

**BACK TO THE FUTURE:
RESULTS FROM A NATIONAL CONSUMER SURVEY
ABOUT ENERGY CONSERVATION AND EFFICIENCY**

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Schulman, Ronca, and Bucuvalas, Inc., (SRBI) and Research into Action conducted a national residential consumer survey about energy conservation and efficiency. The objective of the survey was to provide current information about attitudes, behavior, and understanding related to energy conservation and efficiency. Question topics addressed attitudes about energy conservation and efficiency, current behavior with respect to energy conservation and efficiency, motivations for saving energy, interest in energy-efficient products and services, Energy Star® awareness, opinions about current energy suppliers, and residence and demographic characteristics. Selected survey results are presented in this paper.

SURVEY METHODOLOGY

A nationally representative random-digit dial sample was selected for the survey. Between March 18 and April 14, 2002, 900 interviews were completed with an average length of 21 minutes. Up to ten attempts were made to reach each sampled telephone number. The margin of error for the survey is plus or minus 3.3 percent at the 95 percent confidence limit. Over-samples for some specific service geographies served by some project sponsors were also conducted, but these results are proprietary to individual sponsors and are accordingly excluded from this paper.

The cooperation rate for the survey was 38.5 percent, which is average for a lengthy telephone survey of this type where the sponsor is identified only generically (in this instance, as a group of electric utility companies and government agencies). The cooperation rate is determined by dividing the total number of attempted contacts (including answering machines, callbacks, refusals, and language and health problems) by the number of completions.

**UNDERSTANDING OF THE MEANING OF
ENERGY CONSERVATION AND EFFICIENCY**

In two of the open-ended questions in the survey, respondents were asked the meaning of the terms “energy conservation” and “energy efficiency”. The survey sponsors believed that it was important to gauge the level of understanding of these terms among the general public. The items were rotated randomly to avoid question order effects, and the verbatim responses from interviewees were recorded and encoded. As indicated in Table 1, it appears that respondents tend to associate energy-saving actions with “energy conservation” and product-related attributes with “energy efficiency”.

Table 1 What is the Meaning of ...?		
	<i>Energy Conservation</i>	<i>Energy Efficiency</i>
Saving energy	27%	11%
Conserving energy	15	5
Using less energy	13	6
Turning off lights/appliances, turning off heat	12	6
Using energy wisely/efficiently	8	9
Saving money	5	8
Not wasting energy	5	4
Using energy only when needed	4	3
Using energy efficient products	4	30
Saving resources	4	0
Using as little energy as possible	3	3
Trying to cut down energy use	3	0
Saving energy for the future	2	0
Environmental concerns	1	0
Alternative energy sources	1	0
Home improvements from energy savings	0	3
Getting the most out of energy used	0	7
Maximum use of energy at low cost	0	3
All other mentions	5	7
Don't know/Refused	2	3

*Note: Multiple mentions permitted
Questions were rotated*

Q3. What do the following terms mean to you? - Energy conservation
- Energy efficiency

Base: All respondents, n = 900

When asked about the meaning of “energy conservation”, more than 40 percent of respondents essentially restated the term by saying that it means “conserving energy” or “saving energy”. Respondents under 35 years old were more likely than other respondents to provide these responses. Approximately one-third of respondents said that "energy conservation" means "using less energy," "using energy wisely," "not wasting energy", or some variation of these themes. Respondents offering these answers tend to be over 35 and to have undergraduate or graduate degrees.

Sixteen percent of respondents related the term "energy conservation" to specific actions such as turning off lights, turning down the heat, or using energy-saving products. Respondents living in the West were more likely than those in other areas of the country to provide these definitions for “energy

