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# Socio-Economic Impact of Energy-Related Policy on Hispanic New Mexico Attitudes, Values and Policy Perceptions

Southwest Hispanic Research Institute

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UNIVERSITY OF NEW MEXICO, ALBUQUERQUE, NEW MEXICO 87131

**Final Technical Report  
SOCIO-ECONOMIC IMPACT OF  
ENERGY-RELATED  
POLICY ON HISPANIC NEW MEXICO  
ATTITUDES, VALUES AND POLICY  
PERCEPTIONS**

**Submitted To:  
U.S. Department of Energy  
Washington, D.C. 20585**



**Southwest  
Hispanic  
Research  
Institute**

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## ABSTRACT

### "Socio-Economic Impact of Energy-Related Policy on Hispanic New Mexico Attitudes, Values and Policy Perceptions"

The Southwest Hispanic Research Institute at the University of New Mexico conducted a one-year study of the impact of energy-related policies on a survey sample of 584 Hispanic families in the New Mexico communities of Taos, Albuquerque and Las Cruces. Upon an extensive review of the research literature, the project team developed and tested sixteen hypotheses focusing on nine energy impact issues: Energy Use and Expenditures, Conservation Efforts, Market Basket Effects, Employment and Energy, Recreation and Leisure Activities, Transportation Effects, Attitudes Towards Energy Costs, Attitudes Towards Rate Structure and Evaluation of the Federal Energy Assistance Program.

The data supported most the hypotheses derived from the literature but not all. Specific findings indicated that the Hispanic families in the sample have reduced their level of expenditures for energy expenses, have implemented a variety of conservation measures, have curtailed expenses for food purchases, leisure and recreational activities and for miscellaneous transportation; also, the data show significant dissatisfaction with high energy costs which are perceived to accrue benefits mostly to the energy suppliers; the respondents were in favor of a progressive rate structure that would lessen the price burden on families with low or fixed-incomes. Not supported were hypotheses that predicted negative impacts of energy costs on employment-related activities. Lastly, the federal low-income energy assistance program in New Mexico received weak support.

The study concludes with policy recommendations calling for an energy message program geared to regional and socio-cultural factors, a companion program to solarize homes and farm structures utilizing technologies suitable to the region, incentives to private sector minority entrepreneurs equipping them with solar venture capabilities that will serve local markets and create jobs, an "energy safety net" and an intensive greenhouse program that will protect the market basket resources of the poor, a government policy on transportation and energy that will insure access to essential formal and informal points in the health and welfare system, and lastly, a federal-state-local partnership of financial and technical assistance options at the community level to expand energy assistance and weatherization programs.

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## Preface

In August of 1981, the Southwest Hispanic Research Institute at the University of New Mexico received a one-year grant from the federal Department of Energy (Office of Minority Economic Impact) to study the impact of national energy policies on Hispanic families. The "Statement of Work" directed the Southwest Hispanic Research Institute to analyze the socio-economic impact of energy-related policies on Hispanic New Mexico attitudes, values and policy perceptions. The specific research tasks were to:

Task A - conduct a comprehensive literature search relative to existing research and data on the impact of rising energy prices on minorities;

Task B - Formulate and refine hypotheses (from the literature) relative to the impact of rising energy prices nationally versus the impact on Hispanics in New Mexico;

Task C - Analyze available and relevant survey data to determine patterns of energy consumption in the New Mexico region relative to the impact of rising energy

prices;

Task D - Examine the findings in terms of existing energy policies and specify any relationship to community economic development projects;

Task E - Summarize the findings to enhance the technical capabilities of DOE's Office of Minority Impact.

The project was staffed by Institute personnel at UNM and by field interviewers. Serving as Principal Investigators were Dr. Mari-Luci Jaramillo, Dr. Estevan Flores and Dr. Roberto Salmón. Manuel Avalos served as the Program Data Manager. Frances Rico and Pauline Romero provided secretarial and clerical support. Dr. José Rivera provided editorial assistance and directed the compilation of the Final Report. Chapter and section credits are as follows:

Chapter I - Roberto Salmón for the Literature Review and Estevan Flores for the Study Hypotheses;

Chapter II - Manuel Avalos;

Chapter III - Estevan Flores;

Chapter IV - Estevan Flores and José Rivera;

Annotated  
Bibliography- Roberto Salmón.



The project staff expresses its appreciation of field support provided by Carmen Medina (Taos) and Dr. Cookie Stephan (Las Cruces) for their identification of appropriate interviewers. A debt is also owed to Ray Rapisand of the El Paso Electric Company and Gus Espinosa of the Kit Carson Electric Coop for their assistance in the sampling phase of the research.

All conclusions, findings and recommendations expressed herein are solely those of the project staff and do not necessarily correspond to the views of the federal Department of Energy.

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## CHAPTER I

### REVIEW OF THE LITERATURE AND STUDY HYPOTHESES

#### Introduction to the Literature

This chapter summarizes findings of energy attitudinal research of and energy impacts on low income and minority consumers. An annotated bibliography (see Appendix I) of 41 studies describes the methods and samples for each item. The literature review served to develop hypotheses for the present study of Hispanic New Mexicans. The areas of research in these studies included the perceived impact of rising energy prices on a variety of items and on attitudes and policy perceptions.

The majority of sources for the literature review were surveys of U.S. consumers, primarily during the period of 1973-1981. Few comparisons of findings have been made in the past. It must also be noted that research findings exist without a holistic conceptual framework (see Cunningham and Cook Lopreato, 1977, on this point). No broad theoretical framework or perspective has been developed to cover the range of findings. Here, the literature review compares and contrasts trends from recent research and begins to

develop a preliminary sociological explanation for extant findings.

### The Minority Consumer

A survey that relates directly to Hispanic consumers is Energy Use and Conservation Incentives: A Study of the Southwestern United States by Cunningham and Cook Lopreato (1977). Cunningham and Cook Lopreato's (1977) literature review developed several pertinent themes. Drawing from Murray, et. al., (1974), Cunningham and Cook Lopreato summarize:

1. Overall, U.S. consumers held the federal government and large oil companies responsible for the energy situation and believed the energy problem to be "contrived" as opposed to "real."
2. Past studies found few significant relationships between energy attitudes, conservation behavior, and such demographic variables as education, income and region of residence.
3. Most U.S. consumers reported life style effects stemming from rising prices, but prior to 1977, few experienced dramatic changes (Cunningham and Cook Lopreato, 1977:17).

These themes were also supported by Grier (1977), King (1975), Opinion Research Corporation (1974-76) and Wright (1975).

A study by Bartell (1974) reported differences in attitude and policy perceptions of energy policy by sex and race. Through an area probability sample of 1,069

Los Angeles County adults (oversampling Blacks), Bartell specifically found that a respondent's willingness to assign blame for rising prices was directly related to ethnicity and socioeconomic status. Bartell also argued that energy consumption by minority consumers was best explained in economic terms. For instance, the only significant correlation with conservation incentives by Blacks, Hispanics and women consumers leaned more toward those policies that would require the least personal cost and change in life style. Other researchers (Cunningham and Cook Lopreato, 1977:98) add to Bartell's position by concluding, for example, that:

"Consumers with low to middle education and income experience more effects on budget and life styles. They discuss energy issues, complain about the problem, and make more conservation efforts. At the same time, these people seem to be bitter about the role energy industries are playing and are willing for the government to take a hand in sorting things out."

Perlman and Warren (1975) found more similarities than differences in low-income behavior and attitudes across three metropolitan areas in Connecticut, Alabama, and Oregon. Low-income consumers in this study were more skeptical about the reality of rising energy prices, placing greatest blame for energy problems on the federal government (Perlman and Warren, 1975:Chapter 7).

Low-income Black consumers also cited price/cost as the major reason for adopting conservation measures.

Hull (1979) expands on the price/cost issue by stating that price controls have not been designated to favor low-income Blacks. While he acknowledges that Blacks paid lower controlled prices, they shared in the burden of disproportionate unemployment resulting from firms closing down or from cutbacks in business operations (Hull, 1979:246).

Walker and Draper (1975) found that from 1972-74, upper-income households in Austin, Texas, increased consumption and appeared likely to continue consuming regardless of price. Middle-income family households (the majority being Hispanic) which increased consumption were offset by those which decreased consumption resulting in little net change. These findings and conclusions were similar to those of Paul Allen Beck (1980).

Beck's study of 779 Pittsburg families found that "those more likely to conserve, derived a satisfaction from energy conservation (Beck, 1980:462-63)." This finding was statistically related to education, but the level of education did not account for the impact on energy-related attitudes.<sup>1</sup> In the Southwest, especially among Hispanics, this particular finding is supported by Cunningham and Lopreato (1977:40).

Perlman and Warren (1975) found that low-income Blacks are more likely to suffer during a period of rising energy prices. On the benefit side of the same cost scenario, Dolores Dalomba (1980) found a potential for Black employment opportunities assuming a federal policy of conservation and renewable energy development. Her findings, of course, would now need to be reassessed in light of current federal energy-related cutbacks and shifting policy priorities.<sup>2</sup> Just one year after the Dalomba report, for example, the U.S. Commission of Civil Rights, (1981) found that Hispanics, Blacks, and Indians were not obtaining a significant share of energy-related jobs in New Mexico. In fact, the minority community of New Mexico was concentrated in the lower paying occupations. The New Mexico Advisory Committee of the U.S. Commission of Civil Rights believes increased federal action is necessary for Hispanics and Native Americans to penetrate the spectrum of energy jobs.

These findings indicate that a variety of factors enter into energy-related behaviors and impacts. Thus, to adequately understand the impact of rising energy prices on Hispanic New Mexicans, demographic data on Hispanics must be recognized. For example, Hispanic families tend to be larger than white families. Second,



the Hispanic population is the fastest growing minority in the U.S. The Hispanic population is presently estimated at 14.6 million by the Bureau of the Census. Between 1970-79, the Census Bureau noted a percentage increase in the Hispanic population of 24.4 percent, or a 2.7 percent increase per year. Third, youth constitute the largest proportion of the Hispanic population. These population characteristics are salient in considering the future consumption patterns and energy employment needs of Hispanic Americans.

Two other variables important to Hispanics are education and social setting. In general, studies have found that educational levels appear to be related to energy information and belief in an energy problem (Beck, 1980; Curtin, 1975 and Pruden and Longman, 1972). Beck (1980) found that those consumers most likely to conserve valued a satisfaction from energy conservation. He interpreted this finding to be related to better-educated households. However, Cunningham and Cook Lopreato (1977) found that the education level of Hispanics did not account for any impact on attitudes. Instead, consumers at upper income and educational levels were more likely to express concern over a longer-term problem than higher prices alone could cure, and low-income consumers "are more concerned

about what present prices are doing to them and their families (Cunningham and Cook Lopreato, 1977:40)." In terms of blame, Hispanic respondents are more willing to attribute responsibility to oil companies and the government for the energy problem, regardless of educational attainment (Cunningham and Cook Lopreato, 1977:49).

### General Attitudes

National attitude and behavior research such as the "National Interim Energy Consumption" study by the Department of Energy are presently being tabulated. Eleven DOE publications to date are longitudinal studies. In one study, DOE stated that since about 1976, the majority of single family households reported changes in energy problems (DOE, 1979). Maintenance of adequate fuel inventories and expenses (since 1978), were reported as extremely difficult. The northeastern parts of the country were most heavily impacted. Evaluations and assessments of fuel oil capability were not articulated, however, until the duration of shortages and pervasiveness of the rising costs of fuel oil reached a crisis threshold. Assignment of responsibility for the crisis did not vary significantly over time. The federal government and oil and gas

companies received the most blame (cf., Bartell, 1974; Angell and Associates, Inc., 1975; Newman and Day, 1975; Bultena, 1976; Caplovitz, 1979).

The Congressional Budget Office (CBO) in 1981 used DOE data to examine the effects of high energy costs on low-income households. In an "Issue and Options" study, they reported that energy impacts upon households varied within low-income groups according to climate, heating patterns, fuel used and automobile driving patterns (cf., Congressional Budget Office, 1981:17). The CBO estimated that the average home energy expenditures for low-income households in fiscal 1981 ranged from \$700 in the West to \$1,290 in the Northeast. Concurrently, funding for low-income energy assistance programs had risen from \$200 million in 1977 to \$1.85 billion in 1981. Yet there was little evidence to suggest that federal remedies actually resulted in substantial benefits to impacted areas, especially regarding weatherization (see CBO, 1981:42).

The CBO reported that the 1979-81 weatherization assistance program was limited in several ways. First, poorer households inhabiting the least energy-efficient housing were unable to benefit from weatherization assistance programs because their homes would require

costly basic repairs that could not be financed under the then current programs. Second, weatherization assistance left many renters unserved since landlords were required to let the benefits of weatherization accrue to tenants and not raise rents as a result of weatherization improvements. These agreements were difficult to secure. Third, approximately 13 percent of households with income below 25 percent of the poverty guidelines resided in multi-unit structures containing five or more dwellings. Since ineligible and eligible households often occupied units in the same apartment building, the targeting of low-income weatherization efforts was more difficult than the targeting of other low-income assistance programs. Therefore, while renters accounted for approximately half of all eligible households, they made up only 10 percent of those households receiving weatherization assistance. It remains an empirical question whether the Block Grant funds will be more efficient and cost-effective in energy assistance programs (see CBO, 1981:42).

The CBO reported that the history of federal low-income energy assistance programs reflected a diversity of goals. While the Congress appropriated money for low-income energy assistance programs every year since 1977, the individual programs differed greatly.

In New Mexico, the Community Services Administration and its local grantees performed the variety of services aimed at lessening the burden of rising energy prices on low-income households (see CBO, 1981:45).

The general survey literature was found to be diverse in terms of samples, regions, methods and findings. Each source contributes in piecemeal fashion to an understanding of low-income consumer attitudes. Despite contradictory findings on specific variables, however, a profile of the low-income consumer in the 1973-81 period emerged. In general, most low-income households are aware of the seriousness of the energy problem, but are not in an economic position to make significant adjustments. Although low-income groups have cut-back on energy use, the increase in price represents a much larger energy expenditure of their disposable income.

"In fiscal year 1981, households with incomes below \$7,400 are estimated to spend over 15 percent of their income on home energy and over 8 percent on gasoline compared to less than 4 percent spent on home energy and less than 5 percent spent on gasoline by other households" (Congressional Budget Office, 1981:IX).

The impact of price increases varies by region, with the Southwest being relatively less severely impacted. As reported earlier, Blacks and Hispanic Americans tend

to blame oil and gas companies and the federal government for allowing, if not causing, prices to rise (Cunningham and Cook Lopreato, 1977:96). Compared to middle-income consumers, the surveys noted that the low-income population evidences fewer internal differences on energy attitudes and behavior. Low-income consumers as a whole appeared skeptical about energy-related price increases.

With regard to price response, Cunningham and Cook Lopreato (1977) found that low-income consumers, hit hard by price increases, were indeed conserving. At the same time, these consumers were hostile about the energy situation and would become increasingly so as prices continued to rise.

Data gathered on policy perceptions by Curtin (1975), and Blakely (1976) differed in part from the studies cited above. In these surveys, U.S. companies rather than the government were blamed for the rising price of energy. Those beliefs however, were not correlated with socio-economic variables or demographic characteristics. Conserving energy was generally viewed as positive by these respondent's, but no major conservation efforts were reported, even though more than 33 percent of those surveyed said that increasing energy prices greatly reduced their incomes. Decreased consumption

patterns were found to be directly related to price and income.

Bultena (1976) found that rising costs forced low-income consumers to respond to the energy crisis in much the same way as responses recorded for middle-income households, i.e., both groups effected changes in automobile driving patterns, alternative home heating, and decreased consumption of energy. Efforts made were limited to those things easiest to do, such as shorter trips and carpooling as reported by Grier (1977) in a separate study.

Still, energy expenditures for low-income consumers are increasingly regressive, indicating that price increases will severely impact low-income households. Michael Miloff (1980) argued that rising energy prices will lead to major structural changes in the U.S. economy and thereby alter employment opportunities, wages and household costs. The impact of these changes will hurt low-income households.

The literature presents the case that the major motivating mechanism behind consumer behavioral response appears to be price. But reliance on price to control demand raises questions concerning equity, social responsibility and justice. Individuals with higher incomes consume more energy and can better afford

to keep doing so even at higher costs. At the same time, these higher income consumers are better able, if necessary, to reduce consumption without significant effects on their life styles.

Blackwell (1980) found that the public, regardless of educational background, had a disjointed view of the energy pricing process and the socioeconomic situation confronting them. Cunningham and Cook Lopreato (1977) reported that when their attitudinal questions were factor analyzed, all consumers believed that an energy problem existed in terms of resource depletion, price and consumer responsibility.

Most low-income consumers reported efforts to cut energy use but the reason given for conservation was almost always rising costs (Bultena 1976; Caplovitz 1979; CBO, 1981; Newman and Day, 1975, and the U.S. Office of Civil Rights, 1980).

As prices rose, low-income groups developed conservation efforts out of sheer necessity. Cunningham and Lopreato (1977) found that the high energy conservers in the Southwest were over-represented by women, Blacks, and Hispanics. Moreover, low-income households were heavily represented in the more conserving group of five Southwestern cities surveyed. In addition, nearly 85 percent of the lower-income respondents compared to 51



percent of higher-income respondents were classified as more conserving. In most cases, those individuals who were classified as more energy-conserving were low-income, less educated, and more likely to be Hispanic, Black or Indian than less energy-conserving subjects (see Cunningham and Cook Lopreato, 1977:98-99).

### The Media

News and propaganda on energy issues proliferated during the last decade. Television, through special broadcasts, public relations commercials of energy companies, as well as a number of public service broadcasts directly attempted to educate or influence the public. There is evidence, however, that although educational materials and the media play a general role in forming energy attitudes and opinions, they have little impact on the reactions of low-income consumers (Cunningham and Cook Lopreato, 1977:Chapter II).

Cunningham and Cook Lopreato suggest that mass media messages fail to convey to minorities the possibilities of playing active roles in the resolution of societal problems such as the energy crisis. Therefore, policy makers, when using the media, should gear their messages to reach Blacks, Hispanics and women and the elderly since the first three groups were found

to be more energy-conserving when compared with other groups (Cunningham and Cook Lopreato, 1977:70).

Energy information reaches and influences in divergent ways. The literature suggests that the environment or social setting in which individuals interact may be an important factor. Blackwell (1980) for example, demonstrated that there were various social dimensions to energy resource planning.<sup>3</sup> Significant differences in energy awareness across populations were reported. The majority of respondents did not appear to understand the relationship between technology, economics, and social influence. Yet all women, Hispanics and single respondents believed "control of the economic system was more important for human well-being (Blackwell, 1978:29)." In contrast to Anglos, Hispanic respondents placed a higher value on the need for technical assistance to consumers. In general, then, energy-related issues should be targeted to various consumer groups in ways which are sensitive to the specific socio-economic condition of the particular group.

### Study Hypotheses

The following hypotheses were developed either

from past research findings or from the known social characteristics of Hispanics in the geographic areas under study. In the latter case, the hypotheses were developed solely from knowledge about the geographic areas since no previous research on these particular areas was extant.

1. ENERGY USE AND EXPENDITURES: (H1) Hispanics in New Mexico have made significant efforts to use less energy per household.

Focus here is on winter temperature settings, monthly gasoline expenses and total energy costs.

2. CONSERVATION EFFORTS: (H2) Hispanics in New Mexico are making efforts to conserve energy.

Minority and low-income groups conserve more out of necessity than other groups. New Mexican Hispanics are expected to bear out previous research findings. The areas covered include items related to home improvements and air-conditioner use.

3. MARKET BASKET EFFECTS: (H3) Hispanics in New Mexico will perceive that the rising cost of energy has a severe effect on their food purchasing.

