



Update

REQUEST FOR EXPRESSIONS OF INTEREST (CONSULTING SERVICES for detailed bankable feasibility study – FIRMS SELECTION)

COUNTRY: Southern African Power Pool (SAPP) region - Zambia and Democratic Republic of Congo (DRC)

Projects Grant No.:

Assignment Title: Feasibility Studies for the proposed Luapula River Hydro-Electric Scheme

Background

Zambia and the Democratic Republic of Congo (DRC) have decided to jointly expedite the development of hydropower on the common sites of the transboundary Luapula River. An Intergovernmental Memorandum of Understanding (IGMOU) between Zambia and DRC was signed on July 9, 2015 in Kinshasa, DRC. An Inter-Utility Memorandum of Understanding (IUMOU) was signed between the Power Utilities – ZESCO LTD and SNEL-SA – on the same date.

Power Utilities have been mandated by the Governments of Zambia and DRC to develop the Luapula River Hydroelectric Scheme (the Project) and, therefore, intend to carry out a feasibility study through an outsourced Engineering Consultancy Services Contract. The Power Utilities have subsequently requested assistance from the SAPP Coordination Center ("SAPP CC"). SAPP CC has a Project Advisory Unit ("SAPP PAU") that has been created, and is operational, for the specific purpose of accelerating regional transformational energy projects. Funding has been sourced for the Project by SAPP CC from the Southern African Development Community (SADC) Project Preparation and Development Facility (PPDF) (acting through its agent the Development Bank of Southern Africa (DBSA), being the Fund Manager) with funding from the KFW and the World Bank. SAPP PAU will act as the implementing agent for the Project on behalf of the Power Utilities, providing transaction advisory services. The oversight responsibility for the Project will rest with SAPP PAU.

A Project implementation roadmap has been drafted spelling out the way the Project preparation, planning and implementation would be done. In line with the roadmap, the Power Utilities decided to engage consultants to carry out feasibility studies, taking into account the previous feasibility studies.

Project Description

The Luapula River forms part of the Zambia and DRC boundary, and the basin covers a vast area of over 160,000 km². The Luapula River originates as the Chambeshi River near the Zambia-Tanzania border in the northeast portion of the country at an elevation of about 1,800 meters. The Chambeshi flows in a generally southwesterly direction through the Northern Province from its origin to the Bangweulu swamp. In the swamp, the river loses its definition, and becomes a shallow marshy area with some small lakes. The Luapula River begins at the outlet of the swamp, near a place named Mukuku, and at this point, becomes the boundary between Zambia and DRC. The Luapula flows in a generally westerly direction for a distance, and then turns to the north, ending in Lake Mweru.

The hydropower potential of the Luapula River has been under consideration for some time, one of the earlier reports was published by Dr. F. E. Kanthack in 1929. In 1977, Watermeyer, Legge, Piesold and Uhlmann engaged by ZESCO LTD completed the feasibility studies and recommended the development of five (5) identified sites on the Luapula River namely Mumbotuta M and CX sites, and Mambilima I, II and V sites, subject to further technical investigations. The total full installed capacity proposed under the study was 1,188 MW with firm capacity of 773 MW.

The 1977 feasibility study was further reviewed in 2001 by Harza Engineering engaged by ZESCO LTD. The study recommended three sites to be developed namely Mumbotuta CX, Mambilima I and II with a total installed capacity of 627 MW. Sites Mumbotuta M and Mambilima V were dropped based on economic and environmental considerations. All project related documentation will be made available to the appointed consultants.

Objectives and scope of consultancy assignment

The objective of this assignment is to carry out and develop a bankable feasibility study, complete up to tender design and documentation for the development of the Luapula River Hydroelectric power scheme and associated transmission lines to evacuate the power to both countries. The existence of a bankable feasibility study would allow mobilization of the required resources for the development of the scheme and contribute to addressing the prevailing power supply shortages that the two countries face.

