

# Energy Policies Directed At The Home: Which Ones Will People Accept?

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President Carter's 1977 energy message leaves little doubt that the United States is confronted with an energy crisis of long range magnitude. To emphasize this point, President Carter stated that the energy crisis is: "With the exception of preventing war . . . the greatest challenge that our country faces during our lifetime" (New York Times, 1977:24). As energy demands continue to press hard against domestic production, supplies of energy have become both relatively scarce and undependable, resulting in disruptions in the smooth functioning of society and rapidly increasing costs to obtain needed energy. The 1973 Arab oil embargo and the natural gas shortage experienced during the winter of 1976-1977 highlight our

vulnerability to changing political or climatic conditions which influence energy supply and demand. Although technological developments involving the harnessing of energy sources such as thermal and solar energy may reduce the demand on traditional sources such as natural gas, petroleum, and coal, the present problem of growing energy shortages is not likely to be abated (Benoit, 1976). Thus, from a policy standpoint there seems to be no alternative but to curtail our use of energy to insure adequate supplies for the future.

## The Need For Energy Conservation In Homes

In this paper we are concerned with alternative policies for reducing energy use in homes. Specifically, our purpose is to determine the level of public acceptance of several meaningful policy choices. There are three good reasons for seriously considering energy policies directed at the home. The first reason is that society cannot continue to function smoothly if an inordinate amount of energy is required for home usage. Lewis Carter (1977:7) distinguishes five economic sectors of our economy in which energy is consumed: the military, agricultural, industrial, commercial, and

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individual sectors. These sectors differ in terms of their priority for energy allocation and ease at which regulation can be imposed to conserve energy. The individual sector accounts for 34 percent of total energy use in the U.S., and it is here where considerable energy can be conserved without seriously disrupting societal functioning. Within the individual sector, 56 percent of the energy is consumed in the home and 44 percent is consumed for personal transportation (Newman and Day, 1975: Table 1-7). Further, the proportion of energy used in homes has increased approximately 5 percent since 1950 vis-a-vis the other energy consuming sectors (Schurr, 1971:11). Thus, reducing home energy consumption must be given high priority in the development of a national energy policy.

Second, a rather large proportion of the energy presently used in households is in some sense wasted. It is estimated that approximately half of the energy used in households is lost (Executive Office of the President, 1977:41; New York Times, 1977:24). This excessive energy loss is not surprising given the type of home which Americans prefer and in which many of us live. The typical American family of four resides in a single family home which has seven rooms to heat in the winter and cool in the summer. Not only does their home consist of a living room, dining room, family room, and three bedrooms, but there are other necessities such as bathrooms and a basement, which are substantial energy users (Olsen, 1976:6). Further, these rooms are often rather large and not well insulated. The practice of owning a single family detached dwelling unit compounds the problem, as each home must provide for its own individual heating and cooling systems, electrical appliances, and be enclosed by four walls and a roof which let out warm air in the winter and cool air in the summer. Thus, changes in the structure of homes designed to curb waste may significantly reduce energy use in this country.

Finally, rising prices for residential fuels and gasoline are creating a financial burden for many American families. In fact, the costs of securing

electricity, natural gas, fuel oil, and LP gas for use in American homes increased an average of 65 percent between 1970 and 1974 (Smith, 1976:29). A study conducted recently in Michigan reports that a 126 percent increase in fuel oil cost and an 81 percent increase in natural gas cost occurred between 1974 and 1976; and 60 percent of a sample of Michigan residents perceived increased energy prices for the home as a "great problem" (Morrison, et al., 1977:6). While energy use per household has been declining slightly (Smith, 1976:29), the decline is far from offsetting increasing prices. Thus, homeowners will be increasingly hard-pressed economically to meet energy costs for heating and cooling their homes; and rising costs may even seriously affect the well-being of certain segments of the population such as the poor and elderly.

