

THERMAL INSULATION OF BUILDINGS

Reduces Your Energy
Consumption for Space
Heating & Cooling

and

..... Saves Your Money

Different Temperature



Constant Temperature

20°C

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NEWSLETTER

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Address:

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

P.O. Box 2426

Tel: + 355 4 233 835 Fax: + 355 4 233 834

Email: info@eec.org.al

Internet: www.eec.org.al

THE ENERGY IN ALBANIA



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PROJECT "THERMAL INSULATION OF BUILDINGS STOCK - A WAY TOWARDS ENERGY CONSERVATION IN ALBANIA"

1. Background

Reduction of electricity consumption in buildings through thermal insulation of buildings stock is one of the priorities of Albanian Government. This priority is clearly included in the following documents:

- "National Strategy of Energy" approved by Albanian Government, June 26, 2003.
- "Action Plan for the Implementation of National Strategy of Energy for the Period 2003 - 2005" approved by Albanian Government, September 19, 2003.

On the demand-side management, the National Strategy of Energy includes a number of energy efficiency measures. Among them, thermal insulation of buildings stock is an important measure. With increasing energy prices and especially electricity prices, thermal insulation of buildings stock will become more viable economically. The households and public buildings are between the biggest energy consuming sub-sectors in Albania. They consume large quantities of electricity, fuel wood and LPG, which has contributed to the country's current severe energy situation. Around 82 % of electricity and 30 % of all energy sources are consumed only by the residential sector, and most of it (26 %) is used to provide the space heating. During the last years, in Albania, more and more energy is consumed also for air-cooling. Buildings in Albania have

been constructed with little concern for energy efficiency, since before 1990 the main driven factor has been the construction of buildings with the lowest costs.

The improvement of thermal insulation for the existing buildings and construction of new public buildings based on the new Albanian Energy Building Code (approved by the Parliament on September 16, 2002) will make possible the reduction of the energy used for space heating and cooling in buildings. On one side, this will also help to smooth electricity supply difficulties, and on the other side, the energy savings will make possible to use less energy commodities in order to fulfil the heating and cooling needs and, consequently, less pollutants will be thrown on the environment. While for the new constructions, the law foresees precise measures to achieve the necessary levels of thermal insulation, nothing is done to change the situation of the existing buildings stock. Only a project implemented in Korça by the Albania-EU Energy Efficiency Centre (EEC), during 2004, through the rehabilitation of four Public Buildings has shown a way to change and improve the situation of the existing buildings stock. Thermal insulation of enveloped (external) surfaces in existing buildings stock is the biggest concern and should be addressed in order to change the situation in buildings heating sector. The existing buildings do not fulfil the Albanian Energy Building Code conditions, they have walls with a high coefficient of thermal losses and bad insulated windows & doors, and consequently they result with great energy/heat losses.

In this framework and to show a way to change and improve the situation, during November 2006 - January 2007, the EEC has implemented an Energy Efficiency Project in the Low-income Building No. 624 in Elbasan Municipality. For this building, a total budget of 27,275 USD has been allocated for the implementation of three recommended energy efficiency measures and interventions as it was foreseen in the Energy Survey and Audit conducted by the EEC. The energy efficiency measures and interventions implemented in the Low-income Building No. 624 have included:

1. Thermal insulation of the outside/external walls,
2. New double glass windows,
3. New double glass balcony doors.

Under such circumstances, feeling the responsibility of the role to play, the Albania-EU Energy Efficiency Centre (EEC) in collaboration with Alliance to Save Energy (ASE) in Washington DC and financially supported by USAID - Tirana Office, in the framework of the project "Thermal Insulation of Buildings Stock - A Way towards Energy Conservation in Albania", carried out a set of tasks to support the solution of the above-mentioned issues.

2. Project Description

The project has aimed to mark a shift and show the ways to reduce the energy consumed for space heating and cooling in existing buildings stock. The overall objective was the promotion and introduction of thermal insulation of existing buildings stock as a way to reduce the energy consumption for space heating and cooling in existing buildings. The project has consisted of the following main tasks:

Task 1 - Feasibility Studies on Energy Savings and GHG Emis-

sions Reduction through Thermal Insulation of Several Types of Existing Buildings in Different Climate Zones in Albania.

