



THE REPUBLIC OF UGANDA

MINISTRY OF ENERGY AND MINERAL DEVELOPMENT

**UGANDA ENERGY ACCESS SCALE-UP PROJECT (EASP) - P166685
TERMS OF REFERENCE FOR CONSULTANCY SERVICES**

Clean Cooking Energy Needs Assessment in Public and Private Institutions in Uganda

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1. Introduction

The Government of Uganda (GoU), with support from the World Bank, is preparing the Uganda Electricity Access Scale-up Project (EASP). Among other interventions, the proposed EASP will support GoU's efforts to scale-up access to clean cooking for both public and private institutions. This support will also make targeted interventions to refugees and refugee host communities. EASP activities will build on earlier Government initiatives, in the energy sector, to support the earlier initiatives in clean cooking. This intervention is mainly targeting scale up of clean cooking initiatives including improved institutional cook stoves for efficient cooking with biomass and alternatives to woody biomass use of biogas from biodegradable materials mainly human waste.

The consultancy shall cover public and private institutions in Uganda that shall include public/private schools and health centers, prisons, barracks, etc. with huge cooking requirements. Further, the project will provide technical assistance to strengthen the operational capacity of Ministry of Energy and Mineral Development (MEMD), Uganda Energy Credit Capitalization Company (UECCC) and the Rural Electrification Agency (REA) to ensure compliance with standards and regulations that will be set under the project.

EASP will also support Uganda's Nationally Determined Contribution (NDC) to mitigate climate change, through a series of priority and adaptation measures, including increasing efficiency in the use of biomass and providing easy alternatives to the use of woody biomass.

One of the key output indicators of the EASP for institutions will be the number of public institutions supported / provided with clean cooking solutions.

The consultancy shall cover public and private institutions in Uganda that shall include public/private schools, health centers, prisons, military barracks, etc. with significant cooking requirements.

Rationale for improved clean cooking in private and public institutions under the EASP

Both private and public schools, health centers and other public institutions such as prisons, barracks, and refugee reception centers are engaged with a lot of cooking at their premises. For Public schools, the Ministry of Education and Sports does not provide conditional funding to support cooking yet cooking consumes almost 50% of the school budget. Almost all public institutions that provide meals to their clients are still dependent on inefficient cooking systems. Cooking in institutions is mainly done using biomass materials which are in short supply. A recent study by Uganda Bureau of Statistics (UBOS) stated that improved cook stove adoption in Uganda was at 10%. Even those stoves in existence have poor maintenance regime making them very unreliable in delivering the efficiency desired from those stoves. The continued influx of refugees to the country, adds pressure on the already stressed natural resource for cooking. Cooking is one aspect that has contributed to the increased rate of deforestation in Uganda.

The approach to rapidly disseminate the cooking technologies will be to segment the market from the end user perspective. The assignment will categorize select institutions into 3 categories: It is anticipated that a 3-pronged segmentation will be applied where the end users will be categorized according to the willingness to pay for the technology. As mentioned earlier, most public institutions do not get subversion capitation from government to support clean cooking. Therefore, the institutions will be divided into 3 main categories: 1)

- a. those Institutions that can fully pay and acquire the technologies using their own financing (0% subsidy);
- b. those Institutions that can raise partial financing and therefore need additional financing to help them acquire the technologies (consultant to determine the additional required financing which the institutional can access based on the tier of the subsidy / acquire through UECCC at less that the market lending rates); and
- c. those Institutions that cannot raise any financing and will require full support from the project to acquire these technologies (100% subsidy).

The project will hire and supervise the contractors for the rapid deployment of technologies, adherence to standards and ensuring that the institutions receive the appropriate training to maximize the adoption and use of the technologies. The project will also train more artisans to construct and maintain these technologies. These artisans will be readily available within the communities to ensure sustainable use of the deployed technologies. They will also be available to duplicate these technologies to other beneficiaries

There has been effort to deploy these technologies using the financing model where the funds are availed for the institutions to borrow and pay back over time. This approach has not shown rapid results for adoption. If this method is maintained, at some point, fuel demand will outstrip the regeneration and supply. The costs of fuels keep increasing and becoming scarce, yet the cooking needs keep increasing

It is therefore important to explore alternative approaches to providing clean cooking technologies to public institutions which will spur stable, reliable and cost-effective cooking options.