#### **What are the Policy Choices?**

Given that a national program to conserve energy used in American homes is a reasonable goal to attain, the question becomes what kinds of policies can be developed and implemented to significantly reduce household energy consumption. In recent years several possible policies have been considered by state and federal officials. A number of these can be categorized as **short range** policies, implying that they require little time to enact and will have immediate effects on energy use. Turning off superfluous lighting or lowering the temperature of water heaters are two such policies. A second set of policies is **middle range** in nature, taking some time to enact but having greater effects on the reduction of energy use. Examples of middle range policies are insulating new homes and adding heavier insulation to current homes, closing off sections of homes during times of cold or hot weather, and limiting the heating and cooling of homes. Another set of policies are **long range**, requiring a considerable amount of time to implement but resulting in substantial decreases of energy use which will continue into the long range future. The development of solar energy, implementation of widespread

educational programs beginning with young children to teach how to conserve energy, construction of new homes containing energy conserving devices, and the planned change of residential location are all long range in orientation. All three sets of policies are useful and will quell the energy problem somewhat; however, guaranteed and far reaching reductions in household energy consumption are most likely to come from policies at the middle or long range level.

Proposed energy conservation policies for homes must take into account how energy is expended in homes. Actual data on home energy consumption show that the largest amounts of energy are used for space heating (57 percent), water heating (14 percent), cooking (5 percent), and refrigeration (5 percent), with 18 percent used for other purposes (Carter, 1977: Table 5). Thus, policies designed to curb energy for space heating seem most important.

The development of energy policies does not occur within a vacuum. A policy which is unpopular or which requires great inconvenience has little chance of succeeding. Further, certain policies will effectuate larger energy savings than others. Thus, when an energy package is put together by either state or federal officials, both the detriments (cost, inconvenience) and benefits (realized energy savings) must be considered. Data currently exist for assessing the benefits of certain possible home energy conservation policies. The Northwest Energy Policy Project (1976: see appendix) published estimates on the effects of certain policies on energy use in the Northwest; and Carter (1977: Table 14) subsequently reported revised estimates. Some of the findings are that a moderate lowering of thermostats would save 1 percent of the total energy used in the Northwest; improved insulation of old and new homes would save 7.4 percent; an increase in multiunit dwellings would save 2.5 percent; a 20 percent reduction in window area would save 0.9 percent; and solar heating would save 10 percent. Clearly some policies would be much more effective than others, and the joint implementation of

all would produce sizeable reductions in the amount of energy used by homes.

Similar data concerning the detriments of such policies are almost non-existent. However, we can infer that some policies may cause greater discomforts than others. For example, the lowering of thermostats a degree or two would probably not cause a great inconvenience to most Americans. A further reduction to say 60° might be quite unacceptable, especially by older people who spend large portions of their day within the confines of their home, are less active, and more likely to suffer from circulation problems. Mandatory insulation of homes might be a financial burden for many American families, although the resultant lower energy bills may eventually make up for the initial loss. A policy of building smaller homes or homes which share side walls might inconvenience large segments of the population, as they run counter to well accepted housing norms. These inferences are somewhat supported by the results of a survey of Kentucky residents, which show that 89.3 percent were willing to turn down the heat in their home, 55.4 percent were willing to not use their air conditioning, and 58.6 percent were willing to live in a smaller house (Donnermeyer, 1977:19).

Preference surveys would indicate the extent to which a series of alternative policies are acceptable to the public, and would lead us to infer which policies would be least inconvenient. The rationale behind collecting such information is that policies which are most acceptable to the public are also likely to be implemented with little resistance. Another reason for conducting surveys is to locate the types of people who are most favorable or unfavorable of certain policies. The elderly may not mind closing off two rooms in their house which are not utilized to any degree, but may vehemently protest having to lower their thermostat in the winter or turn off their air conditioner in the summer. Similarly, large families may willingly move into a house sharing walls with another house, but insist on living in a fairly large home so their children have plenty of room

for their activities. Thus, preference surveys would serve the function of both indicating what kinds of policies are most acceptable at an aggregate level, and what preferences are of different segments of the population. Thus, a housing energy program could take into account the unique needs of some people while also recognizing the needs of the entire population in light of the current energy consumption levels.