- (H4) Hispanics in New Mexico will have changed their eating habits and perceive a relationship between rising energy costs and eating habits.

A series of questions explore food purchasing behavior eating habits, eating out and the relationship between food purchasing and the cost of energy.

4. EMPLOYMENT AND ENERGY:
- (H5) Hispanics in New Mexico will perceive severe effects on work-related activities due to rising energy costs.
- (H6) Hispanics will feel that the rising costs of energy have effected their regularity at work and their job-search activity.
5. RECREATION AND LEISURE ACTIVITIES:
- (H7) Hispanics leisure time activities will have been affected negatively by rising energy costs.

Estimations of leisure hours per week lost due to rising energy costs as well as types of leisure activities restricted are the relevant questions here.

6. TRANSPORTATION EFFECTS:
- (H8) Hispanics in New Mexico will perceive negative effects from the increasing cost of gasoline. These effects will be manifested in reduced driving.

(H9) Hispanics in New Mexico will perceive negative effects from the increasing cost of gasoline including limitations in reaching specified destinations.

(H10) Hispanics in New Mexico will view negatively the increasing cost of gasoline.

The increasing price of gasoline may preclude respondents from going to the doctor, shopping, looking for a job, getting to work or visiting relatives and friends. Dissatisfaction with gasoline prices may result.

7. ATTITUDES -  
ENERGY COSTS: (H11) Hispanics in New Mexico will view negatively the rising cost of various types of energy.

Respondents will exhibit dissatisfaction with the costs of home-heating fuel, water, electricity and wood.

8. ATTITUDES -  
RATE STRUCTURE: (H12) Hispanics in New Mexico will favor allowing low or fixed income families lower rates for electricity than other consumers.

Since the majority of the sample will be low-income family households, attitudes may reflect Hispanics own socio-economic positions and payment abilities.

(H13) Hispanics in New Mexico will view the energy companies and the government as benefiting most from the rising cost of energy.

(H14) Hispanics in New Mexico will favor penalizing households for excessive energy use while similarly arguing that businesses which use great amounts of energy should not be given discounts.

These attitudes can be viewed as corollaries of H12. Businesses which benefit from rising energy costs will not be favored to receive discounts on their gains.

(H15) Hispanics in New Mexico will favor a rate structure with higher prices imposed the more KWH are used.

Hispanics will favor a rate structure where those who use more energy pay for that consumption. because minority and low-income groups conserve more and use less energy than other groups (out of necessity).

9. FEDERAL ENERGY ASSISTANCE

PROGRAM: (H16) Hispanics in New Mexico will favorably evaluate the federal energy assistance program.

Because of the targeting of federal energy assistance programs on the low-income, the Hispanic respondents will evaluate the program favorably.

## NOTES

1. There is a scarcity of data on the relationship between income, energy attitudes, and minority policy perceptions. Anderson (1979:234) argues that Black Americans will continue to experience a mixed pattern of economic gains in an environment of rising energy prices. His arguments rest on the assumption of an expanding energy job market and improved basic skill enrichment training for minorities. The current political climate would contradict this assumption and hence his prediction for a mixed pattern of gains would seem unlikely.
2. Hull (1979:246) argues that fewer price controls and a free market solution to the nation's energy problems will result in efficient utilization of the nation's energy productive capacity.
3. Blackwell classified resource planning models using factor, dimension, and domain models. Her research sources were individual, state and local New Mexican leaders involved in energy planning, energy-related literature, 472 randomly selected respondents, and a panel of selected community people.

## CHAPTER II

### THE RESEARCH DESIGN IN NEW MEXICO

This chapter describes the data gathering process for the research project in New Mexico. Included is a description of the research sites, sampling procedures, questionnaire development, interviewing and data gathering.

#### The Research Sites

New Mexico presented an ideal location for the study of social and economic impacts of public policy on Hispanics. In 1980, New Mexico had a total population of 1,303,445 with 36.4 percent or 475,007 Hispanics (combining the categories Mexican and Other Spanish--see Table 1, page 22).

The state has a very large old Mexican/Hispanic population, especially in the northern mountainous part of the state. The New Mexico map, page 23, indicates the research sites where the study was conducted: Taos, Albuquerque and Las Cruces. (The shaded areas encompass the respective counties.)

The Taos area is part of the old (17th century) Spanish colonial area. Descendants there have a rich cultural heritage. The development of this mountainous



Table 1  
1980 Population Totals by Spanish Origin  
for New Mexico and Research Sites

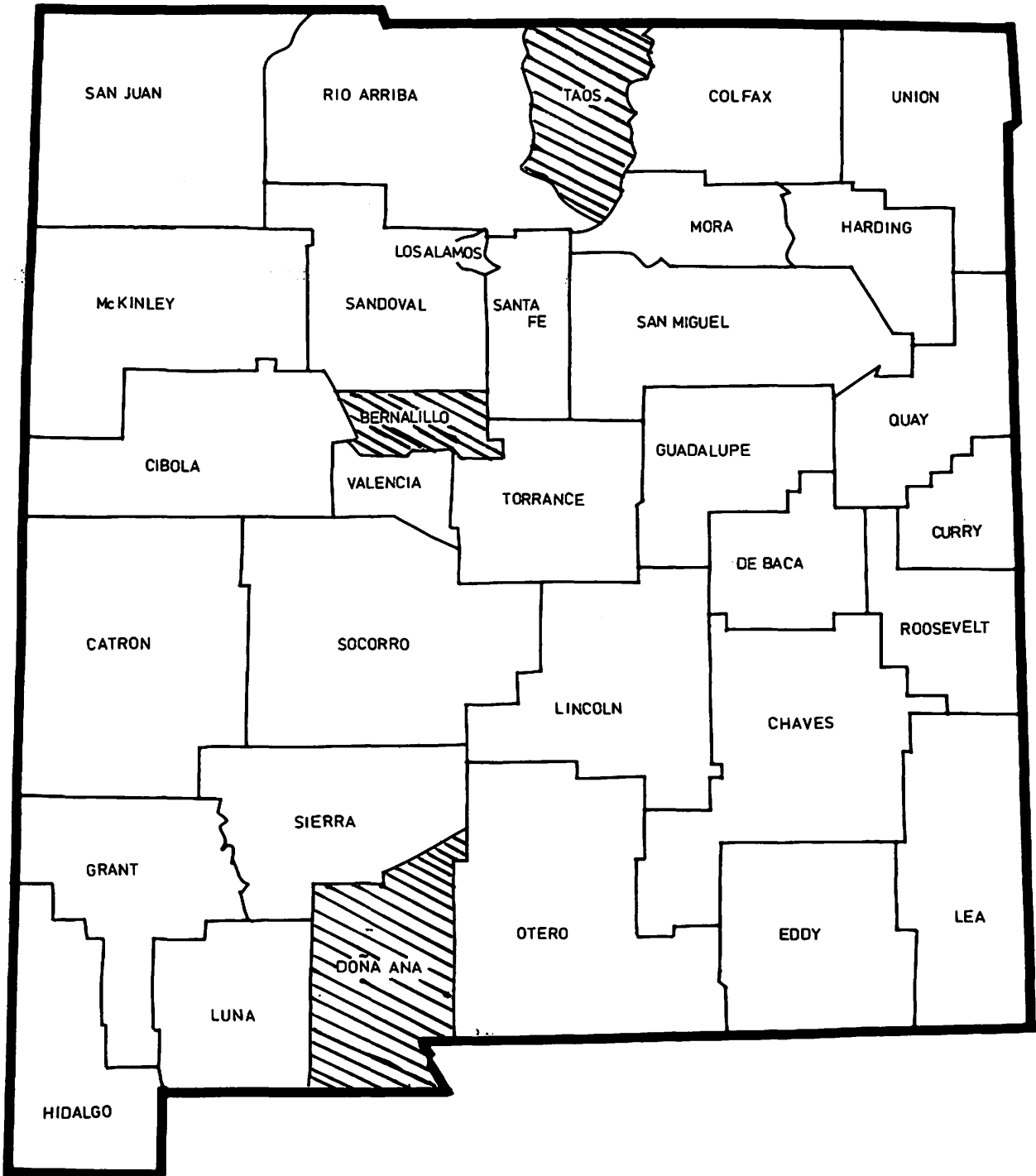
	(1) Total Population	(2) Spanish Origin <sup>a</sup>	(3) Mexican	(4) Other Spanish/ Hispanic <sup>b</sup>	(5) (3) & (4) <sup>c</sup>	(6) % Mexican and Other Spanish of Total pop.
New Mexico	1,303,445 <sup>b</sup>	477,222	233,772	241,235	475,007	36.4
Albuquerque	332,239 <sup>d</sup>	112,084	50,528	60,657	111,185	33.5
Las Cruces	45,086	20,494	16,173	4,198	20,371	45.2
Taos Area <sup>e</sup>						
Taos	3,369	2,271	390	1,876	2,266	67.3
Questa	1,202	978	261	717	978	81.4
Penasco	N/A	N/A	N/A	N/A	N/A	N/A

- a The Spanish Origin totals include Mexicans, Puerto Ricans, Cubans and Other Spanish.
- b As reported by the Census Bureau, persons of "other Spanish/Hispanic" origin are those whose origins are from Spain or the Spanish-speaking countries of Central or South America or they are Spanish origin persons identifying themselves generally as Spanish, Spanish American, Hispano, Latino, etc. In New Mexico however, the "other Spanish/Hispanic" origin category reflects the older Hispanic group which is almost all Mexican origin, but prefers the label "Spanish/Hispanic." Moreover, very few persons from Central or South America (estimated as less than 1% of the total) reside in New Mexico.
- c This column reflects fully the Mexican origin or Chicano population in New Mexico. See notes (a) and (b).
- d These are the corrected totals and not as found in the Tables of PC 80-1-B-33.
- e Interviews were conducted in the cities of Taos, Questa and Penasco and their out-lying areas. The Taos area thus includes the total population for these three areas all of which are in Taos county.

Source: 1980 Census of Population, General Population Characteristics, New Mexico. PC80-1-B33, Table 16, Pp. 11-12.

4) Policy Board

Steve is working on a philosophical statement which will be present



N.B.: In Taos County, surveyed in Questa, Peñasco and Taos;  
in Bernalillo County surveyed in the Albuquerque area;  
in Dona Ana County, surveyed in the Las Cruces area.

area had been preceded over the last century with conflicts centering on the ownership and distribution of land and water. During recent decades, however, the economic development of the Taos area for tourism and skiing has mushroomed.

The Las Cruces area's proximity to Mexico and its primary industry--agricultural production--provides the nexus for a mixed community whose population is more Mexican than Hispanic. Albuquerque, the largest city in the state, is culturally and technologically diverse.

As an urban center, Albuquerque currently draws "silicon-valley" type industry and also many defense-related installations. The city also has an old Hispanic population but is more diverse than the Taos area since it is not geographically isolated and has drawn many more Mexican origin migrants than Taos.

In terms of the ethnic self-identification of the Hispanic population, almost 40% (39.0% or N=226) of total respondents self-identified as Hispanic. The next largest response was divided equally between those who preferred Chicano (15.0%) and those who preferred the label Mexican American (15.0%). The next largest category response was for the self-identifier "Spanish." Twelve point three percent

(12.3%) or 71 respondents self identified as Spanish. The balance of the respondents preferred "Mexicano," "Mexican" or "other" with 9.2% preferring the term "Mexicano."

### The Sample

Initially, 600 families were selected to participate in the survey. But due to the combined problems of turnover on the part of interviewers and the sheer inability to locate some of the families, a total of 584 questionnaires were finally completed. The sample consisted of subsamples from the following three cities and surrounding areas: (1) Taos, (2) Albuquerque and (3) Las Cruces. These three cities represent three distinct geographic areas of the state (north, central, south) as well as urban-rural areas (Taos-rural, Albuquerque-urban).

Taos was selected because it is representative of the rural, mountainous and northern Hispanic population in New Mexico. Albuquerque was chosen because it represents the largest urban area of the state. One of every three New Mexicans lives in Albuquerque and 35% of Albuquerque residents are Hispanic. Las Cruces represents the southern part of the state and is the center of the largest Mexican population in southern New Mexico.

Random sampling techniques were used in all three areas. However, sampling a minority population in a large prodominately rural state such as New Mexico is a difficult task. In fact, as Cardenas and Arce (1981) point out from a 1979-80 survey of Chicanos (Mexican American), this population is "rare" in terms of sampling and interviewer accessibility.

Because of limited funds, a statewide sample of Hispanics proved to be economically unfeasible. Three sample areas which are representative of Hispanics in New Mexico were chosen instead.

Ideally U.S. Census data (i.e., tracts and blocks) would have been used to generate the sample for the three areas. However, 1970 Census data was outdated. Furthermore, Census block data was not available for rural counties in New Mexico.

In addition, the 1980 Census was not available at the time of the survey. The cost of interviewing time would also have been excessive since sampling in a county such as Taos or Doña Ana would have required interviewing trips of 15, 20 or even 40 miles for a single interview. There was no budget for this type of travel or for drawing such a sample where tract data was unavailable. Moreover, street names have only recently been assigned to the most

central of cities such as Taos.

Public utility companies were contacted in the three sample areas to help generate a random sample of Hispanic households based on lists of utility users. In both Taos and Las Cruces user lists were generated in order to random sample.

In Taos, the Kit Carson Electric Coop was able to provide a list of users filtered by Hispanic surname. This list consisted of Hispanic households who averaged 200 or less kilowatt hours of electricity for the previous 12 months. According to Kit Carson data manager, Gus Espinosa, "...a cutoff of 200 kilowatt hours will give you almost every Hispanic household in Taos." From the list (N=800 households) generated by Kit Carson Electric Coop, a sample of 200 households was derived.

In Las Cruces, the El Paso (Texas) Electric Company provided a complete list of service users in Las Cruces and the surrounding area. El Paso Electric was unable, however, to filter out Hispanic surnamed users. Filtering of Hispanic households was performed by hand before the random sample was drawn.

In Albuquerque, the Public Service Company, (PNM) was contacted about generating a similar list. However, PNM would have generated a list of all its users (ap-

proximately 100,000 households). The task of producing a random sample of Hispanic households manually from such a list proved to be overly time consuming. The local telephone directory was used instead to generate the sample of Hispanics in Albuquerque. (see Denney and Hendricks, 1979). Mountain Bell estimated that 98% of all households in Albuquerque have telephone service. Given budgetary constraints, the telephone directory provided an adequate list from which to draw a random sample. In addition, the study oversampled in the southwest valley of Albuquerque where the greatest proportion of Hispanics (Chicanos) live.

Sampling of a "rare population" such as the people of Mexican origin is extremely difficult at best. To have generated a random sample of Hispanics in three counties from the 1980 Census would have cost an additional \$5,000-\$10,000. A statewide random sample would have cost considerably more.

### The Questionnaire

The questionnaire consisted of 101 questions (see Appendix II). Questions for the survey instrument were pretested during December - January of 1981-1982. The questionnaire was translated from English to Spanish in



January, 1982, with great care taken to utilize the local vernacular.

### The Interviewers

The interviewers for the survey were chosen from each of the three areas (Taos, Albuquerque, Las Cruces). Indigenous and fully bilingual Hispanic interviewers were used to increase the likelihood of questionnaire completions.

In Taos, Mr. Carmen Medina (of Taos County Weatherization Program) recruited four interviewers who had previously worked in interviewing positions with the Taos weatherization program. In Las Cruces, Dr. Cookie Stephan of New Mexico State's Sociology Department recruited 10 upper division sociology and social work students for interviewing positions. Two-thirds had previous experience in interviewing. In Albuquerque, 10 undergraduate and graduate students at the University of New Mexico were recruited for interviewing positions.

Interviewers in each area were trained by project staff (Flores and Avalos) in four-hour training sessions. Two-thirds of the interviewers had previous field experience in interviewing.

### Data Gathering

Interviews were conducted from April through July

of 1982 in the three cities. The most difficult area to interview was the Taos area (Taos, Questa and Peñasco), where respondents often had no street address and were only identified through the list provided by the Kit Carson Coop. A typical identifier might read: "house located behind water-pump," or "Martinez Road--quarter mile down." Needless to say, only indigenous interviewers could accomplish such a time-consuming task.

In both Las Cruces and Albuquerque, the task of interviewing was easier. However, in both areas, upper-division college student interviewers were hired. Thus, the research timetable was affected by student's course-loads and semester finals.

## CHAPTER III

### DESCRIPTIVE ANALYSIS OF SURVEY FINDINGS

#### Characteristics of the Sample

The total sample size of 584 consisted of 318 male respondents (55.2%) and 258 female respondents (44.8%). Respondents per site are recorded in Table 2 below:

Sample Size by Site

Table 2

	N	%
Albuquerque	232	39.7
Las Cruces	174	29.8
Taos	178	30.5
Total	584	100.0

Two thirds or 66.3% of the sample (N=386) were married and 66 or 11.3% were single. Divorced, separated or widowed respondents accounted for 22.3% (N=130) of the sample. Of this latter group 10.8% or 63 respondents were widowed.

The average age of respondents was 45.6 years. The median age of respondents was 43.2 years. The sample also included 16% or 93 respondents 65 years of age

or over. Those 60 of age or above included 133 respondents or 21% of the sample. A rather large proportion of elderly was drawn. Thus, the median age of the sample group is greater than the Mexican origin median age for the state.

Eighty-seven percent (N=509) of the sample responded to the interview in English. Only 74 or approximately 13% interviewed in Spanish. Over one-quarter or 26.6% (N=52) of the sample were veterans.

The average family size of a household was 3.4 persons with the median of 3.2 persons. The modal response was three persons per household (23.0% of the sample). In terms of the family household composition, 59.6% of households had one or more children 18 years of age or younger while 124 households or 21.2% of the sample had elderly (65 or older) persons in residence.

The average number of years of schooling completed by respondents was 10.3, while the median or 50th percentile was 11.6 years. Over one-quarter or 27.2% of respondents (N=159) had only completed an eighth grade education. Well over half or 59.0% (N=345) of respondents completed a high-school education while only 6.8% completed a bachelors degree or beyond.

In measuring the total family income, respondents were asked whether they earned more or less than \$15,000. Slightly over one-third of the sample or 35.3% (N=171) reported a total family income of over \$15,000, while 360 or 64.7% of respondents reported earning a family income less than \$15,000.

The distribution for family income is displayed in Table 3. (See Table 3, page 33.) The most frequent response for total family income was \$10,000 - \$14,999, with over one-fifth or 22.1% of all families earning this income. Forty-two point seven percent (42.7%) of respondents reported a total family income below \$10,000. Almost one-tenth or 8.5% (N=41) of Hispanic respondents reported earning over \$30,000.

Table 4 provides the employment distribution for the respondents by industry. (See Table 4, page 34.) A high percentage of retired persons (30.3% or N=84) appeared in the sample. Professional, technical and related fields account for 13% (N=54) of respondents, while service workers account for 14.5%, craftsmen 14.0% and clerical workers 10.6%.

The average number of years employed for all respondents was 8.5 years with the median number of years 5.2. Twenty percent (20.2%) affirmed union membership (N=74)

Table 3

Distribution of Family Income for New Mexico Sample

	N	%
30,000 +	41	8.5
25,000 - 29,999	25	5.2
20,000 - 24,999	34	7.0
15,000 - 19,999	71	14.6
10,000 - 14,999	107	22.1
9,000 - 9,999	31	6.4
8,000 - 8,999	32	6.6
7,000 - 7,999	23	4.7
6,000 - 6,999	18	3.7
5,000 - 5,999	28	5.8
4,000 - 4,999	30	6.2
3,000 - 3,999	30	6.2
2,000 - 2,999	15	3.1
	<hr/>	<hr/>
Total	485	100.0

while 79.8% or 293 respondents answered negatively. The average length of time in a labor union was 10 years with the 50th percentile at eight years.

