PUBLIC INFORMATION CAMPAIGN

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consumers in both sectors it is necessary to use either TV, radio, press, and printed materials simultaneously.

Distribution of information for residential sector by TV is recommended to realize through program "Tesaket"; this program is focused on a wide range of interests. The most appropriate way to distribute information to industrial sector is to demonstrate a film about positive effect of energy saving measures provided by Energy Center in certain industrial enterprise. The film should emphasize a rapid payback of energy saving measures and demonstrate associated with these activities increase in comfort and safety levels. Araks" program is recommended for information distribution on radio. This program broadcasts in Armenian and English 5 hours in a day and has a big audience among plug in radio listeners. To implement recommendations for information campaign through press it is necessary to contact with the biggest Armenian newspapers; these are "Yerkir", "Hayastani Hanrapetutiun", and "Azg". To implement recommendations for information campaign in residential sector through use of printed materials it is necessary to print leaflets about low cost measures for energy conservation like PVC sheet for insulation of windows. For industrial sector it is necessary to develop technical brochures in eight potential energy saving areas. To create a positive attitude to the Energy Center and to stimulate the interest to idea of energy conservation among industrial users of energy it is reasonable to organize a training seminar devoted to the modern technologies for industrial energy conservation and effective use of limited energy resources. The persons responsible for energy saving programs from different state structures as well as leading specialists of Armenian state and private industrial enterprises should be invited.

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III. Introduction

A. Brief background

Armenia is the smallest independent state (29,800 sq.km.) which emerged following the break-up of the former Soviet Union. It has a population of about 3.3 million. As all other newly-independent Republics, Armenia suffers from a lack of coordinated planning and control in all aspects of its economy. However, the government is determined to move the country towards a free market system with help from western institutions and organisations.

Armenia was one of the most economically integrated republics of the former Soviet Union. The Armenian industry's energy structure is a result of the former centralised planning system; economic relations, trade partners, and production of goods were more often determined by political decisions rather than by comparative economic advantages between republics. Economic role of Armenia was (and still is) to transform imported raw materials and intermediate goods into a wide range of consumer and producer goods, such as machinery, light industrial products, and processed foodstuffs. As a result, Armenia is dependent on imported raw materials and energy. The economy is dominated by a large industrial sector which is highly energy intensive and operationally inefficient. The almost free energy supply for decades led to the absence of any incentive to save energy[1].

The energy intensity (GNP/capita) of Armenian economy is almost double that of the market economies. Part of the difference with market economies can be explained by their much more developed service sector, which requires much less energy. Due to the transition and energy crisis, Armenia's GDP fell drastically. However, it was not accompanied by a corresponding drop in

[1] According to information gathered from the Ministry of Economy.

I. Executive Summary

Armenia is moving towards a market system and is faced with a sharp decrease in both living standards and production output. The political situation, continuing war and blockade has resulted in a severe energy crisis. It will be possible, however, to reduce the impact of the energy shortage by immediate actions to reduce energy waste and promote a rational energy policy.

The European Community's Energy Center in Yerevan is intended to provide an energy saving assistance and to be in a focus of energy conservation activities in Armenia. The main objective of the Public Information Campaign is to stimulate energy saving activities (in both residential and industrial sectors of economy) and to interest energy end-users in idea of energy conservation as well as to create an image of the Energy Center as an active participant in energy management. Public Information Campaign is important since the knowledge and information about energy efficiency possibilities is a key element for implementation of energy efficiency strategy.

Data about main energy consuming sectors of the economy (industrial and residential sectors), attitudes and preferences of energy end-users, energy saving opportunities, and media characteristics were gathered from primary and secondary sources of information. Among these were the Ministry of Energy and Fuel, Ministry of Economy, State TV and Radio Committee, Ministry of Justice, State Agency "Haimamul", offices of Armenian newspapers, TV and radio programs as well as population surveys.

The recommendations for organization of Public Information Campaign are given for two target sectors: residential and industrial. Implementation of the Public Information Campaign assumes dealing with many people and management of many variables. For effective distribution of information to

energy consumption. Therefore, energy intensity in 1992 is almost twice the level of 1990. Electricity intensity follows the same path. With the decline in GDP and despite the drop in total electricity consumption, the intensity has almost doubled in 1992 compared to 1990[2].

All houses in Armenia were constructed with the assumption that heating will be provided. Without normal heating, houses are quickly deteriorating. Most of homes were without heating in winter and the electricity supply was provided for only a few hours a day[3].

Energy resources in Armenia are currently inadequate. Indigenous hydrocarbon supplies are limited to a few coal deposits, an important hydro-electrical potential is hampered by severe water shortages in the main lake Sevan. The country's only nuclear plant was shut down following the 1988 earthquake, and supplies of natural gas and oil products have almost dried up due to political problems with neighbouring countries and reduced Russian oil production.[4]

Under the present blockade, energy conservation is vital. Increasing the supply of energy from alternative sources faces major difficulties. Investing in an improved infrastructure will only be possible over a long period of time and will require massive financial resources. In the short term, the country will need to exist on a limited amount of energy. The EC Energy Center provides a range of activities to stimulate energy saving. The activities, provided by Energy Center are shown in Appendix 1.

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[2] According to information gathered from the Ministry of Economy.
[3] Energy Center's description of activities.
[4] Energy Center's description of activities.

B. *Importance of public information*

A country like Armenia with no energy resources and communications hampered as a result of problems with neighbouring countries can survive only if energy use is highly efficient. On the disintegration of the Soviet Union, price increases for imported energy have resulted in budget and balance of payment problems in Armenia. The social and political implications mean that the inflated prices cannot immediately and fully be passed on to end-users. Immediate actions to reduce energy waste, to improve efficiency in production and distribution and to promote rational energy use would help to address some of these problems.

The key benefits of a public awareness campaign are mentioned below:

- energy savings typically associated with public information campaigns are estimated to be 5-10%[5];
- public awareness building affects energy efficiency without requiring financial incentives or disincentives, and resource reallocation. Awareness building is premised on the assumption that if people knew more they would conserve more;
- reduced energy anger towards the government (and consequently increased political stability) due to the provision of basic information on energy issues.

A public awareness campaign is important since the knowledge and information about energy efficiency possibilities is a key element for the implementation of an energy efficiency strategy. End-use consumers need to be fully aware of the potential of energy saving and its benefits. Access to new technologies and information about their costs and availability is very important.

[5] According to information gathered from the Ministry of Energy and Fuel.

C. *Objectives*

of the project are:

- to establish a positive and active image for the Energy Center in energy management;
- to generate an awareness of current inefficient energy use in the economy of Armenia;
- to inform energy users about simple low-cost measures on how to save energy;
- to create an informed demand for energy saving activities, provided by Energy Center.

IV. Methodology

Gathering information about the main energy consuming sectors of the economy and media available in Armenia, analysing attitudes and preferences of energy users, and identifying energy saving opportunities were performed through many different sources of information. Both primary and secondary data were gathered during activities of the group. Gathered data were analysed and processed through use of software package "File Maker Pro v.2.0 for Windows".

A. *Secondary data*

Secondary data were gathered mainly from the Ministry of Energy and Fuel, the Ministry of Economy, the State TV and Radio Committee, the Ministry of Justice, the State Agency "Haimamul", as well as from special literature.

The following secondary information was gathered from the Ministry of Energy and Fuel :

- An Annual Balance of energy consumption by each sector of the economy. This also includes data about losses of electricity in networks in each sector. This balance is in Documentation and partially in Exhibits 1, 2, 3, 4, 5, 6, 7, 8, and 9.
- data on the energy saving potential in Armenia. This information is in Exhibit 10.

Information about the mass-media registered in Armenia was gathered from the Ministry of Justice. The list of the sixty largest Armenian newspapers, their sizes and publications frequency were gathered from the Haimamul Agency. This information is in Exhibit 11.

The State Radio and TV Committee provided information on relevant aspects of the Armenian media as well as prices of advertising on TV and radio for different hours were gathered. This information is in Exhibits 12, 13, 14, and 15.

Information gathered from books "Marketing Research" by D. Tull and D. Hawkins and "Statistical Methods for Business Decisions" by L. Lapin helped to choose appropriate sampling methods, questionnaire design, questionnaire administration, and data analysis.

B. Primary Data

Since the secondary data gathered were not sufficient, primary data were also obtained through survey.

1. Surveys

The main purpose of the survey activity of the project was to highlight the barriers and opportunities which confronted an energy conservation Public Awareness Campaign. The following surveys were performed to gather a primary information: questioning the population, telephone interviews, and personal interviews.

