

COPING WITH THE ENERGY SHORTAGE: PERCEPTIONS AND ATTITUDES OF METROPOLITAN CONSUMERS

JAMES A. BRUNNER

Professor of Marketing

GARY F. BENNETT

Professor of Biochemical Engineering

The University of Toledo

ABSTRACT

The energy shortage in the United States became a crisis with the imposition of an embargo on oil shipments by OPEC. A survey of six hundred residents of a metropolitan area was made in 1974 and again in 1976. The data have been analyzed and illustrate differences between concerned and unconcerned citizens and to show how time has affected perceptions of both groups.

Although exposed to extensive media coverage of the energy problem and its related developments, there was no significant change in the attitudes of the population in the time period involved—about 65 per cent agreed or strongly agreed, in both surveys, there was a problem. Many of the respondents indicated they had changed their life style to reduce energy consumption, but significant differences were indicated between 1974 and 1975. As time lengthened from the severe crisis period, people conserved less; much of the conservation was tied to economic factors rather than an energy ethic.

Introduction

While there are many underlying causes for the energy shortages for the past two years, the consequences for consumer and industry are severe enough to deem the situation a crisis. Although it is worldwide, the effects are felt most heavily in the advanced industrial nations with high living standards such as the United

States. As a consequence, consumers will ultimately bear the impact of the energy shortage.

How they perceive the problem and its resolution will indirectly affect the life styles which they will adopt in order to cope with the energy problem. Moreover, it is conjectured that those who perceive that an energy problem actually exists will modify their life styles and standards of living to a greater extent than those who believe it to be a contrived crisis. The objectives of this longitudinal study, therefore, have been to ascertain how the consumers in the Toledo area, a large metropolitan city, perceive the energy crisis, its seriousness and consequences, and its effect upon their life styles. Other objectives have been to determine what measures they feel would be most appropriate for dealing with the situation, and how they evaluate the actions taken by the federal government to resolve the problem.

Methodology

This study was conducted in two phases, the first of which was undertaken in the Winter of 1974 and the second a year later (1975) in order to ascertain what changes their perceptions and opinion, if any, had been affected by the prevalence of the problem over the ensuing year. The samples consisted of 600 households in 1974 and 940 in 1975. The households were selected on a systematic probability basis from the Toledo and Vicinity Telephone Directories, and adults eighteen years of age and over were initially contacted by telephone and their cooperation elicited. They were mailed self-administered questionnaires, and the rate of response in both years was approximately 60 per cent. Two follow-up telephone calls were utilized in order to elicit a high rate of response and the information received after these reminders was compared to that obtained from the original solicitation. No significant differences were noted between the two groups of respondents in both years and the samples, therefore, are considered to be representative of the telephone subscriber population, which constituted over 90 per cent of the households in the Toledo area.

A sample of 360 respondents was obtained in 1974, and 564 in 1975. Basically, the same questionnaire was used in both years, but a few questions were added in 1975 in order to provide a basis for differentiating between those who felt there was a problem from those who disagreed. These data were then analyzed for 1975 on this basis and compared to the findings for 1974. It is interesting to note that approximately 65 per cent could be described as

Table 1. Perceptions Concerning the Prevalence of an Energy Problem (Per Cent of Respondents)

<i>Perception</i>	<i>1975</i>	<i>1974</i>
Strongly agree	20	18
Agree	45	44
Undecided	12	10
Disagree	19	22
Strongly disagree	4	6
Total	100	100

“Concerned” citizens while 34 per cent did not believe a problem existed and were therefore classified as “Unconcerned.”

Perceptions of the Energy Crisis

Although exposed to extensive coverage of the energy problem and its related developments by the media, there was no significant change in the attitudes of the population in the time period involved. Thus, in both years approximately one-fifth of the populace strongly agreed that there was an energy problem in the United States. Further, about 44 per cent agreed that there was an energy problem in both years. (See Table 1.) Moreover, there were no significant shifts within the age groups, education, educational levels or household income groups. However, it is notable that the degree of concern varied with the age of the respondent. For example, while in 1975 only 60 per cent of those eighteen to twenty-four were “Concerned,” 68 per cent of those in the twenty-five to thirty-four year old group and 70 per cent of those in the thirty-five to forty-nine were “Concerned,” but only 60 per cent of those in the fifty to sixty-four category and 63 per cent of those in sixty-five and over expressed concern over the problem. Similarly, the proportion “Concerned” rose with the education of the respondents: from 43 per cent of those with eighth grade or less educations, 55 per cent of the high school graduates, 73 per cent who had had one to three years of college and 82 per cent of those who were college graduates. Similarly, the degree of concern rose with the income of the household from 64 per cent of those with incomes of less than \$5,000 to 77 per cent of those with incomes of \$25,000 and over. Briefly, the more educated, middle-aged and higher income families were concerned to a greater degree than the balance of the population. Further, about two-thirds of

