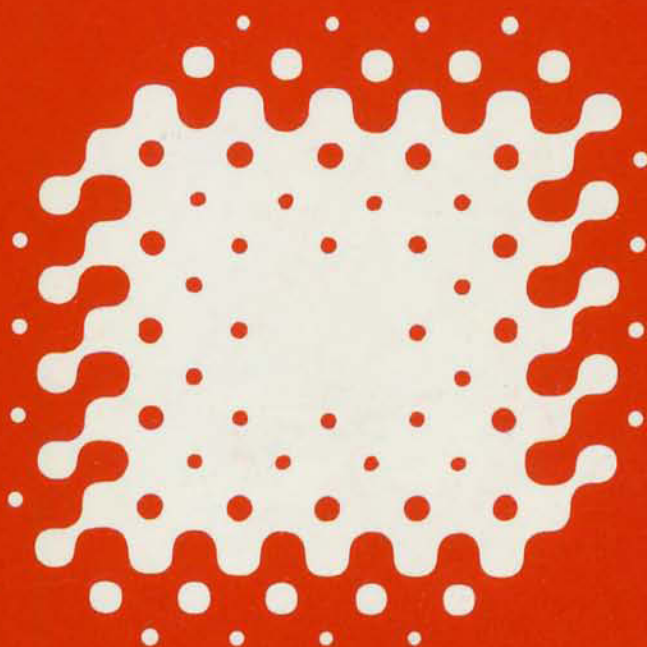


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Energy: Canadians' Attitudes and Reactions (1975-1980)

Gordon H. G. McDougall
Gerald Keller



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Canadiens face à la situation
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ENERGY: CANADIANS' ATTITUDES AND REACTIONS (1975-1980)

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Consumer Research and Evaluation Branch
Consumer and Corporate Affairs Canada

The analysis and conclusions of this study do not
necessarily reflect the views of the Department.

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FOREWORD

This publication is one of a series of survey research reports prepared annually under the direction of the Consumer Research and Evaluation Branch of Consumer and Corporate Affairs Canada.

This series of Energy Attitude Studies began in 1975. The studies have the goals of assessing and monitoring consumers' attitudes, knowledge and behaviour with respect to energy and resource use, and examining the importance that consumers have placed and continue to place on this aspect of their lifestyle.

This report, by Gordon H.G. McDougall and Gerald Keller, examines the data obtained in this spring's survey of Canadian attitudes and reactions to the energy situation and assesses consumers' attitudes towards energy consumption. Based on this information, obtained through telephone surveys and mailed questionnaires, the study suggests a number of measures to reduce the rate of growth of energy use.

It is important to note that the authors' recommendations and analysis reflect only their opinions and do not necessarily represent official departmental or governmental viewpoints.

Two other recently released reports in which readers may be interested are: Energy Consumption and Conservation Patterns in Canadian Households by G.H.G. McDougall, J.R.B. Ritchie and J.D. Claxton, and Role of Home Energy Audits in Facilitating Residential Retrofits by T. Deutscher and H. Munro.



Geoffrey A. Hiscocks
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SUMMARY

Analysis of six surveys (1975-1980) of the Canadian public's attitude towards the energy situation has led to the following conclusions:

- There has been a substantial increase in the number of Canadians who consider energy as one of the problems facing Canada. The reason for this is the increasing cost rather than the fear of shortages.
- The proportion of people who think that the energy shortage is "somewhat or very serious" has been relatively stable since 1976, with about three out of five Canadians expressing this view.
- More people are more concerned about shortages of gasoline and heating fuel than about shortages of electricity and natural gas.
- There has been an increase in the number of Canadians who claim that they are engaging in various types of energy conservation behaviour.
- Canadians believe that individual efforts to conserve energy are important and this attitude is related to energy conservation behaviour.
- There is no demographic characteristic consistently related to attitudes and behaviour.
- Residents of Halifax and Ottawa tend to view the energy problem more seriously than residents of other cities. Not surprisingly, Calgarians see the problem less seriously.
- Government programs which ration energy or increase prices would meet heavy resistance. However, in 1980 the level of resistance had decreased somewhat. Canadians much prefer government advertising and financial incentives to lead the battle to conserve energy.
- Past government information programs have reached up to 40 per cent of the public.
- In 1980 two groups can be identified:
 - (1) The HOSTILES who think the energy issue is somewhat of a hoax. They are resentful and feel that business and government are to blame for the energy problem. Constituting about one-quarter of the sample, these people tend to be older, with lower education and

income levels. The hostiles are less knowledgeable about energy and don't hold a positive attitude towards the need to conserve. They do not support price/tax increases of energy.

- (2) The KNOWLEDGEABLES rank highly on the energy knowledge index and on readership of energy publications. Contrasting with the hostiles, this group (over one-third of the sample) holds a positive need to conserve attitude, is low in hostility and supports price/tax increases.

The following recommendations result from the analysis and conclusions.

- Policy-makers might consider some "tougher" conservation programs as a majority of the public is willing to accept them. Moderate price/tax increases on energy may be less effective in reducing consumption than mandatory programs dealing with home insulation, labelling of efficiency levels of home appliances and minimum gas metrage for automobiles.
- Information programs could be geared towards:
 - (a) The hostiles -- simple, straightforward messages designed to reduce hostility. While lowering hostility may not by itself lead to increased energy conservation, it is likely to allow government greater flexibility in the choice of conservation programs.
 - (b) The knowledgeable -- specific messages to assist in removing information barriers that impede behaviour, such as home energy audits tailored to particular geographic areas.
 - (c) The general population (heads of households) -- designed to support past efforts to encourage continued activities. These messages should be positive and non-threatening. A limited number of energy conservation actions should be advocated. In these advertisements, behaviour perceived by the consumer to be relatively easy to adopt should be stressed. For example, turning down the thermostat on the hot water heater, maintaining automobile tires at the proper air pressures and turning down the thermostat 1°C are considered relatively easy. A possible theme for these advertisements might be the bandwagon approach -- "most people are doing it -- why not join them?"
- Information programs should not use energy shortage themes.

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INTRODUCTION

Canada is facing a critical challenge in the next decade. A country with tremendous natural resources is becoming increasingly dependent upon foreign sources for oil. In 1980, Canada will import more than 500,000 barrels of oil per day (up to 18 per cent over 1978) and the domestic subsidy cost is in excess of \$3.6 billion. Pessimistic forecasts suggest that by 1985 daily oil imports could exceed 750,000 barrels. Should this occur, the strain caused by the foreign payments and the potential for shortages could do serious harm to the economy.

To date Canada has not directly faced up to this challenge. Its energy prices are the lowest among the developed nations, the federal and provincial governments are in a continued struggle over control of the dwindling oil resources and the per capita consumption of energy continues to rise. Solving this crisis will require some hard decisions and sacrifices by all Canadians. The question is, What form will these sacrifices take? If current consumption patterns are continued, within the next ten years gasoline will undoubtedly be rationed. If energy demand can be reduced, then far less severe measures will be required.

One of the keys to solving the problem is conservation, particularly in the consumer sector. Because of the historical cheap energy strategy, Canadians are inefficient in their use of fuels. Houses are not properly insulated, the gas consumption of the automotive stock is high and much of our daily living is based on an energy-intensive environment. To illustrate the impact of consumer energy conservation, if the gas consumption of the automobiles in Canada could be decreased to 11 l/100 km from the current level of 14 l/100 km, an equivalent of 780,000 barrels of oil a day would be saved. This, of course, assumes that there is no increase in the number of automobiles and that current driving behaviour is continued. Similar examples could be given with respect to retrofitting energy-efficient houses.

