Call for Expressions of Interests

International Hydro Power Expert, Guinea Bissau

Post Title:	**Renewal/update of feasibility studies on small hydro sites from the 80s and development of a technical paper on the status and perspectives of the hydro power sector in Guinea Bissau**
Type of Contract:	Individual International Consultant (ECREEE consultancy contract)
Duration:	24 working days (w/d)
Duty Station:	Home based with one travel to Guinea Bissau
Starting date:	as agreed between the partners

A. Background:

The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) in close coordination with the United Nations Industrial Development Organization (UNIDO) is assisting the Ministry of Energy in Guinea Bissau in the development of the national hydro power sector. So far, the country is not taking advantage of the potential due to the existence of various technical, financial, policy, capacity and knowledge barriers. The assignment is linked to the ECOWAS Small Scale Hydro Power Program[1] and the GEF project "Creation of an Enabling Environment for Small to Medium Scale Renewable Energy Investments in the Electricity Sector"[2]. The ECOWAS Small Hydro Power Program was adopted by the ECOWAS Ministers of Energy in October 2012.

The chronic crisis of the electricity sector of the country represents a high cost for the entire economy, adversely impacting production costs and the population's standard of living. As long as the country continues to depend on expensive diesel-based electricity generation the situation will not improve. High generation costs, commercial and technical grid losses, as well as a small base of clients with a low ability and willingness to pay present a heavy burden to the local electricity and water company, as well as the Government. There is a rapidly growing gap between electricity demand and the available national generation capacity. Existing short-term development plans in the electricity sector are focused on the expansion of thermal plants without considering the hydro alternative in the least-cost analysis. Only a small part of the rural population has access to electricity services.

The economics of Small Scale Hydro Power (SSHP)[3] and Medium Scale Hydro Power (MSHP) look very promising in comparison to the existing or planned diesel or heavy fuel oil (HFO) fired generators. The economics are even more promising when negative externalities of thermal plants (e.g. local pollution, GHG emissions) are considered. The use of hydro power would contribute significantly to the improvement of energy security, energy access and mitigation of GHG emissions. It can assist in meeting the peak load demand in the capital Bissau and provide access to electricity services in rural areas. It has the potential to reduce the high electricity generation costs, consumer tariffs and the financial status of the public utility in the long-run. The reduction of dependence on imported diesel will free-up scarce financial resources for the Government, public utility, industry and private households.

[1] http://www.ecreee.org/page/ecowas-small-scale-hydro-power-program-sshp
[2] http://www.thegef.org/gef/project_detail?projID=5331
[3] SSHP is defined up to 30 MW in the ECOWAS region

Assessments have revealed that the rivers Corubal and Geba have significant feasible hydropower potential. There is the need to renew and/or update the measurements and feasibility studies for the identified sites Salthino (18 MW) and Cussilinta (32 MW) at the Corbubal river. It is not clear whether the available hydrological data is reliable (measurements from the 70s or 80s). The two sites are located around 170 km from Bissau and are nearby the planned transmission line of OMVG from Guinea to Senegal. In the case of the site Salthino comprehensive geological, hydrological and feasibility studies are available (in French). The hydraulic contribution of the Geba River seems to be more modest. The flow volume of the Geba River will be also affected by the construction of dams at Anambé and Kaleta.

B. Objectives of the assignment:

In this context, ECREEE is seeking support from an experienced international hydro power expert. The objective of the assignment is to review the available documentation on hydro power sites from the 80s and to scope TORs for a renewal/update of the feasibility studies. Moreover, the expert will prepare a technical paper on the status and perspectives for the development of the hydro sector in Guinea Bissau. During the field trip the hydro power consultant will be supported by the national ECREEE focal in the Ministry of Energy in Guinea Bissau, as well as a national consultant hired under another assignment.