Almost all the respondents were born in the U.S. (93.5% or 546 respondents) while 6.3% or 37 persons were

Table 4

Employment Distribution of Respondents by  
Industry and Research Site\*

	Total	%	Albuquerque	Las Cruces	Taos
Professional, Technical, etc.	54	( 13.0)	23	17	14
Managers and Administrators (Non-farm)	27	( 6.5)	12	7	8
Sales Workers	19	( 4.6)	11	4	4
Clerical, etc.	44	( 10.6)	23	14	7
Craftsmen, etc.	58	( 14.0)	27	15	16
Operatives (Non-transport)	26	( 6.3)	8	3	15
Transport Equipment Operative	7	( 1.7)	1	5	1
Laborers (Non-farm)	24	( 5.8)	8	10	6
Farmers & Farm Managers	6	( 1.4)	0	3	3
Service Workers	60	( 14.5)	25	19	16
Private Household Workers	5	( 1.2)	1	3	1
Retired	84	( 20.3)	38	23	23
	414	(100.0)	177	123	114

\*Codeable responses accounted for 70.9% of all cases.

born in Mexico. Over four out of every five Hispanic respondents were born in New Mexico (81.4% or 443 respondents), with 7.2% born in Texas and 4.8% in Colorado.

The mean or average length of time respondents have lived in New Mexico is about 39 months with the median 36.1 months. The great majority of respondents have lived in New Mexico all their lives. However, 155 respondents provided information on their residence prior to living in New Mexico. Of these, 25% (N=39) came from Texas, 21% (N=33) came from Colorado, 19% (N=30) came from California and 15% (N=24) came from Mexico.

The mean length of time that residents had lived at their current address was 15.2 months and the median 9.8 months. The mean length of time that respondents had lived at their previous residence was 9.8 months. The respondents in the sample thus represent a mobile sector of society which is characteristic of the whole.

Despite this general representation as a mobile sector of society, 73% (N=419) of respondents own their own home and 27% rent. The renters pay on the average \$164 per month.

#### Characteristics of the Respondent's Home

In terms of the quality of the house itself, the responses indicate that repairs were necessary in only



about a quarter or less of all homes. For example, 27% of respondents (N=156) indicated that their exterior walls were in need of repair, while 23% (N=130) indicated that their roofs were in need of repair. Plumbing and flooring were also in need of repair in less than one out of every five cases.

Table 5

Necessary Home Repairs by Type						
	Yes	%	No	%	Total	%
1.Roof	130	23.0	434	77.0	564	100
2.Plumbing	110	19.7	449	80.3	559	100
3.Electrical Wiring	49	8.7	513	91.3	562	100
4.Exterior Walls	156	27.1	420	72.9	576	100
5.Flooring	94	16.3	483	83.7	577	100
6.Heating System	56	9.9	511	90.1	567	100

Over half of the respondents (55%, N=164) said they planned to make repairs soon. When asked why they would not make repairs, 58.7% (N=64) of those responding replied that their owner made the repairs on their house.

Energy use and conservation methods used are directly related to the house construction type and number of rooms. The survey gathered data on these components.

For example, almost half (49.5%, N=288) of the respondents lived in one-story pitched homes while 28.4% (N=165) of the respondents lived in one-story, flat roof dwellings. Only 8.4% (N=49) lived in apartments.

Almost 60% (N=287) of the homes were built during or before 1965, with 25% (N=121) built during or after 1971. The most popular types of materials used for home construction were stucco and adobe. Almost 27% (N=146) were adobe. Most of the adobe style homes were found in the Taos area, where 82 or 56% of adobes are located. The balance of homes were about evenly divided among brick (10.0%), cinder block (10.7%), wood-with-siding (8.8%) and brick veneer (7.1%).

Although no data was secured on the average square footage per dwelling, data was gathered on the number of rooms per dwelling. The average number of rooms was almost 6 (5.9) per dwelling. Five and six room dwellings predominated and accounted for 42.2% (N=244) of the cases. Only 8.8% (N=51) of the cases had 9 or more rooms per dwelling.

The respondents were asked what type of heating was used in the home. Multiple types of heating were evident from the data provided (page 38) as Table 6 indicates. Moreover, 34.5% (N=184) of the respondents had at least two types of heating methods available in

Table 6

Type of Heating Mechanism Used in the Home

	A	B	C	Total
1. Fireplace	85	1	-	86
2. Wood Burning Stove	108	14	-	122
3. Central Heat	191	74	4	269
4. Wall Furnace	121	38	6	165
5. Space Heaters	63	48	7	118
6. Solar	3	5	3	11
7. Steam	2	-	-	2
8. Other	7	4	-	11
	<hr/>			
Totals	579	184	20	783

the house. The most popular was central heat (N=269) followed by wall furnaces (N=165) and wood burning stoves third (N=122).

The wood burning stove was most popular, as expected, in the mountainous and forested area of Taos. Taos respondents accounted for 85 (69.6%) of the 122 cases for wood burning stoves.

When asked for the type of heating fuel used in their system, the respondents indicated that natural gas was their main source of fuel. Again multiple

responses were reflected in the data as Table 7. indicates.

Table 7

Types of Heating Fuel Used

	A	B	C	Total
1. Natural Gas	440	-	-	440
2. Electricity	45	8	-	53
3. Propane	70	2	-	72
4. Wood	24	158	4	186
5. Coal	1	1	4	6
6. Solar	-	5	3	8
7. Oil	-	1	-	1
	<hr/>			
Totals	580	175	11	766

Of all responses (N=766), 440 or 57.4% of respondents have natural gas as one of the sources of heating fuel. Wood is the second fuel type used by respondents in their homes. Few respondents relied on electric heat for their homes (6.9% or 57 of 766 total responses).

When asked what type of cooling systems were maintained in their homes, respondents' reliance on "swamp coolers" was evident. Forty-three percent of respondents

(N=254) had a swamp cooler. The next highest category was represented by those who had no cooling system. Over one in three respondents (35.3% or 205 respondents) had no cooling system. Not surprisingly, 156 cases or 76% of these respondents are from Taos where temperature rarely climbs into the high 80's. Summer time temperatures are usually in the high 70's or low 80's.

In both Albuquerque and Las Cruces the swamp cooler was the type of cooling system preferred. Both areas had 122 respondents using a swamp cooler or 96% of the cases. Only 4.6% or 27 respondents reported having central electric air conditioning.

#### Energy Use and Expenditures

The energy use patterns of Hispanics in New Mexico were hypothesized to reflect significant efforts in using less energy per household (H1). Data is provided below on winter temperature settings, monthly gasoline expenses and total energy costs.

The average daytime winter settings for all respondents was 67.5° (N=491). By research site, the averages were: Albuquerque, 68.4°, Las Cruces, 66.6°, and Taos, 67.8°. The average night-time winter settings for all sample respondents was 66.3° (N=485). By site, the averages were: Albuquerque, 65.9°, Las Cruces, 67.4°,

and Taos, 65.5°.

The monthly gasoline expenditures for the total sample averaged \$87 (N=464) for approximately 1.7 vehicles per household. The averages for the research sites are provided below. The rural area of Taos, where persons drive longer distances, accounts for a relatively larger expenditure on a monthly basis.

Table 8

Average Monthly Gasoline Expenditures  
by Research Site

	N	Expenditure	Average # of vehicles
Albuquerque	195	\$88	1.6
Las Cruces	148	80	1.7
Taos	121	95	1.8

The respondents were asked their total average home energy costs (coal, gas, electricity, wood, etc.) per month for both the winter and summer months. Table 9 provides the data for responses to this question. (See Table 9, page 42.) The difference between the winter average costs for Taos and the other two research areas reflects the extreme cold that Taos faces during the winter. The average winter temperature for Taos is 31° while Albuquerque and Las Cruces average 41° and 46°

Table 9

Total Average Home Energy Costs Per Month  
for Summer and Winter

	Average Monthly Costs	
	Winter	Summer
Total	\$132	\$80
Albuquerque	121	77
Las Cruces	116	84
Taos	163	82

respectively (National Oceanic and Atmospheric Administration, 1981:2-3).

The average monthly costs for the winter were broken down by income category. For income categories of those earning less than \$10,000 and those earning over \$20,000, about the same proportion of each Hispanic sample spent between \$41 and \$120 per month during the winter even though, of course, the higher income group could afford to spend more.

When comparing these same two income categories for the next higher expenditure rate (\$121-160), 16.4% of the lower income sample and 23% of the \$20,000 and above category fell into this expenditure group. However, the proportion of the \$10,000 - \$19,999 income group matches the upper income groups proportion for this expenditure category and for the next two expend-

diture categories (\$161-200 and 200+) as well. (See Table 10, page 44.)

The same can be said for summer expenditures. Table 11 provides this data. (See Table 11, page 44.) For the summer monthly energy costs, there were differences between the higher and lower income groups in energy outlays. For example, 27% of respondents earning \$20,000 and more spend \$81-120 while about 18% of both lower income groups spend this amount.

However, for the monthly expenditure \$41-80, almost 45% of the middle income group and over one-third of the lowest income group expend this amount. The highest income group falls in between with 37% spending between \$41-80.

It appears from Table 11 that the lower income Hispanic groups are spending less of their monthly summer income on energy than the higher income Hispanic groups who can, of course, afford to spend more money and do so. This finding is in line with previous research which indicated that upper income groups spend a lesser proportion less of their disposable income on energy than lower income groups.



Table 10

Yearly Income By Average Winter Monthly Expenditures							
	\$0-40	41-80	81-120	121-160	161-200	201+	Total
1. less than \$10,000	46 (22.2)	33 (15.9)	58 (28.0)	34 (16.4)	15 ( 7.2)	21 (10.1)	207 100%
2. \$10,000-19,999	13 ( 7.3)	36 (20.2)	44 (24.7)	42 (23.6)	28 (15.7)	15 ( 8.4)	178 100%
3. \$20,000+	6 ( 6.0)	17 (17.0)	28 (28.0)	23 (23.0)	17 (17.0)	9 ( 9.0)	100 100%
Total	65 (13.4)	86 (17.7)	130 (26.8)	99 (20.4)	60 (12.4)	45 ( 9.3)	485 100%

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Table 11

Yearly Income By Average Summer Monthly Expenditure							
	\$0-40	41-80	81-120	121-160	161-200	201+	Total
1. less than \$10,000	84 (40.6)	71 (34.3)	38 (18.4)	8 ( 3.9)	3 ( 1.4)	3 ( 1.4)	207 100%
2. \$10,000-19,999	41 (23.0)	80 (44.9)	32 (18.0)	16 ( 9.0)	7 ( 3.9)	2 ( 1.1)	178 100%
3. \$20,000+	18 (18.0)	37 (37.0)	27 (27.0)	11 (11.0)	5 ( 5.0)	2 ( 2.0)	100 100%
Total	143 (29.5)	188 (38.8)	97 (20.0)	35 ( 7.2)	15 ( 3.1)	7 ( 1.4)	485 100%

## Conservation Efforts

Previous research has shown that minority and low-income groups conserve more than other groups because of necessity. Hypothesis Two was formulated with this finding in mind. Moreover, Hispanics in New Mexico were asked whether they had made efforts to conserve energy during 1981. Table 12 summarizes this data. Over four out of five Hispanic New Mexicans made efforts to conserve energy during 1981.

Table 12

New Mexico Conservation Efforts by Area for 1981						
	Yes	%	No	%	Total	%
Albuquerque	194	84.3	36	15.7	230	100
Las Cruces	120	70.6	50	29.4	170	100
Taos	153	89.0	19	11.0	172	100
Total	467	81.6	105	18.4	572	100

The most noticeable difference in conservation efforts by area is that between the Taos and Las Cruces areas. Almost 9 out of 10 Taos Hispanics made an effort to conserve energy while 7 out of every 10 in Las Cruces made this effort. The difference may be due to

the climate of the Taos area. The year-round average temperature in Taos was 48.6° (for 1981) while Las Cruces averaged 62.0°.

The next measure on conservation efforts consisted of questions on the types of conservation efforts made by Hispanics. Table 13 provides the overview.

Table 13

Conservation Effort by Type for 1981

Category	Yes	%	No	%	On Already	%	Total	%
1.Window Stripping	268	46.1	262	45.1	51	8.8	581	100
2.Storm Door/ Windows	115	19.9	401	69.4	62	10.7	578	100
3.Insulation	108	18.7	418	72.3	52	9.0	578	100
4.Lowered winter temp.	430	78.2	99	18.0	21	3.8	550	100
5.Less A/C/	273	70.2	116	29.8	--	--	389	100
6.Auto less	297	61.1	189	38.9	--	--	486	100
7.Truck less	174	61.7	108	38.3	--	--	282	100
8.Other	178	31.2	392	68.8	--	--	570	100

Lowering the winter heating temperature in the residence was favored by almost 80% of respondents. Use of air conditioning was also reduced in 70% of cases

during 1981 as was there less use of both an auto or truck (61% of cases). Adding window stripping was also a popular conservation effort made (46.1% of cases; N=268).

Those conservation efforts not specifically asked about are included in Table 14. Of the miscellaneous conservation efforts made by Hispanics, conserving electricity accounted for half of the responses, while acquisition of wood stoves was cited in 38 cases (23%). Solar use accounted for only 6% of the responses.

Table 14

Miscellaneous Conservation Efforts by  
Type for 1981

	N	%
1. Conserved Electricity	84	50.9
2. Wood Stove Installed	38	23.0
3. Gas-Auto Conservation	15	9.1
4. Solar Use	10	6.1
5. Other	18	10.8
	<hr/>	<hr/>
	165	100.0

Market Basket Effects

During the recent inflationary period, both increasing energy and food prices have been considered

as major economic factors leading to the double-digit inflation of 1980. Hispanic respondents were asked about the effects of rising energy costs on food purchasing behavior. It was predicted (H3) that Hispanics in New Mexico would feel a severe effect on food purchasing behavior from rising energy costs (H3).

The respondents were first told that most families and individuals recognized that the rising cost of energy had effected their economic livelihood. Respondents were then asked to rate the effect of rising costs on a scale from none or no effect (rating of 1) to a very severe effect (rating of 5). A score of three was considered neutral. The responses are shown in Table 15 by geographic area.

Table 15

Perceived Energy Effects on Food by Research Areas

	Total	%	Albq.	%	L.C.	%	Taos	%
1. None	75	13.0	24	10.4	20	11.5	31	18.0
2. Some	58	10.1	23	10.0	14	8.0	21	12.2
3. Neutral	120	20.8	55	23.8	27	15.5	38	22.1
4. Severe	131	22.7	41	17.7	57	32.8	33	19.2
5. Very Severe	193	33.4	88	38.1	56	32.2	49	28.5
	<u>577</u>	<u>100.0</u>	<u>231</u>	<u>100.0</u>	<u>174</u>	<u>100.0</u>	<u>172</u>	<u>100.0</u>

Those respondents who perceived a severe or very

severe effect from rising energy costs totalled 56.1% (N=324). Only 13.0% (N=75) perceived no effect, while 20.8% (N=120) were neutral in their perceptions.

The Las Cruces area was most negative since 65% of that sample perceived a severe or very severe impact from the rising cost of energy. The Taos area was least negative; yet, almost half or 47.7% of that sample felt a severe or very severe impact. The Taos area also had the highest percentage of their sample (18.0%, N=31) who felt that there was no impact from rising energy costs.

Since one half of all respondents perceived a severe or very severe impact on food purchasing for the household, Hypothesis Three was confirmed.

In conjunction with attempting to measure the severity of the energy impact on food on the Hispanic population, the respondents were also asked a series of questions on eating habits and the relationship between food purchasing and the cost of energy. Hypothesis Four (H4) posited that Hispanics in New Mexico would have changed their eating habits and would perceive a relationship between rising energy costs and eating habits.

Respondents were first asked, with regards to home cooked meals, whether their eating habits had

changed. Well over half (57%, N=324) of all respondents answered affirmatively. The Albuquerque and Las Cruces samples were similar in that 61% of each sample answered affirmatively. However, only 43% of Taos respondents answered yes to this question. It may be that the rising cost of food is less severe in Taos due to, for example, local food production, than in the more urban areas.

Those respondents who answered affirmatively to the above question were then asked if they were now eating more or less. Of 309 cases, 274 or 88.7% of the sample said they were eating less; the balance (11.3% or N=35) reported eating more. The Taos area had the highest proportion (94%) of the three areas reporting that they were eating less because of changes in eating habits.

The respondents who reported eating less were then asked to list specific items they were eating less of. Table 16 (page 51) summarizes this data for the sample as a whole. Multiple responses were possible.

Clearly, meat has been the item eaten less by the sample of respondents. Almost half or 45% (N=245) of responses were in the meat category. Vegetables (11.0%) and fruits (10.5%) are also consumed less; all other categories of food were below 10% of the possible responses.

Table 16

Items Consumed Less by Hispanic Respondents

	N	%
1. Meats	245	45.0
2. Staples	30	5.5
3. Vegetables	60	11.0
4. Dairy Products	36	6.6
5. Fruits	57	10.5
6. Snacks/Treats, etc.	47	8.6
7. Pastries	30	5.5
8. Sea Food	16	2.9
9. Everything	10	1.8
10. Bread	5	0.9
11. Other	9	1.6
	<hr/>	<hr/>
	545	100.0

In addition, the interviewees were asked if they were going out to eat less now than in previous years. Over 75 percent (N=415) reported going out less. Again, the urban areas of Albuquerque and Las Cruces differed from Taos. In Albuquerque 83% reported going out less while 77% reported similarly for Las Cruces. In Taos 64% reported going out less. Despite those area differences, it is clear



that Hispanics are eating out less.

The respondents were then asked if they thought there was a relationship between food purchasing (eating habits) and the cost of energy. Over 60 percent of respondents (60.8%, N=340) answered affirmatively; yet, over one-quarter (25.9%, N=145) said no, while 13.2% (N=74) said they did not know.

Those respondents who answered that there was a relationship between food purchasing and the cost of energy were then asked in an open-ended question what that relationship was. Over half (53.4%, N=110) of those responding, said that as energy costs increased so also did the price of food. No specific reason for the increase was given in this response category. Almost one-third of the respondents (32.5%, N=67) said that there was an indirect relationship between increased energy costs and food prices (e.g., added transportation costs, food processing costs, etc.). Twelve respondents (5.8%) said that they were able to cook less.

In general, there are perceived serious negative effects on food purchasing which respondents attribute to rising energy costs (H4). In addition, Hispanics in the sample perceived a relationship between eating habits (which reflected less meat consumption) and rising

energy costs.

### Employment and Energy

Respondents were asked in a series of questions to first rate the effect of rising energy costs on work related activities. The scale previously discussed was again used (measuring no effect to severe effect).

For the sample as a whole, 20% (N=108) perceived either a severe or very severe effect on their work related activities due to rising energy costs. Almost half (49.1%, N=265) of the respondents perceived no effect whatsoever on their work related activities from rising energy costs.

Again a difference appears in the responses by research site. In Taos, 45.6% (N=121) of the 265 responses saw no effect on work related activities. In addition, only 6 percent of Taos respondents saw a severe or very severe effect on work related activities, while the figures for Albuquerque and Las Cruces were 25.7% and 26.8% respectively. In other words, Hypothesis Five (H5) was not supported.

The respondents were then asked two questions on the effects of rising energy costs on work-related activities. The first area focused on job-search activity. Hypothesis Six (H6) was formulated with these two issues in mind.

Hispanics were expected to perceive effects on both regularity at work and job search activity.

Only 14.3% (N=76) of all respondents in the labor force indicated that the rising cost of energy had prevented them from getting to work regularly. Two thirds of those respondents (N=50) were from Albuquerque, the most urban area of the three research sites.

