

# A Western States Perspective on Public Policy for Household Energy Conservation

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During the 1970s several governmental efforts were made to promote energy conservation in people's homes. From 1975 to 1980, several major federal laws concerned with energy conservation were enacted (Pelham, 1981). Included in these laws were residential tax credits for home weatherization and installation of solar collection systems, standards of energy efficiency for home appliances, conservation loans to owners of multi-family dwellings, and mandatory requirements for utilities to improve the energy efficiency of residential customers' homes. In addition,

43 of the 50 states passed laws which provided financial incentives to encourage home energy conservation. These laws ranged from providing credits or deductions on state income taxes, to forgiving property taxes on increases in property values from the addition of energy conservation features.

By 1980, energy conservation had clearly emerged as an important part of the United States' efforts to meet future energy needs. However, announcement of the National Energy Policy Plan of the Reagan Administration in mid-1981 made it clear that conservation, and in particular conservation programs, will no longer be the primary emphasis of this nation's energy policy. Central features of the Reagan plan included decontrol of oil and gas prices, and elimination of the windfall profit tax in an effort to allow market forces to influence energy consumption. Under this plan, it is assumed that conservation efforts will occur, but as a byproduct of higher prices which dampen consumption. Accordingly, federal spending on conservation programs and regulations is expected to be sharply curtailed. Consistent with the new "federalism" emerging from the nation's capitol, it is likely that energy conservation programs in the 1980s will be the province of state and local rather than federal action.

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In this changing policy environment, it seems important to understand citizen views on energy conservation. This article reports the opinions of citizens from ten western states and one eastern state. Our purpose is to provide an understanding of the extent to which citizens favor or oppose energy conservation practices related to the home and the extent to which their views are internally consistent. In addition, we will examine the extent to which differences exist among states and the implications of these differences for the development of energy policy for the United States.

### **The Role of Conservation in Meeting National Energy Needs**

Ironically, the shift away from a deliberate national policy of energy conservation is occurring at a time when its credibility as a significant contributor to meeting the nation's energy needs is on an upswing. Four recent reports summarized in *Science*, two of which are yet to be released to the public, all conclude that energy consumption at the end of this century could be held near present levels or reduced somewhat through investment in conservation and renewable energy sources (Norman, 1981).

Interestingly, these studies are in agreement that decontrol of oil and gas prices, already implemented by the Reagan administration, is essential for encouraging more efficient use of energy. They also suggest that energy conservation will not be as deleterious to economic growth as many previously thought because far less capital will be required for conservation than for increasing energy production and subsequent supplies. At present, according to one of the reports, 40 percent of the investment in the United States now goes to energy production (Norman, 1981).

Although the focus of the Reagan administration's energy policy plan is squarely on increased production and many conservation programs are likely to be dismantled, it would be a mistake to say that energy conservation is being eliminated as a concept relevant to our nation's future. However, the shift toward greater voluntarism in conservation implies that unless Americans are inclined toward conservation

efforts, they are not as likely to occur. The early months of 1981, when the data for this study were collected, seemed a particularly important time for understanding the predisposition of the general public towards conservation.

Amid the shifting political winds it is important not to lose sight of the fundamentally more compelling reasons for achieving significant energy conservation. The exponential growth in energy consumption experienced in this century simply cannot be sustained against known energy resources (Bartlett, 1978; Catton, 1980). Even if it could be sustained, the environmental effects would likely be detrimental, if not disastrous. Energy conservation, which has often been seen as only one policy alternative, may in the near future become a policy imperative.

### **The Home as a Target for Conservation**

The buildings in which Americans live and work represent an important area where energy savings can be realized. According to U.S. Department of Energy (DOE) data, upgrading the efficiency of residential and commercial buildings could reduce oil imports by 2.5 million barrels of oil a day by the late 1980s (*Alternative Energy Sources*, 1980). Noting that about one-third of all energy consumed in the United States is used to heat, cool, and illuminate buildings, and to run appliances such as refrigerators and cooking stoves, a Solar Energy Research Institute (SERI) study commissioned in 1979 by DOE reports that investment in energy efficiency could reduce this demand by 30 percent near the end of this century (Norman, 1981).

