

TERMS OF REFERENCE FOR SENIOR ENERGY RESOURCE AND DECISION-MAKING MODELLER TECHNICAL SUPPORT TO THE EASTERN AFRICA POWER POOL

Position:	Senior Energy Resource and Decision-Making Modeller
Organization:	Eastern Africa Power Pool (EAPP)
Program:	Design and assessment of resilient and sustainable interventions in water-Energy-food-environment Mega-Systems (DAMS 2.0)
Place of Work:	Addis Ababa, Ethiopia
Salary:	Attractive & Negotiable
Type of contract:	Project staff
Project Life's	Start date: 1 st January 2019 and End date: 31 st December 2021

A. PROJECT BACKGROUND AND OBJECTIVES

The Eastern Africa Power Pool (EAPP) is an intergovernmental organization of eleven Eastern Africa Countries (Burundi, Democratic Republic of Congo, Djibouti, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, Libya and Uganda) that works to foster power system interconnectivity in the Eastern Africa Region. EAPP is a special arm of COMESA responsible for energy issues.

University of Manchester, represented by the Global Development Institute, has received financing from the UK government (through Research Councils UK) to develop new and innovative approaches to decision making on large investments in complex water-energy-food-environment systems under uncertain future climate conditions through the FutureDAMS project that was approved in 2017. It seeks to build knowledge, capability and capacity to address global development challenges;

The Project is carried out by **UoM/NBi-ENTRO/EAPP and Other FutureDAMS Consortium members**

B: OBJECTIVES OF THE ASSIGNMENT:

The parties will collaborate to design, develop and apply a techno-economic decision-making tool for integrated water-energy-environment systems analysis and planning, which includes an open-source integrated optimization simulator to help rapidly conduct multi-sectorial assessments that would support the development of sets of optimal investment opportunities to achieve effective trade-offs between different sectors and specific energy network objectives.

C: RESPONSIBLIRTY OF SENIOR ENENERGY RESOURCES AND DECSION-MAKING MODELLER

- Co-lead with FutureDAMS researchers the effort to populate, implement, calibrate, and validate an energy simulator of the Eastern Nile basin.
- Work with FutureDAMS research staff to embed this simulator into an optimization and visualization-assisted infrastructure investment planning approach and toolkit.
- Contribution to outputs: simulator, metrics of performance, optimisation formulation, negotiation and planning enabling graphical output, reporting, training material preparation.

D. DELIVERABLES/SPECIFIC OUTPUTS EXPECTED FROM THE PROJECT

- **Outputs 1:**
 - A text describing the approach, iteratively constructed
 - A coherent suite of modelling software, constituting the 'integrated model';
 - A software user interface that allows its application on real studies
 - Stand-alone river-basin, stand-alone power system model
 - An integrated simulation model of the case-study domain
 - An efficient (optimised) set of prioritised investments or a set of DMU (Decision making under uncertainty) problem formulations
- **Outputs 2:**
 - Written materials on approach
 - Written material describing integrated model, decision-making analytical approach, software
 - Online training module, reports and publications on decision-making analyses
 - Toolkits that integrate information from the river basin model and optimization outputs (this toolkit will be integrated with web application to be shared with wider stakeholders)

E: REQUIRED QUALIFICATIONS

- Experience required: at least MSc level (PhD preferred) in energy modelling, unix supercomputing, mathematical programming, many objective global optimisation, experience modelling the management and planning of the Nile river basin.

F: REQUIRED SKILL

- Ability to work effectively in a multinational team environment with a capacity to work with minimal supervision.
- Have skills and ability in depth of power system planning software like PSSE, DigSilent and others, interconnection operations and demand forecasting.
- Data gathering skills.
- Excellent oral and written communication skills in English; in French will be an added advantage.
- Excellent ability to prepare reports and documents.
- Computer literacy in the use of word processor, spreadsheets and other power system planning application relevant to power system planning.
- Hands-on experience with multilateral and bilateral funded projects.

- Have experience in projects financed by external donors such as the World Bank, African Development Bank..., and also have knowledge of policies and procedures of the World Bank.

G: MANAGEMENT PROCEDURES

Contractually, the senior energy resource and decision-making modeler will be accountable to the EAPP-FutureDAMS Project

H: RESPONSIBILITY OF THE EMPLOYER

The Employer will be availing office furniture, office equipment, stationery materials and communication facilities and other materials required by the Senior Energy Resources and Decision-Making Modeler to perform his/her duties as specified in this TOR.

I. DURATION OF THE ASSIGNMENT

Employment: 50% time.

J. Application

Interested applicants can send their CVs and Applications Letter until August 15th 2019 in electronic format at the following address: eappjobs@eappool.org. Applicants only who pass the screening will be contacted for interview.