

TERMS OF REFERENCE FOR TRAINING OF UNCERTIFIED FORMALLY TRAINED ELECTRICAL INSTALLATION PERSONNEL (WIREMEN)

1. Background

As at 1st October 2019, there are 1,500 certified installation permit holders authorized to carryout electrical installations to the levels of domestic and commercial installations. This is an increase from 800 which was the number of certified technicians at December 2017. The increase in number of certified technicians is as a result of the initiatives undertaken by the Private Sector Foundation Uganda (PSFU) with support from the World Bank which increased the number of certified technicians by 400. There have also been other initiatives undertaken by Electricity Regulatory Authority (ERA) that includes limited radio talk shows to sensitize the general public on use of certified technicians.

However, with the operationalization of the Electricity Connections Policy (ECP) that was effective 1st November 2018, there is increased demand for certified technicians. The number of certified wiremen needs to be substantially increased in order to support attainment of Government of Uganda's access goals.

To meet the annual new connections target of 300,000 the country needs a boost of at least 2,000 certified wiremen by 2020.

The Government of Uganda (GoU) has received funding from the World Bank towards the implementation of the Energy for Rural Transformation (ERT) Project Phase III (ERT-3) and intends to use part of the proceeds to finance training of un-certified formally trained electrical installation personnel (wiremen). The Ministry of Energy and Mineral Development (MEMD), in collaboration with Electricity Regulatory Authority (ERA), wishes to procure the services of a competent and reputable firm to conduct training of uncertified formally-trained practitioners/electrical installation personnel. The pre-certification training is part of the wider efforts to scale up the number of certified technicians and is intended for eligible candidates (i.e., Vocational Training Institute graduates and practitioners) that are currently not licensed by ERA.

2. Objectives

The objective of the assignment is to identify and train 1,000 uncertified formally trained practitioners/electrical installation personnel to ensure that they get equipped with knowledge and practical skills required to make electrical installations that meet both technical and safety requirements in accordance with existing laws and regulations. The proposed training will be conducted at selected Training Institutes in Uganda, namely, Uganda Technical College – Bushenyi, Uganda Technical College – Lira, Uganda Technical College –

Kyema, Uganda Technical College – Elgon, Nakawa Vocational Training Institute, Arua Technical Institute and Rukungiri Technical Institute.

3. Scope of Work

The assignment will require the Consultancy firm to undertake the following:

- a) Work with MEMD, ERA and technical Training Institutes to identify unlicensed electrical installation technicians who will be trained at the selected Training institutes of Uganda Technical College – Bushenyi, Uganda Technical College – Lira, Uganda Technical College – Kyema, Uganda Technical College – Elgon, Nakawa Vocational Training Institute, Arua Technical Institute and Rukungiri Technical Institute.
- b) Vet the selected wiremen to ensure they meet the minimum academic qualifications for each training i.e Electrical Craft Part II for domestic installation training and Electrical Craft Part III for industrial installation training;
- c) Carry out training needs assessment for each of the regions to identify the gaps. Annex 1 provides a list of the indicative training areas which should only serve as a guide. The Consultant will be required to carry out a more detailed needs assessment.
- d) Develop appropriate training curriculum/content to address the identified gaps.
- e) Design and produce appropriate training materials (handouts, booklets, etc) for the theoretical and practical training. These materials will be provided to each participant during the training.
- f) The Consultant will identify and build capacity of 2 (two) existing instructors from each of the 7 (seven) Training Institutions. The instructors should meet minimum experience and qualification requirements. The instructors will work alongside the Consultant under his terms and conditions
- g) Provide training disposable items such as cables to facilitate the practical training
- h) Administer exam(s)/assessments to each of the participants either during the training period or at the end of the training session, but prior to the candidates being interviewed by ERA's Installation Permits Committee (IPC).
- i) Liaise with ERA to ensure that the IPC is available to conduct interviews for the trained candidates immediately after completion of the training.
- j) Facilitate the IPC to conduct interviews by providing allowances for the committee
- k) Prepare and submit to ERA a training report for the trained wiremen with recommendations to ERA of technicians who should be interviewed by the IPC

4. Work Plan

Based on the scope of works above, the Consultancy firm is expected to propose a detailed work plan and implementation schedule for performing the scope of works above.