The example illustrates that part of the solution is possible through energy conservation by consumers. At issue is whether Canadians have the will or the desire to be part of the solution. The remainder of this report examines Canadians' will and desire by looking at self-reported behaviour concerning energy from 1975 to 1980. Based on

annual surveys of over 1400 respondents, a picture will be provided of:

- Canadians' attitudes towards the energy situation: How serious do they think it is? How important are individual efforts to conserve? Who do they think is responsible?
- Canadians' self-reported energy conserving activities: How many people have turned down their thermostat? Are driving less?
- Canadians' reaction to existing and possible government energy conservation programs: How many support information programs? Rationing? Price increases?

These annual surveys provide an interesting insight into consumer perceptions of and reactions to the energy issue over a six-year period.

DESIGN OF RESEARCH

The Canadian federal government has made a commitment to achieving self-reliance with regard to energy. One component of this commitment is the adoption of a strategy to reduce the rate of growth of energy use. As a consequence, a series of programs have been instituted including monitoring Canadians' attitudes towards the energy issue. The results reported here are based on one such monitoring program.

The research was commissioned by two federal government departments¹ and executed by professional marketing research firms. Between 1975 and 1978 the field procedures were as follows. Telephone interviews were used to collect data from respondents 15 years of age or older, in seven geographically dispersed cities in Canada. Quota samples were used on the basis of age, sex and geography. The total sample size in each of the four years from 1975 to 1978 was 1821, 1840, 1815 and 1808 respectively. A random selection of telephone numbers within a specific directory was used to generate the sample and no callbacks were employed. The data were gathered within a period of one month in the spring of each year. For 1979 and 1980, the field procedures were revised; the telephone interviews were conducted with the male or female head of household, one callback was employed and eight Canadian cities were included in the sample. The total sample size in 1979 was 1654 and in 1980 was 1637. The effect of changing the sampling procedure proved to have a minimum impact on the results. As will be noted later, age was not a significant determinant for either attitudes or behaviour.

Over the six years the questionnaire has been modified to incorporate new issues in the energy area. The main topics covered include: the level of concern with respect to energy, government involvement in the energy situation, participation in energy conservation behaviour, possible solutions to the energy situation and demographic characteristics.

The remainder of the paper is organized in the following manner. First, comparable results across all six years (1975-1980) will be presented. Then, because of the substantial changes made in 1979, a section will be devoted to the 1979-80 period.

1. Energy, Mines and Resources Canada was responsible for the survey from 1975 to 1979 and Consumer and Corporate Affairs had responsibility in 1980.

RESULTS: 1975-1980

Degree of Concern

Four attitudinal and four behavioural measures were used to determine consumers' degree of concern about energy. The attitudinal measures were: important problems facing Canadians today, the perceived seriousness of the energy shortage in general, seriousness with respect to specific fuels and the importance of individual efforts in conserving energy. The four types of energy conserving behaviour were: turning off lights more often, lowering the thermostat, using less hot water and driving less.

As presented in Table 1, the proportion of the respondents, on an unaided basis, mentioning energy as an important issue increased significantly in 1979 and again in 1980. Part of this increase undoubtedly is due to the fact that energy was an issue in the 1980 federal election, but the trend from 1978 to 1980 shows more Canadians are becoming concerned about energy. In contrast to the Canadian results, similar data from the United States shows that energy is a very volatile issue. Where almost one-half (46 per cent) said it was a serious problem in January 1974 (at the height of the oil embargo), only 3 per cent felt the same way by October 1974. Similar patterns of relatively extreme highs and lows were present over the next few years. While this volatile pattern does not appear in the Canadian data, it suggests there may be a transitory component to the energy issue indicating that when a mini-crisis is present, people are concerned; when it is not present, people aren't.

Since 1975, a majority of Canadians have considered the energy shortage as a "somewhat or very serious" issue (Table 2). After a substantial increase between 1975 and 1976, the perceived seriousness of an energy shortage has been relatively stable. However, in all six years, 1975 to 1980, the energy shortage was rated last of all issues presented. In comparison to such issues as inflation, pollution or unemployment, the Canadian public has consistently felt that the energy shortage was the least important issue. Within this larger context, Canadians don't consider the energy shortage as being as serious as other concerns. In contrast, the cost of energy was tied with unemployment for second place in 1980. The impact of rising energy prices is evident in the public's reaction.

When asked about specific fuels (Table 3), consumers felt that shortages were most likely to occur with gasoline and then with heating oil. Electricity and natural gas

shortages were considered more unlikely. Over the six years the perceived possibility of shortages has increased slightly for heating oil and gasoline and, in the last two years, electricity and natural gas have declined from previous highs.

The final attitudinal category, "the importance of individual efforts to conserve energy," has remained consistently high over the six years (Table 4). In five of the six years, over 90 per cent of all respondents felt that individual efforts were very or somewhat important. One should be somewhat cautious in taking these results verbatim as there is an element of social desirability present with this question. However, even discounting for the "motherhood" component, Canadians generally accept the notion that they can help and they are favourably disposed to help. At issue is the degree to which they are willing to put these positive feelings into action. One measure of action is the proportion of Canadians engaging in energy conservation behaviour.

Between 1975 and 1978, an increasing proportion of Canadians stated that they were engaging in four types of energy conservation behaviour (Table 5). In 1979 and 1980, the proportions for each of the four types of behaviour remained fairly stable due, in part, to the change in the question but also because many people were already engaged in the activities. The differences in the proportion of people engaging in each type of behaviour probably reflects the degree of difficulty and inconvenience people associate with the respective type of behaviour. Considering both the attitudinal and the behavioural results, a substantial proportion of the Canadian populace has accepted the notion of energy conservation. The number of people accepting this notion has increased moderately over six years.

Over this time period a series of different types of energy conservation behaviour has been measured. All are presented in Table 6. As with the previous results, it appears that the degree of participation reflects the perceived difficulty (real or imagined) that consumers associate with each behaviour. While comparisons across the six years must be made with caution because of changes in the questionnaire, this larger data set would also support the above conclusion that, since 1975, relatively large numbers of people state they are engaging in energy conservation behaviour and that there has been a gradual increase in the proportions engaging in the types of conservation behaviour that were measured.

Reaction to Government Energy Conservation Programs

One of the more interesting and revealing results of the surveys is respondents' reactions to existing or possible government energy conservation programs. While the options varied over the six years (Table 7), consumers are giving a clear message regarding the extent to which they are willing to make sacrifices. Canadians prefer two program types: advertising/information and financial incentives. These options do not impose any direct cost on the individual and do not involve individual sacrifices. The least preferred programs involve price increases and rationing. These programs would have direct costs for individuals and, in effect, would lower their standard of living. Respondents did not support options which would cost them money or restrict their activities. Options that offered them monetary gains (i.e., financial incentives) or attempted to persuade them to reduce consumption in verbal as opposed to monetary terms were supported.

These findings suggest that Canadians may be willing to recognize that part of the solution to the energy situation depends on their efforts, but the degree to which they will participate in any solution is limited to actions or behaviour which require relatively nominal lifestyle changes. One encouraging note, from the conservation viewpoint, is that the proportion of people supporting the tougher options increased in 1980. This will be discussed in a later section.