People's homes, alone, account for about 14 percent of the total energy used in the United States, most of which is used for space heating and cooling (*U.S. Statistical Abstract*, 1981). Only the automobile competes with housing as a consumer of energy in private households. Further, private residences represent one place where considerable energy savings can probably be made without seriously disrupting the functioning of society (Dillman et al., 1977). For this reason alone, the home seems likely to continue to receive attention in state and national policy debates.

The home also represents a perplexing policy target. Whereas the consumption of energy by automobiles has been made subject to direct regulation through fuel efficiency requirements, housing is less amenable to direct energy restrictions such as temperature controls or fuel consumption limits. The major federal housing legislation aimed at energy conservation has been based on incentives provided through income tax credits. These and utility programs, such as home audits and interest free loans, are based on voluntary compliance. While energy consumption by automobiles has been subjected to limits by federal law, energy consumption in the home has been left to decisions by individual households. Consequently, if conservation in the home is to occur, it will be the result of family resource decisions that are often more influenced by individual family and community norms, quality of life aspirations, and personal whims than by careful analysis of economic cost and benefit. The turnover of housing stock, which proceeds at a much slower pace than the turnover of automobiles, complicates the picture by making retrofitting of homes a necessary means to achieve significant energy savings. Therefore, understanding what people will and will not accept and their reasons for doing so takes on great importance in attempting to anticipate the extent to which greater energy efficiency in people's homes will become a reality in the United States.

### **A Western States' Perspective**

In the past, many federal actions have proceeded as if the United States were a homogeneous nation with respect to the household costs and benefits of energy conservation efforts. There are reasons to suspect that substantial differences may exist between states. With respect to the present study, the western states as a whole tend to differ in several ways from the remainder of the United States. They are set apart from their eastern counterparts by generally lower rainfall, and far greater variation in summer day-night temperatures. In addition, longer auto commuting distances to and from work and essential services with few mass transit alternatives are a phenomenon probably not well understood by residents of more densely popu-

lated states. These and other differences, such as housing characteristics and life-style patterns, suggest that people of the western region may be willing to make different conservation efforts and accept different sacrifices than people in other parts of the country.

There is also incredible diversity among western states. Some states have large metropolitan areas, while other states have only one or a few small metropolitan centers. There is a wide range of summer and winter temperatures among the states. The states are also subject to wide differences in the amount of sunlight and the months in which it is available.

The energy conservation policies that are workable in specific western states may differ from one another and from the nation as a whole. Now that conservation is being relegated to the states, rather than being dealt with as a national issue, it is increasingly important that differences among states be understood. Therefore, an explicit purpose of this article is to contribute to an understanding of differences among western states in an effort to inform state policy makers in their continuing attempts to deal with energy conservation issues.

There exists a paucity of previous research on people's attitudes about energy conservation which is available to guide our efforts. Much of the applicable research was conducted in the two years immediately following the 1974 Arab oil embargo and before most of the current conservation programs were enacted; therefore, it has become dated (Olsen, 1981). In addition, a comprehensive review of energy related attitude studies by Farhar et al. (1979) showed that very few statewide surveys of the general public have been conducted in the western states.

Less than one-fifth of the nation's population live in these states. Excluding California, only 8 percent of the nation's population live in the remaining nine western states. Because of the small portion of the national population living in these states and the relatively small samples used in national surveys, it is seldom possible to conclude from the survey results how the western region as a whole differs from the remainder of the country, let alone understand how individual states differ from one another. The present research was specifically designed to identify differ-

ences among western states. The inclusion of Pennsylvania permits comparison of results with a large eastern state which may contribute to an understanding of the basis of differences among states.

### Study Methods

The data analyzed here were collected under a western regional research project, W-159, sponsored by the Cooperative State Research Service of the United States Department of Agriculture and the agricultural experiment stations in the eleven participating states. This analysis is based upon 9,702 completed mail questionnaires from household samples of the general public in each of the eleven states. In all of the states except Pennsylvania, the samples were drawn from telephone directories using random procedures. In Pennsylvania, the sample was drawn from state drivers license lists.