Task 2 - Market Survey to Evaluate the Demand in the Albania for Installation of Thermal Insulation in Existing Buildings.

Task 3 - Organization of a Public Awareness Campaign on the Benefits from Thermal Insulation of Buildings.

All activities of this project have been implemented in coordination with ASE and the involved benefiting Albanian municipalities.

3. Activities Under the Project

The First Task has consisted of conducting several Feasibility Studies (FS) in order to evaluate and measure the Energy Savings and GHG Emissions Reduction resulting from introduction of thermal insulation in selected existing buildings. The EEC has performed the following activities:

1. Define the climate zones for conduction of FS.
2. Select the buildings for conduction of FS.
3. Provide types of the buildings and identify the structures of walls in the selected buildings.
4. Conduct 30 FS (that represent 3 zones and 5 cities). The cities are Tirana, Shkodra, Pogradeci, Burreli and Korça.
5. Calculate expected and actual energy savings and GHG emissions reduction as a result of thermal insulation of walls and ceilings and other weatherization techniques like weatherizing doors and windows, for each type of building.
6. Write the reports and draw the conclusions.

The Second Tasks has supported a Research and Market Survey in order to evaluate and measure the potential for installation of thermal insulation in existing buildings. Using the findings from Task 1 regarding the likely energy savings and GHG emissions reductions, Task 2 has surveyed the households, in the main 5 cities, to ask questions that have revealed the market potential of thermal insulation. The EEC has performed these activities:

- Define zones and the sample of the market survey.
- Design the questionnaire for the market survey.
- Define the interview process and test the questionnaire.
- Conduct the interviews.
- Design the software program for data elaboration.
- Prepare the database and elaborate/analyze the data.
- Evaluate the market potential for thermal insulation.
- Write the report and draw the conclusions.

The Third Task has consisted of the implementation of activities aiming to raise the awareness among policy makers, local government and business decision makers, general public and individual investors for the environmental and energy costs and benefits from thermal insulation of existing stock of buildings. The EEC has organised a Public Awareness Campaign at the national level. The awareness campaign has consisted of the following activities:

1. Leaflet - The Leaflet gave a short introduction of the Albanian building sector situation, its energy consumption, methods of thermal insulation of buildings, introduction of two energy efficiency pilot demonstration projects implemented by the EEC and the photos of energy efficiency measures already implemented, as well as the environmental and energy costs & benefits from thermal insulation of existing buildings stock in Al-

bania. During the awareness campaign, the EEC has distributed about 2,000 coloured Leaflets around 15 main cities of Albania, media and municipalities' premises, schools, enterprises, as well as the city quarters consisted on 4-5 floor buildings that were build before '80 or '90, etc.

2. *TV spot* - Considering the experience gained from the previous campaigns, the EEC experts believe that the impact of the television means has been the most significant one. This is the reason why the TV Spot component has constituted an important part of this public awareness campaign. The TV Spot has mainly transmitted to the general public the idea of the awareness campaign, the advantages of the thermal insulation of the buildings stock, the benefit on environment, etc. A 35 seconds TV Spot has been produced and broadcasted for 20 days by 5 TV channels situated in Tirana, Shkodra, Korça, Pogradeci and Elbasani.

3. *Poster* - The work has aimed to prepare a Poster, which could simply communicate with general public, and make it aware about the building sector situation, energy crisis and advantages of the thermal insulation of the building stock as one way for changing and improving the situation. During the awareness campaign, 1,000 coloured Posters have been placed the on billboards at the most visible places around 15 main cities of Albania, media's premises, schools, enterprises, places appointed by the municipalities, etc.