The Relationship Between Attitudes and Behaviour

It would be expected that Canadians who considered the energy shortage as serious or who considered individual efforts to conserve energy as important would also engage in energy conservation behaviour. As shown in Table 8, the linkage between attitudes and self-reported behaviour is primarily related to the importance of individual efforts, not to the perceived seriousness of the energy shortage. In five of the six years, all four types of behaviour were significantly related to the importance of individual efforts, whereas the four behaviours were related to the perceived seriousness of the energy shortage only in 1975. Generally, individual perceptions of an energy shortage do not affect or influence stated energy conservation behaviour. The attitude most strongly linked to behaviour is "the importance of individual efforts."

Demographic Profile

The data were examined to determine if certain demographic segments of the population consistently exhibited greater concern in terms of either of the two attitudinal variables: perceived shortage or the importance of individual efforts. As shown in Tables 9 and 10, from 1975 to 1977 the concerned consumer tended to be female and English-speaking (as opposed to French-speaking). However, in 1978 only one demographic difference was present: French-speaking respondents felt that the energy shortage was more serious. In all remaining cases with respect to the demographic characteristics, there was a marked decline in the differences between those who exhibited the greatest and the least concern. Consumers, regardless of their demographic background, rated both the shortage and the importance of individual efforts in a similar manner. This movement to a consensus was due primarily to an increase among those who were less concerned. For example, in 1978, both males and females rated the shortage and individual efforts the same. The movement to this level was due far more to the relative increase in concern by males rather than to a decrease in concern by females.

In 1979 and 1980, the trend towards this consensus was somewhat reversed in that the differences between those who exhibited the greatest or the least concern increased for many of the demographic categories. For example, language (French- versus English-speaking) differences were again present, but on one dimension (importance of individual efforts) English-speaking respondents showed the greatest concern and on the other dimension (seriousness of the shortage) French-speaking respondents were more concerned. An examination of the demographic categories for both dimensions suggests that a clearcut profile is no longer present. This indicates that attitudes towards the energy issue are, to a degree, volatile and it would tend to support the notion expressed earlier that energy is a transitory issue subject to current events and situation-specific factors.

An attempt was also made to profile the energy-concerned consumer in terms of the four types of conservation behaviour (Tables 11A to 11D). The results are generally mixed, not only between years but across the four types of behaviour. No clear profile can be established on the basis of behaviour. Across the four types of behaviour English-speaking respondents had, in general, a higher propensity

to engage in energy conservation behaviour than French-speaking respondents. Females had, in general, a higher propensity than males to save energy except by driving less, which was the same. However, in most cases there was no clearcut pattern between demographic characteristics and stated behaviour.

Probably the most interesting finding was the narrowing of the differences in stated behaviour across demographic characteristics in 1978. This result parallels the earlier findings in that differences between groups narrowed considerably in that year. Thus, profiling the respondents on the basis of stated behaviour is difficult for two reasons: no clearcut pattern exists and, in 1978, the consensus that developed was independent of the demographic categories. Again, this trend was reversed in 1979 and 1980; the range by demographics for the four types of behaviour increased. These results also appear to support the general instability of the energy issue.

Regional Profile

A parallel analysis to the demographic characteristics was conducted by region. The most important finding was that there was far wider variation by region than by demographic measures (Tables 11A to 11D). Residents of Halifax show the most concern regarding the energy situation (Table 9) and their energy conservation behaviour has consistently been the most marked over the six years. Toronto and Winnipeg residents could be described as fairly concerned, while residents of Calgary, Quebec City and Montreal are the least concerned. These regional differences appear to reflect provincial pricing policies and possibly attitudinal differences based on culture.

RESULTS: 1979-1980

The substantial changes in the questionnaire in 1979 allowed a more comprehensive look at attitudes, knowledge, energy conservation behaviour and program support. To simplify the analysis, a number of indices comprised of between one and five questions were created: a knowledge index, three attitude indices (hostility, need to conserve and perceived seriousness of the energy shortage), four program support indices (advertising/information, financial incentives, price/tax increases and rationing) and six energy conservation indices (energy use compared to last year, day/night thermostat setting, in-home, home heating, transportation and general). A general description of their construction is given in Table 12.

The mean values for each index are summarized in Table 13. The index scales have been adjusted so that the minimum score is zero, while the maximum is 100. For example, a score of zero on the hostility index would indicate that no-one agreed with any of the three hostility-oriented questions. A score of 100 would mean that everyone agreed with them.

In 1980 more Canadians had a more positive attitude toward the energy situation than in 1979. There was less hostility and a greater perceived need to conserve. This trend is reflected in the program support indices. Respondents seem more willing to support energy related programs and, in particular, were willing to have increases in prices and rationing. As mentioned earlier, in 1980 more Canadians supported the tougher energy conservation programs.

Energy conservation behaviour in 1980 was, on the whole, somewhat more positive than in 1979. Two types of behaviour were lower in 1980 versus 1979: using less energy as compared to the previous year and setting thermostats at lower temperatures. In-home, home heating and transportation-related energy conservation behaviour increased over 1979 while general behaviour remained the same.

Tables 14 to 18 analyze relationships between indices by calculating the correlations and then testing them at the 5 per cent and 1 per cent levels of significance. The results of Table 14, which provides the relations between similar indices (e.g., attitude versus attitude), tend to increase confidence in the use of the indices since in almost all cases the relationships are unchanged between

1979 and 1980. In addition, the relationships are entirely in the expected direction. For example, there is a negative correlation between hostility and need to conserve and a positive correlation between need to conserve and the perceived seriousness of the energy shortage. It is interesting to note the three relationships which are relatively weak. These are hostility and perceived seriousness, energy use and general energy conservation behaviour and thermostat setting and transportation energy conservation behaviour. The consistency between 1979 and 1980 indicates that the weakness of the relationship is not simply due to random chance. What these results suggest is that certain attitudes (i.e., hostility versus perceived seriousness) and certain types of behaviour are relatively independent. Changes in one will not affect the other.

In 1979 and in 1980 the need to conserve and perceived seriousness were better indicators of program support and behaviour than was hostility (Tables 15 and 16). Except for opposition to price/tax increases and higher energy use and thermostat settings, those who are hostile do not have drastically different opinions and behaviour than those who are not hostile. Thus, hostility had little relationship with three of the four programs and with four of the six types of behaviour. Reducing the hostility level is not likely to lead to significant changes. However, if hostility reduction is a goal, it would best be achieved by increasing the knowledge level among Canadians.

In general, those who scored high on the need to conserve and the perceived seriousness tended to support all programs including the tough ones. In addition, they claimed to be participating in the six types of energy conservation behaviour. Interestingly, there did not appear to be much of a relationship between these two attitudes and knowledge.

Supporters of the energy programs also tended to be energy conservers (Tables 17 and 18). This is particularly true of the in-home, home heating and transportation-related behaviours. The general types of behaviour, energy use compared to last year and thermostat setting, did not correlate well with program support (except for the price/tax-energy use correlation), but the correlations, though weak, were mostly in the expected direction.

Again from Tables 17 and 18, the knowledge index was not strongly related to either program support or behaviour indices. This would suggest that knowledge about certain facts related to energy will not by itself lead to more positive attitudes (other than lessening hostility), more

support for programs or the adoption of energy conservation behaviour. Had the knowledge index stressed details on how energy could be conserved, the correlations might have been greater.

Attempts to develop a demographic profile related to energy issues had mixed results in both 1979 and 1980 (Tables 19 and 20). Males with higher education levels scored higher on the knowledge index. Younger, English-speaking Canadians with higher income and education levels ranked relatively high in terms of feeling the need to conserve. However, females with lower incomes tended to perceive the energy shortage more seriously than the group who strongly perceived the need to conserve.