The assignment will be carried out in two inter-related Phases:

- | | |
|-----------|---|
| Phase I: | Technical pre-feasibility study, and |
| Phase II: | Detailed feasibility study and tender design documents. |

In Phase I, the appointed consultant shall carry out an assessment of the existing documentation, including the previous studies; establish the adequacy of the preliminary identified sites for the Project; develop alternative options; and, as a result of the substantiated technical economic comparison, select and recommend the option for which a detailed feasibility study shall be carried out in Phase II. For Phase I, the depth of the investigations, designs and estimates shall be limited to the degree of accuracy required for a clear delineation among the project alternatives considered, enabling the consultant to make a substantiated recommendation as to the selected scheme.

The Phase I will include, but may not be limited to, the following tasks:

- Compilation, consolidation and initial review of previous/existing studies, documents and data (note that documentation and data will only be provided to the appointed consultant)
- Review of existing power development plans for Zambia and DRC to confirm the viability of the plant in the current market and the ability of the utilities to implement the project with regard to parallel large hydro projects i.e. on the Zambian side

- Fatal flaw assessment
- High level transmission network capacity assessment to facilitate evacuation and importation of power in Zambia, DRC and the region from the proposed scheme,
- Coordination with parallel studies such as, but not limited to, Environmental Studies, interconnection studies, Pool Plan studies.
- Market Assessment for regional power trading,
- Sites visits and sites inspections
- Selection of dams and powerhouses sites and dams types and height
- Initial planning of geotechnical investigations and topographical surveys
- Topographical Survey executed through LiDAR-Survey and preparation of maps
- Geological, Geophysical and Geotechnical Investigations
- Seismic Assessment
- Construction Materials Survey
- Meteorological and Detailed Hydrology Studies with Updated Hydrological Assessment and Hydraulic Model Tests
- Assessment of Climate Changes Impact
- Sediment and Hydraulic Analyses
- Cascaded Reservoirs Operations and impact analyses
- Power & Energy Simulations and analyses
- Engineering Design
- Detailed Review of Proposed Scheme Layout and related infrastructure,
- Power Evacuation Engineering & Transmission system
- Costing: cost estimate and cost calculation of each alternative
- Alternatives study with optimisation and recommendations of the current schemes within the constraints of sustainability, cost, schedule, environmental and social impacts and maximum generation potential
- Detailed optimisation of the selected alternative with redoing of the feasibility for the optimised schemes
- Implementation and construction workplan
- Economic and Financial Analysis
- Dam safety assessment including preparation of Instrumentation and Emergency Preparedness Plan
- Detailed Risks Evaluation and Mitigation
- Structural Model Tests

In Phase II, after completing the Phase I and approval of a project defining report by respective parties, the consultant will prepare a complete and detailed bankable feasibility report and detailed tender documents for the option selected in Phase I that can further be presented to potential investors, developers, donors and lenders for the financing and implementation of Luapula HPP.

Required Qualifications and Experience

The Consultant shall be a qualified, internationally recognized firm with at least 15 years of experience in power sector consulting services and a minimum of 15 years of specific experience in hydropower development. This shall involve at least 3 similar assignments executed/under execution by the firm globally, including at least 1 similar assignment in developing countries. The Consultant shall have experience in the region and in their mix of Experts should have local Experts (Zambia/ DR Congo).

The firm should be able to field highly experienced multinational teams, covering at a minimum, areas such as: A Team Leader – Hydropower Expert; Hydropower Engineer; Dam Engineer; Geotechnical Engineer; Civil Engineer; Transmission Engineer; Power Network Analyst; Electrical Engineer; Mechanical Engineer; Steel Structure Engineer; SCADA Engineer; Hydrologist; Legal Expert and Power Economist.

Team Leader shall be a person with good oral and written communication skills in English and French and shall demonstrate a high level of organizational skills. Ability by other experts to communicate in both English and French will be an added advantage.

The SAPP now invites eligible consulting firms (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.

Evaluation Method and Criteria

A Consultant will be selected in accordance with the QCBS method (annex 2) set out in the World Bank Consultant Guidelines.

The shortlisting criteria are:

Criteria		Points
1.	Evidence of experience gained with hydro power in the last 15 years:	35
1.1	Experience in handling similar projects	20
1.2	Experience under various working conditions in developing countries	10
1.3	Experience of region or country, preferably in the same sector	5
2.	Suitability for this specific project:	65
2.1	Assessment of available technical knowledge specific to this project	20
2.2	Assessment of the personnel structure in regard to the tasks expected	20
2.3	Assessment of the key personnel in permanent employment and always available to monitor the team and provide back-up services from the home office	10
2.4	Ability of the consultant's team to communicate in both English and French	10
2.5	The form of the application documents: are they complete and related to the project?	5
Total		100

Consultants may associate with other firms in the form of a joint venture or a sub-consultancy to enhance their qualifications.

