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THE ENERGY IN ALBANIA



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SITE SELECTION FOR CONSTRUCTION OF THE NEW POWER PLANT (3x135 MW)

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

3. Site Evaluation

Seven potential sites were selected, evaluated, and ranked based on the abovementioned development criteria . Each site was evaluated for three potential fuel sources; coal, natural gas, and distillate oil. The original aim included the following locations: Durres, Elbasan, Cerrik, Korçe, Shengjin, and Vlore (Site 6A). Vlore (Site 6B) was identified as a potential site location during the visits, due to the fact that it is a green-field location and its close proximity to an off-shore oil tanker terminal. MWH Management Consulting utilized a standardized methodology for ranking sites that provides weighted evaluation factors based on criteria described earlier. The criteria used included the following items:

- Need for environmental remediation and air quality concerns,
- Stakeholder receptivity,
- Fuel resource availability,
- Water supply availability,
- Property availability and equipment transportation issues,
- Transmission proximity and systems loss reduction.

The table provides a summary of sites overall rating and the fuel to be used for each site under consideration.

Site Ranking	Site Name Identifying Number	Fuel
1	Vlore – Site 6B	Distillate Oil
2	Fier – Site 3	Distillate Oil
3	Fier – Site 3	Natural Gas
4	Vlore – Site 6B	Natural Gas

It is important to note that the site ranking provides a qualitative assessment of the suitability of site relative to the other potential sites. The estimated capital costs presented within the report serve as a check to confirm that a low cost alternative is pursued. As illustrated in the summary table and in the figure, Site 6B (Vlore B) and Site 3 (Fier) both rank consistently high, regardless of the fuel technology utilized. Site 6B (Vlore B), a greenfield site located about 6 km northwest of the Port of Vlore, has been identified as the most favorable location and lowest installed cost alternative for a distillate-fired combined cycle generation facility. As such, this alternative will significantly improve transmission system losses. To date, Site 6B (Vlore B) remains the most suitable location for siting a distillate-fired combined cycle facility and MWH recommends this location for further evaluation as part of a detailed feasibility study. Site 3 (Fier) remains a second viable alternative as a distillate-fired unit. The fuel transportation issues, associated with the installation of fuel oil supply lines, will significantly add to the total cost of the project when compare with Site 6B (Vlore B).



Vlore B site for the new power plant

Based on the best site location, technology, and fuel selected in Task One, a feasibility study was conducted to evaluate the technical requirements of the potential generation facility at the selected site. Due to the current financial constraints of the KESH's ability to invest in new power plants, the feasibility study was based on the development of an installed capacity in the range of 100-150 MW. The scope of the feasibility study included the following:

- Develop technical requirements for the proposed plant,
- Conduct a preliminary environmental analysis,
- Develop project cost estimates,
- Conduct economic and financial analyses.

The feasibility study has reconfirmed the following recommendations that were also provided in the Siting Study:

- Vlora B is the best overall site for the installation of a new based load thermal generation facility,
- Combined cycle technology is more advantages than coalfired steam technology for new base load generation in Albania,
- A distillate-oil combined cycle generation facility is technically, environmentally, economically and financially feasible,

- The Vlore B site has the lowest levelised generation cost of power compared to the other site.

The use of natural gas as a fuel supply in Albania is currently not economical. Since the use of natural gas in combined cycle power plants is more efficient and cost effective than distillate oil, the proposed plant will include the capability for future conversion to natural gas. Standard oil fired combustors are capable of firing natural gas. Therefore, there are no additional costs for specifying natural gas as a future fuel. Based on detailed feasibility study the future TPP of Vlora for the first phase will have these indicators:

1. The technology of this power plant will combine cycle gas-steam turbine (CCGT) with installed capacity 136.5 MW on combination 2-on-1 (two gas turbine and one steam turbine).
2. Overall efficiency of the operation will be (49-51)%.
3. The fuel, which will be used is diesel marine, the specific consumption is 189 gram/kWh, and the overall consumption with 6,130 hour working load is 157,000 ton.
4. The electricity generated by the plant is 830 GWh/year.
5. The power plant will be in the first phase connected to 110 kV network and after the construction of 220 kV double circuits line Fier-Vlore will be connected to the new substation 220/110 kV.
6. Total investment will be 109.73 Million USD.
7. The long run marginal cost for the plant will be 4.5 cent/kWh.
8. Technological water needs for this thermal power plant are 190 m³/hour and cooling water needs are 7,130 m³/hour.

Should be noted that the Ministry of Industry and Energy through the National Agency of Energy prepared all the documents and presented them on December 21, 2002 to the Council of Territory for District of Vlora. After a fruitful discussions with local authorities this Council approved Vlora B site officially. Also, on February 19, 2003, the National Council of Territory for the Republic of Albania, led by Prime Minister, approved the Vlora B site.