Given the above discussion we have three major objectives in writing this paper. First, we will evaluate the acceptability of specific policies directed at reducing energy consumption in homes. In this way we will attempt to add to existing evidence regarding what kinds of energy policies Americans feel are most acceptable to them. The policies are chosen for their estimated energy savings, and are as follows: build smaller homes; build homes partly underground; restrict heating in winter to 65°; restrict cooling in summer to 85°; close off 2-3 rooms and heat to 50° in winter; reduce size and number of windows; build homes on smaller lots which share side walls; stop building of homes in countryside to reduce transportation; and mandatory insulation. Thus, the policies listed in the survey are those which energy use data suggest are the most important in reducing home energy consumption. Second, we will associate the energy policy items with each other. This will illustrate whether increasing acceptance of particular policies are associated with increasing acceptance of other policies. In this manner we might find that a set of policies are highly related to one another and therefore might provide the basis of a coherent energy conservation program. Finally, we will assess the effects of selected social characteristics on policy acceptance. Such an analysis will indicate which policies are most and least acceptable to various segments of the population.

### **The Study**

In the summer of 1977 a sample of Washington state residents was sent a mail questionnaire

eliciting responses to a variety of questions concerning housing satisfactions, preferences, and conditions. Included in the questionnaire was a page of items measuring acceptance of proposed policies to reduce home energy consumption; and these data provide the basis of the analysis to be presented. Using a procedure developed by Dillman (1978), questionnaires were sent to a systematic sample of 4,500 households drawn from all telephone directories in the state of Washington. The analysis is based on the 2,750 questionnaires which were returned as of August 31, 1977. This represents 67 percent of the eligible households to which the questionnaire was presumably delivered.<sup>1</sup>

The methods employed to draw the sample and collect the data both result in certain biases, which have been described elsewhere (Dillman, et. al., 1974). For example, 8 percent of all Washington households lack telephone service. An additional, but unknown, number of predominantly metropolitan households have unlisted telephone numbers so were therefore missed. Further, the mail questionnaire technique tends to have a slight bias against those who are older, less educated, and economically deprived (Goudy, 1978). In terms of housing characteristics there seems to be a bias against apartment dwellers (as opposed to homeowners) and recent occupants of homes. Thus, the data are not totally representative of the state population as a whole. Nevertheless, the bias does not substantially reduce the generalizability of the data collected.

### **Findings**

Respondents were asked to evaluate nine proposed energy policies and indicate how difficult each would be for them to personally accept. Response choices were: "very hard to accept," "somewhat hard to accept," "don't know," "somewhat easy to accept," and "very easy to accept." These particular policies were selected for inclusion in the questionnaire because they covered a wide range of energy saving behaviors and, as suggested earlier, concentrated on the

most significant consumers of home energy — namely, space heating and, in the case of one item, transportation related to housing location. The nine policies have been grouped into four general categories: mandatory insulation, temperature limitation, structural change, and space reduction (see Table 1). These groupings characterize the type of change in behavior that implementation of each policy would require of the respondent.

The results presented in Table 1 indicate that some types of policy are more acceptable to re-

spondents than are others. The most acceptable is “mandatory insulation” of homes with three-fourths of the respondents saying that this policy would be somewhat easy or very easy to accept. Ranking next in acceptability are the three temperature limitation policies. However, there is some divergence within this grouping, as “air conditioning to no lower than 85°” (63.8 percent said this policy would be easy to accept) is more acceptable than “closing off 2-3 rooms and heating them to no greater than 50°” (59.1 percent) and “limiting all heating to 65°” (47.6 percent). It

