quality of these models.

CIRCLE ONE NUMBER PER ROW

	<u>Above Average Quality</u>	<u>About Average Quality</u>	<u>Below Average Quality</u>	<u>Can't Tell</u>
Model P	1	2	3	4
Model R	1	2	3	4
Model S	1	2	3	4
Model T	1	2	3	4
Model V	1	2	3	4

13. What attributes differentiate between the models that are above average quality and those that are below average quality? (PLEASE BE SPECIFIC)

14. Which of these models do you think heats water fastest?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|---|
| Model P | 1 |
| Model R | 2 |
| Model S | 3 |
| Model T | 4 |
| Model V | 5 |
| None | 6 |
| Don't know/can't tell | 7 |

15. Which of these models do you expect would need the fewest repairs?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|---|
| Model P | 1 |
| Model R | 2 |
| Model S | 3 |
| Model T | 4 |
| Model V | 5 |
| None | 6 |
| Don't know/can't tell | 7 |

16. Which of these models do you expect to last the longest?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|---|
| Model P | 1 |
| Model R | 2 |
| Model S | 3 |
| Model T | 4 |
| Model V | 5 |
| None | 6 |
| Don't know/can't tell | 7 |

17. Which of these models costs the least to operate?

CIRCLE ALL
THAT APPLY

- | | |
|-----------------------|---|
| Model P | 1 |
| Model R | 2 |
| Model S | 3 |
| Model T | 4 |
| Model V | 5 |
| None | 6 |
| Don't know/can't tell | 7 |

18. Considering purchase price, performance, reliability, operating costs and other factors of importance to you, please rate the relative value of each model.

CIRCLE ONE NUMBER PER ROW

	<u>Above Average Value</u>	<u>About Average Value</u>	<u>Below Average Value</u>
Model P	1	2	3
Model R	1	2	3
Model S	1	2	3
Model T	1	2	3
Model V	1	2	3

19. Thinking about the model(s) with above average value, what is it about these models that indicates above average value? (PLEASE BE SPECIFIC)

20. Thinking about the models with below average value, what is it about these models that indicates below average value? (PLEASE BE SPECIFIC)

THAT COMPLETES THE QUESTIONS ON HOT WATER HEATERS. PLEASE TURN TO THE NEXT PAGE FOR ADDITIONAL QUESTIONS OR, IF NO NEXT PAGE, GO TO THE EXIT INTERVIEWER BY THE MAIN ENTRANCE.

**Appendix C: Product/Feature Description and
Price Tag and Energy Label**

Appendix D: Respondent Profile

Respondent Profile

	Total (N=204)	Washing Machines- Cont. Bar/Water Heater- Star (N=104)	Washing Machines- Star/Water Heater-Cont. Bar (N=100)
INVOLVEMENT IN PURCHASING HOUSEHOLD APPLIANCES			
Primarily responsible	44%	43%	45%
Share the responsibility equally	53%	53%	52%
LAST PURCHASE OF A MAJOR HOUSEHOLD APPLIANCE			
Within the past year	51%	50%	52%
More than 1 year up to 2 years	27%	22%	32%
More than 2 years up to 3 years	6%	9%	3%
More than 3 years up to 5 years	6%	6%	6%
More than 5 years	7%	11%*	3%
Don't know/remember	3%	2%	4%
AGE			
18 to 24	2%	3%	1%
25 to 34	23%	25%	21%
35 to 44	44%	46%	41%
45 to 54	13%	14%	11%
55 to 64	7%	4%	11%
65 or older	9%	7%	12%
Refused/no answer	2%	1%	3%

Respondent Profile

	Total (N=204)	Washing Machines- Cont. Bar/Water Heater- Star (N=104)	Washing Machines- Star/Water Heater-Cont. Bar (N=100)
ETHNICITY			
Caucasian	78%	78%	78%
Hispanic or Latino	11%	12%	10%
African American	8%	9%	7%
Other	1%	-	2%
Refused/no answer	2%	1%	3%
GENDER (SINGLE RESPONDENTS ONLY)			
Female	50%	54%	46%
Male	26%	21%	31%
INTERVIEWEE			
Single	76%	75%	77%
Couple	24%	25%	23%
NUMBER OF ADULTS CURRENTLY LIVING IN HOUSEHOLD			
One	15%	11%	18%
Two	71%	74%	69%
Three	11%	13%	9%
Four to five	1%	1%	1%
Refused/no answer	2%	1%	3%

Respondent Profile

	Total (N=204)	Washing Machines- Cont. Bar/Water Heater- Star (N=104)	Washing Machines- Star/Water Heater- Cont. Bar (N=100)
CHILDREN UNDER THE AGE OF 18 CURRENTLY LIVING IN HOUSEHOLD			
Zero	34%	34%	35%
One	27%	25%	28%
Two	25%	25%	25%
Three	6%	8%	5%
Four to five	2%	2%	1%
Refused/no answer	6%	6%	6%
TOTAL NUMBER OF PEOPLE CURRENTLY LIVING IN HOUSEHOLD			
One	10%	8%	12%
Two	27%	27%	26%
Three	27%	29%	25%
Four	25%	23%	27%
Five	7%	9%	5%
Six to eight	2%	3%	2%
Refused/no answer	2%	1%	3%
EDUCATION			
Some High School	2%	4%*	-
High School degree	27%	26%	29%
Vocational School	4%	3%	5%
Some College	33%	33%	33%
College Degree	22%	25%	19%
Some Graduate work	2%	2%	1%
Graduate Degree	8%	6%	10%
Refused	2%	1%	3%