2. Objective and Overview

The objective of this assignment (study) is to design a sustainable distribution framework for clean cooking technologies for institutions in Uganda. The framework will be adopted under the proposed Electricity Access Scale-up Project (EASP) to increase the adoption of clean cooking solutions that includes improved institutional cook stoves and biogas using human waste and other biodegradable materials to lower the costs of cooking in public/private institutions.

The study will involve;

- i. Creation of awareness on the use of the improved Institutional clean cooking technologies cook stoves and bio latrine systems to promote clean cooking in both private and public institutions.
- ii. Develop and apply a criteria to sort through the large number of public and private institutions that should be considered for this support
- iii. Apply the above criteria to the long list of institutions to be provided by the relevant Ministries, Departments or Agencies (MDAs) that include Ministries of Education and Sports, Internal Affairs, Defense and Health among others will provide and come up with a list of eight hundred (800)¹ number of schools, prisons, hospitals, police or other institutions that should be considered under the EASP.
- iv. Visit and interview the institutions to do the following:
- v. Conduct an energy needs assessment to determine the most appropriate clean cooking technology (in terms of improved cook stoves and/or biogas, etc.) for the respective each institution
 - a. Perform a financial and economic analysis to determine the institution's ability to pay and categorize each institution by level of subsidy i.e. 0% subsidy or 100% subsidy
 - b. Identify the institutions that have the ability to pay and raise awareness about the low interest lending facility available at UECCC that they can utilize to purchase suitable clean cooking technologies
- vi. Develop and apply criteria to select the final list of institutions to receive the support from EASP
- vii. Finalize a short list of 800 institutions that will receive EASP support along with the suggested level of subsidy for each institution. Identification and categorization of institutions that will be supported to acquire clean cooking technologies. This will include determination of required level of subsidy for each respective public institution.
- viii. Determine other plausible clean cooking technologies that are applicable in the institutions.
- ix. Propose alternative financing mechanisms that will be used to enhance rapid deployment of clean cooking technologies.
- x. Design a model for sustainable model for EASP to support to the operation and maintenance of the installed clean cooking sub sector in technologies Ugandan private and public in the supported institutions.

3. Scope of Deliverables

¹ This number will include 16 regional hospitals, about 86 prisons and barracks facilities regionally distributed as well as 700 schools regionally distributed / characterized. The list will have to be agreed upon amongst, MEMD, UECCC and the respective Ministries, Departments or Agencies.

Task 1: Inception report

The consultant shall submit an inception report detailing the methodology on how to undertake the assignment the report shall be validated with key state holders to enable a smooth implementation of the assignment.

Task 2: Situational and Needs Assessment, Financial and Economic Feasibility Analyses

The Consultant will determine the current cooking technologies as well as penetration of clean cooking technologies (improved institutional cook stoves, bio-latrines, LPG, etc.) in institutions in Uganda. The consultant shall liaise with different stakeholders to establish planned interventions in existing clean cooking activities as well as planned interventions. The consultant should also carry out an in-depth analysis into technical and financial challenges being faced towards reliable cost-effective adoption of clean cooking.

The consultant will have to earmark and study the proposed sites as provided by partners in the clean cooking space. The earmarked sites will then have to be visited nationally and the following should be part of the on-site assessment:

- Verify the existence of the institution at the specified location (school, prison, health facility, etc.) and assess the suitability of the location and structures to be equipped with a clean cooking facility. The identified institutions should also include those in areas of refugee settlement areas and refugee hosting communities.
- Conduct an awareness creation to the institutions on the efficient biomass and other clean cooking technologies to have their interest.
- Determine the number of institutions that will need the clean cooking interventions such as cook stoves, bio-latrines, biogas digesters, LPG, etc.
- Determine the average weekly, monthly and annual expenditure of the respective institutions on cooking fuel.
- Determine the sizes of appropriate technology (cook stoves, biogas, LPG etc.) appropriate for each institution.
- Record the names and contact details of key institution personnel and officials responsible for the operations of the institution;
- Record by GPS the coordinates of the institution and map it on Google My Maps platform
- Assess the willingness or ability of the institutions to pay for the clean cooking technology to enable in the design of a viable financing model for the respective institutions.
- Develop an evaluation criteria for determining the level of subsidy requirement (a maximum of three tiers to be considered / developed by the consultant. Consideration to include among others, the institutions' fuel expenditures, willingness to pay, whether the institution is public or private, etc.).
- Based on the developed subsidy requirement/evaluation criteria, determine the level of financing support needed in each institution to adopt the technology. The financing structure should indicate the level of subsidy required by each institution identified and the cost sharing arrangements.
- Determine level of mobile phone service (voice/text only, GPRS, EDGE, 3G, H/H+, 4G, none) at each institution to determine if remote monitoring technology can be deployed
- Describe the cooking operations of the institution, including the operating hours, and expected daily fuel consumption (demand) patterns

