



THE ENERGY IN ALBANIA



Qendra e Eficiencës së Energjisë Shqiptëri-B
Albania-EU Energy Efficiency Centre



THE ENERGY IN ALBANIA (NEWSLETTER)

Other issues are available on EEC website

PUBLISHED BY THE
“ALBANIA-EU ENERGY EFFICIENCY
CENTRE” (EEC)

ISSUE NO 36 • SEPTEMBER 2006

PROJECT “RENEWABLE ENERGY COORDINATED DEVELOPMENT IN WESTERN BALKAN COUNTRIES”

1. Background

The energy sector in Western Balkan Countries can be characterized by a high proportion of fuel imports, significant environmental impacts and economic incapability of a part of the population to satisfy its basic energy needs. These problems originate from the social, economic, and policy instability of the region. The current non-sustainable energy use patterns in Western Balkans Countries stem to a large degree from the political, social, and financial instability of the region. To change these patterns, there is a need to address the full range of activities necessary to overcome the barriers to large-scale penetration of Renewable Energy Sources (RES). An integral part of the solution of these problems is a large-scale of RES utilization. The EU directives also encourage the utilization of RES. Moreover, this would be an important step to the desired EU membership of the Western Balkan Countries. However, today the proportion of RES utilization in the total energy generation in Western Balkan Countries is very low. There are no clear priorities within this area as well as there are no comprehensive and complete studies that evaluate the opportunities to RES utilization. Under such circumstances, feeling the responsibility of the role to play, Albania-EU Energy Efficiency Centre (EEC) in collaboration with Black Sea Regional Energy Centre (BSREC) of Bulgaria, Centre for Economic, Technological and Environmental Development

Inside this Issue

- PROJECT “RENEWABLE ENERGY COORDINATED DEVELOPMENT IN WESTERN BALKAN COUNTRIES”
- GLOBAL CLIMATE CHANGE AND ALBANIA – THE FUTURE BELONGS TO CLEAN ENERGIES
- HYDROENERGY RESOURCES IN KOSOVA

NEWSLETTER

published by the

“Albania-EU Energy Efficiency
Centre” (EEC)

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

(CETEOR) of Bosnia & Herzegovina, Energy Institute “Hrvoje Pozar” (EIHP) of Croatia, Macedonian Geothermal Association (MAGA) of Macedonia, National Agency for New Technology, Energy and Environment (ENEA) of Italy, and Faculty of Mining and Geology at the University of Belgrade (UB, FMG) of Serbia and financially supported by European Community, in the framework of the project “Renewable Energy Coordinated Development in the Western Balkan Countries” (RECOVER), intends to carry out a set of activities to support the solution of the above-mentioned issues.

2. Project Description

The purpose of the RECOVER project is to perform systematic and comprehensive analysis of the opportunities to RES utilization in Western Balkan Countries, as well as to formulate priorities for future research. The major objective of the international cooperation activities is the mutual benefit of both, the EU and the INCO target countries. The project aims to lead to significant environmental benefits, such as reduced harmful emissions and greenhouse gasses, not only for the project countries, but also for the EU and globally. In addition, in the context of the expected EU membership, the promotion of RES utilization in the Western Balkan Countries will contribute to the EU energy targets and will allow harmonization of the requirements to the countries, which is a prerequisite to the establishment of a common energy market.

For the Western Balkan Countries (WBC), except the benefits related to the environment and the EU membership, the identification of economically feasible options for RES utilization would contribute also to poverty alleviation, increased energy security, and easier compliance with the multinational agreements. These purposes will be achieved through the following activities:

1. Analysis of the energy sector in the WBC.
2. Analysis of the experience and research achievements of the EU, regarding RES utilization.
3. Identifying the best options to RES utilization in WBC.
4. Formulation of research priorities and areas in WBC.
5. Dissemination of information and project results.

All activities of this project are implemented under the leadership of BSREC and in close coordination with CETEOR, EIHP, MAGA, ENEA, and UB, FMG.