For population questioning a convenience sample was used, since implementation of a random sample requires ideal sampling frame. The main reason for use of convenience sample was that there is no adequate sample frame for representing the elements of population; there is no list of entire Armenian population (census), which can reflect demographic changes in Armenia for last 5-6 years. Besides, each habitant of Armenia is affected by the energy shortage (in this or another extent) and equally interested in overcoming of problems caused by the energy crisis. Another reason for use of convenience sample was the timing aspect: it required mach less time. The population is defined in following terms:

(element)	residents of
(sampling unit)	different districts of Yerevan
(extent)	who had experienced energy shortage
(time)	during the last three years.

The questionnaire used to test energy related attitudes and media assessment is attached in Appendix II.

Since the secondary data from the Haimamul Agency contained just the list of Armenian newspapers and the size of each newspaper, the telephone interviews to the newspapers' offices were done to get more detailed information about publicity opportunities and prices of advertising. This information is in Exhibit 11.

Personal interviews took place with officials from the Ministry of Economy, the Ministry of the Energy and Fuel, Ministry of Industry, "Armenergo" State Enterprise, and TV and Radio programs offices.

V. Research Findings

A. Target groups analysis

The present classification of consumers consists of residential, industrial, commercial/official and transport (only state operated transportation). Final energy consumption per sector is shown in Exhibit 6. Residential and services account for 40%, but the part of services sector on its own is rather small due to underdevelopment. Industry follows with 30%. The transport sector consumes 17% of entire energy consumption.

Considering that only residential and industrial sectors of the economy are in the domain of the Energy Center, the group focused on these sectors. The general energy characteristics of these energy end-use sectors are given below.

1. Residential sector

Household consumption decreased by 25% in 1991 compared to 1988. This trend will continue, not only as a result of the fall of GDP, but mainly because of the crisis. The shift to electricity became stronger in 1992 and 1993[6]. Natural gas deliveries were stopped in 1992 and the population had to switch to electricity for cooking and space heating or find alternative fuels, which are

[6] See Exhibit 8.

very expensive due to their scarcity. As a result of the energy shortage a major shift from gas to electricity has occurred in District Heat.

The use of oil products, heat and coal use went down considerably, compensated by a rise in gas use and, especially, more electricity use. Most part of the energy consumption in this sector is for space heating (75%), followed by hot water (down from 15% in 1988 to 8% in 1991) and cooking (up to 10% in 1991)[7].

Certain energy uses, such as for cooking and heating using natural gas, were replaced by less efficient ones on electricity. This is very inefficient. The overall efficiency of cooking and heating with electricity is about 15% compared to 60% on a fixed gas stove. Because of this less efficient use of energy the available supplies run out sooner than would otherwise be the case. Besides, the lack of information about the supply schedule for electricity to the residential sector creates additional problems and leads to waste[8].

The shift toward electricity causes extensive damage to the distribution network. The actual load exceeds the design capacity by a factor of 2 to 3. This results in many disruptions and brown-outs. In Yerevan alone, 252 km of high-voltage cable and 434 transformers were destroyed beyond repair. This left many people without any energy supply during a great part of the winter[9].

2. Industrial sector

Industry's share in the net material product was 60%. The main energy intensive branches had a share of about 80% in the total industrial production. In 1992 industry received approximately 30 to 40% of its energy demand in 1988.

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[7] See Exhibit 8.
[8] See Exhibit 9.
[9] According to information gathered from the Ministry of Energy and Fuel.

Industry produced only in those priority sectors, which are necessary for survival (bakeries etc.) and for certain export products to keep on purchasing energy through barter transactions. But production level were minimal and barely sustained the economy.

By Government decision, special export industries and emergency services are appointed to have energy at all times. The available energy is divided among the industries using previous norms for energy demand. They receive a percentage of their needs. Actual consumption and the relation of energy to produced output is not taken into account. Finally, energy efficiency considerations are absent[10].

The information about industrial energy use by sectors is shown in Exhibit 7. The main energy intensive branches of the industry are Building materials (cement, glass), Chemicals (rubber, ammonia caustic soda), Electro-technical and metal industry (copper/molybdenum), Light industry and Food industry.

Building materials' direct fuel use (heavy oil, coal or gas) is 50% of total industrial fuel use. This is followed by the Electro-technical and chemical industries with respectively 24% and 12% in 1988. Light industry is the biggest heat consumer with 35% of total industrial heat consumption, followed by Electro-technical with 26% and chemicals with 21%. The Electro-technical and metal branch consumed 40% of the total electricity consumption followed by chemical with 32%.Although the country has enough skilled technical experts to maintain the operation of the energy industry, the technologies used and the technical knowledge available are mostly outdated compared to western standards. Technical experience relating to energy efficiency is in short supply (especially with regard to maintenance, load management, and new technologies).

[10] According to information gathered from the Ministry of Economy

B. *Channels of information distribution*

1. Media assessment

a. Television

The number of television sets in Armenia is approximately 800,000 out of total population of 3.5 million. Almost every family has a television. Broadcasting is virtually covers the country. Although television viewing is a subject to electricity supply cuts, it is, nevertheless, the best medium for changing current energy related attitudes.[11]

Television prime time is from 20:30 to 22:30 when new programs and the most popular shows are broadcast[12]. Television production and broadcasting costs in Armenia are low and adequate production facilities are available.

There are two Armenian language television stations in Armenia: Channel I (it is received by approximately 98% of the population) and Channel 2 (it is received by 80% of the population). The viewing audience is split roughly evenly between these two. Production facilities for television spots are available in both Armenian language stations. Television broadcasting costs are in Exhibit 12.

[11] According to information gathered from the State TV and Radio Committee.
[12] According to information gathered from the State TV and Radio Committee.

b. Radio

There are currently two types of radio in Armenia:

1. Radios, which receive signals broadcast over the airwaves. These radios currently receive only one station. The number of such radios is approximately 600,000 in Armenia[13].
2. "Plug in" radios which receive radio signals through a national wire reception grid which includes reception outlets in apartments and offices. The number of such radios is approximately 800,000. These radios receive the same stations as the radios which receive airwaves signals. They receive two other additional stations[14].

Prime radio times are from 7:00 to 11:00, from 12:30 to 15:00, and from 19:00 to 21:00. Radio broadcasting costs are in Exhibit 14.

c. Press

Circulation statistics for the major Armenian dailies as well as advertising costs provided by the "Haimamul" agency and telephone interviews are in Exhibit 11. Actual circulation can be cut by up to 80% on any given day, because of the current paper crisis.

Although the figures of newspapers' circulation are low for a country of 3.5 million with a literacy rate approaching 100%, editors pointed out that circulation has declined substantially during the past three years because:

1. newspaper home delivery has ceased since the onset of the energy crisis;
2. paper supply from Russia is irregular. Readership for the different papers is high and estimated to be 5 readers per copy.

[13] According to information gathered from the State TV and Radio Committee.
[14] According to information gathered from the State TV and Radio Committee.

Advertisement is limited, newspaper size is small, and full page advertisements are rare. A well designed full page ad on energy conservation would achieve high visibility at relatively low cost.

There are virtually no specialised technical journals in operation. One exception is "Armenian Industry", but its publication is irregular. That is why the media campaign for industrial sectors will be impossible through the technical press.

C. Printed materials

Printed materials in the form of leaflets and posters are rare in Armenia. This represents an opportunity to have a high profile campaign at relatively low cost. There are adequate printing possibilities exists in Armenia. Paper quality is adequate for brochures.

Three publishing houses - Periodica, The Press Committee of Armenia, and Vanadian Publishing - were contacted. Based on quality cost factors for the job, the Press Committee of the RA is the preferable choice.

VI. Conclusion

After a careful analysis of data and an examination of the research findings the following conclusions were made concerning the target groups of energy consumers and the media.

The residential sector is the biggest consumer of energy; even a small increase in the efficiency of energy use in this sector will have a large positive effect. That is why an energy conservation awareness campaign is especially important in this sector.[15]

The biggest amount of energy consumed in the residential sector is for space heating[16]. This consumption has a seasonal character: it take place only during the winter. That is why it is especially important to organise the publicity on energy conservation before winter.

It is necessary to explain to people that only a reasonable consumption of energy can create conditions for its uninterrupted supply. This is so because the extensive use of electricity leads to breakdowns of electricity distribution network and leaves many people without any energy supply during most part of the winter.

In the industrial sector, primary attention must be paid to those branches which continue to work during the present crisis and consume energy. These branches are the Building materials (cement, glass), the Chemicals (rubber, ammonia caustic soda etc.), the Electro-technical and metal (copper/molybdenum, etc.), the Light industry and the Food industry[17].

Training programs will have the biggest effect on energy saving in industrial sector. This would stimulate interest in idea of energy conservation. It would

[15] See Exhibit 6.
[16] See Exhibit 8.
[17] See Exhibit 7.

provide access to the newest technologies and energy conservation measures[18].

Questionnaires have shown that women are more open to learn about energy conservation solutions. That is why the messages must be primarily oriented towards women[19].

