



# THE ENERGY IN ALBANIA



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

## THE ENERGY IN ALBANIA (NEWSLETTER)

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## NEWSLETTER

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### PROJECT “ACCELERATION OF THE COST-COMPETITIVE BIOMASS USE FOR ENERGY PURPOSES IN THE WESTERN BALKAN COUNTRIES”

( .....Continued from previous issue..... )

#### 3. Activities under the Project

Following the structure of the ACCENT project, major work performed by the Albania-EU Energy Efficiency Centre, during the period from January to December 2006, has consisted of:

1. *Work Package 1 - Review of the Residential Heating and Heat Production in SME-s in the WBC.* The EEC staff has carried out the work on the following:

- Assessment of the heating requirements of the houses and apartments, classified by type of building and by geographic region,
- Estimation of the degree of meeting these requirements, including an estimation of the actual heating and its effect on the thermal comfort & other social aspects in Albania,
- Review of the characteristics of the fuels and the heating technologies that are currently in use in Albania,
- Review of the costs and tariffs of the various heating options in Albania.

2. *Work Package 2 - Assessment of Opportunities for Production of Wood Chips, Briquettes, and Bio-pellets in the WBC.* The EEC staff has carried out the work on:

- Investigation of the technical characteristics and costs of the fuels/electricity used for heating in Albania,
- Review of the Albanian relevant policy and legal framework,

- Estimation of Albanian biomass potential,
- Investigation of technologies to produce biomass fuels,
- Estimation of the production costs of these fuels.

3. Work Package 3 - Identification of Optimal Combustion Technologies in the WBC. Related to the Albanian situation, the EEC staff has carried out the work on:

- Review of the heating requirements and heating technologies used in the households,
- Review of the heat production and consumption technologies in SME-s,
- Investigation of the EU experience regarding these technologies,
- Assessment of the compatibility of the existing combustion technologies with the studied fuels,
- Assessment of the feasibility of combined utilization of fossil and biomass fuels.

4. Work Package 4 - Analysis of the Impact of the Expanded Use of Biomass Fuels in the WBC. The EEC staff has carried out the work on the following:

- Investigation of the EU perspectives on impact of biomass utilization,
- Overview of the Albanian potential in wood chips, bio-briquettes and bio pellets production and utilisation,
- Evaluation of the impacts of wood chips, bio-briquettes and bio-pellets production and utilisation in Albania.

5. Work Package 5 - Identification of Opportunities to Encourage the Energy Utilization of Biomass in the WBC. The EEC staff has carried out the work, related to the Albanian situation, on the following:

- Assessment of the economic, social, and environmental impacts from increased use of biomass fuels/technologies,
- Identification of the barriers to the penetration of the best fuel and technology options,
- Development of the proposal for overcoming barriers,
- Identification of the areas for future research.

6. Work Package 6 - Dissemination of the Information and Project Results. The EEC staff has carried out the work on the following:

- Involvement of the decision makers from public authorities and representatives from SME-s in the project,
- Organization of a seminar in Albania to present the best identified options for biomass utilization, etc.,
- Production of seminar proceedings,
- Distribution of the released brochure with the project findings, leaflet, CD-ROMS, etc.

Finally, under WP6, EEC organized meetings with representatives of governments, energy producers, research institutes, and other stakeholders in Albania. It has held a national information seminar for the ACCENT project, where the project Brochure, Leaflet, and CD-ROM were distributed to the officials of the Ministry of Economy, Trade & Energy, Electricity Regulatory Authority, Albanian Power Corporation, National Agency of Energy, Academy of Science, University of Tirana, USAID & UNDP.

