Household Energy Conservation Attitudes and Behaviors in the Northwest: Tracking Changes Between 1983 and 1985

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May 1987

**Prepared for the
Bonneville Power Administration
Office of Conservation
under a Related Services Agreement
with the U.S. Department of Energy
Contract DE-AC06-76RLO 1830**

**Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
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PACIFIC NORTHWEST LABORATORY
operated by
BATTELLE MEMORIAL INSTITUTE
for the
UNITED STATES DEPARTMENT OF ENERGY
under Contract DE-AC06-76RLO 1830

Printed in the United States of America
Available from
National Technical Information Service
United States Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161

NTIS Price Codes
Microfiche A01

Printed Copy

Pages	Price Codes
001-025	A02
026-050	A03
051-075	A04
076-100	A05
101-125	A06
126-150	A07
151-175	A08
176-200	A09
201-225	A010
226-250	A011
251-275	A012
276-300	A013

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Pacific Northwest Laboratory
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PREFACE

In October and November, 1985 a telephone survey of 1058 households in the Pacific Northwest was conducted as part of a project to analyze the marketing environment for conservation activities of the Bonneville Power Administration (BPA). Analyses of the survey results are being published in a series of five reports:

- a tracking report analyzing the changes between 1983 and 1985
- a consumer characterization and segmentation report with detailed analyses of market segments
- a fuel switching report detailing the changes in primary and secondary fuel sources in home heating
- a financing report focusing on the financing aspects of household energy conservation investments
- a utility summary report presenting a summary of the above four reports with an emphasis on electrical utilities.

The work on this series of reports is conducted by Pacific Northwest Laboratory (PNL) in support of BPA's efforts to develop the capability in delivering conservation programs for use in the future when it becomes necessary to acquire conservation resources. BPA's technical monitor for the project has been Terry Oliver, Office of Conservation.

This report, entitled Household Energy Conservation Attitudes and Behaviors in the Northwest: Tracking Changes Between 1983 and 1985, PNL-5892, is the first report in the series. It covers aspects such as consumer perceptions of energy conservation, perceptions of institutions, energy conservation actions, and segmentation of consumers into three market prospect groups. The focus of the report is the comparison of the 1985 survey results with those of a similar survey conducted in late 1983.

Comments and suggestions on this report are welcome. Please direct your correspondence to Pacific Northwest Laboratory, P.O. Box 999, Richland, Washington 99352.

D. L. Ivey
Project Manager

EXECUTIVE SUMMARY

Pacific Northwest Laboratory (PNL) has analyzed the changes in consumer energy conservation attitudes and behaviors in the Pacific Northwest between 1983 and 1985. The information was collected through stratified random telephone surveys on 2,000 and 1,058 households, respectively, for 1983 and 1985 in the Bonneville Power Administration (BPA) service area in Idaho, Oregon, Washington and Western Montana. This information will be used by BPA to facilitate better conservation program planning, design, and marketing.

COVERAGE AND HYPOTHESES

This report covers four topic areas and tests two hypotheses. The topics are as follows:

- consumer perceptions and attitudes of energy use and conservation in the home
- consumer perceptions of energy institutions and other entities
- past and intended conservation actions and investments
- segmentation of homeowners into market prospect groups

The hypotheses tested are as follows:

- There has been no change in the size and psychographic make-up of the original three market segments found in the 1983 survey analysis.
- Image profiles of institutions with respect to familiarity, overall impression, and believability as sources of energy conservation information remain unchanged since 1983.

In the following sections, major findings of the study are presented first. Some implications of the findings are then summarized.

PERCEPTIONS OF ENERGY CONSERVATION

- Between 1983 and 1985, consumers in the Northwest have increasingly viewed energy conservation as using energy intelligently or effectively. In 1985, 40% of the respondents defined energy conservation in such terms, compared with 8% in 1983.
- Psychographically, consumers were more likely in 1985 than in 1983 to agree with statements reflecting social responsibility, self interest, materialism, and lifestyle. Similarly, they were less likely in 1985 than in 1983 to agree with statements reflecting limits to energy conservation, cynicism or negative views on energy conservation.

The above results suggest that there was improved understanding of the nature of energy conservation over the two-year period. They also suggest that there was some internalization of energy conservation consciousness: consumers are becoming more energy conservation conscious.

- However, between 1983 and 1985, the intensity of concern about energy use in the home, cost of energy, and energy conservation declined, paralleling the declining trend in the intensity of concern about issues such as unemployment, inflation, and the environment. This may have been a result of changes in external conditions such as the power surplus increasingly being reported in the news media and the relatively more stable or declining energy prices.
- Although consumers in the Northwest were concerned about energy conservation and energy use in the home, the intensity of such concern was not as strong as that for other issues.

PERCEPTIONS OF INSTITUTIONS

- In 1985 as in 1983, the local electric utility stood out as the most familiar energy institution to consumers in the Northwest. When measured in terms of all consumers who were familiar with the energy institutions, energy extension service and the local electric utility were perceived to be the most concerned about the consumer.

- In both years, the local electric utility was regarded as responsible for setting electricity prices, together with institutions such as BPA and the public utility commission.
- In terms of overall impressions, the energy extension service and the local electric utility were the two most favorably regarded energy institutions by consumers who were familiar with them. Radio and retail stores were the two most highly regarded nonenergy entities.
- The energy extension service, state energy office, the local electric utility, retail stores and the radio were the most credible sources of energy conservation information.
- Between 1983 and 1985, consumers familiarity with energy institutions generally increased; whereas favorability ratings of energy institutions remained relatively constant except for the Northwest Power Planning Council. For the latter, its favorability rating increased.
- In 1985 proportions of respondents who regarded the energy institutions, other entities and individuals as credible sources of energy conservation information were generally lower than in 1983, except for energy extension service, retail stores and news media. The believability rating of the latter three entities remained constant.

It can be concluded from the above results that there have been significant changes between 1983 and 1985 in consumers' image profiles of energy institutions.

ENERGY CONSERVATION BEHAVIORS

- Only one significant change occurred in the proportions of consumers preferring a general approach to conserve energy in the home: the proportion of consumers who would both change their ways of living and spend money on improvements declined.

- Most of the proportions for no/low cost energy conservation practices appeared to stay about the same or at a slightly lower level in 1985 than in 1983. The only action showing a significant increase was that of setting the thermostat at a lower level during the heating season.
- Five energy conservation measures (ECMs) showed increases in the proportion of homes equipped with them:
 - roof/ceiling insulation
 - wall insulation
 - weatherproofing
 - storm windows
 - clock or setback thermostat.
- The proportions of homes equipped with following two ECMs stayed relatively unchanged during 1983-85:
 - floor/basement/crawl space insulation
 - heat pump furnaces.
- Showing declines in the proportions of homes equipped were the following two ECMs:
 - storm doors
 - wood stoves.
- It appeared that the proportions of homeowners who claimed to have actually installed specific ECMs during 1983-85 closely matched the proportions of those who indicated in 1983 that they were likely to invest in the ECMs in the next one or two years.
- Average investment per household in energy conservation amounted to about \$1,570 during 1983-85. This is slightly higher than the amount of \$1,200 during 1981-83.^(a)

(a) The average investment in the 1983 survey was about \$1,800. However, the figure was calculated for a period of three years. For comparison purposes, the figure shown in the text has been converted into a corresponding 2-year figure by multiplying the original figure by the ratio of 2/3.

- In 1985, homeowners who had made investments in ECMs speculated that the value of their home would increase by 110% of their investments compared with the 160% increase derived in the 1983 survey.
- Perceived average savings in monthly electrical bills was estimated at \$55 in the 1985 survey, compared with \$32 in the 1983 survey.
- Current income, savings, bank and utility loans, and utility payments, in that order, were the most important sources of financing energy conservation investments in 1985, as in 1983.
- The proportion of homes not equipped with a specific ECM but whose owners indicated that they were likely to install the ECMs into the next two years ranged from 3 to 15% in 1985, compared with 6 to 13% in 1983.^(a)

MARKET PROSPECT GROUPS

As in the 1983 survey, homeowners were segmented into three prospect groups likely to invest in ECMs based on past investment behaviors and expressed intent to invest:

- The size distribution of the prospect groups in 1985 remained relatively unchanged from that in 1983.
 - First-tier prospects, including those who were considered to be most likely to invest in ECMs, accounted for about 1 in 10 households in the region.
 - Second-tier prospects, covering those who were considered to be somewhat likely to invest in ECMs, amounted to be about 1 in 3 households.
 - Nonprospects, those who are unlikely to invest in ECMs on their own were estimated to be about 1 in 3 households.
 - About 1 in 4 of the region's households were renters and were not included in the above prospect groups.

(a) As a proportion of total homeowners.

- In 1985, there were some changes in the psychographic profiles of prospect groups in the sense that significantly larger proportions of respondents agreed with the following statements, compared to those observed in 1983:

Statements Reflecting Social Responsibility

"Conserving energy is the best way to protect the environment."

Statements Reflecting Self Interest/Materialism/Lifestyle

"Most people who conserve electricity do so to save money."

"Conserving energy is the best way to maintaining my lifestyle."

Statements Reflecting Cynicism/Negative Views on Energy Conservation

"The amount of energy I use is really my own affair and no one else's."

In contrast, the proportion decreased regarding respondents who agreed with the statement that "my conservation efforts won't have much effect one way or the other on the availability of electricity" (a statement reflecting cynicism/negative views on energy conservation).

The proportions of respondents who agreed with the other statements remain unchanged.

IMPLICATIONS

- With improved understanding of energy conservation and heightened level of energy conservation consciousness on the part of the consumers in the region, it would be useful to explore the ways to tap them. This can be included as part of the overall effort in building the capability to deliver conservation programs. This capability would be used to acquire conservation resources at the time when they are needed.
- The lower level of concern for energy conservation and related issues in 1985 reflected mainly the impact of changed external conditions. In addition, the intensity of concern for energy conservation and energy use was lower than that for other issues such as crime, unemployment, inflation, and the environment. These results suggest

that public awareness and information programs should continue to play an important role in the effort to promote energy conservation.

- Given the high favorability and credibility ratings of the energy extension service, the local electric utility, the news media and the retail stores, as well as the high credibility of the state energy office in terms of energy conservation information, efforts to reach consumers should include as intermediaries, the energy extension service, the electric utility, the state energy office, the news media, and the retail stores.
- It is well known that a period of power surplus currently exists in the Northwest. Therefore, the general strategy is to build the capability to acquire conservation resources for application when the need arises, rather than actually acquire them at this time. This strategy would require different approaches for different prospect groups:
 - For the First-tier and Second-tier prospects, the approach should be one of maintenance through promotional efforts such as public information programs, especially by providing information about the benefits of specific ECMs. Few subsidies or none at all would be used for the duration of the power surplus.
 - For the Nonprospects, the approach should be to actively develop this group into Second-tier and eventually First-tier prospect groups. The goal of this approach would be to increase awareness and interest in specific ECMs and to persuade consumers to invest in their ECMs, at least at a minimal level. Because Nonprospects are likely to be low income households, some subsidies may be necessary, even during the period of power surplus.

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1.0 INTRODUCTION

This report presents information and analyses to track the changes, if any, in the energy conservation attitudes and behaviors of consumers in the Pacific Northwest between 1983 and 1985. The information was collected through random telephone surveys of households in Idaho, Oregon, Washington, and Western Montana. Pacific Northwest Laboratory (PNL) conducted analyses of the survey results for the Bonneville Power Administration (BPA) to obtain a better understanding of consumer attitudes and behaviors and to facilitate conservation program planning, design, and marketing.

1.1 BACKGROUND

During 1983-84, PNL conducted the Phase I study of consumer energy conservation attitudes for the BPA. The study was part of an overall project designed to assess the marketing environment for BPA's energy conservation programs and activities. It was the first comprehensive regional study of its kind and established a baseline for future tracking.

In the baseline study, a telephone survey of 2000 residents of the Northwest was conducted.^(a) The sample was drawn to be a representative cross-section of consumers in the Northwest and was composed of 500 respondents from each of the four geographic divisions: Western Washington; Western Oregon; Eastern Oregon and Southern Idaho; Eastern Washington, Northern Idaho, and Western Montana. The respondents were adult heads of households. Only one respondent per household was interviewed. Eighty percent of the interviews were conducted during evening and weekend hours between October 30 and November 13, 1983. Seventy-five percent of the interviews lasted approximately 20 minutes. Interviews with the remaining respondents lasted approximately 30 minutes longer because of additional questions relating specifically to heat pump and solar water heaters.

The respondents were asked questions regarding their attitudes, perceptions, and awareness of energy conservation; their conservation actions and

(a) The survey was conducted by RMH Research Inc. of River Edge, New Jersey.

measures to date; their methods of financing past conservation investments; their perceptions of energy institutions; their behaviors with respect to public communication media such as newspapers, radio and television; and their willingness to invest in energy conservation and its relationship to perceived rates of returns. Based upon their past investment in energy conservation measures, and excluding renters who accounted for about 24% of the region's households, three market prospect groups were identified:

- First-Tier Prospects were those homeowners who had previously installed eight or more specific energy conservation measures (ECMs). Homeowners in this group indicated an interest in investing in additional ECM requiring substantial capital. This group represented approximately 18% of the region's households.
- Second-Tier Prospects were those homeowners who had previously installed 2 to 7 ECMs. They were willing to invest in full weatherization of their homes. This market group accounted for about 22% of the region's households.
- Nonprospects were homeowners who had undertaken only one conservation measure or none at all. They showed little interest in adopting additional energy conservation measures. This segment represented 36% of the region's households.

The results of the baseline study (RHM Research, Inc. 1984a) were published and compared with results from other studies (Fang 1985). A companion survey on the marketing environment for solar and heat pump water heaters was also conducted (RHM Research, Inc. 1984b).

In July 1985, PNL undertook Phase II of the project to analyze the marketing environment for BPA conservation activities with the following three objectives:

1. to track changes in consumer attitudes, interests and opinions between 1983 and 1985
2. to identify more refined segments of the residential conservation market in terms of attitudes, interests, and opinions

3. to test hypotheses concerning consumer conservation actions and investment behaviors.

To achieve these objectives, a second survey of Northwest consumers was conducted in late 1985. This report provides the data, information, and analyses to achieve Objective 1 and part of Objective 3 relating to tracking changes in attitudes. Specifically, it describes the 1985 attitudes, perceptions, and behaviors of the consumers and compares them with the 1983 survey results to identify the changes that are statistically significant. It also tests the following two hypotheses: a) There has been no change in the size and psychographic make-up of the original three market prospect groups from the 1983 survey described above; and b) the familiarity, overall impression, and believability as a source of energy information of energy institutions and other entities remained unchanged since 1983.

1.2 SURVEY AND SAMPLE DESCRIPTIONS

In the 1985 survey, 1058 telephone interviews were completed. The sample was drawn from Idaho, Oregon, Washington and Western Montana, with about equal number of respondents from each of the same four geographical divisions as in the 1983 sample. Interviews were conducted from October 15 through November 8, 1985. Calls were made from 4 p.m. to 9 p.m. on weekdays and from 10:30 a.m. to 7 p.m. on Saturdays and Sundays. Each interview took between 35 and 45 minutes to complete. The refusal rate was 13% and the termination rate was 10%.^(a)

The data presented in this report have been weighted to approximate population values in the BPA service area. The populations of counties within each of the four geographic divisions in the BPA service area were determined and summed. This yielded a total population count for each geographic division. The total counts for the four geographic divisions were then summed to arrive at a total population for the BPA service area. The populations of each division were then expressed as a percentage of the total population of the

(a) For detailed description of sampling design, survey procedure, and survey instrument, see Columbia Research Center, 1985 Marketing Environment for BPA Conservation Activities: Phase II, Draft report submitted to Pacific Northwest Laboratory, December 6, 1985, Portland, Oregon.

region. The weights were derived by comparing the sample observations for the geographic divisions with their respective divisional populations. All population values were approximated by using the 1980 Census data.^(a)

The main focus of this report is the comparison of the conservation attitudes, actions, and perceptions exhibited in the two samples. However, there are differences in the demography of the two samples, which may affect the reliability of the comparison of attitudes, actions, and perceptions. These differences are noted below:^(b)

- Compared with the 1983 sample, the 1985 sample is composed of a larger proportion of female respondents (62% versus 54%). This higher proportion of females in the 1985 sample may have affected the occupational characteristic of the sample, noted below.
- The 1985 sample has a significantly larger group of respondents whose occupation is in the "clerical-sales-technician" category (17% in the 1985 sample versus 7% in the 1983 sample) and a smaller group in the "crafts-foreman" category (7% versus 15%).

(a) Total number of households in the Pacific Northwest for 1980 is 3,022,490. The details of the weights by geographic division are as follows:

<u>Geographic Division</u>	<u>Relative Weight</u>	<u>% of Total Households</u>	<u>Households in Division</u>	<u>Households in Sample</u>	<u>Weight for Division</u>
W. Washington	1.58	39.50	1,193,884	258	4,627.5
W. Oregon	1.12	20.80	846,297	270	3,134.4
E. Washington, N. Idaho, & W. Montana	0.73	18.25	551,604	274	2,013.2
E. Oregon & S. Idaho	<u>0.57</u>	<u>14.25</u>	<u>430,705</u>	<u>256</u>	<u>1,682.4</u>
Total	4.00	100.00	3,022,490	1,058	--

(b) See Appendix Table B.1 for the detailed statistics of the comparison.

- The 1985 sample has a larger group of single-person households (19% versus 15% in 1983).
- The 1985 sample has twice as many respondents who have moved within the past year compared with those in the 1983 sample (23% versus 10%).
- In the 1985 sample, fewer respondents have remained at their current addresses from one to four years (22% versus 31%).
- The 1985 sample has a larger group of higher income (over \$30,000) respondents than the 1983 sample (32% versus 24%).
- The proportion of renters in the 1985 sample is higher than that in the 1983 sample (29% versus 24%).

The two samples had no significant differences in other characteristics of education, age distribution, types of dwelling units, primary heating fuel, and number of persons in the household.

1.3 SCOPE AND LIMITATIONS OF THE REPORT

This report includes only those aspects of the 1985 survey that permit comparison with the 1983 survey results. It does not include all aspects covered in the 1985 survey; much of the information collected in the 1985 survey are being used for other analyses and will be presented in a series of separate reports on consumer characterization and segmentation, fuel switching, and financing.

To the extent possible, the comparisons between the two surveys are conducted in terms of standard statistical test of significance of differences between two proportions at the 95% confidence level. In the tables, values that are significantly greater than others are marked with an asterisk (*) and those which are significantly lower than others are marked with a tilde (~).^(a)

The proportions presented in this report are computed by including those respondents who indicated "don't know" or refused to answer a specific question in the total number of respondents. Therefore, it is different from the

(a) See Appendix A for a detailed description of the significance testing and explanation of the convention to denote the results of the test.

proportions presented in the other reports in this series. This was done to ensure that the 1985 data would be comparable to the 1983 data. Exceptions are those associated with Chapter 4 on perceptions of energy institutions, in which the proportions are computed in terms of those who are familiar with the institutions only.

1.4 REPORT CONTENTS

Chapter 2 presents an overview of the findings and conclusions derived in the analyses detailed in Chapters 3 through 6. Chapter 3 discusses consumer perceptions of energy conservation and related issues. Chapter 4 explains consumer perceptions of energy institutions, other entities, or individuals. Chapter 5 covers the past and potential future conservation actions, including sources of conservation financing and the impact of past conservation actions. Chapter 6 deals with the segmentation of the residential energy conservation market into prospect groups, and discusses the perceptions, attitudes, and actions of the prospect groups.

Appendix A explains the statistical significance tests for the difference between proportions and means. Appendix B presents the detailed supporting information for the discussions and tables in the text.

2.0 FINDINGS

Chapters 3.0 through 6.0 present detailed analyses and discussions of data and information derived from comparing the 1983 and 1985 surveys of Northwest consumer attitudes toward energy conservation. This chapter presents an overview of the findings and conclusions relating to consumer perceptions of energy conservation, perceptions of energy institutions and other entities, past and probable future conservation actions, and three market prospect groups. Some implications are also discussed.

2.1 CONSUMER PERCEPTIONS OF ENERGY CONSERVATION

Between 1983 and 1985, the Northwest consumers' understanding of the term "energy conservation" has progressed to the more general definition of "conserve or save energy." In 1983, when multiple definitions of the term were allowed, 74% percent of respondents gave mentions belonging in this category. In 1985, when multiple mentions were not allowed, the corresponding proportion was 86%.^(a) Consumers were less likely in 1985 to associate the term "energy conservation" directly with specific actions, saving money, or social responsibility. The proportion of respondents who defined energy conservation in terms of specific actions fell from 37% to 1%. Those respondents who expressed energy conservation in terms of saving money decreased from 19% to zero. Energy conservation expressed in terms of social responsibility was lowered from 8% of the respondents to zero.

Within the general category of "conserve or save energy", a much larger proportion of respondents in 1985 than in 1983 defined energy conservation as "to use energy intelligently or efficiently" (40% versus 8%).^(b) It appears that more people in the Northwest understand energy conservation to be the

(a) The magnitude of the change in perception between 1983 and 1985 should be viewed as larger than directly suggested by the difference between 74% and 86%. This is because the 86% in 1983 is derived without multiple mentions while the 74% in 1986 was with multiple mentions.

(b) The essence of the note (a) above applies here.

efficient use of energy, rather than simply as less use of energy or going without use of energy. This suggests that consumers' understanding of energy conservation has improved over the two year period.

Seven of the nine issues included in the 1985 survey were also included in the 1983 survey: energy conservation, inflation, unemployment, cost of energy, the environment, crime, and energy use in the home. The other two issues not included in the 1983 survey were cost of groceries and wildlife preservation. The intensity of consumers' concern about issues decreased from 1983 to 1985 as measured by the proportion of respondents who were very concerned about an issue. Of the seven issues, concern about the cost of energy decreased most. The proportion of respondents who are very concerned dropped 19 percentage points, from 70% in 1983 to 51% in 1985. For the four issues of inflation, unemployment, energy use in the home, and energy conservation, the proportions of respondents who were very concerned about these specific issues decreased by more than 10 percentage points. Specifically, the proportion for inflation fell from 64 to 53%; that for unemployment fell from 63% to 48%; that for energy use in the home fell from 48% to 35%; and that for energy conservation fell from 48% to 33%.

Among the seven common issues in the two surveys, the two issues of energy conservation and energy use in the home had the lowest proportions of respondents who indicated that they were "very concerned." In 1985, these two issues had lower proportions of respondents who were very concerned than the two new issues introduced into the survey: cost of groceries and wildlife preservation. These results suggest that, although people in the Northwest are concerned about energy conservation and energy use in the home, the intensity of these concerns is not as high as those of other issues included in the survey. Therefore, it can be concluded that, if promoting energy conservation is a desirable societal objective, continued public awareness and information dissemination programs are needed to maintain public interest.

The 1985 survey included 15 statements concerning energy use and conservation, which are presented in detail in Section 3.3. The respondents were asked as to whether they agreed or disagreed with the statements. These statements

were classified into four categories: social responsibility, self-interest/materialism/lifestyle, limits to energy conservation, and cynicism/negative view toward energy conservation. Table 2.1 presents the results for the 10 statements that were common to both the 1983 and 1985 surveys. Three general conclusions can be made of the psychographic profiles of consumers in the Northwest from the information detailed in Section 3.3.

- Consumers generally agreed more with statements in the categories of "social responsibility" and "self-interest/materialism/lifestyle" than in the other two categories. Conversely, they disagreed more with the statements concerning the "limits to energy conservation" and "cynicism/negative views on energy conservation."
- The patterns of agreement and disagreement with individual statements appear to be parallel to between the two surveys.
- In 1985, the proportions of those agreeing are higher than those in 1983 for the statements in the categories of the social responsibility and self interest/materialism/lifestyle. One exception is the statement that "I would only make conservation investments which would enhance the value of my home." The proportion of those agreeing with the cynic view that "the amount of energy I use is really my own affair and no one else's" was also higher in 1985 than in 1983.

It appears that there was some internalization of energy conservation consciousness; i.e., consumers were becoming more energy conservation conscious. Thus, in 1985, most consumers in the Northwest (9 out of 10) disagreed with the statement that, with the current power surplus in the region, there is no need to conserve electricity. Similarly, a large majority (8 out of 10) disagreed with the statement that utilities should stop offering a variety of programs to encourage energy conservation.