The only consistent supporters of energy conservation programs were French-speaking Canadians (for advertising/information), younger respondents (for financial incentives) and younger people with higher incomes (for price/tax increases).

Francophones set their thermostats relatively higher and older people were participating more with in-home energy conservation. In addition, older respondents with lower incomes tended to use less energy in transportation and older anglophones participated in the general energy conserving behaviours.

Table 21 summarizes the relationship between cities and the indices. In general, there appears to be an east-west split on the energy problem. Residents of Halifax and Ottawa appear to be most knowledgeable while Calgarians know little about the subject. The cities with the most positive attitudes appear to be Halifax, Ottawa and Toronto. Canadians living in Quebec City, Montreal and Winnipeg tend to be most hostile while Ottawa, Calgary and Vancouver have fewer hostile residents. Hostility and program support are again shown to be unrelated since the strongest supporters are in Quebec City, Montreal, Ottawa and Vancouver. Halifax should also be included since that city's residents were in favour of price/tax increase and rationing -- the two least popular programs.

The regional disparities that exist on the first three indices continue when examining energy conservation behaviour. Respondents living in Halifax and Ottawa stated that they used less energy than the previous year, set their thermostats lower and, in general, had higher participation

rates in the other four behaviour indices. The same holds true at a somewhat lower level for Montrealers and Torontonians. It is surprising that Winnipeg's residents had the poorest record. They appeared to be using more energy than the previous year, set their thermostats higher than average and participated only in the general energy conservation behaviour in 1979. Both Calgary and Vancouver had better records.

SUMMARY AND IMPLICATIONS

The overall impression of consumers' reaction to the energy situation over the past six years is that there is a growing awareness among more Canadians that something has to be done. That a problem exists is generally accepted by consumers. That they can be part of the solution is also accepted -- the degree to which they are willing to be part of the solution is debatable.

The awareness or recognition of the problem for the consumer is based primarily on cost. While there is some apprehension about shortages, specifically fuel oil and gasoline, the greater concern is with energy costs. The motivation for concern or action may be derived from a variety of sources -- altruism, patriotism, future orientation -- but the primary operating motive appears to be the impact of rising prices on an individual's standard of living.

The support for this notion is that while consumers have positive attitudes towards energy conservation and are engaging in a number of types of energy conserving behaviour, they are not willing to make substantial sacrifices which would affect current lifestyles. Although this is not surprising, it is worth noting so that one is not left with the impression that Canadians are on an energy conservation bandwagon and will support any measure that saves energy.

This position by consumers is also not surprising when the real cost of energy is considered. As shown in Table 22, the real fuel cost per 100 kilometres has actually declined since 1971. The message provided by the marketplace is that gasoline is not a scarce or valued resource. It is quite possible that if Canadian energy prices moved closer to world levels, consumer reaction in terms of reducing energy consumption would likely be far more positive.

While most consumers have not previously supported policies or programs which would impact directly on their lifestyles, in 1980 a slightly higher percentage of consumers supported the tougher options. This fact indicates that there may be a slow but gradual acceptance by Canadians that the time for "biting the bullet" is nearer. Thus, the negative impression of many of the results can be counterbalanced to some degree by the fact that a growing number of Canadians have accepted higher prices as one part of the conservation effort.

Policy-makers concerned with consumer energy conservation have four basic types of programs that can be used to achieve their objectives. These are:

1. a voluntary/non-financial program which provides information and advice on how to conserve energy;
2. a voluntary/financial program which offers tax and price incentives to encourage particular conservation measures;
3. a mandatory/non-financial program which restricts the availability of energy or energy-inefficient products; and
4. a mandatory/financial program which imposes financial penalties on all consumers who refuse to conform to regulations or laws governing energy usage.

Energy Conservation Program Types

	Non-Financial	Financial
Voluntary	home audits	home insulation grants and loans
Mandatory	rationing	licensing fees

Considering the results of the surveys, consumers would favour voluntary/non-financial (e.g., advertising) programs and, if coupled with other measures, some forms of advertising might be effective. However, it is likely that information programs alone will have only a marginal impact on the energy conservation activities of Canadians. As the data have shown, most Canadians already hold positive attitudes towards conservation. The situation calls for programs to generate action -- something that is unlikely to happen with information only.

Second on the list of consumer preferences are voluntary/financial programs (e.g., CHIP) which offer rewards for conservation efforts. These types of programs are superior to advertising campaigns because they are geared towards action. Tying rewards to specific behaviour is appropriate in the energy conservation field. In considering the type of voluntary/financial programs to

implement, policy-makers should first consider activities which lead to more efficient use of energy (e.g., retrofitting) rather than activities which require behavioural changes to capture savings. In the intermediate term it will be easy to get consumers to purchase smaller cars (efficient use) than to drive less (continuous behaviour that involves a lifestyle change). As a final point, voluntary/financial programs probably have a higher pay-off ratio in net energy saved per dollar spent than do information programs.

Virtually tied for last place on consumers' preference list are mandatory programs, financial or non-financial. The preference is clearly based on the perceived impact on lifestyle, particularly on the cost of living. These mandatory programs would have the most significant effect in reducing energy consumption. The problem is that they may not be politically viable. However, as noted, more Canadians are accepting the idea that the time is coming when they have to bite the bullet. Serious consideration should therefore be given to some mandatory programs

Finally, one must consider all of the above comments in conjunction with energy prices. As long as Canada maintains a cheap energy policy relative to the rest of the world and offers consumers non-renewable resources at low prices, very few conservation measures are going to have more than a marginal effect. Until energy is treated as a valuable and increasingly scarce resource and is priced accordingly, consumers will likely continue to help Canada achieve the notoriety of having the highest per capita energy consumption in the world, bar none.

Table 1

Problems Facing Canadians Today (1975, 1978-1980)

Question: "Of all the problems facing people living in Canada, which ones do you feel we should be most concerned about today? (PROBE)^a Are there any other areas of concern?"

<u>Mentioned</u>	Percentage			
	<u>1975</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
energy only	2	2	4	5
energy and another issue	6	5	13	17
other issue	87	90	77	70
no issue	5	3	6	8
	—	—	—	—
	100	100	100	100
	—	—	—	—
total energy mentions	8	7	17	22
N =	1422	1409	1654	1637

^a "(PROBE)" indicates that the interviewer will ask "Are there any other areas of concern?" twice.

Table 2

Perceived Seriousness of Selected Issues in Canada
(1975-1980)

Question: "I would like you to think about the following issues and tell me how seriously you feel each one is affecting us in Canada today. Would you say it is very seriously affecting Canada, somewhat seriously, not too seriously or not seriously at all?"

Percentage stating that the issue is very serious or somewhat serious						
<u>Issue</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
inflation	92	90	91	92	92	95
unemployment	73	76	87	94	88	82
energy shortage	45	60	63	62	60	66
cost of energy	-	-	-	-	80	82
pollution	-	-	-	-	69	72
national unity	-	-	-	-	-	71
N =	1422	1436	1413	1409	1654	1637

Table 3

Perceived Shortage of Specific Fuels (1975-1980)

Question: "Now, more specifically, I would like to discuss what is commonly termed the 'energy shortage'. Thinking of (FIRST * PHRASE),^a do you feel the possibility of a shortage in Canada, in the coming years, is very serious, somewhat serious, not too serious or not serious at all?"

	Percentage who feel the possibility of a shortage is very or somewhat serious					
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
heating oil	51	61	63	59	57	64
electricity	26	42	47	44	38	34
gasoline	52	69	69	68	62	69
natural gas	35	48	47	46	32	34
N =	1422	1436	1413	1409	1654	1637

^a This refers to the type of fuel (e.g., heating oil, electricity).

