UNDERSTANDING HOUSEHOLD ENERGY USE: CONSUMER AWARENESS AND KNOWLEDGE OF ELECTRIC UTILITY RESTRUCTURING

Introduction

Historically, electric utilities have had exclusive control of the generation, transmission, and distribution of the nation’s electricity. That is, the utilities have provided the power generated at the plant and the transmission or delivery of that power to community wires and poles that distribute or carry the electricity to a customer’s home. Under this monopoly system, utilities have been obligated to provide all interested customers with reliable service at terms, conditions, and prices established by government regulators.

In the hope of encouraging lower prices, higher service quality, and greater innovation, some policymakers have sought to restructure the utility industry by moving away from the traditional regulated monopoly model. A primary goal of electric restructuring, also known as electric deregulation, is to give consumers the opportunity and responsibility to select their suppliers of electricity from a range of competing, unregulated suppliers. This change opens the generation of electricity to competition but leaves the transmission and distribution of electric power under regulatory control.

The extent to which individual consumers will benefit from restructuring depends, in large measure, on their awareness of the changing regulatory environment, their knowledge of essential information such as price per kilowatt-hour, their understanding of how to use the information available to them, and, of course, the actual availability of alternative electricity providers. The findings from a national survey of adult energy bill payers commissioned by the AARP Public Policy Institute provide some insight into consumer awareness and knowledge of these issues.

Respondents to the survey were asked an array of questions related to their use of energy, household energy expenditures, and awareness of and participation in restructured utility markets. This data digest is the first in a series of reports on household energy use based on the results of AARP’s national survey of energy bill payers.

Methodology

A nationally representative sample of 3,076 respondents participated in the survey from the population of adult energy bill payers living in households in the continental United States. The interview questionnaire was developed by AARP and revised by Princeton Survey Research Associates based on the pre-test results in collaboration with AARP. Telephone interviews were conducted in English by Princeton Data Sources, LLC from October 23 to November 29, 2001.

All statistical results were weighted to correct for the disproportionate sampling design and for any systematic non-response that could bias results. The margin of sampling error for the complete set of weighted data was ± two percent.

Findings and Results

Awareness of Electric Deregulation

Nearly three out of four electricity bill payers (74 percent) living in restructuring active states as defined in Footnote 5 (N=3,163) and
restructuring suspended6 states (hereafter known as restructuring states) reported that they had heard about electric deregulation, compared to 61 percent of all electricity bill payers in the nation. Of those bill payers in restructuring states who had heard about deregulation in general, 81 percent were aware that deregulation was taking place in their own states of residence.

Age. In restructuring states, bill payers over 65 years of age were the least likely to have heard about deregulation. Sixty-seven percent of bill payers age 65 and older, compared to 78 percent of bill payers between ages 35 and 49 and 81 percent of bill payers ages 50 through 64, had heard about deregulation7 (see Figure 1).

Income. Disparities in electric deregulation awareness were statistically significant between low- and high-income8 bill payers living in restructuring states. Low-income bill payers (52 percent) were four times more likely than high-income bill payers (13 percent) to report that they had never heard of electric deregulation9 (see Figure 2).

Knowledge of Per Unit Price for Energy10

One of the most important factors that consumers consider in choosing an energy supplier is price. Standardized price information (for example, price per kilowatt-hour for electricity) is critical to making accurate cost comparisons and deciding between an established company and a new one.

Among electricity and natural gas bill payers in all states, just one in 10 reported that they knew how much they paid per kilowatt-hour for electricity (nine percent) or per therm for natural gas (10 percent). In contrast, respondents who used

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5 “Restructuring active states” refers to states that have either enacted enabling legislation or issued a regulatory order to implement retail access, which allows customers to choose their own suppliers of generation energy services (N=3,163). See the Energy Information Administration’s (EIA) Status of State Electric Industry Restructuring Activity for a list of active states, available at http://www.eia.doe.gov/cneaef/electricity/chg_str/regmap.html (accessed June 3, 2002). Note: Oregon is listed on EIA’s website as active, but is not included here because the law only allows access for non-residential customers.

6 California suspended retail access on September 20, 2001 (N=643).

7 \(\chi^2 (6, N=3,019)=61.16, p <.001\)
The probability that the disparities could have occurred by chance, as noted with p-value, is less than 0.001, or 0.1 percent (p<.001). This p-value, or probability, is less than the significance level (or alpha level) of .001, which is far more conservative than the commonly used alpha level of .05.

8 This report defines households with incomes at or below $20,000 before taxes for 2000 as low income, and households with incomes at or above $75,000 before taxes for 2000 as high income. Income was reported in ranges rather than in discrete dollar amounts for this survey. These definitions of low and high income were selected because respondents with annual incomes of less than $20,000 (19 percent) and those with annual incomes of more than $75,000 (22 percent) accounted for comparable shares of respondents at opposite ends of the income distribution.