#### 4. Final Remarks

The ACCENT project has started in January 2006 and it is implemented within 12 months, which means finished in December 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 biomass utilization as well as the possibilities and best options for biomass utilization in WBC and Albania. The EEC will promote and advocate the biomass utilization throughout 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 biomass utilization and improvement of energy supply situation in Albania. The main deliverables and the project findings could be found at the ACCENT web-page at <http://www.bsrec.bg/newbsrec/accent/accent.html>



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### RENEWABLE ENERGY - AN ALTERNATIVE TO CONVENTIONAL ENERGY SOURCES

The conventional sources covering today the world's energy demand include coal, oil and its derivatives, and natural gas, not excluding the nuclear energy gained by fission of radioactive elements. The environmental disadvantages characterizing conventional energy sources have attracted the attention of countries, mainly developed ones, who are orientated towards renewable sources that have considerable advantages regarding their availability, amount and friendliness toward environment. Thus, these sources are considered a real opportunity and alternative for eliminating, or at least alleviating, the global concerns facing challenges such as: 1. Increasing energy demand; 2. Exhaustion of conventional energy sources reserves, especially fossil fuels; 3. Concentration of conventional energy sources deposits in certain areas; and 4. Hazardous impacts increasingly resulting into environment and climate changes (global warming) as a result of greenhouse gas effects.

The above concerns can only find solution through a more efficient utilization of energy and increased generation from renewable energy sources (RES). For the development of RES, international instruments are identified and are being implemented. In this respect the measures for the establishment of the CDM could be mentioned. These measures are being implemented within the framework of Kyoto Protocol, several relevant directives of the European Union, and, more recently, the South-Eastern European Energy Community Treaty, the later imposing obligations on Kosova, in the field of RES also. The Kyoto Protocol foresees that in the countries of the European Union, until 2010, the participation of renewable energy in energy consumption should achieve the level of 12 %. This level of RES utilization is expected to contribute also to a reduction of CO<sub>2</sub> emissions by the Kyoto Protocol signatory countries to the rate of 5.2 %, while for the EU countries this reduction shall be 8 % in comparison to the emis-

sions rate of 1990. In addition, the Kyoto Protocol provides that the percentage of RE in total energy consumption shall be around 50 % until 2050. Knowing the geographical position, the morphology of relief, altitude above the sea level, climatic conditions and other characteristics, it can generally be stated that Kosovo possesses some potentials for the utilization of the main RES. Regarding concrete potentials of these sources, accurate data may be gathered only after assessing their potentials technically, economically and financially.

**1. Solar Energy** – The existing data, solar radiation in Kosovo is 1,400 kWh/m<sup>2</sup> year. Compared to solar radiation in other countries of Europe, which varies between 800 kWh/m<sup>2</sup> year in the north, and 1,750 kWh/m<sup>2</sup> year in the south, the solar radiation scale in Kosovo is promising. With 2,086 sunny hours it can be stated that Kosovo can use the benefits of solar energy for a good part of the year. Utilization of this energy is related mostly to water heating by solar panels. With all the advantages of solar equipment for electricity generation by solar radiation, their high price makes them unaffordable for the consumers in Kosovo. Today Kosovo is a modest user of solar energy with participation of such energy in the total energy consumption of the country to around 0.04 %.

**2. Wind Energy** – The existing data show that Kosovo has some wind potential for energy generation. In some of its areas, such as the northern and north-eastern parts of Dukagjini Plain, the Kosovo Plain, the Berisha high plains (central Kosovo), etc., there are potentials as well as technical and economic possibilities for installing wind generators for production of electricity. The velocity of wind which in Kosovo varies from a minimum of around 2 m/s, to a maximum of around 20 m/s, a maximum which is achieved only in 16 % of the days of a year. Undoubtedly, in higher elevations the wind velocity offers higher energy potential. Although a number of studies were made after 2000 with the aim of implementing a wind energy project, no wind generator has been installed in Kosovo so far. So, the contribution of wind energy in the total energy consumption is inexistent.