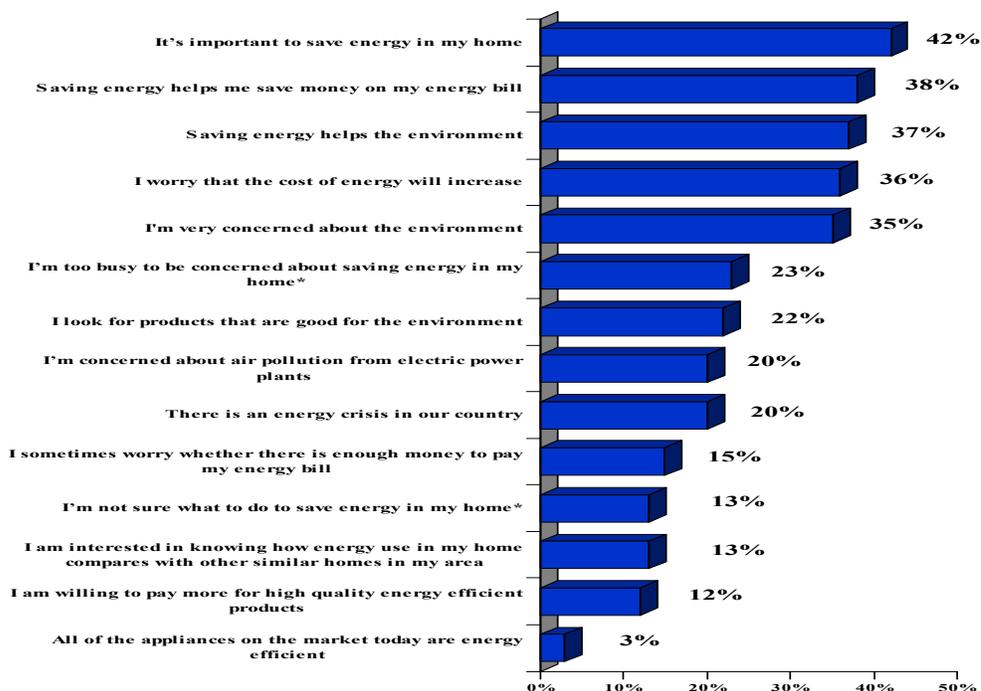
conservation". Seven percent of respondents related "energy conservation" to "saving resources," "saving energy for the future," or "environmental concerns." While only five percent of respondents overall equated "energy conservation" to "saving money", 12 percent of those with incomes less than \$20,000 gave this response.

In contrast, approximately one-third of respondents related the term "energy efficiency" to the use of energy-efficient products. Respondents who associated "energy efficiency" with specific products or actions tended to be 45 years old or older, college graduates, reside in the Northeast, and live in one-person households. Another 25 percent of respondents defined "energy efficiency" as "saving energy" or "conserving energy" or "using energy wisely". Eight percent said that "energy efficiency" means "saving money" to them, and three percent mentioned "home improvements from energy savings." While 12 percent of respondents characterized "energy conservation" as "turning off lights and appliances/turning down the heat", only six percent defined "energy efficiency" in these terms.

CURRENT ATTITUDES

Respondents were asked whether they agreed or disagreed with a series of statements about energy conservation and efficiency. Overall, the findings indicate strong agreement with the importance of saving energy, as shown in Figure 1.

Figure 1
Attitudes Toward Saving Energy
 Percent who "Strongly Agree"



* Percent who strongly disagree

Q4. Please indicate whether you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree with each of the following statements:

Base: All respondents, n = 900

Forty-two percent of respondents agreed strongly that it is important to save energy in their home. Respondents in the Midwest were less likely (35 percent) than other respondents to agree they are concerned about saving energy in their homes. Fewer than four in ten respondents strongly agreed that saving energy helps them save money on their energy bill and helps the environment. College graduates were more likely than other respondents to agree strongly that saving energy helps save money on their energy bill, while those 65 years of age and older were less likely to say that saving energy helps the environment.

More than one-third of respondents strongly agreed with the statements that they are worried that the cost of energy will increase and that they are very concerned about the environment. Respondents 35 to 44 years of age and respondents with lower incomes and educational levels were more concerned about energy cost increases than other respondents. Nearly one-quarter of respondents strongly agreed that they look for products that are good for the environment. These respondents were less likely to live in the Midwest and were more likely to be aware of the Energy Star label than other respondents.

One-fifth of respondents strongly agreed that there is an energy crisis in this country, with the attitude more common among women (23 percent of whom strongly agree) than men (15 percent). Respondents in the West were also more likely than respondents in other regions to agree strongly that there is an energy crisis. One-fifth of respondents said they are concerned about air pollution from electric power plants, with those age 35 to 54 more concerned than other respondents.