Table 2. Perception of Length of the Energy Problem

<i>Perception</i>	<i>1975</i>			<i>1974</i>
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
No real problem	1	45	16	^a
Short range problem	3	10	5	12
2-5 year problem	12	17	14	25
Long range problem	78	16	57	50
No opinion	5	12	8	13

^a Not included in 1974 study.

both male and female respondents were concerned about the energy problem.

Duration of the Problem

With the passage of one year, their perceptions of the duration of the problem had increased. Thus, in 1974 50 per cent considered it to be a long range problem; that is, one of greater than five years duration. By 1975, however, this had risen to 57 per cent, while those who felt that it was a short range problem had declined from 12 to 5 per cent, and an intermediate term problem of two to five years duration, from 25 to 14 per cent. However, it should be noted that 16 per cent of the people in 1975 thought that there was no real problem concerning energy, thereby implying that it was a contrived problem which would ultimately go away. This was particularly true of those who were "Unconcerned" of which 45 per cent indicated there was no real problem as compared to only 1 per cent of those who were "Concerned." Moreover, of the "Concerned" citizens, 78 per cent considered it to be a long range problem, and only 12 per cent thought it would be of two to five years in duration. (See Table 2.)

Causes of the Problem

In pinpointing the problem's causes, these respondents felt there were a number of contributing factors. Initially, in 1974 63 per cent accused the oil companies and claimed that they were holding back production in order to increase prices. However, this number declined to 55 per cent by the winter of 1975. Approximately 40

Table 3. Probable Causes of the Energy Problem (Per Cent of Respondents)

<i>Cause</i>	<i>1975</i>			<i>1974</i>
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
Oil Companies holding back production	47	71	55	63
High rate of consumption in United States	53	12	39	40
Discouraging federal regulations	40	30	37	18
Mid-East oil embargo	28	20	25	22
Environmentalists	23	20	22	22
Poor federal estimates of national oil demand	21	9	17	23
High rates of oil consumption outside US	14	5	10	13
Decrease in Mid-East oil production	10	5	9	12
Other	11	7	10	15
No opinion	2	8	4	1

per cent in both years asserted that the high rate of oil consumption in the United States was a major contributing factor.

Approximately one-fourth in both years felt that it was attributable to the Mid-East oil embargo against the United States. In both years, 22 per cent placed partial responsibility on the environmentalists who had fought the Alaskan pipeline. It is notable that while in 1974 18 per cent thought that the fault rested with Congress and federal regulations discouraging the development of the oil fields, this more than doubled to 37 per cent in 1975; thus the emphasis shifted away from the oil companies to the federal government and its regulations.

Differences of opinions about the causes of the problem existed for the "Concerned" and "Unconcerned." The major differences centered in 1975 upon whether or not the oil companies were responsible: 47 per cent of the "Concerned" asserted this was a primary cause in contrast to 71 per cent of the "Unconcerned" and 53 per cent of the "Concerned" thought that the high rate of oil consumption in the U.S. was a major contributing factor while only 12 per cent of the "Unconcerned" attributed it to this factor. Otherwise there were no major distinctions between the two groups concerning the factors causing the problem. (See Table 3.)

Table 4. Perceived Profits per Gallon of Gasoline (Per Cent of Respondents)

<i>Profit made by oil company</i>	1975			1974
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
1 cent per gallon	2	1	2	27
2 cents per gallon	7	3	6	14
3 cents per gallon	1	—	1	3
4 cents per gallon	10	6	8	3
5 cents per gallon	9	5	7	6
6 cents per gallon	42	64	50	47
No Opinion	29	21	26	—

Profits of Energy Producers

As a substantial number of respondents in both years attributed the oil crisis to the actions of the oil companies, it is interesting to observe that approximately 50 per cent believed that the companies made six cents or more per gallon, and only 14 per cent in 1974 and 6 per cent in 1975 indicated that the profit per gallon was two cents—an amount indicated by the Mobil Oil Corporation in its advertising. A larger proportion of those “Unconcerned” about the crisis thought the oil companies made six cents or more per gallon; 64 per cent as compared to 42 per cent of those “Concerned” thereby suggesting a higher level of economic awareness of the facts by the concerned citizens. (See Table 4.)