The following constraints apply to a Public Awareness Campaign:

- there is a government tendency to define any energy information as "strategic" and, consequently, secret. Information regarding the timing of electricity supply to the residential sector, for example, is absent. This creates social unrest and promotes an unstable political situation;
- there are attituditional constraints, including the widespread belief that government alone is responsible for energy efficiency. Understanding the crucial importance of energy saving is not widespread in Armenia[20].
- the majority of energy consumers (especially in industry) concentrate on short-term activities in energy conservation. The experience of western countries suggests, however, that real and sustainable energy efficiency gains are only achievable over several years;
- there is a lack of specialised and technical magazines and journals;
- the Armenian media has limited experience with public awareness campaigns;
- non-functioning postal system. The current unreliability of the postal system necessitates relying on other distribution channels for printed materials.

The following opportunities support the implementation of Public Information Campaign:

[18] See Exhibit 10.
[19] See Appendix 3.
[20] See Appendix 3.

- the Armenian media, though not highly developed, would be able to communicate the messages of an energy conservation campaign. High literacy rates, the proliferation of radios and television, and the existence of many daily newspapers would help disseminate communication of the energy conservation messages;
- the small size of the RA and the concentration of the population in urban centres will make for an economic campaign that reaches a high percentage of the population, particularly those who live in Yerevan and are more concerned by the crisis than the others;
- there is a desire for energy information in Armenia. Questions asked by the population and media articles are clear demonstrating a great interest in efficiency measures in both residential and industrial sectors[21] ;
- "plug-in" radios for Public Awareness Campaign continue to function when the electricity switched off in a given region, provided that the radio station itself receives electricity.

There are many talk shows in Armenia which would allow listeners to call in and ask questions to the guests or just to offer commentary. Talk-shows offer significant opportunities for free or low-cost broadcast which would feature EC experts speaking on specific conservation issues and responding to questions and comments.

[21] See Appendix 3.

VII Alternative actions

The publicity for energy conservation and advertising through the Energy Center's activities can be realised in many ways. There are 330 media organisations registered in Armenia. There are 249 newspapers, 47 magazines, 26 TV programs, 9 Radio programs, and 9 news agencies in Armenia. Another way is distribute printed materials through bakeries and Housing Management offices.

It is also possible to inform energy consumers about the activities of the Energy Center and the necessity to conserve energy through seminars and training courses.

VIII. Recommendations

It is clear from the research findings that energy consumption characteristics, measures to increase effectiveness of energy conservation and the perceptions concerning energy conservation are quite different for the two target sectors of energy consumers: the residential sector and the industrial sector. That is why the recommendations for organising a public information campaign for these target groups are different.

A. General strategy

Publicity is the most appropriate way to create an understanding of importance of energy conservation and to inform end-users about energy saving activities provided by the Energy Center; in comparison with advertising publicity costs less and creates a more positive image to the subject among consumers. For effective distribution of information to consumers in both sectors it is necessary to use either TV, radio, press, and printed materials simultaneously. Since the

largest part of energy consumption in the residential sector is for heating[22], publicity would have to start no later than mid-November to inform people about the importance of energy saving and appropriate opportunities prior to the onset of the winter heating season.

It is urgent that the Public Information Campaign begin as soon as possible for the following reasons:

1. The experience in other countries suggests that messages in the media must be delivered intensively at the outset and than repeated regularly in order to impact consumer attitudes and behaviour;
2. The electricity supply and, consequently, television and radio broadcast hours, will be reduced in winter due to the supply shortage;
3. Consumers must begin to act as soon as possible before the onset of winter, when outdoor measures such as installing insulation are more difficult to undertake.

B. Channels to distribute information to target groups

1. Television

Television is an appropriate media reaching the largest audience in Armenia and having the greatest potential to affect attitudes and practices. Its high effectiveness is based on by the fact that it has a large audience (virtually the whole country). According to information gathered from the population television is a very popular source of information for the majority of Armenians.

The most appropriate way to distribute information to industrial sector is to show a film about the positive effects of energy conservation as suggested by Energy Center in any given industrial enterprise. The film should emphasise a rapid payback through energy conservation and demonstrate concurrent

[22] See Research Findings.

increase in comfort and safety levels. To make these gains obvious it is suggested to create the film in the following way. A certain factory (for instance, the "Kanaz" factory) may be shown before and after the Energy Center's intervention. The main accent must be put on the economic and safety benefits from the implementation of such activities.

To achieve the main objectives of the Public Information Campaign in the residential sector it is necessary to organise publicity within a popular program which is viewed by a large audience all over the country. This program must focus on a wide range of interests and not be oriented towards just one or several closely related areas of public or economic activities. This program ought to attract people of different age groups, professional background, and social and marital status. It is especially important to attract Armenian women to the program, because of their greater openness to energy conservation solutions. This program must demonstrate low cost methods and measures for energy saving and conservation in the residential sector. Information about these measures must be provided by the Energy Center.

The main disadvantage of this medium is the frequent interruptions of the electricity supply, as a result of which people loose an opportunity to see programs.

2. Radio

Radio is an effective channel for the distribution of information distribution on energy conservation information to the residential sector, since it is an important source of information in Armenia (especially in winter). Radio became popular under the present circumstances, because the population lost the habit to watch television regularly and home delivery of newspapers has ceased.

An appropriate type of radio program for publicity of energy conservation is talk shows. They offer significant opportunities for free or low-cost broadcasts. It will allow EC experts to speak on specific issues and respond to questions and comments. It would be useful to periodically broadcast talk show programs devoted to present activities of the Energy Center, its future plans, and positive responses on realised projects. This program would be effective for both residential sector as well as for industrial sector.

3. Press

It is necessary to identify the most popular and widespread newspapers in Armenia for the Public Information Campaign. Newspapers should be selected according to information concerned .

The best way to develop an awareness campaign in the industrial sector is to print publications in technical journals. However, the only Armenian special technical journal "Armenian Industry" appears irregularly. That is why publicity in industrial sector use the same methods as in the residential sector. The same article can cover information concerning both sectors and thus attract the attention of residential and industrial energy users simultaneously.

Taking into consideration the low cost of advertising and rarity of full page advertisement in Armenian newspapers it is also useful to design full page advertisement on energy conservation. This would achieve high visibility at relatively low cost.

4. Printed materials

Printed materials have a great potential to disseminate the Energy Center's activities and the idea of energy conservation at a low cost. Their content and

channels of distribution, however, must be quite different for the two target sectors.

For the residential sector it is necessary to develop brochures about low-cost energy conservation measures such as insulation in houses or the use of energy saving perlite panels. These brochures must be distributed through bakeries or the Yerevan housing authority. The main accent on low cost measures is premised by the limited financial resources of the majority of the population.

For the industrial sector, it is necessary to develop and distribute technical brochures in eight potential energy saving areas[23]: boiler combustion, steam efficiency, compressed air, steam control, insulation and leak stoppage, refrigeration, lighting, ovens and drying.

5. Training seminar

To make industrial users aware of energy conservation opportunities provided by the Energy Center, it would help to organise a training seminar devoted to modern technologies in energy conservation and the effective use of limited energy resources in industry. Persons responsible for energy saving programs from different state organisations as well as leaders and leading specialists of Armenian state and private industrial enterprises may be invited. The seminar would create a positive attitude towards the Energy Center and stimulate interest in energy conservation.

IX. Implementation plan and costs

The implementation of the Public Information Campaign assumes dealing with many people and the management of many variables. It is reasonable to hire a person for successful implementation of the Public Information Campaign. This

[23] List is provided by the Energy Center.

person would co-ordinate activities and develop advertisement plans. A basic knowledge of marketing and good communication skills are prerequisite for the job. Approximate salary of the Media Co-ordinator could be from $100 to $120.

A. Television

To implement the recommendations concerning the use of television it is necessary to contact Sergey Yeritsian, Editor in Chief of the "Tesaket" program. The program is broadcast every Friday on Channel. It is repeated every Tuesday on Channel 2 from 21:00 to 22:00. The "Tesaket" program fits all the requirements, mentioned in Chapter 8 (Recommendations). A preliminary agreement with Sergey Yeritsian has already been matched.

It costs $50 to prepare a 10 minute film for the industrial sector according to the recommendations in Chapter 8. For the residential sector, a program inviting a round table discussion with representatives of the Ministry of Energy and Fuel, state enterprise "Armenergo" as well as representatives of Yerevan City Council and experts of the Energy Center ought to be organised. The importance of energy management in Armenia would be emphasised. Financial, technical and attituditional aspects of energy conservation would also be discussed. Preparation for such a program is free of charge. Sergey Yeritsian's telephone numbers are 57-08-30 and 55-37-50.