About one-seventh of respondents strongly agreed with statements that they sometimes worried whether there is enough money to pay their energy bill and that they were interested in knowing how energy use in their home compares with other similar homes in their area. Among respondents aged 35 to 44, twenty percent expressed strong interest in a usage comparison.

In contrast to the relatively large proportion of respondents who strongly agreed that it is important to save energy in the home, that saving energy helps lower their bill and helps the environment, and that they were concerned about the environment and future energy cost increases, only 12 percent of respondents agreed strongly that they are willing to pay more for high quality energy-efficient products.

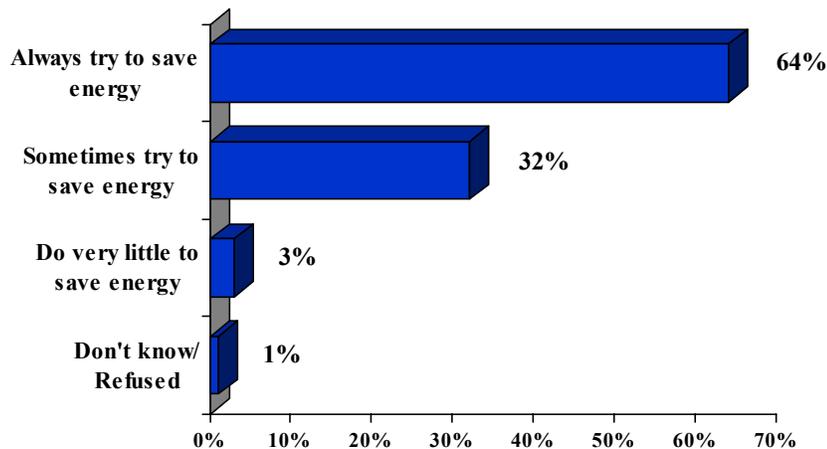
Agreement was also very low with statements conveying an inability to make good decisions about energy use and appliance purchases. Only five percent of respondents strongly agreed that they were not sure what to do to save energy in their home, three percent strongly agreed that all appliances on the market today are energy efficient, and two percent strongly agreed that they are too busy to be concerned about saving energy in their homes. The small proportion of respondents who strongly agreed that they do not know what to do to save energy in their home are more likely than other respondents to have incomes under \$40,000, be under 35 years old, have a high-school education or less, and live in a mobile or manufactured home.

CURRENT ENERGY-RELATED BEHAVIOR

As illustrated in Figure 2, almost all of the survey respondents reported that they sometimes or always try to save energy in their home. Sixty-four percent said that they always try to save energy in their home, and 32 percent said they sometimes try to save energy. Respondents under age 35 were less likely than other respondents to say that they always try to save energy, while those with a high school

education or less were more likely to say they always try to save energy. There was an inverse relationship between always trying to save energy and respondent income.

Figure 2
Actions to Save Energy



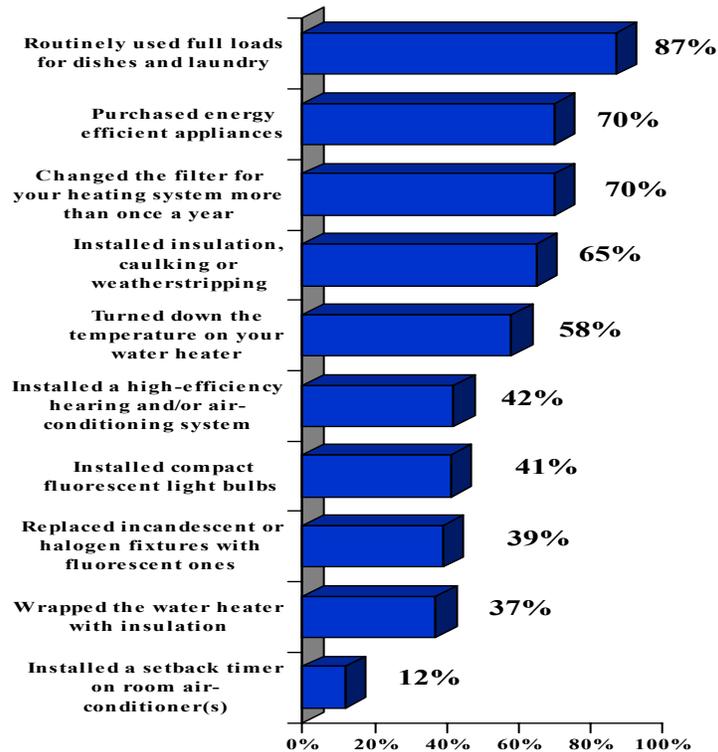
Q1. Which of the following best describes your approach to using energy in your home?
Base: All respondents, n = 900