2.2 PERCEPTIONS OF INSTITUTIONS

Among the seven energy institutions, the local electric utility was the most familiar to consumers in the Northwest. In 1985, only 4% of the respondents indicated that they were not familiar with their local electric utility,

TABLE 2.1. Psychographic Profile: Agreement and Disagreement with Statements, 1985 Versus 1983

Item	Agreement ^(a)			Disagreement ^(a)		
	1985	1983		1985	1983	
		A	B		C	D
<u>Social Responsibility</u>						
		%				
It's our responsibility to conserve electricity for future generations	85*(b)	71	77	10*	8~(c)	9
Conserving energy is the best way to protect the environment	73*	41	51	17*	9~	15
<u>Self-Interest/Materialism/Lifestyle</u>						
Most people who conserve electricity do so to save money	92*	75	83	6	4	5
I would only make conservation investments which would enhance the value of my home	25*	19~	24	70*	35	46
Conserving energy is the best way to maintaining my lifestyle	62*	36	46	28*	13	19
<u>Limits to Energy Conservation</u>						
I only use electricity when it's really needed; there is no way I can cut down	47*	42~	50	49*	12	18
I have already done everything I can to conserve energy	34*	19~	40	60*	19	27
<u>Cynicism/Negative Views on Energy Conservation</u>						
The amount of energy I use is really my own affair and no one else's	46*	26	32	49*	31	40
It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use	31	28	34	63*	34	41
My conservation efforts won't have much effect one way or the other on the availability of electricity	21~	22	27*	74*	34	44

- (a) A - Highest three scores (10, 9, 8)
 B - Highest four scores (10, 9, 8, 7)
 C - Lowest three scores (2, 1, 0)
 D - Lowest four scores (3, 2, 1, 0)

(b) An asterisk (*) indicates that the value is significantly greater than the other values at 5% significance level.

(c) A tilde (~) indicates the value is significantly lower than the other values at 5% significance level.

down from 12% in 1983. The energy extension service and the Northwest Power Planning Council were least familiar to the region's consumers, with about half or more of the respondents in the 1985 survey indicating they were not familiar with these two institutions. In between these extremes and in terms of increasing familiarity were state energy offices, Washington Public Power Supply System (WPPSS), the public utility commission, and BPA. Data also suggested that familiarity with energy institutions in general increased from 1983 to 1985.

With the consumers' perception of energy institution's concern for the consumer, the energy extension service received the highest rating. Eight out of ten respondents (80%) in 1985 who were familiar with energy extension service regarded it as very concerned and concerned about the consumer. It is followed by the local electric utility (65%), state energy office (64%), public utility commission (60%), and Northwest Power Planning Council (60%). BPA was next with 48% and WPPSS was lowest with 32%. (There were no corresponding data for 1983.)

Although the survey data regarding the responsibility for setting electricity prices were not directly comparable, they did suggest that consumers in the Northwest regarded the local electric utility, BPA and the public utility commission as most responsible for setting electricity prices.

In terms of overall impressions, the favorability ratings of energy institutions remained relatively constant between 1983 and 1985, except for the Northwest Power Planning Council. Among respondents who were familiar with the Northwest Power Planning Council, the proportion who viewed it very favorably and favorably rose from 47% to 65%. The energy extension service and the local electric utility were the most favorably regarded energy institutions in 1985 with 82% and 74%, respectively. In 1985, WPPSS was the least favorably regarded among the energy institutions, with only 22% of respondents familiar with its functions regarding it favorably.

Among the entities and individuals not directly related to energy matters, favorability ratings of radio and retail stores were the highest (over 80%) in 1985. They were followed by banks and credit unions (71%), television (71%),

newspapers (64%), local elected officials (62%), and building contractors (57%). Realtors had the lowest rating with only one-half of the respondents (48%) perceiving them very favorably or favorably. Among the three mass communication media, radio had the highest favorability rating; it was ahead of television by 13 points and newspapers by 20 points. There were no comparable 1983 data on the favorability of nonenergy entities and individuals.

From 1983 to 1985, the believability ratings of energy institutions, other entities and individuals, generally decreased except for the energy extension service, retail stores and the news media. The ratings for these latter entities remained relatively constant. Potential contributing factors to the lower believability ratings of institutions, entities, and individuals may include decline or relative stability of energy prices, less intense concern about energy cost, energy use in the home, and energy conservation.

The energy extension service, state energy office, the local electric utility, the news media, and retail stores appeared to be the most credible to consumers as sources of energy conservation information. Therefore, the design and implementation of strategies to reach consumers with messages about energy conservation might be more effective if coordinated with these entities.

In summary, familiarity and believability as sources of energy conservation information of energy institutions have significantly changed between 1983 and 1985. In 1985, the consumers were more familiar with energy institutions than they were in 1983. However, they were not as likely to regard the institutions, entities, and individuals as credible sources of energy conservation information in 1985 as in 1983. The favorability ratings of energy institutions remained relatively constant except for the Northwest Power Planning Council, which enjoyed an increase in the favorability rating.

2.3 ENERGY CONSERVATION ACTIONS

There was no significant difference between 1983 and 1985 in the proportion of respondents who picked "changing way of living" as the preferred method of conserving energy in the home (50% to 54%). The proportion favoring spending money on improvements stayed in the 31% to 33% range. The proportion of respondents who were willing to do both fell significantly from 16% to 9%.

In 1985, most no/low cost energy conservation practices by Northwest consumers appeared to have stayed at about the same level, or at a lower level of activity than in 1983. The use of shades and drapes for heating and cooling and the lowering of the thermostat setting during the heating season remained the two most frequently practiced measures; 8 or 9 out of 10 respondents stated that these measures were used on a regular basis. Among the 8 measures considered, 5 showed no significant changes in the proportions of respondents who regularly practiced them: using shades and drapes for heating and cooling (88% to 90%), wrapping the water heater (about 62%), controlling lights with dimmer switches or timers (about 45%), using water flow restrictors in showers (about 35%), and receiving an energy audit (about 27%). Two other measures showed decreases in the proportion who regularly practiced them: selecting energy-efficient appliances when purchasing new ones (from 71% to 59%), and putting plastic over windows (from 60% to 33%). The only measure showing a significant increase in the proportion of respondents practicing it (from 81% to 85%) was that of lowering the thermostat setting during the heating season.

For investment-type energy conservation measures (ECMs), 5 of the 9 measures common in the two surveys showed significant increases in the proportions of homes equipped with specific ECMs from 1983 to 1985: roof/ceiling insulation (from 77% to 92%), outside wall insulation (64% to 80%), weatherproofing (71% to 80%), storm windows (67% to 76%), and clock or setback thermostat (29% to 44%). The proportions stayed relatively unchanged from 1983 to 1985 for two ECMs: floor, basement or crawl space insulation (54% to 56%), and heat pump furnace (9% to 11%). The wood stove/furnace and storm doors were exceptions; they showed significant decreases in the proportion of homes so equipped (65% to 41% for wood stove, and 63% to 57% for storm doors). However, the reduction in the proportion of wood stoves can be attributed to the addition of "fireplace insert" as a separate item in the 1985 survey. Many respondents in 1983 might have included fireplace insert in their responses to the question on wood stove and thus led to a higher proportion of homes equipped with wood stove/furnace for that year. There is no obvious explanation for the decline in the proportion of homes equipped with storm doors.

Comparison of claimed installation of ECMs during 1984-85 with the intention to install ECMs from the 1983 survey revealed that the announced intention far exceeded the installations claimed in the 1985 survey in only two cases: clock or setback thermostat and heat pump furnace. In the other seven cases, claimed installations during the last two years either matched or exceeded the respondents intentions from the 1983 survey. This suggests that the responses to the question as to how likely the consumers are to install specific ECMs in the next two years can be useful for planning purposes.

During 1983-85, the average investment to install energy conservation measures by homeowners who had made some investments was about \$1570, compared to the average investment of about \$1800 for the 1981-83 period. Note that the 1983 figure was considered to be for three years. If the average amount from the 1983 survey were converted to cover a two year period, then the average investment can be said to rise from about \$1200 to \$1570 for a two-year period.

The 1985 and the 1983 results on conservation investment financing are consistent in that current income, savings, bank and utility loans, and utility payments were the primary sources of financing. Delaying or cutting back on other purchases and federal tax credits were important supplementary sources of conservation investment financing.

In 1985, the proportions of owner-occupied homes not currently equipped with specific ECMs but whose owners are likely to install ECMs in the next two or three years stayed in the range of 3% to 15%, compared to the range of 6% to 13% in the 1983 survey. Therefore, substantial potential in the near future for conservation investment is possible in the region. This potential increases with the inclusion of the following groups: those who indicated they were very likely or likely to install more of the ECMs such as weatherproofing, insulation over the ceiling and under the roof, in the walls, and under the floor, in the basement or in the crawl space.

Homeowners who had invested in ECMs during 1983-85 speculated that the value of their home had increased, on the average, by 110% of their investment. This is much less than the 160% increase from the 1983 survey. Homeowners also

claimed that these investments lowered their monthly electric bills by \$55 in 1985, compared with an average reduction of \$32 per month in the 1983 survey.

2.4 MARKET PROSPECT GROUPS

In a slightly modified scheme from the 1983 survey, and using two segmentation criteria the homeowners in the region were grouped into three prospect groups. One segmentation criterion is past investment in ECMs: "limited" past investment for 0 or 1 item, "moderate" past investment for 2 to 7 items, and "heavy" past investment for 8 or more items. The other segmentation criterion is possible future investment in the next 2 to 3 years: "minimal" future investment for zero ECM, "moderate" future investment for 1 or 2 ECMs, and "high" future investment for 3 or more ECMs. Applying these two criteria creates nine market segments. The first-tier prospect group is defined to include the three market segments of heavy-high, moderate-high, and heavy-moderate.^(a) The second-tier prospect group covers the three market segments of heavy-minimal, moderate-moderate, and limited-high. The nonprospect group includes the other three segments of "limited-minimal, moderate-minimal, and limited-moderate (see Figure 2.1).

- In 1985, the size distribution of the three prospect groups remained relatively unchanged from that in 1983. First-tier prospects accounted for about 10 to 12% of the region's households. Second-tier prospects made up about one-third of the region's households (32%). The nonprospects amounted to 29% to 31%. The rest were renters (25% to 28%).

(a) In each of the nine segments, the first of the segment designation term refers to past investment behavior while the second of the term refers likely future installation of ECMs. For example, the segment "moderate-high" means those respondents who had installed 2 to 7 items (moderate past investment) and who also indicated that they are likely to install 3 or more ECMs in the future (high future investment). Other segments indicated in this discussion can be interpreted in a similar manner.

FIGURE 2.1. Segmentation of the Residential Energy Conservation Market (excluding renters)

- In 1985, there were some changes in the psychographic profiles of prospect groups in the sense that significantly larger proportions of respondents agreed with the following 4 statements, compared with 1983 results:

Statement Reflecting Social Responsibility

"Conserving energy is the best way to protect the environment."

Statements Reflecting Self-Interest/Materialism/Lifestyle

"Most people who conserve electricity do so to save money."

"Conserving energy is the best way to maintain my lifestyle."

Statement Reflecting Cynicism/Negative Views on Energy Conservation

"The amount of energy I use is Really my own affair and no one else's."

The proportion of respondents who agreed with the statement "my conservation efforts won't have much effect one way or the other on the

availability of electricity," decreased for first-tier and second-tier prospect groups. The proportions of respondents who agreed with the other statements remained unchanged.

- The first-tier prospect group was more likely to be very concerned about energy use in the home and energy conservation than the non-prospect group. The same was also true for issues such as inflation, crime, and the environment.
- Among those respondents who were familiar with energy institutions, the overall impressions of the Northwest Power Planning Council improved from 1983 to 1985 for all three prospect groups and that for BPA also rose for the first-tier prospect group. Otherwise, the favorability ratings of other energy institutions stayed relatively constant.
- However, the believability ratings for the local electric utility and the BPA as sources of energy conservation information fell. For other entities and individuals not directly dealing with energy matters, a decrease in the believability rating between 1983 and 1985 was observed except for retail stores and news media. Retail stores showed an increase in the believability rating for the nonprospect group. News media showed no changes for all three prospect groups.
- Compared to the first- and second-tier prospects, nonprospects were more likely to prefer changing their ways of living and less likely to prefer spending money on improvements.
- Nonprospects were less likely than first- and second-tier prospects to regularly practice no/low cost conservation actions, except for putting plastic over windows.
- By definition, the nonprospects were less likely than respondents in the two prospect groups to have their homes equipped with specific ECMs.

2.5 IMPLICATIONS

With the above findings, the following implications are briefly noted.

First, with improved understanding of energy conservation and heightened level of energy conservation consciousness on the part of the consumers in the region, it would be useful to explore the ways to tap them. This can be included as part of the overall effort in building the capability to deliver conservation programs. This capability would be used to acquire conservation resources at the time when they are needed.

Second, the lower concern for energy conservation and related issues in 1985 reflected mainly the impact of changed external conditions. In addition, the intensity of concern for energy conservation and energy use was lower than that for other issues such as crime, unemployment, inflation, and the environment. These results suggest that public awareness and information programs should continue to play an important part in the effort to promote energy conservation.

Third, given the high favorability and credibility ratings of the energy extension service, the local electric utility, the news media and retail stores as sources of energy conservation information, as well as the high credibility of state energy offices, efforts to reach consumers should include them as intermediaries.

Finally, it is well known that the Northwest is currently in period of power surplus. Under the power surplus situation, the general strategy is building the capability to acquire conservation resources for application when the need arises, rather than actually acquire them at this time. This overall strategy would require different approaches for different prospect groups. For the first-tier and second-tier prospect group, the approach should be one of maintenance through promotional efforts such as public information programs, especially by providing information about the benefits of specific ECMs. Few subsidies or none at all need to be used for the duration of the power surplus. For the nonprospects, the approach should be to actively develop this group into second-tier prospect group and eventually first-tier prospect group. The goal of the approach would be to increase awareness and interest in

specific ECMs and to persuade consumers to invest in them, at least at a minimal level. Since nonprospects are likely to be low-income households, some subsidies may be necessary, even during the period of power surplus.

3.0 PERCEPTIONS OF ENERGY CONSERVATION

This chapter explains the results comparing the two surveys on consumers' perceptions and attitudes on energy conservation. First, consumer understanding of the term "energy conservation" is discussed. Concern for energy conservation and other issues is treated next. Psychographic profiles are then described in terms of agreement or disagreement with specific statements.

3.1 UNDERSTANDING ENERGY CONSERVATION

At the beginning of the telephone interview and after the preliminary questions pertaining to owner/renter status and electric utility bill payments, the respondents were asked the following question: "We hear a lot nowadays about 'energy conservation'. What does that phrase mean to you?" Exactly the same question was asked in both 1983 and 1985 surveys. Verbatim responses were recorded by the interviewers.

Table 3.1 provides a comparison of the two survey results by general category of the definitions given. Table 3.2 compares the results of the two surveys by the specific mentions for the general category of "conserve/save energy". The following observations can be noted:^(a)

- In 1985, a large majority of respondents in the region interpreted the term "energy conservation" in a general manner. Of those interviewed, 86% responded to the above question by giving definitions that could be grouped into the general category of conserving or saving energy. This represented an increase from 74% in 1983.
- Within the category of "conserve or save energy," a much larger proportion of the respondents in 1985 defined energy conservation to mean "use energy intelligently or efficiently" than in 1983 (40% versus). The proportion of respondents who defined the term as

(a) However, note that the data for 1983 allows multiple mentions by a respondent while the proportions for 1985 limit the respondents to only one mention. For this reason, statistical test of significance was not conducted.

TABLE 3.1. Meaning of the Term "Energy Conservation" by Category, 1985 Versus 1983

<u>Meaning of the Term "Energy Conservation"</u>	<u>% of Respondents</u>	
	<u>1985</u>	<u>1983</u>
Conserve/save energy	85	74
Use/develop alternative energy sources	3	8
Specific conservation actions	1	37
Save money	0	19
Social responsibility/way of life	0	8
Other	0	3
Don't know/means nothing/no answer	10	3

TABLE 3.2. Specific Mentions in the Category of Conserve/Save Energy, 1985 Versus 1983

<u>Meaning of the Term "Energy Conservation"</u>	<u>% of Respondents</u>	
	<u>1985</u>	<u>1983</u>
<u>"Conserve/save energy" Category</u>		
Use energy intelligently/efficiently	40	8
Use less electricity	26	26
Conserve natural resources	13	5
Use only as much as needed	6	19
Use less oil	0	4
Protect-save water	0	4
Conserve/save energy/use less	0	22

"conserve natural resources" also showed increases from 5% in 1983 to 13% in 1985. In contrast, the proportion of those who took the term "energy conservation" to mean "use only as much as needed" declined from about 19% to 6%.

- In 1983, there was a relatively large group (about 22%) who simply gave the definition as "conserve energy," "save energy," or "use less energy." In 1985, most of such responses were further classified by

the interviewer through additional probing and eventually led to other definitions.^(a)

- The proportion of those who defined the term energy conservation as meaning "use less electricity" stayed unchanged from 1983 to 1985, at about one fourth of the respondents (26%).
- The proportion of those who gave the definition in the categories of "specific conservation actions" or "save money" had become 1% or less in 1985 than in 1983.
- In 1983, 8% of the respondents defined energy conservation as a social responsibility or a way of life. No such response was given in the 1985 survey.
- In 1985, about 10% said it meant nothing, don't know, or refused to answer. This is compared with 3% in 1983.

Detailed data for the 1985 survey are shown in Appendix Tables B.2 and B.3. In 1985 age and sex did not appear to affect definitions given by the respondents (Appendix Table B.2). In contrast, the 1983 data showed that the older group was less likely to give definition in the category of "conserve/save energy" and more likely to give definitions in the category of "specific actions." In 1985, income and education did impact the understanding of the term "energy conservation:" The higher income and more educated groups appeared more likely to interpret energy conservation as "using energy intelligently or efficiently", and are less likely to define it as "using less electricity" (Appendix Table B.3). One possible explanation is that the more educated and higher income respondents may be better able to perceive that "energy" covers a broader spectrum than just electricity.

To summarize, it appears that, between 1983 and 1985, the Northwest consumers' understanding of the term "energy conservation" has moved toward more mentions of definitions falling into the general category of "conserve/save

(a) This was brought to light during the debriefing meeting held in CRC office on January 10, 1985.

energy." They were less likely to directly associate the term "energy conservation" with specific actions, saving money, or social responsibility in 1985 than they did in 1983.^(a) The fact that, in 1985, 4 of 10 respondents directly associated energy conservation with the phrase "using energy intelligently or efficiently" is important. In 1983, the corresponding proportion was less than 1 of 10. This seems to imply that more people are understanding energy conservation as efficient use of energy, rather than as simply using less energy. It can therefore be concluded that there is improved understanding of the nature of energy conservation in the residential sector of the Northwest.

3.2 CONCERN ABOUT ENERGY CONSERVATION AND OTHER ISSUES

Respondents were asked how concerned they were about issues such as energy conservation, inflation, unemployment, cost of energy, the environment, crime, cost of groceries, energy usage in the home, and wildlife preservation. For energy conservation, the specific question was as follows:

"Now I'm going to read you a short list of topics that some people are concerned about. Please tell me how you personally feel about each of these topics - would you say you are very concerned, somewhat concerned, not very concerned, or not at all concerned about energy conservation?"

Table 3.3 compares the results of the two surveys on these issues. It indicates that the proportions of those who were very concerned about seven issues in 1985 were significantly lower than the corresponding proportions for 1983. Two issues, cost of groceries and wildlife preservation, were added in the 1985 survey. Several observations can be noted:

- The proportion of those who indicated that they were very concerned about the cost of energy encountered the largest drop, about 19 percentage points, from 70% to 51%. Relative stability of electricity price, cost of natural gas as well as falling oil prices probably caused this decrease in concern.

(a) However, see Section 3.3 for discussion on agreement with the statement that energy conservation is a social responsibility.

TABLE 3.3. Concern About Specific Issues, 1985 Versus 1983

Issue	% of Respondents "Very Concerned"		
	1985	1983	Difference
Crime	67~(a)	74	-7
Inflation	53~	64	-11
Cost of Energy	51~	70	-19
Environment	50~	55	-5
Unemployment	48~	63	-15
Energy use in the home	35~	48	-13
Energy conservation	33~	48	-15
Wildlife preservation	44~	-	-
Cost of groceries	43~	-	-

(a) A tilde (~) indicates that the value is significantly lower than the other value at 5% significance level.

- For inflation, unemployment, energy use in the home, and energy conservation the respective proportions with "very concerned" rating also decreased by more than 10 percentage points from the 1983 levels. Relative energy price stability, lower inflation rates, and continued economic recovery probably contributed to the decrease in concern on these issues.
- Among the issues, crime remained the one issue with the highest proportion of "very concerned" responses. In 1985, two-thirds of the respondents indicated that they were very concerned, whereas three-fourths indicated concern in 1983.
- In both 1985 and 1983, the two issues of energy conservation and energy use in the home had the lowest proportions of respondents who indicated they were very concerned. This suggests that, although people in the Northwest were concerned about energy conservation and energy use in the home, the intensity of this concern was not as high as that of concerns for crime, inflation, cost of energy, the environment, unemployment, wildlife preservation, and cost of groceries.

- For the two new issues introduced in the 1985 survey, wildlife preservation and cost of groceries, the proportions of respondents with very concerned responses were about 8% to 10% higher than those for energy conservation in the home and energy conservation.

Detailed 1985 results are summarized in Appendix Tables B.4 and B.5. Review of these two tables and the 1983 results led to the following observations:

- In 1985, the proportion of the respondents indicating they were very concerned about energy conservation was not dependent on age, sex, income and education. In contrast, in 1983, concern about energy conservation was affected by age, sex and education: female, younger (under 34), and less educated respondents were less likely than their respective counterparts to indicate that they were very concerned.
- In 1985, the proportion of people very concerned about energy use in the home was not dependent on age or sex, but was affected by income and education. The higher income and more educated groups were less likely to be very concerned about this issue. In 1983, female, younger (under 34), and more educated respondents had lower proportions of respondents who were very concerned about energy use in the home than their respective counterparts.
- In 1985, concern about the cost of energy was influenced by age, sex, income and education. The younger (under 34) group was not as likely to be concerned about the cost of energy as those in the 35 to 54 age group. Female respondents, the lower income group, and those who had a high school education or less were more likely than their respective counterparts to be very concerned about the cost of energy. The results in 1983 were the same, except income was not a factor then.
- In 1985, the older (over 55) group, female respondents, the lower income group, and the less educated appeared more likely than their respective counterparts to be very concerned about crime, inflation, unemployment. This is comparable to the situation in 1983.

- In 1985, male, high income, and more educated respondents were less likely to be very concerned about the cost of groceries.
- In 1985, a larger proportion of the younger respondents were very concerned about the issue of wildlife preservation.

In summary, the intensity of concern on various issues surveyed decreased in 1985 compared with 1983. Among the seven issues, the largest drop in the proportion of respondents who were very concerned about a specific issue occurred in the cost of energy (19 percentage points). Probable causes for this drop were the lower oil prices and relatively stable prices of electricity and natural gas. The proportions of respondents who were very concerned about inflation, unemployment, energy use in the home, and energy conservation were also lowered by more than 10 percentage points. In both 1985 and 1983, the intensity of Northwest consumers' concern about the twin issues of energy conservation and energy use in the home was not as high as that of concern about other issues such as crime, inflation, cost of energy, the environment, and unemployment. In 1985, the intensity of concern for energy use and energy conservation was also lower than the intensity of concern for wildlife preservation and cost of groceries. This suggests that there is a need for continued public awareness and information dissemination programs to maintain and to promote public interest in energy conservation.

3.3 ATTITUDES TOWARD ENERGY USE AND CONSERVATION

In the 1985 survey, respondents were asked whether they agreed or disagreed with 15 statements concerning energy use and conservation.^(a) The questions were posed in this manner: "I'm going to read a list of statements about how some people feel about various issues. With a response range from strongly disagree, disagree, neutral, agree, and strongly agree, please tell me how you feel about each of the following statements." Based upon the results from the 1983 survey as well as implications of the specific statements in question, these 15 statements can be grouped into four categories: social

(a) Other statements not directly related to energy use and conservation were also asked. However, they are not included in the 15 statements discussed here.

responsibility, self-interest/materialism/lifestyle, limits to energy conservation, and cynicism/negative view on energy conservation. These fifteen statements are shown below.

Social Responsibility:

- It's our responsibility to conserve electricity for future generations.
- Conserving energy is the best way to protect the environment.

Self-Interest/Materialism/Lifestyle:

- Most people who conserve electricity do so to save money.
- I would only make conservation investments which would enhance the value of my home.
- I would invest in energy conservation because it increases the comfort of my home.
- Conserving energy is the best way to maintain my lifestyle.

Limits to Energy Conservation:

- I only use electricity when it's really needed; there is no way I can cut down.
- I have already done everything I can to conserve energy.

Cynicism/Negative Views on Energy Conservation:

- The amount of energy I use is really my own affair and no one else's.
- It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use.
- My conservation efforts won't have much effect one way or the other on the availability of electricity.
- Utilities should stop offering a variety of programs to encourage energy conservation.