The interviewees were also asked if the rising cost of energy prevented them from looking for work. Fourteen point three percent (14.3%, N=73) of respondents replied affirmatively to this question. Over half, 53.4%, (N=39) of positive responses to this question were from Albuquerque.

Hypothesis Six (H6) was thus rejected based on the responses to the two questions above. It should be kept in mind, however, that even though the proportion of those respondents who answered affirmatively (one in ten respondents) is small, even such a low percentage (14%) constitutes a noticeable consequence on labor force productivity..

### Recreation and Leisure Activities

Besides having to make various budget adjustments in the household for such items as food, it was also predicted that Hispanic leisure-time activity would be

curtailed by rising energy costs (H7). Several questions were developed for this area.

The interviewees were first asked to approximate the number of hours per week that they spent on leisure time (e.g. going to a movie, visiting friends, etc.). The average number of hours per week for the sample as a whole was 9 (N=485) with a median of 7 hours per week.

The respondents were then asked if the rising cost of energy had prevented them from spending as much leisure time as they would like. Of those persons responding (N=571), 63.8% said yes, 28% said no and 8.2% said that they did not know.

When asked to approximate how much leisure time was lost due to energy costs the following resulted. About 16.5% (N=58) reported losing less than 4 hours of leisure time per week, while 14.2% (N=50) reported not knowing how much leisure time they were losing. Almost four of ten respondents (38.9%, N=137) reported losing four to nine hours of leisure-time per week, while 30.4% reported losing ten or more hours per week.

Those respondents who reported losing leisure-time due to rising energy costs were asked to specify the types of leisure-time activities which had been restricted. The following table provides an

overview.

Table 17

Ranking of Leisure Activity Reduced Due to  
Rising Energy Costs

	N
1. vacations/travel	155
2. visiting	126
3. movies	123
4. outdoors	74
5. sports	67
6. eating out	63
7. dances	23
8. parties	17
9. shopping	9
10. meetings	4
11. dating	3
12. other	20

Respondents have clearly limited their travel and/or vacations. Visiting friends and relatives and going to the movies ranked second and third in terms of leisure activities affected by rising energy costs. Outdoor activities, sports and eating out were next most often cited.

In addition to providing samples of the types of activities now restricted, respondents were asked to rate the severity of the effect of rising energy costs on their leisure/recreation. Twenty-four percent (N=139) reported either some or no effect. Twenty-five percent (N=45) reported a very severe effect, while 20.7% reported a severe effect. Almost 30% were neutral in their response.

Almost sixty percent (58.6%, N=333) of respondents reported that they were prevented from visiting friends because of the increased cost of energy. Hispanics generally reported a loss of leisure time due to rising energy costs and specified the type of activities restricted. Hypothesis Seven (H7) was thus supported.

#### Transportation Effects

The increasing cost of gasoline for auto and truck use affects all residents of the United States. In the New Mexico area, but especially in the rural Taos area, Hispanics drive long distances to reach their destinations. Hypothesis Eight (H8) predicted that Hispanics would perceive negative effects from the increasing cost of gasoline and that these effects would be most easily recognized in reduced driving.

Over two-thirds of respondents indicated that they

had reduced driving (67.7%, N=367), while less than twenty per cent (19.4%, N=102) responded negatively. Almost 13% reported no difference.

The respondents were also asked to gauge the impact of rising energy costs on transportation. Over forty-six per cent (46.3%, N=266) of respondents reported either a severe or very severe impact. However, only 25% of the Taos respondents rated the effect as severe or very severe. The proportion of Albuquerque and Las Cruces Hispanic respondents for these categories was 58% and 52% respectively. Less than one-fifth (19.5%) of all respondents reported no effect on transportation.

Hypothesis Eight (H8) was supported by the data. However, the Taos respondents who, on the average, drive longer distances, were not as negative in their perception of the effects of the rising energy costs on transportation as the more urban areas of Albuquerque and Las Cruces.

Hispanics in New Mexico were also predicted to perceive negative effects from the increasing cost of gasoline (H9). The effects were explored through a series of questions. The first question asked respondents if they had been prevented from "getting where they needed to go?" Less than half or 45.8% of the sample responded "yes" to this question with the

balance answering no.

A series of questions was asked on specific destinations which respondents were prevented from reaching because of increased costs of energy (gas). Three of these questions were discussed previously in regard to other factors affected by rising energy costs. They are, however, included in the summary Table below.

Table 18

Destinations Not Reached Due to Rising Energy Costs

	N	%
1. Doctor	153	26.8
2. Shopping	243	42.6
3. Work Regularly	76	14.3
4. Friends/Relatives	333	58.6
5. Job Search	73	14.3

Those destinations given up most often are shopping or visiting friends and/or relatives. Still, over a quarter of respondents replied that they did not have adequate transportation to reach a doctor. As could be expected, work related activities was least affected in terms of percent, yet as was pointed out earlier, would strongly impact productivity rates.



Surprisingly, only 4.6% of Taos respondents were not able to go to a doctor because of gas costs. However, in Albuquerque almost 30% of respondents indicated they were prevented from getting to a doctor. It may be that the social support networks were stronger in rural Taos than in urban Albuquerque. Hypothesis Nine (H9) received mild support.

It was also predicted (H10) that respondents would perceive negatively the increasing cost of gasoline. Not unexpectedly, almost three-quarters of the respondents (73.3%, N=438) were dissatisfied or very dissatisfied. Only 6.5% of the sample were satisfied or very satisfied with the cost of gasoline. Hypothesis Ten was thus strongly supported.

#### Attitudes: Energy Costs

A general dissatisfaction with the cost of various types of energy sources was predicted (H11) for New Mexican Hispanics. Table 19 provides the overview of this data (page 61). Clearly, Hispanic respondents were dissatisfied or very dissatisfied with both costs of gas and electricity (74.4% of respondents for gas and 79.7% for electricity). Dissatisfaction with the costs of wood and water was also exhibited, but not so negatively as for gas and electricity. Hypothesis Eleven

Table 19

Attitudes on Various Energy Costs

	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied
1. Gas	57.2	17.2	16.1	5.7	3.9
2. Water	29.1	13.5	37.5	5.8	14.2
3. Electricity	62.6	17.1	13.6	3.7	3.0
4. Wood	26.9	10.5	53.3	2.8	6.5

(H11) was thus supported. (Note that less than 10% of respondents were satisfied or very satisfied with the costs of gas, electricity and wood.)

Attitudes: Rate Structure

A series of questions on attitudes towards the rate structure for electric utilization was asked of respondents. Hispanics were predicted to favor allowing low or fixed income families lower rates for electricity than other consumers (H12).

The interviewees were first asked if low income groups -- families below \$6,700 per year--should be allowed lower rates. Sixty-five per cent of respondents agreed that lower rates should be afforded low income groups, while 16% said no. Nineteen per cent felt that

the state or appropriate governmental agency should handle the problem.

The respondents were then asked if persons with annual fixed incomes (e.g., retired or widowed; less than \$5,000) should be allowed a lower rate for electricity. Almost four out of five (78.2%, N=446) said, "yes, they should be afforded a lower rate." Only 3.7% (N=21) said "no, they should pay the same as other residential customers." Eighteen per cent (18.1%, N=130) felt that the state or a governmental agency should handle the problem. Hypotheses Twelve was thus strongly supported.

Hispanics in New Mexico were also predicted to view energy companies and government as benefiting most from rising costs of energy (H13). Respondents were thus asked who benefits from rising costs of energy.

Eighty per cent of respondents (N=403) felt that the energy companies benefit most while 17.7% felt that the government benefited from rising costs. Less than one per cent (0.8%) felt that consumers benefited. Hypothesis Thirteen received considerable support.

Respondents were predicted to favor penalizing households for excessive energy use while also believing that businesses which use great amounts of energy should not be given discounts (H14). Respondents were first asked about penalties to households which use excessive

energy. Slightly over half (50.5%, N=244) of the respondents answered yes to the question while almost half (49.5%) said no.

When asked whether business firms who use great amounts of energy should be given discounts for energy consumption, 82.4% (N=440) answered negatively. Only 17.6% of respondents responded affirmatively. Hypothesis Fourteen was thus supported.

Interviewees were also asked whether they favored a rate structure with higher prices the more kilowatt hours (KWH) were used (H15). Almost half (48.3%, N=227) of the respondents favored a lower rate the more KWH were used while 37.4% (N=176) said the rate should be the same no matter the KWH. Fourteen point three per cent (14.3%) said the rate should be higher the more KWH were used.

Hypothesis Fifteen was clearly not supported. The question was possibly too complex in terms of the responses available. The data from this item would seemingly contradict the data from Hypothesis Fourteen. Additional research and more discriminating questions would need to be formulated.

## Federal Energy Assistance Program

Sixty-five respondents or 11.1% of the respondents had received federal energy assistance. Most of the respondents heard about the program through friends (N=33) or family (N=11). The median amount of assistance received for respondents was \$111.50. The average was \$143.03.

Hispanics in New Mexico were predicted to favorably evaluate the federal energy-assistance program (H16). Two questions were asked with this hypothesis in mind.

Respondents were first asked if the amount they received was sufficient or insufficient. Half of the respondents (50.8%, N=32) said the amount was insufficient, while 42.9% (N=27) said the amount was adequate. Six point three per cent (6.3%) could not gauge the sufficiency of the amount.

The respondents were also asked in an open-ended question to recommend improvements or needed changes in the energy assistance program. Only four responses were made to this question, so that no conclusion, however tentative, could be made.

The interviewees were asked if the personnel of the energy assistance program responded to their needs. Over half (54.1%, N=33) answered yes, while 45.9% (N=28) res-

ponded negatively.

Hypothesis Sixteen received weak support. Mixed responses resulted with over half stating that they received insufficient assistance in dollars; over half replied that personnel responded to their needs. (This area of research needs further analysis and evaluation.)

## CHAPTER IV

### CONCLUSIONS AND POLICY IMPLICATIONS

This study of Hispanic New Mexicans attempted to answer specific questions in a variety of areas related to rising energy costs: energy use and expenditures, conservation efforts, market basket effects, employment and transportation effects, recreation and leisure activities, attitudes on energy costs, attitudes on rate structure and perception of the Federal Energy Assistance Program.

A sample of 600 households was drawn from the Albuquerque, Taos and Las Cruces areas resulting in 584 completed questionnaires. Almost two-thirds of the sample (64.7%) earned less than \$15,000 total family income and 42% earned less than \$10,000. Professional and managerial occupational categories accounted for 18.5% of Hispanics in the sample while the balance were in the blue and white collar categories. Twenty-three point three per cent (23.3%) of the sample were retired. The average age of the sample group was thus older (45.6 years) than expected.

The condition of the respondents' houses were reportedly fair to good. However one-quarter of respondents indicated that roofs or exterior walls were

in need of repair; about one-fifth indicated that repairs were needed for plumbing and flooring. Almost half of the Hispanics lived in one-story pitched homes. Well over half of the homes were built during or before 1965 with stucco and adobe favored in construction of the homes in over half the cases. Dwellings averaged six rooms per unit with multiple types of heating found in at least 34.5% of cases. Central heating was cited most often as the mechanism for heating the home, followed by wall furnaces, wood burning stoves and space heaters.

The type of heating fuel preferred for home use was natural gas (57% of cases), followed by wood (22%). Electric heating was used in less than 10% of cases.

Swamp coolers were favored as the cooling system by 43% of Hispanic New Mexicans; however, over one in three had no cooling systems in their homes. Over three-quarters of these cases were from the mountainous Taos area where cool weather abounds.

The background characteristics highlighted above provide the social context for understanding the data gathered in this survey. A discussion as to conclusions and policy implications is now in order.

### Findings and Conclusions

The data gathered on the Hispanic population across



three sites in New Mexico indicated a number of trends and patterns on energy related issues. The first area analyzed was that of ENERGY USE AND EXPENDITURES. The specific hypothesis (H1) stated that:

(H1) Hispanics in New Mexico have made significant efforts to use less energy per household.

Hispanic New Mexicans lowered their winter thermostat settings. The average setting was about 67°. The average monthly gasoline costs were \$88 and the total average home energy costs per month were \$80 for the summer and \$132 for the winter.

By income level, those Hispanic families earning less than \$10,000 spent more of their income during the winter months on energy than either the \$10,000-\$19,000 group or the \$20,000 and above category. . Surprisingly, these latter two income groups were similar in the proportion of each group's spending over the winter months. For the summer month's expenditures, the lowest income group spent more of its income on energy costs than the \$20,000 and above group.

Hypothesis One (H1) was supported from the data in terms of a within group analysis by income and winter and summer energy expenditures. Unfortunately, comparisons across groups (i.e. Anglos and Blacks) were

not possible for either temperature settings in the home or monthly gasoline expenditures. However, baseline data for Hispanics was generated. Future research should be undertaken with this data in mind as well as the Fresno, California, DOE Hispanic study (1982) for comparative analysis.

The second hypothesis area dealt with CONSERVATION EFFORTS, with the specific prediction (H2) that:

(H2) Hispanics in New Mexico are making efforts to conserve energy.

The study revealed that over four out of five Hispanic New Mexicans implemented conservation efforts during the previous year. Besides lowering the thermostat during the winter in 80% of the cases, autos and trucks were used less (70% response). In the homes, window stripping was applied in 46% of cases. Hypothesis Two was thus supported.

MARKET BASKET EFFECTS comprised the third area of study, with the specific hypothesis (H3) that:

(H3) Hispanics in New Mexico will perceive that the rising cost of energy has a severe effect on their food purchasing.

Over half of the respondents (56.1%) reported a severe or very severe effect from rising energy costs on their budgets for food purchase. Only 13% perceived no effect

at all, while 20% indicated a neutral effect. Hypothesis Three was confirmed.

Hypothesis Four likewise addressed market basket effects by proposing that:

(H4) Hispanics in New Mexico will have changed their eating habits and perceive a relationship between rising energy costs and eating habits.

Well over half (57%) of the respondents replied that home eating habits had been altered, 88.7% reported eating less, and 75% indicated they were eating out less. The respondents were asked whether there was a relationship between the market basket issues and the rising cost of energy; 60.8% replied affirmatively. Hypotheses Four was thus accepted.

Hypothesis Five inquired about the relationship between EMPLOYMENT AND ENERGY:

(H5) Hispanics in New Mexico will perceive severe effects on work-related activities due to rising energy costs.

Respondents were asked in a series of questions to rate the effect of rising energy costs on work related activities. The hypothesis was not substantiated since only a minority portion (20%) reported a severe or very

severe effect.

Hypothesis Six also addressed the employment and energy issue by predicting that:

(H6) Hispanics will feel that the rising costs of energy have effected their regularity at work and their job-search activity.

Hispanics were expected to perceive effects on both regularly at work and job search activity, but the hypothesis was rejected since only 14.3% expressed adverse effects in these two categories.

Impacts on RECREATION AND LEISURE ACTIVITIES were recorded in response to several questions on leisure time spent, relationship to rising cost of energy, specific attribution, etc. The specific hypothesis (H7) stated that:

(H7) Hispanic's leisure time activities will have been affected negatively by rising energy costs.

Analysis of the responses indicated that Hypothesis Seven should be supported: almost sixty percent (58.6%) reported a curtailment of trips to visit friends and relatives because of the increased costs of energy.

TRANSPORTATION EFFECTS were examined in the study by proposing Hypotheses Eight, Nine and Ten.

(H8) Hispanics in New Mexico will perceive negative effects from the increasing

cost of gasoline. These effects will be manifested in reduced driving.

(H9) Hispanics in New Mexico will perceive negative effects from the increasing cost of gasoline including limitations in reaching specified destinations.

(H10) Hispanics in New Mexico will view negatively the increasing cost of gasoline.

Hypothesis Eight was supported since over two-thirds of the respondents reported less driving and 46.3% specifically attributed a severe or very severe impact of rising energy costs on their transportation needs. Hypothesis Nine received mild support in that less than half of the sample (45.8%) indicated that the increased cost of gasoline prevented them from "getting where they need to go." General dissatisfaction with the increased cost of gasoline, however, occurred in 73.3% of the cases, supporting Hypothesis Ten.

A general dissatisfaction with the cost of various types of energy sources was predicted in Hypothesis Eleven relating to ATTITUDES-ENERGY COSTS:

(H11) Hispanics in New Mexico will view negatively the rising cost of various types of energy.

Regardless of type of energy source for home heating, the data showed significant levels of dissatisfaction with costs. In particular, there was dissatisfaction with the costs of natural gas (74.4%) and electricity (79.7%). Hypothesis Eleven was thus supported.

Several Hypotheses (H12, H13, H14, H15), explored the category of ATTITUDES-RATE STRUCTURE:

(H12) Hispanics in New Mexico will favor allowing low or fixed income families lower rates for electricity than other consumers.

(H13) Hispanics in New Mexico will view the energy companies and the government as benefiting most from the rising cost of energy.

(H14) Hispanics in New Mexico will favor penalizing households for excessive energy use while similarly arguing that businesses which use great amounts of energy should not be given discounts.

(H15) Hispanics in New Mexico will favor a rate structure with higher prices imposed the more KWH are used.

Hypothesis Twelve received strong support with a 65% response rate favoring lower electricity costs for low-income groups and 78.2% favoring lower rates for

persons on fixed incomes. With 97.1% responding that energy companies and government benefit the most from rising energy costs, Hypothesis Thirteen was also supported. (However, note that 80% of that amount identified energy companies, as opposed to government, as the largest benefactor.)

Hypothesis Fourteen likewise was supported with 82.4% disagreeing that businesses which use larger amounts of energy should be provided discounts; on a parallel question, slightly over half of the respondents (50.5%) stated that households which use excessive energy should be penalized in the rate structure. The final hypothesis (H15) on attitudes towards rate structures, however, was not supported. The study asked interviewees whether households which utilized more kilowatt hours should pay a higher rate per hour. Only 14.3 agreed with this statement and in fact, almost half (48.3%) favored a reduced rate for higher KWH consumption. As noted in Chapter Three, H15 appears to contradict H14.

The last hypothesis (H16) in the study addressed perceptions of the FEDERAL ENERGY ASSISTANCE PROGRAM:

(H16) Hispanics in New Mexico will favorably evaluate the federal energy assistance program.

The Hypothesis received weak support with half (50.8%) of those respondents who actually received assistance indicating that the amount of aid was "insufficient." Also, only 54.1% indicated that the personnel of the federal energy program had responded to their needs.

### Policy Implications

The findings of this study, coupled with supporting evidence in the research literature, suggest the need for coordinated action at all levels of government. Although the policy recommendations below were developed in the context of the survey of Hispanic families in New Mexico, many of them, if actualized, of course, would benefit a broader range of energy consumers in the region and elsewhere.

Recommendation # 1: ENHANCE AND EXPAND ENERGY CONSERVATION PRACTICES THROUGH AN ENERGY MESSAGE PROGRAM TAILORED TO HISPANIC CONSUMERS IN THE REGION.

Energy conservation will be further enhanced via an energy message program geared to Hispanic consumers in the region. The literature bears out the connection between level of energy awareness and willingness to implement specific conservation practices. Despite the absence of an educational program tailored to the



region's Hispanics, the study found that the respondents were favorably disposed to conserve energy and in fact were actively carrying out a variety of conservation measures in the home.

Recommendation # 2: THE ENERGY AWARENESS PROGRAM SHOULD TAKE INTO ACCOUNT THE MIX OF SOCIO-CULTURAL FACTORS IN THE REGION AND SHOULD REACH BOTH URBAN NEIGHBORHOODS AND RURAL COMMUNITIES THROUGH THE NETWORK OF HISPANIC ORGANIZATIONS AND INSTITUTIONS.