Among respondents who always or sometimes tried to save energy, approximately one-quarter reported that they had been very successful in their efforts, while 60 percent said that they have been somewhat successful. Women are more likely than men to indicate that their energy-saving efforts have been “very successful”.

As shown in Figure 3, the three most often-reported measures to reduce home energy use were using full loads for dishes and laundry (87 percent), purchasing energy-efficient appliances (70 percent), and changing the filter for the heating system more than once a year (70 percent). Installing insulation and turning down the temperature on the water heater were also mentioned by approximately three-fifths of the respondents as measures used to reduce their home energy use. Respondents who tended to mention these top five measures are more likely to be homeowners, have children in the home, and earn \$50,000 or more. Respondents aware of Energy Star and/or having had an energy audit were also more likely to have implemented these energy-saving measures in their home than other respondents.

There are some regional differences among respondents in their energy-saving efforts: for example, respondents in the West were more likely to have wrapped their water heater than other respondents, while respondents in the Northeast were more likely to have purchased energy-efficient appliances.

Figure 3
In-Home Efforts to Save Energy



Q9. Have you done any of the following in your home to reduce energy use:
Base: All respondents, n = 900

ATTITUDES TOWARD INFORMATION SOURCES ABOUT SAVING ENERGY

A randomly selected one-half of survey respondents was asked to assess the reliability of a variety of information sources about saving energy. These information sources included the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), state government, the respondent's electric utility company, consumer publications, news/media, contractors, and retailers. The split half-sample approach was used in order to reduce respondent burden and to control survey length

As shown in Table 2, approximately one-quarter of respondents viewed the U.S. Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), their electric utility company, and consumer publications as very reliable sources of information about saving energy. Agreement that the EPA, DOE, and electric utilities are very reliable sources of information about saving energy is inversely related to respondent income. Fourteen percent characterized their state government as a "very reliable" source of energy. Least reliable information sources were the news media (9 percent), contractors (8 percent) and retailers (6 percent).

Table 2 Reliability of Information Sources about Saving Energy Percent “very reliable”	
U. S. Environmental Protection Agency (EPA)	26%
U. S. Department of Energy (DOE)	27
Your electric utility company	25
Consumer publications	25
State government	14
News/media	9
Contractors	8
Retailers	6

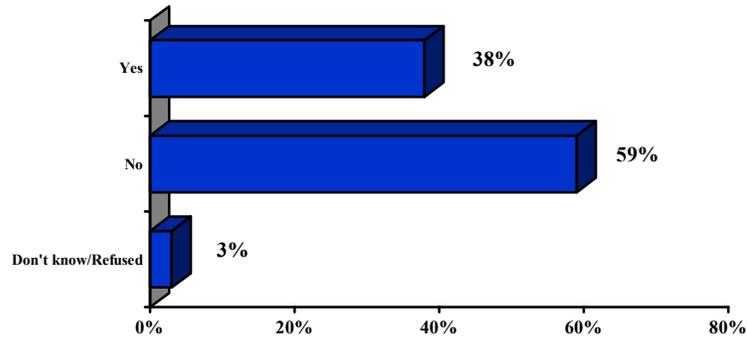
Q28. How reliable would you consider each of the following as a source of information about saving energy? Using a scale of zero to ten, where zero is “very unreliable” and ten is “very reliable”, how reliable would you consider ___ as a source of information about saving energy:

AWARENESS OF THE ENERGY STAR LABEL

As shown in Figure 4, thirty-eight percent of respondents claimed they could name a program, brand, or label to certify appliances, electronic equipment, and related products as energy-efficient. However, when actually asked to provide the name of the program, brand, or label, 45 percent of these respondents were unable to do so. Sixteen percent (six percent of all respondents) mentioned Energy Star. Those who mentioned Energy Star were most likely to be male and under the age of 55. Of those under 55 years old, respondents under 35 years old are nearly twice as likely (31 percent) to mention Energy Star as those respondents who are in the 35 to 54 year age group (18 percent). By region, awareness of Energy Star ranged from approximately 25 percent in the Northeast and West to nine percent in the South and Midwest.

Energy Guide[®] was mentioned by four percent of respondents, and Energy \$martsm, Good Cents[®], and Underwriters’ Laboratory were each mentioned by one percent of respondents. Overall, 21 percent of the respondents who said they could name an energy efficiency program, brand or label provided the name of an appliance brand, including Kenmore, General Electric, Whirlpool, Maytag, or Frigidaire. It may be that the inclusion of the word “brand” in the question led respondents to think of specific appliance manufacturers, rather than independent energy-efficiency certification programs.

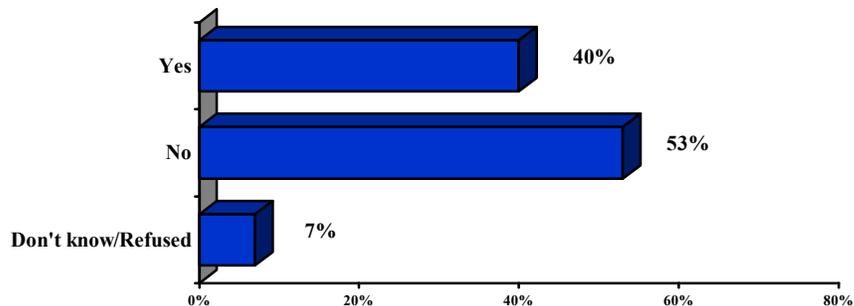
Figure 4
Unaided Awareness of Programs, Brands, or Labels
to Certify Energy Efficient Products



Q19. Are you aware of any programs, brands, or labels to certify appliances, electronic equipment, and related products as energy efficient?
 Base: All respondents, n = 900

To respondents who did not mention the Energy Star label, the interviewer described the label as "a symbol that you may find on products like televisions, home appliances, air conditioners, or computers. It's the word 'energy' in script, followed by a star—it's called the Energy Star symbol." As illustrated in Figure 5, 40 percent of those who did not previously mention Energy Star then indicated that they had seen the symbol.

Figure 5
Aided Awareness of Energy Star



Q20. Now I'd like to describe a symbol that you may find on products like televisions, home appliances, air conditioners or computers. It's the word "energy" in script, followed by a star - it's called the Energy Star symbol. To the best of your knowledge have you ever seen the symbol?
 Base: Respondents who did not mention Energy Star, n = 845

Respondents with either aided or unaided awareness of the Energy Star label were asked about its meaning using a series of several statements. Two-thirds of those aware of Energy Star agreed that the label means that "the product uses energy more efficiently than a comparable model". Forty-five percent agreed that the Energy Star label means that "the product, even if it costs more up front, will save [the

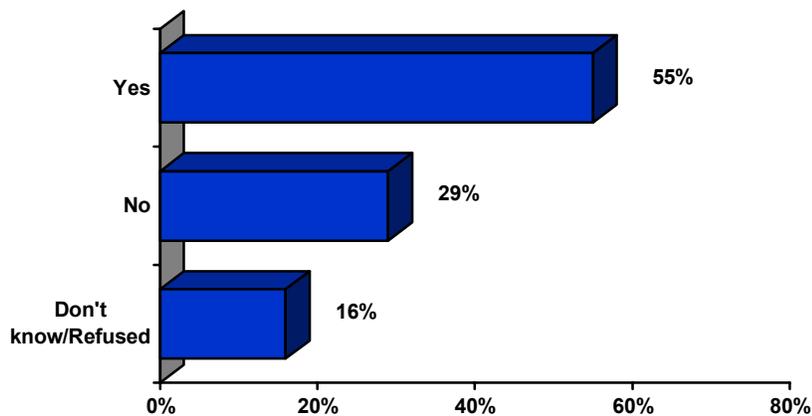
purchaser] money over its life," and approximately 30 percent agreed that the label means that "the product is friendly to the environment."