Prequalification Documents

The application document has to show the capability of the consultant to perform the required services successfully. In case of an association, joint venture, etc. every team member has to submit all the required declarations including their financial and legal capacities.

The prequalification document, comprised of one copy **in English and one copy in French**, **must** have the following structure and content and **must** be presented in the same sequence as shown below:

- (i) **Covering Letter**, comprising the firm's name, address, contact person, telephone, fax and email. If applicable mention the association for this project.
- (ii) **Presentations of firms** (maximum 10 pages), inclusive of clear statements of type, property and key task of the association, if applicable.
- (iii) **Legal capacity to enter into a contract**
 - (a) A copy of the bidder's trading license of 2016 or equivalent
 - (b) A copy of the bidder's certificate of registration or equivalent,
 - (c) Bidder's income tax clearance evidence or equivalent issued within the last 6 months or for last financial year
 - (d) Declaration of the consultant that he/she has fulfilled obligations relating to the payment of taxes and social security contributions in accordance with the legal provisions of the country in which he is established
 - (e) A copy of the bidder's tax registration or equivalent
 - (f) Registered Powers of Attorney
- (iv) **Statements and Declarations:**
 - a) Declaration of submitting a proposal in case of being short-listed;
 - b) Statement on **affiliations** of any kind with other firms, which may present a conflict of interest in providing the envisaged services.
 - c) In case of an **association** – the intended contractual arrangement with international and/or local firms, nominating the lead consultant and including letters of intent of participating firms (in case of difficulty in getting an original document with the signatures of all partners a fax copy of such letter of intent is sufficient).
 - d) Declaration to observe the highest standard of ethics during execution of the contract. Applicants should be aware that any fraudulent or corrupt activities disqualify them immediately from participation in the selection process and will be subject to further legal investigation. The said declaration shall be submitted and duly signed according to the Annex 1.1 by **every** team member.
Any changes of this declaration shall lead to disqualification of the consultant.
 - e) **Certified statement of financial capacity** of the lead consultant and all associated partners (excluding sub-consultants) each showing the necessary turnover of more than **1 Mio. USD/year** for the last 3 years (Balance sheet, statement of turnover or annual tax statement or profit and loss account all of the last three years (2013-2015)).
- (v) Completed table as per annex 1.2 indicating the personnel structure for the bidder for the past 2 years and the current year.

- (vi) **(a) List of project references** carried out as per Annex 1.3 covering the last 15 years and **strictly** related to the envisaged services (maximum 10 references).

With a minimum of two **(2)** projects - 2 for new construction of HPP project with similar size/layout.

- (b) **List of the available personnel** carried out as per Annex 1.4

- (c) **List of the available expertise** (in case of an joint venture or affiliation) as per Annex 1.5

- (vii) **List of clients with named contact persons** who are ready to get questioned about the performance of the consultants for hydropower projects concluded in the last ten years (maximum 5 references with contact details).

The attention of interested Consultants is drawn to paragraph 1.9 of the World Bank's *Guidelines: Selection and Employment of Consultants [under IBRD Loans and IDA Credits & Grants] by World Bank Borrowers* ("Consultant Guidelines")- January 2011, revised July 2014, setting forth the World Bank's policy on conflict of interest.

Further information can be obtained at the address below during office hours from Monday to Friday 08:00 to 16:30 hours.

Expressions of interest must be delivered in a written form in English and French to the address below (in person, or by mail, or by e-mail) by 25 November 2016 at 15:00 hours Central African time and mention " **Expression of Interest for Consultancy Services for the Feasibility Studies for the proposed Luapula River Hydro-Electric Scheme** "

Address and Contact:

Southern African Power Pool

Attention: Thembekani Luthuli, SAPP-PAU Procurement Specialist

222 Morningside Close

Morningside

Johannesburg

South Africa

Tel: +27 72 709 7252

Email Address: thembekani.luthuli@sapp-pau.com

With a copy to omar.vajeth@sapp-pau.com

ANNEXES

1.1 Declaration of Undertaking

We underscore the importance of a free, fair and competitive procurement process that precludes abusive practices. In this respect we have neither offered nor granted directly or indirectly any inadmissible advantages to any public servant or other person nor accepted such advantages in connection with our bid, nor will we offer or grant or accept any such incentives or conditions in the present procurement process or, in the event that we are awarded the contract, in the subsequent execution of the contract. We also declare that no conflict of interest exists in the meaning of the kind described in the pertinent Guidelines¹.