9 \(\chi^2 (2, N=1,073)=196.87, p <.001\)

10 In this report, knowledge refers to knowing how to find out per unit price as well as actually knowing per unit price. Respondents living in all restructuring states, as defined by this report, were included in this analysis (N=3,163).
heating oil as the primary fuel to heat their homes displayed a much higher degree of knowledge on this question. More than 70 percent of all heating oil users said that they knew how much they had paid per gallon for heating oil (see Figure 3).

In restructuring states, only one in 10 bill payers (10 percent) knew how much they had paid per kilowatt-hour for electricity. However, 80 percent of those who did not know reported that they knew how to find out the unit price.

**Age.** In restructuring states, bill payers age 65 and older (nine percent) were less likely to report knowing their per kilowatt-hour price than bill payers between ages 35 and 49 (11 percent) or those between ages 18 through 34 (13 percent).

Disparities in knowledge of how to find out the per-unit price of electricity were even more significantly associated with age. Older bill payers (11 percent) were almost twice as likely as bill payers between ages 35 and 49 (six percent) or those between ages 50 through 64 (six percent) to report that they did not know how to find out their per-unit price for electricity.

**Income.** In restructuring states, nearly twice as many high-income bill payers (13 percent) as low-income bill payers (seven percent) reported that they knew the per kilowatt-hour price they paid for electricity. Although more than 90 percent of bill payers reported that they knew how to find out the per-unit electricity price, low-income bill payers (19 percent) were about four times more likely than high-income bill payers (five percent) to say that they did not know how to find out their per kilowatt-hour electricity price (see Figure 4).

**Participation in Restructured Utility Markets**

Only six percent of all electricity bill payers living in states where they were permitted to choose their own electricity providers reported that they had actually chosen a provider other than their local utility. And 12 percent reported that they had thought about switching to other providers, although they had not actually done so.

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11 $\chi^2 (3, N=3,028)=10.51, p < .05$
12 $\chi^2 (3, N=2,728)=60.97, p < .001$
13 $\chi^2 (1, N=1,071)=8.76, p < .01$
14 $\chi^2 (1, N=962)=44.57, p < .001$
15 Only the bill payers living in states where deregulation was currently active at the time of the survey were included in this analysis of participation (see Footnote 16). Although questions on participation were asked only of those who reported that they were aware of the options to select their own utility providers (n=900) during actual interviews, this report includes respondents who were not aware of such options (n=903) and who were not sure about such options (n=389) in this analysis in an attempt to incorporate all respondents (N=2,191) who could have participated in the restructured utility market had they known the availability of such options.
16 Restructuring became effective as of January 2002 in three states—Michigan, Texas, and Virginia—and as of May 2002 in the state of Illinois. Since the survey was conducted from October 23 to November 29, 2001, bill payers from these four states were excluded from the analysis of participation (N=2,191).
Age. Electricity bill payers age 65 and older (18 percent) were less likely to report that they had either switched to other providers or at least thought about selecting other providers, compared to 23 percent of bill payers between ages 50 and 64 and 20 percent of bill payers between ages 35 through 49.  

Income. Bill payers from high-income households (22 percent) were about 1.4 times more likely than their counterparts from low-income households (16 percent) to say that they had either chosen or thought about selecting other electricity providers. 

Non-participants

More than eight in 10 energy bill payers (82 percent) in restructuring active states reported that they neither had chosen nor thought about choosing an alternative electricity provider. The responses of these non-participating bill payers, however, revealed inherent differences with regard to their awareness of options to choose their own providers of electricity.

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<tr>
<th>Awareness of Provider Options Among Non-Participating Bill Payers (N=1792)</th>
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<tbody>
<tr>
<td>Aware of the options but did not participate: 28%</td>
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<tr>
<td>Not sure whether the options are available: 22%</td>
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<td>Do not have options to choose: 50%</td>
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Among the bill payers who reported that they neither had chosen nor had thought about choosing other electricity providers, almost three in four (72 percent) said that they had no alternative to their local utility provider or were not sure of any alternatives (see Figure 5).

Summary

The extent to which consumers benefit from competition in the electric utility industry depends significantly on whether they are aware of the restructuring process, have options among electricity providers from which to choose, and know basic information about the price of their electricity.

Findings from this survey suggest that in restructuring states:

- Most consumers, and particularly high-income consumers, have heard about deregulation.
- More than half of low-income consumers have never heard of electricity deregulation.
- Most consumers have neither chosen nor thought about choosing another electricity provider.
- Among these non-participants, most say they have no alternative to their local utility provider or are not sure of any alternatives.
- The vast majority of consumers do not know how much they pay per kilowatt-hour for electricity, information that is critical to making accurate cost comparisons and deciding between an established company and a new one.
- Older and low-income consumers are the least likely to know how to find out their per kilowatt-hour electricity price.