B. Radio

To implement the recommendations for an information campaign by means of radio it is necessary to contact Karine Stepanian, reporter of the "Araks" radio program, which broadcasts in Armenian and English five hours in a day and has a big audience among "plug in" radio listeners. The recommended type of program is 20 minute talk show, which allows listeners to call in and ask questions and comments to the guests or offer commentary. This direct-

response program also allows EC experts to speak on specific issues. This talk shows ought to be broadcast every in two or three weeks and inform listeners about the present activities of the Energy Center, its future plans, and the positive response on realised projects. Approximate time may be from 12:30 to 15:30. This program would be effective for the residential sector as well as for the industrial sector and is free of charge.

Another opportunity to stimulate interest in the population to the Energy Center and increase the effectiveness of energy consumption in the residential sector is to announce electricity supply schedules by region and city districts. This information could be broadcast at the end of the radio news issues six time a day. To organise this broadcast it is necessary to contact Deputy Editor in Chief of the Armenian Radio Information Services Mr. Stepan Maroutian. The approximate price is $15 per minute of broadcast. The only problem is that it will be difficult for the Energy Center to get this information.

C. Press

To implement the recommendations for information campaign through the press it is necessary to contact the largest Armenian newspapers. According to information gathered from agency "Haimamul"; the biggest Armenian dailies are "Yerkir", "Hayastani Hanrapetutiun", and "Azg", with circulation 25000, 15000, and 10000 respectively[24]. Both publicity and advertising must be organised in these newspapers. Full page advertisements are appropriate, since full page advertisements are rare and achieve high visibility at relatively low cost. Ads should be ordered once a month in each newspaper mentioned above with a shift in 10 days. The table below gives information about these opportunities.

[24] See Appendix

Newspaper	Circulation	Cost of Ad	Contact Person	Telephone
Yerkir	25000	$120	T. Vardanian	53-78-32
H. Hanrapetutiun	15000	$105	H. Zorian	52-69-74
Azg	10000	$71	-	-

D. Printed Materials

To implement the recommendations for an information campaign through printed materials in the residential sector it is necessary to print leaflets about low cost measures for energy conservation such as PVC sheet to insulate windows. The main accent on low-cost measures is caused by the limited financial resources of the majority of population. Such materials are developed by the Center of Business Administration of the American University of Armenia and may be distributed to the population through bakeries or Housing Management offices. These materials are attached in the Documentation. For the distribution of these materials through the Housing Management offices, it is necessary to contact with Mr. Katchatrian, Deputy Minister of the Yerevan Housing Authority and Mr. Amian, the Deputy Minister of the Outside Yerevan Housing Authority. Preliminary agreement with these persons have been made. Distribution of these materials would be free of charge.

For the industrial sector it is necessary to distribute technical brochures in eight potential energy saving areas. These materials must be provided by the Energy Center. The most appropriate channel to distribute these brochures is to send them to industrial users through lists of Ministry of Energy and Fuel and the Ministry of Industry. Besides, these brochures can be distributed to participants of a training seminar devoted to energy conservation in industry.

would be best alternative to print these materials at the Periodica publishing house. The printing of 20000-30000 copies of the leaflet would cost $15 per thousand and take about two weeks. Ruben Boshian, Deputy Director of the publishing house was contacted and a preliminary agreement was concluded.

E. Training seminar

The organisation of training seminar is a good opportunity to establish a positive and active image for the Energy Center in energy management within the industrial sector. The seminar must be organised for officials from the Ministry of Energy and Fuel, Ministry of Economy, "Armenergo" and "Naladka" state enterprises as well as heads of large industrial enterprises. This seminar may take place in the office of the energy Center and last two days. During the first day training films about energy saving and energy conservation[25] could be shown to the participants. During the second day, new measuring and control devices, new technologies for energy conservation may be demonstrated; activities provided by the Energy Center and its plans for future may also be presented. During the seminar, the brochures[26] about energy conservation opportunities may be actively distributed among the participants. To stimulate interest within government officials concerning to activities of the Energy Center it is possible to attract them through the organisation of a training trip to Europe. For the convenience of participants the seminar must last no more than 3 hours in a day.

F. Conclusion

Monthly expenses for organisation of the Public Information Campaign are in table below.

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[25] These films are available in the Energy Center.
[26] See Chapter IX, Printed Materials.

Expense	Cost, in $
1. Salary of the Media co-ordinator	100
2. Film preparation	50
3. Fool page ad in newspaper:	
in Yerkir	120
in Hajastani Hanrapetutiun	105
in Azg	71
4. Leaflets printing	600
5. Seminar organisation (invitations, refreshment)	100
Total	1146

X. Exhibits

Exhibit 1. Annual Balance of Electricity Power, mln. Kwh

Indicator/year	1980	1985	1988	1990	1991	1993	2000	2005
Production	13,03	14,891	15,290	10,362	9,516	6,286	14,100	15,500
Import	-	-	-	920	1,572	114	-	-
Total delivery	13,03	14,891	15,290	11,28	11,088	6,400	14,100	15,500
Export	2,234	3,384	3,334	-	-	-	1,100	1,200
Consumption	10,800	11,508	11,95	11,28	11,088	6,400	13,000	14,300
Losses in network	1319 10.1%	1,785 12.0%	1,648 10.8%	1,649 14.6%	1,6601 5%	2,391 37.3%	1,420 10.1%	1,500 9.7%
Losses in electrostations	1,033 7.9%	784 5.3%	723 4.7%	612 5.4%	793 7.2%	316 4.9%	1,050 7.4%	1,000 6.5%
Other losses	2,352 18.0%	2,569 17.3%	2,371 15.5%	2,081 18.4%	2,4592 2.2%	2,707 42.2%	2,470 17.5%	2,500 16.2%
Net consumption	8,448	8,939	9,485	9,021	8,635	3,693	10,530	11,800

Exhibit 2. Consumption of Energy Resources in Armenia, million. Tn.

Type of resources	1985	1988	1990	1991	1993	2000	2005
Total	8.75	8.93	7.93	7.24	2.16	8.84	9.41
Oil	3.59	3.62	3.71	3.31	0.33	1.99	1.99
Natural gas	3.47	4.24	3.31	2.96	0.65	4.64	4.63
Coal	0.21	0.32	0.28	0.18	0.002	0.55	0.87
Nuclear energy	1.06	0.35	-	-	-	1.2	1.38
Hydroenergy	0.38	0.36	0.37	0.38	1.13	0.39	0.47
Methane	0.04	0.04	0.04	0.02	0.02	0.07	0.07
Import of el. power	-	-	0.22	0.39	0.028	-	-

Exhibit 3. Annual Consumption of Energy Power per Sector, mln KW

Sector/year	1985	1988	1990	1991	1993	2000	2005
Residential	1,383	1,559	2,047	2,405	2,117	2,200	1,800
Industrial	4,465	4,555	2,852	2,780	583	4,400	5,435
Communal	1,078	1,159	1,097	766	180	700	1,200
Transportation	312	366	386	347	214	380	400
Agriculture	240	253	464	1,542	495	260	270
Construction	1,446	1,436	1,759	352	104	2,500	2,600
Others	15	157	416	443	4	90	95
Total	8,939	9,485	9,021	8,635	3,697	10,530	11,800

Exhibit 4. Structure of Energy Power Production, mln. Kwh

Year	Production	Export(import)	Types of energy power stations		
			TES	HES	NES
1985	14,892	(3384)	8,007	1,619	5,266
1988	15,290	(3,334)	8,947	1,534	4,810
1990	15,290	(920)	8,807	1,572	0
1991	9,516	1,572	7,970	1,546	0
1993	6,286	114	2,010	4,276	0
2000	14,100	(1,100)	7,500	1,600	5,000
2005	15,500	(1,200)	7,500	1,900	5,800

Exhibit 5. Change in Energy Consumption Due to Energy Crisis (ktcf)

	Residentia l			Industrial		
	1988	1992	(+/-%)	1988	1992	(+/-%)
Electricity	212	350	(+65%)	562	208	(-63%)
Natural gas	1409	0	(-100%)	408	200	(-51%)
Distinct Heat	849	105	(-88%)	1674	519	(-69%)

Exhibit 6 .Final Energy Consumption by Sector.

