

REQUEST FOR EXPRESSION OF INTEREST Renewables Integration Study in Ethiopia

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Country: Ethiopia

Description of procurement:

Currently around 95% of generated energy in Ethiopia is form of hydropower; Hydro-dominated power systems are generally energy-constrained rather than capacity constrained and is highly dependent on hydrological conditions. Most hydropower plants have daily storage capacity, and many have monthly, seasonally, and even yearly storage capacity which are uniquely positioned to facilitate the integration of intermittent power sources like solar and wind. Solar power plants have higher outputs in the dry season which complement well the hydropower fleet. Three wind parks with total installed capacity 324MW are under operation, however within the next ten planning horizon EEP has laid out a plan maximizing the development of non-hydro energy resources. This has been expected to be realized through the opening of the sector to Independent Power Producers (IPP). A large list of wind and solar projects are already on the pipeline to be developed under IPP.

Ethiopia is currently a member of Eastern African Power Pool (EAPP), the pool has eleven member countries. The Ethiopian Power system have operational interconnection with Djibouti, and Sudan. The third interconnection, Ethiopia - Kenya 400kV HVDC is under commissioning. Further additional interconnection with neighboring countries as well as power wheeling is planned and expected to be in operation within the upcoming ten years. The low-cost renewable power generation mix plus the dispatchable characteristics of hydropower in Ethiopia puts it in a very favorable position not only provide clean and cheap energy to other members of EAPP, but also to facilitate the integration of VRE in other member countries and play a very important role in the stable, secure and reliable operation of EAPP.

The objectives of this assignment are to conduct the needed analysis and build institutional capacity that will help maximize the development and integration of the variable renewable energy (VRE) in the Ethiopia power system which is currently dominated by hydropower.

Scope of Work:

The scope of work for the assignment includes:

- (i) review of all existing analysis and studies related to the development and integration of VRE, such as the latest least cost generation and transmission network expansion plan, any studies on integration of VRE in Ethiopia's power system, any analysis on potential transmission constraint and assessment on potential impact on system reliability etc;

- (ii) building on all existing analysis and studies, carry out additional analysis needed to optimize the development of VRE and facilitate VRE integration during operation; and
- (iii) conduct knowledge and experiences sharing and capacity building for stakeholders in Ethiopia. The assignment is expected to focus on the following specific tasks.

Eligibility Criteria:

The assignment requires an experienced consulting firm capable of carrying out system planning, reliability assessment and optimization of hydropower and integration of VRE. The consulting firm should have carried out similar assignments preferably with at least one in sub-Africa region. At a minimum the Consultant team shall have the following key staff with the listed qualification and experience:

<i>Team Leader</i>	At least a Master’s Degree in Engineering, Science, Economics, Finance or Business Administration and a Bachelor/master degree in engineering; at least 12 years’ experience in power system planning/operation, including deep knowledge and experience of grid rules, operational rules and procedures; experience in at least one similar assignment and with experience in sub-Saharan Africa.
<i>Hydropower Specialist</i>	At least a Bachelor’s Degree, preferably also a master’s degree, in Science or Engineering; At least 8-year experience in power generation including solar and wind power, and 5-year experience in hydropower operation focusing on assessing water flow/hydrology and optimizing the use of storage capacity of reservoirs.
<i>Power System Specialist</i>	At least a Bachelor’s Degree, preferably also a master’s degree, in electric/electronic engineering. At least 8-year experience in power system planning and operation preferably specialized analysis of system reliability and stability, and in communication, control and protection philosophy and technologies.

For more information about technical details and requirements, please email to info@tenderingprojects.es