In order to ascertain whether these profits were appropriate, they were asked to specify what level of profits would be “reasonable.” It is interesting that a third of the respondents had no opinion what would be a reasonable profit, about 35 per cent asserted that the profit per gallon should be two or three cents, and both the “Concerned” and “Unconcerned” agreed on this level of profitability. Thus it is evident that the oil companies, if their rate of profit is indeed two cents a gallon, have a major educational problem to convince consumers that their profits are actually in line with consumer perceptions of reasonableness. (See Table 5.)

Although the oil companies are perceived as our major suppliers of energy, the electrical and gas companies are also significant energy contributors. Interestingly, in 1975 over half of these consumers had no idea concerning what The Toledo Edison earned per dollar of revenue; and similarly, the majority could not indicate the rate of profit earned by the Columbia Gas system. However, about one-fourth of the “Unconcerned” respondents thought that both

Table 5. Reasonable Level of Profit per Gallon of Gasoline
(Per Cent of Respondents)

	1975			1974
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
1 cent per gallon	8	11	9	8
2 cents per gallon	17	15	16	17
3 cents per gallon	17	23	19	75
4 cents per gallon	6	12	8	—
5 cents per gallon	6	4	5	—
6 cents per gallon or more	3	3	3	—
No Opinion	43	32	40	—

companies made nine cents or more per dollar of revenue in contrast to 15 per cent or less of the “Concerned” citizens who held this perception. Moreover, 10 per cent of the “Concerned” respondents thought that both companies made less than four cents per dollar of revenue, in contrast to only 4 per cent of the “Unconcerned.” This again points up the need for consumer education on the economics involved.

Solutions to the Energy Problem

In order to resolve the energy problem a number of alternatives were proposed to these respondents for their consideration. (See Table 6.) Thus, 39 per cent of those “Concerned” thought that gas rationing was a sound solution, but only 25 per cent of those

Table 6. Proposed Solutions for Relieving the Energy Problem
(Per Cent of Respondents)

	1975		
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>
Gas rationing	39	25	34
Tax on heavier cars	37	20	31
Increase gas prices ten cents/gallon	21	8	16
Shorter gas station hours	20	12	17
No Sunday driving	12	5	10
No shortage	11	56	26
Other	13	7	11
No Opinion	7	5	6

“Unconcerned” agreed. Levying a tax on heavier automobiles was favored by 37 per cent of the “Concerned” respondents, while only 20 per cent of the “Unconcerned” shared this view. Increasing gasoline prices by ten cents a gallon was favored by over one-fifth of the “Concerned” but only 8 per cent of the “Unconcerned” concurred. Restricting Sunday driving was favored by 12 per cent of the “Concerned” while only 5 per cent of the “Unconcerned” deemed this necessary. One-fifth of the “Concerned” respondents thought that shortening gasoline station hours would help alleviate the problem while only 12 per cent of the “Unconcerned” indicated this was desirable. Thus, the “Concerned” citizens were more inclined to take some form of action because they perceived the energy issue as a problem. It is interesting to note that many of them were willing to undergo restrictive measures even though Congress is reluctant to take actions which will directly affect the voter. Apparently, a substantial proportion of the electorate are ahead of their representatives in resolving the energy problem.

Effects on Life Styles

Many of these Toledoans indicated that they had changed their life styles in order to reduce gasoline consumption. (See Table 7.) Thus, in 1974 almost two-thirds indicated that they had reduced their car speeds but this declined to 51 per cent in 1975. In general, there appears to have been a decline in the efforts of these consumers to reduce their gasoline consumption from the time of the initial crisis to the time of the second study. For example, the number who indicated that they had reduced their car usage for non-pleasure activities declined from 53 per cent to 27 per cent, reductions in pleasure driving dropped from 56 to 43 per cent, the number who were shopping closer to work declined from 29 per cent to 4 per cent, but the number who were shopping closer to home rose from 7 to 20 per cent. Interestingly, 13 per cent in 1975 stated that they were having more frequent tune-ups of their automobiles in order to improve efficiency, and about a third in both years stated that they were making fewer trips to shopping centers with the objective of reducing fuel consumption. However, only 12 per cent in both years indicated they had skipped or postponed their vacations due to the energy crisis, and the number who indicated that they were walking rather than driving declined from 19 per cent in 1974 to 12 per cent in 1975.