- Record the number of people at the institution that will need the services of cooking including their distribution on the institution;
- List all cooking equipment destined to be replaced by improved cook stove and bio latrines and describe how this is perceived in terms of efficiency, reliability, service quality and provide photographic evidence.
- Record the condition of the existing average amounts of money spent monthly on fuel/wood/charcoal, initial costs (if relevant) including photos and the potential savings from switching to the suggested cleaner cooking methods
- The consultant shall develop and complete the site-specific Environmental and Social safeguards checklist for each institution as per the World Bank Performance Standards.
- Analyze and consolidate the findings into a written report. This report shall be the basis of the planning and design phases to follow.

Task 3: Development of Standard Designs, Tender documents and the Implementation Strategy / Roll-out program

The consultant will develop standard designs and a detailed implementation strategy including behavioral change communication strategy for the clean cooking solutions of the institutions that are deemed feasible to benefit from the envisaged program considering the following strategies:

- Develop appropriate standardized designs for the clean cooking interventions for the respective institutions with different sizes and capacities. The designs should utilize the latest technologies that enable long-term system sustainability, particularly focusing on optimizing efficiency of fuel usage, operations and maintenance, and social acceptability of the cooking technologies.
- The earmarked institutions shall be grouped into geographical lots, include optimum number of sites to allow economies of scale for contractors;
- The contractors shall follow the set standards of the construction installation of cook stoves and bio latrines the technologies
- The contractors shall adopt the provided designs but have the flexibility to make reasonable adjustments to the described designs to improve efficiency and adapt to conditions dictated by the selected cooking technology and site conditions.
- The Consultant will describe mechanisms and set a framework that will be used to implement the interventions of clean cooking considering the participation of private sector to provide bridge support especially to those that will afford to pay for the cooking systems either in whole or in part.
- Develop appropriate tender documents for the various clean cooking technologies as per the design.
- The Consultant shall recommend key performance indicators (KPIs) to be adhered to by the contractors such as system reliability and O&M services required to sustain the cooking systems.
- Develop an appropriate implementation strategy and roll-out plan of the programme including an effective behavioral change strategy.
- Once the implementation strategy is conceptualized, conduct a market sounding exercise / workshop to validate the approach and ensure there is adequate interest from potential contractors to ensure successful implementation and conclusion of contracts as earmarked in the concept.

Based on feedback from the market-sounding stage, including from the client and other relevant stakeholders, revise the implementation strategy and develop appropriate tender documents².

4.

Deliverables

Deliverables	Due date in weeks from the date of contract signing	Client's Commitment to review deliverables from date of delivery by the Consultant (Duration in Weeks)
1. Inception Report - Summarize approach, methodology and flag key issues to be addressed that may present challenges the study	Week 2	1 week
2. Report on <i>Situational and Needs Assessment, Financial and Economic Feasibility Analyses</i> - To include section on awareness campaigns executed	Week 16	2.5 Weeks
3. Report on Implementation Strategy and Roll-out Program / Prioritization - To include information on implementation approach, a SWOT analysis of the designed implementation approach, roles of different stakeholders, awareness & communication strategy for effective implementation/behavioral change, etc.	Week 22	2 weeks
4. Draft Final Report and Tender designs - To combine / include contents of deliverables 1, 2 and 3 - To capture / address all comments received from stakeholders.	Week 25	2.5 weeks
5. Market Sounding and Validation work shop report - To detail workshop proceedings, participants comments, potential contractors and agreed upon approaches to enrich the final report and implementation of the proposed interventions.	Week 28	1 week
6. Final Report and Tender Documents - To include contents from deliverables 1, 2, 3 and 4 and 5	Week 31	2 weeks

²Tender documents will have to be developed in close coordination of both UECCC and MEMD

5. Payment Schedule

This assignment is expected to be completed within a period of 33 weeks from the signing of the contract. The consultant will be paid as per the following schedule:

S/N	Milestone	Payment %
1	Approval of inception report	20%
2	Approval of Report on <i>Situational and Needs Assessment</i> , Financial and Economic Feasibility Analyses	40%
3	Approval of the Rollout Program / Prioritization and Implementation Strategy Report and approval of the Market Sounding and Validation workshop report.	20%
4	Approval of Final Report and Tender Documents	20%

6. Firm Qualifications

Interested consultancy firms should provide information demonstrating that they have the required qualifications and relevant experience to perform the services outlined.