- I will invest in the efficiency of my home only if there are rebates to me from the utility.
- Electricity prices in the Northwest are not high enough to necessitate conservation activities.
- With the current power surplus in the Northwest, there is no need to conserve electricity.

These four categories are used below in discussing the imagery on energy use and conservation of the consumers in the Northwest. Table 3.4 depicts that in 1985 consumers generally tended to agree more with statements in the categories of "social responsibility" and "self-interest, materialism and lifestyle" than in the other two categories. It also suggests that, in general, people disagreed more with statements in the "limits to energy conservation" and "cynicism/negative view on energy conservation" categories than with statements in the other two categories. One exception to the above generalization is the statement "I would only make conservation investments which would enhance the value of my home" in the self-interest, materialism and lifestyle category. There were more respondents who disagreed with the statement (about 70%) than those who agreed with it (25%).

Table 3.5 presents the data for comparing the results of the two surveys. Because the 1983 survey used an 11-point scale to measure respondents' agreement with individual statements, with 10 indicating strong agreement and 0 indicating strong disagreement, two ways to group the responses in the 1983 data are used: those who agreed with the statements are assumed to have given a rating of the top three scores (10, 9, 8) or the top four scores (10, 9, 8, 7). (These are shown in Table 3.5 as column A and column B, respectively.) Similarly, those who disagreed are assumed to have given a rating of the lowest three scores (2, 1, and 0) or the lowest four scores (3, 2, 1, and 0). (These are shown in Table 3.5 column C and column D.)

The patterns of agreement and disagreement with individual statements appear to be parallel between the two years. However, the proportions of those agreeing with the statements in 1985 appear to be somewhat higher than those for 1983 for the statements in the social responsibility category and those in

TABLE 3.4. Psychographic Profiles: Agreement and Disagreement with Statements, 1985

Item	Percent of All Respondents			
	Strongly Agree or Agree	Neutral	Strongly Disagree or Disagree	Don't Know
<u>Social Responsibility</u>				
It's our responsibility to conserve electricity for future generations	85	2	10	2
Conserving energy is the best way to protect the environment	73	5	17	5
<u>Self Interest/Materialism/Lifestyle</u>				
Most people who conserve electricity do so to save money	92	1	7	0
I would only make conservation investments which would enhance the value of my home	25	4	70	2
I would invest in energy conservation because it increases the comfort of my home	90	2	7	1
Conserving energy is the best way to maintaining my lifestyle	62	6	28	4
<u>Limits to Energy Conservation</u>				
I only use electricity when it's really needed; there is no way I can cut down	47	3	49	1
I have already done everything I can to conserve energy	37	3	60	0
<u>Cynicism/Negative Views on Energy Conservation</u>				
The amount of energy I use is really my own affair and no one else's	46	5	48	1
It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use	31	4	63	2
My conservation efforts won't have much effect one way or the other on the availability of electricity	21	2	74	2
Utilities should stop offering a variety of programs to encourage energy conservation	12	2	84	2
I will invest in the efficiency of my home only if there are rebates to me from the utility	12	4	81	2
Electricity prices in the Northwest are not high enough to necessitate conservation activities	8	2	86	4
With the current power surplus in the Northwest, there is no need to conserve electricity	4	2	93	1

TABLE 3.5. Psychographic Profile: Agreement and Disagreement with Statements, 1985 Versus 1983

Item	Agreement (a)			Disagreement (a)		
	1985	1983		1985	1983	
		A	B		C	D
Percent						
<u>Social Responsibility</u>						
It's our responsibility to conserve electricity for future generations	85*(b)	71	77	10.4*	2~(c)	9
Conserving energy is the best way to protect the environment	73*	41	51	17*	9~	15
<u>Self Interest/Materialism/Lifestyle</u>						
Most people who conserve electricity do so to save money	92*	75	83	6	4	5
I would only make conservation investments which would enhance the value of my home	25*	19~	24	70*	35	46
Conserving energy is the best way to maintaining my lifestyle	62*	36	46	28*	13	19
<u>Limits to Energy Conservation</u>						
I only use electricity when it's really needed; there is no way I can cut down	47*	42~	50	49*	12	18
I have already done everything I can to conserve energy	34*	19~	40	60*	19	27
<u>Cynicism/Negative Views on Energy Conservation</u>						
The amount of energy I use is really my own affair and no one else's	46*	26	32	47*	31~	40
It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use	31	28	34	63*	34	41
My conservation efforts won't have much effect one way or the other on the availability of electricity	21~	22	27*	74*	34	44
(a) A - Highest three scores (10, 9, 8) B - Highest four scores (10, 9, 8, 7) C - Lowest three scores (2, 1, 0) D - Lowest four scores (3, 2, 1, 0)						
(b) An asterisk (*) indicates that the value is significantly higher than other values at 5% significance level.						
(c) A tilde (~) indicates that the value is significantly lower than the other values at 5% significance level.						

the "self-interest/materialism/lifestyle" category, except for the statement that "I would only make conservation investments which would enhance the value of my home." The proportion of those agreeing with the cynic view that "the amount of energy I use is really my own affair and no one else's" was also

higher in 1985 than in 1983.^(a) The following provides a detailed discussion by each of the four categories.

Social Responsibility

In both 1983 and 1985, a large majority of the respondents agreed with statements reflecting social responsibility. In 1985 almost 9 of 10 respondents (85%) agreed that "it is our responsibility to conserve electricity for future generations." This can be compared with less than 77% in 1983. The proportion agreeing with the statement that conserving energy is the best way to protect the environment was 73% in 1985; it was less than 51% in 1983.

Self-Interest/Materialism/Lifestyle

In both years, agreement with statements reflecting self-interest/materialism/lifestyle was also high, except for the statement that "I would only make energy conservation investments which would enhance the value of my home." In 1985, 9 of 10 people (92%) agreed that most people conserve electricity to save money, compared with 83% in 1983.

It is interesting to note that, when asked to explain the meaning of the term "energy conservation," less than 1% of respondents explicitly mentioned saving money. In contrast, over 90% agreed that most people conserve electricity to save money. This may be interpreted to mean that saving money is one of the objectives or expected benefits of conserving electricity, but not inherent to the meaning of energy conservation.

In 1985, 6 of 10 (62%) agreed that conserving energy is the best way to maintain a lifestyle. Less than half of the respondents did so in 1983. In contrast, only a quarter of the respondents agreed, in 1985, with the statement that "I would only make energy conservation investments that would enhance the value of my home." The proportion agreeing with this statement in 1983 was about the same (column B of Table 3.5) or slightly lower (column A).

In 1985, a new statement was added to the self-interest/materialism/lifestyle category: "I would invest in energy conservation because it increases

(a) Note that some of the differences may be due to differences in the way the scales were grouped in the two surveys.

the comfort of my home." There was overwhelming agreement with this statement (90%) (Table 3.4). Comparing this result with that concerning the statement of investing to increase the value of the home, it appears, at first glance, paradoxical that two statements which are nearly identical in construction and which both pertain to the self-interest would produce almost opposite results. The statements refer to perceived benefits of conservation investment:

Statement	% of All Respondents	
	Agreement	Disagreement
I would only make conservation investments which would enhance the value of my home.	25	70
I would invest in energy conservation because it increases the comfort of my home.	90	7

Closer examination reveals that the word "only" appears in one statement and not in the other. While enhancing the value of one's home is a desired benefit of installing energy conservation measures, it is not the only benefit sought. In contrast, the second statement relates a willingness to invest in order to increase the comfort level of the home. Most people can agree with such a statement.

Limits to Energy Conservation

In 1985 there were more respondents who disagreed with statements reflecting limits to energy conservation than those who agreed. Respondents were almost fairly evenly split between agreement and disagreement (46% versus 49% Table 3.5) with the statement "I only use electricity when it's really needed; there is no way I can cut down." In 1983, agreement with the statement was about 50%, but disagreement was only 18% or less.

In 1985, out of 10 respondents, about 6 disagreed and 3 agreed that "I have already done everything I can to conserve energy." In 1983, 40% agreed and less than 27% disagreed with this statement.

Cynicism/Negative Views on Energy Conservation

Among the seven statements in the category of cynicism/negative views on energy conservation, only one showed about the same level of agreement and disagreement in 1985. All other statements were dominated by disagreement. In 1983, there were only three statements in this category and there were more respondents who disagreed than who agreed with them.

- In 1985, 46% agreed and 49% disagreed with the statement that "the amount of energy I use is really my own affair and no one else's." In 1983, the corresponding proportions were less than 32% in agreement and less than 40% in disagreement with it.
- Out of 10 respondents in 1985, two agreed and seven disagreed with the statement that "my conservation efforts won't have much effect one way or the other on the availability of electricity." The comparable proportions in 1983 were 27% agreed and 43% disagreed.
- Twice as many people disagreed (63%) in 1985 as those who agreed with the statement (31%) that "it's silly to conserve electricity because the electric utility just turns around and charges more for what you do use." The corresponding proportions in 1983 were 41% for disagreement and 34% for agreement.

The 1985 data also show the following results. Even with the current power surplus in the region, 9 of 10 disagreed with the view that there is no need to conserve electricity. Almost 9 of 10 disagreed with the view that electricity prices in the Northwest are not high enough to necessitate conservation activities. A large majority (more than 80%) disagreed with the statements "utilities should stop offering a variety of programs to encourage energy conservation" and "I will invest in the efficiency of my home only if there are rebates to me from the utility" (Table 3.4).

4.0 PERCEPTIONS OF INSTITUTIONS

This chapter discusses the survey results of consumers' perceptions of various energy institutions and other entities in the Pacific Northwest. Institutions dealing directly with energy matters include the respondents' local electric utility, Bonneville Power Administration, state energy offices, Public Utility Commission, energy extension service, Northwest Power Planning Council, and Washington Public Power Supply System (WPPSS). Other entities and individuals include local elected officials, banks/credit unions, realtors, building contractors, retail stores, and the mass communication media of newspaper, radio, and television. These entities and individuals were included because they may either become sources of energy conservation information to the consumers or influence their opinions and attitudes.

The respondents' familiarity with energy institutions is explained first. Perceptions of the institution's concern for the consumer and the responsibility of some of the institutions in setting electricity prices are then treated in sequence. The overall impression of the institutions and entities by the respondents is also described. Finally, the believability of these organizations and individuals as a source of energy conservation information is described. Note that the proportions shown in this chapter, except those shown in Section 4.1, are in terms of only those respondents who were familiar with the individual institutions only.

4.1 FAMILIARITY WITH ENERGY INSTITUTIONS

Table 4.1 presents the proportions of respondents who were not familiar with specific energy institutions. Among the seven institutions directly involved in energy matters, the energy extension service and the Northwest Power Planning Council were the least familiar to the region's population. In 1985, over half of the respondents did not know about the functions of these two institutions. For the Northwest Power Planning Council, this unfamiliarity index dropped from 60% in 1983 to 50% in 1985. In contrast, the local electric utility was the most well known. In 1985, less than 4% of the respondents

TABLE 4.1. Proportions of Respondents Who Are Not Familiar with Energy Institutions, 1983 Versus 1985

<u>Institution</u>	<u>% Not familiar</u>	
	<u>1985</u>	<u>1983</u>
Local electric utility	4~	12
Bonneville Power Administration	26~	35
Public utility commission	30	--
WPPSS	32	--
State energy office	43~	57
Northwest Power Planning Council	50~	60
Energy extension service	59	--

said they were not familiar with the local utility, showing a decline from about 12% in 1983. In between these extremes and in terms of increasing familiarity are state energy offices, WPPSS, public utility commission, and BPA. The proportions of respondents not familiar with both BPA and state energy office have shown significant decreases, dropping from 35% to 26% for BPA and from 57% to 43% for state energy office.

In other words, familiarity with energy institutions had increased over the two-year period. This trend may be due largely to increased exposure of consumers to the activities of the institutions during the 1983-85 period.

4.2 CONCERN FOR THE CONSUMER

In 1985, respondents were asked questions similar to the following one for the local electric utility: "Please tell me how you feel about your electric utility in terms of their concern for the consumer. Would you say they are very concerned, concerned, not very concerned, or not at all concerned?" The respondents had the option to respond they were neutral, or to refuse to answer. There was no corresponding question in the 1983 survey.

Table 4.2 summarizes the 1985 results. Among the seven energy institutions, consumers who were familiar with the institutions regarded the energy extension service as the most concerned about the consumer in 1985. About 8 in

TABLE 4.2. Perceptions of Energy Institutions' Concern for the Consumer, 1985

<u>Institution</u>	<u>Households Familiar With Institution (1000)</u>	<u>% Very Concerned or Concerned</u>
Energy extension service	548	80
Local electric utility	1066	65
State energy office	630	64
Northwest Power Planning Council	556	60
Public utility commission	779	60
Bonneville Power Administration	816	48
WPPSS	751	32

10 respondents felt that the energy extension service was "very concerned" or "concerned" for the consumer. Local electric utility, state energy office, the public utility commission and Northwest Power Planning Council were second; about 6 in 10 respondents indicated that these institutions were concerned about the consumer. At the other extreme, Washington Public Power Supply System (WPPSS) was lowest with only about 32% of respondents believing that there was concern for the consumer. BPA was above that with 48%.

4.3 RESPONSIBILITY FOR ELECTRICITY PRICES

Consumers were asked their perceptions of the energy institution's responsibility in setting electricity prices (Table B.10). Among those who were familiar with the energy institutions, about three-fourths of the respondents regarded the local electric utility (78%), BPA (75%), and Public utility commission (72%) as "totally responsible" or "responsible". WPPSS received 69%. Northwest Power Planning Council was lowest with 62%.

The 1983 survey collected similar, but not identical, information. When asked to choose among the local utility, BPA, both, and "not sure" as the more responsible for setting the price for electricity, 41% of the respondents picked local utility; 35% picked BPA; and 10% picked both. Since the 1983 choices of institutions were mutually exclusive and those in 1985 were not, the proportions from the two surveys are not directly comparable. Nevertheless,

the data suggest that consumers in the Northwest regarded the local electric utility, BPA, and the public utility commission as those most responsible for setting electricity prices.

4.4 OVERALL IMPRESSIONS

Respondents were asked questions similar to this one: "What is your overall impression of the BPA? Is it very unfavorable, unfavorable, favorable, or very favorable?" Table 4.3 summarizes the results for energy institutions in 1985 and compares them with the 1983 results.

In 1985, among the seven energy institutions, the energy extension service and the local utility had the highest favorability ratings in terms of overall consumer impression (82% and 74%, respectively). Next highest ratings were in the 61 to 67% range for state energy office, Northwest Power Planning Council, and public utility commission. BPA was next with 55% and WPPSS was the lowest with only 22% of those respondents who are familiar with it regarded WPPSS very favorably or favorably.

The favorability rating of the Northwest Power Planning Council increased by 18 percentage points between 1983 and 1985, which is statistically significant.

TABLE 4.3. Overall Impressions of Energy Institutions, 1985 Versus 1983

<u>Institution</u>	<u>Households Familiar With Institution (1000)</u>		<u>% Very Favorable or Favorable</u>	
	<u>1985</u>	<u>1983</u>	<u>1985</u>	<u>1983</u>
Energy extension service	458	--	82	--
Local electric utility	1066	2004	74	73
State energy office	630	804	67	71
Northwest Power Planning Council	556	578	65*	47
Public utility commission	779	--	61	--
Bonneville Power Administration	816	980	55	49
WPPSS	751	--	22	--

The favorability rating in 1985 of the entities and individuals not directly related to energy are summarized in Table 4.4. Radio and retail stores had the highest favorability rating (over 80%). They were followed by banks and credit unions, television, newspapers, local elected officials, building contractors, and realtors.

Note that, among the three mass communication media, radio had the highest favorability rating; it was ahead of the television by 13 points and of the newspaper by 20 points. The overall impression question was not asked of the nonenergy entities and individuals in the 1983 survey; hence, no comparison can be made.

4.5 BELIEVABILITY

A question similar to the following was asked of respondents: "Please tell me how you feel about the Northwest Power Planning Council in terms of believability as a source of information about energy conservation? Would you say it is very believable, believable, not very believable, or not at all believable?" Table 4.5 presents the results for 1985 and compares them with 1983 data. The following can be noted:

TABLE 4.4. Overall Impression of Other Entities and Individuals, 1985

<u>Institution</u>	<u>% Very Favorable or Favorable</u>
Radio	84
Retail stores	80
Banks and credit unions	71
Television	71
Newspapers	64
Local elected officials	62
Building contractors	57
Realtors	48

TABLE 4.5 Believability of Institutions and Entities as Sources of Information About Energy Conservation, 1985 Versus 1983

<u>Energy Institutions^(a)</u>	<u>1985</u>	<u>1983</u>
Respondents familiar with institution	(b)	(c)
	<u>% Very Believable and Believable</u>	
Energy extension service	89	91
State energy office	75~	85
Local electric utility	73~	89
Northwest Power Planning Council	65~	77
Bonneville Power Administration	60~	76
 <u>Other Entities and Individuals</u>		
Number of Respondents	686	2000
	<u>% Very Believable and Believable</u>	
Retail stores	70	66
News media	70 ^(d)	74
Radio	77	--
Television	68	--
Newspapers	66	--
Banks and credit unions	64~	76
Building contractors	55~	77
Local elected officials	39~	67
Realtors	40~	50

- (a) The public utility commission and WPPSS are not included here because the believability question was not asked of respondents regarding these two institutions.
- (b) For numbers of households who were familiar with the institutions in 1985, see Table 4.3.
- (c) The number of households who were familiar with the institutions in 1983 (in thousands) are as follows: Energy extension service, 1,966; state energy office, 1,818; local electric utility, 2,711; Northwest Power Planning Council, 1,493; Bonneville Power Administration, 1,891.
- (d) Simple average of radio, television, and newspaper.

- In 1985, the energy extension service, state energy office, the local electric utility, the retail store, and the radio received the highest believability ranking; each received a rating of over 70% ("very believable" or "believable"). However, different trends occurred. The ratings for state energy office and the local electric utility fell while those for energy extension service, retail stores and new media^(a) remained relatively constant.
- Among the five energy institutions, the energy extension service was the most credible to those who are familiar with its function, with a rating of 89% in 1985, which was about 14 percentage points higher than the state energy office, which had the next highest rating. The Northwest Power Planning Council and BPA had the lowest rating; only about 2 in 3 respondents viewed them as believable or very believable.
- Except for energy extension service, the proportions of respondents who regarded the energy institutions as either a very believable or believable source of energy conservation information had significantly declined from the 1983 levels for the other four energy institutions.
- Among other entities and individuals not directly associated with energy matters, radio and retail stores were highest in 1985 in terms of the proportion of respondents who regarded them as very believable or believable as energy information sources, 77% and 70%, respectively. They were followed by the other two news media: television (68%) and newspaper (66%). Banks and credit unions, and building contractors were the next highest group, with 64% and 55% respectively. Local elected officials and realtors were lowest in terms of their believability rating with 39% and 40% respectively.

(a) There was only a single item of "news media" and no separate rating for the three individual media in 1983. Nevertheless, if the data for 1985 are combined to derive a group of "news media," the rating for these two years are comparable.

- Except for retail stores and news media, the believability ratings of other entities and individuals, including banks and credit unions, building contractors, local elected officials, and realtors, were significantly lower in 1985 than in 1983.
- Among the three mass communications media, radio had the highest believability rating in 1985: 77% compared to 66% for television and 68% for newspapers. In a survey conducted for the Northwest Power Planning Council in February, 1982, the believability rating for the three media were virtually the same: 78% for television and newspaper, and 76% for radio (Fang 1985, p. 4.4).

In summary, except for retail stores, energy extension service and news media, there was a general decline in 1985 in the believability ratings of the energy institutions and other entities. Potential contributing factors to the lower believability ratings may include decline or relative stability of energy prices, less intense concern about cost of energy, energy use in the home, and energy conservation. Among the entities and institutions, the energy extension service, state energy office, the local electric utility, the news media, and retail stores appeared to be the most credible as sources of energy conservation information. Hence, efforts to reach the consumers with messages about energy conservation might be more effective if coordinated with these five entities.

4.6 DISCUSSION

The specific tracking hypothesis for the consumers' perceptions of institutions, noted in Chapter 1.0, states that "image profiles of institutions with respect to familiarity, overall impressions, and believability as a source of energy information remain unchanged since 1983." Given the analyses presented above, the results of the tests conducted for this hypothesis can be summarized as follows:

- Familiarity with energy institutions increased between 1983 and 1985. The proportion of respondents who were unfamiliar with the local electric utility fell from 12% to 4%; that for BPA dropped from 35% to 26%; that for state energy office decreased from 57% to 43%;

and that for the Northwest Power Planning Council changed from 60% to 50%. All these changes are statistically significant (Table 4.1).

- In terms of overall impressions, favorability ratings of energy institutions remained relatively constant, except for Northwest Power Planning Council. The proportion of respondents who were very favorably and favorably impressed with the Northwest Power Planning Council rose from 47% to 65% (Table 4.3).
- From 1983 to 1985, there was a general decline in the believability rating of energy institutions, and other entities and individuals, except for the energy extension service, retail stores and the news media. The ratings for these latter entities remained relatively constant (Table 4.5).

It can be concluded from the above results that significant changes occurred between 1983 and 1985 in the image profiles of energy institutions with respect to familiarity and believability as sources of energy conservation information. In 1985, consumers in the Northwest were more familiar with energy institutions than they were in 1983. However, they were less likely to regard the institutions, entities and individuals as very believable or believable as sources of energy conservation information. The favorability ratings of energy institutions remained relatively unchanged except for the Northwest Power Planning Council, which enjoyed an increase in the favorability rating.

5.0 ENERGY CONSERVATION ACTIONS

This chapter explains the conservation actions taken by the respondents. Preferred methods for conserving energy are discussed first. Past conservation actions are then covered, including topics such as no/low cost conservation measures, investment-type energy conservation measures (ECMs), average amount of investment, and sources of financing. Possible future installations of ECMs are also explained. Finally, the impacts of past investments on the value of the home and on the average monthly utility bills are noted.

5.1 PREFERRED METHODS FOR CONSERVING ENERGY

To determine preferred methods of conserving energy at home, the respondents were asked the following question: "There are many ways to reduce your energy use at home. Some of these ways involve spending money on such things as solar water heating, insulation and heat pumps. Other ways require changes in the way you live, such as lowering the thermostat, using less hot water, wearing a sweater indoors in the winter, and so forth. Given a choice between the two--spending money on improvements or changing the way you live--which would you say you would rather do to save energy at home?" Table 5.1 summarizes the 1985 results and compares them with the 1983 data.

TABLE 5.1. Preferred Method of Conserving Energy, 1985 Versus 1983

<u>Item</u>	<u>1985</u>	<u>1983</u>
Number of Households (1,000)	3022	3117
	<u>Percent</u>	
Changing way of living	54	50
Spending on improvement	33	31
Both	9~(a)	16
Neither	1	2
Don't know/not sure	3	1~

(a) A tilde (~) indicates that the value is significantly lower than the other value at 5% significance level.

In 1985 over half of the respondents (54%) said that they preferred changing their way of living, which is roughly the same as in 1983 (50%). About one in three respondents (33%) preferred spending money on improvements in 1985, compared with 31% in 1983. In 1985, about one-tenth (9%) of the respondents said that they prefer to do "both"--change their way of living and also spend on improvements. This represented a significant decline from the 16% in 1983.

5.2 NO/LOW COST CONSERVATION PRACTICES

Past conservation actions include minor changes in ways of living, ECMs requiring little or no investment, and ECMs that require larger investments. Examples of no/low cost conservation practices are: reduce thermostat settings, dress warmer during the heating season, and put plastic over windows. Examples of investment-type ECMs are add more insulation over the ceiling, under the floor, or in the wall; weatherproof the house; and install storm doors, storm windows, or wood stoves. This section discusses the results on no/low cost conservation practices while the next section treats the investment-type ECMs.

Except for wording changes in one instance, the same eight no/low-cost energy conservation items were asked of the respondents in the 1985 survey as in the 1983 survey. The question asked in the 1985 survey is as follows: "I will read you a few specific energy conservation measures. Please tell me which of these conservation practices you have done or have regularly followed during the last two years (1983 until now). Control lights with dimmer switches or timers?" Table 5.2 presents the 1985 results and compares them with 1983 data. The results are as follows:

- In 1985 as in 1983, using shades and drapes for heating and cooling was the most frequently practiced conservation action. Approximately 9 out of 10 respondents indicated that they regularly followed the practice.
- The second most frequently followed practice in both 1985 and 1983 was lowering thermostat settings during the heating season. The

TABLE 5.2. Low Cost Energy Conservation Measures Regularly Used, 1985 Versus 1983

Item	1985	1983
Number of Households (1,000)	3022	3117
	Percent	
Use shades for heating and cooling	90	88
Lower thermostat settings in the heating season	85*	81
Wrap water heater	63	62
Select energy-efficient appliance when purchasing a new one	59~	71
Control lights with dimmer switches or timers	44	45
Use water flow restrictors in showers	36	35
Put plastic over windows	31~	60
Receive energy audit	27	27

proportion of those who have done this or regularly followed the practice rose significantly by 4 percentage points from 81% in 1983 to 85% in 1985.