As expected, the response to energy saving suggestions varied for “Concerned” and “Unconcerned.” In the winter of 1975, about

Table 7. Actions Taken to Reduce Gasoline Consumption
(Per Cent of Respondents)

<i>Steps taken</i>	<i>1975^a</i>	<i>1974</i>
Reduced car speed	51	64
Reduced pleasure driving	43	56
Reduced car use for non-pleasure activities	27	53
Made fewer trips to shopping center	33	33
Shopped less frequently	30	33
Shopped closer to work	4	29
Shopped closer to home	20	7
Bought a better mileage car	15	9
More frequent tune-ups	13	—
Walked more	12	19
Skipped or postponed vacation	12	12
Formed car pools	9	7
Changed vacation to a closer area	7	6
Used public transportation	6	5
Moved closer to work	2	—
Changed jobs to save gas	1	—
Other	2	3

^a In 1975, 69 per cent of the "Concerned" respondents indicated they had reduced their gasoline consumption in the prior three months as compared to only 52 per cent of the "Unconcerned."

two-thirds of the "Concerned" citizens stated they had reduced their gasoline consumption in the prior three months as compared to only 52 per cent of the "Unconcerned." It is notable, however, that over half of the "Unconcerned" drivers had initiated steps to reduce their gas consumption, presumably as a result of the increased cost rather than concern over the energy crisis. In general, relatively more of the "Concerned" citizens exhibited overt actions to reduce consumption than did the "Unconcerned."

Other Energy Conservation Efforts

When queried concerning the efforts which they had taken to conserve all forms of energy, of the twelve possible ways covered in the study, three of them were used by 40 per cent or more of the respondents in 1974 and by a third or more in 1975, thereby suggesting that people were becoming less energy conservation conscious over the time period covered. (See Table 8.)

Interestingly, over 75 per cent in both years were consciously turning off lights in unoccupied rooms and about 70 per cent had

Table 8. Actions Taken to Conserve Various Forms of Energy
(Per Cent of Respondents)

<i>Action taken</i>	1975	1974
Turned off lights when not in room	75	80
Reduced thermostat level in home	70	71
Turned off heat in unused rooms	33	42
Used electric appliances less often	20	24
Installed storm windows	21	17
Added insulation	19	12
Used radio or TV less frequently	15	16
Used smaller wattage bulbs	16	14
Reduced use of home air conditioning	18	—
Increased use of fireplace	11	12
Used space heaters	10	6
Decreased use of a fireplace	4	—
None of these	3	4

reduced the thermostat level in their homes. Further, a third or more in both years were turning off heat in unused homes and about a fifth were using electrical appliances less frequently. Twenty per cent had installed storm windows and 20 per cent indicated that they had added insulation. Moreover, using smaller wattage light bulbs was mentioned by approximately one-sixth and a similar number were using their radios or TVs less frequently. As might have been anticipated, the efforts to conserve fuel were more prevalent among those "Concerned" than by the "Unconcerned."

Utility companies during the energy crisis encouraged the reduction of thermostat levels and apparently this struck a responsive chord. Thus, 38 per cent in 1974 and 42 per cent in 1975 indicated they had set their thermostats at 68° or lower. About 40 per cent in both years had reduced them to 69° to 71°. While in 1974, 20 per cent heated their homes at 70° to 74°, only 14 per cent stated they used these temperatures in 1975. In general, people were responding to the requests by the utility companies to reduce their home temperatures in order to conserve energy. This pattern was comparable for both the "Concerned" and the "Unconcerned" groups, although in 1975 a larger percentage of the "Unconcerned" had their daytime temperatures at 72°-74°. Both groups tended to set the thermostat lower during the night. (See Table 9.)

Table 9. Levels of Thermostats in Homes (Per Cent of Respondents)

<i>Thermostat setting</i>	<i>1975</i>			<i>1974</i>
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
Day Temperature				
68 degrees or lower	45	38	42	38
69°-71°	42	41	42	40
72°-74°	12	18	14	20
75° or above	1	3	2	2
Night Temperature				
68 degrees or lower	56	50	54	53
69°-71°	36	41	37	34
72°-74°	8	6	8	11
75° or above	—	2	1	2

As expected, in 1975 the "Concerned" citizens adopted more energy-saving actions than did those less concerned about the problem. For example, using games for home entertainment, reading, purchasing of warmer clothing, driving compact cars, shopping at home or closer to their place of employment, and obtaining auto tune-ups were more frequently mentioned by the "Concerned" than the "Unconcerned." This pattern implies that those who are concerned about the energy problem will take more concrete steps to alleviate it than those who do not perceive it similarly. (See Table 10.)