We also underscore the importance of adhering to minimum social standards ("Core Labour Standards") in the implementation of the project. We undertake to comply with the Core Labour Standards ratified by the country of Zambia and DRC.

We will inform our staff about their respective obligations and about their obligation to fulfil this declaration of undertaking and to obey the laws of the country of Zambia and DRC.

We also declare that our company/all members of the consortium has/have not been included in the list of sanctions of the United Nations, nor of the European Union (EU), nor of the German Government, nor in any other list of sanctions and affirm that our company/all members of the consortium will immediately inform the client and or the clients funder if this situation should occur at a later stage.

We acknowledge that, in the event that our company (or a member of the consortium) is added to a list of sanctions that is legally binding upon the client and/or the clients funder, the client is entitled to exclude our company/the consortium from the procurement procedure and, if the contract is awarded to our company/the consortium, to terminate the contract immediately if the statements made in the Declaration of Undertaking were objectively false or the reason for exclusion occurs after the Declaration of Undertaking has been issued.

.....
(Place)

.....
(Date)

.....
(Name of company)

.....
(Signature(s))

1.2 Personnel Structure

Please indicate the following information for the previous two years and the current year. Do not mention the kind of experts for staff (engineers, economists etc). The administrative and support staff (drivers etc.) are excluded!

	Year 2014		Year 2015		Year 2016	
	Total staff	No. of staff for the required services	Total staff	No. of staff for the required services	Total staff	No. of staff for the required services
Personnel permanent						
Additional personnel*						
Total						
Permanent staff as a percentage of the total	%	%	%	%	%	%
	Total	> 10 years experience	Total	> 10 years experience	Total	> 10 years experience
Civil Engineers/ Hydropower Experts						
Electrical Engineers						
Mechanical Engineers -Turbine Experts - Hydraulic Steel Experts						
Geotechnical Engineers						
Environmental Engineers						
Social Scientists						

* Independent or associated experts **with** contracts

1.3 Company Experience

Please provide information contained in the table below summarizing the **major relevant projects related to the Hydropower Project** as per the required experience above.

Ref (maximum 10)	Project title		...					
Name of legal entity	Country	Overall project value (USD)	Proportion carried out by legal entity (%)	No. of key personnel provided for the project	Name of client and contact person with e-mail	Origin of funding	Dates (start/end) and number of MM	Name of partners if any
...
Description of project in relevance to the EOI					Type of services provided (in detail!)			
<ul style="list-style-type: none"> - Technical features - Detailed and clear Scope of work - Size of project (Installed capacity in MW) - Rehabilitation or new construction 					<ul style="list-style-type: none"> - Provided services (design, tendering, OE, site supervision commissioning etc.) - Function of experts 			

1.4 List of the available personnel

Use the following table to show the staffing personnel of the Consultant or group available for the tasks at hand.

Name	Function in company/ Proposed position at the project	Qualification*/ Specialisation**	Experience in similar projects	Total years of professional experience	Year of experience in the company (Name of Company)	Languages of the expert	Regional experience (Country and period)
		- XX..... - XX	• XX • XX				

*University Degree, e.g. Master; Dipl-Ing.

** Field of Specialisation, e.g. Electrical Engineer, Geotechnical Eng.

1.5 List of the available expertise (in case of an joint venture or affiliation)

Expertise	Team leader	Member 2	Member 3	Etc. ...
Expertise 1		X		
Expertise 2	X		X	X
Etc. ...				

Use the first column to list your skills for this project. Then marked with an X the member of the group who has this skill.

It is possible that several members of a group have the same scope. In this case, you must specify which provides the essential expertise by **X** bold.

Annex 2 – QCBS Method as per the World Bank Consultant Guidelines.