A regional energy awareness program can best take into account the mix of socio-economic factors that will respond to specific energy conservation messages. The Hispanics in New Mexico and surrounding states share many characteristics with Hispanics in other regions in terms of language, family size and relative youthfulness. Outreach and information marketing techniques certainly ought to consider these common socio-cultural factors, but equally important, Hispanics in New Mexico and other western states such as Colorado and Arizona are more rural than Hispanics in other regions. Energy conservation messages via regional radio and T.V. (including Spanish language stations) should therefore reach into both urban neighborhoods and rural communities. Further, Hispanic organizations and institutions at

the community level should be identified as potential sponsors of information dissemination programs and also as technical assistance sources.

Recommendation # 3: CONSERVATION PROGRAMS SHOULD BE SUPPLEMENTED WITH LOCALIZED TECHNICAL ASSISTANCE PROGRAMS IN THE SOLAR TECHNOLOGIES SUITABLE TO THE RESOURCES OF THE REGION.

While conservation programs geared toward regional Hispanics will yield the desired results, policy-makers need to recognize the limits of conservation and supplement with localized technical assistance programs in the solar technologies. The literature abounds with data that, shown the way, low income groups will conserve energy like no one else. Necessity demands it. Information programs need to capitalize on this behavior by going beyond conservation in the energy messages by incorporating methods around the solar related technologies suitable to the resources of the region: active and passive solar for space heating, wind energy for farm and home use in rural areas, solar hot water heating, etc.

Recommendation # 4: AN ATTITUDE OF "CONSERVATION PLUS SOLARIZATION" CAN BE FACILITATED VIA ASSISTANCE TO MINORITY ENTREPRENEURS IN THE PRIVATE SECTOR WHO CAN REACH AND SERVE THE LOCAL MARKET AND CREATE JOBS.

The spectrum of solarization choices typically involve greater costs to the consumer than conservation; the levels of government need to package incentives to Hispanic and other consumers that will encourage local attitudes of "conservation plus solarization." Along with incentives to the homeowner, government policy should provide technical and financial assistance to community-based entrepreneurs equipping them with the capability to serve the local market, stimulate the economy and create local jobs. Minority business opportunities exist in the manufacturing of solar "hardware" systems, in distributorships, in direct sales operations and in installation by local contractors (construction, plumbing, heating and cooling, etc.).

Recommendation # 5: THE MARKET BASKET RESOURCES OF THE POOR CAN BE PROTECTED THROUGH A POLICY OF AN "ENERGY SAFETY NET" AND THROUGH AN INTENSIVE GREENHOUSE PROGRAM.

Incentives to solarize will reach a sizeable portion of Hispanic consumers in the region, but even modest costs of solarizing will be out of reach for the lowest of the income groups who either do not own their own home or who do not have repayment ability, e.g., the elderly on fixed incomes. As noted in the literature, exclusive reliance on pricing policies of the free

market will simply exasperate the disproportionate burden on the poor. Government policy, then, ought to examine either a program of rate structure reform or a "safety net on energy costs" for the poor. This study, along with others cited in Chapter I, further document that rising energy costs have eroded the family market basket. Clearly, persons on limited incomes need protection from any further erosion of the most basic human requirement. In the decade ahead, either more food stamps or special "energy stamps" will most certainly be needed should energy costs continue to rise. Further, the installation of greenhouse systems (attached and community scale) should definitely be intensified at the local level as a means of stimulating food production for the population segments most affected by market basket trade-offs, for example, the elderly on fixed incomes and families with dependent children.

Recommendation # 6: TRANSPORTATION POLICIES SHOULD INSURE ACCESS TO THE FORMAL AND INFORMAL POINTS IN THE HEALTH AND WELFARE SYSTEM OF HISPANIC FAMILIES.

Along with market basket effects, the study documented negative impacts in other areas of family health and welfare. Transportation costs, in particular,

have reduced contact with formal and informal "helping" structures such as visits to the doctor and to the homes of families and friends. Government transportation policies and programs should place top priority on methods that assist families in reaching destination points, formal and informal, essential to health and welfare. Failure to continue prevention and maintenance routines will prove more costly in the long run to both the individual and to society.

Recommendation # 7: FEDERAL, STATE AND LOCAL GOVERNMENTS NEED TO FORM A PARTNERSHIP OF FINANCIAL AND TECHNICAL ASSISTANCE OPTIONS AT THE COMMUNITY LEVEL TO EXPAND ENERGY ASSISTANCE AND WEATHERIZATION PROGRAMS.

The study points out that the federal energy assistance program in New Mexico has experienced mixed results due in part to insufficient amount of assistance. This finding is not surprising since the underfunding of the program is a widespread complaint among the various segments of the low-income population who benefit from and need the program. Increased rather than decreased federal funding is recommended both for payment of utility bills and for weatherization projects. In addition to continued support at the

federal level, state and local financing and technical assistance options should be explored and facilitated through a system of low-interest home repair loans, design assistance, tax credits, revolving loan funds and a grant program for those who fall within the guidelines of an "energy safety net."

APPENDIX I: Annotated Bibliography

Action Associates: 1977. Job Creation Through Energy Conservation: A Solution to A Crisis. Bridgeport, Conn.: Action Associates, Inc., (Community Services Administration Contact No. PB-265-295).

Subject: Creation of prototype organization which is projected as initial effort to effect substantial reduction in energy consumption through national program model of energy-conservation measures.

Survey Date: March 1, 1977 (Report Date).

Methods: Proposal examines, "economic development" method for increasing quantity and quality of jobs in areas of high unemployment.

Analysis Technique: Examination of services and products most likely to conserve energy and capture unused solar energy. The markets for these new energy sources are analyzed and savings potential in low-income markets explored.

Significant Findings: The proposal summarized a model that maximized energy savings for low-income households by focusing upon job projections in energy-conservation services and product areas.

Proposal developed four prototype models for products and service: (1) manufacturing of storm windows, (2) manufacturing of casement seal, (3) business development of winterization program, and (4) the creation of an Energy Conservation Corps.

Marketing and training were proposed through community development models supported by federal government, (inter-governmental coordination).

Conclusion that the Community Services Administration be designated as federal agency to administer suggested program funds and develop a national program of assistance.



Anderson, Bernard E. 1979  
"Energy Policy and Black Employment: A  
Preliminary Analysis." The Review of Black  
Political Economy 9: 214-37.

Subject: Employment prospects of Black Americans under  
energy scenarios (projected to 1985).

Survey Date: Bureau of Labor Statistics projections (1980-  
1985).

Methods: BLS model, assumptions, and projects. The use  
of 1962-75 data for justification of employment  
scenarios.

Analysis  
Technique: BLS projections with energy policy assumptions  
that produce final demand estimate for detailed  
three-digit industries across the economy.

Significant  
Findings: Continued and enriched improvement in basic ed-  
ucation among minorities an essential precond-  
ition for occupational advancements. Given job  
market projections (in regard to energy),  
minorities will be at a disadvantaged during the  
next decade.

Education beyond high school is necessary for  
minorities, especially technical-vocational pro-  
ficiency in energy fields.

National employment and training policy should  
place greater emphasis on skill enrichment  
programs rather than job creating programs.

A network of job market possibilities should be  
made available to minorities. Better counseling  
and career guidance necessary.

Energy costs will increase, but the direction of  
change will follow national energy policy. It  
is unlikely, that any occupational change will  
be observed among minorities.

Black workers will continue to experience a  
mixed pattern of gains toward occupational up-  
grading in an environment of high energy cost.

Angell and Associates, Inc., 1975.

A Qualitative Study of Consumer Attitudes Toward Energy Conservation: Chicago: Bee Angell and Associates.

Subject: Conservation behavior, public attitudes concerning the energy situation.

Survey Date: Ongoing from late 1975.

Methods: Series of ten focus groups (8-10 people), conducted in four different areas of U.S. Groups were moderated by professional interviewer and followed semi-structured discussion. Participants selected from widely diversified incomes and cross-section of society.

Analysis Technique: Taped interviews.

Significant Findings: Respondents were willing to make energy-related sacrifices, if need were genuine and the responsibility shared by all.

Those interviewed believe the government is sincere in effort to listen and respond to the needs of energy consumers.

The common reaction of those interviewed is a sense of, "helplessness and frustration." They believe that those in the position to exploit the situation are doing just that.

Majority of respondents did not believe that an energy crisis existed, although they were aware of the impact and were coping with it.

The word "crisis" in energy seemed to mean that they were required to drastically curtail usage.

The Arabs and OPEC were not to blame for the energy shortages, oil companies, public utilities, and Big Business were blamed.

Respondents optimistic about the future and faith in "American know-how," and consumers willingness to answer the call.

Those interviewed felt the crisis was not critical, not that drastic measures in the future would be necessary.

Most were reluctant to conserve and believed that all not pulling their fair share.

Bartell, Ted. 1974

"The Effects of Energy Crisis on Attitudes and Life Styles of Los Angeles Residents." Presented at the 69th Annual Meeting of the American Sociological Association, Montreal.

Subject: Behavioral and attitudinal effects of energy crisis and likely impacts on general public policies.

Survey Date: February-March 1974.

Methods: Probability sample of 1,069 Los Angeles County adults, oversampling of Blacks to achieve more respondents in the "analytic domain"; interviews.

Analysis Techniques: Multiple regression.

Significant Findings: A 20 percent belief in a severe energy shortage, 48 percent believed it to be mild, and 26 percent believed no shortage existed; 59 percent said the energy crisis had affected them in some way, but only 6 percent said that it made life that much more difficult.

Most reported efforts to conserve, especially turning out the lights when not needed (93 percent) and reducing heating or thermostat setting (80 percent). Only 18 percent reported changing driving habits.

Only significant relationship between conservation efforts and attitudinal or demographic variables was positive relationship between personal conservation and the expected future impact on one's own employment.

Of those surveyed, 20 percent blame the oil companies; nonbelievers most likely to blame the oil companies; Blacks and women are least likely to place blame. Blaming the president, however, related significantly to Black ethnicity, low-income status and gender.

The energy policies having little or no personal cost generally accepted; 55 mph (86 percent agree); reserved freeway lanes for buses and car pools (70 percent agree).

Beck, Paul Allen. 1980.

"Correlates of Energy Conservation." Public Policy 28: 451-71

Subject: Factors related to energy conservation and some assumptions and prospects for national energy policy.

Survey Date: February-April 1978.

Methods: Sample survey of 779 Pittsburg families. A broad-gauged study (socioeconomic) with interview with single-family household in Allegheny County.

Analysis Technique: Correlation and regression analysis. Respondents were asked to report on specific energy-related activities of themselves and other members of their household.

Significant Findings: Homeowners are more conservation-oriented than renters, but differences are small.

Attitude and perception account for about 10 percent of the variance in conservation efforts.

The largest simple correlation is between energy sophistication and conservation. More sophisticated respondents were substantially more likely to conserve. (Beck is referring to education).

Those more likely to conserve, derived a satisfaction from energy conservation. This to related to education, but the level of education did not account for impact on attitudes.

Those Pittsburg families who experienced hardships because of strikes or unemployment were more likely to conserve (coal strike of 1977).

Family income has a relationship with conservation. But the impacts of age and race cannot be attributed to other variables in the regression analysis.

Given the findings, whites are more likely to conserve than Blacks. They are more likely to possess the attributes of (income, education, home ownership) found to be connected to conservation.

Implications: Enhance consumer conservation; increased prices impact demand; energy usage increases with income; low-income families have few alternatives regarding electricity of demand.

Blackwell, Peggy J. 1980.  
Energy Resources Planning: The Socio Dimensions. University of New Mexico: Behavioral Research Division for Applied Research Sciences.

Subject: To establish a framework for incorporating social factors in the energy resource planning-decision process.

Survey Date: Ongoing from late 1976.

Methods: Resource planning models using factor, dimension. domain models. Three sources: Interviews with state and local leaders involved in energy planning, relevant energy-related literature, a panel of selected individuals, and a questionnaire administered to 265 respondents.

Analysis Technique: Respondents systematically selected from telephone books; acceptance rate of 82 percent. 32 percent of the respondents were Hispanic.

Significant Findings: Public surveyed has a disjunct view of the energy process and the situation confronting them.

Respondents do not appear to understand the relationship existing between technology, economics, and the social-sphere of influence.

There is a strong desire for personal freedom, especially among Hispanics, and rights which ultimately will conflict with the need to modify energy use patterns.

Respondents want an adequate supply of energy, generally without having to undertake any extraordinary measures themselves.

There is a willingness to implement conservation measures if some direction is made available.

Respondents are willing to pay a limited economic cost to ensure personal lifestyles but are unwilling to change those lifestyles to reduce energy consumption.

Incentives and penalties were ranked low by Hispanic respondents. But they ranked economic relief high.

Hispanic consumers placed a high priority on technical assistance to consumers.

Blakely, Edward J. 1976.  
"Energy, Public Opinion, and Public Policy:  
A Survey of Urban, Suburban, and Rural  
Communities." California Agriculture 30: 4-30.

Subject: Energy-related community behavior.

Survey Date: 1976 (Report date)

Methods: Stratified random sample of three consumer groups  
in Sacramento, California.

Analysis  
Technique: House to house survey of 500 single-family  
households. Correlation and regression analysis.

Significant  
Findings: Place of residence determines attitudes on  
energy-related behavior.

Respondents preferred energy alternatives in  
regard to public policy recommendations.

Respondents showed little difference on the  
principal issues of energy even though rural  
or urban.

There exist a dichotomy between the role of  
individuals and government in solving energy  
problems.

Bloom, Martin. 1975.

A Study of the Effects of Rising Energy Prices on the Low and Moderate Income Elderly. Maryland: Applied Management Sciences, NTIS Report PB-244.

Subject: Impacts of rising energy costs on three target areas.

Survey Date: March. 1975 (Report Date).

Methods: Interviews with randomly selected individuals.

Analysis  
Technique: Taped interviews.

Significant Findings: The primary impacts on elderly consumers are income/expenditures, housing, and transportation.

On a regional basis, there is not much of a variable as to quality of life decisions regarding the elderly consumer.

There was no consensus of opinion as to the role of the government in solving the energy crisis.

Bultena, Gordon L. 1976  
Public Responses to the Energy Crisis: A Study of Citizens' Attitudes and Adaptive Behaviors.  
Ames: Iowa State University.

Subject: Attitudinal and behavioral responses of Des Moines, Iowa residents, especially social-class differences regarding rising energy costs.

Survey Date: Summer 1974

Methods: Des Moines census tracts were ordered on four socioeconomic indicators: occupation of residents, educational attainment, house value, average monthly rent. High through low-income respondents were stratified throughout the tract. 190 people interviewed in their homes.

Analysis Technique: Use of chi-square for differences in responses.

Significant Findings: Majority of respondents blamed large oil companies for the energy problem. They referred especially to government favoritism.

Few respondents felt shortages came from declining resources or energy reserves.

Most low-income consumers believed the government was to blame for their particular energy problems regarding rate structures and supply.

Increased gasoline costs and home-heating were the impacts most often reported.

Low-income respondents did not report as much conservation effort as more affluent respondents.

Few respondents had taken political action in regard to energy.

Greatest priority, securing a sufficient supply of energy to meet immediate needs. The need expressed by low-income consumers was for lowering of prices.

Technological solutions were not as popular with low-income consumers. Yet, the government was largely looked upon to solve immediate energy problems.



Caplovitz, David. 1979.  
Making Ends Meet: How Families Cope With  
Inflation and Recession. Beverly Hills: Sage  
Library of Social Research.

Subject: The impact of "stagflation" on vulnerable  
socioeconomic groups in a particular  
stratified sample area.

Survey Date: 1976-78.

Methods: Sample survey of 20,000 interviews in SMSA  
districts of Atlanta (500), San Francisco (495),  
New York (500), and Detroit (507). Interviewed  
adult heads of households.

Analysis  
Technique: Stratified random sample and correlation with  
qualitative data.

Significnat  
Findings: The term of the late 1970s "stagflation" is  
widespread across all income levels of survey.

Across the board, changes in life styles  
have taken place as people adjust to rising cost  
of living.

Unlike the depression of 1930s, stagflation  
and recession have failed to generate any mass  
protest by consumers.

Formulated prior to Reagonomics, Caplovitz  
projects that the widespread factor of social  
programs will be effective in lessening the  
impact of coming hard times.

Low-income consumers (incomes below \$7,500)  
made up about 25 percent of the study. Hispanics  
were represented in the survey, especially  
in the San Francisco research.

There was enough evidence to suggest that Hispanics  
were representative of families who have fallen  
behind rising prices.

Chapter #5 focused on consumer responses in  
revealing consumer attitudes towards the impact  
of inflation on their families.

Chapter #12 gave implications for public policy,  
suggested continued price controls, financial  
assistance for the low-income, economic incentives,  
grassroots organization by consumers, weather-  
ization efforts, and inner city employment programs  
such as manpower programs of the past.

Conclusion, Blacks and Hispanics are most  
severely impacted by inflation and recession of the  
late 70s.

Congress of the United States, Congressional Budget Office. 1981.  
Low-Income Energy Assistance: Issues and Options.  
Washington, D.C.: U.S. Government Printing Office.

Subject: Examination of high energy costs on low-income households and analysis of issues and options relating to design and future energy needs (Senate Budget Committee).

Survey Date: June 1981 (Report Date).

Analysis Technique: Distributional impacts of energy prices increases; policy alternatives/analysis based on DOE's National Interim Energy Consumption Survey.

Significant Findings: Funding for low-income energy assistance has risen from \$200 million in 1977 to \$1.85 billion in 1981.

In fiscal year 1981, households with incomes below \$7,400 estimated to spend over 15 percent of their income on home energy and over 8 percent on gasoline, compared to less than 4 percent spent on home energy and less than 5 percent spent on gasoline by other households in U.S.

Rising energy burden varies among households in same low-income grouping, in accordance to climate, heating fuel used, and automobile driving patterns. Average home energy expenditures in fiscal year 1981 are estimated to range from \$700 in the West to \$1,290 in the Northeast.

Rising energy burden on low-income households may be at least partially offset by indexation of their income to the rising cost of living. Because low-income households more likely to receive such indexed benefits as Social Security, Supplemental Security Income, or food stamps, federal income support programs at least partially compensate some low-income families for rising energy costs.

Low-income energy assistance programs should address any number of specific goals, among them ensuring adequate levels of home energy consumption by low-income households; offsetting effects of rising energy prices on the real incomes households; and promoting energy conservation.

Energy assistance proposals for 1982 provide block grant assistance to the states. Specific program design issues include eligibility requirements, allocations, and funding benefits to those who fall within new income guidelines.

Cunningham, William H., and Sally Cook Lopreato. 1977.  
Energy Use and Conservation Incentives: A  
Study of the Southwestern United States.  
New York, N.Y.: Praeger Publishers.

Subject: Information on the attitudes and beliefs of Southwestern consumers relevant to energy problems and conservation in particular.

Survey Date: Fall, 1975.

Methods: Ten thousand questionnaires mailed to residents in five communities: Austin and El Paso, Texas; Flagstaff and Prescott, Arizona; and Albuquerque, New Mexico. Response rate of 25 percent yielded 2,403 codable returns for analysis.

Analysis Technique: Factor analysis using equimix rotation. A range of seven attitudinal factors and item loadings.

Significant Findings: Because of warmer climate in the Southwest, low-income consumers use considerable less energy than counterpart in other regions of the country.

Low-income consumers reported life style changes because of the energy crisis.

Some 64 percent of Blacks surveyed and 62 percent of Hispanics felt that nation's energy problem is not very significant.

Low-income Hispanics in the Southwest do make serious efforts at conservation.

Hispanics fall into a "complainers" category versus a non-complainers category.

Low-income Hispanics are more readily willing to attribute responsibility for the problem and feel that energy industries have taken advantage of the situation.