Among respondents aware of Energy Star, there was a positive association with income and agreement with statements that the Energy Star label means that the product uses energy more efficiently than a comparable model and that a product uses energy more efficiently than other products.

Respondents familiar with the Energy Star label were asked if they had purchased any of a series of specified home appliances and other products within the past year. Nearly all (95 percent) indicated that they had purchased at least one of the items within the past year. Light bulbs, home electronics, lighting fixtures, and remodeling materials account for the preponderance of the items that respondents purchased within the past year.

Of those who say they have purchased one or more new items for their home in the past year, 55 percent say that at least one of the products they purchased had the Energy Star label (Figure 6). These respondents tended to have children in the home and own their home. Seventy-one percent of those aware of Energy Star in the Northeast purchased products with the Energy Star label in the past year, compared with approximately one-half of respondents in other regions.

Figure 6
Purchased Products with the Energy Star Label
within the Past Year



Q24a. Did any of the products you purchased have the Energy Star label?
Base: Respondents aware of Energy Star label and purchased new Energy-related products within the past year, n = 375

SUMMARY

In this paper, results were presented from a national survey of residential consumers regarding energy conservation and efficiency. The objective of the survey was to provide a comprehensive picture of residential consumer attitudes and behaviors related to energy conservation and efficiency.

The survey results indicated that respondents are more likely to associate energy-saving actions with “energy conservation” and product-related attributes with “energy efficiency”. For the most part, these terms are defined differently by consumers. Importantly, the results indicate that respondents understand that saving energy involves active participation on their part, whether by turning off lights when not in use or purchasing energy-efficient appliances.

Not surprisingly, respondents expressed a high level of agreement with statements related to support for energy conservation and efficiency. Most feel that they already know what to do to save energy in their home. Four out of ten respondents agree strongly that saving energy translates into lower energy bills. There is also a perceived relationship between energy and the environment, as evoked by respondent agreement with statements about concern for air pollution from electric power plants and the importance of the environment. However, while respondents expressed support for energy-saving actions, many indicated an unwillingness to pay more for energy-efficient appliances. There is also concern among some respondents about the future cost of energy, as well as about the ability to pay the monthly energy bill.

How do attitudes translate into behavior? Two-thirds of respondents indicated that they always try to save energy in their homes. Most of the remaining respondents said they sometimes try to save energy. Only three percent gave the socially undesirable response that they “do very little to save energy.” Despite this high level of effort, only one-quarter of respondents who have tried to save energy said they had been “very successful” in doing so. Further information about how consumers define success in this context would be beneficial in understanding the efficacy of energy-saving actions in the consumer sector.

Residential consumers distinguish among various information sources in the reliability of energy information provided. One-quarter characterize the EPA, DOE, their electric utility, and consumer publications as “very reliable” sources of energy information. In contrast, only one in ten respondents perceive contractors, retailers, and the media as reliable energy information sources. Consumers appear to have high standards for assessing the reliability of energy information, creating a challenge to these agencies and organizations as they seek to educate consumers about energy matters.

While unaided awareness of Energy Star is relatively low, aided awareness is 40 percent, indicating that progress is being made in increasing awareness of the label on energy-efficient products. Among respondents aware of Energy Star who had purchased at least energy-related product in the preceding year, more than one-half had purchased an item with the Energy Star label. This is certainly important progress as continuing efforts are undertaken to increase awareness of the label in promoting the purchase of energy-efficient products.

The 2002 survey of residential consumers about energy conservation and efficiency will be replicated in early 2004 to assess whether energy-related attitudes and behaviors have been impacted by recent events, including the continuing economic recession and the August 2003 blackout. In addition, the forthcoming survey will examine opportunities for demand response with residential consumers. Most importantly, the survey will provide information to begin identifying residential sector trends in energy conservation and efficiency.