Mail questionnaires were administered by researchers in each of the states in the spring of 1981. In an effort to standardize the data collection procedures, the total design method for mail surveys (Dillman, 1978) was used in each of the states. Letters sent to each household alternated between asking for an adult male or female to respond. Complete details of the data collection procedures, including slight modifications made by the various states, are reported elsewhere (Makela et al., in press).

The number of completed questionnaires per state ranged from 629 to 1,333. This represents an overall response rate of 56.4 percent of the households to which questionnaires were first sent. Adjustment of the response rate for questionnaires that could not be delivered or that were delivered to ineligible households (deceased, moved, or not a private residence) reveals that 63.9 percent of questionnaires delivered to eligible households were returned. These "adjusted" response rates for the eleven states ranged from a low of 48.6 percent to a high of 73.6 percent.

The samples in each state were stratified on the basis of urban and rural areas of each state. The urban strata were defined as Standard Metropolitan Statistical Areas. Approximately equal numbers of households in each strata received questionnaires. Consequently, the data reported in this article have been

weighted by the portion of the state's population living in each strata of each state, according to preliminary 1980 census data.

At the time of this writing, the appropriate data for examining the extent to which the returned questionnaires are representative of the entire population are not available from the 1980 census. Because of the dramatic growth in most western states during the 1970s, the use of prior census data is inappropriate. Past studies using similar sampling methods and mail questionnaires in some of the western states suggest that respondents to the survey are likely to be biased in favor of home ownership, higher education, and persons over 25 years of age (Dillman, 1978).

### Findings

Respondents were questioned about a variety of home conservation actions which they might have taken as well as a number of attitudes towards energy conservation. In this article only state differences on the attitudinal questions are examined. We will examine the patterning of responses on a series of five questions which consider people's acceptance of various conservation alternatives.

#### *Increased Production Versus Cutbacks*

Since 1974, there has been considerable debate over whether the United States should pursue a strategy of more energy production or one of reduction in energy use as our national policy. One of the survey questions attempted to address this issue in an effort to learn the overall direction of people's commitment. Respondents were queried as follows: "One way to meet our future energy needs is to cut back on energy use. Another way is to increase energy production. Which one of the following choices do you feel our country should make in order to meet our future energy needs?"

This question sought people's preferences for basic strategy and provides an important context for understanding their commitment to more specific alternatives posed in later questions. The respondents were given five response choices which included depending entirely, mostly, or equally on each of the two choices. The entirely and mostly options for each

strategy (i.e., production and conservation) have been combined for presentation in Table 1.

It is evident that depending equally on both options is the most preferred alternative by a two-thirds majority. Those who chose one strategy or the other were more likely to select increased energy production. People's responses show considerable consistency across states. The most populated states of Pennsylvania and California were a little more likely to opt for depending on cutbacks, while the more sparsely populated states of Arizona, Idaho, and Utah were more likely to opt for increased production. Overall, however, state differences tend to be slight.

#### *Alternative Ways to Meet Future Needs*

To examine the direction of people's commitment in more depth, respondents were asked the extent to which they favored or opposed 11 possibilities for energy production or conservation. The responses to these questions help explain the pattern of response to the previous question in which respondents were asked to choose cutbacks or more production as a strategy for meeting future energy needs.

Five of the production alternatives received more support than any of the conservation choices offered to respondents (Table 2). Ninety percent or more of the respondents were favorable to more use of solar energy and more exploration for oil in the United States, followed by 88 percent favoring increased use

of wind energy. State variations among these alternatives tend to be small.

When ranked on the basis of responses, increased use of western coal and western shale, both of which received 70 percent favorable ratings, were next. The highest support for these alternatives comes from Montana, Utah, and Wyoming, states that contain these resources. The high support for more use of coal in Pennsylvania is consistent with the fact that Pennsylvania is a major coal producer, and for this question "western" was deleted from the version of the questionnaire used in Pennsylvania.

The remaining two production alternatives, which were less favored than most of the conservation alternatives, were more use of nuclear power (favored by an average of 47 percent of the respondents) and more oil imports (favored by only 6 percent). The use of more nuclear power was clearly less favored by Pennsylvania residents than by people in other states. The fact that only 34 percent favored more use of nuclear power is perhaps explained by the Three Mile Island incident. The northern states, Washington, Oregon, and Montana, were also less favorable to nuclear power, whereas the Rocky Mountain states of Idaho, Nevada, Utah, and Wyoming each had a greater portion (around 50 percent) or response in support of nuclear power.