Dr. Eng. Besim ISLAMI
Chairman
National Agency of Energy

WIND GENERATION STARTS SOON IN ALBANIA

The Government of Albania is determined to guarantee sustainable and cost effective energy resources, with minimal environment impacts. The Albanian Government evaluates that a fast growth of generation capacities is decisive and priority for economic, industrial and social development of the country. This development will be an important contribute for Albania to face the progress challenges of this decade and the integration as a member of EU. In this framework, the Government of Albania, through the Ministry of Industry and Energy, has started the negotiations with the consortium of GE

Wind Energy GmbH and General Electric International, Inc. Such negotiations include the projecting, supplying, installation and commissioning of wind turbines. These wind turbines are "GE Wind Energy" type and the total installed generation capacity will be about 220 MW. Escalation of the installed capacity for wind turbines will depend on logistic, climatic and other technical characteristics of the installation site and the specific characteristic of the connection point of the grid. The project will pass in three phases, as follows:

First Phase - consists of installation of wind turbines with the installed power 5-6 MW as "Pilot Project" through a private operator. The beginning of the project is expected to be March 03.

Second Phase - consists of expansion of the contract of the first phase with an installed power of 50 MW. This phase is expected to start four months after the first phase is completed.

Third Phase - consists of installation of wind turbines with an total installed power of 165 MW. This phase is expected to be implemented until March 2004.

The agreement for purchasing the energy will be signed between the local operator and KESH. The agreement will incorporate an element for the price regulation that will be based on a reference price per kWh, which will be defined by the Energy Regulatory Authority.



Eng. Sokol ALIKO
Project Manager
Energy Efficiency Centre

THIRD NATIONAL CONFERENCE OF THE ALBANIAN THERMODYNAMICS ASSOCIATION

On 21st December 2002, at the premises of Faculty of Mechanical Engineering was held the 3rd National Conference organised by the Albanian Thermodynamics Association (ATA). The title of this Conference was: "Contribution for improvement of the Energetic Situation in Albania". The Conference was organised in collaboration with Association of Albanian Electrical Engineers and experts of hydraulics and hydromechanics institutions. The Conference was financially supported from different institutions such as Polytechnic University of Tirana, Ministry of Industry and Energy, Albanian Academy of Sciences, Albania-EU Energy Efficiency Centre, etc. The Conference had a scientific character and was focused on the efficient production and utilisation of various forms of energy in Albania. In this Conference were presented about 20 papers prepared from different experts of the thermal and hydro power fields. After the opening speech that was given by the Chairman of ATA - Prof. Dr. Hysen AGOLLI, the Minister of Industry and Energy - Mr. Viktor DODA and the Vice/President of the Polytechnic University of Tirana - Mr. Agim SANXHAKU, addressed to the Conference.

Many of the papers were focused on the energy problems, the active attitudes in finding out the optimal solutions for efficient production of electricity and thermal energy, the introduction

of alternative and renewable energy sources (solar thermal, PV and wind energy). The Conference pointed out that in order to face the actual energy crisis, it is absolutely necessary to construct the new Vlora Power Plant (300 MW) in south of Albania, and to rehabilitate the thermal power plants in Fieri and Ballsh. The Conference was characterized by debates, contrary views and opinions. The experts of National Agency of Energy have emphasized as vital the construction of the new Vlora Power Plant, financed by World Bank. Prof. Skender OSMANI suggested that it is important to undertake a study on priorities of national development and national strategy of energy, including the restructuring of energy production and consumption institutions. Prof. Alfred PALOKA was focused on the preparation of a power system development programme for the country, reconstruction of transmission lines and the establishment of a good combination of the power systems of Albania and Kosovo. In his speech, the Minister of Industry and Energy, Mr. Viktor DODA pointed out the priorities of the Ministry of Industry and Energy such as the construction of the new Vlora Power Plant, upgrade and modernization of the transmission lines and the connection of Albanian power system with Kosovo and the region. The Conference was evaluated from the participants as a high level conference regarding not only the organisation, but also the level of the papers presented in it. The Conference elected also the Assemble and other organisms of the ATA.

At the end of the Conference was prepared a document including conclusions, as follows:

1. Increase the efforts for a better utilization of water for energy production,
2. Need for the rehabilitation of power plants in Fier and Ballsh, by collaboration of several Institutions,
3. Update and modernize the transmission lines,
4. Promote the utilization of alternative energy sources.



Prof. Eng. Angjelin SHTJEFNI
Albanian Thermodynamics
Association

PROJECT "MUNICIPALITY NETWORK FOR ENERGY EFFICIENCY - ALBANIA"

Background

After more than a decade of a difficult transition, the main challenges of the energy and water sectors in Albania remain the continuation of the restructuring process, the improvement of legislation while enforcement of law constitutes the weakest issue. All these issues, in particular the last one, constitute crucial objectives in the integration process, accelerating or delaying the accession of Albania into the European Union. They have also the same effect in the fulfilment of the main objectives of the Albania-EU Energy Efficiency Centre (EEC).