- Wrapping the water heater was third on the list. In either year, almost two-thirds (63%) of the respondents indicated that their water heaters have been wrapped. Since the water heater needs to be wrapped only once, this suggests that there were relatively few cases of wrapping water heaters during 1984-85.
- The proportions of those who regularly practiced the actions for two no/low cost conservation practices decreased significantly from 1983 to 1985: selecting energy efficient appliances when purchasing new ones (from 71% to 59%), and putting plastic over windows (from 60% to 31%). It should be noted that a change in wording may have accounted for part of the decrease in the proportion of those who regularly put plastic over their windows. In the 1983 survey, the term "put up storm windows" was used. In answering the question phrased in this

manner, respondents could have included the investment-type measure.^(a) In other words, the 1983 figure might have been overstated.

- The proportions of households that controlled lights with dimmer switches or timers, that used water flow restrictors in showers, and that had received an energy analysis or audit had stayed relatively unchanged between 1983 and 1985: approximately 44% for controlling lights with dimmer switches, 36% for using water flow restrictors and approximately 27% for receiving an energy audit.

Thus, comparison of 1985 data with 1983 data produces mixed results. In 1985, most no/low cost energy conservation practices by Northwest consumers appeared to be either at the same or at slightly lower levels of activity than in 1983. Use of shades and drapes for heating and cooling and lowering thermostat settings during the heating season remained the two most frequently practiced measures. The proportions of respondents who regularly used shades for heating and cooling, had wrapped their water heaters, controlled lights with dimmer switches or timers, had used water flow restrictors in their showers, or received an energy audit remained relatively unchanged between the two years. In contrast, the proportions of those respondents who regularly selected energy-efficient appliances when purchasing a new one, or put plastic over their windows had declined from 1983 to 1985. Finally, lowering thermostat settings during the heating season was the only practice that showed an increasing proportion of households that regularly practiced it.

5.3 ENERGY CONSERVATION INVESTMENTS

Whereas 11 investment-type energy conservation measures were included in the 1983 survey, 12 measures were included in the 1985 survey. Common to both surveys are the following 9 ECMs:

(a) In the 1983 survey, the term "put up storm windows" appeared under the question on no/low cost conservation measure and the term "storm windows/thermal window panes" was used in the question on investment-type ECMs.

- Weatherproofing
- Storm windows (thermal window panes)
- Roof or attic insulation
- Floor, basement or crawl space insulation
- Wall insulation
- Storm or insulated doors
- Heat pump (furnace)
- Wood stove or furnace
- Clock or setback thermostat.

The 1985 survey included 3 new items: fireplace inserts, solar panels for water heating, and heat pump water heaters. Fireplace insert was added to the 1985 survey to distinguish from the free standing wood stove. The 1983 survey included two items which were not repeated: solar panels for space heating, and sun space or passive solar.

Table 5.3 presents, according to time of installation, the 1985 results of past investments in ECMs in owner-occupied homes. Table 5.4 presents a comparison of the proportion of homes equipped with specific ECMs between 1983 and 1985. Some of the important results are noted below:

- According the respondents in the 1985 survey, nine of ten homes (92%) had roof or attic insulation, up from 77% in 1983. In 1985, eight of ten owner-occupied homes had weatherproofing, wall insulation, or storm/thermal pane windows. All three measures showed significant increases in the proportion of homes currently equipped with the ECM in question. The proportion of homes with wall insulation rose from 64% in 1983 to 80% in 1985. Similarly, the proportion for weatherproofing increased from 71% to 80% and that for storm/thermal pane windows rose from 67% to 76%.
- The proportion of owner-occupied homes with insulation in the floor, basement or crawl space had stayed relatively the same between 1983 and 1985: 54% to 55%

TABLE 5.3. Proportions of Owner-Occupied Homes^(a) with Specific Energy Conservation Measures According to Time of Installation, 1985 (Percent)

Item	Currently Equipped	Installed Within the Last 2 Years	Installed More Than 2 Years Ago	There When Moved in
Roof or attic insulation	92%	13%	28%	51%
Wall insulation	80	6	19	55
Weatherproofing	80	31	27	21
Storm windows	76	15	27	35
Storm or insulated doors	57	10	21	26
Floor, basement or crawl space insulation	55	10	19	26
Clock or setback thermostat	43	6	14	22
Wood stove/furnace	39	8	23	9
Fireplace insert	20	3	13	4
Heat pump (furnace)	9	1	4	4
Heat pump water heater	3	0	1	2
Solar panels for water heating	2	1	1	0

(a) Total number of owner-occupied homes was about 2,150 in thousands.

- In 1983, less than 3 in 10 owner-occupied homes (29%) was equipped with a clock or setback thermostat. In 1985, the corresponding ratio rose to over 4 in 10, or 43%.
- The cases of storm doors and wood stoves proved to be major exceptions: the proportions declined. In 1983, 65% of the respondents occupying their own homes indicated that the house was equipped with a wood stove/furnace. In 1985, this proportion was significantly lower, at 39%. This lower percentage can be partially attributed to the inclusion of fireplace insert as a separate item in the list of investment-type ECMs in the 1985 survey. In the 1983 survey, fireplace insert was not listed separately and some

TABLE 5.4. Proportions of Owner-Occupied Homes Currently Equipped with Specific Energy Conservation Measures, 1985 Versus 1983

Item	1985	1983
Number of owner-occupied homes (1000)	2150	2356
	Percent	
Roof or attic insulation	92*	77
Wall insulation	80*	64
Weatherproofing	80*	71
Storm windows	76*	67
Storm or insulated doors	57~	63~
Floor basement or crawl space insulation	55	54
Clock or setback thermostat	43*	29
Wood stove/furnace	39~	65
Fireplace insert	20	--
Heat pump furnace	9	11

respondents might have included fireplace insert in their responses to the "wood stove/furnace" question.^(a) In contrast, there is no obvious explanation for the decline of the proportions of homes equipped with storm doors from 63% in 1983 to 57% in 1985.

- The proportion of homes equipped with heat pump furnaces remained relatively constant at 9% to 11% between 1983 and 1985.
- In 1985, the proportion of owner-occupied homes equipped with heat pump water heaters was about 3%, and that with solar panels for water heating was about 2%.

In summary, among the nine ECMs with comparable data from both the 1985 and 1983 surveys, five show statistically significant increases in the proportions of homes equipped with the specific ECMs: roof/ceiling insulation, weatherproofing, storm windows, wall insulation, and clock or setback

(a) Note, however, that even if the 1985 figure on fireplace insert (20%) were added to that of wood stove/furnace, the combined proportion would be 60% in 1985. This is still significantly lower than the 65% for 1983.

thermostat. Three ECMs had shown no significant changes either way: storm or insulated doors, floor-basement-and crawl space insulation, and heat pump furnaces. Wood stove/furnace was a major exception because it showed a significant decrease in the proportion of homes so equipped. A large part of the reduction in the proportion can be accounted for by the separate listing of fireplace insert in the 1985 survey.

Although there are no comparable data from the 1983 survey, the following results from the 1985 survey are also important.

- More than half of the owner-occupied homes currently equipped with roof/ceiling insulation, wall insulation or clock thermostat control were pre-existing; i.e., so equipped when the respondents moved into the home. Similarly, close to half of those homes occupied by the owner and equipped with storm doors, storm windows, and insulated crawl space were pre-existing (Table 5.3). In contrast, the proportions of homes in which the ECMs were installed since the respondents moved into the homes are shown in Table 5.5.

TABLE 5.5. Proportions of Owner-Occupied Homes for Which Specific ECMs are Installed Since Respondents Moved In, 1985

ECM	% Installed Since Moved In
Weatherproofing	58
Roof or attic insulation	41
Storm windows	41
Storm doors	31
Wood stove	30
Floor, basement or crawl space insulation	29
Wall insulation	25
Clock or setback thermostat	20
Fireplace insert	16
Heat pump (furnace)	5
Solar panels for water heating	2
Heat pump water heater	1

- About one in three homeowners claimed that they had weatherproofed their home during 1983-85. About one in ten homeowners said that they had added roof insulation, storm windows, or added insulation to the basement or crawl space (Table 5.3).

In addition, the 1983 survey asked homeowners who had not installed specific ECMs if they intended to install them in the next 2 or 3 years. The 1985 survey collected data on specific ECMs installed during the 1983-85 period. It is thus possible to compare the intentions with the installations in an aggregate sense. Table 5.6 provides some interesting insights:

TABLE 5.6. Proportions of Homeowners Installing Specific Energy Conservation Measures--Comparison Between Intention and Claimed Installation

Item	Installed During 1984-85	Indicated "Very Likely" and "Likely" in the 1983 Survey
Number of Homeowners (1000)	2150	2356
	Percent	
Weatherproofing	31*	10
Storm windows	15	11
Roof/attic insulation	13*	6
Storm or insulated doors	10	13
Wood stove/furnace	8	8
Wall insulation	6	6
Floor, basement or crawl space insulation	10	9
Clock or setback thermostat	6~	11
Fireplace insert	3	--
Heat pump (furnace)	1~	12

- Compared to the intention expressed in 1983 (10%), the proportion of owner-occupied homes that were weatherproofed during 1984-85 was significantly higher (31%). The proportion of homes that added insulation to under the roof or above the ceiling during the last two

years was also higher (13% versus 6%). The proportion for storm windows rose from 11% to 15%. Note, however, that two of these three ECMs are among the four items that even if homes are currently equipped with them, more can be added (see discussion in Section 5.6, relating to Table 5.9).

- The proportions of actual installation of clock or setback thermostat or heat pump furnaces were much lower than the proportions of those who indicated intentions to do so. The proportion of intended installation was 11%, while actual installation was only 6% for clock thermostat setback. Similarly, for heat pump furnace, intended installation proportion was about 12% while actual installation claimed was less than 1%.
- There was agreement between the expressed intentions and the installations claimed for 1983-85 period for wood stoves (about 8%), wall insulation (6%), storm doors (11% to 13%), and floor, basement or crawl space insulation (9% to 10%). However, the case of wood stoves needs to be noted. As explained above, it is possible the 1983 data for wood stove included fireplace inserts. For this reason, the data for fireplace insert and wood stove for 1985 may be combined to become 11%, which is higher than the 8% for 1983.

The above comparison between the intentions to install specific ECMs revealed in the 1983 survey and the actual installations of ECMs claimed in the 1985 survey reveals that in only two cases, clock or setback thermostat and heat pump furnace, the intention expressed in the 1983 survey far exceeded actual installation claimed in the 1985 survey. In the other seven cases claimed installations during the last two years either exceeded or matched the announced intentions in the 1983 survey. These results suggest that the responses to the question as to how likely the consumers are to install specific ECM in the next two years, with appropriate allowances for specific circumstances, can be useful for planning purposes.

5.4 AVERAGE CONSERVATION INVESTMENT

During 1983-85, the average investment by homeowners in installing energy conservation measures was about \$1570. This appeared to be lower than \$1800 average investment for the 1981-83 period (Table 5.7). However, the 1985 results covered only two years (1983-85), while the 1983 result covered three

TABLE 5.7. Average Conservation Investment, 1985 Versus 1983

Item	1983-1985 ^(a)	1981-1983 ^(a)
	(Dollars)	
Homeowners Who Invested (1000)	1574	1811
<u>Age</u>		
Under 34	1472	1481
35-54	1825	1836
Over 55	1110	2019
<u>Sex</u>		
Male	1390	1934
Female	1699	1681
<u>Income</u>		
Under \$16,000	893	1439
\$16,000 to \$30,000	1510	1667
Over \$30,000	1877	2043
<u>Education</u>		
Complete High School or Less	1330	1671
Some College or More	1775	1907
<u>Monthly Utility Bill</u>		
Under \$50	1900	1643
\$51 to \$75	1325	1732
Over \$76	1379	1846

(a) Note that data from the 1985 survey covers the two year period of 1983-85, while data from the 1983 survey covers the three years of 1981-83.

years (1981-83). Converting to the same basis of two years, the 1983 results are close to \$1200, which is somewhat lower than the 1985 average. Thus, the adjusted overall average investment rose from \$1200 to \$1570 for two years, between 1983 and 1985.

In the 1985 survey, the average investment for those homeowners in the middle age group (35 through 54) was higher than that for the younger group (under 34 years of age), about \$1800 versus \$1100. In contrast, the 1983 results showed that the older group (over 55) had the highest average investment.

The average investment for the 1983-85 period was lowest for the lower income group. This is consistent with the results from the 1981-83 period, which showed that the lower income group has the lowest average investment.

5.5 SOURCES OF FINANCING

In the 1985 survey, the respondents were asked the question: "Of everything spent on energy conservation for your home, where did the biggest proportion of money come from?" In the 1983 survey, the question was asked: "How did you pay for the energy conservation improvements you made in your home in the past 2 or 3 years--did you (Read List; Multiple Record) use money from current income (Yes; No)? Delay other purchases (Yes; No)? . . ." Thus, the 1983 survey permitted and recorded substantial number of multiple mentions. Although the 1985 survey also allowed multiple responses, the number was small; and most have been included in a separate category of "combination of two or more sources." With these considerations in mind, Table 5.8 presents the 1985 results and compares them with the 1983 results.

Money from current income was the most important source of conservation investment financing in both surveys. In 1985, six of ten homeowners who had invested in energy conservation measures over the 1983-85 period (63%) indicated that money from current income was the most important source in financing their investment. In 1983, 3 of 4 homeowners (75%) said that they had used current income in financing their investment. Although the proportion in 1985 appeared to be lower than that for 1983, part of the difference might be due to the possibility that, for some respondents in 1983, money from current income

TABLE 5.8. Financing Sources for Energy Conservation Investment,
1985 Versus 1983

Item	1985	1983 ^(a)
	Percent of Homeowners	
Current income	63	75
Savings	19	38
Delay or cut back other purchases	2	47
Bank loans and credits	8	13
Utility loans	2	8
Payments by utility	3	9
Paid by others	1	--
Federal tax credits	1	23
Combined sources	2	--
Other	0	0

(a) 1983 data include multiple mentions.

was a supplementary, instead of the primary, source of financing. This possibility arose because the construction of the 1983 question on financing sources allowed multiple mentions of potential sources. Thus, even if a homeowner used primarily savings, utility payments, or other sources to finance the installation of ECMs and supplemented with money from current income, he could still mention current income as a financing source. In contrast, under the question for the 1985 survey, he would not have been able to mention current income as the source of biggest proportion of money for financing the investment.

Money from savings was the second most often mentioned source of financing. In 1985, almost 1 of 5 respondents (19%) said that savings were the largest sources of financing. In 1983, almost 2 of 5 (38%) indicated savings as one of the financing sources.^(a)

(a) In 1983, the combined category of "delay or cut back other purchases" was larger with 47%. However, when separated, each of them was lower than the savings category at 21% or 27%. See more discussion on this category below.

For 10% of the respondents, combined bank loans and utility loans, were the third most important financing source in 1983-85. Allowing for multiple mentions, loans from banks, credit unions, and the local utility combined were mentioned by 21% of respondents who were homeowners in the 1983 survey.

In 1985, the investment was largely paid by the utility or others for about 4% of the responding homeowners. In 1983, utility payments was mentioned by about 9% of homeowner respondents.

The other financing sources mentioned included cutting back or delaying other purchases, federal tax credits, combination of two or more sources, and others. In 1985, these sources combined to account for less than 5% of the number of homeowners. However, in 1983 when multiple responses were allowed, the combination of these sources was mentioned by 70% of the relevant respondents in 1983. Nearly half (47%) of the respondents mentioned that they paid for the investment by delaying or cutting back on other purchases. When the question was limited to one mention of the "biggest portion of money" in 1985, delaying and cutting back on other purchases were mentioned by only about 2 percent of the respondents. Similarly, in 1983 about 1 of 4 respondents said that they paid for conservation investment through federal tax credits. In 1985, the proportion was less than 1%. These results suggest that delaying or cutting back on other purchases and federal tax credits are important supplementary sources of financing conservation investment, but not the primary sources. Another factor could have contributed to the smaller role of federal tax credit in financing the installation of ECMs in 1985. This factor could be the limitation on federal residential weatherization credits; it was available to only those houses constructed before April, 1977. Perhaps by the end of 1983, most of the homes eligible for federal income tax credits had been substantially weatherized.

In short, the 1985 results on conservation investment financing discussed above are consistent with the 1983 results in the sense that current income, savings, bank and utility loans, and utility payments were the most frequently mentioned or primary financing sources. The above results also suggest that delaying or cutting back on other purchases and federal tax credits are important supplementary or secondary source of financing conservation investment.

5.6 LIKELY FUTURE CONSERVATION INVESTMENT

For each of the 12 ECMs included in the 1985 survey, respondents whose homes were not currently equipped with a specific ECM were asked a question similar to this one: "How likely is it that you will spend money to install weatherproofing (caulking-weatherstripping) within the next 2 or 3 years? Would you say it is very likely, somewhat likely, not very likely, or not at all likely?" Respondents whose homes were equipped with four specific ECMs (including weatherproofing, insulation in the floor/basement/crawl space, insulation in outside walls, and insulation in the roof or attic), were also asked a question similar to this one: "How likely is it that you will spend money to install more outside wall insulation in your current residence within the next 2 or 3 years? Would you say it is very likely, somewhat likely, not very likely, or not at all likely?" Table 5.9 presents the results for 1985 and compares them with 1983 data. Some of the more salient aspects can be noted below:

- For weatherproofing, insulation in the floor/basement/crawl space, insulation in outside walls, and insulation under the roof or in the attic, the 1985 proportions of homes likely to install or add more of these (including those currently equipped with the specific ECM in question) more than doubled the proportions of homes currently not equipped and likely to install in the next 2 or 3 years. Weatherproofing was the most dramatic, with its proportion increasing by 30 percentage points from about 7% to 41%. Roof or attic insulation would increase from 3% to 21%. Floor/basement or crawl space insulation would increase from about 9% to 16%. The proportion of homes likely to install wall insulation would go up to 11% from 4%.^(a)
- Excluding homes currently equipped with the ECMs in question, the proportion of homes likely to install in the next 2 or 3 years ranged from 3% for installing ceiling insulation to 15% for storm doors. This is comparable to the range of 6% to 13% in the 1983 survey.

(a) In the 1983 survey, data were collected only from homes currently not equipped with the specific ECM.

TABLE 5.9. Likelihood of Installing Specific ECMs During the Next Two to Three Years, 1985 Versus 1983

Item	1985	1983
Number of homeowners (1000)	2150	2356
	Percent ^(a) Very Likely or Somewhat Likely	
Weatherproofing (A)	41	--
(B)	7~	10
Roof or attic insulation (A)	21	--
(B)	3~	6
Floor/basement/crawlspace insulation (A)	16	--
(B)	9	9
Storm or insulated doors	15	13
Insulated outside walls (A)	11	--
(B)	5	6
Wood stove/furnace	9	8
storm/thermal pane windows	9~	11
Fireplace insert	9	--
Clock or setback thermostat	7~	11
Heat pump (furnace)	7~	12

(a) Computed as proportions of all homeowners.

(A) Includes all owner-occupied homes whether or not they are currently equipped with specific ECM but are "very likely" or "somewhat likely to install more insulation."

(B) Including only owner-occupied homes currently not equipped with the specific ECM in question.

Thus, the proportion of households likely to install in the next two or three years appeared to stay in the same order of magnitude in 1985 as in 1983: floor/basement/crawl space insulation (about 9%), outside wall insulation (about 5-6%), storm doors (13% to 15%), and wood stoves (8% to 9%).

- The proportions of owner-occupied homes not currently equipped with specific ECMs but likely to install such ECMs in the next 2 or 3 years appeared to have declined for weatherproofing (from 10% to 7%), roof attic insulation (from 6% to 3%) storm windows (from 11% in 1983

to 9% in 1985), clock or setback thermostat (from 11% to 7%), and heat pump furnaces (from 12% to 7%).

- If fireplace insert were combined with wood stove, the proportion of homes indicating they were likely to install this measure would show an increase from 8% to about 18%.

In summary, the proportions of owner-occupied homes not currently equipped with specific ECMs but likely to install the relevant ECMs in the next two or three years (in the total number of owner-occupied homes) stayed in the range of 3% to 15% in 1985. These proportions are more or less consistent with those in the range of 6% to 13% in the 1983 survey. Thus, it appears that there is still substantial potential in the near future for conservation investment in the Northwest. This potential is even higher with the inclusion of those homes currently equipped with some of the ECMs and whose owners also indicated very likely or likely to install more of the measures. Four measures are in this category: weatherproofing, insulation over the ceiling and under the roof, in the walls, and under the floor, in the basement or in the crawl space.

5.7 IMPACTS OF CONSERVATION INVESTMENT

Two specific impacts of energy conservation investments perceived by the respondents were measured in both surveys: increased value of the home and difference in the average monthly heating bill. This section briefly explains the results of the comparison of the two surveys.

In 1985, about 45% of the homeowners answered "yes" to the question of whether they felt that their investment in energy conservation measures made a difference in the value of their homes. However, only about 25% of the homeowners were able or willing to speculate on the amount of increase in that value. The average increase in the value of homes claimed by those who were willing to speculate was \$1797 in 1985, compared with \$2908 in 1983. Since the average investment made during 1983-85 was \$1574, the ratio of perceived increases in home values to conservation investment made is 1.1, compared with the 1.6 ratio computed from 1983 survey results (Table 5.10).

TABLE 5.10. Average Increases in Home Values Due to Energy Conservation Investment, 1985 Versus 1983

<u>Item</u>	<u>1985</u>	<u>1983</u>
Average Increase in Home Values Perceived	\$1787	\$2908
Average Conservation Investment	\$1574	\$1811
Ratio of Perceived Average Increases in Home Value Due to Average Conservation Investment	1.14	1.61

This result suggests that, on the average, respondents who had invested in energy conservation measures in the 1985 sample speculated that the value of their home would increase by about 110% of the value of the investment made. In comparison, homeowners in 1983 speculated that the value of their homes would increase on the average by 160% of the investment made. One possible explanation of this phenomenon is that there may be a heightened realism in 1985, compared to 1983. Northwest consumers may have become more realistic in 1985 in estimating how investments in ECMs can be translated into the resale value of their homes. An alternative explanation is that homeowners were more pessimistic in 1985 than in 1983 regarding the rate of increase in home values.

With respect to the impact on utility bills, respondents claimed that, in 1985, the energy efficiency improvements made in their homes led to reductions of \$59 in their average monthly utility bills. This is about 80% higher than that claimed by the respondents in the 1983 sample (\$32). Two factors might have contributed to the greater amount of savings claimed in 1985 than in 1983. First, the rates charged for electricity in 1985 could have been higher in 1985 than in 1983. Second, the 1983 survey asked for estimates by respondents in terms of total annual saving whereas the 1985 survey asked for average monthly saving. Since the average monthly figure is smaller than the annual figure, there could be a tendency to give a value that tended to bias upward.

6.0 MARKET SEGMENTATION

This chapter categorizes consumers in the Northwest, excluding renters, into three prospect groups based on a slightly modified scheme from that used in the 1983 survey analysis. The attitudes, perceptions, and conservation actions are compared among the three prospect groups and between 1983 and 1985. The definitions of the market segments and prospect groups are discussed first. This is followed by explanations of the demographic and energy use characteristics of the two samples by prospect group. The attitudes, perceptions, past and likely future conservation actions, and sources of financing are then explored in turn, with emphasis on identifying trends and changes between 1983 and 1985. The final section discusses the results of testing on the tracking hypothesis concerning prospect groups noted in Chapter 1.0.

6.1 DEFINING MARKET SEGMENTS AND PROSPECT GROUPS

For the purpose of this report, consumer segments for energy conservation action in the Northwest can be defined by past behaviors and expressed intentions. Past investment categories include "limited" (1 or zero ECM installed), "moderate" (2 to 7 ECMs installed), and "heavy" (8 or more ECMs installed). Future intention categories are "minimal" (no ECM to be installed), "moderate" (1 or 2 ECMs to be installed), and "high" (3 or more ECMs to be installed). Nine market segments are created by combining the two segmentation criteria. They are depicted in Figure 6.1 and listed below:

<u>Segment</u>	<u>Past Investment</u>	<u>Future Investment</u>
A	limited	minimal
B	moderate	minimal
C	heavy	minimal
D	limited	moderate
E	moderate	moderate
F	heavy	moderate
G	limited	high
H	moderate	high
I	heavy	high

FIGURE 6.1. Segmentation of the Residential Energy Conservation Market (excluding renters)

Three prospect groups are then determined by combining market segments according to the likelihood of actual installation of ECMs. The First-tier prospects are defined to include segments F, H and I. This group represents those consumers who are most likely to make investments in conservation: they have installed at least 2 items in the past and indicated they are likely to install at least one item in the next two or three years. However, those who are in the moderate past investment and the moderate likely investment category, i.e., those in the E segment, are excluded.