**Table 1—Percent of Respondents, by State, Who Favor Cutbacks in Energy Use, Increased Production or Depending Equally on Both in Order to Meet Future Energy Needs**

Choice	Arizona	Cali- fornia	Colo- rado	Idaho	Mon- tana	Nevada	Oregon	Utah	Wash- ington	Wyo- ming	Penn- sylvania	State Mean
Number of respondents <sup>a</sup>	(849)	(629)	(950)	(834)	(907)	(737)	(834)	(830)	(977)	(822)	(1333)	
Depend on cutbacks	7.4	12.6	8.8	7.0	8.2	5.9	7.9	6.5	9.4	8.4	10.5	8.4
Depend equally on both	65.8	62.8	69.4	64.9	69.5	68.5	69.5	65.3	70.2	69.9	68.9	67.7
Depend on increased energy production	26.8	24.6	21.8	28.1	22.4	25.6	22.7	28.3	20.4	21.8	20.5	23.9

<sup>a</sup>Number of respondents reported here is equal to number of completed questionnaires. The number of respondents on which percentages reported here and in the following tables is based, in most cases, slightly less because of occasional "no responses."

**Table 2—Percent of Respondents, by State, Who Favor or Strongly Favor Taking These Actions as a Way to Meet U.S. Future Energy Needs**

Choice	Arizona	California	Colorado	Idaho	Montana	Nevada	Oregon	Utah	Washington	Wyoming	Pennsylvania	State Mean
More use of solar energy	95.0	91.1	95.2	93.3	93.0	93.5	92.0	92.9	91.8	93.2	86.4	92.5
More exploration for oil in the U.S.	90.6	86.2	90.8	89.9	89.0	93.9	87.8	94.1	86.3	90.4	90.4	90.0
More use of wind energy	84.8	89.1	87.3	87.3	93.3	86.4	93.1	88.9	88.9	91.8	84.2	88.7
More use of western coal	66.5	64.3	67.6	69.6	75.3	71.4	61.6	82.8	64.0	75.5	79.2	70.7
More use of oil from western shale	67.4	67.0	65.8	70.2	72.6	73.0	63.4	82.5	65.8	75.5	68.3	70.2
Reduce energy use in homes	70.9	70.2	73.2	69.7	63.8	69.4	68.7	61.5	73.1	68.1	66.2	68.6
Reduce energy use in business and industry	60.4	54.0	63.0	51.2	54.7	58.2	52.4	48.8	59.8	59.3	57.0	56.3
Reduce energy use in individual travel	54.6	54.9	53.6	53.2	54.9	46.5	53.3	51.5	53.9	52.7	54.0	53.0
More use of nuclear power	49.9	47.9	46.3	51.0	43.7	50.1	40.6	51.6	42.7	55.4	33.9	46.6
Reduce energy use by agriculture	20.3	27.3	18.7	17.9	19.7	16.4	16.8	14.4	18.6	17.4	20.7	19.0
More oil imports	4.4	9.4	4.6	5.3	7.0	5.4	5.5	7.1	5.7	4.7	5.3	5.8

The four conservation alternatives were developed to represent the two major individual uses of energy, i.e., homes and travel, and two major industrial uses. The reduction of energy use in the home was favored by an average of 69 percent of respondents, whereas reduction of use in individual travel was favored by 53 percent. Between these two alternatives was reduction of energy use by business and industry, favored by 56 percent. There was much less support for reducing energy use in agriculture, with fewer than one-fifth of the respondents supporting that reduction. Thus, among the reduction alternatives, energy use in

homes was most favored as the place for conservation.

Considerable uniformity exists regarding support for the energy reduction items in the various states. However, Utah was less favorable toward three of the four energy reductions; the exception being reduced individual travel. The lowest support for reducing individual travel came from Nevada, a fact that is perhaps understandable by the state's heavy dependence on tourism to its two major cities. With respect to energy use by agriculture, only California deviated noticeably in the direction of support for reductions.

These data amplify the finding of the previous question that production receives greater support than does conservation; however, citizens make a distinction in the source from which additional energy should come. Also, among the alternatives for reducing energy consumption, the one most favored is reduction of energy use in the home.

#### *Specific Actions to Reduce Home Related Energy Use*

Respondents to the survey were provided with a list of fourteen possible actions to reduce energy consumption, all but two of which directly concern housing. The two exceptions were included for comparison purposes and concerned two of the most frequently mentioned means of motivating reduced energy use in private automobile transportation. Table 3 reports the percentage of respondents from each state who favor or strongly favor each of the actions. Nine of the fourteen items were favored by at least the majority of the respondents.

It is convenient to divide the proposed actions into four natural groupings based on the amount of support they received. Those receiving 77 percent or more favorable responses are considered as receiving strong support; 60-70 percent as receiving moderate support; 30-49 percent as receiving modest support; 12-17 percent as receiving very little support. None of the proposed actions received a level of support that would place it outside these categories.

All five of the actions receiving strong support are programs already underway throughout the United States in one form or another. They include tax credits for improving home energy efficiency, better energy labeling practices, mandating more efficient electrical appliances, changing building codes to encourage new types of energy saving housing, and tax credits for solar installations. Public support for further steps in this direction seems substantial. It is perhaps significant that none of these strongly supported programs employ major direct changes in people's individual behavior.

Support for these programs is fairly uniform across states. In no case is the difference in support for any one of the programs more than 13 percentage points between the highest and lowest state. The highest support for energy labeling and reduction of energy

requirements for appliances is in California and Pennsylvania. Support for both general and solar tax credits is higher in Colorado (87 and 85 percent) than in any other state. Colorado is a state which also has favorable state tax credits in effect. In contrast, support for tax credits for solar heating or cooling is lowest in Pennsylvania.

Four items were considered as receiving moderate support, two of which would require changing practices of utility companies. An average of 70 percent of respondents from each state would favor utilities being required to furnish users with reports of whether their energy use was higher or lower than in previous years. The difference among states was substantial with 80 percent in California and 76 percent in Pennsylvania favoring this action, compared to 61 percent in Utah and 64 percent in Nevada. Support for utility companies charging lowest rates to low energy users and highest rates to high energy users is somewhat lower, averaging 60 percent, but it is more uniform across the states. Highest support was 65 percent in Nevada, compared to 49 percent in Montana.

Respondents were also asked about relying on state instead of federal programs to encourage conservation. This theme is evident in many efforts being encouraged by the Reagan Administration. Overall, the states averaged 63 percent in their support of reliance on state programs. Support for state programs is consistently highest in the Rocky Mountain states of Wyoming (70 percent), Nevada (67 percent), and Utah (67 percent), and lowest in the heavily populated states of Pennsylvania (52 percent) and California (54 percent).

The remaining item for which there was moderate support was maintenance of the 55 MPH speed limit. There was more divergence on this item than for any other in this set of fourteen programs. Whereas 41 percent of the people in Wyoming and 48 percent of those in Nevada favored maintenance of the speed limit, nearly 81 percent of the Pennsylvania respondents favored it. Next highest was 69 percent in California. Support seems lowest in the states in which people often have to travel long distances for essential goods and services.

The three proposed actions which received only modest support all share a common feature: each

would place constraints on individual householders. The requirement that everyone's home pass an energy audit was favored by 33 percent, that homes be heated no higher than 65°F in winter by 30 percent, and that homes be cooled no lower than 78°F in summer by 49 percent. There was a considerable range in responses between states. Interestingly, Arizona, the state with the hottest summer climate, was most willing to accept the summer cooling requirement. In contrast, states with cooler climates, Utah and Wyoming, were least willing to accept the cooling restraint, with 43 percent and 47 percent, respectively, in favor.

The winter heating requirement was accepted by a portion one-half as large in Utah (21 percent) as it was in California (42 percent). Other states with severe winter climates, Wyoming and Idaho, were among those least willing to accept the winter restriction. The requirement that every home pass an energy audit was accepted to the greatest extent in Pennsylvania (39 percent) and Washington (38 percent). The portion indicating acceptability in Arizona (31 percent), California (31 percent), and Oregon (31 percent) was lowest.