- At least ten years of experience working in clean cooking sector, and or renewable energy industry sectors
- At least five years of experience working in institutional cook stoves and biogas technology (biolatrines, biogas digesters, etc.).
- Experience of at least two similar assignments involving support to governments in performing energy needs assessments and preparing and implementing design, installation, and maintenance of clean cooking in institutions in the last 10 years;
- The firm must have staff with skills in the following areas:
 - Institutional Improved cooking technologies – Including but not limited to improved cook stoves,
 - Biogas technology and
 - LPG
 - SME Renewable energy financing
 - Public -sector planning and development
 - Social and Environment Safeguards
- Experience in Sub-Saharan Africa
- Experience with World Bank projects will be considered an advantage;

The Consultant shall employ well qualified and competent professional staff at all times in the execution of the assignment and shall therefore propose a team of experts that is fully able to deliver the services in accordance with the requirements defined in this TOR. In order to comply with the requirements from this TOR, firms can substitute individuals and/or add further individuals who had not been originally included in the expression of interest. The Consultant shall submit CVs for all the key staff in their proposed team. All CVs must meet the minimum requirements as indicated in the Request for Proposal.

All the experts shall be highly skilled and experienced and shall score a minimum of 75%. Key staff with scores of less than 75% shall have to be replaced if the consultant progress to negotiation stage.

The Consultant’s proposal should include key professional staff with qualifications and experience similar to or exceeding the following:

Position	Minimum Qualification	Specific Experience	Nature of Involvement
Project Manager	Degree in Engineering/ Natural Science/ Finance/ Economics from a recognized University / Institution, with Project Management Qualifications	At least 10 years of experience as Project Leader in activities related to planning, design, implementation, Integration and operations of Clean Cooking Systems. Should have demonstrated analytical skills to analyze and interpret data. Good communication skills in local language and English and good written Communication skills in English.	Has the overall responsibility for the successful initiation, planning, design, execution, monitoring, controlling and closure of the project Manage timely Delivery of Pre-Implementation and Implementation
Institutional Improved Cook Stove (IICS) Expert	Degree in Mechanical Engineering or Natural Science from a recognized University / Institution with post grad qualifications in Renewable Energy as added advantage	At least 10 years' Progressive experience in at least 2 similar projects as well as demonstrated knowledge and credentials and experience in Cook Stove industry.	Provide expert inputs and deliverables of Pre- Implementation, and Implementation guidance on all aspects of the project as it relates to IICS

Position	Minimum Qualification	Specific Experience	Nature of Involvement
Bio gas Expert	Degree in Mechanical Engineering or Natural Science from a recognized University / Institution with post grad qualifications in Renewable Energy as added advantage	At least 10 year's Progressive experience in at least 2 similar projects as well as Demonstrated Knowledge and credentials in Bio Latrine industry.	Provide expert guidance on all aspects of the project as it relates to Bio gas technologies inputs and deliverables of Pre- Implementation, and Implementation
Financial Analyst Specialist	Masters' Degree in Finance or MBA with relevant post graduate qualifications	At least 5 year's progressive experience in the conducting financial analyses and feasibility assessments of renewable energy programs	Provide Financial assessment / expert inputs on the assignment
Social and Environmental Specialist	A minimum of Bachelor's Degree in Social Sciences Environmental Sciences, or a related field from a recognized university / institution.	At least 2 year's progressive experience in social and environmental assessment of off-grid solar projects	Provide guidance on social and environmental impacts of interventions and propose mitigation measures as needed

The consultancy is expected to take 33 weeks in total.

7. Support from the Client

While the Consultant shall be responsible for providing all the necessary tools required for successful execution of this assignment, including the necessary software, transport (foreign and inland), accommodation, communication, etc. and shall include the cost of these responsibilities and tools in their proposed price, the Client will provide available data and information related to the assignment. The client will also cover the cost of the stakeholders' workshops and will, upon request, introduce the Consultant to relevant stakeholders.