The Second-tier prospects are defined to include segments C, E, and G. Segment C are those who have invested heavily but indicated that they are not likely install any ECM in the near term. However, due to their past experience in energy conservation investment, it is assumed that through public information programs and incentive programs it is possible to induce these consumers to install more ECMs. Segment G are those consumers who have had only limited

investment in the past but are in the "high" likely investment category. However, their expressed intentions were somewhat discounted by virtue of their relative lack of past investment record.

The Nonprospects include segments A, B, and D. Their past investment record is either "moderate" or "limited" and their expressed investment likelihood is "minimal" or "moderate."^(a) These consumers are unlikely to install energy conservation measures in the near term on their own or under normal circumstances. To reach them, it may be necessary to design and develop programs with heavy subsidies or particular focus, such as low-income weatherization.

Since renters are not included in the nine consumer segments used in defining the three prospect groups, they become a fourth prospect group in order to represent the entire residential sector for existing homes. Table 6.1 suggests that the relative proportions of the three prospects groups remain relatively unchanged between 1983 and 1985.^(b) About 1 in 10 respondents are First-tier prospects. The other 9 of 10 respondents are about equally distributed between Second-tier prospect group (about 32%), Nonprospect group (about 30%), and renters (about 28%).

TABLE 6.1. Distribution of Prospect Groups, 1985 Versus 1983

Group	(Percent)			
	Including Renters		Excluding Renters	
	1985	1983	1985	1983
First-tier prospect	10	12	14	16
Second-tier prospect	32	32	45	43
Nonprospect	29	31	41	41
Renter	<u>29</u>	<u>25</u>	<u>--</u>	<u>--</u>
All Groups	100	100	100	100

(a) However, households in the moderate-moderate segment are excluded; they are in the Second-tier prospect group.

(b) See Table B.32 and Table B.33 in Appendix B, respectively, for 1985 and 1983 data on market segments and the derivation of prospect groups.

Note that the proportions for 1983 in Table 6.1 are different from those cited in Chapter 1.0. This is due to the differences in the definitions of prospect groups explained above and those used in the 1983 survey report (RMH Research, Inc. 1984a). Several factors contributed to necessitate the modification of the definitions used in this tracking analysis. First, ambiguities in the earlier definitions and available documentation on the data tape did not allow exact replication of the analysis results of the 1983 survey. Second, it is unreasonable to include those in the First-tier prospect groups (Segment C in the scheme of Figure 6.1) who have installed many conservation measures and who indicated that they would not install any more ECMs. To do so would completely disregard the respondents negative intentions toward future investment. It is, however, reasonable to argue that, due to their past investment experiences, it is likely that respondents in Segment C can be persuaded through public information and incentive programs to eventually adopt some of the measures with which their homes are not currently equipped. This is the reason that Segment C is included in the Second-tier prospect group in the current scheme. Third, a reverse logic is used to include Segment G in the Second-tier prospect group. The expressed intention to install many ECMs is somewhat discounted by the lack of prior investment behavior.

6.2 DEMOGRAPHICS AND ENERGY USE CHARACTERISTICS

Appendix Tables B.34 and B.35 present the results of testing the differences between proportions of the demographic and energy use characteristics of the prospect groups. The data contained in Table B.34 show the differences between the two surveys. Table B.35 provides the test results on the differences among the prospect groups separately for 1985 and 1983.

In general, age, education, and income appear to be important determinants for the segmentation scheme among the prospect groups developed in Section 6.1. Younger and higher income respondents, and those with at least some college education appeared to be more likely to be in the First- and Second-tier prospect groups. Older and lower income respondents and those with no more than a high school education were more likely than their counterparts to be in the Nonprospect group. Occupation was also important. The Nonprospect

group had smaller proportions of respondents in the white collar occupations such as professionals, managers, sales, and clerical. Type of residence, and the primary fuel used in heating the home were not important factors in determining the prospect status of respondents. Changes between 1983 and 1985 occurred in the proportions of respondents by gender (the Second-tier prospects and Nonprospects), by age (Nonprospects), by education (First-tier prospects), by income (Nonprospects), and by type of residence (the Second-tier prospects).

The detailed differences by demographics and energy use are highlighted below:

- Gender. Reflecting the significantly larger proportions of female respondents in the 1985 sample, the proportions of females in Second-tier and Nonprospect groups were significantly higher than the corresponding proportions in 1983. For the First-tier prospect group, the female proportion is also higher in 1985 than in 1983, but this difference is statistically insignificant. Nonprospect group was more likely than the Second-tier prospect group to have a higher proportion of female respondents in 1985.
- Age. Age appears to be an important factor in determining the prospect group with which a respondent is identified. The First- and Second-tier prospect groups are more likely to have significantly larger proportions of mid-age (between 35 and 54) and younger (under 34) respondents than the Nonprospect group. Conversely, the Nonprospect group is composed of a larger proportion of older (over 55) respondents. In 1985, for example, the proportions for the First-tier prospects were 43%, 46%, and 9% respectively for the younger, mid age, and older groups. In contrast, the corresponding proportions for the Nonprospect group were 14%, 35%, and 51% respectively.

The only changes in the relative proportions by age group occurred in the Nonprospect group. The proportion of younger (34 and under) respondents in this group was significantly lower in 1985 than in

1983 (14% versus 25%). The proportion of older respondents (over 55 years old) was significantly higher in 1985 than in 1983 (51% versus 41%).

- Education. In 1983, the proportion of respondents in the First-tier prospect group who had had at least some college education was significantly higher than a similar proportion for the Second-tier prospect group which, in turn, was significantly higher than the same proportion for the Nonprospect group. In 1985, such a relationship is true only for the Second-tier prospect group. For the First-tier prospects, there was a significant decrease in the proportion of respondents who had at least some college education in 1985 from the level in 1983. No significant changes were observed for the other two prospect groups.
- Occupation. In general, the Nonprospect group had lower proportions of respondents who were in the professional, managerial, and clerical/sales occupational groups than the other two prospect groups. The only significant change between the two surveys occurred in the Second-tier prospect group: the proportion of respondents in this group who were in managerial positions rose from 7% in 1983 to 11% in 1985.
- Income. Income is also an important factor which affected the composition of the prospect groups. The Nonprospect group had larger proportions of lower income (under \$16,000) respondents and smaller proportions of high-income (over \$30,000) respondents than the First- and Second-tier prospects. For example, in 1985, 32% of the Nonprospect respondents had incomes less than \$16,000, compared to 12% and 14%, respectively, for the First- and Second-tier respondents. On the other hand, the Nonprospect group's proportion of respondents with incomes over \$30,000 was 30% in 1985, compared to 43% and 41% respectively for the First- and Second-tier prospect groups.

The only significant change between 1983 and 1985 occurred in the Nonprospect group. The proportion of Nonprospect respondents in the

middle income group fell significantly from 39% in 1983 to 27% in 1985. The offsetting changes occurred in terms of increases in the proportions of lower income groups.

- Type of Residence. In 1983, the proportion of Nonprospect respondents living in single family detached homes was 83%, which was significantly less than the 90% for both the First- and Second-tier prospects. Correspondingly, there was a significantly larger proportion (13%) of Nonprospect households living in mobile homes and other similar structures than the proportions in the other two prospect groups (about 5%). In the 1985 sample, this difference among prospect groups was no longer observed. Otherwise, the only significant change between the two years was that the proportion of Second-tier prospect respondents living in mobile homes rose from 6% in 1983 to about 11% in 1985.
- Primary Heating Fuel. There were no significant differences in the fuel shares among the three prospect groups in either 1985 or 1983. There were no significant changes in the individual fuel shares from 1983 to 1985.

6.3 ATTITUDES TOWARDS ENERGY CONSERVATION OF PROSPECT GROUPS

This section discusses the attitudes of the prospect groups towards energy conservation and use. In particular, the concerns about various issues are explained first. The psychographic profiles in terms of agreement with various statements concerning energy use and conservation are also explored.

6.3.1 Concern About Various Issues

Table 6.2 compares, by prospect group, the proportions of respondents who were very concerned about the specific issues in 1985 with the relative proportions in the 1983 survey. The following are significant highlights resulting from this comparison:

TABLE 6.2. Concern About Various Issues by Prospect Groups, 1985 Versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of respondents (1000)	309	377	955	1010	886	617
	% Very Concerned					
Energy conservation	34~(a)	57	33~	48	28~	49
Unemployment	50	61	43~	63	44~	64
Cost of energy	51~	74	51~	70	48~	75
Inflation	51~	70	52~	63	56~	65
Crime	60~	73	67~	72	72	75
Energy use in the home	44	53	30~	49	33~	50
Environment	57	66	48	49	44~	52

(a) A tilde (~) indicates that the value is significantly lower than the other values at 5% significance level.

- Reflecting the overall drop in concern explained in Section 3.2, the proportions of those who were very concerned about energy conservation, cost of energy, and inflation were significantly lower for all three prospect groups in 1985 when compared with the 1983 results.
- For First-tier prospects, the proportion of those who were very concerned about crime was also significantly lower in 1985 than in 1983.
- For Second-tier prospects, the proportions of those who were very concerned about unemployment, crime, and energy use in the home were also lower in 1985 than in 1983.
- For the Nonprospects, the proportions of those who were concerned with unemployment, energy use in the home, and environment were also lower in 1985 than 1983.

Table B.36 in Appendix B provides separate comparison test results for 1985 and 1983. These tests reveal the following:

- In 1983, the proportion of respondents who were very concerned about energy conservation was significantly higher in the First-tier prospect group than in the Nonprospect group. In 1985, there was no significant difference.
- In both 1983 and 1985, there were no significant differences among prospect groups in terms of the proportion of respondents who indicated that they were very concerned about unemployment, the cost of energy, and inflation.
- The First-tier prospects were more likely than other groups to be very concerned about energy use in the home (1985), and the environment (both 1983 and 1985). They are also less likely to be concerned about crime than the Nonprospect group (1985).

To summarize, several aspects can be noted. First, although changes in external conditions have contributed to a general decrease in concern about energy conservation, cost of energy, and energy use in the home from 1983 to 1985, the First-tier prospect group had higher proportions than the Nonprospect group of those who were very concerned about energy conservation, and energy use in the home. However, the proportion of those who were very concerned about the cost of energy was not significantly different among the three prospect groups. Second, the First-tier group was less concerned about crime than the Nonprospect group.

6.3.2 Psychographic Profiles

Table 6.3 compares the prospect groups' psychographical images between 1983 and 1985 in terms of the proportions of respondents who agreed with 10 attitudinal statements common to both surveys. The table depicts that, consistent with the overall results discussed in Section 3.3, proportions of respondents agreeing with the statements increased significantly for all three prospect groups between 1983 and 1985 for the following 5 statements:

"It's our responsibility to conserve electricity for future generations."

"Conserving energy is the best way to protect the environment."

TABLE 6.3. Psychographical Images, 1985 Versus 1983^(a)

Item	First-Tier Prospects		Second-Tier Prospects		NonProspects	
	1985	1983	1985	1983	1985	1983
Number of Respondents (1000)	309	377	955	1010	886	966
% Strongly Agree or Agree						
<u>Social Responsibility:</u>						
It's our responsibility to conserve electricity for future generations	88	81	83	79	84*(b)	72
Conserving energy is the best way to protect the environment	71*	56	71*	53	72*	46
<u>Self Interest/Materialism/Lifestyle:</u>						
Most people who conserve electricity do so to save money	90*	81	92*	83	93*	83
I would only make conservation investments which would enhance the value of my home	25	23	21	22	25	24
Conserving energy is the best way to maintaining my lifestyle	68*	46	62*	47	63*	44
<u>Limits to Energy Conservation:</u>						
I only use electricity when it's really needed; there is no way I can cut down	42	41	44	48	51	56
I have already done everything I can to conserve energy	23	25	34	36	48	47
<u>Cynicism/Negative Views on Energy Conservation:</u>						
The amount of energy I use is really my own affair and no one else's	46*	24	45*	32	51*	37
It's silly to conserve electricity, because the electric utility just turn around and charge more for what you do use	33	33	31	35	31~(c)	38
My conservation efforts won't have much effect one way or the other on the availability of electricity	14~	25	20~	27	27	32

(a) The 1983 results assume that those agreeing with a statement would give one of the 4 highest scores possible, 10, 9, 8 and 7. These are consistent with Case B in the discussion associated with Table 3.5, Section 3.3.

(b) An asterisk (*) indicates that the value is significantly greater than the other values at 5% significance level.

(c) A tilde (~) indicates that the value is significantly lower than the other values at 5% significance level.

"Most people who conserve electricity do so to save money."

"Conserving energy is the best way to maintain my lifestyle."

"The amount of energy I use is really my own affair and no one else's."

The first two statements fall into the "social responsibility" category. The next two are in the "self interest/materialism/ lifestyle" category. And the last of the above statements is in the "cynicism/ negative views on energy conservation" category. Thus, agreement with statements in the "social responsibility" and "self-interest/materialism/lifestyle" categories had become more pronounced over time.

In addition, Table 6.3 indicates that agreement with the statement "my conservation efforts won't have much effect one way or the other on the availability of electricity" was lower in 1985 than in 1983 for First- and Second-tier prospect groups. This is also consistent with the overall result discussed in Section 3.3.

For the remaining three prospect groups, there were no significant changes in the proportions of respondents agreeing with statements such as "I would only make conservation investments which would enhance the value of my home," "I only use electricity when it's really needed; there is no way I can cut down," and "I have done everything I can to conserve energy." In the Nonprospect group, the proportion agreeing with the statement "it's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use" declined from 38% in 1983 to 31% in 1985.

Table B.37 (Appendix B) presents the results of significance testing separately for 1983 and 1985 data. The following results are important for determining the prospect groups:

- The two statements in the "limits to energy conservation" category are most useful in separating prospects from nonprospects. Data from both the 1983 and 1985 surveys showed that respondents in the Nonprospect group are more likely than those in the First and Second-tier prospect groups to agree with the statements "I only use electricity when it's really needed; there is no way I can cut down." In

1983, the same is also true for the statement "I have done everything I can to conserve energy."

- For both surveys, the following three statements are not very useful in separating respondents among the three prospect groups: "Most people who conserve electricity do so to save money." "I would only make conservation investments which would enhance the value of my home." "Conserving energy is the best way to maintaining my life-style." "It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use."
- Three of the remaining four statements were useful in a limited manner in separating respondents among the three prospect groups in 1983. However, this was no longer true in 1985. The other statement yielded significant results for 1985: A larger proportion of the Nonprospect group (27%) than that of the First-tier prospect (14%) agreed with the statement, "My conservation efforts won't have much effect one way or the other on the availability of electricity."
 - In 1983, compared to the First- and Second-tier prospect groups, the Nonprospect group had a smaller proportion of those who agreed with the statement "It's our responsibility to conserve electricity for future generations," and the statement "conserving energy is the best way to protect the environment." In 1985, no significant difference was observed.
 - In 1983, compared to either the Second-tier prospect and Nonprospect groups, the First-tier prospect group had a smaller proportion of those who agreed with the statement "The amount of energy I use is really my own affair and no one else's." In 1985, no significant difference was observed.
 - In 1985, compared to the First-tier prospect group, the Nonprospect group had a larger proportion of respondents who agreed with the statement "My conservation effort won't have much effect one way or the other on the availability of electricity."

In summary, the less likely a respondent is to agree with either one of the two "limits to energy conservation" statements, the more likely he or she will be in the First-tier or Second-tier prospect groups for energy conservation investments. There were also some changes in the psychographic profiles in the sense that agreement with 3 of the 5 statements in the "social responsibility" and "self-interest/materialism/lifestyle" categories, and 1 in the 3 statements in the "cynicism/negative views on energy conservation category" had intensified between 1983 and 1985 for all three prospect groups. There were also some decreases in proportion of respondents who agreed with the statement that "my conservation efforts won't have much effect one way or the other on the availability of electricity."

6.4 PERCEPTIONS OF INSTITUTIONS OF PROSPECT GROUPS

In this section, the overall impressions of the respondents on energy institutions by prospect group are presented first. It is followed by a discussion of the perception of believability of energy institutions, entities and individuals as sources of energy conservation information. The 1985 data for energy institutions are measured in terms of only the respondents who were familiar with the specific energy institutions in question.^(a)

6.4.1 Overall Impressions

Table 6.4 compares the 1985 results on overall impressions of energy institutions with 1983 results. Among those who were familiar with the Northwest Power Planning Council, the proportions of respondents who rated the institution as very favorable or favorable rose significantly for all three prospect groups from 1983 to 1985. With respect to the BPA, there was also a significant increase in the corresponding proportion for the First-tier prospect group.

In 1983, the Nonprospect group had a significantly smaller proportion than the First- and Second-tier groups who regarded the state energy office as very favorable or favorable. Similarly in 1983, the Nonprospect group had a lower proportion than the Second-tier prospect group who regarded the Northwest Power

(a) This is necessitated by the skip pattern in the survey instruments.

TABLE 6.4. Overall Impression of Energy Institutions by Prospect Group:
Comparison with 1983 Results

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
	Number of Respondents ^(a) (1000)					
Local electric utility	108	349	371	913	291	848
Bonneville Power Administration	92	254	253	668	228	637
Northwest Power Planning Council	64	157	164	423	146	389
State energy office	69	184	194	441	150	388
	% Very Favorable or Favorable					
Local electric utility	79	72	72	74	73	73
Bonneville Power Administration	65 ^(b)	51	55	51	55	48
Northwest Power Planning Council	70 [*]	40	72 [*]	51	61 [*]	38
State energy office	78	66	73	63	63	50

(a) Includes only those respondents in each prospect group who were familiar with the specific institutions in questions.

(b) An asterisk indicates that the value is significantly greater than the others at 5% significance level.

Planning Council as very favorable or favorable. In 1985, the First-tier prospect group had a larger proportion of respondents who regarded the local electric utility very favorably and favorably than the Second-tier prospect group (Table B.38, Appendix B). Note that other items not specifically mentioned above did not yield significant difference.

6.4.2 Believability

The data concerning the believability of energy institutions as sources of energy conservation information by prospect group are summarized in Table 6.5 and Table B.39 in Appendix B. The corresponding data for other entities and individuals not dealing directly with energy matters are summarized in Table 6.6 and Table B.40 in Appendix B. The following can be noted:

- Between 1983 and 1985, there was, for all three prospect groups, a significant decrease in the proportions of respondents who regarded

TABLE 6.5. Believability of Energy Institutions as Sources of Energy Conservation Information by Prospect Group, 1985 Versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
	Number of Respondents ^(a)				(1000)	
Local electric utility	104	371	369	984	275	934
Bonneville Power Administration	92	307	250	824	210	735
State energy office	66	266	189	712	148	606
Energy extension services	53	257	149	720	96	635
Northwest Power Planning Council	64	229	180	647	161	571
	% Very Believable or Believable					
Local electric utility	79~	92	83~	92	70~	85
Bonneville Power Administration	57~	79	63~	82	58	69
State energy office	86	86	92	89	71	74
Energy extension service	100	97	95	94	84	85
Northwest Power Planning Council	61	77	65~	80	70	68

(a) Includes only those respondents in each prospect group who were familiar with the specific institutions in question.

the local electric utility as very believable or believable. For the BPA, the decreases in the applicable proportions occurred for the First-tier and Second-tier prospect groups (Table 6.5).

- Compared to the First- and Second-tier prospect groups, but particularly with respect to the Second-tier prospect group, the Nonprospect group is less likely to regard the energy institutions as believable sources for energy conservation information. This was even more evident in 1983 than in 1985 (Table B.39, Appendix B).
- Believability ratings of local elected officials and building contractors decreased for all three prospect groups between 1983 and

TABLE 6.6. Believability of Other Entities and Individuals as Source of Energy Conservation Information by Prospect Group, 1985 Versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of respondents (1000)	198	377	570	1010	586	966
	% Very Believable or Believable					
Retail stores	71	66	69	67	73*	59
News media ^(a)	66	77	73	73	67	68
Radio	66	--	70	--	63	--
Television	72	--	78	--	73	--
Newspapers	60	--	71	--	64	--
Banks and credit unions	61~	76	67	72	66	69
Building contractors	59~	81	58~	78	48~	66
Local elected official	33~	67	42~	63	42~	58
Realtors	43	54	38~	49	38	42

(a) Values for 1985 are simple averages of radio, television, and newspapers.

1985, similar to the trend for the overall sample noted in Section 4.5. In the case of banks and credit unions, only the First-tier prospect group showed significantly lower ratings. For retail stores, the Nonprospect groups showed a significant increase. There were no significant differences between 1983 and 1985 for news media for each prospect group (Table 6.6).

- In 1983, the Nonprospect group gave significantly lower believability ratings to building contractors and realtors (compared to both First- and Second-tier prospect groups), retail stores (compared to the Second-tier prospect group), and local elected officials (compared to the First-tier prospect group). In 1985, there were no significant differences among prospect groups in the believability ratings they

gave to other entities and individuals. Building contractors is the only exception: Nonprospect groups had a smaller proportion than had the Second-tier prospect group (Table B.40, Appendix B).

6.5 ENERGY CONSERVATION ACTIONS OF PROSPECT GROUPS

Three topic areas are covered in this Section. First, the methods preferred by the respondents to conserve energy in the home is discussed. Second, past no/low cost conservation actions by the respondents in the three prospect groups are compared and discussed. Then past installations of ECMs are explained.

6.5.1 Preferred Methods for Conserving Energy

Table 6.7 presents a comparison of the 1985 and 1983 data on the preferred methods for conserving energy in the home by prospect group. It suggests that the proportions of respondents who preferred to spend money on improvements increased significantly from 1983 to 1985 for the First-tier prospect group (from 31% to 48%) and Second-tier prospect group (from 30% to 38%). In contrast, for the Nonprospect group, the proportion of those preferring both changing their way of living and spending money on improvements decreased significantly from 13% in 1983 to 6% in 1985.

Tests performed separately on the 1985 data suggest that, compared to the First- and Second-tier prospect groups, the Nonprospect respondents were more

TABLE 6.7. Preferred Methods for Conserving Energy by Prospect Group, 1985 Versus 1983

<u>Item</u>	<u>First-Tier Prospects</u>		<u>Second-Tier Prospects</u>		<u>Nonprospects</u>	
	<u>1985</u>	<u>1983</u>	<u>1985</u>	<u>1983</u>	<u>1985</u>	<u>1983</u>
Number of respondents (1000)	309	377	955	1010	886	966
	<u>% Very Believable or Believable</u>					
Change way of living	45	50	44	49	59	55
Spend money on improvements	46*	31	38*	30	29	28
Both	9	17	14	18	6~	13

likely to prefer changing their way of living to conserve energy and less likely to prefer spending money on home improvements to do so. This is probably due to fact that the Nonprospect respondents are more likely to be in the lower income group, as noted above in Section 6.2. Tests for both 1985 and 1983 data reveal that the Nonprospect respondents were less likely than the Second-tier prospect respondents to prefer "both" (Table B.41 in Appendix B).

6.5.2 No/Low Cost Energy Conservation Actions

Data suggest that, compared to the respondents in First- and Second-tier prospect groups, respondents in the Nonprospect group were less likely to regularly practice no/low cost energy conservation actions, except in the case of putting plastic over their windows. Data for both 1985 and 1983 support this generalization for the following actions: lowering thermostat setting during the heating season, selecting energy efficient appliances when purchasing new ones, installing water flow restrictors in the showers, receiving a home energy audit, and wrapping water heaters. Data for 1983 survey also support this generalization for controlling lights with dimmer switches and timers, and using shades and drapes for heating and cooling (Table B.42 in Appendix B).

For all three prospect groups, significant decreases occurred between 1983 and 1985 in the proportions of respondents who regularly selected energy efficient appliances when buying new ones and for those who regularly put plastic over their windows. As noted in Section 6.2, one contributing factor for the significant decrease in the proportion of respondents who regularly put plastic over their windows was the change in wording from "putting up storm windows" in 1983 to "putting plastic over windows" in 1985. For the First-tier prospect group, the data also indicated that the proportion of those who regularly controlled their lights with dimmer switches and timers became significantly lower in 1985 at 42%, compared with 57% in 1983. For the Nonprospect group, the proportion of those who regularly used shades and drapes to aid in heating or cooling rose from 83% in 1983 to 88% in 1985 (Table 6.8).