**Table 3—Percent of Respondents, by State, Who Favor or Strongly Favor Taking These Actions to Reduce Energy Use in the United States**

Choice	Arizona	California	Colorado	Idaho	Montana	Nevada	Oregon	Utah	Washington	Wyoming	Pennsylvania	State Mean
Provide larger tax credits for improving home energy efficiency	82.7	79.3	86.6	83.4	81.7	82.0	82.3	82.6	84.0	82.4	82.1	82.7
Require better label information on appliances telling how much energy they use	84.9	87.9	82.1	78.3	77.5	82.1	80.2	81.2	80.3	76.3	87.0	81.1
Require manufacturers to make appliances that use less energy	79.7	88.2	82.1	82.8	78.3	82.7	78.2	76.2	81.0	79.2	85.7	80.9
Change building codes and mortgage requirements to encourage new types of energy-saving housing	83.2	82.2	82.2	79.5	81.2	84.1	78.4	75.4	81.2	78.9	76.6	80.7
Provide larger tax credit for adding home solar heating or cooling	78.5	76.4	84.8	76.7	76.3	77.5	77.8	74.6	76.6	76.8	72.0	77.6
Require utilities to provide regular reports to users on whether energy use is higher or lower than in previous years	72.2	80.0	68.4	72.8	62.3	63.9	74.0	60.5	69.7	67.1	76.2	69.1

**Table 3—Percent of Respondents, by State, Who Favor or Strongly Favor Taking These Actions to Reduce Energy Use in the United States (continued)**

Choice	Arizona	California	Colorado	Idaho	Montana	Nevada	Oregon	Utah	Washington	Wyoming	Pennsylvania	State Mean
Rely on state instead of federal programs to encourage conservation	65.7	53.9	61.2	60.5	60.3	67.0	63.7	66.9	54.9	69.6	52.0	62.4
Keep 55 MPH speed limit	60.4	68.6	59.6	63.0	51.4	47.9	71.8	65.7	71.0	40.7	81.4	60.1
Require utility companies to charge lowest rates to low energy users and highest rates to high users	64.1	64.4	62.6	53.8	49.5	65.1	61.4	54.8	61.1	55.3	62.9	59.3
Require home thermostats to be no lower than 78° in summer	55.6	51.7	51.7	48.3	46.6	49.9	47.0	42.8	51.1	43.3	54.5	48.8
Require everyone's home to pass an energy "audit"	30.7	31.1	36.2	35.6	35.9	32.2	31.1	28.4	38.1	34.4	39.1	33.4
Require home thermostats to be no higher than 65° in winter	31.5	41.7	34.1	26.8	25.6	31.1	27.5	21.4	32.1	25.9	37.3	29.8
Discourage building homes away from towns and cities to lessen travel by car	20.5	20.2	21.2	20.9	22.9	12.1	16.5	13.2	14.4	13.7	16.5	17.5
Place higher taxes on gasoline	14.1	19.4	13.4	9.0	11.6	11.2	15.9	9.2	13.6	7.7	10.2	12.5

Finally, two transportation items on this list received very little support. Discouraging the building of homes away from towns and cities to lessen travel by car was supported by only 17 percent of the respondents. Placing higher taxes on gasoline, an issue much discussed in recent years, was favored least, by only 13 percent of all respondents. California gave the gas tax item more support than any other state (19

percent compared to 16 percent in Oregon and less in all the remaining states). Opposition to an increased gasoline tax is particularly strong in Idaho, Utah, and Wyoming.

In summary, there is considerable variation in the extent to which the proposed energy conservation actions are favored. The most favored items tend to be actions already being taken to some degree through-

out the country. None of them would place direct personal restrictions or required actions on individuals. The least favored items tend to be those which would place restrictions on individuals.

Among the most favored items, there are no substantial differences among states. However, among the moderately supported items, there are state variations. The greatest variation of all does not exist on the housing related items, but on a transportation item (i.e., keeping the 55 MPH speed limit). It is quite apparent that the transportation items included in this list received very little support. People seem more willing to accept conservation actions aimed toward the home, a finding that is quite consistent with results from the preceding question where people said they were more willing to accept reductions in home use rather than individual transportation.