C. Scope of assignment, deliverables and time schedule

Under the direct supervision of ECREEE the international consultant will take responsibility for executing the following activities below:

Item No.	**Activities**	**Proposed Duration**	***Location***	***Deliverables*** *(to be provided as MS word files in English)*
1	Prepare an inception report (including time schedule and planned activities during the field visit) in close coordination with ECREEE and UNIDO	2 w/d	*Home based*	***Inception report*** *with comments of ECREEE/UNIDO*
2	Undertake one field trip to Guinea Bissau to review the available documentation on hydro sites and potentials, as well as execute site visits. The collected data and information will be used to produce the deliverables under the Items 3 and 4. The consultant will submit the format and table of content of the mission report in advance to the travel to ECREEEE for approval. The agenda of the field visit includes: - meetings with key stakeholders relevant for the hydro sector (e.g. Ministries, utility). - identification of gaps in the available national river flow data and review of the quality and usability of the existing data for hydro power planning; - a rough assessment of potential SSHP sites not studied or identified so far (e.g. at the Geba River); - a detailed review of the available geological, hydrological and feasibility studies from the 80s on the two SSHP sites Salthino and Cussalinta (available at the Ministry of Energy in French); identify gaps and determine the scope and costs for a necessary renewal/update of the studies;	12 w/d (including travel times)	*Guinea Bissau*	***Mission report*** *(incl. documentation on meetings, site visits and related photos in jpeg format)*

	- a visit to the sites Salthino and Cussalinta and elaboration of a list of key issues on the technical feasibility (e.g. transmission line, river flow variations) and viability of the sites.			
3	Based on the collected information during the field visit the consultant scopes and develops the Terms of Reference (TORs) for the tendering of the update/renewal of the feasibility studies for the sites Salthino and Cussalinta; estimation of the costs;	5 w/d	*Home based*	***Final TORs** with incorporated comments of ECREEE/UNIDO*
4	Prepare a technical paper on the status and perspectives of the national hydro power sector based on the findings during the field visit. The consultant will send the format and table of content of the paper to ECREEE for approval before starting the works. The paper includes: a. general status of the sector, views of key experts (e.g. utility, ministries) and the possible role of hydro power to mitigate the current electricity crisis in the country; b. overview on the existing river flow and site data and its quality; potential additional hydro sites so far not identified or studied (provide GIS data); c. identified barriers (e.g. technical, policy, financial) and recommended priority activities for the further development of the sector in a short-term and mid-term view. d. list with key contacts in Guinea Bissau	5 w/d	*Home based*	***Technical paper** on the status and perspectives of the hydro sector with incorporated comments of ECREEE/UNIDO*

D. Qualification Requirements:

- Individual hydro power consultant;
- Obtains at least a Master degree in electric engineering, hydrology or an related field;
- At least ten (10) years of relevant work experience in international consulting on hydro power;
- Work experience in Sub Sahara Africa is a requirement; work experience in Guinea Bissau is an added value;
- Proven track-record in the elaboration of (pre-)feasibility studies on small hydro power projects and hydro power sector development
- Proficiency in English and French or Portuguese
- French reading skills are necessary to review the available hydro power documentation on Salthino and Cussalinta

E. Payment terms

The consultant will be paid in accordance with the produces deliverables or as agreed in the contract:

- 30% payment after submission of the final deliverables of Item 1
- 70% payment after submission of the final deliverables of Item 2 to 4

F. Application Process:

Interested and qualified consultants send their application at latest by 08 July 2013 to gb@ecreee.org (max. 10 MB). The electronic application includes the following documents:

- Detailed CV with educational background, work experience and track record of hydro power assignments of similar scope and focus
- Indicate your expected daily fees (home based as well as in Guinea Bissau)
- Scanned copy of highest university certificate and other technical certifications, licenses and quality standards related to the assignment
- Scanned copy of passport

G. Project contact:

Mr. Jansenio Delgado and Mr. Martin Lugmayr

H. Further information:

- Baseline report on small hydro power in the ECOWAS region and the ECOWAS Small Scale Hydro Power Porgram are available at: http://www.ecreee.org/page/ecowas-small-scale-hydro-power-program-sshp or http://www.ecreee.org
- Country profile and hydro sites of Guinea Bissau are available at: http://www.ecowrex.org (GIS maps on the sites Salthino and Cussalinta are available)
- GEF Project: http://www.thegef.org/gef/project_detail?projID=5331

The activity is supported by: