



THE ENERGY IN ALBANIA



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Albania-EU Energy Efficiency Centre



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AWARENESS CAMPAIGN "PROMOTION OF PAYMENT OF ELECTRICITY AND EFFICIENT USE OF ENERGY IN ALBANIA"

The awareness campaigns are actions that contribute in improving the society through efforts to influence the behaviour of people. An awareness campaign could be addressed also to the highest levels of administration.

The energy and especially the electricity crisis are an everyday and vital problem for the Albanian population. During the last two years, especially during the winter period, this crisis reaches the peak and forced electricity supply interruptions lasts for several hours. Such interruptions are effecting too much the residential and service sectors, which now are the biggest electricity consumers and are responsible respectively for about 60 % and 13 % of the country's electricity consumption. Under the current situation, where abusive use and non-payment of electricity is widespread, there is small possibility to increase the price of electricity that remains under its marginal cost. On the other hand, there is no incentive for new investments or rehabilitation in the Power Sector. Initiatives for independent power producers (hydro or thermal power plants) or combined heat and power producers (co-generation schemes) are also suspended. It is evident that it is difficult to advise people to save energy or introduce renewable energy sources when they easily can get energy free of charge. Promotion of payment of electricity bills, efficient use of energy and use of

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Address:

Blvd. "Zhan D'Ark", No. 2, Tirana, ALBANIA

P.O. Box 2426

Tel: + 355 4 233835 Fax: + 355 4 233834

Email: aleueec@icc-al.org

Internet: www.eec.org.al

alternative energy sources in household and service sectors are important contributions to reduce the energy consumption and its negative impact on the environment. Taking into consideration the country's energy demand and energy resources situation, as well as the role that the household and service sectors consumption plays in them, the Albania-EU Energy Efficiency Centre (the Centre) believed that there were very good reasons to undertake another awareness campaign consisting of a number of actions that will contribute in the promotion of Payment of Electricity Bills, Energy Savings through Efficient Use of Energy, and Use of Alternative Energy Sources in Albania.

Based on the previous experience, the Centre believes that the written and electronic media should be considered as the most efficient communication tools to increase the population awareness and should be strongly used in order to secure a successful implementation of each awareness campaign. Before the implementation of this awareness campaign, the Centre has selected about 10-12 journalists from the written and electronic media, which were trained and became familiar with energy related problems that affect the actual energy crises. In this way, the selected journalists have played an active role to make aware the general public about the energy problems and to push the Government and the responsible energy institutions to improve the situation, by taking different measures in order that the coming winter should not be worse and boring as the previous one. In this framework, in May 2001, the Centre together with Public Affairs Section of American Embassy in Tirana have prepared a work programme and also have agreed for the co-financed budget necessary for the implementation of this public awareness campaign. This campaign was organised during October - December 2001, and was designed as follows:

Round Table and Training of the Journalists

At the end of July 2001, at the Centre's premises, the Centre's experts have organised three round table discussions and training of the journalists from different Newspapers and TV stations. After a short explanation of the main factors, which affect the actual energy crisis, in the training material were shown the directions to be followed and the necessary steps to be taken in order that the energy crisis stops and the situation improves. At the end of the training material were drawn the necessary conclusions for the improvement of the situation in Albanian Energy Sector. Each journalist has received a full copy of the prepared Training Material. During the round table discussions and training, to the journalists were explained not only the aims and the main expected outputs of the awareness campaign but also were defined and explained the tasks that each journalist of the written and electronic media has to undertake. Separately, with each journalist from the newspapers or TV stations, was discussed and agreed about articles, TV reports and interviews to be prepared, and the problems that they will deal with.

Poster

The work has aimed to prepare a Poster, which could simply communicate with general public, make it aware about the energy crisis, present what it is requested to do, and what should be done for improving the situation. About 2,000 copies of the

Poster were prepared and distributed to all the affiliates of Albanian Power Corporation in Tirana and further they were placed on billboards at the most visible places around Tirana media's premises, schools, enterprises, places appointed by the municipality, etc. The Poster has given a special message to people about the importance of paying the electricity bills, saving energy and use of alternative energy sources in their homes and businesses.