**TABLE 1. Difficulty of Accepting Nine Proposed Energy Conservation Policies.**

Proposed Policies <sup>a</sup>	How Difficult to Accept?					Combined “Easy” Categories
	Very Hard	Somewhat Hard	Don’t Know	Somewhat Easy	Very Easy	
				percent		
1. Mandatory installation of heavy insulation in existing homes	7.5	8.4	8.5	27.7	48.0	(75.7)
<b>Temperature Limitation</b>						
2. Allow air conditioning to cool no lower than 85° in summer	8.9	14.5	12.8	26.6	37.2	(63.8)
3. Close off 2-3 rooms of your home and only heat them to 50° in the winter	15.8	17.0	8.1	32.8	26.3	(59.1)
4. Allow heat no higher than 65° in winter months	17.1	29.8	5.5	30.9	16.7	(47.6)
<b>Structural Change</b>						
5. Build homes partly underground, so only one side has windows	32.2	22.6	14.6	21.0	9.6	(30.6)
6. Reduce size and number of windows below present average	24.9	35.5	13.3	20.4	5.8	(26.2)
<b>Space Reduction</b>						
7. Build smaller home 1-2 less rooms than present average	28.5	25.4	11.9	22.2	12.0	(34.2)
8. Stop the building of homes in countryside to cut down energy for transportation to and from work	47.8	26.1	13.7	7.7	4.7	(12.4)
9. Build homes on smaller lots so that the side walls are shared with homes next door	67.9	21.0	5.8	4.3	1.0	( 5.3)

<sup>a</sup> Policies are worded exactly as they appeared in the questionnaire.

should be realized that summer air conditioning in the ocean-moderated climate of the Northwest is probably far less essential to comfort than in the warmer and more humid regions of the U.S., particularly from the Great Plains eastward. Thus, it is not surprising that our respondents were less reluctant to give up summer cooling than winter heating.

None of the remaining five policies were considered easy to accept by more than about one-third of the respondents. All such policies deal in some manner with future home construction. People are slightly more willing to accept "smaller homes" (34.2 percent) than to accept certain construction techniques designed to protect against heat loss — "building homes partly underground" (30.6 percent) and "including fewer windows" (26.2 percent). The least support by far was reserved for "ending the construction of homes in the countryside" (12.4 percent), a policy designed to cut down energy use for transportation, and "building homes in a townhouse style with adjoining side walls" (5.3 percent). Objections to ending the proliferation of homes throughout the countryside were not surprising inasmuch as previous research has shown the countryside to be the most preferred residential location for the majority of Washington residents (Dillman and Dobash, 1972). Similarly, the single family detached dwelling has been considered synonymous with the American dream, a view confirmed by simple observation of the residential patterns in most towns and cities, as well as the findings of numerous surveys measuring locational preferences (Morris, Crull and Winter, 1976; Michelson, 1967). As a result, the policy encouraging the construction of dwellings which are not detached was not acceptable to the vast majority of our respondents.

Table 2 addresses the question of whether people who tend to find one policy easier to accept than others do, are similarly more favorable to the remaining policies. Or, alternatively, does an inclination to accept certain policies correspond with the tendency to reject others? To arrive at an

answer to this question gammas were calculated for all possible policy combinations.<sup>2</sup> As shown in Table 2, a definite, though imperfect, pattern emerges. First, there is a total lack of negative gammas, indicating that in no instance does the tendency to support one policy correspond to a tendency to reject other policies. Second, there are strong associations among items within each of the general four categories, suggesting the appropriateness of the groupings made earlier in Table 1. Third, the temperature limitation items tend to be associated with the items in the mandatory insulation and structural change categories; and the items in the space reduction category also tend to be associated with the structural change category. Finally, there is a distinct lack of association between the temperature limitation and space reduction items. The single exception is a .22 gamma between "closing off 2-3 rooms and heating them to no greater than 50°" in the temperature limitation category and "smaller homes" in the space reduction category. This is perhaps understandable inasmuch as maintaining a low temperature in a few rooms would imply cutting back on space for some household activities. Since knowledge of people's willingness to accept less space does not help predict their willingness to accept lower temperatures, these items can be considered independent of one another.