Table 4

Importance of Individual Efforts to Conserve Energy
(1975-1980)

Question: "How important do you feel efforts by individuals to conserve energy can be? Do you feel these efforts would be very important, somewhat important, not too important or not important at all?"

Percentage stating that individual efforts are
very or somewhat important

<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
87	91	92	95	92	93
N = 1422	1436	1413	1409	1654	1637

Table 5

Four Types of Self-Reported Energy Conservation Behaviour
(1975-1980)

Question: "Since the start of the energy situation a few years ago, some people have changed some of the things they do. I will now read to you a list of things people have or have not done to conserve energy. Please tell me YES or NO for each statement as it applies to you."

<u>Energy conservation behaviour</u>	Percentage of eligible respondents engaging in:					
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
turning off lights more often	74	81	88	92	79	86
using less hot water	35 ^a	42	58	59	36 ^b	47
turning down thermostat	65	70	84	85	71	86
driving less	44	48	57	57	43	57
N =	1422	1436	1413	1409	1654	1637

^a From 1975 to 1978 the question was: "I will now read you a list of things people say they are doing now to conserve energy. Please tell me which one(s), if any, you yourself are currently doing?"

^b In 1979, the phrase "within the last year" was added.

Table 6

All Types of Self-Reported Energy Conservation Behaviour (1975-1980)

Question: "Since the start of the energy situation a few years ago, some people have changed some of the things they do. I will now read to you a list of things people have or have not done to conserve energy. Please tell me YES or NO for each statement as it applies to you."

	Percentage of eligible respondents engaging in:					
	1975	1976	1977	1978	1979	1980
In-home conservation behaviour						
- turn off lights more often	74 ^a	81	88	92	80 ^b	86
- use less hot water	33	40	56	61	36	47
- keep hot water heater at lower temperature	- ^c	-	-	-	36	47
- cook in larger quantities and freeze excess	39	49	-	-	-	-
Home heating conservation behaviour						
- keep thermostat at lower temperature	63	70	84	84	71	86
- have furnace serviced once a year	-	-	84	83	79	79
- have improved or am considering improving home insulation	-	-	72	75	-	-
- made improvements to home insulation	-	-	-	-	59	69
- had a home energy audit done	-	-	-	-	-	14
- participated in ENERSAVE Program	-	-	-	-	-	11
Transportation-related behaviour						
- have car serviced more often	-	-	88	91	45	55
- driving less	40	44	55	58	43	57
- driving slower	45	55	-	-	-	-
- using public transportation	-	-	64	67	40	46
- participating in a car pool	22	17	24	31	29	27
- have bought or am considering a smaller car	-	-	62	66	-	-
- bought a smaller car	-	-	-	-	27	46
General conservation activities						
- use returnable bottles	-	-	82	84	80	83
- separating kitchen wastes for recycling	-	-	-	-	37	34
- buying goods that have been recycled	-	-	47	50	-	-
- participating in a conservation committee at work	-	-	16	19	-	-
N =	1422	1436	1413	1409	1654	1637

^a From 1975 to 1978 the question was: "I will now read you a list of things people say they are doing now to conserve energy. Please tell me which one(s), if any, you yourself are currently doing."

^b In 1979, the phrase "within the last year" was added.

^c Not asked

Table 7.

Perceived Effectiveness/Support for Government Energy Conservation Programs
(1975-1980)

Program type	Rank					
	Perceived effectiveness/support					
	1975	1976	1977	1978	1979	1980
Number of programs rated	6	6	10	10	11	11
Advertising/information						
- encourage people to set thermostat at no more than 18°C	4 ^a	2	-	-	-	-
- give the public facts about future energy supplies	- ^c	-	2	1	5 ^b	4
- show people how much can be saved if everyone uses a little less	-	-	3	2	3	-
- tell consumers how to cut their heating bills	-	-	5	4	-	-
- show people how to maintain their cars	-	-	6	6	6	5
- appliance energy-use labelling required	-	-	-	-	1	1
Financial incentives						
- tax break for insulating homes	-	-	1	3	-	-
- expand grant program for home insulation	-	-	-	-	2	2
- reduce price of public transportation	-	-	4	5	-	-
- subsidies to improve public transportation	-	-	-	-	4	3
Price increases						
- make gasoline \$0.34 a litre	5	5	-	-	-	-
- double the price of electricity	6	6	-	-	-	-
- price electricity higher the more it is used	-	-	7	7	8	9
- remove controls on the price of gas and oil	-	-	9	8	-	-
- tax all heating fuels	-	-	10	9	11	10
- special tax on gas-inefficient cars	-	-	-	-	7	7
- fines for using too much energy	-	-	-	-	9	-
Mandatory regulations						
- maximum speed limit of 90 km/h	1	1	-	-	-	-
- required home energy audit	-	-	-	-	-	8
- require homes to meet insulation standards before being sold	-	-	-	-	-	6
Rationing						
- ration fuel oil	3	4	-	-	-	-
- ration all fuels	-	-	8	10	10	11
Other						
- stop exporting oil to the United States	2	3	-	-	-	-

a Of the six programs rated by respondents in 1975, "Encourage people to set the thermostat at no more than 18°C" was perceived as fourth most effective.

b Of the 11 programs rated by respondents in 1979, "Give the public facts about future energy supplies" was the fifth most supported program.

c Not asked

Table 8

Summary Relationships Between Attitudes and Behaviour (1975-1980)

Of the four types of behaviour,^a the number significantly related to:^b

<u>Attitude</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
perceived seriousness of energy shortage	4	3	0	0	1	3
importance of individual efforts to conserve energy	4	4	4	4	4	3
	N = 1422	1436	1413	1409	1654	1637

^a The four types of behaviour are: using less hot water, turning down the thermostat, driving less and turning off lights.

^b Based on a chi-square test with a 5 per cent level of significance

Table 9

Perceived Seriousness of Energy Shortage Related to Demographic Characteristics
(1975-1980)

<u>Demographic category</u>	Percentage responding very or somewhat serious:					
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
sex: male	43	58	60	- ^a	55	61
female	50	69	73	-	68	75
age: 18-34 ^b	-	63	-	-	-	-
35-44	-	66	-	-	-	-
45-54	-	59	-	-	-	-
55 and over	-	66	-	-	-	-
income: less than \$10,000 ^c	53	-	-	-	65	-
\$10,000-\$15,000	53	-	-	-	67	-
\$15,000-\$25,000	39	-	-	-	60	-
over \$25,000	43	-	-	-	63	-
education: elementary	-	67	-	-	-	-
secondary/technical	-	64	-	-	-	-
college/CEGEP	-	62	-	-	-	-
university	-	54	-	-	-	-
language: English	44	65	68	62	58	66
French	53	60	62	66	77	80
city: Halifax	50	80	82	-	80	75
Quebec City	54	55	62	-	79	80
Montreal	52	65	61	-	74	81
Ottawa ^d	-	-	-	-	61	64
Toronto	51	64	68	-	54	65
Winnipeg	46	65	68	68	50	62
Calgary	35	60	57	-	49	58
Vancouver	37	54	65	-	52	66
N =	1422	1436	1411	1409	1654	1637

^a There were no significant differences between the categories based on a chi-square test with a 5 per cent level of significance.

^b In 1975-78 the age categories were: 18-34, 35-49, 50-64, and 65 and over.