3. Activities under the Project

Following the structure of the RECOVER project, the major work performed by the EEC, during the period from June 2005 to May 2006, has consisted of:

1. Work Package 1 - Review of the Current Situation in the WBC. The EEC staff has carried out the work, related to the Albanian situation, on the following:

- Investigation of the current situation of energy sector,
- Investigation of the energy policy and strategy,
- Review of the legal framework, international agreements, compliance with the EU directives,
- Review and assessment of the availability and regional distribution of RES,
- Investigation of the macroeconomic parameters (purchase power, political and economic stability, etc.).

2. Work Package 3 - Identification of the Best Options and the Barriers to RES Implementation. The EEC staff has carried out the work, in Albania, on the following:

- Analyses of different aspects of RES deployment,
- Development of strategies for implementation of best options,
- Identification of best technological, legislative, and organizational options for RES development,
- Assessment of technology availability and technology transfer opportunities,
- Identification of major obstacles to large-scale RES penetration and, especially, to the identified best options.

3. Work Package 4 - Definition of WBC Research Priorities and Areas. The EEC staff has carried out the work as follows:

- Identification of national research capacities in the field of RES,
- RES resource and potential assessment,
- Specific technological research areas Development of proposals regarding exchange of research information with the EU,
- RES national and international research funding possibilities.

4. Work Package 5 - Dissemination of the Information and Project Results. The EEC staff has carried out the work on the following:

- Organization of meetings with representatives of governments, energy producers, research institutes, and other stakeholders,
- Organization of a seminar in Albania to present the best identified options for RES utilization, research priorities and areas,
- Production of seminar proceedings,
- Distribution of the released brochure with the project findings.

Finally, under WP5, EEC organized meetings with representatives of governments, energy producers, research institutes, and other stakeholders in Albania. It run a national information seminar for the project RECOVER, where the project Brochure was distributed to the representatives of the Ministry of Economy, Trade and Energy, Albanian Electricity Regulatory Authority, Albanian Power Corporation, National Energy Agency, Academy of Science, University of Tirana, USAID, UNDP, private companies, etc.

4. Final Remarks

The RECOVER project has started in June 2005 and it is implemented within 12 months, that means within May 2006. This project is considered as an important step in introducing to the Albanian stakeholders, researchers and decision-makers the EU experience in the field of RES as well as the possibilities and best options for RES utilization in WBC and Albania. The EEC will promote and advocate the RES utilization through all the country and consequently bring steady improvements in the long term. The successful implementation of this project is very crucial to the further development of RES utilization and improvement of energy supply situation in Albania. The main deliverables and the project findings

could be found at the RECOVER web-page at:
http://www.bsrec.bg/newsrec/RECOVER_Summary.html



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

GLOBAL CLIMATE CHANGE AND ALBANIA – THE FUTURE BELONGS TO CLEAN ENERGIES

The world is getting warmer at an ever-increasing pace. The science of climate change states that the global average surface temperature has increased over the 20th century by about 0.6 °C. Despite of the uncertainties in the projection of future trends, scientists predict a rise of 1.4 to 5.8 °C in global mean surface temperature over the next 100 years. The impact of warming, even at a lower end of this range is likely to be dramatic: sea level rise, melting ice caps and glacier, more frequent extreme weather events, droughts, floods, heat waves, this is what will affect the society and economic development. There are strong evidences that most of the warming observed over the last 50 years is attributable to the global emissions of greenhouse gases which are rising due to human activities.

Global climate change that the overall world is facing today is not only an environmental issue. It is a complex issue of sustainable development which arises mainly due to unsustainable energy production and consumption. Solutions to address climate change issue can serve as a tool for addressing many other sustainable development concerns. The energy sector remains in the heart of any climate change mitigation policies and measures and of sustainable development strategies. Climate change is a global issue as all countries of the world contribute at certain rates to the overall greenhouse gas emissions and all countries are affected in varying degrees by it. Being such the climate change will affect Albania with increased temperatures, less precipitation and sea level rise. Less rain for Albania means more droughts, less hydroelectricity, which in turn will affect the economic development and undo efforts spend so far in poverty eradication and achieving Millennium Development Goals. It will also affect, tourism, agriculture and ecosystems. Albania's coast is found to be one of the most vulnerable parts of the country to the current and expected impacts of Climate Change.