The lack of association between the temperature limitation and space reduction items raises the question of whether differences exist in their acceptance among various segments of the population. We address this question in Table 3. Here gammas are reported for the associations between selected social characteristics, and all nine energy policies. Overall the associations are relatively weak, especially for the income, education, and home ownership variables for which the gammas exceed .10 in only five of 27 instances. Further, there is no systematic difference in the direction of the relationship between them and the temperature limitation policies on the one hand and space reduction policies on the other. In contrast, age

and the number of people living in the household exhibit a slightly stronger association and do differentiate among policies. Older people are less likely than others to accept all energy policies except those in the space reduction category. In contrast, the greater the number of people in one household the less likely they are to accept a reduction in space and the more likely they are to accept the other policies (with the single excep-

tion of "closing off 2-3 rooms and heating them to no greater than 50°," a policy noted previously as combining certain elements of both space and temperature).

Respondents to the questionnaire were also asked to answer the following question which required them to choose between the alternatives of accepting less space or lower temperatures:

"If it were necessary to do **one** of the following

**TABLE 2. Interassociation of Proposed Energy Policies.**

Proposed Policies <sup>a</sup>	Gammas for Nine Policies <sup>b</sup>								
	1	2	3	4	5	6	7	8	9
1. Mandatory installation of heavy insulation in existing homes	--								
<b>Temperature Limitation</b>									
2. Allow air conditioning to cool no lower than 85° in summer	.15	--							
3. Close off 2-3 rooms of your home and only heat them to 50° in the winter	.11	.24	--						
4. Allow heat no higher than 65° in winter months	.15	.44	.31	--					
<b>Structural Change</b>									
5. Build homes partly underground, so only one side has windows	.09	.14	.16	.20	--				
6. Reduce size and number of windows below present average	.04	.10	.22	.11	.36	--			
<b>Space Reduction</b>									
7. Build smaller home 1-2 less rooms than present average	.00	.07	.22	.09	.19	.24	--		
8. Stop the building of homes in countryside to cut down energy for transportation to and from work	.00	.00	.01	.02	.04	.16	.14	--	
9. Build homes on smaller lots so that the side walls are shared with homes next door	.01	.06	.02	.04	.18	.28	.24	.48	--

<sup>a</sup> Policies are worded exactly as they appeared in the questionnaire.

<sup>b</sup> Given approximately equivalent n's and following Goodman and Kruskal's (1963) formula for calculating the significance level of gamma, gammas of about ± .12 or larger are statistically significant at the .05 level.

in order to conserve energy, which would you be most willing to accept?

1. Build smaller homes (1-2 less rooms) and heat 1-2 less rooms in existing homes.
2. Strictly limit temperature; heat to maximum 65° in winter; cool to minimum 85° in summer."

The format of this question allows us to distinguish more clearly between types of people who would opt for temperature limitation versus space reduction policies. This is due to the fact that

people could not offer both as legitimate responses, but instead were forced to choose one or the other. As expected, this item relates positively to the temperature limitation policies except for the 50° limit on closed-off rooms, and negatively to all the space reduction items (Table 3). Thus, its use as a summary measure of these policy dimensions is justified. There is virtually no association with income, education, and home ownership. However, there is a very strong negative association with age (gamma equals  $-.34$ ;