Under such circumstances, feeling the responsibility of the role to play, the Albania-EU Energy Efficiency Centre in collaboration with Alliance to Save Energy (Alliance) and financially sup

ported by USAID, in the framework of the project "Municipality Network For Energy Efficiency - Albania" (MUNEE), intends to carry out a set of activities to support the solution of the above-mentioned issues.

Project Description

The project consists of several components, which support activities for energy and water efficiency in Southeast European Countries, with an effort to focus the work around some key issues as follows:

1. Tariff and subsidy reforms,
2. Helping consumers, particularly low-income ones,
3. Make the transition to market-based energy services by using energy efficiency as a tool,
4. Policy reform and energy efficiency fund,
5. Training cities to reform their municipal enterprises and undertake greater responsibility that lead to greater investments in energy management.

Some activities under this project are also related to Regional Network for Efficient Use of Energy and Water Resources (RENEUER). RENEUER Network is based on a voluntary agreement of representatives from Southeast European countries, developed on local level, using the "bottom-up" approach, in which the municipalities, and the local authorities and institutions are active participants as well as main beneficiaries from the network activities. RENEUER and MUNEE member countries are Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Macedonia, Moldova, Romania, and Yugoslavia. EEC is the Albanian representative member for both MUNEE and RENEUER networks.

All components of this project will be implemented in coordination with ASE, members of other participation countries, Albanian local administration and the involved benefiting municipalities.

Activities under the Project

Main activities under the project are:

Task I - Research and Assessment of Tariff and Low-Income Assistance Approaches. EEC will search at the potential mechanisms and deliverers of low-income energy assistance. The research will include social safety net programs, income burden, impacts' assessment of energy efficiency potential deliverers of low-income energy assistance, etc. Based on the research and in coordination with Alliance, EEC will outline the design of low-income energy assistance efforts by national or local governments, as well as suggest methods of financing such programs.

Task II - Implementation of Tariff/Subsidy Reforms and Low-Income Energy Assistance Program. EEC will organize a workshop in Albania to present the results from the research and program designs from Task I. The workshop will be attended by officials from ministries of energy, social protection, as well as Parliamentary officials, electricity and heat supply utilities, etc. Based on the results of the above tasks, an implementation program will be recommended to USAID, for tariff reform and low-income energy assistance based on what is most effective and politically feasible in each Southeast European Country.

Task III - Incorporating Energy Efficiency in IFI Lending. EEC will work and push the WB and EBRD, as well as other donors and the Ministry of Finance, for a small portion of the loans

that International Financial Institutions give to Albania, to be used for end-use energy efficiency activities and work. EEC will develop a list of ideas for how 3-5 percent of each loan could be used and create an energy efficiency fund, finance end-use investments, public awareness, technical assistance, project implementation, etc.

Task IV - Policy Reform. EEC will coordinate with USAID and push for adoption of the secondary legislation to promote energy efficiency. EEC will use the recommendations of the Albania Power Sector Reform Task Force on Energy Policy and Efficiency as a starting point and work on drafting actual legal language for three specific secondary laws related to energy efficiency. The topics of each secondary law will be focused on laws that try to lead to real implementation of energy efficiency measures by consumers.

Task V - Training for Municipalities, Ministry of Health, Municipal Decentralization. EEC will prepare and organize a training program on energy and water management in Albania. EEC will coordinate with the Albanian Association of Municipalities (AAM) to select cities for participation in the training. The training program will include senior municipal officials from between 10 and 15 municipalities in Albania and will consist of about three sessions. Each session will last 2-3 days, with EEC being available in between sessions for answering the questions. EEC will then work with the AAM to disseminate this experience to all 65 members of AAM.

Task VI - Additional Regional Coordination Tasks. EEC will also carry out its tasks in the framework of the plan of action for RENEUER in 2003. EEC will work with EnEffect of Bulgaria to support the regional activities under RENEUER, with the goal of transferring useful experience on municipal energy and water management to the RENEUER participants in all eight countries. EEC will participate and provide information from Albania that will go into the following RENEUER activities:

- NGO and RENEUER participant database;
- Survey of financial institutions;
- Survey of policy barriers in Albania, and
- Information to submit to update the RENEUER website and newsletter (key new and developments from Albania that would be of interest to RENEUER member countries, whether it be new laws passed, new projects implemented, new events, etc.).

Final Remarks

The project has started in November 2002 and it is expected to be implemented within 12 months. This project can be considered as an important step in introducing to the Albanian municipalities the issues such as efficient management of energy and water resources, tariffs/subsidy reforms, low-income energy assistance and consequently bring steady improvements in the long term. The successful implementation of this project is very crucial to the further development of such networks and the improvement of energy and water supply situation in Albania.



Dr. Eng. Edmond HIDO
Director
Energy Efficiency Centre