Albania contributes to the global climate changes with around 7 Million tones of CO₂ emissions released from Albania's territory in 1994 and around 8.5 Million tones in 2000. Above figures indicate relatively low levels of emissions compared to other industrialized countries because Albania's electricity is mainly produced from hydro sources and due to the shortage of high-energy intensity industries. However, predictions of future emissions indicate higher growth rates of emissions if no reduction measures are undertaken on time.

The United Nations Framework Convention on Climate Change adopted in 1994 and its Kyoto Protocol adopted in 2005 laid the foundation for actions to addressing the climate change mitigation at both national and international setting. The Kyoto Protocol, this good example of the global governance which represents the most legally binding environmental agreement that the international community has ever developed so far has put under operation a set of innovative tools for promotion of the sustainable development in countries with economies in transition and developing countries. The Kyoto Protocol through its market based mechanisms, such as Clean Development Mechanism allow developed countries to meet part of their emission reduction targets outside their territories at lower cost by investing in clean technologies in developing countries.

The First meeting of the Parties of the Kyoto Protocol held in Montreal last year gave a significant momentum to the CDM by adopting the so called Marrakech accords-the rules and procedures for making the CDM fully operational. After this carbon credits generated by CDM projects were sold and purchased in the international carbon market. Two years ago the CDM operation picture was uncertain. Today the CDM framework is fully operational, as it was given a "prompt start" in 2001 where the first projects have been approved. Many others are under development such as promoting renewable energy, energy efficiency, fossil fuel switching, landfill-gas capture, as well as reforestation and afforestation. According to the United Nations Climate Change Secretariat more than 800 CDM projects are presently in the pipeline, out of which 210 are registered and another 58 are requesting registration. In 2005, only around 140 activities were registered or being considered for registration.

In June 2006 the Kyoto Protocol's clean development mechanism (CDM) was estimated to pass one billion tonnes of emission reductions mark. By crossing such important threshold the CDM showed to be an effective tool towards sustainable development in developing countries. It is very important to highlight that the success of the CDM is dedicated to actions taken from developing countries that do not have emission reduction targets in creating the proper environment for hosting such projects.

Since late 2004, when the Albania's Parliament adopted the decision for the ratification of the Kyoto Protocol it became an important issue under the environmental agenda of the country. With the assistance of the Italian Ministry of Environment and Territory and the United Nations Development Program a considerable potential for CDM projects has been assessed and the most feasible sectors have been identified especially in the areas of solar energy, hydroelectric power, and waste management.

The First CDM Project Document on a community-based afforestation/reforestation type of activities has been drafted and its methodology has been approved from the Executive Board of the CDM followed by the negotiation of the first Emission Reduction Purchase Agreement with the BioCarbon Fund of the World Bank. Other CDM projects are under way of development and the level of interests from foreign investors to

develop CDM projects that would transfer clean technologies in Albania is growing day-by-day.

Thus, Albania is smoothly joining the international community in the most challenging battle against global climate change by contributing in reduction emission quotas for a better and sustainable developed world of tomorrow.