**TABLE 3. Association Between Energy Policies and Selected Socioeconomic and Housing Characteristics.**

Proposed Policies <sup>a</sup>	Gammas for Social Characteristics <sup>b</sup>					Forced Choice Temperature vs. Space
	Age	Income	Education	Number in Household	Ownership	
1. Mandatory installation of heavy insulation in existing homes	-.22	.15	.10	.11	-.08	.15
<b>Temperature Limitation</b>						
2. Allow air conditioning to cool no lower than 85° in summer	-.14	.07	.08	.11	.09	.34
3. Close off 2-3 rooms of your home and only heat them to 50° in the winter	-.04	.01	.05	-.11	.01	-.03
4. Allow heat no higher than 65° in the winter months	-.21	.04	.11	.06	-.04	.62
<b>Structural Change</b>						
5. Build homes partly underground, so only one side has windows	-.15	.06	.13	.07	.04	.00
6. Reduce size and number of windows below present average	-.06	.01	.04	.06	.01	-.10
<b>Space Reduction</b>						
7. Build smaller home 1-2 less rooms than present average	.12	.00	.04	-.18	-.01	-.45
8. Stop the building of homes in countryside to cut down energy for transportation to and from work	.16	-.03	.01	-.11	-.10	-.13
9. Build homes on smaller lots so that the side walls are shared with homes next door	.10	.07	.15	-.08	-.15	-.13
Forced Choice Temperature vs. Space	-.34	.04	.06	.22	-.05	--

<sup>a</sup> Policies are worded exactly as they appeared in the questionnaire.

<sup>b</sup> Given approximately equal n's and following Goodman and Kruskal's (1963) formula for calculating the significance level of gamma, gammas of about  $\pm .12$  or larger are statistically significant at the .05 level.

**TABLE 4. Association of Forced Choice Between Size and Temperature with Age.**

Choices <sup>a</sup>	Age					
	25 or under (233)	26-35 (639)	36-45 (477)	46-55 (430)	56-65 (426)	over 65 (438)
	percent making each choice					
Build smaller homes (1-2 less rooms) and heat 1-2 less rooms in existing homes	30.0	28.5	37.4	51.9	58.0	58.7
Strictly limit temperature; heat to maximum 65° in winter; cool to minimum 85° in summer	70.0	71.5	62.6	48.1	42.0	41.3
	Gamma = -.34, p < .001					

<sup>a</sup> Choices are worded exactly as they appeared in the questionnaire.

Table 4) and a strong positive association with the number of people living in a household (gamma equals .22; Table 5).

The high association between age and the forced-choice item is not surprising, as older people probably spend more of their time at home, and physically cannot tolerate temperature variations as easily as younger people. At the same time older people typically do not have children living at home and therefore do not require a large house. On the other hand, large families need enough space to comfortably hold all members of the family so space conflict is minimized. A reduction in home temperature may be one means of attaining this goal if home energy consumption has to be limited. Further, it should be noted that there might be a curvilinear relationship between age and size of household — the number of people in a household is most likely to be smaller when the head of the household is in either the younger (when just beginning a family) or older (when the children have left home) age categories, and larger when the head of the household is in the middle age category (when all the children are born and still at home). Such a curvilinear relationship does

indeed exist, and thus the question arises as to whether the observed relationship between age and acceptance of temperature limitation versus space reduction policies is a spurious one. This is not the case however. When the associations between age and responses to the forced-choice question are analyzed controlling on size of household we find the following gammas: —.17 (one person household), —.33 (two person), —.36 (three person), —.31 (four person), and —.43 (five person). Thus, the associations between age and the forced-choice question remain high regardless of the size of household. Therefore, age appears to be a significant variable having independent effects on the acceptance of policies designed to reduce home space or to limit the heating and cooling of homes.

The results presented above concerning the effects of age and number of family members living in a household suggest an important modification to our earlier conclusions (based on Table 1) about the acceptability of the various energy policies. There we concluded that temperature limitation policies were substantially more acceptable than space reduction policies. That now

**TABLE 5. Association of Forced Choice Between Size and Temperature with Number of People Living in Household.**

Choices <sup>a</sup>	Number of People in Household						
	1 (456)	2 (908)	3 (437)	4 (461)	5 (236)	6 (80)	7 (35)
	percent making each choice						
Build smaller homes (1-2 less rooms) and heat 1-2 less rooms in existing homes	50.9	51.2	40.0	36.4	29.7	33.8	26.9
Strictly limit temperature; heat to maximum 65° in winter; cool to minimum 85° in summer	49.1	48.8	60.0	63.6	70.3	66.3	73.1
	Gamma = .22, p < .001						

<sup>a</sup> Choices are worded exactly as they appeared in the questionnaire.

appears true for only some segments of the population. For example, whereas over two-thirds of those people 35 or under would choose lower temperatures over smaller homes, more than one-half of those over 45 would choose the opposite. And, whereas just under one-half of the people in 1-2 person households would choose lower temperatures, nearly two-thirds of the people in larger households would make that choice. These data clearly suggest that the acceptability of certain energy policies is not universal, but varies rather significantly across different segments of the population.