Table 10. Activities Increased as a Result of the Energy Crisis
(Per Cent of Respondents)

<i>Activities Increased</i>	<i>1975</i>	
	<i>Concerned</i>	<i>Unconcerned</i>
Games as home entertainment	26	17
Use of TV	10	12
Entertaining friends at home	23	20
Reading	38	24
Purchase of warmer clothes	44	30
Layoffs	17	21
Shorter workweeks	15	19
Smaller car use	46	28
Auto tune-ups	46	31

Table 11. Vacation Patterns (Per Cent of Respondents)

<i>Vacation Pattern</i>	<i>1975</i>		<i>1974</i>		<i>1973</i>
	<i>Total</i>	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
Went on a vacation	48	51	56	53	62
Travelled by Auto	46	43	45	44	53
Distance Travelled by Auto (per cent of line above)					
0- 99 miles	20	11	9	9	6
100- 499 miles	20	22	16	21	21
500- 999 miles	24	29	35	32	14
1000-1499 miles	12	16	18	17	21
1500 miles or over	24	22	22	21	38

Vacations

Interestingly, although in 1973, the period of the Mid-East oil embargo, 62 per cent of the respondents took a vacation; this declined to 53 per cent in 1974, possibly due to the energy crisis but also undoubtedly responding to economic conditions. This pattern, however, did not vary significantly between the "Concerned" and the "Unconcerned." However, it is notable that those who used an automobile on their vacation dropped from 53 per cent in 1973 to 44 per cent in 1974, presumably as a result of the increased cost of gasoline. Further, although 38 per cent indicated they travelled 1500 miles or more on their vacations in 1973, the percentage who travelled this distance on a vacation dropped to only 21 per cent in 1974. Moreover, while 14 per cent went on vacations of 500 to 999 miles in 1973, 32 per cent travelled on their vacations in this range in 1974. Evidently, there was a concerted effort to reduce the distance travelled on vacations in order to at least reduce the cost of transportation if not actually conserve gasoline. Interestingly, again there was no significant difference between the "Concerned" and "Unconcerned" consumers on this activity. (See Table 11.)

In the winter of '75, the number of respondents who were planning to take a vacation declined from 53 per cent in '74 to 48 per cent, possibly in response to either the energy problem or the reduced state of the economy. It should be noted that, in general, there were no drastic changes in their vacation mode of transportation as in both years about 45 per cent planned to travel by car and the distance planned tended to increase.

Table 12. Perceived Effect of Energy Problem on Employment 1974-1975
(Per Cent of Respondents)

<i>Effect</i>	1975	1974		<i>Total</i>
		<i>Concerned</i>	<i>Unconcerned</i>	
Reduced hours worked	24	18	36	11

Reduced Work Week

The energy shortage affected many people in the Toledo area in respect to their hours of work per week. In 1975 there was a definite increase in work reductions as 24 per cent of the respondents indicated they had experienced reductions as a result of the energy shortage as compared to only 11 per cent in 1974. The layoffs affected the "Unconcerned" considerably more than the "Concerned." Thus, 36 per cent of the "Unconcerned" indicated that some member of their household either had been laid off or worked a shorter week because of the energy shortage in contrast to only 18 per cent of the "Concerned." Partly this can be attributed to the occupational patterns of the "Unconcerned." It is perplexing to note that although these people are affected by the energy shortage they are reluctant to initiate remedies to alleviate the situation. Evidently more educational efforts are essential to modify their perceptions and attitudes. (See Table 12.)

Attitude Toward Federal Action

In time of crisis, the American people tend to look to the Federal government for solutions. It is logical, therefore, that governmental action to cope with this major problem is expected by the populace and, hopefully, the action taken by the federal government will meet with their approval. Unfortunately, it is noteworthy that only 3 per cent in '74 and 2 per cent in '75 strongly agreed that the government was doing a good job in this area and 11 per cent in '74 and 17 per cent in '75 agreed with this assertion, but without strong feeling. In contrast, 47 per cent in '74 and 47 per cent in '75 disagreed with the assertion that the government was doing a good job and almost one-fifth in both years strongly disagreed that it was acting effectively. Thus, there is considerable evidence of a growing sense of dissatisfaction among these respondents concerning the actions of the government and presumably the dissatisfaction is centered upon the actions of

Table 13. Attitudes Concerning Efforts of Federal Government
To Solve the Energy Problem (Per Cent of Respondents)

<i>Federal Government Doing a Good Job</i>	1975	1974
Strongly Agree	2	3
Agree	17	11
Undecided	16	20
Disagree	47	47
Strongly disagree	18	19

Congress. Moreover, in '75, 73 per cent of the "Unconcerned" and 71 per cent of the "Concerned" strongly disagreed with the statement that the government was doing a good job to resolve the energy problem. Thus, it is reasonable to conclude that they believe that other types of federal intervention must be taken in order to alleviate the problem. (See Table 13.)