^c In 1975-78 the income categories were: less than \$9,000, \$9,000-\$12,000, \$12,000-\$15,000 and over \$15,000.

^d Ottawa was not included in the 1975-78 surveys.

Table 10

Importance of Individual Efforts Related to Demographic Characteristics
(1975-1980)

Demographic category	Percentage responding very or somewhat important:					
	1975	1976	1977	1978	1979	1980
sex: male	85	90	88	- ^a	-	-
female	91	95	96	-	-	-
age: 18-34 ^b	-	-	-	-	-	-
35-44	-	-	-	-	-	-
45-54	-	-	-	-	-	-
55 and over	-	-	-	-	-	-
income: less than \$10,000 ^c	-	-	-	-	-	-
\$10,000-\$15,000	-	-	-	-	-	-
\$15,000-\$25,000	-	-	-	-	-	-
over \$25,000	-	-	-	-	-	-
education: elementary	88	-	-	-	-	88
secondary/technical	90	-	-	-	-	95
college/CEGEP	86	-	-	-	-	94
university	80	-	-	-	-	95
language: English	89	93	-	-	93	96
French	87	91	-	-	90	88
city: Halifax	90	94	94	-	-	95
Quebec City	88	93	95	-	-	88
Montreal	86	90	90	-	-	88
Ottawa ^d	-	-	-	-	-	99
Toronto	90	93	93	-	-	97
Winnipeg	92	92	93	-	-	95
Calgary	88	91	93	-	-	95
Vancouver	83	94	90	-	-	96
N =	1422	1436	1411	1409	1654	1637

^a There were no significant differences between the categories in 1978 based on a chi-square test with a 5 per cent level of significance.

^b In 1975-78 the age categories were: 18-34, 35-49, 50-64, and 65 and over.

^c In 1975-78 the income categories were: less than \$9,000, \$9,000-\$12,000, \$12,000-\$15,000 and over \$15,000.

^d Ottawa was not included in the 1975-78 surveys.

Table 11A

Self-Reported Energy Conservation Behaviour Related to Demographic Characteristics (1975-1980)

Demographic category	Percentage of eligible respondents using less hot water:					
	1975	1976	1977	1978	1979	1980
sex: male	28	32	51	- ^a	33 ^b	-
female	42	52	64	-	40	-
age: 18-34 ^c	29	36	52	63	35	43
35-44	29	41	59	52	32	45
45-54	43	53	68	60	41	46
55 and over	45	55	69	52	41	59
income: less than \$10,000 ^d	43	52	-	-	-	-
\$10,000-\$15,000	38	45	-	-	-	-
\$15,000-\$25,000	33	43	-	-	-	-
over \$25,000	26	34	-	-	-	-
education: elementary	49	54	71	-	-	-
secondary/technical	34	43	58	-	-	-
college/CEGEP ^e	30	35	53	-	-	-
university	25	28	-	-	-	-
language: English	-	39	-	-	-	45
French	-	47	-	-	-	54
city: Halifax	38	46	-	-	38	57
Quebec City	36	47	-	-	39	57
Montreal	31	47	-	-	38	47
Ottawa ^f	-	-	-	-	-	47
Toronto	47	46	-	-	46	43
Winnipeg	31	37	-	-	36	44
Calgary	31	30	-	-	23	43
Vancouver	33	39	-	-	37	41
	N = 1422	1436	1411	1409	1654	1637

- a There were no significant differences between the categories based on a chi-square test with a 5 per cent level of significance.
- b The lower percentage of respondents engaging in energy conservation behaviour in 1979 can be attributed to the change in the question which added the phrase "within the last year."
- c In 1975-78 the age categories were: 18-34, 35-49, 50-64, and 65 and over.
- d In 1975-78 the income categories were: less than \$9,000, \$9,000-\$12,000, \$12,000-\$15,000 and over \$15,000.
- e In 1977 and 1978 the college/CEGEP category was grouped with the university category.
- f Ottawa was not included in the 1975-78 surveys.

Table 11B

Self-Reported Energy Conservation Behaviour Related to Demographic Characteristics (1975-1980)

Demographic category	Percentage of eligible respondents who turned down their thermostats:					
	1975	1976	1977	1978	1979	1980
sex: male	61	- ^a	-	-	-	-
female	68	-	-	-	-	-
age: 18-34 ^c	-	-	-	-	72 ^b	-
35-44	-	-	-	-	72	-
45-54	-	-	-	-	75	-
55 and over	-	-	-	-	63	-
income: less than \$10,000 ^d	-	-	-	-	-	-
\$10,000-\$15,000	-	-	-	-	-	-
\$15,000-\$25,000	-	-	-	-	-	-
over \$25,000	-	-	-	-	-	-
education: elementary	-	-	-	-	-	-
secondary/technical	-	-	-	-	-	-
college/CEGEP ^e	-	-	-	-	-	-
university	-	-	-	-	-	-
language: English	68	73	-	-	74	-
French	57	63	-	-	63	-
city: Halifax	68	78	-	-	78	88
Quebec City	56	64	-	-	59	89
Montreal	58	62	-	-	68	86
Ottawa ^f	-	-	-	-	80	88
Toronto	74	74	-	-	73	83
Winnipeg	65	74	-	-	67	87
Calgary	58	68	-	-	73	77
Vancouver	73	72	-	-	72	87
N =	1422	1436	1411	1409	1654	1637

^a There were no significant differences between the categories based on a chi-square test with a 5 per cent level of significance.

^b The lower percentage of respondents engaging in energy conservation behaviour in 1979 can be attributed to the change in the question which added the phrase "within the last year."

^c In 1975-78 the age categories were: 18-34, 35-49, 50-64, and 65 and over.

^d In 1975-78 the income categories were: less than \$9,000, \$9,000-\$12,000, \$12,000-\$15,000 and over \$15,000.

^e In 1977 and 1978 the college/CEGEP category was grouped with the university category.

^f Ottawa was not included in the 1975-78 surveys.

TABLE 11C

Self-Reported Energy Conservation Behaviour Related to Demographic
Characteristics (1975-1980)

<u>Demographic category</u>	Percentage of eligible respondents who drove less:					
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
sex: male	- ^a	-	-	-	-	-
female	-	-	-	-	-	-
age: 18-34 ^c	-	47	52	-	43 ^b	54
35-44	-	42	58	-	36	51
45-54	-	52	68	-	45	53
55 and over	-	58	69	-	51	76
income: less than \$10,000 ^d	47	51	69	-	-	71
\$10,000-\$15,000	50	52	49	-	-	63
\$15,000-\$25,000	49	52	63	-	-	56
over \$25,000	38	41	55	-	-	52
education: elementary	-	-	-	-	-	-
secondary/technical	-	-	-	-	-	-
college/CEGEP ^e	-	-	-	-	-	-
university	-	-	-	-	-	-
language: English	48	-	-	-	46	-
French	33	-	-	-	38	-
city: Halifax	49	-	-	-	-	62
Quebec City	31	-	-	-	-	58
Montreal	36	-	-	-	-	48
Ottawa ^f	-	-	-	-	-	62
Toronto	51	-	-	-	-	56
Winnipeg	45	-	-	-	-	54
Calgary	49	-	-	-	-	50
Vancouver	51	-	-	-	-	63
	N = 1422	1436	1411	1409	1654	1637

a There were no significant differences between the categories based on a chi-square test with a 5 per cent level of significance.

b The lower percentage of respondents engaging in energy conservation behaviour in 1979 can be attributed to the change in the question which added the phrase "within the last year."

c In 1975-78 the age categories were: 18-34, 35-49, 50-64, and 65 and over.

d In 1975-78 the income categories were: less than \$9,000, \$9,000-\$12,000, \$12,000-\$15,000 and over \$15,000.

e In 1977 and 1978 the college/CEGEP category was grouped with the university category.

f Ottawa was not included in the 1975-78 surveys.