4. *TV Round Table* - A Round Table discussion has been organised with the participation of relevant experts and responsible persons of the Ministry of Economy, Trade and Energy, National Agency of Energy, Albania-EU Energy Efficiency Centre, energy experts, etc. The Round Table Discussion has been focused on the awareness campaign, the energy crisis and the advantages of the thermal insulation of the building stock as one way for improving the situation, etc. The participants have given a short introduction of the building sector situation, its energy consumption, ways of thermal insulation, what has been done in two energy efficiency pilot demonstration projects implemented by the EEC, and the photos of energy efficiency measures already implemented.

After this Awareness Campaign has been completed, for more than 15 days, many persons, individual investors and companies have called or visited the EEC offices for asking detailed information about the methods of thermal insulation of buildings, materials to be used, costs of different methods of thermal insulation, projects implemented by the EEC, the environmental and energy costs & benefits resulting from thermal insulation of their own buildings.

4. Final Remarks

The project has started in April 2005 and it is implemented until April 2007. This project can be considered as an important step in introducing to the Albanian residential sector the issues such as efficient management of energy resources, thermal insulation of existing buildings stock and consequently help to bring steady improvements in the long term. In accordance with the self-governance law for municipalities and related obligations, the thermal insulation can also help Albanian municipalities to reduce their expenses for space heating and cooling in municipality buildings, and to allocate the money saved for other necessities. Also it could become a way how to cope with energy poverty and to improve the social welfare

on the municipal level. The successful implementation of this project is very crucial to the further development of municipal energy efficiency networks and the improvement of energy supply situation in Albania. The conclusion arising from this project is that the work done by EEC to inform the policy makers, local government and businesses, general public and individual investors has been very useful. This project had a great impact by communicating to them and making them aware about the building sector situation, the energy crisis and the advantages of the thermal insulation of the building stock as one way for changing and improving the energy situation. The EEC will continue to promote and advocate the efficient management of energy resources and the energy conservation in buildings throughout the country.



Dr. Eng. Edmond M. HIDO
Director
Albania-EU Energy Efficiency Centre

PROJECT "LOT 4: ENERGY EFFICIENCY" OF THE KFW PROGRAM IN ALBANIA

1. Background

This paper outlines the activities undertaken and progress achieved under the Project "Lot 4: Energy Efficiency (EE)" of the Program "Promotion of Renewable Energies and Energy Efficiency" financed by the German Bank KfW and carried out by EXERGIA S.A. This project has started in January 2007 and will continue until March 2009. Under this project, KfW Bank will finance 3.5 MEURO for improvement of Energy Efficiency (EE) in the Albanian Public Buildings, Private Services as well as Industrial Enterprises. Based in the Term of Reference, the overall objective of the Program is to promote economic growth and productivity enhancement in the Albanian economy. The project consists of the following tasks:

- Promote EE potentials.
- Assist potential investors in defining EE investment projects taking into consideration technical, environmental, social, economic and financial aspects.
- Establish various project documents, assist in the procurement, supervision and acceptance of different EE constructions and/or installations.
- Assist the National Agency of Natural Resources (NANR) in the role of Program Executing Agency (PEA) in building up a pipeline of EE projects.
- Consult and train PEA and other institutions' personnel for assessment of investments and operation.

2. Project Progress and Results

For the first project period, these targets have been met:

- Project office and facilities have been established and project staff has been mobilised.
- Contacts and collaborations with key Albanian organisations have been developed.
- Extensive field work for identification of project pipeline, including energy audits, has been performed. Up to now have

been visited and carried out simple energy audits in 31 Albanian public buildings as well as have been identified 12 industrial buildings. Recently, a new sector is added to the list: hotels in the tourist areas and hotels that are big consumers of electricity.

• Pre-feasibility studies for promising potential EE investments are in advanced progress. Up to now are finished 4 feasibility studies for public buildings, 2 for industry and 10 others are in the progress.

During the initial project period, know-how transfer was provided through discussions, provision of information and collaboration during the site visits.