*Response to Crisis*

Respondents were asked to go one step further and indicate what they could best do in response to a national crisis. Specifically, respondents were asked whether they would prefer cutbacks in home heating and cooling or private automobile use. In most states, respondents reported a greater willingness to reduce home heating to no more than 65°F and cooling to no less than 78°F than they were to accept a one-fourth reduction in automobile use. In California, Colorado, and Nevada, the latter option was chosen by a three to two margin. However, the margin across all states is not great, 54 percent for the first alternative versus 46

percent for the second. This finding is explained in part by the fact that in Idaho, Montana, and Utah, more people prefer automobile reduction than prefer the home heating reduction. Further exploration is needed to determine possible reasons for this substantial difference among states.

The voluntary action question for which results were just reported was followed by a mandatory action question, "If our government had to take drastic action to save energy, which one of the following would you be more willing to accept?" The choices were to ration home heating fuel and electricity so that people get about one-fourth less or to ration gasoline so that people get about one-fourth less. In response to this question, people favored rationing gasoline by nearly a three to one margin. At first look, this response may seem inconsistent with previous questions. A possible explanation for the difference is that many people have previous experience with the limited supply of gasoline and can understand how their lives might be affected. In contrast, however, the consequences of rationing home electricity and heating fuel are somewhat more difficult for people to anticipate. Also, people may feel they have already adjusted home energy use to a greater extent than automobile usage. Further adjustments in convenience as related to travel may be more acceptable than further sacrifice of comfort as greater home "confinement" would be forced by less travel. Thus, people may be opting for the response they feel would

**Table 4—Percent of Respondents, by State, Who Would Choose Each Option in Case of Crisis**

	Arizona	Cali- fornia	Colo- rado	Idaho	Mon- tana	Nevada	Oregon	Utah	Wash- ington	Wyo- ming	Penn- sylvania	State Mean
"If it were essential for every family to voluntarily cut back its energy use"												
Reduce winter home heating to no higher . . . . .	53.7	59.8	59.0	47.5	47.6	59.3	54.1	44.9	54.6	52.8	54.3	53.4
Reduce automobile use . . . . .	46.3	40.2	41.0	52.5	52.4	40.7	45.9	55.1	45.4	47.2	45.7	46.6
"If our government had to take drastic action to save energy"												
Ration home . . . . .	30.4	37.7	30.9	20.8	20.0	32.0	27.0	22.0	28.7	24.0	24.3	27.0
Ration gasoline . . . . .	69.6	62.3	69.1	79.2	80.0	68.0	73.0	78.0	71.3	76.0	75.7	72.9

work. Idaho, Montana, and Utah had larger portions of respondents than the remaining states willing to accept rationing of gasoline, a finding that is consistent with responses to the preceding question.

*Is Further Home Related Conservation Possible?*

The final question reported here was posed to respondents as follows: "If you were asked to reduce your energy consumption during the entire next year by one-fourth, that is, 25 percent less than you now consume, do you feel you could do it?" Our concern with this question was to switch from attitudes to beliefs about what is and is not possible. It is one thing to be supportive of conservation practices and policies; it is another to believe that conservation may actually be achieved in one's personal life.

Sixty percent of the respondents across states indicated that they believed that their own energy consumption could be reduced during the entire next year by one-fourth. Less than one out of five indicated that they felt they could not make that reduction. Differences among states were small. The percent indicating they felt they could not achieve the 25 percent reduction ranged from 17 percent in Arizona to 26 percent in Montana.

**Discussion**

The attitudes of residents of the western United States seem consonant with the emerging direction of U.S. energy policy. The renewed emphasis on production coupled with continued, albeit somewhat less, emphasis on conservation is supported by people's attitudes. The vast majority of western residents prefer an equal dependence on conservation and production. However, among those who chose one or the other, nearly three residents chose production for every one who opted for conservation.

Support for production versus conservation depends on what means are used to provide more energy. Solar, wind, and drilling for more oil in the United States are evaluated favorably by similar portions in all states. More use of western oil and shale are also favored, but to a lesser extent. However, if increasing production of energy means use of nuclear power, then conservation seems a more desirable alternative to many people. This is evidenced by greater support for reducing energy use in homes, business and industry, and individual travel, rather than more use of nuclear energy. Particularly low support for nuclear power from the eastern comparison state, Pennsylvania, suggests that safety records of nuclear power plants are a factor influencing views on the desirability of more dependence on nuclear energy.