Those individuals who were classified as more energy conserving were low-income, less educated, and more likely to be Hispanic than were less energy-conserving subjects.

Middle-income consumers appear to be more responsive regarding economic incentives and conservation. Low-income consumers show significantly less response.

Those individuals in higher income groups more likely to believe in the problem of energy, but those making conservation sacrifices are the low-income.

Curtin, Richard T. 1975. "Consumer Adaptation to Energy Shortages." Ann Arbor: University of Michigan, Survey Research Center (unpublished manuscript).

Subject: Conservation behavior, attitudes, and motivations.

Survey Date: Autumn, 1974.

Methods: Personal interviews with single-family heads of households from 1,400 randomly selected family units within United States.

Analysis Technique: Multiple-classification analysis.

Significant Findings: A widespread conservation effort reported regardless of income variables. But a prospect of difficult adjustment found in all socio-economic groups.

Personal experience with past conservation efforts lowered expectations future adjustments to energy shortages.

Those who believe that government can handle national economic problems made a greater effort at conservation. They view future efforts as less difficult. Low-income consumers did not fall into this opinion.

The young consumer and educated consumer stated greater effort at conservation. They also saw less difficulty in conserving if electricity or heating prices continued to rise.

Those consumers interviewed with smaller homes made less of an effort to conserve. Those consumers with larger homes viewed conservation as more difficult in the future.

Family size was directly related to conservation efforts. With the low-income it was a curvilinear relationship. The energy crisis had a real effect on the way they make efforts to conserve.

Consumers in large urban areas reported an easy adjustment to rising gasoline prices and would continue to drive regardless of price. Still, they reported a difficulty in adjusting to home heating bills.

Respondents in more rural areas of the country, reported just the opposite. Alternatives were found to home heating (such as firewood), but gasoline prices were believed to be excessively high.

Dalomba, Dolores. 1980.  
Job Oportunities in Energy: Prospects for  
Low-income People, Minorities and Women.  
National Community Action Agency Directors  
Association Report.

Subject: Employment opportunities.

Survey Date: May 1980.

Methods: Bureau of Labor Statistics (BLS) profiles and  
projection analysis.

Analysis  
Technique: Concurrent openings and BLS figures for future  
energy field positions.

Significant  
Findings: The combined potential for job creation from  
a federal policy of conservation and renew-  
able energy development far exceed the potential  
for jobs that might be created and accessible  
to minority community.

Denney, Michael and J. Stephen Hendricks. 1979.  
Energy, Inflation, and Citizen Discontent:  
A Report on the Public Reasoning About Electric  
Utility Policies and Nuclear Energy.  
Center for Energy Studies, The University of  
Texas at Austin.

Subject: Public opinion about energy and inflation:  
and public reasoning about nuclear energy.

Survey Date: September 1978-November 1979.

Methods: 825 telephone interviews from a random sample  
of Austin, Texas area residents. Interviews  
consisted of both precoded and open-ended  
questions and took an average of thirty  
minutes to administer.

Analysis  
Technique: Testing validity of egocentric versus socio-  
tropic models in the context of local rather  
than national perspectives: Multivariate  
analysis.

Significant  
Findings: Austin citizens hold impressively favorable  
image of electric utility, even though they  
believe rates are far too high.

Austin residents are likely to misunderstand  
other features of electric utility and the forces  
that shape them. Still, age, education, and time  
lived in Austin influence awareness.

On nuclear energy, no great after effects of incid-  
ences such as three-mile island.

DuMars, Charles T., Michael B. Browde, Scott Taylor, Barbara, Shapiro, Maria Geer, and F. Lee Brown. 1977.

A Study of Lifeline as A Form of Low-Income Consumer Relief in the Context of Utility Rate-Making. University of New Mexico: New Mexico Energy Institute.

Subject: To evaluate "Lifeline" concept in terms of cost effectiveness as a means of relieving low-income consumers from spiraling costs of energy.

Survey Date: December 1975-December 1976.

Methods: As method of determining low-income natural gas usage, researchers examined random sample of 400 active food stamp files. Data on gas consumption for residential users in Albuquerque, New Mexico supplied by Gas Company of New Mexico. Random sample yielded statistics on 177 low-income families. They were analyzed concerning average usage of low-income people (564 monthly bills examined).

Analysis Technique: Comparing of low-income natural gas usage with average residential usage; computing cost efficiency of "lifeline" as program for relief of low-income consumers at three different gas price levels (statistical analysis and California lifeline program as model).

Significant Findings: "Lifeline" describes rate plans adopted by public utilities whereby consumers pay low rates for limited amount of electricity or gas necessary to satisfy basic needs. Under lifeline plan, the basic quantity may be exempt from rate increases, subject to small increases, or given at reduced rates.

Major assumption regarding lifeline is that all people are entitled to minimum quantum of energy regardless of economic status. Opponents and advocates of lifeline have fair share of arguments regarding rate structures.

Low-income consumers are frequently "inelastic" users of energy; they already consume energy at minimal levels and cannot change behavior to consume less. Larger users are more elastic; they can use energy more efficiently and can conserve more; therefore, rate structures should encourage them to practice such conservation behavior.

DuMars, Charles T., Michael B. Browde, Scott Taylor, Barbara, Shapiro, Maria Geer, and F. Lee Brown. 1977.

Significant Findings:

Over 22 percent of New Mexico residents fall within a low-income category as compared with 13 percent for rest of the United States. Low-income families spend a greater proportion of their income for heat and light, generally they can only pay for increased rates by depriving themselves of other necessities.

Since low-income households are generally unable to reduce energy consumption because they are at minimal subsistence levels, adequate lifeline levels at low rates would provide necessary utilities without depriving them of other necessities.

Average monthly bill for all residential users for 12 month period December 1975-November 1976 (computed by taking the mean of average monthly bills for that period) was \$14.86. In contrast, average monthly bill for same period based on the low-income sample (same computation) was \$17.28. Over the annual period, average monthly bill from low-income sample was \$2.42 more than average monthly bills for all residential users. This varies drastically between summer and winter.

If the sole purpose of lifeline is to subsidize low-income households, arriving at a figure and setting block of low usage at low cost may be less efficient than more direct methods of subsidy. Still, alternative programs have problems in reaching low-income people. An effective program of energy assistance will most likely require the coordination of several approaches.



El Paso Electric Company, 1981.

New Mexico Residential Appliance Saturation Survey. Report Number 1. El Paso, Texas.

Subject: Estimates of various electrical appliances, types of equipment used for both space cooling and heating.

Survey Date: October 1981. (Report Date).

Methods: Survey questionnaire mailed to 3,948 New Mexico residential customers. Total number of returns was 1,434 useable questionnaires.

Analysis Technique: Three weighting factors calculated to overcome saturation levels in responses. No cross-tabulation used.

Significant Findings: The information (presented on tables) can be used to (1) develop load characteristics and energy requirements of residential consumers, (2) prepare energy forecast, (3) develop usage profiles, (4) assess the extent of energy conservation, (5) provide preliminary customer attitudes and awareness levels, (6) provide a data base, and (7) provide research vital for formulation of marketing objectives and strategies.

Fisk, Pliny. 1979.

Multi-Level Coordination of Low Cost  
Community Produced Passive Solar System  
in Crystal City, Texas. Center for Maximum  
potential Building Systems, Texas.

Subject: Passive and solar heating systems in rural towns.

Survey Date: Presented at DOE/ET 4th National Passive Solar Conference, Kansas City, October 3-5, 1979.

Methods: Descriptors: solar heating construction, solar collectors, greenhouses, recycling techniques, and capital costs.

Analysis  
Technique: Cross-tables of energy use and savings per household. Experimental models used in the region.

Significant Findings: Small high poverty area in South Texas confronting problem of affordable energy resources. Techniques used lowered energy costs in this rural area of Texas, especially an area with a high concentration of Hispanic consumers. Total energy savings resulted from this passive system were 33-34 percent. Capital cost and thermal performance of the system was at a minimum.

It must be stressed that the system was only experimental and that Crystal City, Texas has a significant Hispanic population.

Federal Energy Administration, Consumer Affairs/Special  
Impact Office. 1975.

A Study of the Effects of Rising Energy  
Prices on the Low and Moderate Income  
Elderly. Washington, D.C., U.S.  
Government Printing Office.

Subject: Research data on rising energy costs on the low-income and elderly, and their likely impacts.

Survey Date: March 1975 (report date).

Methods: Acquisition, review, tabulation, and analysis of existing secondary sources. Assessment on three target areas: individual elderly consumer, institutions which serve the elderly, and federal programs.

Analysis Techniques: Assessment of variance on regional basis, focusing on series of "energy crisis" related questions.

Significant Findings: Low-income families use less energy than other households and use it largely for necessities. They spend a larger proportion of their income on the energy they use, pay a higher price per unit, and cannot afford the out-of-pocket costs, of equipment for conserving energy.

Energy price increases have been greatest in SMSA's in the New England and Middle Atlantic states, while smallest in SMSA's in the South and Southwest.

The largest number of elderly persons live in north central regions of U.S. the proportion of elderly in the population has increased in last decade in all regions except North-east and Mountain states.

Policy recommendations: (1) automatic increases in Social Security benefits in response to Consumer Price Index increases; (2) exemption of elderly from taxation on energy sources to conserve energy; (3) readjustment of utility rates so that low

energy users such as elderly pay lower rates; and (4) reorganization of present income support programs in response to rising energy prices.

Grier, Eunice S. 1977.

Colder...Darker: The Energy Crisis and Low-Income Americans. U.S. Community Services Administration Report, Washington Center for Metropolitan Studies.

Subject: The effects of energy prices upon low-income households in the U.S.

Survey Date: Spring 1973- June 1977.

Methods: Representative samples (nationally) of households surveyed by the Center for Metropolitan Studies; in-depth interviews, direct measurement of utility consumption and costs. Post-crisis sample numbered 3,200.

Analysis  
Technique: Frequencies, cross tabulations, average consumption.

Significant  
Findings: Pre-and post-oil embargo: Less energy is consumed by low-income households compared with the amount consumed by upper income households across the country. Low-income households average 20 percent of their income on energy expenditures.

Weatherization in low-income households is far less than the middle to upper income investments in conservation through protection. Also, there appliances are more often of low energy consumption types.

Since 1976, low-income households have reduced travel significantly. Automobile usage has been limited to short trips and car pooling is an alternative practiced by low-income people.

Most low-income households are aware of the "energy crisis," but majority (65 percent) have not made significant adjustments to the crisis. Efforts are limited to those things easiest to do.

Grier, Eunice S. 1977.

Energy conservation efforts are related directly to income. Middle-income groups (\$14,000-17,000) made largest proportion of energy conservation efforts, especially into the area of home improvements.

More than 50 percent of those households surveyed definitely agree that every family (regardless of income) should make efforts to reduce energy consumption.

Recommendations: policies and energy programs designed to help low-income households need to recognize the diversity of low-income households across the U.S. and diversity of low-income needs.

Grier included a breakdown through the usage of 64 tables and graphs. Majority of his survey covered the low-income Black consumer in major urban areas of the country.

Grier, Eunice S., and George Grier 1978.

High Fuel Oil Prices: The Impact On Low-Income Households. Bethesda, M.D.: Grier Partnerships (Community Services Administration Contract No. B8B-5587).

Subject: Impact of rising fuel oil prices on low-income households.

Survey Date: August 1978 (Report Date).

Methods: The Washington Center for Metropolitan Studies 1975 National Survey of Household Energy Use was updated using federally-compiled data.

Analysis  
Technique: Data used to prepare a profile of low-income fuel oil users and their housing. Report discusses policy options to alleviate problems created by rising fuel oil prices including price controls, financial assistance and weatherization programs.

Subject  
Findings: Average low-income household which heated with fuel oil and paid its own bills spent an estimated \$530 for that fuel alone during the 1977-78 heating season. This was 41 percent more than it paid in 1974-75.

Grier, Eunice S., and George Grier 1978.

Fuel oil users are concentrated in the Northeast. Winters there are considerably colder than U.S. average. Oil prices are higher as well. The average low-income households in the Northeast paid \$693 for fuel oil in 1977. This was 31 percent more than its counterpart in the nation as a whole.

Low-income fuel oil users in Northeast pay more not only because of where they live, but also because of types of housing available to them. Nearly three-fifths of their homes were built prior to 1940. Often these homes lack adequate insulation; and their heating plants, converted from coal in many cases, tend to be poorly maintained and inefficient.

More than one-third of all low-income fuel oil users are elderly, most of them on fixed incomes. For the elderly, rising fuel oil prices have been devastating.

Weatherization efforts have begun to attack some of the problems. But prior to 1978, only an estimated 3.5 percent of homes have received weatherization.

Emergency energy assistance, while it serves an important function, is purely a stopgap measure. It does not meet the primary problem, which is a budgetary one. If energy prices continue to rise, more and more energy funds will be needed each year. Hence, the Griers' conclude that price controls--whatever their limitations--may be the only alternative possible.

Hull, Everson W. 1979.

"U.S. Energy Policy and Employment Opportunities for the Poor." The Review of Black Political Economy 9:238-55.

Subject:

Energy prices and there impact on minority employment prospects.

Survey Date:

Prompted by energy report of National Association for the Advancement of Colored People (NAACP) issued in 1977.

Methods: Five sections: historical evidence to document that the closer economy is to full employment, more likely that Black unemployment will be low. Evidence to show that substitution of non-energy-intensive production techniques will have positive impact on Black employment. Evidence in form of graphs to show that negative employment effects of energy shortage and implications for Black employment. Discussion on effects of regulation. And last, profitability of the petroleum industry.

Analysis  
Technique: Relationship between aggregate economic performance and Black employment prospects using such data as GNP and BLS tables.

Significant  
Findings: Black Americans suffer disproportionately whenever the U.S. economy falls short of its potential.

Fewer controls and a free-market solution to the nation's energy problems will result in the most efficient utilization of nation's productive capacity. Such a policy will result in a greater employment prospect for Blacks and other members of low-income groups.

Price controls have not been designated to favor low-income people. While true that Black Americans paid the lowered controlled price, also true that they shared the burdens of disproportionate layoffs and long gas lines of the 1973-74 energy crisis.

High rates of economic growth are a necessary condition for the economic progress of Black Americans. Given the economic realities of Black unemployment (13.1% per annum) and a white unemployment rate of 6.2% per annum (1977), it is not in the best interest of Black Americans to support no-growth policies which would restrict domestic energy development and calls for cleanliness at any price.

The analysis is somewhat misleading. It does not address the unemployment picture directly. Other things being equal, higher energy prices could lead to increased demand for labor. Also, Hull presents no evidence to show how Black employment picture would look if regulation were lifted. He only can make a projection. Moreover, the analysis ignores consumption demands for energy and that low-income consumers typically pay a disproportionate share of their income for energy.

Joint Center for Political Studies. 1977. Energy Policy and the Poor: A Roundtable Discussion. Washington, D.C.: Proceedings Report (unpublished).

Subject: Issues raised by administration's 1977 energy proposals and their implications for minority groups and the poor.

Survey Date: June 1977.

Methods: In a roundtable discussion, forty-four participants ranging from federal representatives through labor groups and industry to private, non-profit organizations discussed issues raised by energy proposals (the administration's energy proposals), and their economic impact upon the poor and minority consumers.

Analysis Technique: Public-policy hearings. Taped report proceedings.

Significant Findings: General consensus in 1977, prior to National Energy Act, that the poor and minority group consumers had not been adequately considered in foundation of national energy policy.

Federal proposals to provide assistance in aiding low-income households with rising energy prices reflect a diversity of goals and objectives.

Specific issues raised included: low-income eligibility requirements, benefits and services proposed, amounts of federal or state funds projected, and how funds should be allocated to low-income consumers.



- Miloff, Michael. 1980.  
"The Impact of Energy Prices on Low-Income Households." Alternatives 9:1-16.
- Subject: Rising Energy prices and projected impacts on low-income consumers.
- Survey Date: 1979.
- Methods: Impact assessment; income comparisons; and expenditures for transportation and shelter projected to 1985.
- Analysis  
Technique: Correlation and regression analysis of socioeconomic indicators; technical report of energy-related indicators (transportation tables, home heating profiles).
- Significant  
Findings: Energy expenditures for low-income consumers in 1979 were increasingly regressive, indicating that price increases will severely affect low-income families.
- The burden of rising energy prices varies among low-income households in accordance with such factors as climate, heating fuel used, and automobile driving patterns.
- Average home energy expenditures in 1981 are estimated to range from \$700 in the West to 1,400 in the Northeast. Household gasoline expenditures will continue to rise, but will remain lower priced in the Northeast.
- Rising energy prices will lead to major structural changes in the U.S. economy and thereby alter employment opportunities, wages, and household costs. The distributional impact of these changes will be extremely complex, but will hurt low-income households.
- Murray, Linda, Bonnie, Braun, and Sue Williams. 1979.  
"Energy Education Methodologies for Limited Income Families." Paper presented at Information Transfer INC/ET AL Technology for Energy Conservation Conference, Tucson, Arizona (January).

Subject: Energy conservation techniques for low-income consumers.

Survey Date: January 23-25, 1979 (conference date).

Methods: Project models to ascertain which of the two methods of information dissemination is most effective in attracting low-income households to meaningful conservation techniques.

Analysis Techniques: One-to-one approach was compared with that of group demonstration technique; the former approach found to be most effective.

Significant Findings: If the federal government seeks to ensure adequate energy consumption patterns by low income households, it can tie benefits to actual energy use through some type of subsidy program, or make their homes more energy efficient.

Weatherization assistance, like a subsidy for home energy, would allow the poor to consume necessary amounts of home energy at a lower cost, and would decrease total energy consumption.

Although home improvement measures may serve as complement to other forms of energy assistance, they cannot be a substitute for them. Many low-income and those households whose homes are in need of major nonenergy-related repairs, may not be able to benefit from energy education/conservation programs.

Despite progress in energy education methodologies, little hard data is available on types of educational activities that are most efficient for low-income consumers. In particular, information is lacking on the impact of weatherization activities prior to 1979.

Newman, Dorothy K., and Dawn Day. 1975. How Black Households Use Energy. Ford foundation Energy Policy Project Report. Cambridge: Ballinger.

Subject: Energy use patterns of Black households.

Survey Date: Interviews, 1972-74.

Methods: Personal interviews with single-family heads of households--overall, 1,455 respondents (65 percent); multistage area probability sample (national) with oversampling of lowest socioeconomic quartile; separate survey of electric and gas companies serving households billed directly, to obtain billing date for those who gave permission (90 percent response rate). This study should not be confused with The Energy Gap-Poor to Well Off also by Newman and Day. 1975.

Analysis  
Technique: Weight factors inversely proportionate to the probability of inclusion of each household in the sample; descriptive statistics.

Significant  
Findings: Black households used 7 percent of the electricity, natural gas, and gasoline used by all private consumers between 1972-73.

The Black proportionate share population was 11 percent. Of previous 7 percent figure, 11 percent was for natural gas, 6 percent went to electricity and 5 percent for gasoline.

Black consumers have less of a choice than do middle-income groups regarding energy sources at home.

Blacks use less electricity and natural gas per household, spend more money for it, and pay more per unit.

Home loan programs, energy assistance, federal housing legislation, and stronger enforcement of civil rights laws are Newman and Day recommendations.

The energy gap is most significant in the social consequences of automobile use.

Of all income groups, Blacks consume the least.

Basic features of Black homes (over which they have little control in many cases) are more important than the choice of appliances used in the households. Black households themselves can play only a minor role in energy conservation.

Opinion Research Corporation, Michael Rapoport and Patricia Labaw, Project Directors, 1974-76.

Public Opinion Polls on Energy. Highlight Reports (No. 1, 4, 8, 13, and 15) Princeton New Jersey: Opinion Research Corporation for the Federal Energy Administration):

Subject: Energy-related attitudes and behavior.