Increased Gasoline Prices

One solution proposed frequently by politicians and economists is to raise gasoline prices and some have suggested a minimum of ten cents a gallon would be required to effect meaningful conservation. They assert that such action would motivate consumers to purchase more fuel-saving automobiles, and it is notable that in both years three-fourths of the consumers thought gas economy would probably be at least important to them when purchasing their next automobile. Thus, although the demand for gasoline is highly inelastic and a 10 per cent increase in price will bring about only a 0.1 decrease in consumption, consumers are becoming motivated by the rising costs of gasoline. The long range effect of price increases of gasoline could very well be to accelerate the trend of purchasing more gas-efficient automobiles and indirectly shifting the responsibility to a considerable degree of solving the energy problem to the automotive manufacturers.

As expected, the "Concerned" respondents were more inclined to purchase an automobile which would provide greater gasoline economy than the "Unconcerned." (See Table 14.) Although the proportion for the former group was larger than for the latter, 75 per cent to 64 per cent, it is notable that a substantial proportion of the "Unconcerned" are being motivated to purchase more

Table 14. Attitudes on the Importance of High Prices of Gas and the Purchase of an Automobile (Per Cent of Respondents)

<i>If gas prices rose by 10¢ gas economy in the purchase of a car would be . . .</i>	1975			1974
	<i>Concerned</i>	<i>Unconcerned</i>	<i>Total</i>	<i>Total</i>
Definitely important	52	46	49	51
Probably important	23	18	21	23
Undecided	4	8	5	10
Probably not important	7	11	9	9
Definitely not important	1	3	2	3
No response	13	14	14	4

economical cars, and it is reasonable to expect this trend to continue if prices continue to climb. However, there was no substantial change in their attitudes for the last two years covered in this study.

During the winter of 1975, President Ford proposed a \$150 tax credit to households which insulated their homes, and this proposal was favorably received by both groups of consumers. Approximately one-fifth stated they would definitely insulate and an additional 24 per cent said they probably would take this action if this credit allowance was permitted on their income tax returns. (See Table 15.)

Energy vs. the Environment

Finally, many authorities maintain that the resolution of the energy problems will result in decisions which will be detrimental to the environment, such as the effects on the tundra by the

Table 15. Plans to Add Insulation

<i>Tax Credit: Insulation</i>	1975	
	<i>Concerned</i>	<i>Unconcerned</i>
Will definitely	20	21
Will probably	24	10
Undecided	22	24
Probably not	15	21
Definitely not	19	23

Table 16. Perception of the Importance of the Energy and Environmental Problems—1975 (Per Cent of Respondents)

<i>Comparison of Problems</i>	<i>Concerned</i>	<i>Unconcerned</i>
Energy supplies more important	28	31
Environmental matters more important	11	15
Both about the same	56	43
No opinion	5	11

construction of the Alaskan pipeline, offshore oil spillage associated with offshore wells, air pollution, etc. In a sense, alleviating one problem involves trade-offs which are opposed by environmentalists. Delays on the Alaskan pipeline have contributed to the energy problem in the United States and will make the country more dependent upon foreign oil until the pipeline is completed. In order to ascertain the perceptions of these respondents, they were queried concerning the relative importance of these two major problems.

Overall, about 50 per cent of the respondents thought these problems were of equal importance, although relatively more of the "Concerned" citizens (53 per cent as compared to 43 per cent of the "Unconcerned") indicated they were equally important. (See Table 16.) Approximately 30 per cent of both groups asserted that the energy resolution was more important as contrasted with about 13 per cent who were more concerned about the environment. Interestingly, a relatively limited number of both groups, 5 per cent to 11 per cent, were undecided thereby indicating an awareness of the major issues involved. Clearly, these respondents favor a resolution of the energy problem but not at the risk of damage to the environment and any solution for the energy problem which takes this into consideration would receive widespread support.

Direct reprint requests to:

Gary F. Bennett, Ph.D.
 Department of Chemical Engineering
 The University of Toledo
 2801 W. Bancroft Street
 Toledo, Ohio 43606