3. EE Project Pipeline

During the first period of this project, the main effort of the Consultant was to identify projects and prepare draft project concepts for facilities of the broader public sector, as most organisations do not have the expertise and capacity to identify and propose projects by their own means. The geographical distribution of sites visited was also considered. The site visits and short audits identified that many public buildings are in bad condition from energy efficiency point of view, with inadequate and poorly designed and maintained energy installations i.e. lack of proper heating system, no wall/roof insulation, single-glass windows with extensive air draughts, unacceptable thermal comfort conditions, extensive use of electricity for heating, steam leaks, boiler poor efficiencies, etc. It became obvious that in certain cases the interventions will improve the comfort level rather than reduce actual energy consumption. In this respect, the comfort level should be taken into account in our cost and benefit calculations. The Team performed a first screening of potential projects on the basis of information obtained and the results of site visits. The criteria for this screening included:

1. Scope for EE interventions.
2. Acceptance / Implementation risk.
3. Replicability and demonstration effect.
4. Social sensitivity related to the investment.

Ranking of sites was done on the basis on the above mentioned four qualitative criteria.



Dr. Eng. Besim ISLAMI
Energy and Environmental
Consultant

WORLD RENEWABLE ENERGY CONGRESS X AND EXHIBITION

1. Congress Mission Statement

At no time in modern history has energy played a more crucial role in the development and well being of nations than at present. The source and nature of energy, the security of supply and the equity of distribution, the environmental impact of its supply and utilization, are all crucial matters to be addressed by suppliers, consumers, governments, industry, academia, and finan-

cial institutions. The World Renewable Energy Congress (WREC), a major recognized forum for networking between these sectors, addresses these issues through regular meetings and exhibitions, bringing together representatives of all those involved in the supply, distribution, consumption and development of energy sources which are benign, sustainable, accessible and economically viable. WREC enables policy makers, researchers, manufacturers, economists, financiers, sociologists, environmentalists and others to present their views in Plenary and Technical Sessions and to participate in discussions, both formal and informal, thus facilitating the transfer of knowledge between nations, institutions, disciplines and individuals. WREC acts as a reminder to everyone in our planet to do his best in conserving, reducing and rationalising the use of energy in order to stay in existence. The recent World Renewable Energy Congress IX in Florence, Italy, attended by more than nine hundred participants, signalled the increasing importance of renewable energy, but much effort is still required whether collectively or individually to make it a major energy supplier.

2. Congress Dates to Remember

All papers will be subjected to a full reviewing process before being accepted. The accepted papers will be published in the proceedings by Elsevier. All abstracts must be written in English and no more than one page A₄ in length. Full papers must be no longer than 6 pages. The key dates are:

- March 14, 2008 - Last date for receiving abstracts,
- April 15, 2008 - Acceptance notification of abstract,
- May 5, 2008 - Last date for receiving full papers, and
- May 15, 2008 - Acceptance notification of full papers.

3. Congress Organization

Host Chairman: Prof. Joe Clarke, ESRU, UK.

National Advisory Committee Chair: Mr. Philip Wolfe, USA.

Congress Chairman: Prof. Ali Sayigh, WREC, UK.

Exhibition Contact: Ms Alison Shamwana, WREC X 2008, Concorde Services Ltd. 4B, 50 Spiers Wharf Glasgow G4 9th, UK, Tel: + 44- (0) 141-331-9123, Fax: + 44- (0) 141-331-0234
Email: alison.shamwana@concorde-uk.com

The exhibition will be held on 20-25 July 2008 at Glasgow Scottish Exhibition Centre.

4. General Information

Congress Date: 19-25 July 2008.

Congress Place: Glasgow, Scotland, UK.

Congress Venue: Scottish Exhibition & Conference Centre.

Congress Hotel: Menzies Glasgow Hotel, 27 Washington Street, Glasgow, G3 8AZ.

Congress Registration: Pre-registration for this conference will be required. Early Bird registration by 25 May, 2008.

Organised by: World Renewable Energy Congress, Brighton, UK.

For more information about the Congress and Exhibition contact www.wrenuk.co.uk or www.wrecuk.co.uk

Dr. Eng. Edmond M. HIDO
Member
International Steering Committee