TABLE 6.8. No/Low Cost Energy Conservation Actions by Prospect Group, 1985 Versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of respondents (1000)	309	377	955	1010	886	966
	% Regularly Practicing					
Control lights with dimmer switches and times	42~	57	50	50	45	44
Lower thermostat setting	92	86	84	83	77	76
Select energy efficient appliances	71~	84	66~	77	56~	67
Use shades for heating and coolings	92	91	89	92	88~	83
Install water flow restrictors	45	44	40	41	29	33
Put plastic over windows	36~	65	24~	67	27~	69
Receive an energy audit	29	32	37	34	28	25
Wrap water heater	67	72	70	66	58	59

6.5.3 Investment-Type Energy Conservation Measures

Table 6.9 compares the proportions of homes between 1983 and 1985 equipped with the specific investment-type ECMS by prospect group.^(a) The following can be observed:

- The proportion of homes equipped with wood stove/furnace decreased significantly from 1983 to 1985 for all three prospect groups. As discussed earlier in Section 5.3, these decreases can be partially explained by the explicit introduction of fireplace inserts in the 1985 survey, eliminating the possibility, occurred in the 1983

(a) The data collected in the 1983 survey can be viewed as homes equipped with specific ECMS (see Fang 1985 p. 3.1 through 3.8).

TABLE 6.9. Proportions of Homes Equipped with Specific ECMs by Prospect Group, 1985 Versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of respondents (1000)	309	377	955	1010	886	966
	% Currently Equipped					
Roof/attic insulation	89	83	93*	83	91*	70
Wall insulation	75	65	83*	71	79*	56
Weatherproofing	77	70	84*	77	77*	65
Storm/thermal pane windows	69	67	83*	71	74*	64
Storm doors	46~	61	57~	67	62	58
Floor, basement or crawlspace insulation	55	65	58	61	51*	43
Clock or setback thermostat	43	37	47*	35	37*	21
Wood stove/furnace	46~	71	42~	69	33~	56
Fireplace insert	24	--	24	--	15	--
Heat pump furnace	15	13	8~	14	8	6

survey, that some respondents may have included a fireplace insert in their responses to the wood stove category.

- Between 1983 and 1985, significant increases occurred in the proportions of homes in both the Second-tier and Nonprospect groups equipped with roof insulation, wall insulation, weatherproofing, storm windows, and clock or setback thermostat. Floor and basement insulation showed increase from 1983 to 1985 only for the Nonprospect group. In contrast, ECMs that showed significant decreases between 1983 and 1985 included storm doors for both First- and Second-tier prospect groups and heat pump furnaces for the Second-tier group (Table 6.9). It is not clear what factors caused the decreases.

Table B.43 in Appendix B presents the results testing the significance between proportions separately for 1983 and 1985. The following can be noted:

- As can be expected from the manner in which the prospect groups were defined, respondents in the Nonprospect group are generally less likely than those in the First-tier and Second-tier prospect groups to have their homes equipped with the specific ECMs under consideration. This phenomenon was more evident in 1983 than in 1985, because, unlike 1983, there were no significant differences among the three prospect groups in 1985 for installing roof/attic insulation, and floor insulation.
- In 1985, the Second-tier prospect group tended to have higher proportions of respondents whose homes were equipped with outside wall insulation, weatherproofing, storm windows and clock thermostat than the other two groups, particularly compared to the Nonprospect group. In 1983, the Second-tier prospect group had higher proportions of homes equipped with weatherproofing, storm windows, and storm doors compared to the Nonprospect group.
- In 1985, significant differences occurred between the proportions of respondents in the First-tier and Second-tier prospect groups whose homes were equipped with outside wall insulation, storm windows, and heat pump furnaces.

In summary, relative to the First- and Second-tier prospect groups, the Nonprospect group had lower proportions of respondents whose homes were equipped with various ECMs. This was true for both 1983 and 1985, but more so for 1983. Compared to other groups, the Second-tier prospect group had higher proportions of homes equipped with outside wall insulation, weatherproofing, storm windows, and clock or setback thermostat. This is to be expected because, in terms of past conservation investments, the Second-tier prospect group had a larger group of respondents than the First-tier prospect group who had installed as many ECMs as respondents in the First-tier prospect group.^(a)

(a) See Appendix Tables B.32 and B.33.

Between 1983 and 1985, there were significant increases in the proportions of homes equipped with ECMs such as roof/attic insulation, wall insulation, weatherproofing, storm windows, clock or setback thermostat (Second-tier and Nonprospect), and floor insulation (Nonprospects only). There were significant decreases in the proportions of homes equipped with wood stove/furnace (all three groups), storm doors (First- and Second-tier prospects), and heat pump furnace (Second-tier prospect group only). While the decreases in the wood stove can be partially accounted for by the inclusion of the fireplace insert in the 1985 survey instrument, the decreases in storm doors and heat pump furnace cannot be easily explained.

6.6 FINANCING SOURCES OF PROSPECT GROUPS

The most important financing source of conservation investment for all three prospect groups is current income. This is followed by savings, banks loans and credits, utility loans, and payments by utilities. When multiple mentions of financing sources are allowed, as was the case in the 1983 survey, delay or cutbacks of other purchases and federal tax credits were also important (Table 6.10). This result is generally consistent with the overall results discussed in Section 5.5.^(a)

In 1983, the Nonprospect group was less likely than the First- and Second-tier prospect groups to mention savings, delaying or cutting back on other purchases, and bank loans as financing sources of conservation investment. Otherwise, there were no other significant differences among the prospect groups in terms of financing sources in either 1983 and 1985 (Table B.44, Appendix B).^(b)

(a) Note that, since the 1983 data include multiple mentions and the 1985 data do not, no attempt was made to statistically test the numerical differences of proportions between the two years.

(b) Detailed 1985 results on conservation financing are being presented and analyzed in a separate report.

TABLE 6.10. Sources of Financing Conservation Investment by Prospect Group, 1985 Versus 1983^(a)

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of respondents (1000)	309	377	955	1010	886	966
	%					
Current income	55~	74	51~	77	50~	75
Savings	16~	39	14~	41	17~	35
Delay or cut back other purchases	1~	69	1~	50	1~	36
Bank loans and credits	6~	18	9	13	4~	12
Utility loan	2~	10	2~	8	2~	7
Payments by utility	1~	11	3~	9	3~	8
Paid by others	1	--	1	--	0	--
Federal tax credits	0~	30	0~	23	1~	19
Combined sources	0	--	2	--	1	--
Other	1	--	0	--	0	--

(a) 1983 data include, while 1985 data do not include, multiple mentions.

6.7 LIKELY FUTURE ACTIONS OF PROSPECT GROUPS

Table 6.11 compares by prospect group the 1985 results with the 1983 results on likely future installations of ECMs. The proportions of respondents in the First-tier prospect group who indicated that they are likely to install specific ECMs remained relatively constant except for heat pump furnace which decreased from 39% to 23%. In the Second-tier prospect group, only the proportion for storm doors increased from 15% to 21%. There were significant decreases for roof/attic insulation, wall insulation, weatherproofing, clock or setback thermostat. For the Nonprospect group, the proportion likely to install were generally less than 2% and no test was performed.

TABLE 6.11. Likely Installation of Energy Conservation Measures by Prospect Group, 1985 Versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of respondents (1000)	309	377	955	1010	885	966
	% Very Likely or Likely to Install					
Roof/attic insulation	9	13	3~	9	1	1
Walls insulation	20	20	4~	7	0	0
Weatherproofing	20	25	9~	13	1	2
Storm/thermal pane windows	26	27	10	14	0	1
Storm doors	37	31	21*	15	0	1
Floor, basement, or crawl space insulation	26	17	12	14	0	1
Clock or setback thermostat	29	28	7~	15	0	1
Wood stove/furnace	26	19	12	11	0	1
Fireplace insert	25	--	11	--	1	--
Heat pump furnace	23~	39	9	12	0	1

Table B.45 (Appendix B) shows the expected results that the First- and Second-tier prospects, and especially the First-tier generally had higher proportions of respondents who indicated they are likely to install the ECMs listed.

6.8 DISCUSSIONS

One of the two specific hypotheses to be tested in this report is that the size and psychographic make-up of the original three market segments found in

the 1983 survey remain unchanged. Given the information and analyses explained above, it is now possible to summarize the results of testing this hypothesis as follows:

- When the three prospect groups are defined in the manner described in Section 6.1, which is a slight modification of the original 1983 scheme, it was shown that the size distribution of the three prospect groups remain unchanged: In 1985, 10% of the respondents were in the First-tier prospect group, compared with about 12% in 1983. Second-tier prospect group accounted for about 32% of respondents in both years. The Nonprospect group accounted for 29% in 1985 compared with 31% in 1983. Table 6.1 showed that none of the differences were not statistically significant.
- The test results for the prospect groups' psychographic make-up depended on the specific statements. In general, agreement with statements in "social responsibility" and "self interest/materialism/lifestyle" categories,^(a) and the statement that "the amount of energy I use is really my own affair and no one else's" was intensified in the sense that the proportions of respondents agreeing with these statements were significantly higher in 1985 than in 1983. There were no significant changes in the two statements in the "limits to conservation" category. There were even some decreases in the proportions of respondents agreeing with the remaining two statements in the "cynicism/negative views on energy conservation" category.
- There were also some changes in the psychographic profile of the prospect groups. In 1983, the Nonprospects were less likely to agree with the two statements in the "social responsibility" category. This was no longer the case for 1985. In 1985, Nonprospects were more likely than the Second-tier prospect groups to agree with the statement "I would only make conservation investments which would

(a) The statement "I would only make conservation investments which would enhance the value of my home" is excepted.

enhance the value of my home." This was not the case in 1983. Similarly, in 1985, the Nonprospect group had a higher proportion than the First- and Second-tier prospect groups of respondents who agreed with the statement that my conservation efforts won't have much effect one way or the other on the availability of electricity.

Thus, it is concluded that the relative size of the three prospect groups remained relatively unchanged between 1983 and 1985. It is also concluded that there were some changes in the psychographic profiles in the sense that agreement with 3 of 5 statements in the "social responsibility" and "self-interest/materialism/lifestyle" categories, and with 1 in 3 statements in the "cynicism/negative views on energy conservation" category had intensified for all three prospect groups. There was also a decline in the proportion of respondents who agreed with the statement that "my conservation efforts won't have much effect one way or the other on the availability of electricity."

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APPENDIX A

TESTING THE SIGNIFICANCE OF DIFFERENCES BETWEEN TWO PROPORTIONS

APPENDIX A

TESTING THE SIGNIFICANCE OF DIFFERENCES BETWEEN TWO PROPORTIONS

This appendix explains the statistical test of significance used in comparing proportions in different groups as well as those from 1983 and 1985. The convention used in this report to indicate whether a proportion is significantly higher or lower than the other proportion(s) is also noted.

Assume that there are two proportions p_1 and p_2 . p_1 is the proportion from sample (or subsample) 1 with a certain attribute A. p_2 is the proportion from sample (or subsample) 2 with the same attribute A. The size of the sample is n_1 for sample 1 and n_2 for sample 2.

The null hypothesis to be tested is that there is no significant difference between p_1 and p_2 ; i.e., $p_1 - p_2 = 0$. Since there are no a priori reasons to assume that p_1 is larger than p_2 or vice versa, the alternative hypothesis is that p_1 and p_2 are different from each other, i.e. $p_1 - p_2 \neq 0$. This would be a two-tailed test.^(a)

The relevant computations are carried out in accordance with the following equations and expressions:

$$\bar{p} = \frac{n_1 p_1 + n_2 p_2}{n_1 + n_2} .$$

$$\bar{q} = 1 - \bar{p} .$$

$$s_{p_1 - p_2}^2 = \frac{\bar{p} \bar{q}}{n_1} + \frac{\bar{p} \bar{q}}{n_2} .$$

-
- (a) In contrast, if there is reason to believe that p_1 is higher (or lower) than p_2 , then the test would be one-tailed. The null hypothesis is that p_1 is greater than p_2 ; i.e., $p_1 - p_2 > 0$. The alternative hypothesis is then p_1 is not greater than p_2 ; i.e., $p_1 - p_2 \leq 0$.

The test statistic is calculated as:

$$z = \frac{(p_1 - p_2) - 0.0}{S_{p_1 - p_2}} .$$

Given a 5% significance level and a two-tailed test, the critical value of the test statistic in absolute terms is 1.96.^(a) Any pair of proportions with calculated z less than -1.96 or greater than +1.96 is viewed as significantly different.

Example. For the proportions of respondents who were very concerned about crime, the data are as follows:

<u>Year</u>	<u>% Very Concerned</u>	<u>Sample Size</u>
1985	$p_1 = 67\%$	$n_1 = 1058$
1983	$p_2 = 74\%$	$n_2 = 2000$
	$\bar{p} = 0.716$	
	$S_{p_1 - p_2} = 0.017$	
	$z = -4.118$	

Since -4.118 is less than -1.96, the interpretation of the above result is that the proportion of respondents who were very concerned about crime was significantly lower in 1985 than in 1983.

Note that although the proportions presented in the report have been weighted to approximate population values, the n's used in the testing are sample sizes.

Denoting Results of Significance Testing. For convenience, the following convention has been adopted in this report for denoting the results of significance testing with respect to proportions:

(a) In a one-tailed test as explained in the previous footnote, the critical value of the test statistic at a 5% significance level is +1.645.

1. When there are only two proportions being tested, a significant difference between the two proportions in question will either be denoted as proportion p_1 is significantly lower than p_2 , or equivalently, proportion p_2 is significantly greater than p_1 . To illustrate, the result of the above example can be denoted as

	<u>(% very concerned)</u>	
	<u>1985</u>	<u>1983</u>
crime	67~	74

or

	<u>(% very concerned)</u>	
	<u>1985</u>	<u>1983</u>
crime	67	74*

Note that the tilde (~) is used to denote "significantly lower than" and asterisk (*) is used to show "significantly higher than."

2. When there are three proportions (p_1 , p_2 , p_3) being tested, pairwise comparisons were carried out in three ways: p_1 and p_2 ; p_1 and p_3 ; p_2 and p_3 .
 - a. If none of the three pairs yielded significant results, neither ~ nor * would appear in the tables, as shown in the following example:

	<u>Age</u>		
	<u>Under</u>	<u>35-</u>	<u>Over</u>
	<u>34</u>	<u>54</u>	<u>55</u>
	<u>(% very concerned)</u>		
Cost of Groceries	44	42	45

- b. If only one of three pairs yielded significant result, then ~ and * would appear together, as shown in the following example:

		Income	
		Under	Over
		<u>\$16K</u>	<u>\$30K</u>
		(\$16K-\$30K)	
		(% very concerned)	
Cost of Energy	59*	51	47~

- c. If two of the three pairs yield significant results, then either ~ or * would be used with one of the three proportions to show that it is larger than (*) or smaller than (~) the other two proportions. For example:

		Age	
		Under	Over
		<u>34</u>	<u>55</u>
		35-54	
		(% very concerned)	
Inflation	47	51	63*

		Income	
		Under	Over
		<u>\$16K</u>	<u>\$30K</u>
		(\$16K-\$30K)	
		(% very concerned)	
Energy Use in the Home	41	39	28~

- d. If all three pairs yield significant results, then the # symbol is attached to all three proportions to show significant differences on all three pairwise comparisons. The following example is given:

		Income	
		Under	Over
		<u>\$16K</u>	<u>\$30K</u>
		(\$16K-\$30K)	
		(% very concerned)	
Cost of Groceries	60#	46#	30#

APPENDIX B

DETAILED 1985 DATA AND DISCUSSIONS

APPENDIX B

DETAILED 1985 DATA AND DISCUSSIONS

This appendix presents detailed supporting data for the 1985 survey results that have been discussed in the text. The data have been arranged in the sequence they are treated in the text. Text is also included to highlight the information contained in the tables and not otherwise discussed in the main body of this report.

As explained in Appendix A, the following convention is used in the tables to indicate the results of significance testing among the proportions:

- An asterisk (*) indicates that the value is significantly higher than the other values at a 5% significance level.
- A tilde (~) indicates that the value is significantly lower than the other values at a 5% significance level.
- A pound sign (#) indicates that there are significant differences among any pairs of values formed from 3 values.

B.1 SUPPORTING DATA FOR CHAPTER 1.0

Table B.1 compares the characteristics of the 1985 sample with that of the 1983 sample, covering demographic information, building characteristics and economic conditions.

B.2 SUPPORTING DATA FOR CHAPTER 3.0

Tables B.2 and B.3 present the cross tabulations of the verbatim responses for the meaning of the term "energy conservation" by age, sex, income and education of the respondents.

TABLE B.1. Comparison of Sample Characteristics

Item	Units	1985	1983
1. Number of Households (1000)	Household	3022(a)	3117(a)
2. Sex			
Male	%	38~(b)	46
Female	%	62*(c)	54
3. Age			
18-24	%	9*	7
25-34	%	25	28
35-44	%	23	23
45-54	%	14	12
55-64	%	13	13
Refused/missing	%	1~	4
4. Education			
High school or less	%	45	44
Some college or more	%	55	54
5. Occupation			
Professional	%	17	16
Executive/administrative	%	11	9
Clerical-sales-technicians	%	17*	7
Crafts-foreman	%	7~	15
Other employed	%	16	17
Not applicable/refused	%	33	36
6. Income			
Under \$16K	%	25	24
\$16-30K	%	36	39
Over \$30K	%	32*	27
7. Own/Rent			
Own	%	71~	76
Rent	%	29*	24
8. Length of Stay at Current Address			
Under 1 year	%	23*	10
1-2 years	%	10~	15
3-4 years	%	12~	16
Over 5 years	%	55	58
9. Type of Dwelling			
Single Family	%	76	76
Building with 2-4 units	%	9	8
Building with more than 4 units	%	7	8
Mobile home/other	%	8	7
10. Primary Heating Fuel			
Electricity	%	38	37
Wood	%	29	28
Natural Gas	%	19	20
Oil	%	11	11
LP gas	%	2	3
Solar	%	0	0
Other	%	0	0

TABLE B.1. (contd)

Item	Units	1985	1983
11. Number of Persons in the Household			
1	%	19*	15
2	%	34	35
3	%	17	17
4	%	18	20
5	%	8	8
6	%	3	3
7-8	%	2	2
9 or more	%	0	0

- (a) These numbers should not be interpreted to mean that there was a decrease in the number of total households in the region from 1983 to 1985. They simply reflected different estimates of 1980 total households in the BPA service area, both based on the 1980 Census. The 1983 figure was developed by RMH Research, Inc. (1984a, p. vi - vii) while the 1985 figure was developed by Columbia Research Center (see discussion in Chapter 1 of this report). It was necessary to use the 1980 Census data because county by county household data was required to develop the weights for each of the four geographic divisions. Since most of the substantive discussions in this report are in terms of proportions of the total households or home owners, the findings should not be affected by the absolute values of the estimates.
- (b) A tilde (~) indicates that the value is significantly lower than the other values at a 5% significance level.
- (c) A asterisk (*) indicates that the value is significantly higher than the other values at a 5% significance level.

Tables B.4 and B.5 provide data on the proportions of respondents who were very concerned about various issues by age, sex, income and education of the respondents.

Tables B.6 and B.7 summarize the results on the psychographic profiles of the respondents with respect to 15 statements concerning energy use and conservation by age, sex, income and education of the respondents. The 15 statements have been grouped into four categories: social responsibility, self-interest/materialism/lifestyle, limits to energy conservation, and cynicism/negative views on energy conservation. The following interpretations of the results are grouped into these four categories.

Social Responsibility

The proportions of respondents agreeing with two social responsibility statements were affected by sex or education, but not by age and income. Males and the more educated respondents were less likely to agree that "it is our

TABLE B.2. Understanding the Term "Energy Conservation" by Age and by Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35-54	Over 55	Male	Female
Base: Total Households (1000)	3022	1022	1156	801	1143	1880
Conserve/Save Energy	<u>85%</u>	<u>85%</u>	<u>87%</u>	<u>84%</u>	<u>82%</u>	<u>87%</u>
use energy intelligently/efficiently	40	41	41	38	40	40
use less electricity	26	27	25	26	23	27
conserve natural resources	13	10	14	14	13	12
use only as much as needed	6	6	6	5	5	6
use less oil	0	1	0	0	1	0
protect/save water	0	0	1	0	0	1
Specific Conservation Actions	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>
Insulate/weatherize house	1	0	1	1	0	1
Get a small car	0	0	0	0	0	0
Recycle	0	0	0	0	0	0
Use/Develop Alternative Energy Sources	<u>3%</u>	<u>3%</u>	<u>2%</u>	<u>3%</u>	<u>2%</u>	<u>3%</u>
develop alternatives	1	1	1	0	0	2
use/develop solar	1	1	0	1	0	0
use wood as fuel	1	1	1	1	2	1
Save Money	<u>0%</u>	<u>1%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>
save money	0	1	0	0	0	0
tax credits	0	0	0	0	0	0
Don't Know/Mean Nothing/Refused	<u>11%</u>	<u>11%</u>	<u>10%</u>	<u>11%</u>	<u>14%</u>	<u>9%</u>

responsibility to conserve electricity for future generations." Males were less likely than females to agree that conserving energy is the best way to protect the environment.

Self-Interest/Materialism/Lifestyle

The more educated were less likely to agree with the statements that "most people who conserve do so to save money" and that "I would only make

TABLE B.3. Understanding of the Term "Energy Conservation" by Income and by Education, 1985

Item	All Respondents	Income			Education	
		Under \$16K	\$16K-\$30K	Over \$30K	High School or Less	Some College or More
Base: Total Households (1000)	3022	753	1088	971	1359	1654
Conserve/Save Energy	<u>85%</u>	<u>86%</u>	<u>85%</u>	<u>86%</u>	<u>83%</u>	<u>87%</u>
use energy intelligently/efficiently	40	32	39	47*	36~	44
use less electricity	26	31*	27	19~	29*	23
conserve natural resources	13	10	13	14	13	12
use only as much as needed	6	7	5	5	6	6
use less oil	0	0	0	0	0	1
protect/save water	0	1	0	1	1	0
Specific Conservation Actions	<u>1%</u>	<u>0%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>	<u>1%</u>
Insulate/weatherize house	1	0	0	0	1	1
Get a small car	0	0	0	0	0	0
Recycle	0	0	0	0	0	0
Use/Develop Alternative Energy Sources	<u>3%</u>	<u>2%</u>	<u>4%</u>	<u>3%</u>	<u>3%</u>	<u>3%</u>
develop alternatives	1	2	1	1	0	2
use/develop solar	1	0	0	2	1	1
use wood as fuel	1	0	3	0	2	0
Save Money	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>0%</u>	<u>1%</u>	<u>0%</u>
save money	0	0	0	0	1	0
tax credits	0	0	0	0	0	0
Don't Know/Means Nothing/Refused	<u>11%</u>	<u>11%</u>	<u>10%</u>	<u>11%</u>	<u>12%</u>	<u>9%</u>

TABLE B.4. Concern About Issues by Age and by Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35- 54	Over 55	Male	Female
Base: Total Households (1000)	3022	1022	1156	801	1143	1880
% Very Concerned						
Crime	67	63	65	75*	57*	73*
Inflation	53	47	51	63*	46	57*
Cost of energy	51	47	55	50	43	56*
Environment	50	59#	50#	40#	48	51
Unemployment	48	43	46	55*	37	54*
Wildlife preservation	44	49*	44	38	44	43
Cost of groceries	43	44	42	45	33	50*
Energy use in the home	35	39	33	32	32	36
Energy conservation	33	31	32	36	30	34

TABLE B.5. Concern About Issues by Income and by Education, 1985

Item	All Respondents	Income			Education	
		Under \$16K	\$16K \$30K	Over \$30K	High School or Less	Some College or More
Base: Total Households (1000)	3022	753	1088	971	1359	1654
% Very Concerned						
Crime	67	72*	66	62	72*	63
Inflation	53	59*	54	48	60*	47
Cost of energy	51	59*	51	47	58*	46
Environment	50	51	50	51	46~	54
Unemployment	48	58*	49*	38*	54*	42
Wildlife preservation	44	48	44	41	44	44
Cost of groceries	43	60#	46#	30#	51*	37
Energy use in the home	35	41	39	28~	39	32
Energy conservation	33	36	32	31	33	33

TABLE B.6. Psychographic Profile by Age and Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35- 54	Over 55	Male	Female
Base: Total Households (1000)	3022	1022	1156	801	1143	1880
	% Strongly Agree or Agree					
<u>Social Responsibility</u>						
It's our responsibility to conserve elec- tricity for future generations	85	86	87	85	81~	88
Conserving energy is the best way to protect the environment	73	74	74	72	68~	77
<u>Self Interest/Materialism/Lifestyle</u>						
Most people who conserve electricity do so to save money	92	94	91	92	92	92
I would only make conservation investments which would enhance the value of my home	25	25	23	26	25	24
I would invest in energy conservation be- cause it increases the comfort of my home	90	89	94*	87	89	91
Conserving energy is the best way to main- tain my lifestyle	62	64	57~	69	57~	66
<u>Limits to Energy Conservation</u>						
I only use electricity when it's really needed; there is no way I can cut down	47	39#	46#	58#	44	48
I have already done everything I can to conserve energy	37	26	32	60*	30~	42
<u>Cynicism/Negative Views on Energy Conservation</u>						
The amount of energy I use is really my own affair and no one else's	46	46	44	48	47	45
It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use	31	29	33	33	38*	17
My conservation efforts won't have much effect one way or the other on the availability of electricity	21	15~	23	28	27*	18
Utilities should stop offering a variety of programs to encourage energy conservation	12	9	10	20*	10	14
I will invest in the efficiency of my home only if there are rebates to me from the utility	12	15	10	13	12	12
Electricity prices in the Northwest are not high enough to necessitate conservation activities	8	9	7	8	11*	6
With the current power surplus in the Northwest, there is no need to conserve electricity	4	1#	4#	9#	4	5

TABLE B.7. Psychographic Profile by Income and Education, 1985

Item	Total Respondents	Income			Education	
		Under \$16K	\$16K \$30K	Over \$30K	High School or Less	Some College or More
Base: Total Households (1000)	3022	753	1088	971	1359	1654
% Strongly Agree or Agree						
<u>Social Responsibility</u>						
It's our responsibility to conserve elec- tricity for future generations	85	86	86	86	89*	82
Conserving energy is the best way to protect the environment	73	76	77	68~	78*	70
<u>Self Interest/Materialism/Lifestyle</u>						
Most people who conserve electricity do so to save money	92	93	92	91	94*	91
I would only make conservation investments which would enhance the value of my home	25	28	25	22	29*	21
I would invest in energy conservation be- cause it increases the comfort of my home	90	87~	91	92	91	89
Conserving energy is the best way to main- tain my lifestyle	62	68	68	55~	66*	60
<u>Limits to Energy Conservation</u>						
I only use electricity when it's really needed; there is no way I can cut down	47	60*	42	40	53*	41
I have already done everything I can to conserve energy	37	53#	34#	27#	45*	31
<u>Cynicism/Negative Views on Energy Conservation</u>						
The amount of energy I use is really my own affair and no one else's	46	53*	44	39	53*	40
It's silly to conserve electricity, because the electric utility just turns around and charges more for what you do use	31	39*	31	24	38*	25
My conservation efforts won't have much effect one way or the other on the availability of electricity	21	26*	18	21	26*	17
Utilities should stop offering a variety of programs to encourage energy conservation	12	18*	10	9	17*	8
I will invest in the efficiency of my home only if there are rebates to me from the utility	12	18*	11	9	16*	9
Electricity prices in the Northwest are not high enough to necessitate conservation activities	8	10	7	7	10*	6
With the current power surplus in the Northwest, there is no need to conserve electricity	4	7*	1~	4	5	3

conservation investments which would enhance the value of my home." Age, sex, and income were not important in affecting people's belief in the latter aspects.