TV Spots

Considering the experience gained from the previous campaigns, the impact of the television means has been the most significant one. This is the reason why TV Spots component has constituted an important part of this Campaign. The TV spots have aimed to make aware the general public respectively about utilisation of alternative energy sources (for cooking and heating), and utilisation of solar energy (for sanitary hot water). The prepared TV spots were broadcasted two times a day for fifteen days, in Albanian Public Television and in private channels such as "TV Klan", "TVA" and "TV Norba". The TV spots were prepared with very attractive ideas and fulfilled the objectives of the campaign.

Posters on the Newspapers

In the previous campaigns, the impact of publication on newspapers of the campaign posters has been very significant. Considering this experience, the campaign's poster was published for fifteen days on newspapers "Shekulli", "Koha Jone" and "Gazeta Shqiptare". This campaign was completed from 22.10 to 11.11.01.

TV Reports

From August to November, the Centre's experts have collaborated with the journalists on preparation of a few TV reports, until the desired TV reports quality was reached. The TV reports were broadcasted in the above-mentioned TV channels.

Seminar

During October, the Centre has organised the seminar "Payment of the Consumed Electricity, Efficient Utilisation of Electricity, and further Utilisation of Alternative Energy Sources - A Necessity for Improvement of the Energetic Situation in Albania". The main topics of this seminar were:

1. Energy resources and their utilisation in Albania,
2. Current energetic situation and measures to be taken,
3. Use of renewable and other alternative energies for electricity,
4. Energy policy for improving the energy situation in buildings stock and introduction of the central heating systems,
5. Legislative and other barriers to overcome this energy crisis,
6. Role of the written and electronic media in dealing with energy and electricity related problems.

In the seminar were invited about 110 specialists and experts from different Albanian Energy Institutions. During the seminar were presented 19 papers, 2 of them by the Centre. The Centre's experts have gathered all the papers and materials to be presented in it. After improving and translating them, the Centre has produced 70 copies of the seminar proceed-

ings in the Albanian language, which during the seminar were distributed to the participants.

This seminar was highly evaluated by all the participants for the high level of the papers presented. It will help to overcome some barriers and find the ways out of the critical energetic situation in Albania. This seminar will also help the decision-makers in finding the right solutions for planning and developing the Albanian Energy Sector. At the end of the seminar, all the participants have approved a Resolution on the seminar conclusions, problems of the energy sector and the necessary steps to be undertaken for improving the very difficult energy situation in the country. Copies of the seminar proceedings and the resolution were handed to the Albanian Prime Minister, Minister of Public Economy and Privatisation and State Minister for Energy.

Round Tables Discussions on TV

TV discussions have an important role in changing human behaviour. Two round tables were organised during November. They are successfully organised with the participation of very high officials and responsible experts from the Albanian Power Sector such as the Ministry of Public Economy & Privatisation, State Minister for Energy, Albanian Power Corporation, National Agency of Energy, Regulatory Board for Electricity, Electricity Police, the Centre, etc. During the round tables was discussed about the importance of the problems, the possible solutions as well as what everyone, governmental institutions, media, and general public, can contribute for the improvement of the situation. The round tables has given special messages to people about the importance of paying the electricity bills, saving energy in their homes and businesses, energy policy, and steps to be undertaken from the Government for improving the very difficult energy situation. The round tables were broadcasted by Albanian Public Television.

Opinion Survey

In order to have a feedback on the results, to measure the impact of the campaign and to identify which of the communication tools is more efficient to increase the population awareness, the Centre carried out a detailed public opinion survey at the end of the awareness campaign. During December, a group of energy experts undertook this public opinion survey. A questionnaire designed for this purpose and related to the aims of campaign, the way in which it is carried out, etc., was distributed and filled out, by randomly selected consumers. For this, a group of students filled out about 500 questionnaires by interviewing consumers in the area of Tirana City. At the end, the group of energy experts worked on and prepared a detailed report. The analyses of the answers of the interviewed consumers indicated how efficient the campaign was.

One of the conclusions arising from this public opinion survey is that the work done by the Centre to inform the general public has been very useful, making possible for each family or other consumer to understand better the importance of the electricity payment, efficient use of energy sources, substitution of electricity with LPG for ensuring space heating, and utilisation of solar energy for meeting energy demand for domestic hot water. The final conclusion of this public opinion survey is that even with the really good results of the aware-

ness campaign, there is still a lot to do in order to inform as much as possible the general public about electricity payment, substitution of electricity with LPG, promotion of solar water heating systems in Albanian households. The results of the opinion survey showed that most of the interviewers are informed about it by the TV informative programs, TV reports and TV spot, from discussions between friends and poster as well.