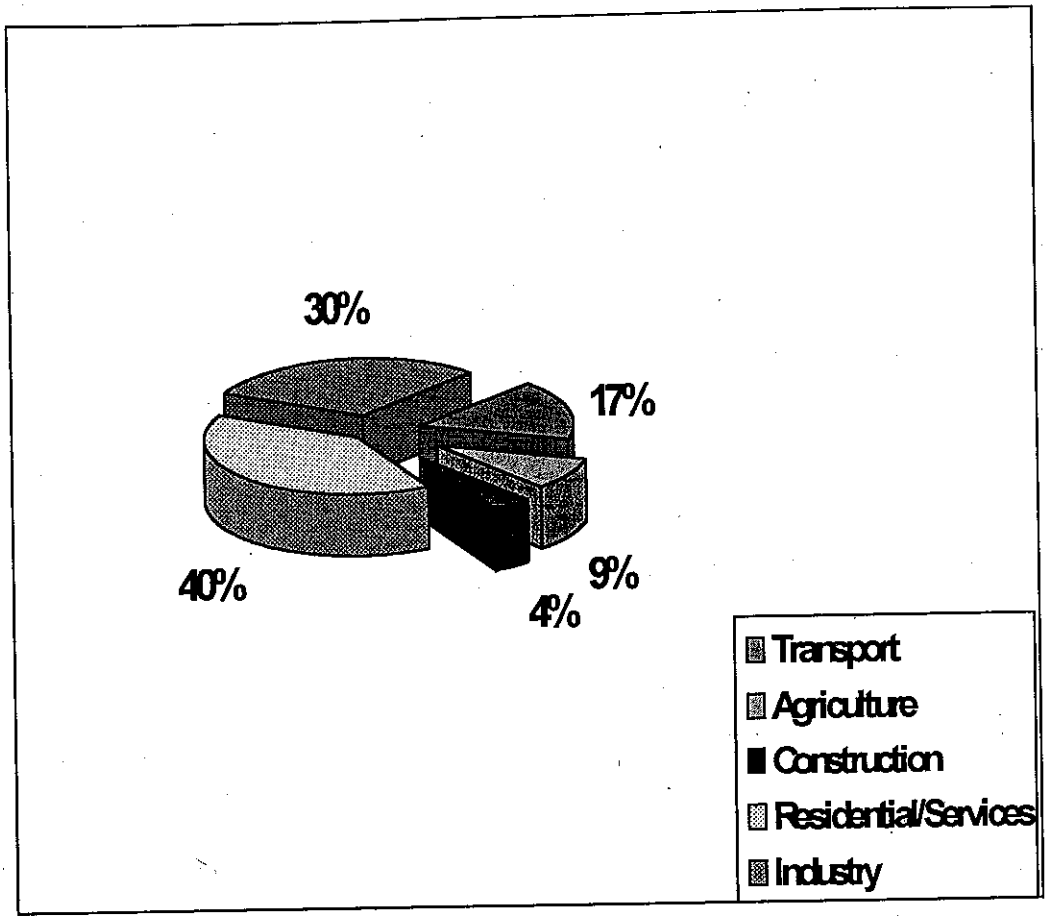

Exhibit 7. Industrial Energy Use by Branch (ktcf & GWn)

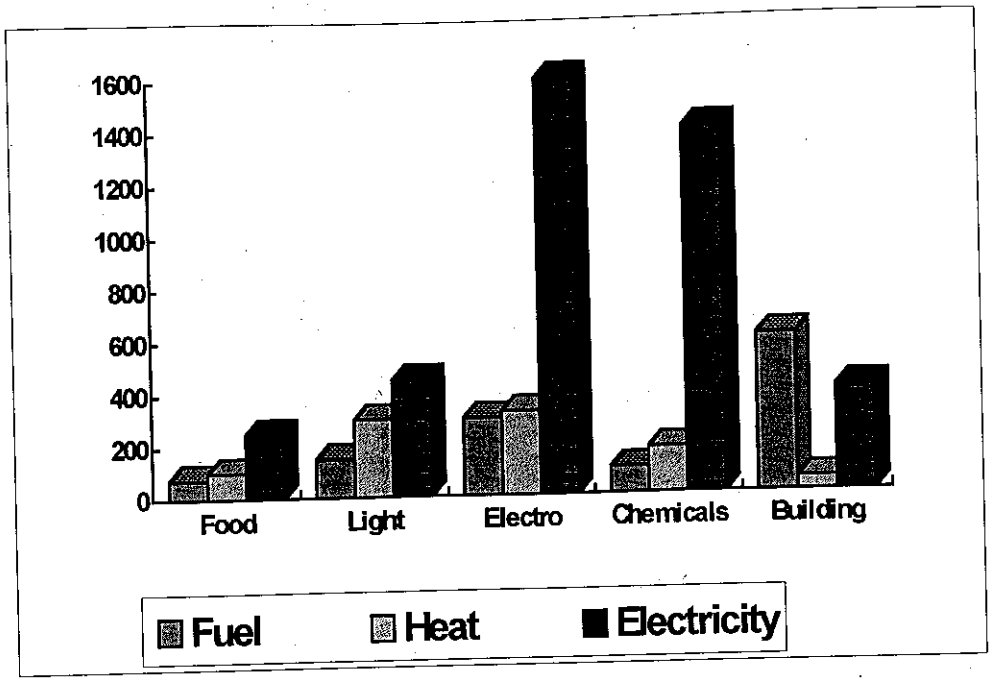

Exhibit 8. *Residential energy use in 1988 and 1991 (ktcf)*

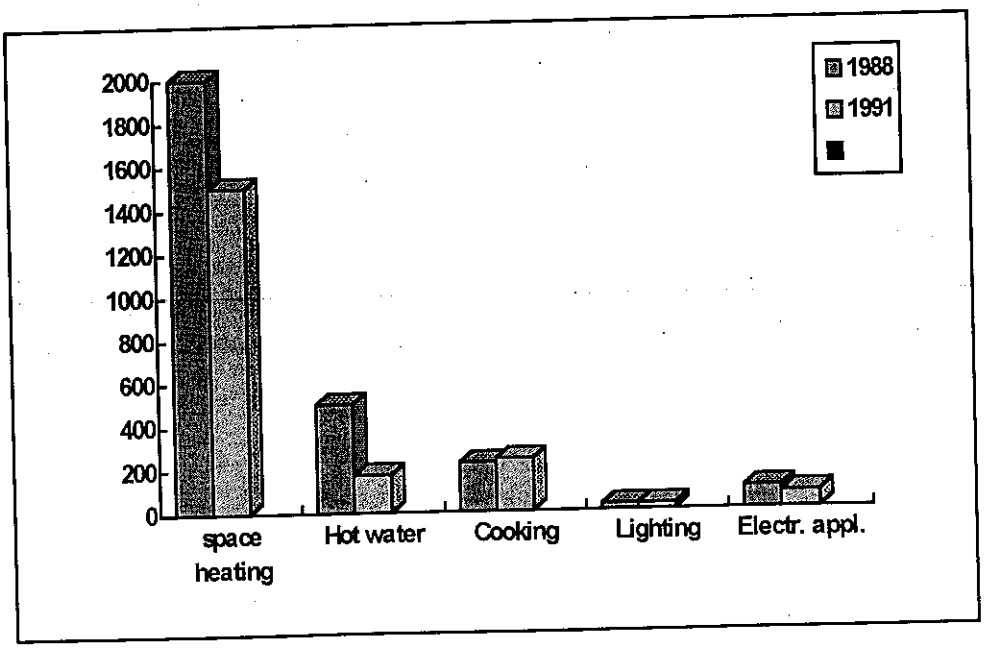

Exhibit 8. Electricity consumption by sector in 1988 and 1991 (Gwh)

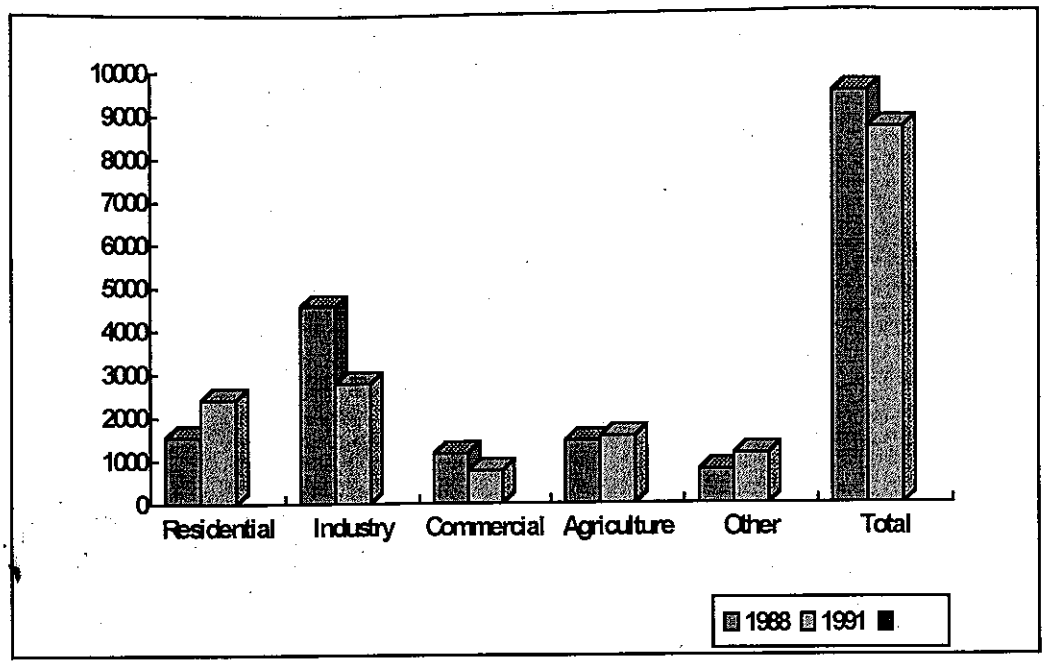
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Residential
Industry
Commercial
Agriculture
Other
Total
1988
1991

