“Energy Auditing of Albanian Buildings; Capacity Building, Methods and Tools”

Project description
To reduce the energy consumption and costs, and to improve the indoor environment, it is necessary to renovate and implement energy efficiency measures in buildings. Projects should be developed and implemented in a structured and efficient way, requiring good Energy Auditing and Project Management methods and tools, as well as good skills of local specialists. To ensure long-term effects, local engineers, specialists and managers should be trained, and the subject included in the Curriculum of Universities.

The energy situation in Albania has been difficult throughout the transition period and especially during the last years. The situation aggravates during the winter season, because of the space heating of buildings. Half of energy required for heating is provided by electricity. Buildings in Albania have been constructed with little concern for energy efficiency, since before 1990 the main driving factor was the construction of buildings with the lowest costs. A radical change is needed related to heating of buildings, towards the direction of increasing energy efficiency.

For more than 15 years, ENSI® - Energy Saving International has developed and implemented capacity building programmes on “Energy Auditing of Buildings” in a number of Central and Eastern Europe and CIS countries. The programmes have been for engineers, specialists, energy auditors, managers, University professors and teachers as well as University students. The Norwegian methodology has been introduced, and comprehensive materials and tools including software for energy and profitability calculations adjusted, translated and provided for wider dissemination. A sustainable development is secured by an “interactive training of trainers” approach, building local capacities and skills able to continue and further develop by themselves. ENSI has been asked by the Albanian-EU Energy Efficiency Centre to cooperate on a project to be implemented together with the National Agency of Natural Resources and the Polytechnic University of Tirana.

Objectives
The overall objective of the project is to improve and increase the local capacities and skills on Energy Auditing of Buildings, and thus contribute to improved energy efficiency in the Albanian building sector. The project also aims at getting “Energy Auditing of Buildings” included as a subject into the Curriculum at Albanian Universities.

To perform Energy Auditing, it is necessary to include professional energy calculations as well as profitability and cashflow calculations. To assist engineers and technicians in quick energy calculations, ENSI has developed the Key Number Software. For profitability calculations, ENSI has developed the Economy Software. The development of the project will be done through an interactive training programme on “Energy Auditing of Albanian Buildings”.

The programme consists of three workshops/training sessions, and the trainers will use the ENSI software and manuals to develop Energy Audit Reports for 6 suitable building projects.

Main tasks
The project “Energy Auditing of Albanian Buildings - Capacity Building, Methods and Tools” includes three main tasks:

1. Adjustment of ENSI methods and tools on Energy Auditing of Buildings for Albanian conditions
2. Training of trainers in applying ENSI methods and tools in development of real building projects
3. Further training of local specialists and education of university students
All three Albanian partners are involved in the whole process of adjusting the methods and tool (incl. software for energy and profitability calculations), and in the “training of trainers” programme. In this way local specialist will be able to offer professional consultancy services in the market. Furthermore, the development of laws, regulations and standards for the building sector can be supported and improved.

Implementation of the project
At the start-up of the project in Nov. 2007, an “Energy Auditing Team” had been established, consisting of 11 specialists representing:
- Albania-EU Energy Efficiency Centre (EEC-Albania)
- National Agency of Natural Resources
- Tirana Polytechnical University, Faculty of Mechanical Engineering
- Tirana Polytechnical University, Faculty of Electrical Engineering
- Institute of Buildings
- Ministry of Economy, Trade and Energy
- Individual Consultant

The participants were provided a comprehensive package of training materials, and a draft Albanian version of the ENSI Key Number Software for energy calculations. Exercises were performed with the Software, demonstrating how useful it would be also for Albanian conditions.

At the end of the two-day training session, EEC-Albania divided the participants into 6 groups, which will develop Scanning reports for 6 different building projects, and present them at Workshop 2. The Workshop will continue in January 2008 with discussions on how to establish national reference values and climatic data and development of the Albanian version of the ENSI Key Number Software for energy calculations.

Guest lecture on “Energy Auditing of Buildings” was given at the Tirana Polytechnical University, Faculty of Mechanical Engineering for 15 students of the fifth year. The University is interested in including the subject into their Curriculum, and install the software at the computer room, allowing students to work with the software.

Expected outputs
The project will provide the following output:
- Albanian version of the ENSI Key Number Software, Economy Software and Energy Auditing Manuals
- 11 trained experts that will be able to:
  - offer professional services as Energy Auditors
  - provide input for a better strategy and laws, regulations and norms for energy efficiency in the Albanian building sector
  - offer training programmes for other Albanian professionals
  - offer education on Energy Auditing of Buildings for University students