Those who are in the age bracket 35 to 54 are more likely than either younger or older respondents to agree with the statement that "I would invest in energy conservation because it increases the comfort of my home." Lower income respondents are less likely than higher income respondents to agree with this statement.

Agreement with the statement that "conserving energy is the best way to maintain my lifestyle" was affected by age, sex, income and education of respondents. Older respondents were more likely than those in the middle age group to agree with the statement. Female respondents were also more likely to be in agreement with the statement. Lower income, and more educated respondents were less likely to agree with it.

Limits to Energy Conservation

Agreement with statements concerning limits to conservation were affected by age, sex, income and education. Generally, the older, lower income, and the less educated respondents were more likely to agree with both statements in this category. Female respondents were also more likely than males to agree with the statement that "I have done everything to conserve energy."

Cynicism/Negative Views on Energy Conservation

The lower income and the less educated respondents were more likely to agree that "the amount of energy I use is really my own affair and no one else's." Female respondents, higher income respondents, and those with at least some college education were less likely than their respective counterparts to be in agreement with the statement that "it's silly to conserve electricity because the electric utility just turns around and charges more for what you do use."

Younger respondents, female respondents, higher income households and those with at least some college education were not as likely as the older respondents, male, lower income households and those with at most high school education to be in agreement with the statement that "my conservation efforts

won't have much effect one way or the other on the availability of electricity." Similarly, older respondents, lower income people, and those with at most high school education were more likely than their respective counterparts to agree that utilities should stop offering a variety of programs to encourage energy conservation.

Lower income respondents and those with at most high school education were more likely to agree with the statement that "I will invest in the efficiency of my home only if there are rebates to me from the utility." Female respondents and those with at least some college education were less likely to agree with the statement that electricity prices in the Northwest are not high enough to necessitate conservation activities. Finally, older and lower income respondents were more inclined than the younger or the middle income respondents to agree that, with the current power surplus in the Northwest, there is no need to conserve electricity.

B.3 SUPPORTING DATA FOR CHAPTER 4.0.

Tables B.8 and B.9 present the 1985 data on the proportions of respondents' perception of the energy institutions' concern for the consumer by age, sex, income and education of the respondents. It appears that consumer perceptions of the energy institutions' concerns for the consumer were not affected by sex and education but were impacted by age. The younger (under 34) respondents were more likely than the older respondents (35 or older) to feel that BPA, Northwest Power Planning Council, and energy extension service were very concerned or concerned about the consumers' economic welfare. Middle income respondents were more likely than higher income respondent to regard the energy extension service as concerned about the consumer.

Tables B.10 and B.11 provide the 1985 data on the proportions of respondents who regarded the specific energy institutions as most responsible or responsible for setting electricity prices by age, sex, income and education. Sex, income and education did not appear to influence the views on which organizations responsible for setting prices. Compared to the respondents under 54 years old, the older (over 55) respondents were significantly less likely to

TABLE B.8. Energy Institution's Concern for the Consumer by Age and Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35- 54	Over 55	Male	Female
		% Very Concerned and Concerned ^(a)				
Local electric utility	65	68	61	69	65	66
Public utility commission	60	69	54	54	61	59
State energy office	64	68	63	62	69	61
Bonneville Power Administration	48	65*	36	40	42	52
Energy extension service	80	88*	70~	82	79	80
Northwest Power Planning Council	60	75*	43~	61	55	64
WPPSS	32	41	29	24	36	29

(a) As proportions of those who were familiar with the specific institutions.

view the BPA and WPPSS as responsible for setting electricity prices in the Northwest. In contrast, the under 34 age group was more likely to view the Power Council as responsible.

Tables B.12 and B.13 present the detailed data on the overall impression of energy institutions, other entities and individuals by age, sex, income and education. Age appeared to be an important factor in determining overall impressions of the energy institutions. The younger (under 34) respondents were more likely than their older counterparts to favorably regard the BPA, state energy office, and Northwest Power Planning Council. On the other hand, the older (over 55) respondents were more likely than the middle aged (35 to 54) group to regard the local utility in a favorable light (Table B.12). Middle income consumers were more likely than low income respondents to favorably regard state energy office and energy extension service (Table B.13).

TABLE B.9. Energy Institution's Concern for the Consumer by Income and Education, 1985

Item	All Respondents	Income			Education	
		Under \$16K	\$16K \$30K	Over \$30K	High School or Less	Some College or More
		% Very Concerned and Concerned ^(a)				
Local electric utility	65	67	67	64	64	67
Public utility commission	60	56	65	53	59	59
State energy office	64	61	66	69	63	66
Bonneville Power Administration	48	49	52	40	49	47
Energy extension service	80	80	90*	69~	78	81
Northwest Power Planning Council	60	53	64	58	55	64
WPPSS	32	36	34	26	29	35

(a) As proportions of those who were familiar with the specific institutions.

TABLE B.10. Energy Institution's Responsibility in Setting Electricity Price by Age and Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35-54	Over 55	Male	Female
% Totally Responsible and Responsible ^(a)						
Local electric utility	78	85	76	74	84	75
Bonneville Power Administration	75	82	78	58~	72	76
Public utility commission	72	76	72	66	73	71
WPPSS	69	78*	69	54~	59	76
Northwest Power Planning Council	62	77*	55	53	60	63

(a) As proportions of those who were familiar with the specific institutions.

TABLE B.11. Energy Institution's Responsibility in Setting Electricity Price by Income and Education, 1985

Item	All Respondents	Income			Education	
		Under \$16K	\$16K \$30K	Over \$30K	High School or Less	Some College or More
		% Totally Responsible and Responsible ^(a)				
Local electric utility	78	77	83	77	81	77
Bonneville Power Administration	75	71	70	80	76	73
Public utility commission	72	70	78	67	78	68
WPPSS	69	66	78	61	70	68
Northwest Power Planning Council	62	65	64	60	67	57

(a) As proportions of those who were familiar with the institutions.

Age, sex, income and education all affected the respondents' overall impressions of the entities and individuals not directly dealing with energy matters in some ways. The older respondents were less likely than the younger ones to view retailers, stores, realtors, building contractors, or the radio in the favorable light and were more likely to regard banks and credit unions favorably. Female respondents were more likely to have a favorable overall impression of banks/credit unions but were less likely to see the building contractor in that light (Table B.12).

The lower income respondents were less likely to have a favorable impression of realtors, building contractors, and the radio. Impressions of banks/credit unions, local elected officials, retail stores and newspapers were not dependent on income level. Those with at least some college education were more likely to view building contractors, retail stores in a favorable light. They were also less likely to regard television in this manner (Table B.13).

TABLE B.12. Overall Impression of Institutions and Entities by Age and Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35- 54	Over 55	Male	Female
<hr/>						
% Very Favorable and Favorable ^(a)						
<hr/>						
<u>Energy Institutions</u>						
Local electric utility	74	77	65~	82*	73	74
Public utility commission	60	71	55	53	57	63
Bonneville Power Administration	55	67*	49~	46	53	56
State energy office	67	81*	64	51~	69	65
Energy extension service	82	87	77	83	84	81
Northwest Power Planning Council	65	83*	57~	56	65	66
WPPSS	22	36	13	15	17	25
 <u>Other Entities</u>						
Number of Respondents (1000)	1916	638	755	502	739	1176
<hr/>						
% Very Favorable and Favorable						
Retail stores	80	80	83*	76~	81	79
Banks/credit unions	71	67~	70	77*	67	74*
Local elected officials	62	58	69*	57	62	61
Building contractors	57	59	63	43~	64*	52
Realtors	48	49	51	39~	45	50
Radio	84	89*	83	78~	81	85
Television	71	72	71	72	71	72
Newspaper	64	68	66	59	64	65

(a) As proportions of those who were familiar with the institutions.

Tables B.14 and B.15 present the detailed cross tabulations on the believability of energy institutions and other entities as a source of energy information by age, sex, education and income. Consumer perceptions of energy institutions as believable sources of information about energy conservation were significantly affected by age, sex, and income but generally not by education. Generally, the younger (under 34) respondents were more inclined

TABLE B.13. Overall Impression of Institutions and Entities by Income and Education, 1985

Item	All Respondents	Income		Over \$30K	Education	
		Under \$16K	\$16K- \$30K		High School or Less	Some College or More
% Very Favorable and Favorable ^(a)						
<u>Energy Institutions</u>						
Local electric utility	74	71	73	77	74	73
Public utility commission	60	60	64	55	60	61
Bonneville Power Administration	55	65	50	54	59	52
State energy office	67	57~	78*	62	66	67
Energy extension service	83	74~	92*	80	82	82
Northwest Power Planning Council	65	65	68	64	63	67
WPPSS	21	26	22	18	26	19
<u>Other Entities</u>						
Number of Respondents (1000)	1916	480	678	622	903	1010
% Very Favorable and Favorable						
Retail stores	80	77	82	81	77	83*
Banks/credit unions	71	71	72	70	72	70
Local elected officials	62	57	66	64	62	62
Building contractors	57	46~	61	60	51	62*
Realtors	48	41~	53*	47	45	50
Radio	84	80~	83	88*	82	85
Television	71	67	78*	68	75	68~
Newspaper	64	62	67	65	64	65

(a) As proportions of those who were familiar with the institutions.

than the over 35 groups to view information from the BPA, state energy office, energy extension service, and the Northwest Power Planning Council as credible. Compared to male respondents, female respondents were significantly less likely to view energy conservation information from their local electric utility and state energy office as believable (Table B.14).

TABLE B.14. Believability of Institutions and Entities as Source of Energy Conservation Information by Age and Sex, 1985

Item	All Respondents	Age			Sex	
		Under 34	35- 54	Over 55	Male	Female
% Very Believable and Believable ^(a)						
<u>Energy Institutions</u>						
Local electric utility	74	75	78	68	81*	70
Bonneville Power Administration	60	70*	57	49~	58	61
State Energy Office	75	90*	70	62	84*	69
Energy Extension Service	89	95*	88	82~	88	90
Northwest Power Planning Council	65	83*	54	54	64	66
<u>Other Entities</u>						
Number of Respondents (1000)	1916	638	755	502	739	1176
% Very Believable and Believable						
Radio	78	81	76	75	76	78
Retail stores	70	66	75*	66	69	70
Television	68	70	67	69	66	69
Newspapers	66	69	67	63	65	67
Banks/credit unions	64	59	67	67	65	63
Building contractors	55	56	61	44~	60	51~
Realtors	39	38	41	37	35	41
Local elected officials	40	38	44	38	40	40

(a) As proportion of those who were familiar with the institutions.

TABLE B.15. Believability of Institutions and Entities as Source of Energy Conservation Information by Income and Education, 1985

Item	All Respondents	Income		Over \$30K	Education	
		Under \$16K	\$16K- \$30K		High School or Less	Some College or More
% Very Believable and Believable ^(a)						
<u>Energy Institutions</u>						
Local electric utility	74	66~	75	81*	72	76
Bonneville Power Administration	60	58	59	53	62	58
State energy office	75	65	72	76	73	77
Energy extension service	89	81~	97*	88	89	89
Northwest Power Planning Council	65	62	69	64	65	65
<u>Other Entities</u>						
Number of Respondents (1000)	1916	480	678	622	903	1010
% Very Believable and Believable						
Radio	78	75	79	78	77	78
Retail stores	70	61~	70	75	70	69
Television	68	65	70	66	69	67
Newspaper	66	62	67	69	64	68
Banks/credit unions	64	61	64	66	64	64
Building contractors	55	47~	57	59	52	57
Realtors	39	35	39	43	41	36
Local elected officials	40	39	43	38	38	42

(a) As proportions of those who were familiar with the institutions.

Perceptions concerning the believability of radio, television, banks/credit unions, and local elected officials were seldomly affected by age, sex, income and education. The older (55 and over) and female respondents appeared to be less likely than their younger counterparts to believe the energy conservation information provided by building contractors. The mid-age group (35 to 54 years) appeared more likely to accept energy conservation information from the retail stores than were the younger (under 34) respondents. Relative to male respondents, female respondents were more willing to believe information supplied by realtors and less willing to trust information from building contractors (Table B.14). The lower income respondents were less likely than their higher income counterparts to view retail stores or building contractors as credible energy conservation information sources (Table B.15).

B.4 SUPPORTING DATA FOR CHAPTER 5.0

Tables B.16 and B.17 present the cross tabulations on preferred methods of conserving energy in the home by age, sex, income, and education.

TABLE B.16. Preferred Method of Conserving Energy by Age and Income, 1985

Item	All Respondents	Age			Income		
		Under 34	35- 54	Over 55	Under \$16K	\$16K- \$30K	Over \$30K
Number of Respondents (1000)	3022	1022	1156	801	753	1088	971
		%					
Change way of living	54	60*	49~	53	58*	57	49~
Spend money on improvements	33	30~	37*	31	31	32	36
Both	9	7	11	8	6~	8	12*
Neither	1	0	1	3*	2*	0~	1
Don't know/not sure	3	2	2	5*	3	2	2

TABLE B.17. Preferred Method of Conserving Energy by Own/Rent, Sex, and Education, 1985

Item	All Respondents	Own/Rent		Sex		Education	
		Own	Rent	Male	Female	High School or Less	Some College or More
Number of Respondents (1000)	3022	2150	873	1143	1880	1359	1654
		%					
Change way of life	54	50~	63	50~	56	54	54
Spend money on improvement	33	35*	28	38*	31	34	33
Both	9	10	6	8	10	8	10
Neither	1	2	0	1	1	1	1
Don't know/not sure	3	3	2	3	2	3	2

Age, income, and home ownership affected preferences concerning methods for conserving energy; but education and sex did not (Tables B.16 and B.17). Compared to the younger (under 34) group, those in the 35 to 54 year age group were less willing to change their lifestyles. Similarly, those in higher income groups were less willing to change their lifestyles and more likely to prefer to do both. Homeowners and male respondents were less willing to change lifestyle and more likely to prefer spending money on improvements than were renters and female respondents.

Respondents who chose "changing way of living," "spend money on improvements," or "both" were asked further about the first energy conservation measure they would adopt. The most frequently mentioned measures are shown in Table B.18. About one in four respondents would reduce heating temperature. About one in seven would reduce energy consumption. These two top measures were in the "changing ways of living" category. Another frequently mentioned action in this category was to dress warmer (4%).

TABLE B.18 The First Measure or Action to be Adopted in Conserving Energy at Home, 1985

<u>Measure/Action</u>	<u>% of All Respondents</u>
Changing Way of Living	
Reduce heating temperature	33
Reduce energy consumption	21
Dress warmer	4
Spend on Improvements	
Insulate	16
Install solar	11
Weatherize	8
Install wood stove	4

About one in six would insulate the house; and about one in ten would install solar or other devices. These were the top measures mentioned in the "spend on improvements" category. Others in this category were to weatherize (8%) and to install wood stove (4%).

Tables B.19, B.20, and B.21 present the data on the practice of no/low-cost energy conservation measures by home ownership, age, sex, income, education, and average monthly bill. Home ownership, sex, and education appeared to affect the proportions of respondents who practiced no/low-cost conservation actions regularly. Compared to homeowners, renters were more likely to lower their thermostat settings in the heating season or to put plastic over their windows. They were less likely to select energy efficient appliances when purchasing a new one, to control their lights with dimmer switches or timers, or to receive an energy audit. It also appeared that female respondents were more likely than male respondents to use shades and drapes for heating and cooling, to put plastic over their windows, and were less likely to receive an energy audit. People with more education were more likely to wrap their water heaters, to control their lights with dimmer switches or timers, or to have an energy audit. More educated respondents were less likely to put plastic over their windows (Table B.19).

TABLE B.19. Low Cost Energy Conservation Measures Regularly Used by Own/Rent, Sex, and Education, 1985

Item	All Respondents	Own/Rent		Sex		Education	
		Own	Rent	Male	Female	High School or Less	Some College or More
Number of Respondents (1000)	3022	2150	873	1143	1880	1359	1654
		%					
Use shade for heating and cooling	90	89	91	87	91*	88	91
Lower thermostat setting in the heating season	85	83	90*	84	86	83	87
Wrap water heater	63	65	59	65	62	59	66*
Select energy-efficient appliances when purchasing a new one	59	63	50~	60	58	60	58
Control lights with dimmer switch or timers	44	47	36~	42	45	40	47*
Use water flow restrictors in showers	36	37	35	37	36	33	38
Put plastic over windows	31	27	39*	26	33*	33	29
Receive energy audit	27	32	14~	32*	24	21	31*

Age and income also affected conservation actions in the following ways. Respondents in the younger (under 34) group were more likely than the older groups to lower thermostat settings during the heating season and to use shades and drapes for heating or cooling, but less likely to select energy efficient

TABLE B.20. Low Cost Energy Conservation Measures Regularly Used by Age and Income, 1985

Item	All Respondents	Age			Income		
		Under 34	35-54	Over 55	Under \$16K	\$16K-\$30K	Over \$30K
Number of Respondents (1000)	3022	1022	1156	801	753	1088	971
		%					
Use shade for heating and cooling	90	92*	90	86~	91	89	89
Lower thermostat setting in the heating season	85	88*	84	82~	84	84	87
Wrap water heater	63	64	64	60	54~	67	66
Select energy-efficient appliances when purchasing a new appliance	59	51#	67#	59#	54	62	60
Control lights with dimmer switch or timers	44	41	48	41	35	40	52*
Use water flow restrictors in showers	36	41	39	27~	27~	38	40
Put plastic over windows	31	36	33	21~	40	33	23~
Receive energy audit	27	23~	30*	27	21~	28	31

appliances or to have had an energy audit. Older respondents (over 55) were less likely than the younger groups to put plastic over their windows or to use water flow restrictors. Lower income respondents were less likely to have wrapped their water heaters, used water flow restrictors, or received an energy audit. In contrast, the higher income (over \$30,000) group appeared to be more likely than the lower income groups to have used dimmer switches or timers to control their lights and less likely to put plastic over windows (Table B.20).

Average monthly utility bills had only limited impact on low-cost energy conservation actions; these bills affected conservation behavior in the following manner. First, respondents whose utility bill was in the mid-range group

TABLE B.21. Low Cost Energy Conservation Measures Regularly Used by Monthly Utility Bill, 1985

Item	All Respondents	Monthly Utility Bill		
		Under \$50	\$51-\$75	Over \$76
Number of Respondents (1000)	2607	737	934	937
		%		
Use shade for heating and cooling	89	85	94*	88
Lower thermostat setting in the heating season	85	83	84	88
Wrap water heater	64	62	65	65
Select energy-efficient appliances when purchasing a new one	61	55~	63	64
Control lights with dimmer switch or timers	44	43	40	48
Use water flow restrictors in showers	37	36	37	38
Put plastic over windows	31	36	32	27
Receive energy audit	28	21~	28	33

(\$51 to \$75 per month on average) were more likely to use shades and drapes for heating and cooling. Secondly, those with the lower energy bills (less than \$50 per month on average) were less likely to have received an energy audit and to select energy-efficient appliance when purchasing a new one (Table B.21).

Tables B.22, B.23, and B.24 provide the data on investment-type energy conservation measures installed. Age did not impact the proportions of homes equipped with roof or attic insulation, weatherproofing, storm windows, heat pump furnace, heat pump water heater, and solar panel for water heating. However, younger respondents (under 55) were more likely than the over 54 group to have installed a wood stove. Respondents in the middle age (35-54) group were more likely to have installed fireplace inserts or wall insulation. The older (over 54) respondents were more likely to have installed storm doors or clock thermostat controls. In terms of income, the highest income group households

TABLE B.22. Proportions of Homes Currently Equipped with Specific Energy Conservation Measure by Age and Income, 1985

Item	Home Owners	Age			Income		
		Under 34	35-54	Over 55	Under \$16K	\$16K-\$30K	Over \$30K
Number of Respondents (1000)	2150	526	901	684	451	735	791
		%					
Roof/attic insulation	91	91	91	91	88~	92	94*
Wall insulation	80	72~	85*	80	75~	79	83*
Weatherproofing	80	82	80	80	74~	81	83*
Storm/thermal pane windows	76	79	74	76	72	79	75
Storm or insulated doors	57	47	55	67*	59	56	57
Floor, basement or crawl space insulation	55	54	58	52	46~	54	61*
Clock or setback thermostat	42	35	39	51*	43	41	45
Wood stove/furnace	39	51*	42	26~	32~	45*	40
Fireplace insert	20	20	25*	14~	14	15	28*
Heat pump furnace	9	6	8	12	6	6	12*
Heat pump water heater	2	5	2	2	3	2	3
Solar panels for water heating	2	1	3	1	0	0	4

were more likely than those of lower income groups to have installed wall and ceiling insulation, weatherproofing, basement or crawl space insulation, fireplace inserts, or a heat pump furnace. The lower income households were less likely to have a wood stove (Table B.22).

Male respondents were more likely to indicate that they have weatherproofed their homes. Respondents with at least some college education were

TABLE B.23. Proportions of Owner-Occupied Homes Currently Equipped With Specific Energy Conservation Measure by Sex, Education, and Length of Stay, 1985

Item	Home Owners	Sex		Education		Length of Stay		
		Male	Female	High School or Less	Some College or More	Under 2 Years	3 to 4 Years	5 or More Years
Number of Respondents (1000)	2150	792	1358	1001	1139	420	236	1492
				%				
Roof/attic insulation	91	94	90	91	92	87~	96*	92
Wall insulation	80	81	79	81	79	79	83	80
Weatherproofing	80	83*	79	79	82	81	85	79
Storm/thermal pane windows	76	80	74	73	79	83*	83	73~
Storm or insulated doors	57	60	56	58	57	50~	60	59*
Floor, basement or crawl space insulation	55	58	53	57	53	49	61	56
Clock/setback thermostat	42	38	45	44	42	41	44	43
Wood stove/furnace	39	41	38	39	39	35~	49*	39
Fireplace insert	20	20	20	21	20	17	15	22
Heat pump furnace	9	9	9	8	10	9	9	9
Heat pump water heater	3	1	3	2	2	5	2	2
Solar panels for water heating	2	3	1	0	3	2	1	2

TABLE B.24. Proportions of Homes Currently Equipped with Specific Energy Conservation Measure By Average Monthly Bill, 1985

Item	Home Owners	Average Monthly Bill		
		Under \$50	\$51-\$75	\$76 or Over
Number of Respondents (1000)	1895	417	709	769
		%		
Roof/attic insulation	92	91	90	94
Wall insulation	81	78	83	81
Weatherproofing	81	80	81	83
Storm/thermal pane windows	76	82	75	75
Storm or insulated doors	57	68*	59	50~
Floor, basement or crawl space insulation	57	58	56	57
Clock or setback thermostat	41	39	40	44
Wood stove/furnace	40	46*	39	37~
Fireplace insert	20	14~	19	24*
Heat pump furnace	9	5	10	10
Heat pump water heater	2	1	3	3
Solar panels for water heating	1	2	2	0

more likely than those with at most a high school education to have storm windows in the house. The length of stay at the current address affects the incidence of having specific ECMs in the following manner. Compared to those who stayed at their current address for two years or less, those who had stayed at their current address for 5 or more years are more likely to have installed fireplace inserts or storm doors (Table B.23).