Exhibit 9. Industrial Energy Efficiency Potential

	NEXT STEP FOR IMPLEMENTATION	COST-BENEFIT
1. Improving use of oil products.	Information campaign.	2% saving of oil products and reduction of non-burnt pollutants emission, with reduced implementation cost.
2. Improving boiler combustion efficiency.	Measurement and adjustment campaign. Information campaign and in-depth audit.	10-15% saving of gas and oil products for boilers, with 1-2 year pay back time.
3. Improving process efficiency for gas or oil product use.	Audit without process specialists. Audit with process specialist.	10% saving on fuel and electricity in ovens and drier, with reduced implementation cost. 20-50% saving on fuel and electricity in oven and dryers. Benefits for product quality and productivity and productivity, with pay back time depending on specific cases.
4. Implementing steam traps by using steam heat exchangers.	Identification and evaluation of steam traps through a specific "task force" or through an in-depth audit. Information campaign.	20% saving industrial steam, with 1 year pay back time.
5. Implementing steam control systems by using steam heat exchangers.	Identification and evaluation of control systems through a specific "task force" or an in-depth audit. Information campaign.	5% saving industrial steam and eventual benefits for product quality, with 1-3 year pa back time.
6. Improving pipe insulation.	Identification and evaluation of a insulation through a specific "task force" or an in-depth audit. Information campaign.	2.5-3% saving in industrial steam, with 1 yea pay back time.
7. Implementing valve insulation.	Identification and evaluation of a insulation through a specific "task force" or an in-depth audit. Information campaign.	0.5-1% saving in industrial steam, with 2 years pay back time.
8. Reducing leaks.	Information campaign.	1-2% of industrial thermal energy consumption, with reduced implementation cost.
9. Improving steam condensate valorisation.	In-depth audit.	10% of thermal energy where condensate is lost with 2 year pay back time.
10. Improving compressed air production.	In-depth audit. Information campaign.	20-50% electricity saving in compressed air production with reduced implementation cost
11. Improving freezing production and distribution.	In-depth audit Information campaign.	20-30% electricity saving in freezing with reduced implementation cost.
12. Reducing over consumption due to equipment underload.	Reorganisation of production through an allocation committee. Equipment re-sizing through in-depth audit.	According to every specific use; until 50% saving energy where the present load is very low.

Exhibit 10. Broadcasting Price of Commercial Clips and Announcements.

Armenian TV. Channel-1 and Channel-2

Time or Program	Type	Duration (minutes)	Price (in US $)	
			Channel-1	Channel-2
20:25	Advertising	1	60	30
20:25	Clips	1	70	35
20:45	Advertising	1	45	22.5
20:45	Announcement	1	30	15
Block -III	Advertising	1	30	15
Block-III	Announcement	1	40	20
During the Film	Advertising	-	70	35
During News Set	Advertising	-	80	40
During other programs	Advertising	-	60	30

Exhibit 11 Discounts available:

Number of orders	10-20	20-30	30-50
Discount (%)	5	10	25

Exhibit 12. Broadcasting Price Armenian Radio Program 1

Time	Type	Duration (minutes)	Price (in US $)
8:00-10:00	Ad	1	15
8:00-10:00	Announcement	1	10
10:00-12:00	Ad	1	12
10:00-12:00	Announcement	1	7
12:00-16:00	Ad	1	15
12:00-16:00	Announcement	1	10
16:00-18:00	Ad	1	10
16:00-18:00	Announcement	1	7
18:00-20:00	Ad	1	8
18:00-20:00	Announcement	1	5
20:00-24:00	Ad	1	10
20:00-24:00	Announcement	1	5

Exhibit 13. Prices of Clips and Other Programs Development

Armenian TV

Type	Duration	Price (in US $)
Advertising	1 minute	400-2500
Music Clip	1 minute	1000-8000
Video Clip	1 minute	500-1200
Announcement	10 minute	300-1200
Program	3 hours	300-500

Exhibit 14. ***Sizes and Advertising Price of Armenian Newspapers***

Newspaper	Size	Space (in sq. cm)	Price (in drams)
1. Golos Armenii	8000	1	100
2. Haiastani Hanrapetytiun	15000	5	60
3. R. Armenia	12000	5	60
4. 02	17000	1	50
5. Erekoian Yerevan	5000	5-10	500
6. Azg	10000	1	90
7. Erkir	25000	5-10	2000
8. Urartoo	6000	10	700
9 Lragir	3000	5	800
10 Azatamart	13000	5-10	1500
11. Gorts	10000	1	150
12. Haik	6000	1	50
13. Ankakhytiun	5000	1	100
14. Vozni	10000	5	600
15. Business	5000	5	400
16. Banber	8000	1	60

XI. Appendices

APPENDIX I. European Community's Energy Center: Objectives and Activities.

The European Community's Energy Center in Yerevan provides a range of energy saving assistance and is in focus of energy conservation activities in Armenia. Both technical and economic assistance are given to the industrial and public services sector. The operation of the Energy Center helps to encourage the cost-effective use of energy through the mechanism of market forces.

In general, the Center aims to build up an understanding of the energy situation in Armenia. It aims to remedy the most urgent managerial and operational problems in order to reduce the country's energy consumption and increase general awareness of the needs for rational use of energy both during the production and installation. In particular, it involves the following specific objectives:

- participation in the energy conservation campaign through the provision of successful examples from the European Community;
- Improvement of energy efficiency in production and distribution campaigns, including the modernisation of maintenance schedules through the provision of examples from relevant Western organisations;
- facilitation of joint venture opportunities between the Armenian companies and appropriate energy equipment manufacturers, etc. from member states of European Community;
- close collaboration with members of the EC funded consortium of Western experts who are developing a strategic policy for the Government of Armenia covering all aspects of the efficient utilisation of energy.

In addition to its direct activities the Center will also provide co-ordination services for temporary EC experts whose objectives include:

- the co-ordination of energy audits in appropriate Armenian organisations, with regard for those already undertaken through the TACIS'91 Armenian initiative;
- the provision of basic training on appropriate energy related issues including energy management, energy auditing and privatisation of energy sector;
- the organisation of small, practical workshops or "surgeries" throughout the country in order to demonstrate solutions to common energy related problems.

The specific activities of the Energy Center include:

the implementation of advice and assessment of actions such as short energy surveys of industrial installations, public buildings (e.g. hospitals) and/or transport systems. These will be conducted predominantly by the temporary EC experts in order to demonstrate to local organisations the high potential for energy savings. These activities will help to increase awareness of the need for energy efficiency, and promote the image of the Energy Center. Care should be taken by the experts to avoid duplication of audits carried out during the work in Armenia under the TACIS program;

- the organisation and implementation of an information program on energy saving by :

1. obtaining and making available to industry and public services any publications (leaflets, brochures and reports) from other EC and Member States' programs and initiatives relevant to, the needs of Armenia, with appropriate translation as necessary;
2. provision of technical assistance to the Government in the preparation of materials for the nation-wide public information campaign which should complement the action to improve consumer awareness under TACIS;

HIBIT 5

	$0-$5	$5 - $10	$10-$15	$15-$20	$20-$25	$25-$30	$30-$35	$35-$40
mple 1	77.14%	14.29%	5.71%	1.43%	1.43%	0.00%	0%	0%
mple 2	80.85%	12.76%	4.26%	2.13%	0.00%	0.00%	0%	0%
mple 3	9%	4%	32%	11%	17%	9%	4%	4%