Table 11D

Self-Reported Energy Conservation Behaviour Related to Demographic Characteristics (1975-1980)

Demographic category	Percentage of eligible respondents who turned off lights more often:					
	1975	1976	1977	1978	1979	1980
sex: male	69	78	-a	-	77b	-
female	79	84	-	-	82	-
age: 18-34c	-	-	86	-	82	89
35-44	-	-	91	-	79	84
45-54	-	-	90	-	81	80
55 and over	-	-	90	-	75	85
income: less than \$10,000d	-	-	-	-	-	-
\$10,000-\$15,000	-	-	-	-	-	-
\$15,000-\$25,000	-	-	-	-	-	-
over \$25,000	-	-	-	-	-	-
education: elementary	79	-	-	-	-	-
secondary/technical	73	-	-	-	-	-
college/CEGEPe	74	-	-	-	-	-
university	55	-	-	-	-	-
language: English	81	86	91	-	81	-
French	57	70	81	-	76	-
city: Halifax	80	89	94	-	79	-
Quebec City	53	67	77	-	74	-
Montreal	62	73	85	-	78	-
Ottawaf	-	-	-	-	87	-
Toronto	85	88	92	-	84	-
Winnipeg	81	88	89	-	78	-
Calgary	78	82	92	-	82	-
Vancouver	78	83	88	-	78	-
	N = 1422	1436	1411	1409	1654	1637

- a There were no significant differences between the categories based on a chi-square test with a 5 per cent level of significance.
- b The lower percentage of respondents engaging in energy conservation behaviour in 1979 can be attributed to the change in the question which added the phrase "within the last year."
- c In 1975-78 the age categories were: 18-34, 35-49, 50-64, and 65 and over.
- d In 1975-78 the income categories were: less than \$9,000, \$9,000-\$12,000, \$12,000-\$15,000 and over \$15,000.
- e In 1977 and 1978 the college/CEGEP category was grouped with the university category.
- f Ottawa was not included in the 1975-78 surveys.

Table 12

Construction of Indices

<u>Index</u>	<u>Number of questions used in constructing the index</u>	<u>Sample question</u>
Knowledge	3	On average, Canadians use more energy than any other country in the world (1980). Using a fireplace in winter can actually increase your heating costs (1979).
Attitudes		
hostility	4	The "energy crisis" is a hoax created by the government, utilities and corporations.
need to conserve	4	It is useless for the individual consumer to do anything about energy conservation.
perceived seriousness of the energy shortage	5	Thinking of heating oil, do you feel the possibility of shortage in Canada in the coming years, is: very serious, somewhat serious, not too serious, or not serious at all.
Behaviour		
energy use compared to last year	3	Overall, do you think you are using more, about the same, or less three energies this year as compared to last year?
thermostat setting	2	At what temperature do you set your thermostat during the day? During the night?
in-home conservation behaviour	3	Turning off lights in your home more often.
home-heating conservation behaviour	3	Keeping the thermostat at a lower temperature.
transportation conserving behaviour	5	Driving less.
general conservation behaviour	2	Using returnable bottles.
Program support		
advertising/information	3	A government advertising program showing people how to maintain their car in order to save gasoline.
financial incentives	2	Expanding the government program of offering consumers a grant for insulating their homes.
price/tax increases	3	A special tax on cars that consume more than 20 l/100 km.
rationing	1	Rationing the amount of gasoline, heating oil and electricity each person can use.

Table 13

Mean Value of Indices (1979-1980)

<u>Index</u>	Mean ^a	
	<u>1979</u>	<u>1980</u>
Knowledge ^b	51	71
Attitude: hostility	43	41
need to conserve	78	82
perceived seriousness	66	66
Program support: advertising/information	83	87
financial incentives	85	85
price/tax increase	40	48
rationing	25	28
Energy conservation		
behaviour: energy use compared to	57	53
last year		
day/night thermostat setting	63	60
in-home	60	62
home heating	70	80
transportation	39	48
general	60	60

^a Scales have been adjusted so that the minimum is 0 and the maximum is 100.

^b Comparison between years is not valid for the knowledge index because of substantial changes in the knowledge questions.

Table 14

Relationship Between Similar Indices (1979-1980)

<u>Index</u>	<u>Correlation</u>	
	<u>1979</u>	<u>1980</u>
Attitude		
hostility versus need to conserve	-.34 ^b	-.34 ^b
hostility versus perceived seriousness	-.07 ^b	-.01 ^b
need to conserve versus perceived seriousness	.33 ^b	.28 ^b
Program support		
advertising/information versus financial incentives	.30 ^b	.34 ^b
advertising/information versus price/tax increase	.13 ^b	.14 ^b
advertising/information versus rationing	.07 ^b	.10 ^b
financial incentives versus price/tax increase	.11 ^b	.16 ^b
financial incentives versus rationing	.07 ^b	.09 ^b
price/tax increase versus rationing	.26 ^b	.21 ^b
Energy conservation behaviour		
energy use ^c versus thermostat setting ^d	.13 ^b	.14 ^b
energy use versus in-home	-.19 ^b	-.23 ^b
energy use versus home heating	-.18 ^b	-.15 ^b
energy use versus transportation	-.17 ^b	-.17 ^b
energy use versus general	-.02	-.06 ^b
thermostat setting versus in-home	-.06 ^a	-.18 ^b
thermostat setting versus home heating	-.16 ^b	-.18 ^b
thermostat setting versus transportation	-.04 ^a	-.04
thermostat setting versus general	-.17 ^b	-.10 ^b
in-home versus home heating	.33 ^a	.28 ^b
in-home versus transportation	.29 ^b	.25 ^b
in-home versus general	.17 ^b	.10 ^b
home heating versus transport	.25 ^b	.14 ^b
home heating versus general	.17 ^b	.06 ^a
transportation versus general	.19 ^b	.09 ^b

a Significant at 5 per cent level

b Significant at 1 per cent level

c A high index level indicates high energy use compared to last year.

d A high index level indicates a high day/night thermostat setting.

Table 15

Relationship Between Attitude Indices versus
Program Support, Energy Conservation Behaviour
and Knowledge Indices (1980)

	Correlation		
	Attitudes		
	<u>hostility</u>	<u>need to conserve</u>	<u>perceived seriousness</u>
Knowledge	-.16 ^b	.19 ^b	.00
Program support			
advertising/information	.04 ^a	.09 ^b	.14 ^b
financial incentives	-.01	.13 ^b	.13 ^b
price/tax increase	-.14 ^b	.18 ^b	.08 ^b
rationing	-.01	.10 ^b	.16 ^b
Energy conservation behaviour			
energy use compared to last year ^c	.11 ^b	-.13 ^b	-.07 ^b
day/night thermostat setting ^d	.09 ^b	-.10 ^b	-.06 ^a
in-home	.04 ^a	.13 ^b	.16 ^b
home heating	.01	.12 ^b	.09 ^b
transportation	.03	.09 ^b	.15 ^b
general	-.03	.07 ^b	.03

^a Significant at 5 per cent level

^b Significant at 1 per cent level

^c A high index level indicates high energy use compared to last year.

^d A high index level indicates a high day/night thermostat setting.