The average monthly utility bill affected the proportions of owner occupied homes with specific ECMs in the following ways. Those homes whose monthly bills were under \$50 were more likely than those whose bills were above \$76 to have installed storm doors, or wood stoves. Those homes with higher monthly bills (over \$76) were more likely than those with low monthly bills to have installed fireplace inserts (Table B.24).

TABLE B.25. Average Amount of Conservation Investment 1983-1985

	<u>Number of Homeowners</u>	<u>Average Amount Invested</u>
All Homeowners Who Had Invested (1000)	300	\$1574
Age		
Under 34	90	1472
35-54	137	1825
Over 55	70	1110
Sex		
Male	120	1390
Female	180	1699
Income		
Under \$16,000	58	893
\$16,000 to 30,000	114	1510
Over \$30,000	118	1877
Education		
Complete High School or Less	138	1330
Some College or More	162	1775
Monthly Utility Bill		
Under \$50	61	1900
\$51 to \$75	104	1325
Over \$75	112	1379

Table B.25 presents the data on average energy conservation investment for the period 1983-85.

Tables B.26 and B.27 present the data on the sources of financing energy conservation investment by age, sex, income, and education.

Tables B.28, B.29, B.30, and B.31 provide data on the likelihood of installing specific ECMs in the next two or three years by age, sex, income, education, current and expected future stay in the current address, and average monthly utility bill.

B.5 SUPPORTING DATA FOR CHAPTER 6.0

Tables B.32 through B.45 present supporting data for the analyses in Chapter 6.0. Except for Tables B.32, B.33, and B.34, all the tables show the

TABLE B.26. Financing Sources for Energy Conservation Investment by Age and Sex, 1985

Item	Homeowners	Age			Sex	
		Under 34	35-54	Over 54	Male	Female
Number of Homeowners (1000)	1752	411	757	554	638	1115
		%				
Current income	63	63	62	64	62	63
Savings	19	14~	18	24*	18	20
Delay/cut back purchases	2	2	1	1	1	2
Bank loans and credit	8	12*	9	5~	10	2
Utility loan	2	2	2	2	3	2
Payments by utility	3	4	4	3	4	3
Paid by others	1	1	1	0	1	0
Federal tax credits	1	1	1	0	0	1
Combined sources	2	2	2	1	1	2
Other	0	1	0	0	0	0

results of the separate tests for 1983 and 1985. There is a corresponding table in the text of Chapter 6.0 showing the results of comparing the 1985 data with 1983 data. The discussion of the information contained in the tables included in this part of Appendix B has been incorporated in Chapter 6.0.

Tables B.32 and B.33 show the composition of the market segments and derivation of prospect groups for 1985 and 1983 respectively. They are the underlying data for Table 6.1

Tables B.34 and B.35 provide comparisons of demographic and other characteristics of prospect groups between 1983 and 1985, and the results of separate tests for 1983 and 1985.

Tables B.36 and B.37 show the results of the test for, respectively, consumers concern about various issues by prospect group, and psychographic profiles by prospect group.

TABLE B.27. Financing Sources for Energy Conservation Investment by Income and Education, 1985

Item	Homeowners	Income			Education	
		Under \$16K	\$16K-\$30K	Over \$30K	High School or Less	Some College or More
Number of Homeowners (1000)	1752	363	591	668	816	930
		%				
Current income	63	66	57	66	67*	59
Savings	19	18	23	16	17	21
Delay/cut back purchases	2	3	1	1	2	1
Bank loans and credit	8	4~	10	10*	5~	11
Utility loan	2	1	3	2	2	3
Payments by utility	3	4	2	4	4	3
Paid by others	1	1	1	0	1	1
Federal tax credits	1	1	0	0	1	0
Combined services	2	2	1	1	2	2
Other	0	0	0	0	0	0

Tables B.38, B.39, and B.40 show the results of the test on consumers' perceptions of institutions by prospect group. Table B.38 covers the overall impression of energy institutions. Table B.39 covers the believability of energy institutions as sources of energy conservation information. Similarly, Table B.40 covers the believability of other entities and individuals as sources of energy conservation information.

Tables B.41 through B.45 present the results for separate tests for 1983 and 1985 on data relating energy conservation practices, investment, and financing. Table B.41 covers the results on the preferred method for conserving energy at the home. Table B.42 covers no/low cost energy conservation actions. Table B.43 covers investment-type ECMs. Table B.44 covers sources of financing. Table B.45 covers likely future installation of ECMs.

TABLE B.28. Likelihood of Installing Specific Energy Conservation Measures During the Next Two to Three Years by Age and Sex, 1985

Item	Homeowners	Age			Sex	
		Under 34	35-54	Over 55	Male	Female
Number of Respondents (1000)	2150	526	901	684	792	1358
	% Very Likely or Somewhat Likely					
Weatherproofing	41	64#	41#	22#	41	41
Roof/attic insulation	21	26	25	10~	23	19
Floor, basement/crawlspace insulation	16	25	18	6~	16	16
Storm or insulated doors	15	26#	17#	4#	11~	17
Wall insulation	11	21#	10#	5#	10	12
Solar panel for water heating	9	15	10	3~	13	7~
Wood stove/furnace	9	17#	10#	2#	9	10
Fireplace insert	9	10	13	3~	7	10
Storm/thermal pane windows	9	10	12	3~	7	9
Heat pump furnace	7	10	9	3~	9	6
Clock or setback thermostat	7	12	8	3~	10	6~
Heat pump water heater	6	9	7	1~	6	6

TABLE B.29. Likelihood of Installing Specific Energy Conservation Measures
During the Next Two to Three Years by Income and Education, 1985

Item	Homeowners	Income			Education	
		Under	\$16K	Over	High	Some
		\$16K	\$30K	\$30K	School or Less	College or More
Number of Respondents	2150	451	735	791	1001	1139
		% Very Likely or Somewhat Likely				
Weatherproofing	41	31~	49	42	41	41
Roof/attic insulation	21	16	24	21	22	19
Floor, basement/crawlspace insulation	16	13	19	17	17	15
Storm or insulated doors	15	8	22*	13	14	16
Wall insulation	11	11	14	9	13	10
Solar panel for water heating	9	4~	10	12	5	13*
Wood stove/furnace	9	3~	13	9	8	10
Fireplace insert	9	3~	13	10	9	9
Storm/thermal pane windows	9	6	9	11	12	6~
Heat pump furnace	7	5	5	11*	6	8
Clock or setback thermostat	7	4~	9	9	5	9*
Heat pump water heater	6	4	7	6	7	5

TABLE B.30. Likelihood of Installing Specific Energy Conservation Measures During the Next Two to Three Years By Current and Expected Length of Stay, 1985

Item	Homeowners	Current Stay at Address			Expected Stay at Address	
		Under 2 Yrs	2-4 Yrs	Over 5 Yrs	Under 2 Yrs	Over 2 Yrs
Number of Respondents (1000)	2150	420	236	1492	209	1863
	% Very Likely or Somewhat Likely					
Weatherproofing	41	55	48	36~	34	42
Roof/attic insulation	21	24	20	20	15	22
Floor, basement/crawl space insulation	16	23*	14	14~	15	17
Storm or insulated doors	15	25*	17	12~	9	16
Wall insulation	11	15	16	10	10	12
Solar panel for water heating	9	13*	10	8~	4	10
Wood stove/furnace	9	22#	12#	5#	11	9
Fireplace insert	9	13*	4~	8	10	9
Storm/thermal pane windows	9	6	11	9	4	9
Heat pump furnace	7	11*	7	6~	7	7
Clock or setback thermostat	7	13*	7	6~	6	7
Heat pump water heater	6	10	9	4~	5	6

TABLE B.31. Likelihood of Installing Specific Energy Conservation Measures
During the Next Two to Three Years by Monthly Energy Bill, 1985

Item	Homeowners	Monthly Bill		
		Under \$50	\$51- \$75	Over \$76
Number of Respondents (1000)	2150	417	709	769
	% Very Likely or Somewhat Likely			
Weatherproofing	41	32~	44	45
Roof/attic insulation	21	12~	21	24
Floor basement/crawl space insulation	16	11~	15	19*
Storm or insulated doors	15	10~	16	17*
Wall insulation	11	8~	10	14*
Solar panel for water heating	9	11	8	9
Wood stove/furnace	9	6	7	14*
Fireplace insert	9	5	6	13*
Storm/thermal pane windows	9	4~	8	12*
Heat pump furnace	7	2~	7	10*
Clock or setback thermostat	7	5	5	10*
Heat pump water heater	6	7	3~	9

TABLE B.32. Residential Energy Conservation Market Segments and Prospect Groups, 1985

(1000 Households)

<u>Likely Future Investment</u>	<u>Past Energy Conservation Investment</u>			<u>Renters</u>	<u>Sum</u>
	<u>Limited ≤1</u>	<u>Moderate 2-7</u>	<u>Heavy ≥8</u>		
Minimal 0	20	846	184	0	1050
Moderate 1-2	19	750	86	0	855
High ≥3	21	219	4	0	244
Renter	0	0	0	873	873
Sum	61	1815	274	873	3022

First-Tier Prospects = $86 + 4 + 219 = 309$
 Second-Tier Prospects = $184 + 750 + 21 = 955$
 Nonprospects = $20 + 846 + 19 = 885$
 Renters = 873

TABLE B.33. Residential Energy Conservation Market Segments and Prospect Groups, 1983

(1000 Households)

<u>Likely Future Investment</u>	<u>Past Energy Conservation Investment</u>			<u>Renters</u>	<u>Sum</u>
	<u>Limited ≤1</u>	<u>Moderate 2-7</u>	<u>Heavy ≥8</u>		
Minimal 0	127	51	76	0	254
Moderate 1-2	783	687	279	0	1749
High ≥3	242	91	5	0	337
Renter	0	0	0	776	776
Sum	1151	829	360	776	3117

First-Tier Prospects = $279 + 91 + 5 = 375$

Second-Tier Prospects = $76 + 687 + 242 = 1005$

Nonprospects = $127 + 51 + 783 = 961$

Renters = 776

TABLE B.34. Demographics and Other Characteristics of Prospect Groups, 1985 versus 1983

Item	First-Tier Prospects		Second-Tier Prospects		Nonprospects	
	1985	1983	1985	1983	1985	1983
Number of Respondents (1000)	309	377	955	1010	886	966
	%					
Sex						
Male	40	45	40~	47	32~	45
Female	60	55	60*	53	68*	55
Age						
Under 34	43	40	29	29	14~	25
35 - 54	46	43	47	46	35	35
Over 55	9~	17	22	26	51*	41
Education						
High school or less	46*	33	43	42	51	54
Some college or more	54~	67	56	58	49	44
Occupation						
Professional	21	20	20	17	13	10
Manager	14	11	11*	7	8	6
Clerical/Sales	16	18	19	15	11	12
Crafts and Foreman	9	5	6	9	7	7
Other	13	16	15	15	15	18
Income						
Under \$16K	12	15	14	17	32*	25
\$16K - \$30K	39	41	39	43	27~	39
Over \$30K	43	38	41*	32	30	24
Type of Residence						
Single family	89	90	88	90	87	83
2 - 4 unit building	3	5	1~	4	2	4
Building with 4 units or more	2	1	0	0	0	1
Mobile home/other	6	5	11*	5	11	13
Primary Heating Fuel						
Electricity	32	34	31	30	30	30
Wood	34	27	34	34	32	33
Natural gas	22	22	19	20	22	19
Oil	10	13	12	12	14	12
LP gas	1	2	2	2	2	3
Solar	1	1	1	0	0	0
Other	0	2	1	1	0	1

TABLE B.35. Demographics and Fuel Use Characteristics of Prospect Groups,
Separate Tests for 1985 and 1983 Results

Item		Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Number of Respondents (1000)					
1985		3022	309	955	886
1983		3117	377	1010	966
		%			
Proportion of Total Sample					
1985		100	10	32	29
1983		100	12	32	31
Gender					
1985	Male	37	40	40*	32~
	Female	63	60	60~	68*
1983	Male	46	45	47	45
	Female	54	55	53	55
Age					
1985	Under 34	25	43#	29#	14#
	35 - 54	42	46	47	35~
	Over 55	26	9#	22#	41#
1983	Under 34	38	40*	29	25
	35 - 54	36	43	46	35~
	Over 55	26	17#	26#	41#
Education					
1985	High school or less	47	46	43~	51*
	Some college or more	53	54	56*	49~
1983	High school or less	44	33#	42#	54#
	Some college or more	54	67#	58#	44#
Income					
1985	Under \$16K	21	12	14	32*
	\$16K - \$30K	34	39	39	27~
	Over \$30K	37	43	41	30~
1983	Under \$16K	25	15	17	25*
	\$16K - \$30K	40	41	43	39
	Over \$30K	27	38	32	24~

TABLE B.35. (contd)

Item		Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Occupation					
1985	Professional	17	21	20	13~
	Manager	10	14	11	8
	Clerical/Sales	15	16	19*	11
	Crafts and Foreman	7	9	6	7
	Other	14	13	15	15
1983	Professional	16	20	17	10~
	Manager	6	11*	7	6
	Clerical/Sales	14	18*	15	12~
	Crafts and Foreman	8	5	9	7
	Other	16	16	15	18
Type of Residence					
1985	Single family	88	89	88	87
	2-4 unit building	2	3	1	2
	Building with 4 or more units	1	2	0	0
	Mobile home/other	10	6	11	11
1983	Single family	76	90	90	83~
	2-4 unit building	8	5	4	4
	Building with 4 or more units	8	1	0	1
	Mobile home/other	8	5	5	13*
Primary Heating Fuel					
1985	Electricity	31	32	31	30
	Wood	33	34	34	32
	Natural gas	21	22	19	22
	Oil	12	10	12	14
	LP gas	2	1	2	2
	Solar	0	1	1	0
	Other	1	0	1	0
1983	Electricity	37	34	30	30
	Wood	28	27	34	33
	Natural gas	20	22	20	19
	Oil	11	13	12	12
	LP gas	3	2	2	3
	Solar	0	1	0	0
	Other	1	1	1	1

TABLE B.36. Concern About Various Issues By Prospect Group, Separate Tests for 1985 and 1983

Item	Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Number of Respondents (1000)				
1985	3022	309	955	886
1983	3117	377	1010	966
	% Very Concerned			
Energy Conservation				
1985	31	34	33	28
1983	49	57*	48	49~
Unemployment				
1985	46	50	43	44
1983	63	61	63	64
Cost of Energy				
1985	50	51	51	48
1983	73	74	70	75
Inflation				
1985	54	51	52	56
1983	65	74	63	65
Crime				
1985	68	60~	67	72*
1983	74	73	72	75
Energy Use in the Home				
1985	33	44*	30	33
1983	53	53	49	50
Environment				
1985	48	57*	48	44~
1983	53	66*	49	52

TABLE B.37. Psychographical Profiles by Prospect Group, Separate Tests for 1985 and 1983^(a)

Item	Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Number of Respondents (1000)				
1985	3022	309	955	886
1983	3117	377	1010	966
	% Strongly Agree or Agree			
Social Responsibility: It's our responsibility to conserve electricity for future generations.				
1985	84	88	83	84
1983	76	81	79	72~
Conserving energy is the best way to protect the environment.				
1985	71	71	71	72
1983	50	56	53	46~
Self Interest/Materialism/ Lifestyle: Most people who conserve energy do so to save money.				
1985	92	90	92	93
1983	82	81	83	83
I would only make conservation investments which would enhance the value of my home.				
1985	23	25	21	25
1983	23	23	22	24
Conserving energy is the best way to maintaining my lifestyle.				
1985	63	68	62	63
1983	46	46	47	44

TABLE B.37. (contd)

Item	Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Limits to Energy Conservation:				
I only use electricity when it's really needed; there is no way I can cut down.				
1985	47	42	44	51
1983	50	41	48	56*
I have already done everything I can to conserve energy.				
1985	38	23#	34#	48#
1983	39	25#	36#	47#
Cynicism/Negative Views on Energy Conservation:				
The amount of energy I use is really my own affair and no one else's.				
1985	48	46	45	51
1983	33	24~	32	37
It's silly to conserve electric- ity, because the electric utility just turn around and charge more for what you do use.				
1985	31	33	31	31
1983	36	33	35	38
My conservation efforts won't have much effect one way or the other on the availability of electricity.				
1985	22	14	20	27*
1983	29	25	27	32

- (a) The 1983 results assume that those agreeing with a statement would give one of the four highest scores possible: 10, 9, 8, and 7. These are consistent with Case B in the discussion associated with Table 3.5, Section 3.3.

TABLE B.38. Overall Impressions of Energy Institutions by Prospect Group,
Separate Tests^(a) for 1983 and 1985

Item	First-Tier Prospects	Second-Tier Prospects	Nonprospects
	% Very Favorable or Favorable		
Local electric utility			
1985	79	72	73
1983	72	74	73
Bonneville Power Administration			
1985	65	55	55
1983	51	51	48
Northwest Power Planning Council			
1985	70	72	61
1983	40	51*	38~
State energy office			
1985	78	73	63
1983	66	63	50~

(a) For the numbers of respondents used in these tests, see Table 6.4. Note that only those who were familiar with the specific institutions are used in computing the proportions.

TABLE B.39. Believability of Energy Institutions as Sources of Energy Conservation Information by Prospect Group, Separate Tests^(a) for 1983 and 1985

Item	First-Tier Prospects	Second-Tier Prospects	Nonprospects
	% Very Believable or Believable		
Local electric utility			
1985	79	83*	70~
1983	92	92	85~
Bonneville Power Administration			
1985	57	63	58
1983	79	82	69~
State energy office			
1985	86	92*	71~
1983	86	89	74~
Energy extension service			
1985	100	95	84
1983	97	94	85~
Northwest Power Planning Council			
1985	61	65	70
1983	77	80*	68~

(a) For the numbers of respondents used in these tests, see Table 6.5. Note that only those respondents who were familiar with the specific institutions are used in computing the proportions.

TABLE B.40. Believability of Other Entities and Individuals as Sources of Energy Conservation Information By Prospect Group, Separate Tests for 1983 and 1985

<u>Item</u>	<u>Base</u>	<u>First-Tier Prospects</u>	<u>Second-Tier Prospects</u>	<u>Nonprospects</u>
Number of Respondents (1000)				
1985	1354	198	570	586
1983	3117	377	1010	966
	<u>% Very Believable or Believable</u>			
Retail stores				
1985	71	71	69	73
1983	63	66	67*	59~
News media				
1985 ^(a)	69	66	73	67
1983	71	77*	73	68~
Banks and credit unions				
1985	66	61	67	66
1983	72	76*	72	69~
Building contractors				
1985	54	59	58*	48~
1983	73	81	78	66~
Local elected officials				
1985	40	33	42	42
1983	62	67*	63	58~
Realtors				
1985	39	43	38	38
1983	47	54	49	42~

(a) Simple averages of radio, television, and newspapers.

TABLE B.41. Preferred Methods for Conserving Energy By Prospect Groups,
Separate Tests for 1983 and 1985

<u>Item</u>	<u>Base</u>	<u>First-Tier Prospects</u>	<u>Second-Tier Prospects</u>	<u>Nonprospects</u>
Number of Respondents (1000)				
1985	2150	309	955	886
1983	3117	377	1010	966
	<u>% Preferring</u>			
Change way of living				
1985	50	45	44	59*
1983	52	50	49	55
Spend money on improvements				
1985	35	46	38	29~
1983	30	31	30	28
Both				
1985	10	9	15*	6~
1983	16	17	18*	13~

TABLE B.42. No/Low Cost Energy Conservation Actions By Prospect Group,
Separate Tests for 1983 and 1985

Item	Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Number of Respondents (1000)				
1985	2150	309	955	386
1983	3117	377	1010	966
	% Regularly Practicing			
Control lights with dimmer switches				
1985	47	42	50	45
1983	49	57	50	44~
Lower thermostat setting				
1985	83	92#	84#	77#
1983	86	86	83	76~
Select energy efficient appliances				
1985	63	71	66	56~
1983	74	84#	77#	67#
Use shades for heating and cooling				
1985	89	92	89	88
1983	88	91	92	83~
Install water flow restrictors				
1985	37	45	40	29~
1983	38	44	41	33~
Put plastic over windows				
1985	27	36*	24~	27
1983	67	65	67	69
Receive an energy audit				
1985	32	29	37*	28~
1983	30	32	34	25~
Wrap water heater				
1985	65	67	70*	58~
1983	64	72	66	59~

TABLE B.43. Proportions of Home Equipped with Specific Energy Conservation Measures By Prospect Group, Separate Tests for 1983 and 1985

Item	Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Number of Respondents (1000)				
1985	2150	309	955	886
1983	3117	377	1010	966
	% Currently Equipped			
Roof/attic insulation				
1985	91	89	93	91
1983	78	83	83	70~
Wall insulation				
1985	80	75~	83*	79
1983	64	65	71	56~
Weatherproofing				
1985	80	77	84*	77~
1983	71	70	77*	65
Storm/thermal pane windows				
1985	76	69~	80*	74
1983	67	67	71*	64~
Storm doors				
1985	57	46~	57	62*
1983	63	61	67*	58~
Floor, basement or crawl space insulation				
1985	55	55	58	51
1983	54	65	61	43~
Clock or setback thermostat				
1985	42	43	47*	37~
1983	29	37	35	21~
Wood stove/furnace				
1985	39	46	42	33~
1983	65	71	69	56~
Fireplace insert				
1985	20	24	24	15~
Heat pump furnace				
1985	9	15*	8	8
1983	10	13	14	6~

TABLE B.44. Sources of Financing Conservation Investment, Separate Tests for 1983 and 1985^(a)

Item	Base	First-Tier Prospects	Second-Tier Prospects	Nonprospects
Number of Respondents (1000)				
1985	2150	309	955	885
1983	2227	377	1010	966
	%			
Current Income				
1985	51	55	51	50
1983	75	74	77	75
Savings				
1985	15	16	14	17
1983	38	39	41*	35~
Delay or Cut Back Other Purchases				
1985	1	1	1	1
1983	48	69#	50#	36#
Bank Loans and Credits				
1985	7	6	9*	4~
1983	13	18*	13	12~
Utility Loan				
1985	2	2	2	2
1983	8	10	8	7
Payments by Utility				
1985	3	1	3	3
1983	9	11	9	8
Paid by Others				
1985	0	1	1	0
Federal Tax Credits				
1985	0	0	0	1
1983	23	30*	23	19~
Combined Sources				
1985	1	0	2	1
Other				
1985	0	1	0	0

(a) 1983 data include, while 1985 data do not include, multiple mentions.

TABLE B.45. Likely Installation of Energy Conservation Measures by Prospect Group, Separate Tests for 1983 and 1985

<u>Item</u>	<u>Base</u>	<u>First-Tier Prospects</u>	<u>Second-Tier Prospects</u>	<u>Nonprospects</u>
Number of Respondents (1000)				
1985	2150	309	955	885
1983	2367	377	1010	966
	<u>% Very Likely or Likely to Install</u>			
Roof/attic insulation				
1985	3	9#	3#	1#
1983	6	13#	9#	1#
Wall insulation				
1985	5	20#	4#	0#
1983	6	20#	7#	0#
Weatherproofing				
1985	7	20#	9#	1#
1983	10	25#	13#	2#
Storm/thermal pane windows				
1985	9	27#	10#	0#
1983	11	27#	14#	1#
Storm doors				
1985	15	37#	21#	0#
1983	12	31#	15#	1#
Floor, basement or crawl space insulation				
1985	9	26#	12#	0#
1983	9	17#	14#	1#
Clock or setback thermostat				
1985	7	29#	7#	0#
1983	11	28#	15#	1#
Wood stove/furnace				
1985	9	26#	12#	0#
1983	8	19#	11#	1#
Fireplace insert				
1985	9	25#	11#	1#
Heat pump furnace				
1985	7	23#	9#	0#
1983	12	39#	12#	1#

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