### Conclusion

The serious consideration of which of a variety of energy policies directed at the home should be implemented is essential. Public policy can neither be made nor implemented in the abstract. Where society's welfare is at stake **and** the citizenry will be directly and knowingly affected, as in the case of the proposed energy policies we have discussed, a multitude of factors will likely influence which policies become law. Citizen acceptance of such energy policies, along with data

revealing estimated energy savings, is one important consideration likely to determine whether adopted policies are a success in actually reducing energy consumption of homes.

Certain policies can have negative impacts on the American public without producing significant energy savings. Other policies can both lead to the conservation of energy and be of minimal inconvenience to people. We have attempted in this paper to indicate which policies are more acceptable to the public, and thus are perceived as producing the least likely amount of inconvenience, and which will produce large energy savings. Our results reveal that the middle range energy policies are those which appear to be the most promising in terms of successful implementation. The temperature limitation and mandatory insulation policies received the highest levels of public acceptance, and as shown earlier would result in considerable energy savings. The space reduction and structural change policies, which are long range in orientation, do not receive much public acceptance. In addition, these long range policies would take too long to develop and put into practice, while the need for home energy conservation

is now. The policy implication of these findings is that a substantial revision of the American home, changing both the interior and exterior in ways implied by our stated policies, would not be willingly accepted by the American public at this time, and perhaps would be actively resisted. Rather, the policies involving the limitation of temperatures and the installation of heavy insulation are those which appear to be most likely to succeed.

On the other hand, our data also suggest that it would be a mistake to treat all households as if they were the same. Not only is there substantial variation in the acceptance of certain policies depending upon age and number of people in households, but the relative acceptability of temperature limitation versus space reduction actually reverses. We found that temperature limitation was more acceptable to smaller but not larger households. These findings affirm the importance of family life cycle variables in housing decisions, as frequently reported by others (Rossi, 1955; Morris and Winter, 1975). Thus, while the middle range policies included in the questionnaire are most acceptable at an aggregate level, different results appear when particular subgroups of the population are analyzed. This suggests that before any far reaching home energy program is designed by the federal government, differences among various segments of the population must be taken into account.

A single survey such as we have done can hardly provide a definitive answer to which policies citizens will accept. The answers provided now are likely to change somewhat as energy cost changes, as a sense of "crisis" comes or goes, and as unforeseen alternatives for energy conservation may develop. Thus, a continuous monitoring of people's willingness to accept particular energy policies directed at the home is needed. Further, such surveys need to be conducted throughout all regions of the U.S., as energy sources, costs, and alternatives for conservation are likely to differ.

#### FOOTNOTES

1. The number of eligible households was calculated to be 4,115. This figure eliminates all persons who were deceased, had moved out of state, had moved and left no forwarding address, were of advanced age with failing health, or were otherwise disabled.
2. Gamma is a measure of association that has a potential range of  $-1.0$  to  $+1.0$ . The value measures the predictability of order on one variable from order on another, and indicates the relative superiority of predicting order of Y from order of X, over prediction based on chance alone (Mueller, et al., 1970: 279-290).

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### Call For Papers

The American Association of Housing Educators will hold its 13th annual conference on October 10-14, 1978 in Minneapolis, Minnesota. The AAHE Research Committee is calling for abstracts of three to five pages of papers for consideration for delivery at the meeting. The deadline for submission of abstracts is April 15, 1978. Authors of accepted abstracts will be asked to submit completed papers by July 15 for final consideration.

Three copies of abstracts should be sent to: Abe Farkas  
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