**3. Biomass energy** – Biomass is considered: firewood and wood remaining from the industrial processing; agriculture products and their remaining, energy plants cultivated for the purpose of combustion as biomass; animal and fowl remaining; solid urban waste, from combustion, bio-degradation and other processes, remaining of which may be used for production of combustible briquette and fuel in gaseous or liquid form. Today in Kosovo, the biomass is used extensively as firewood, burned only in the conventional form, including the briquette chaff. This utilization takes part with over 8 % in the total energy consumption, representing a high percentage of renewable in the total primary energy sources supplied in Kosovo. It should be noted that although the annual growth rate of forests is around 0.6 million cubic meters, and higher than the annual wood consumption rate of 0,4 million cubic meters, wood in Kosovo is used without any proper criteria, especially in the wood processing industry. For this reason, regarding the utilization of wood for heating, it is necessary to monitor the condition of forests and their regeneration, and opportunities explored for the use of other biomasses, especially rural and urban waste.

**4. Hydro Energy** – Kosovo is estimated to have hydropower potential of around 0,7 TWh/year. The most important hydro-

power potential, with a generation potential of 0,377 TWh/year, for which technical and economic feasibility studies have been done, is the one in Zhur. Also, the water flows of rivers such as Drini i Bardhe, Ibri, Morava, Lepenci, Llapi, etc., are also characterized by considerable potentials for electricity generation. The advantage of hydro-power is in fact that in the process of its generation, no hazardous gases are released, as it is in the case of combustion of fossil fuels. Considering that development of large hydro-power plants is associated with specific problems and their environmental impact, the priority is assigned to small hydro-power plants (SHP), since they use water springs and flows without changing their destination, being of the run-of-river type of plants. Based on these advantages, of course provided their environmental consideration, the interest of Kosovo in using its hydro-energy potentials is to build small hydropower plants. The participation of water electro-energy in the total energy consumption in Kosovo is 0.54 %. This percentage is made by energy generated in HPP Ujmani at the Iber River; the SHP Lumebar-dhi in the Lumebardhi River in Deçan, and SHP Radavc in the spring of Drini Bardhe. In the meantime, with the rehabilitation of other small hydro-plants owned by KEK in Istog and Dikanc, and another unit of the SHP Radavc, and increasing their installed capacity, the overall installed capacity of existing hydropower plants would arrive to 45 MW. Hence, the SHPs represent the best possibility of increasing the consumption of electricity generated by renewable sources, and this is a priority objective of the Ministry of Energy and Mining (MEM). A study realized under the guidance of MEM on hydropower potentials of Kosovo, which identified 18 technically suitable and economically feasible sites for construction of small hydropower plants with a total installed capacity of 63,7 MW, represents an important step towards the realization of this objective.

**5. Geo-thermal waters** – Apart from renewable (inexhaustible) energy sources, there are other *almost inexhaustible sources* also. These sources include geo-thermal energy, namely hydro-thermal, which can be used as thermal energy. Kosovo possesses a number of superficial deposits of geo-thermal springs, such as Peja Spa, Klllokoti Spa, Runiku Spa, Malisheva Spa, etc., with different temperatures, and up to 54 Celsius degrees (Banjska in the north of Kosovo).

As a conclusion it can be said that the use of RES should be a strategic objective, not only for the developed countries but also for those under development, the entire globe. Presently the price of RES, as a result of high initial investment required, is too high and uncompetitive in comparison to energy generated by conventional sources; but it is foreseen that in the future, as a result of rapid technological development and transfer, a maximum use of RES will be enabled. There must be a hope that the RES will truly be the energy of the future.



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# PROJECT PRINCIPLES FOR PRIVATISATION AND CONCESSION AWARD FOR SMALL HYDRO POWER PLANTS IN ALBANIA

## 1. Importance of SHPPs for Electricity Supply

This paper presents a summary of the Small Hydro Power Plants (SHPPs) Institutional Framework Study, under the program Promotion of Renewable Energies and Energy Efficiency in Albania sponsored by KfW Bankengruppe and carried out by DECON Consulting Company and the author of this paper as part of DECON team. Albania has a major hydropower potential of which only 35 % so far is being exploited. Profitability of hydropower exploitation is conditioned by the geological and topographic conditions for construction of dams and particularly by topographic conditions in view of avoiding as much as possible the land flooding. Their construction depends on high capital investment for generation units as well as the possibility to adjust the flow in high level creating cumulative reservoirs. A high theoretical hydropower potential considerably declines if all problems are taken into account that are related to their construction and operation. Exploitation of hydro energy through small hydropower plant schemes is of very high interest for Albania. Until 1988, in Albania were built 83 SHPPs, with a total capacity of 14 MW. There is a potential for constructing other 180 MW new capacity. The rehabilitation/upgrading/construction of SHPPs will bring a number of positive impacts to the economy of Albania. The major of these positive impacts are:

- Use of national economic resources,
- Using of local renewable energy resources,
- Supplying electricity with low negative impacts on the environment,
- Reduction of transmission and distribution losses,
- Improvement of electricity supply in remote areas.

## 2. Study on SHPPs Institutional Framework

The Planning Study supported by KfW German Bank and carried out by Decon Consultant Company presented an assessment of the institutional framework for SHPPs privatisation. The assessment of the situation from August 04 until December 06 revealed quite significant improvement, the developments were related to the reform of the electricity sector in general and specifically to the privatisation and operation of SHPPs.

## 3. Ongoing Reform of the Legal and Regulatory Basis for SHPPs Privatisation

A new General Concession Law was approved on December 18, 2006 by the Albanian Parliament, the Council of Ministers approved the "On the adoption of the rules for the evaluation and granting of concessions" and Draft SHPPs Concession Law is in the process of its final preparation. The key-elements are:

- Introduction of competitive bidding procedures for SHPPs development,
- Define transparent criteria under which SHPPs concessions may be awarded,
- Allocate METE internal functional responsibility in the area of SHPPs concessions,
- Define objectives under which METE may assume a general public interest to award SHPPs concessions,

- Procedure on administrative complaining and court appeal,
- Uniform tariffs has been introduced for existing SHPPs based in average weight retail electricity price from ERE and based in the previous year of electricity import price for new SHPPs.

## 4. Principles for Privatisation and Concession Award

The privatisation of state assets has become an issue of growing importance in recent decades in Europe and beyond, yet neither in international law nor in European law binding legal standards have been established. However, what has emerged over the last decade as a result of the growing experience with advice on privatisation/concessions projects by different international organisations and institutions - mainly the UNICITRAL (but also more recently the EBRD, the European Commission and the OECD) - is a set of core documents that define a set of general legal standards and core principles recommended to be applied in any Privatisation Project (PP) / Concession Project (CP). Those standards/principles, that are also applicable to SHPPs, PPs/CPs, can be summarised as follows:

*Principle 1. PPs/CPs supported by Clear Policy Commitment to Private Sector Participation (PSP) in SHPPs Sector* - The SHPPs PPs/CPs should firstly be supported by a clear policy commitment towards private sector participation in the SHPPs sector. This principle does not directly relate to the legal dimension of a privatisation/concession procedure but to the general political climate that complements the relevant legal system. While generally the quality of the legal framework is obviously of utmost importance for any privatisation/concession award, the success of a privatisation/concession procedure does not only depend on the legal framework. In fact the level of policy/government commitment towards PSP is of equally high importance. Political commitment in this sense can for e.g. be indicated by the definition of a clear privatisation policy/strategy, by a continuous dedication to further eliminate potential deficits in an existing legal framework or to further align this framework with potentially changing international legal sectoral standards.

*Principle 2. SHPPs PP/CP awarded on Sound of Legal/Contractual Basis for SHPPs Privatisation and Concession* - The SHPPs PPs/CPs should secondly be awarded on a sound legal basis. The PPs/CPs should in this respect thus be awarded ideally based on a specific SHPPs concession law in combination with a specific SHPPs Concessions Contract or based on a coherent set of generally concessions rules in combination with specific a specific SHPPs Concessions Contract (e.g. framework law on concessions/SHPPs concessions regulation/SHPPs Concessions Contract) ensuring that the SHPPs project cycle is governed by a clear, fair, predictable and stable legal environment.

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



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