5. Qualifications of the Consultancy firm

The Consultancy firm must have the following:

- a) A minimum of three (3) years demonstrated experience in delivering similar courses and/or customized training for electrical technicians at a minimum of low voltage three phase (415V), undertaken within the last four (4) years
- b) A minimum of three (3) similar assignment/ trainings in electrical installations with not less than a total of 100 technicians trained, undertaken within the last four (4) years
- c) Demonstrable experience in training technicians on electrical safety.
- d) The Consultancy firm is expected to assemble a team of professional staff under the leadership of an experienced Team Leader/Coordinator, comprising the following experts:
 - i. Team Leader/Coordinator: Minimum qualification of a Bachelor of Science in Electrical Engineering, five (5) years' experience in training electrical technicians; minimum Class B valid installation permit issued by ERA.
 - ii. Trainers: minimum of eight (8) electrical technical staff with demonstrated hands on working experience in domestic and commercial electrical installation. They must have a minimum of a National Diploma in Electrical Engineering and valid Class B installation permits issued by ERA.

- e) Technical Institute staff (maximum of two)

The Consultant will identify and build capacity of 2 (two) existing instructors from each of the 7 (seven) Training Institutions. The instructors should meet minimum qualification of a National Diploma in Electrical Engineering and five (5) years' experience in electrical technical teaching/instructing. The instructors shall be remunerated at terms and conditions that will be determined by the consultant.

6. Deliverables and Implementation Schedule

The Consultancy firm is expected to produce the following key deliverables:

- a) **Inception report** highlighting the scope of the assignment, approach and methodology, key deliverables, implementation schedule, and project team structure and composition. The inception report will be submitted to the MEMD/ERA for approval before the Consultant can proceed with the rest of the assignment.
- b) **Training needs assessment report** highlighting compliance of the applicants with the minimum qualifications for the training
- c) **Training curriculum/content and training materials** highlighting details of training content as provided in these TORs including handouts and booklets.
- d) **Training assessment/examination forms**
- e) **Draft training report**
- f) **Final training report**

It is expected that this assignment will commence in January 2020 and be completed within a period of Six (6) calendar months. The timeframe for completion and review of each deliverable is presented in the table below:

#	Activity	Duration from contract effectiveness (Months)					
		1	2	3	4	5	6
1	Inception report						
2	Training needs assessment report						
3	Training curriculum/content and training materials (handouts)						
4	Assessment/exam results						
5	Draft training report						
6	Final training report						

7. Reporting

The successful firm will report to the Accounting Officer of the Ministry of Energy and Mineral Development.

All work files, document files, databases, spreadsheets and drawings related to this assignment will be prepared in English and provided to MEMD in electronic format upon completion of the assignment, in addition to three (3) printed hardcopies of the final report. The electronic data formats shall be compatible with the latest versions of Microsoft Office Suite, Auto CAD, or Any other data formats shall be subject to prior approval by the MEMD.

8. Services, facilities and resources to be provided by the MEMD/ERA

The MEMD and ERA will provide demo cubicles equipped with training facilities for the technicians.

Annex 1: List of indicative Training Areas (Theory and Practical)

1. Electrical wiring regulations and standards
2. Electrical wiring systems (ring and radial)
3. Circuit protection
4. Protection grading
5. Circuit drawings
6. Motor installations
7. Motor winding and rewinding
8. Motor starters (star delta and direct on line)
9. Cable sizing
10. Load balancing
11. Earthing
12. Accessory positioning and mounting
13. Tests carried out on the electrical installation
14. Electrical Safety practices