**Ermira Fida, MBA
Manager
Climate Change Unit/Program
MoEFWA**

HYDROENERGY RESOURCES IN KOSOVA

1. Introduction

Kosova is the country with the biggest coal (lignite) reserves in the South East Europe. The study and utilisation of coal reserves has been and still it is one on the most important priorities of the Ministry of Energy and Mining in Kosova. However, beside coal, in the Strategy of Energy of Kosova a big attention is reserved, also for other energy sources especially for renewable energy sources. In order to know the potential of renewable energy sources the Ministry of Energy and Mining of Kosova undertake a study to evaluate the potential of small hydro resources. Study was carried out from an Albanian group with great experience on hydrology, technical items, economy, finance and environment in very closer collaboration with the experts of the Ministry of Energy and Mining Kosova. Kosova is characterized by rivers and torrents with hydrologic potential to be taken into account for the production of electricity. The western part of Kosova has the hydro-energetic potential of Drini Bardhe, which includes more than half of the Kosova hydro-energetic potentiality. The useful hydro energy potentiality of Kosova is 0.7 TWh/year. The biggest HPP that could be constructed in Kosova is that one of Zhurri, in the stream of Drini Bardhe, with a potential of 0.377 TWh/year.

Power energy produced from hydro is renewable and during its production there is no emission of gases, as in the case of energy produced from the burning of fuel. HPP now are constructed with very advanced technology and developed all over the world. However the use of hydro energy for the production of electricity brings economical, social and environmental problems. The theoretical potentiality of hydro energy decreases sensibly if we consider all the problems rising with their construction; where, in the first place, the huge initial investments stand. In the figures 1, 2 and 3 is presented the Energy Balance of Kosova.

Analyses indicate that 9.05 % of total supplies of primary energy sources of 82.3356 PJ are supplied from renewable energy. The fuel wood have the big contribution with 8.46 %, the hydro energy is the second one with 0.54 % and solar energy contribution only with 0.04 %. This percentage is very small and a lot of work is required that this contribute to be increased in the upcoming years, as it is emphases in the Stra-

tegy of Energy the potential of hydro energy is the first and very important sources to exploitation.

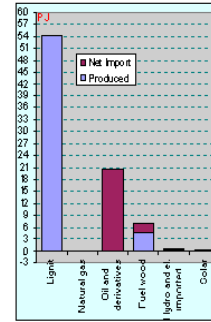


Figure 1. Primary Energy Source of Kosova for the year 2003 (PJ)

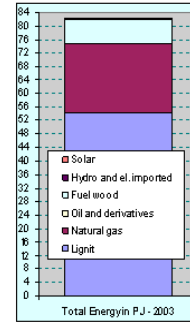


Figure 2. Total Primary Energy Source of (2003 - PJ)

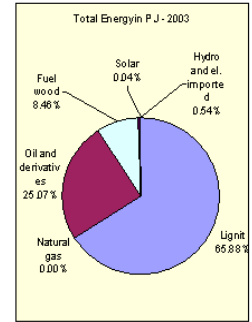


Figure 3. Share of Primary Energy Source (year 2003 - PJ)

2. Methodology of study evaluation for Small Hydro Power Potential

Consultants followed the methodology "Frame of the Evaluation Process for the Potentiality and Promotion of the Rehabilitation/Development of Small HPP in Kosova", and this methodology has been issued by the World Bank and used in many countries. The first part of this frame is mainly focused on the actual project. In order to estimate the potentiality the consultant undertook a scout study (identification of potential places). The knowledge of the terrain was the first step for which the topographic maps of the scale 1:25,000 up to 1:50,000 were used. Based on the maps taken from MEM, it was possible first to work with them in order to choose potential locations. It was possible to visit all the potential places with the support of MEM. The potential places were studied and evaluated depending on these factors, including (but not limited to): hydro capacity based on the river flows and head; hydrology; meteorology; geology; required investments; demand and supply with electricity; environmental issues.

3. Hydro energy potential

The hydro-energetic potential is the quantity of potential energy that exists in every river or part of the river. The study of potential hydro-energy was realized by investigating the most valuable potentials, based on the initial analysis of respective maps. The study was realized focusing on:

- The maximization of the availability of the river dropping, where possible, taking into consideration the existing technology and other economical development factors.
- The choosing of a method for the generation of electricity, which is suitable for the country conditions and could be determined from the river topography and the average flows, and
- The optimal positioning of the central, in a way to maximize as much as possible the generation of electricity through the most effective use of the flows.

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



**Dr. Eng. Besim ISLAMI
Energy and Environmental
Consultant**