Final Remarks

Evidently, an awareness campaign can not be considered as a means that could radically improve the situation, but it is a very efficient means that can smoothly change the human behaviour and consequently bring steady improvements in the long term. Based on the very promising results of this awareness campaign, in the future the Centre will continue to work in this field. The Centre believes that this campaign has contributed in Promotion of Payment of Electricity Bills, Efficient Use of Energy and Use of Alternative Energy Sources in Albania. The solutions for the energy crisis can not be achieved within days or weeks, and besides the measures taken by the Government and the Albanian Power Corporation all the citizens have to understand the situation and give their contribution for improving it. Other alternative energy sources such as LPG, solar energy, etc., have to be utilised instead of electricity, in order to improve the situation.



Dr. Eng. Edmond HIDO
Director
Energy Efficiency Centre

FEASIBILITY STUDY FOR REHABILITATION OF FIER THERMAL POWER PLANT

Introduction

The first thermal power plants installed in Albania in the early and mid 1950s at Tirana (coal), Maliq (coal), Kucova (heavy fuel oil), Vlora (heavy fuel oil) and Cerrik (heavy fuel oil) had capacities smaller than 10 MW. All of 9 thermal power plants installed were designed to produce both heat and power. Four of them (Ballshi, Kucova, Cerrik, and Fier) are dedicated plants supplying only heat to the respective refineries, and the other five were planned to supply electricity and heat to a variety of end users. Only Fier TPP is operating nowadays, with a reduced operated capacity of 8-35 MW. The Albanian Power System relies practically only on hydropower plants (99 %) and therefore it is totally dependent on hydrological conditions that means that it is vulnerable and unreliable. It is important to point out that Drin River Cascade production system can supply the installed yearly capacity only if the cascade accumulation basins are refilled fully six times per year. During the last two seasons, water inflow was the lowest ever recorded, so refilling of the basins has been far below the requirements. Being in such difficult situation, the rehabilitation of Fier TPP has been considered as priority from Albanian Government.

Harza Engineering (an American Company), in collaboration with National Agency of Energy (NAE) and specialists of Fier TPP has started since July 2001 the evaluation of technical and economic feasibility of rehabilitation of some or all units of the Fier TPP. Being before this task, NAE, together with American specialists undertook an energy audit at Fier TPP. The aim was to establish a detailed database for analyzing the operation of Fier TPP from 1997 to 2001. This database was created to serve the energy audit and so, to give the main indicators of Fier TPP. The analysis was realized for both Chinese and Czech units, in different periods, from 1997 to 2000. Following we are describing shortly the main indicators for Fier TPP.

Active and Reactive Power of Fier TPP

As may be seen from Figure 1, Fier TPP has been operating with a minimal active power 7-10 MW almost during all this period. While the maximal active power of Fier TPP has been 55 MW during these five years. On these five years analyzed, the Czech unit has operated only three seasons. The minimal reactive power of Fier TPP has been 25 MVar and the maximum has been 100 MVar. If we compare average reactive power with active power from Fier TPP we have a ratio of 2-4 between them. It means that Fier TPP has served all these years more as generation point for boosting voltage than an active generation point.

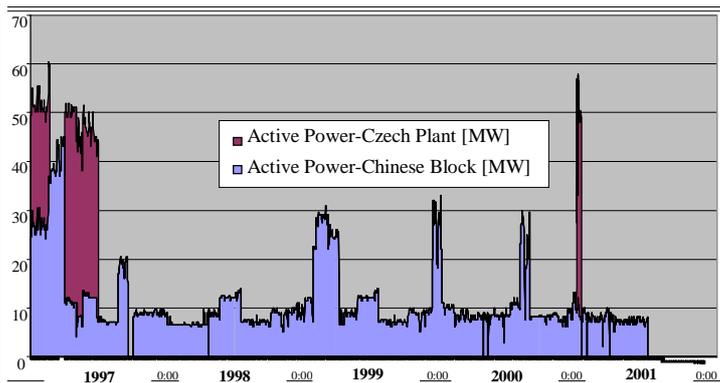


Figure 1. Active Power of Fier TPP during the four seasons (one week for each season) for the years 1997-2001 (in MW)

Electricity Generation from Fier TPP

Yearly electricity generation from Fier TPP for the period 1997-2001 is shown in Figure 2. As it is shown in this figure, electricity generation during these years is done mostly from Chinese units, which has contributed on the yearly bases to 60-100 % of total electricity generation from Fier TPP. As primary fuel, Fier TPP is using residual fuel oil and, as ignition fuel, heavy fuel oil, which has lower viscosity and higher net calorific value (NCV).