Table 16

Relationship Between Attitude Indices versus
Program Support, Energy Conservation Behaviour
and Knowledge Indices (1979)

	Correlation		
	Attitudes		
	<u>hostility</u>	<u>need to conserve</u>	<u>perceived seriousness</u>
Knowledge	-.15 ^b	.02	-.02
Program support			
advertising/information	.06 ^a	.17 ^b	.15 ^b
financial incentives	-.02	.13 ^b	.12 ^b
price/tax increase	-.10 ^b	.21 ^b	.14 ^b
rationing	-.01	.12 ^b	.15 ^b
Energy conservation behaviour			
energy use compared to last year ^c	.08 ^b	-.10 ^b	-.03
day/night thermostat setting ^d	.06 ^a	-.12 ^b	-.06 ^b
in-home	-.01	.17 ^b	.13 ^b
home heating	-.03	.14 ^b	.08 ^b
transportation	.03	.05 ^a	.08 ^b
general	-.02	.09 ^b	-.02

a Significant at 5 per cent level

b Significant at 1 per cent level

c A high index level indicates high energy use compared to last year.

d A high index level indicates a high day/night thermostat setting.

Table 17

Relationship Between Program Support Indices
versus Energy Conservation Behaviour
and Knowledge Indices (1980)

	Correlation				
	Program support				
	<u>advertising/ information</u>	<u>financial incentives</u>	<u>price/tax increases</u>	<u>ration- ing</u>	<u>knowledge</u>
Types of conservation behaviour					
energy use compared to last year ^c	-.02	-.05 ^a	-.11 ^b	-.04	-.07 ^b
day/night thermostat setting ^d	-.03	-.02	-.06 ^a	-.02	.03
in-home	.10 ^b	.08 ^b	.11 ^b	.15 ^b	.03
home heating	.08 ^b	.08 ^b	.07 ^b	.07 ^b	.04
transportation	.16 ^b	.19 ^b	.11 ^b	.15 ^b	.06 ^b
general	.01	.07 ^b	.04	.02	.01
Knowledge	-.01	0	.14 ^b	.07 ^b	-

^a Significant at 5 per cent level

^b Significant at 1 per cent level

^c A high index level indicates high energy use compared to last year.

^d A high index level indicates a high day/night thermostat setting.

Table 18

Relationship Between Program Support Indices
versus Energy Conservation Behaviour
and Knowledge Indices (1979)

	<u>Correlation</u>				
	Program support				
	<u>advertising/ information</u>	<u>financial incentives</u>	<u>price/tax increases</u>	<u>ration- ing</u>	<u>knowledge</u>
Types of conservation behaviour					
energy use compared to last year ^c	-.01	-.04a	-.07b	-.04	0
day/night thermostat setting ^d	-.07b	-.03	-.06a	-.06a	.03
in-home	.09b	.11b	.09b	.10b	-.06b
home heating	.05a	.05a	.06b	.06a	.02
transportation	.10b	.11b	.07b	.11b	-.09b
general	.03	.02	.04a	.01	.01
Knowledge	-.04a	-.05a	.06b	-.01	-

a Significant at 5 per cent level.

b Significant at 1 per cent level

c A high index level indicates high energy use compared to last year.

d A high index level indicates a high day/night thermostat setting.

Table 19

Relationship Between Demographic Characteristics and Indices (1980)^a

<u>Index</u>	<u>Demographic categories relatively high on index</u>				
	<u>Age</u>	<u>Sex</u>	<u>Language</u>	<u>Income</u>	<u>Education</u>
Knowledge	older ^b	male	French	-	higher
Attitudes					
hostility	older ^b	-	French	lower	lower
need to conserve	younger	-	English	-	higher
perceived seriousness	younger	female	English	lower	-
Program support					
advertising/information	-	-	French	lower	-
financial incentives	younger	-	French	-	-
price/tax increase	younger	male	-	higher	higher
rationing	-	-	-	-	lower
Energy conservation					
behaviour					
energy use compared to last year ^c	-	-	-	-	lower
day/night thermostat setting ^d	-	male	French	-	-
in-home	older	-	-	-	lower
home heating	-	-	-	-	-
transportation	older	-	French	lower	-
general	older	-	English	higher	-

^a Based on a chi-square with a 5 per cent level of significance

^b A greater percentage of older respondents scored in the high category of the hostility index.

^c A high index level indicates high energy use compared to last year.

^d A high index level indicates a high day/night thermostat setting.

Table 20

Relationship Between Demographic Characteristics and Indices (1979)^a

<u>Index</u>	<u>Demographic categories relatively high on index</u>				
	<u>Age</u>	<u>Sex</u>	<u>Language</u>	<u>Income</u>	<u>Education</u>
Knowledge	-	male	English	higher	higher
Attitudes hostility	older ^b	-	French	lower	lower
need to conserve	younger	female	English	higher	higher
perceived seriousness	-	female	French	lower	-
Program support advertising/ information	-	-	French	-	-
financial incentives	younger	-	-	-	-
price/tax increase	younger	-	-	-	higher
rationing	-	-	-	lower	-
Energy conservation behaviour					
energy use compared to last year ^c	-	-	French	-	-
day/night thermostat setting ^d	-	-	French	lower	lower
in-home	older	female	-	-	-
home heating	younger	-	English	higher	-
transportation	older	female	-	lower	-
general	older	-	English	-	-

^a Based on a chi-square with a 5 per cent level of significance

^b A greater percentage of older respondents scored in the high category of the hostility index.

^c A high index level indicates high energy use compared to last year.

^d A high index level indicates a high day/night thermostat setting.

Table 21

Relationship Between Cities and Indices (1979-1980)

Index	Cities relatively high on the index*							
	Halifax	Quebec City	Montreal	Ottawa	Toronto	Winnipeg	Calgary	Vancouver
Knowledge	a,b	a	a	a,b	b	b		b
Attitudes								
hostility	b	a,b	a,b		b	a,b		
need to conserve	a,b			a,b	a,b	b	b	a,b
perceived seriousness	a,b	b		a	b			
Program support								
advertising/information		a,b	a,b	a,b		b		a
financial incentives		a	a,b	b			b	a,b
price/tax increase	a	a	b	a,b	b		a	a,b
rationing	a,b	a	a,b	b	b			
Energy conservation								
behaviour								
energy use compared to last year**	a	a	a		a	a,b	a,b	b
day/night thermostat setting***		a,b	b		a	a,b		b
in-home	a,b	a	b	b	b			b
home heating	a,b	a	a	a,b	b			
transportation	a	a	a,b	a,b			b	
general					a,b	b	a,b	a,b

* An "a" indicates that in 1980 the city had a greater percentage in the high category compared to the percentage of all cities combined.

A "b" indicates that in 1979 the city had a greater percentage in the high category compared to the percentage of all cities combined.

** A high index level indicates high energy use compared to last year.

*** A high index level indicates a high day/night thermostat setting.

Table 22

Real Cost Per 100 km of Driving (1971, 1979, 1980)

	<u>1971</u>	<u>1979</u>	<u>1980</u>
Gasoline per litre ^a	\$.12	\$.20	\$.25
Real gasoline price per litre (in 1971 dollars)	\$.12	\$.10	\$.12
Fleet fuel economy (litres per 100 km) ^b	15.6	11.4	10.7 ^c
Real fuel cost per 100 km (in 1971 dollars)	\$ 1.87	\$ 1.25	\$ 1.50

^a Toronto average, regular grade, leaded

^b Motor Vehicle Energy and Emissions, Transport Canada. Based on weighted average of new car sales

^c Projected

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