Survey Date: Monthly for 20 months, beginning September 1974.

Methods: Telephone interviews; randomly selected adults in households having telephones, nationwide; 600-1,200 interviews per month.

Analysis Technique: Frequencies, cross tabulations, multiple regression on attitudes toward energy problems.

Significant Findings:

Public remains split about seriousness of the energy problem; but there has been an increase in those who do take it seriously.

No demographic variables correlate with belief in reality of the crisis.

No significant difference in attitudes of low-income consumers and the total population. Any behavioral differences are slight and result from structural influences like economics rather than from conscious energy-related decisions.

Energy shortage is ranked far below rising unemployment and inflation as a national problem. There is little difference among age groups over time.

The pervasive lack of energy knowledge is not affected by age or income.

People generally are not able to cite accurately the amount they spend on home fuel.

Low-income consumers believed they were making as much effort as possible to conserve on energy.

Public generally does not favor removing pollution controls. Younger respondents are more willing to pay more for environmental protection. Low-income households and the elderly, are split on this issue.

Most consumers did not follow government advice on thermostat settings during the winter of 1975-76, nor did they intend to do so the following winter.

Low-income households and the elderly did not see the federal government as good source of advice on energy conservation or saving procedures.

Price cited as most important reason for conservation efforts by majority of low-income households and the elderly.

Perlman, Robert, and Roland L. Warren. 1975.  
Energy Savings by Households of Different Incomes in Three Metropolitan Areas.  
Massachusetts: Brandeis University.  
Heller Graduate School for Advanced Studies in Social Welfare.

Subject: Study on the impact that energy crisis had on families in several parts of U.S.

Survey Date: November 1974.

Methods: Towns selected because of region, climate, and primary source of fuel (Hartford, Connecticut; Mobile, Alabama; Salem, Oregon); households selected-multistage probability sample personal interviews; preference order; female head, male head, other adult; 1,913 contacts, 1,440 completed and processed.

Analysis Technique: Frequencies, cross tabulation.

Significant Findings: The elderly and poor Blacks were more likely to have suffered during the energy crisis.

Efforts to conserve vary more accordingly, to community than income of the household.

Majority of those interviewed reported price as primary reason for conserving.

Reductions were highest in areas where rates were highest.

Low-income Black consumers are more skeptical about reality of energy problems and placed greatest blame upon the federal government.

Majority of those interviewed did not believe that the crisis was real, but contrived to raise oil and gas prices.

Low-income energy conservation attitudes and behaviors in the three areas show more similarities than differences.

Survey methodology directed its focus to six elements that play important roles in family-policy interaction.

- (1) The stressor event.
- (2) Initial impact on capacities.
- (3) Cognitive processes.
- (4) Adjustments.
- (5) Successive adjustments on the family.
- (6) Residual effects in terms of crisis readiness/proneness.

Pruden, Henry O. and Douglas S Longman. 1972.  
"Race, Alienation and Consumerism."  
Journal of Marketing (July) : 58-59.

Subject: Findings of a survey of Whites, Hispanics, and Blacks which reveal that positive and significant relationship exists between alienation and belief in government intervention in the marketplace.

Survey Date: 1968-72.

Methods: Marketing research on correlation between low-income consumerism and the government. Commentary of literature then available.

Analysis  
Technique: Marketplace sample for attitudes and various measures of association.

Significant Findings:

Conditions of modern large-scale capitalism alienate low-income consumer from the process of acquisition and consumption of goods.

Low-income consumers do not feel they are active bearers of their own living standards in consumer marketplace.

Mass consumption, distribution and massive marketplace have alienated low-income consumer.

Low-income Hispanics feel powerless, meaningless, and socially isolated.

Although the so-called plight of low-income people has been strongly identified with Blacks, there is strong evidence to suggest that low-income Hispanics are not well served by retailers and financial institutions.

Consumerism refers to the widening of activities of government, business, and independent organizations which are designed to protect individuals from practices and policies that infringe upon consumer rights.

Consumer advocates believe the rights of consumers remain unfulfilled. Elements of alienation relate to demographic factors consisting of ethnic background, sex, age, income, formal education, and marital status. Alienation is a significant facet of Black and Hispanic discontent with the marketplace.

Schexnider, Alvin J. 1964.

"Blacks, Cities, and the Energy Crisis." Urban Affairs Quarterly 10: 5-16.

Subject: Residential distribution to large urban cities of lower-and lower-middle-income Blacks and impacts upon energy resources.

Survey Date: Survey of literature, 1970-74.

Methods: Comparative patterns of Black urbanization, urban ecology, and settlement patterns through literature review.

Analysis Technique: Hypothesis developed from literature.

Significant  
Findings:

There has occurred noted polarization of the nation into separate and unequal societies; of chiefly Black and poor and located in central cities; the other largely white, affluent, and suburban. Today, fully half of the American Black population resides in central cities of the North.

In the jargon of community politics, central city is synonymous with Blacks.

Where it has occurred, Black control of central cities is truly a "hollow victory" indeed.

Technological and organizational changes that were made as a result of energy transformation and communication, ultimately led to demise of the compact city. Moreover, the automobile is the link between central city and suburbia.

The increasing cost of gasoline prices is heavily impacting the central city and will continue to do so.

There are three basic categories of employment remaining in the central city; office jobs, service jobs, and government jobs. Essentially, Blacks are concentrated in the service sector of central cities.

There is possibility that the energy situation may restore central city to its former prominence and also stem the tide of increasing Black percentages there.

Inner-city Black residents may be in the position to maximize rewards from the reverse of white migration. The energy crisis thus allows Blacks the opportunity to reassess the "hollow victory" which may not be so barren after all.

The Urban Institute. 1979

Distributional Consequences of Energy Price Increases for the Nation's Low-Income Households. Washington, D.C.: Urban Institute:

Subject:

Federal assistance programs and the economic impact of rising energy prices. Institutional factors also examined.



Survey Date: 1978-79.

Methods: Public policy hearings using secondary data on modified area probability samples (nationwide).

Analysis Techniques: Data differentiated to identify low-income people most in need and identification of energy needs prior to passing of energy assistance legislation. Analysis of variance and public policy projections.

Significant Findings: The impact of rising energy costs on low-income consumers will produce a need gap of nearly \$2 billion for those households spending over 14 percent of their income for home energy uses.

Estimates of energy assistance needed for home fuel for the low-income in each state reveal variations in prices by fuel type or region, but show an increase for all low-income households.

Percentage increased for oil exceeds 50 percent in each region, while gas varies from 2 to 28 percent and electricity from 1 to 11 percent increase.

Since 1977, federal low-income energy assistance proposals or programs have reflected a diversity of goals and objectives. Individual programs instituted have differed greatly, and display no real continuity.

U.S. Commission of Civil Rights, New Mexico Advisory Committee. 1982.  
Energy Development in Northwestern New Mexico: A Civil Rights Perspective.  
Washington, D.C.: U.S. Government Printing Office.

Subject: Fact-finding commission on matters pertaining to the civil rights of Indians and Hispanics and energy development in New Mexico.

Survey Date: Fall of 1981.

Methods: Series of hearings throughout northern part of New Mexico.

Analysis  
Technique: Public-policy hearings.

Significant Findings: Indians and Hispanics not obtaining significant share of energy-related jobs in New Mexico.

Energy development is threatening to both communities, especially religious practices of the Indians.

The BIA has neither the staff nor technical skill to advise and represent Indian people on energy issues.

Civil rights have been heavily impacted in Mckinley, Cibola, and San Juan counties.

The minority community in New Mexico, regarding energy jobs, are concentrated in low level positions.

Increased affirmative action necessary for Indians and Hispanics to penetrate energy fields.

Close monitoring by federal government is needed to insure the process of equity in regard to energy employment and development.

Confusion exists in interpretation of laws and regulations located near Indian lands.

Language difficulties limit the ability of Indians and Hispanics to participate in the decision-making process involving energy issues.

This ten-member committee, chaired by Lt. Governor Roberto Mondragon, in 216-pages criticized the BIA for "shortchanging" the Hispanic and Indian community of New Mexico.

Important to stress that the government is largely looked to for amelioration of

the problem of civil rights violations in New Mexico. At a time when government is moving in another direction, report calls for stiff monitoring.

U.S. Commission of Civil Rights, Western Region Advisory Committee, 1980.  
Energy and Civil Rights. Washington, D.C.: U.S. Government Printing Office.

Subject: Socioeconomic impact of energy related policy upon the lives of the elderly, women, and minorities in the Southwest.

Survey Date: 1980.

Methods: Secondary statistics and series of civil rights panels in the Western part of U.S.

Analysis Technique: Public-policy hearings and recommendations.

Significant Findings: Low-income Hispanics, the elderly, and women who head households carry a disproportionate share of energy pricing policies in the Southwest.

The uneven impact of price policies, block-rate structures, indexing, energy assistance, and energy conservation efforts aimed at low-income families suffers from interregional inequalities.

Civil Rights of the poor in places like New Mexico, Colorado, and Arizona are heavily impacted as shifts in energy policy introduced.

The National Energy Act (1978) has not helped low-income families in the Southwest. Weatherization, particularly homes of the elderly and handicapped, have not significantly aided in creation of recent energy policy.

Budget plans and rate making processes of regional utilities companies have not been specifically projected to low-income consumer, especially in the area program availability.

Public assistance such as Aid to Families with Dependent children has not kept pace with rising costs of energy. Social Security Income has also not kept pace with the rising costs of energy.

Families in New Mexico receiving public assistance are disproportionately headed by Hispanic women and the elderly.

Low-income Hispanics use energy primarily for essentials: heating, lighting, refrigeration, and driving.

Findings indicate that the poor in the Southwest are not better off than when Congress passed National Energy Act of 1978.

In fact, in areas like Rio Arriba County of New Mexico the economically disadvantaged suffer tremendously from escalating energy prices.

U.S. Department of Energy, Energy Information Administration.  
1979.

Distributional Analysis of Trends in  
Energy Expenditures by Black Households.  
Washington, D.C. : U.S. Government  
Printing Office (DOE/RG-0184/30).

Subject: Trends in the distribution of average energy expenditures among households headed by Blacks and Whites from 1974-85 are projected.

Survey Date: January 1979 (report date).

Methods: Distributional trends include location, age and sex of household head, and income. Comparative patterns vary significantly from one demographic socioeconomic group to another. Socioeconomic projections from DOE data base.

Analysis  
Technique: Distributional impact model of energy price increases; factor projections using Black/White comparisons.

Significant Findings:

White households are estimated to have higher energy expenditures than comparable Black households in each year, but Black households have higher expenses when expressed as a percentage of disposable income.

Percentage of disposable income spent on energy needs varies more for Black and White households in different demographic areas and with different incomes than for the same groups and circumstances rated according to DOE's forecast of future energy expenses.

Since Black households spend higher proportion of their disposable incomes on energy-related expenditures than do Whites expenditures, they lose a larger proportion of their real incomes as energy prices continue to rise.

U.S. Department of Energy, Energy Information Administration. Ongoing from 1978. The National Interim Energy Consumption Survey (NIECS). Washington, D.C. : U.S. Government Printing Office (Eleven interrelated report presently available).

Subject: Analysis of residential energy consumption data/linear models and single-family household characteristics from a national statistical sample (presented on tables and groups).

Survey Date: Ongoing from 1978.

Methods: NIECS survey designed as probability sample of households using personal interviews (mailed questionnaires) to obtain energy-related characteristics of housing units and household members. Latter data also obtained from utilities companies serving sampled households. Altogether 3,842 single-family households completed first NIECS national sample.

Analysis Techniques:

Multi-stage area probability sample, consumption models, analysis of variance: descriptive statistics.

Details of the NIECS sampling plan are summarized in the report, National Interim

Energy Consumption Survey: Exploring  
the Variability in Energy Consumption  
(DOE/EIA-0272).

Preliminary public use version of the NIECS statistical data is available in machine-readable form from the National Technical Information Service. Residential Energy Consumption Survey: 1978-1980 Consumption and Expenditures, Part II: Regional Data, May 1981 (DOE/EIA-0262/2).

There appears to be wide variability of energy consumption patterns within specific regions of the country. Still, physical housing factors such as number of appliances, rooms, or family members are more highly correlated with personal single-family household consumption, than are life style factors.

Even though housing relates directly to energy consumption (size of single-family household, number of rooms, doors, and windows), these are but variables closely related to family income.

Basic features of home structure (over which single-family household had little control) appears to be more important than choice of appliances in energy consumption. It appears that households by themselves can play only a minor role in conservation efforts.

Other related reports published by the Office of Energy Markets and Use, DOE, End Use Energy Division:

Single-Family Households: Fuel Inventories and Expenditures: National Interim Energy Consumption Survey (Dec., 1979).

Residential Energy Consumption Survey: Characteristics of Housing Stocks and Households, (July, 1978).

Residential Energy Consumption Survey: Consumption and Expenditures (April 1979-March 1979).

Residential Energy Consumption Survey: Consumption Patterns of Household Vehicles (June-August 1979).

Residential Energy Consumption Survey:  
1978-1981 Consumption and Expenditures,  
Part I: National Data, Part II, Regional  
Data (1981).

U.S. Department of Energy, Economic Regulatory Administration.  
1980.

Low Income Energy Assistance Programs: A  
Profile of Need and Policy Options.  
Washington, D.C.: U.S. Government  
Printing Office (DOE/RG-0039).

Subject: Federal assistance programs, inflation  
and household energy supplies.

Survey Date: July 1980 (Report Date).

Methods: Fuel oil marketing profiles, assessment  
of documentation. Fuel Oil Marketing  
Advisory Committee (FOMAC) model and  
projected cost of 1980-81 energy assistance  
program (updating of needs and responses  
to that need).

Analysis  
TEchnique: Descriptive statistics; modeling and  
time-series explorations.

Significant  
Findings: Updated assessment needs survey finds  
that the poor will expend at least 21  
percent of personal income on household  
energy needs.

Appropriations by Congress and stipulations  
in aiding low-income families supports  
FOMAC design of income indexing/vendor  
line of credit approach. The design  
provides assistance based on energy needed,  
cost of fuel, and percentage of income.

To implement FOMAC design nationally  
would (estimated) range from \$3.5 to  
4.6 billion for the 1980-81 winter heating  
season. A figure of \$1.6 to \$2.2 billion  
discussed in Congress (estimates far  
below actual budget for energy assistance  
program).

Meeting ongoing energy needs of the low-  
income consumer, especially Blacks, Hispanic,  
and elderly, will require a coherent national  
policy which consist of aid in paying  
energy bills and aid in the poor's efforts  
to conserve energy.

Report calls for promoting such goals nationally. Needs assessment, government response, FOMAC model, comments on the programs, projected cost of 1980-81 energy assistance program, need for conservation programs, and program financing are issues confronting public-policy makers.

The commitment to conservation positively related to energy assistance. No blame is placed, but a felt need for conservation education of low-income consumers nationally. There is avoidance to question of conservation as national issue that impacts all income groups.

Report findings concerning importance of energy problems related to education, income, and area of residence.

U.S. Department of Health, Education, and Welfare. Office of Income Security Policy. 1974.  
Impact of Rising Residential Energy Prices on the Low-Income Population: An Analysis of the Home-Heating Problem and Policy Alternatives. Washington, D.C.: U.S. Government Printing Office.

Subject: Effect of rapidly rising residential energy prices, specifically for home-heating fuels on low-income consumer is examined; public policy alternatives to ameliorate this impact are analyzed.

Survey Date: 1973-74.

Methods: Resources planning models using feasibility for the concept of "fuel stamp" program. Five sources: Data from Food Stamps Program, Aid to Families with Dependent Children, Emergency Assistance, Supplemental Security Income, and state and local assistance programs.

Analysis Technique: Analysis of home-heating costs and particular needs of low-income consumers. Correlation and regression analysis of fuel oil expenditures (regional profiles). Needs assessment analysis at congressional request.



Significant Findings:

While 1973-74 "fuel stamp" proposals differed in several significant respects, all proposed federal commitments to aid low-income households with rising costs of energy. These proposals, in response to the "energy crisis" would provide low-income energy assistance in offsetting high costs of home-heating fuels (federal cash assistance).

During the "energy crisis" fuel oil prices increased significantly more in the North-east than elsewhere. Prices for energy used in homes nationwide--principally fuel oil, natural gas, electricity, and bottled gas--rose twice as fast, on the average, as general inflation rate.

Recommended federal goals: Provide additional purchasing power to low-income households and encourage reduced consumption of home heating fuels through improvements in thermal efficiency of living quarters.

Incorporating cash payments, or any kind goods (such as blankets, or space heaters) into Aid to Families with Dependent Children and Supplemental Security Income programs, allowing recipients flexibility in allocating their resources, suggested as early as 1974. On the other hand, actual implementation of low-income energy assistance followed another pattern.

Walter Nolen E., and Linn Draper, 1975.

"The Effects of Electricity Price Increases on Residential Usage of Three Economic Groups: A Case Study." Texas Power Policies 5. Austin: University of Texas, Center for Energy Studies.

Subject: Impact of price increases on income groups; behavior and attitudes; electric consumption changes.

Survey Date: July 1974; consumption data from previous two years.

Methods: Stratified random sample of households in Austin, Texas; 60 personal interviews; electricity data from company.

Analysis  
Technique: Charting of consumption data over time period; frequencies.

Significant  
Findings: From July 1972 to July 74, number of low-income households increasing use equaled number decreasing use of electricity; middle-income, number decreasing electricity consumption greater than the number increasing; upper-income, number decreasing much less than number increasing.

Upper-income households will continue to consume regardless of price; low-income households already at minimum; greatest flexibility in middle-income groups.

Wilson, Margaret Bush. 1978.  
'Energy Growth and Jobs.' Presented at Edwin Electric Institute 46th Annual Convention, Houston.

Subject: Impact assessment of restricted economic/energy growth and Black Americans.

Survey Date: April 10-12, 1978.

Methods: National Association for the Advancement of Colored People (NAACP) position paper for vigorous economic expansion, which oppose National Energy Plan of 1978.

Analysis  
Techniques: Evidence presented through three descriptions:  
1. Probability -- national plan would probably increase already high unemployment rates among Blacks and the poor.  
2. Impact -- if every plan implemented, it will have severe negative effects on Black employment.  
3. Economic growth -- NAACP energy policy promotes vigorous economic expansion, which is in mutual interest of the energy industry and Black Americans.

Significant  
Findings: Price controls will not favor Blacks

and the poor. Black Americans will suffer from the disproportionate unemployment created.

An expanding economy is necessary condition for the economic progress of Black Americans, especially in the area of energy-related job market.

Given the economic realities of 1974-78, it is not in the best interest of Black Americans to support price controls that restrict domestic energy development.

Wright, Susan Elizabeth. 1975.

"Public Responses to the Energy Shortage: An Examination of Social Class Variables." Unpublished Ph.D. dissertation, Iowa State University.

Subject: Relationship between social class and energy shortage perceptions.

Survey Date: Summer 1974.

Methods: Stratified random sample from Des Moines, Iowa: 190 persons interviewed.

Analysis Technique: Correlational analysis, regression analysis.

Significant Findings: Social status variables, as a set, explain only a small portion of the variance in energy shortage perception.

While some relationship between classes and energy exist, they are not strong enough to indicate social class polarization of interest on the energy issue.

**APPENDIX II: Questionnaire**

Southwest Hispanic Research Institute  
Energy Project  
University of New Mexico

Case Number         
( ) ( ) ( )

Interviewer Name                                 

Interviewer Code         
( )

Date         
( ) ( ) ( )

Sample Code         
( )

Time Interview Started                                 

Time Interview Ended                                 

RAPPORT STATEMENT

Hello, may I speak to the man or woman of the house?