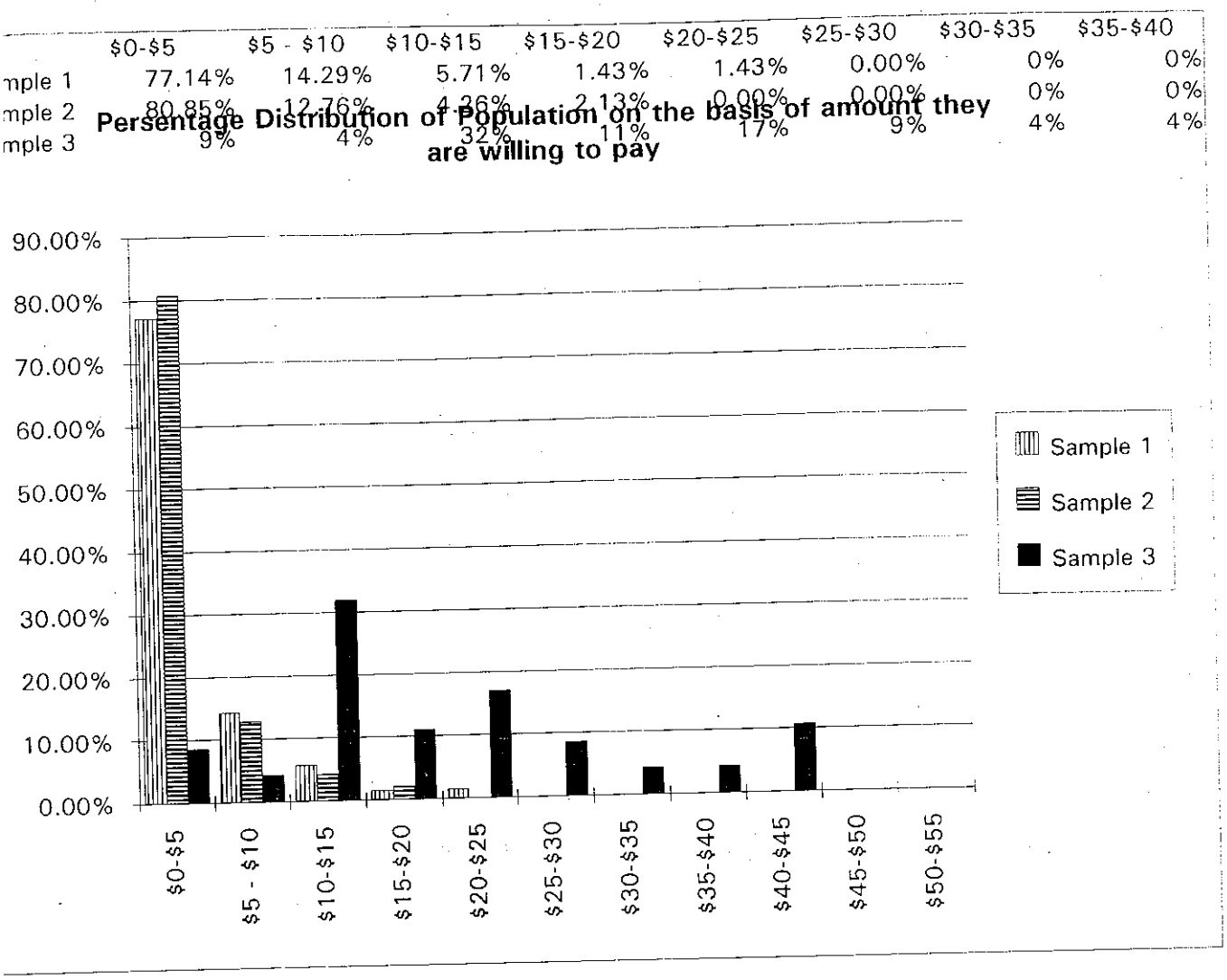

EXHIBIT 6

Sizes and Advertising Price of Armenian Newspapers

Newspaper	Size	Space (in sq. cm)	Price (in drams)
1. Golos Armenii	8000	1	100
2. Haiastani Hanrapetytiun	15000	5	60
3. R. Armenia	12000	5	60
4. 02	17000	1	50
5. Erekoian Yerevan	5000	5-10	500
6. Azg	10000	1	90
7. Erkir	25000	5-10	2000
8. Urartoo	6000	10	700
9 Lragir	3000	5	800
10 Azatamart	13000	5-10	1500
11. Gorts	10000	1	150
12. Haik	6000	1	50
13. Ankakhytiun	5000	1	100
14. Vozni	10000	5	600
15. Business	5000	5	400
16. Banber	8000	1	60

Broadcasting Price Armenian Radio Program 1

Time	Type	Duration (minutes)	Price (in US $)
8:00-10:00	Ad	1	15
8:00-10:00	Announcement	1	10
10:00-12:00	Ad	1	12
10:00-12:00	Announcement	1	7
12:00-16:00	Ad	1	15
12:00-16:00	Announcement	1	10
16:00-18:00	Ad	1	10
16:00-18:00	Announcement	1	7
18:00-20:00	Ad	1	8
18:00-20:00	Announcement	1	5
20:00-24:00	Ad	1	10
20:00-24:00	Announcement	1	5

Broadcasting Price of Commercial Clips and Announcements.

Armenian TV. Channel-1 and Channel-2

Time or Program	Type	Duration (minutes)	Price (in US $)	
			Channel-1	Channel-2
20:25	Advertising	1	60	30
20:25	Clips	1	70	35
20:45	Advertising	1	45	22.5
20:45	Announcement	1	30	15
Block -III	Advertising	1	30	15
Block-III	Announcement	1	40	20
During the Film	Advertising	-	70	35
During News Set	Advertising	-	80	40
During other programs	Advertising	-	60	30

XI. APPENDICES

XI. APPENDIX A.

The results of the questionnaires

1. Interest to the Western language books.
2. Need for a bookstore of Western language books.
3. The sources of books for respondents
4. The foreign languages spoken by respondents.
5. Need for a Western language books.
6. Statistical data about the preferred languages.
7. Types of books the population would like to obtain.
8. Types of dictionaries people would like to obtain.
9. Demand for Western language textbooks.
10. Demand for periodicals.
11. Demand for catalogs.
12. Need of other things to be obtained in the bookstore.
13. The average amount of money people can afford to pay for Western language books monthly.

1. Interest to the Western language books.

Statistical analysis concerning the *market-place* and bookstores show that 80% of the respondents are interested in Western language books, and 20% are not. For *colleges* and the *Western Community* we have obtained respectively (94.17% ; 5.83%), and (96.92%; 3.08%).

2. Need for a bookstore of Western language books.

Analyses show that about 85.83% of respondents in marketplace and bookstores mentioned that there is a need for such a bookstore in Armenia. For sample 2 and sample 3 we have obtained 89% and 84.62% respectively.

3. The sources of books for respondents

Approximately 35% of the respondents of *market-place* noticed that the libraries are the only sources of Western language books for them, and 65% use other sources such as home libraries, bookstores, market-place, and friends' libraries. For the *colleges* and *Western Community* we have respectively (65.83% and 34.17%) and (46.15% and 53.85%). In addition to sources mentioned above members of Western Community members also use the Peace Corps library, USIS and Papazian libraries.

4. The foreign languages spoken by respondents.

a. Sample 1. Market place.

About 23% of the respondents in market-place and bookstores speak foreign languages. Among them 72.02% speaks English, 10.07%-French, 3.60%-German, 7.04%-English and German, 5.56%-English and French, 1.85%-German and French, Spanish - 3.6%. The percentage of non-speakers of foreign languages is 77%.

b. Sample 2. Colleges

For colleges we have obtained the following information: about 90.83% of the respondents speaks foreign languages, among them 86.24% speak English, 5.5%-French, 0.92%-German, 2.75%-English and French, 2.75%- English and German, 0.92%-German and French, 0.92%-French and Italian. The remaining 9.17% do not speak any foreign languages.

c. Sample 3. Western Community

For the Western Community we have obtained the following data: 49.23% of the respondents speak English, 3.08%-French, 21.54%-English and French, 10.77%-English and German, 1.54%-English and Spanish, 3.08%-English, French, and Spanish, 1.54%-English, French, and Arabic, 1.54%-English, French, and Italian, and finally 1.54%-English, French, German, Spanish, and Turkish.

5. Need for a Western language books

About 93.33% of the respondents in the market-place and bookstores think that there is a need for Western language books in Armenia. About 6.67% of the respondents have the opposite opinion. For colleges and the Western Community we have respectively obtained (96.67% and 3.33%) and (98.46% and 1.54% cannot tell).

6. Statistical data about the preferred languages acquired from the respondents of:

a. Sample 1. Market place.

Analyses show that 56.67 % of them prefer English language books. Second priority is given to both and English and French language books (13.33%). Then the following languages are coming according to priority: English, French, German- 6.67%, French-4.17%, English, French, German, Spanish, and Italian-4.17%, English and Spanish- 3.33%, English, Spanish, and French-3.33%, German-2.5%, English-German-

1.67%, and the remaining English, French, Spanish, English, French, German, and Italian-0.83%, French, Spanish, and Italian-0.83%, and French and German-0.83%.

b. Sample 2. Colleges

For the college respondents we have the following priority list of preferred languages: English-47.5%, English and French-16.67%, English, French, and German-15.83%, English and German-4.17%, and English and Spanish-4.17%, English, French, and Spanish-2.5%, English, French, and Italian-each of 1.67%, German, English, French, German, Spanish, and Italian-0.83%, and French, Spanish, and Italian-0.83%, and finally, the only French-0%.

c. Sample 3. Western Community

The same statistics concerning Western Community sample gave the following list of priority of preferred languages: English-41.54%, English, and French-18.46%, English, French, and German-12.31%, English and German-6.15% and English, French, German, and Spanish-6.15%, English, French, German, and Italian-3.08%, English, French, and Greek-1.54%, English, French, and Spanish-1.54%, English, French, and Arabic-1.54%, English, French, Polish-1.54%, and French-1.54%.