If a conservation policy is pursued, the most favored target is reduction of energy use in people's homes as opposed to private transportation or the production sectors of the economy. This finding underscores the importance of identifying the kinds of home energy conservation actions which people will support. Consideration of such home related conservation choices reveals substantial support for existing laws implemented by the federal government during the past several years. It is equally clear, however, that more specific regulations such as requiring homes to pass an audit and restricting summer cooling or winter heating are not favored by most respondents.

Taken together, people's views as expressed in this survey do not suggest a public that is unconcerned about the energy future of the United States. People do not reject the need for energy conservation. Rather, they indicate an ability to conserve if it is necessary to do so, and to do it in their homes.

**Table 5—Percent of Respondents, by State, Who Feel They Could Reduce Their Energy Consumption During the Entire Next Year by 25 Percent**

	Arizona	California	Colorado	Idaho	Montana	Nevada	Oregon	Utah	Washington	Wyoming	Pennsylvania	State Mean
Yes	62.2	59.2	63.0	57.3	54.8	63.9	58.3	62.4	63.5	59.2	54.6	59.9
Don't Know	20.5	16.5	18.7	20.0	19.1	17.2	16.5	16.9	16.1	18.4	22.8	18.4
No	17.3	24.3	18.2	22.8	26.2	18.9	25.1	20.7	20.4	22.3	22.6	21.7

People's attitudes were strikingly consistent across states. For the most part the differences reported were not large. The most substantial differences reflect a strong antipathy toward the 55 MPH speed limit in Wyoming and Nevada, and the preference of Idaho, Montana, and Utah residents to conserve first in private transportation and secondly in homes, whereas the opposite was preferred in the other states. Although certain energy policies seem likely to be received somewhat better in some western states as opposed to others, data do not suggest a need for widely divergent state energy policies. The data suggest that similar programs for fostering home energy conservation would garner somewhat similar amounts of support and opposition. Thus, to the extent western states individually decide to take an active role in energy conservation, it would seem that they could profitably work with other states sharing blueprints and general methods for conservation. People's inclinations to accept or reject policies are simply not sharply demarcated by state boundaries.

Current federal activity in the energy arena make it clear that energy conservation is now a matter for states and individual householder's decisions and not for federal programs. Whereas people's attitudes and beliefs are often irrelevant to the strong arm of federally mandated technological fixes and regulations, voluntary actions are not. Even rising prices, which seem a certainty in response to the decontrol of oil and gas prices, do not by themselves promise immediate conservation. People's beliefs that conservation is desirable and can be achieved by them seem an important, if not essential, precursor to conservation actions.

The data reported here provide reason for cautious optimism that energy conservation in people's homes will occur voluntarily. Once associated with pain and sacrifice, energy conservation now has considerable acceptance among the general public. The residents of the ten western states and the one eastern comparison state are supportive of a broad based effort to meet America's future needs within which energy conservation as well as energy production has an important place. Besides these generally positive attitudes directed at conservation, people believe it is possible for them personally to reduce their energy

consumption, should it be necessary to do so. At the same time, required regulation of home temperatures, rationing of home heating and cooling, and mandatory home energy audits are not favored.

The message of these data seems to be that the home is still viewed as one's castle and direct intrusion is opposed; however, there is also a belief that even a castle can and should use energy more efficiently. It remains to be seen how well these beliefs become translated into actions.

#### Footnote

1. In addition to the authors, the research investigators responsible for project implementation include: William Fasse, Donna Iams and Edwin Carpenter, University of Arizona; Sylvia Lane, University of California-Davis; Joann Jones, University of Idaho; Marjorie Keiser, Montana State University; Suzanne Badenhop, Oregon State University; Dan Moore, Pennsylvania State University; H. Craig Petersen, Utah State University; Eugene A. Rosa, Washington State University; and Mary Ann Anderson and Don Anderson, University of Wyoming. This article is partly based on a technical report of findings prepared by the authors in collaboration with the research investigators mentioned here (Makela et al., in press). Appreciation is expressed to the Western Rural Development Center for financial support to convene the authors for the writing of this manuscript.

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