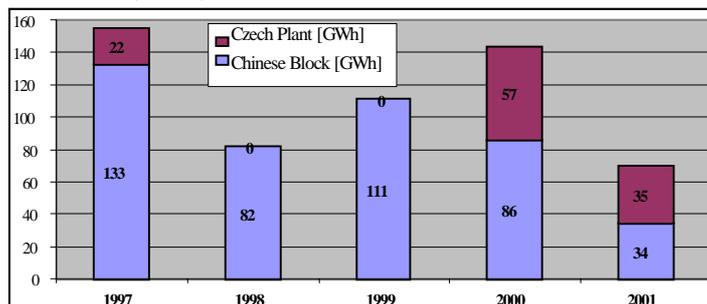


Figure 2. Electricity Generation from Fier TPP during 1997-2001 [in GWh]

than residual fuel oil (mazut). Average NCV for it has been almost 38,678 kJ/kg.

Unit Cost of Electricity Generation from Fier TPP

At last let analyze the unit cost of fuel and total unit cost for generation of a unit of electricity. Figure 3 shows the trend of residual fuel oil price supplied, the trend of Rotterdam (ARA) residual fuel oil price (FOB) and exchange rates between USD and Lek during the period 1997-2010. Figure 4 shows the trend of fuel rate cost for electricity generation during the period 1997-2010.

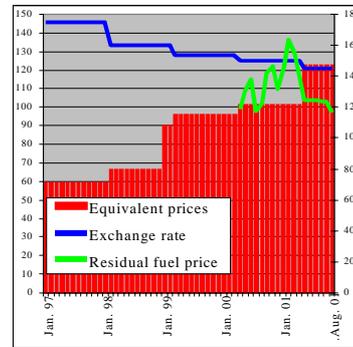


Figure 3.

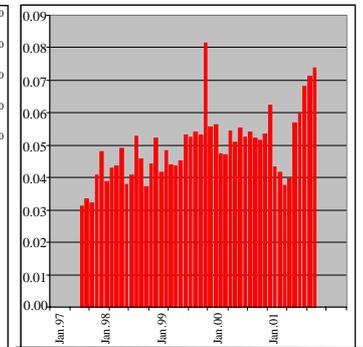


Figure 4.

As it is shown in Figure 3, residual fuel oil price supplied by ARMO (Fier refinery) to Fier TPP has been increased year by year. Actually this price is 122.76 USD/ton, which is higher compared with world price of residual fuel oil (20.08.01, 89.92 USD/ton). This price is comparatively higher even for some other important reasons: Albanian residual fuel oil has in its content 6-8 % sulphur, its cinematic viscosity is very high around 250-400 °E at 100 °C, while international residual fuel, which has higher net calorific value (39,767 kJ/kg), has very low percentage of sulphur (lower than 3.5-4 %) and very low cinematic viscosity (around 30-70 cS at 82.2 °C). So, it is important to negotiate for lower prices of residual fuel oil between ARMO (Fier refinery) and Fier TPP. Ministry of Public Economy and Privatization should resolve this key problem in favor of both sectors: KESH and APC (ARMO).

The total unit cost of electricity generated has varied between 5 -14.5 UScent/kWh, the lowest values being during the months when both Chinese and Czech units are in operation. This has reduced the fuel cost (because Czech unit has higher efficiency) and also reduce the unit cost for other components like labour, maintenance and depreciation.

As a final conclusion of this section, we may underline that is very important and urgent to rehabilitate Fier TPP not only for technical and safety reasons but because its unit cost of electricity generation is very high. Rehabilitation will bring higher technical availability, higher safety to the staff of thermal power plant and for sure lower unit cost of electricity generation.

On the second part of this article will be described what is the best rehabilitation scheme for Fier TPP.

(.....continued on next issue.....)

Dr. Eng. Besim ISLAMI
Vice Chairman
National Agency of Energy