7. Types of books the population would like to obtain.

a. Sample 1. Market place and bookstores

Analysis show that 68.33% of the respondents of market-place and bookstores prefer specialized or specialized and fiction or children books. Approximately 20.83 % of the respondents would like to obtain only fiction and 2.5% only children books, the remaining 8.33% prefer both fiction and children books.

b. Sample 2. Colleges

From respondents of colleges the 84.75% give preference to specialized books only and specialized and fiction or children books, 8.47%-to fiction only, 5.08%-to children only, and 1.67%-to both fiction and children books.

c. Sample 3. Western Community

From the analysis of the data of Western Community sample we obtained that 70.77% of respondents prefer specialized only or/and specialized and fiction or children books, 23.08%-fiction only, 1.54%-children only, and 4.62%-both fiction and children books.

8. Types of dictionaries people need in

a. Sample 1. Market place and bookstores

About 84.17% of respondents need in dictionaries, and the remaining 15.83% do not need. From those who need in dictionaries 45.54% mentioned the need of language dictionaries, 8.08%-scientific, 1.01%-programming, 4.04%-commercial, the remaining 41.33% need in combination of types of books, from which Language and Scientific-12.12%, Language and programming-5.05%, Language and commercial-2.02%, Language, Scientific, and Programming-8.08%, Language, Scientific, and Commercial-3.03%, Language, Programming and Commercial-1.01%, and Language, Scientific, Programming and Commercial-6.06%, Scientific and Programming-2.02%, Scientific and Commercial-2.02%, and finally Programming and Commercial-1.01%.

b. Sample 2. Colleges

From the analysis of questionnaires distributed in higher educational institutions we can see that 90% of respondents need dictionaries, and only 10% do not need. From those

who need in dictionaries 42.59% said they wanted to obtain the following types of dictionaries: language-26.85%, scientific-6.48%, commercial-6.48%, and programming-2.78%. The remaining 50.93% mentioned different combinations of types of books: language and scientific-14.81%, language, scientific, and programming-9.26%, language, scientific, programming, and commercial-8.33%, language and commercial-7.41%, language and programming-6.48%, language, scientific, and commercial-3.70%, scientific and programming-2.78%, scientific and commercial-1.85%, language, programming, and commercial-1.85%, and programming and commercial-0.93%.

c. Sample 3. Western Community

About 21.54% of questioned representatives of the Western Community do not need dictionaries. About 78.46% need them, from which 60.78% mentioned the need of the following type of dictionaries: language (ordinary)-54.9%, commercial-3.92%, and musical-1.96%. The remaining 39.22% mentioned the combinations of different types of dictionaries would like to obtain, among them: language and scientific-9.80%, language and commercial-11.76%, programming and commercial-3.92%, language and programming-1.96%, language, scientific, programming, and commercial-3.92%, language and programming-1.96%, language, programming, and scientific-1.96%, language, scientific, and commercial-1.96%, scientific and programming-1.96%.

9. Demand for Western language textbooks

a. Sample 1. Market place and bookstores

About 82.5% of respondents in market-place would like to obtain textbooks, from which 72.73% preferred to have textbooks with audio tapes, 18.18%-with videotapes, and 9.09%-both types. The remaining 17.5% are indifferent to the foreign language textbooks.

b. Sample 2. Colleges

The survey of college students showed that 83.33% of respondents would like to obtain foreign language textbooks from which 49% gave preference to the textbooks with audio tapes, 31.00%-to textbooks with videotape, and 20.00%-t0 both types of foreign language textbooks. Only 16.67% of respondents had not willing to obtain foreign language textbooks.

c. Sample 3. Western Community

However, there is a marked difference in the data of Western Community sampling. Here the percentage of respondents willing to obtain foreign language textbooks comprised 52.31%. Among them 52.94% would like to obtain textbooks with audio tapes, 11.76% with videotape, and 18.46%-both type of textbooks. The remaining 47.69% were not need in foreign language textbooks of any type.

10. Demand for periodicals

a. Sample 1. Market place and bookstores

The 16.67% of respondents in market-place and bookstores mentioned that they would like to obtain Western language periodicals. Among them 59.09% mentioned magazines, 27.27%-newspapers, 11.36%-both magazines and newspapers. Those who would like to obtain Western language magazines and newspapers listed particularly the following titles of journals: Anglia, Time, National Geographic, Economist, New Scientist, Art, Fortune Vogue, Fishing in California, Vanity fair, Plasters, and Byte PC magazines, and titles of newspapers: Financial Times, Paris Match, Le Monde, L'Umanite, and Figaro. The remaining 63.33% were indifferent to the periodicals.

b. Sample 2. Colleges

Approximately 80.33% of college respondents mentioned that they would like to obtain Western language periodicals. Among them 51% mentioned magazines, 34%-newspapers, and 15.00%-both magazines and newspapers. Only the 20% were not willing to obtain Western language periodicals.

c. Sample 3. Western Community

For the Western Community we got the following data. Only 7.69% would not like to obtain periodicals, the majority, about 92.31% had the opposite opinion. Among them who would like to obtain periodicals 23.33% mentioned magazines, 11.67%-newspapers, and 65%-both magazines and newspapers.

11. Demand for catalogs

a. Sample 1. Market place and bookstores

About 31.67% of respondents in market-place and bookstores would like to obtain Western language catalogs. They listed the following titles: Catalogue of fashion (particularly Burda), scientific, furniture design, art, business, physics, political, medicine, massage, everyday, automobiles, apparatus.

b. Sample 2. Colleges

About 50% of respondents of higher educational institutions said they would like to obtain Western language catalogs. Those who are interested in catalogs mostly mentioned the following names; Publishers, Environmental, Fiction, Technology, medical, design, Computer, Book catalogs.

c. Sample 3. Western Community

The situation is different with the Western Community sample. The 69.23% did not wish to obtain catalogs, and 30.77% wish. Those who would like to obtain catalogs mentioned the following titles: Publisher, environmental, nutritional, souvenirs, fiction, technology, fashion, shopping on catalogs, medicine, design, computer, scientific, and physics.

12. Need of other things to be obtained in the bookstore.

a. Sample 1. Market place and bookstores

About 65% of respondents in the market-place found that there should be only books in Western language bookstore in Armenia. About 35% of respondents had opposite opinion. They expressed willingness to obtain other materials as well in such a bookstore. Those who would like to obtain other things in a Western language bookstore mentioned the following materials: stationery, maps, calendars, medicaments, diafilms, information bulletins, films, materials concerning radio technologic equipment, souvenirs, clothes, shoes, cigarettes, disks, printing materials, diskettes, and the like.

b. Sample 2. Colleges

We can see radically opposite opinions of higher educational institution respondents. Only 18.33% found unnecessary to have other materials sold as well as books in such a bookstore. The majority, about 81.67% would like to find also other materials such as stationery, shoes, clothes, videotapes, traveler books, maps, business directories, office supplies, movies, computer materials, and the like.

c. Sample 3. Western Community

The opinion of Western Community members differs very much from both market-place and bookstores, and higher educational institution respondents. About 52.31% of respondents think that the bookstore should be only for books. The remaining 47.69% express willingness to obtain other materials also in western language bookstore. The most often appeared type of materials mentioned were: stationery, local maps, travel and tourist books in the surrounding area, stamps, post cards, business and scientific directories, office supplies, video/audio tapes, software, calendars, photographic materials, also clothes, shoes, clothing with Armenian college logos.

13. The average amount of money respondents can afford to pay for Western language books monthly in order to have possibility to determine the available average price of Western language books to be imported. Perhaps this is the most difficult question in our questionnaire, therefore we have faced some crucial moments. Not all the respondents in the three samples answered this question or answered it partially. Therefore, a different number of questions from these questionnaires of all three samples were discarded because of incomplete or unreliable data.

a. Sample 1. Market place and bookstores

From the survey in the market-place and bookstores we obtained the following information: the results of 50 (42.67% related to total amount) questionnaires were discarded because of incomplete or unreliable data, from which 34 (68% in relation with discarded questionnaires) were not filled out, 2 (4%-from discarded ones) respondents mentioned that it was difficult to answer the question, 9 (18% from discarded) respondents answered that they would pay for necessary Western language books as much money as they could afford . And 5 (10% from discarded) questionnaires were discarded because of unreliable data. In these two questionnaires the respondents mentioned that they