Hello, my name is    and I am with the

University of New Mexico. We are doing a survey of Hispanic families and  
rising energy prices. Your household has been randomly selected to part-  
icipate in our study. Would you help us and answer our questionnaire?

1. We want to know how well insulated your house is. By this we mean how well your house keeps in the heat, and keeps out the cold in the winter.

Would you say your house is very well insulated, well insulated, poorly insulated, or very poorly insulated?

- 1. Very well \_\_\_
- 2. Well \_\_\_
- 3. Poorly \_\_\_
- 4. Very poorly \_\_\_
- 9. Don't know \_\_\_

1	2
3	4
9	

2. Have you made any efforts to conserve energy during the past year, 1980?

- 1. Yes \_\_\_
- 2. No \_\_\_

1	2
---	---

3. Have you put window stripping and covering on your windows during the past year, 1980?

- 1. Yes \_\_\_
- 2. No \_\_\_
- 3. Was already on \_\_\_
- 4. Other \_\_\_

1	2
3	4

4. Have you installed storm doors and windows to your residence during the past year, 1980?

- 1. Yes \_\_\_
- 2. No \_\_\_
- 3. Was already on \_\_\_
- 4. Other \_\_\_

1	2
3	4

5. Have you added insulation to your residence during the past year, 1980?

- 1. Yes \_\_\_
- 2. No \_\_\_
- 3. Was already on \_\_\_
- 4. Other \_\_\_

1	2
3	4

6. Did you lower the heating temperature in your residence during the past year, 1980?

- 1. Yes \_\_\_
- 2. No \_\_\_
- 3. Was already set \_\_\_
- 4. Don't know \_\_\_

1	2
3	4

7. Did you reduce the use of air conditioning during the past summer?

- 1. Yes \_\_\_
- 2. No \_\_\_

1	2
---	---

8. Did you use your auto or truck LESS during the past year, 1980?

8A Auto

- 1. Yes \_\_\_
- 2. No \_\_\_

1	2
---	---

8B Truck

- 1. Yes \_\_\_
- 2. No \_\_\_

1	2
---	---

9. Did you make any other efforts, not listed above to save energy?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1 2

9A. If Yes, explain \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Now, I'm going to read a list of parts of your home which may be in need of MAJOR REPAIR: Does your

	Yes	No	Don't know	No response		
	1	2	3	9		

10. Roof need repair

1 2  
3 9

11. Plumbing need repair

1 2 3 9

1 2  
3 9

12. Electrical wiring

1 2 3 9

1 2  
3 9

13. Exterior walls

1 2 3 9

1 2  
3 9

14. Flooring

1 2 3 9

1 2  
3 9

15. Heating system

1 2 3 9

1 2  
3 9

16. Other (specify) \_\_\_\_\_

17. Are you planning to make these repairs in the near future?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_
- 3. Don't know \_\_\_\_\_

1 2  
3

17A. If no, could you briefly tell me, why you aren't planning to make these repairs? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

18. What type home or dwelling do you live in? \_\_\_\_\_

- |  |                |   |   |
|--|----------------|---|---|
| 1. A single family one-story flat roof | 5. Apartment   | 1 | 2 |
| 2. A single family two-story flat roof | 6. Mobile home | 3 | 4 |
| 3. One-story pitched roof              | 7. Condominium | 5 | 6 |
| 4. Two-story pitched roof              | 8. Other _____ | 7 | 8 |

19. How many rooms does your \_\_\_\_\_ have?

Rooms = \_\_\_\_\_

98. Don't know \_\_\_\_\_

20. When was your home built? \_\_\_\_\_

- |                |               |   |   |
|----------------|---------------|---|---|
| 1. Before 1945 | 4. 1966-1970  | 1 | 2 |
| 2. 1945-1955   | 5. 1971-1975  | 3 | 4 |
| 3. 1956-1965   | 6. After 1975 | 5 | 6 |
|                | 9. Don't know | 9 |   |

21. Is your home all-electric?

- |              |   |   |
|--------------|---|---|
| 1. Yes _____ | 1 | 2 |
| 2. No _____  |   |   |

22. What type of construction best describes your residence? \_\_\_\_\_

- |                                 |                                   |   |   |
|---------------------------------|-----------------------------------|---|---|
| 1. Brick                        | 5. Concrete, stone or slump block | 1 | 2 |
| 2. Wood frame with stucco       | 6. Adobe                          | 3 | 4 |
| 3. Wood frame with brick veneer | 7. Log                            | 5 | 6 |
| 4. Wood frame with siding       | 8. Cinder block                   | 7 | 8 |
|                                 | 9. Other (describe) _____         | 9 |   |

23. Do you own or rent?

- |               |   |   |
|---------------|---|---|
| 1. Own _____  | 1 | 2 |
| 2. Rent _____ |   |   |

24. If renting how much is your monthly rent?

\$\$ \_\_\_\_\_

25. Does this include gas or electricity?

- |              |                     |   |   |
|--------------|---------------------|---|---|
| 1. Yes _____ | 3. Don't know _____ | 1 | 2 |
| 2. No _____  |                     | 3 |   |

26. What type of heating do you have? \_\_\_\_\_  
(Probe for mechanics of heating; possible multiple response)  
Circle as many as respondent answers.

- |                          |                  |   |   |
|--------------------------|------------------|---|---|
| 1. Fireplace             | 5. Space heaters | 1 | 2 |
| 2. Wood burning stove    | 6. Solar         | 3 | 4 |
| 3. Central heating       | 7. Steam         | 5 | 6 |
| 4. Wall or floor furnace | 8. Other _____   | 7 | 8 |



27. What type of fuel is used by your heating system? \_\_\_\_\_

- 1. Natural gas
- 2. Electricity
- 3. Propane
- 4. Wood
- 5. Coal
- 6. Solar
- 7. Oil

1	2
3	4
5	6
7	

28. What temperature do you attempt to maintain in your home during the winter?

28A. Daytime \_\_\_\_\_

A. \_\_\_\_\_

28B. Night time \_\_\_\_\_

B. \_\_\_\_\_

29. What type of cooling system is in your home? \_\_\_\_\_

- 1. None
- 2. Swamp cooler on roof
- 3. Window/wall swamp cooler
- 4. Central gas refrigerated air unit
- 5. Window/wall refrigerated air unit
- 6. Heat pump
- 7. Central electric refrigerated air unit

1	2
3	4
5	6
7	

30. How satisfied with the cost of gas for heating your home? (Circle)

Very Dissatisfied 1 2 3 4 5 Very Satisfied and hand card  
neutral

1	2
3	4
5	

31. How satisfied with the cost of water for your home are you? (Circle)

Very Dissatisfied 1 2 3 4 5 Very Satisfied and hand card  
neutral

1	2
3	4
5	

32. Has the increase in the price of gasoline reduced the amount of driving you do?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_
- 3. No difference \_\_\_\_\_
- 4. No response \_\_\_\_\_
- 9. Don't know \_\_\_\_\_

1	2
3	4
9	

33. What would encourage you most to reduce your driving? \_\_\_\_\_

- 1. Improved mass transit system
- 2. Lack of parking facilities city wide
- 3. Increased traffic congestion
- 4. Cost of living becomes too high
- 5. Increased pollution
- 6. Nothing
- 7. Other (List): \_\_\_\_\_
- 9. Don't know

1	2
3	4
5	6
7	9

34. Would you mind indicating approximately how much you spend on gasoline each month? (for all vehicles in your household)

34A. \$\$ \_\_\_\_\_ per month

A. \_\_\_\_\_

Don't know 999

34B. How many vehicles is this for? \_\_\_\_\_

B. \_\_\_\_\_

35. What is your TOTAL average home energy costs per month? (gas, electricity, wood, etc.)

A. During the winter \_\_\_\_\_

A. \_\_\_\_\_

B. During the summer \_\_\_\_\_

B. \_\_\_\_\_

36. Approximately how many hours a week do you and your family spend on leisure time (e.g. going to a movie, for a visit to friends or relatives, etc.)?

Hours per week \_\_\_\_\_  
( ) ( )

\_\_\_\_\_

37. Has the recent cost of energy prevented you from spending as much leisure or recreation time as you would like?

1. Yes \_\_\_\_\_

3. Don't know \_\_\_\_\_

1 2  
3

2. No \_\_\_\_\_

37A. → If yes, how much leisure or recreation time have you lost due to energy costs?

1. A lot: 10 hours or more per week \_\_\_\_\_

1 2  
3 4

2. Some: Between 4 and 9 hours per week \_\_\_\_\_

3. A little: Less than 4 hours per week \_\_\_\_\_

4. Don't know \_\_\_\_\_

38. What are those recreational and leisure activities that you've been forced to cut down on recently?

List:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

39. Most families and individuals recognize that the rising costs of energy have effected their economic livelihood.

For each of the areas listed, how does the rising cost of energy effect you? (On a scale from 1 to 5, one being no effect, 5 being severe effect. Hand respondent card.)

1 2  
3 4  
5

A. Food: None 1 2 3 4 5 Very Severe

B. Leisure/recreation: None 1 2 3 4 5 Very Severe

1 2  
3 4  
5

C. Clothing: None 1 2 3 4 5 Very Severe

1 2  
3 4  
5

D. Luxury/Non-Essential Items: None 1 2 3 4 5 Very Severe

1 2  
3 4  
5

E. Transportation: None 1 2 3 4 5 Very Severe

1 2  
3 4  
5

E. Work Related Activities: None 1 2 3 4 5 Very Severe

1 2  
3 4  
5

40. Do you find that your home cooked meals, that is, your eating habits, have changed in recent times?

- 1. Yes
- 2. No
- 3. Don't know

1 2  
3

A. If yes, are you or your family eating more or less?

- 1. More
- 2. Less

1 2

40 B. If less, how have you changed your eating habits, that is, what items are you eating less of now?

- 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_
- 4. \_\_\_\_\_ 5. \_\_\_\_\_ 6. \_\_\_\_\_

41A Do you find that you are going out to eat less now than in previous years?

- 1. Yes
- 2. No
- 3. Don't know

1 2  
3

41B In your opinion, do you think that there is a relationship between your food purchasing, that is, your eating habits and the cost of energy?

- 1. Yes
- 2. No
- 3. Don't know
- 9. No answer

1 2  
3

41C If yes, what is the relationship you see between your food purchasing and energy costs? \_\_\_\_\_

42. Has the increased costs of energy prevented you from getting where you need to go?

- 1. Yes
- 2. No

1 2

Specifically have these energy costs prevented you from having adequate transportation for:

- A. Going to the doctor (1) Yes (2) No

1 2

- B. Getting to work regularly Yes No

1 2

C. Going shopping	Yes	No	1	2
-----				
D. Visiting friends/relatives	Yes	No	1	2
-----				
E. Looking for a job	Yes	No	1	2
-----				
43. Do you think electrical residential rates- the price of KWH (Kilowatt-hour)- should be: _____				
1. Higher the more KWH you use			1	2
2. Lower the more KWH you use			3	4
3. The same price per KWH no matter how much you use			9	
4. No opinion				
9. Don't know				
-----				
44. Do you believe that customers in low income groups--families below \$6,700 per year--should be allowed a lower rate for electricity? _____				
1. Yes, they should receive a lower rate from the utility company			1	2
2. No, they should pay the same as other residential customers			3	4
3. The state or appropriate government agency should handle this special problem			9	
4. No opinion				
9. Don't know				
-----				
45. Do you believe that customers who are retired or widowed and have a low fixed income less than \$5,000 per year should be allowed a lower rate for electricity? _____				
1. Yes, they should receive a lower rate from the utility company			1	2
2. No, they should pay the same as other residential customers			3	4
3. The state or appropriate government agency should handle this special problem			9	
4. No opinion				
9. Don't know				
-----				
46. Do you believe that HOUSEHOLDS should be penalized or fined for excessive energy consumption/use? _____				
1. Yes _____			1	2
2. No _____			3	9
3. No opinion _____				
9. Don't know _____				
-----				
47. Do you believe that business firms who use great amounts of energy should be given discounts on the amount they pay for their energy use? _____				
1. Yes _____			1	2
2. No _____			3	9
3. No opinion _____				
9. Don't know _____				

48. Who do you believe benefits from the rising costs of energy?

- 1. Energy companies \_\_\_\_\_
- 2. Consumers (the public) \_\_\_\_\_
- 3. The government \_\_\_\_\_
- 4. No one \_\_\_\_\_
- 5. Other (list) \_\_\_\_\_
- 9. Don't know \_\_\_\_\_
- 6. No Opinion \_\_\_\_\_

1	2
3	4
5	9
6	

49. Do you own or use a clothes dryer?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

50. If you own or use a clothes dryer is it electric or gas?

- 1. Electric \_\_\_\_\_
- 2. Gas \_\_\_\_\_

1	2
---	---

51. Do you own or use a dishwasher?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

52. Do you own or use a stove?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

53. If you own or use a stove is it electric or gas?

- 1. Electric \_\_\_\_\_
- 2. Gas \_\_\_\_\_

1	2
---	---

54. Do you own or use a microwave oven?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

55. Do you own or use a television set?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

56. If you own or use a television set how many color sets and how many black/white sets do you have?

- A. Color sets \_\_\_\_\_
- B. Black/white \_\_\_\_\_

A. _____
B. _____

57. Do you own or use a refrigerator?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

58. Is your refrigerator a frost free refrigerator?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1	2
---	---

59. Do you own or use a separate freezer?

- 1. Yes
- 2. No

1 2

60. If you own a separate freezer is it electric or gas?

- 1. Electric
- 2. Gas

1 2

61. Do you own or use a washing machine?

- 1. Yes
- 2. No

1 2

62. Have you ever heard of the Federal Energy Assistance Program?

- 1. Yes
- 2. No

1 2

63. Have you ever applied for Federal Energy Assistance?

- 1. Yes
- 2. No

1 2

64. Have you ever received any Federal Energy Assistance money?

- 1. Yes
- 2. No  If No, go to question #71

1 2

A. In what years did you receive it? 19\_\_ \_\_

A\_\_

65. How did you learn about the low income energy assistance program? \_\_\_\_\_

- 1. Friends
- 2. Family
- 3. Energy program outreach
- 4. Religious organization
- 5. Community organization
- 6. Other (Specify) \_\_\_\_\_
- 7. Can't recall

1 2  
3 4  
5 6  
7

66. What type of energy assistance did/do you receive? \_\_\_\_\_

67. What was the amount or value of the assistance?

\$\$ \_\_\_\_\_ per month.

68. Do you consider the amount to be a \_\_\_\_\_?

- 1. Sufficient sum
- 2. Insufficient sum
- 3. Hard to tell
- 4. No answer

1 2  
3 4

69. What types of energy assistance changes or improvements would you like to see made to help you out in your situation? (Open ended)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

70. Did the personnel of the energy assistance program respond to your needs? \_\_\_\_\_

- 1. Promptly
- 2. With long delays
- 3. No opinion

1 2  
3

71. Are you working now?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_
- 9. No response \_\_\_\_\_

1 2  
9

72. If Yes, what is your current occupation? \_\_\_\_\_  
(Specify in detail)

\_\_\_\_\_  
\_\_\_\_\_

73. In what industry are you employed? \_\_\_\_\_

74. How long have you been employed in your current job?

Yrs. \_\_\_\_\_ Months \_\_\_\_\_

75. Are you working full-time or part-time?

- 1. Full \_\_\_\_\_
- 2. Part \_\_\_\_\_

1 2

76A. How many hours a day do you work? \_\_\_\_\_

A. \_\_\_\_\_

B. Days per week \_\_\_\_\_

B. \_\_\_\_\_

77. How many months did you work last year? 1981? \_\_\_\_\_

78. If unemployed, how long have you been unemployed?

Total number of months \_\_\_\_\_

79. Is respondent currently receiving unemployment insurance or on any other program?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1 2

79A. What other programs is respondent on? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

80. If unemployed, is respondent currently looking for a job?

- 1. Yes \_\_\_\_\_
- 2. No \_\_\_\_\_

1 2

81. How satisfied would you say you are with the wages you earn? (hand card)

Very Dissatisfied 1 2 3 4 5 Very Satisfied  
neutral

1 2  
3 4  
5

82. How satisfied are you with the job you have?

Very Dissatisfied 1 2 3 4 5 Very Satisfied  
neutral

1 2  
3 4  
5

83. How satisfied with the cost of gas for your cars and trucks are you?

Very Dissatisfied 1 2 3 4 5 Very Satisfied  
neutral

1 2  
3 4  
5

84. How satisfied with the cost of electricity are you?

Very Dissatisfied 1 2 3 4 5 Very Satisfied  
neutral

1 2  
3 4  
5

85. How satisfied with the cost of wood are you?

Very Dissatisfied 1 2 3 4 5 Very Satisfied  
neutral

1 2  
3 4  
5

86. Where were you born?

- 1. U.S. \_\_\_\_\_
- 2. Mexico \_\_\_\_\_
- 3. Other \_\_\_\_\_

1 2  
3

86A. If U.S., which state? \_\_\_\_\_



87. How long have you lived in New Mexico? \_\_\_\_\_

87A. Prior to living in New Mexico, from what state did you come? \_\_\_\_\_

88. How long have you lived at your current address? Yrs. \_\_\_\_\_  
(Round to the nearest year, less than one year= 00)

89. How long did you live in your previous residence? Yrs. \_\_\_\_\_  
(Round to the nearest year, less than one year= 00)

90. What is your ethnic origin? \_\_\_\_\_  
(Hand out cards)

- |                     |            |
|---------------------|------------|
| 1. Hispanic         | 5. Mexican |
| 2. Mexican American | 6. Spanish |
| 3. Chicano          | 7. Other   |
| 4. Mexicano         |            |

1	2
3	4
5	6
7	

91. What is your marital status? \_\_\_\_\_

- |             |              |
|-------------|--------------|
| 1. Single   | 4. Separated |
| 2. Married  | 5. Widowed   |
| 3. Divorced |              |

1	2
3	4
5	

92. What was your last grade in school completed? \_\_\_\_\_

93. Including yourself, how many persons live in your household? \_\_\_\_\_

94. How many elderly persons, 65 years and older, live in your household? \_\_\_\_\_

95. How many children 18 years of age or younger live in your household? \_\_\_\_\_

96. How many wage earners (including yourself) live in your household? \_\_\_\_\_

97. What year were you born? 19 \_\_\_\_\_

98. Are you currently a member of a labor union at work?

- 1. Yes
- 2. No
- 3. No response

1 2  
3

If so, how long have you been in the union?

Yrs. \_\_\_\_\_

99. Are you a veteran?

- 1. Yes
- 2. No

1 2

100. Please estimate your family's income from all sources for the last year. Was it more than or less than \$15,000?

- 1. More
- 2. Less
- 9. No response

1 2

Was it more than:

- 5. \$10,000 (10,000 to 14,999)
- 6. \$ 9,000 ( 9,000 to 9,999)
- 7. \$ 8,000 ( 8,000 to 8,999)
- 8. \$ 7,000 ( 7,000 to 7,999)
- 9. \$ 6,000 ( 6,000 to 6,999)
- 10. \$ 5,000 ( 5,000 to 5,999)
- 11. \$ 4,000 ( 4,000 to 4,999)
- 12. \$ 3,000 ( 3,000 to 3,999)
- 13. \$ 2,000 ( 2,000 to 2,999)
- 14. Less than \$2,000
- 99. No response/Don't know

5 6  
7 8  
9 10  
11 12  
13 14  
99

Was it more than:

- 1. \$30,000 (or more)
- 2. \$25,000 (25,000 to 29,999)
- 3. \$20,000 (20,000 to 24,999) - if no, mark 4
- 4. \$15,000 (15,000 to 19,999)
- 99. No response/Don't know

1 2  
3 4  
99

101. Indicate the sex of the respondent and circle: M F

M F