Terms of reference (ToRs) for the procurement of services below the EU threshold

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Preparation and supervision of rehabilitation works of three micro-hydro-power plants in Sidama Regional State, Ethiopia

Project number/ cost centre:

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0. List of abbreviations

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2020
EnDev	Energising Development
GBE	Green People's Energy (German: Grüne Bürgerenergie)
MHP	Micro-hydropower
MoWIE	Ministry of Water, Irrigation and Energy
ToRs	Terms of reference

1. Context and objective of the assignment

Since 2018, the GIZ project Green People's Energy for Africa (hereinafter GBE) aims to improve the conditions for decentralized energy supply in selected sub-Saharan African countries with the participation of citizens and companies. Activities will focus on Ethiopia, Benin, Côte d'Ivoire, Ghana, Mozambique, Zambia, Namibia, Senegal and Uganda. In addition to country-specific measures, the initiative promotes renewable energy projects of common benefit across countries and strengthens partnerships between actors in Europe and Africa. For its operations in Ethiopia, GBE collaborates closely with the Ethiopian Ministry of Water, Irrigation and Energy (MoWIE) as well as with the Energising Development Ethiopia Project of GIZ (hereinafter: EnDev). Furthermore, GBE provides technical support to a number of governmental institutions and non-governmental organizations, private institutions and enterprises, cooperatives, and communities.

Between 2013 and 2016, EnDev has implemented five micro-hydropower (MHP) mini-grids: four in Sidama and one in Oromia. The five sites have been developed by EnDev together with Ethiopian partners as cost share projects to pilot MHP mini-grid infrastructure managed by cooperatives in Ethiopia, and to lay the foundations for a MHP sector in Ethiopia. However, two of the sites are still operating – but at limited performance - and 3 have ceased to operate. All the five sites, however, are supposed to operate sustainably and enable the adjacent community to increase its productive use of the electricity generated by these plants.

As first step towards the rehabilitation of the sites, GBE Ethiopia has conducted in 2020 an in-depth study to assess the technical and organizational deficiencies as well as the potential of productive use of the energy generated by the MHP in case they are re-operationalized. As one of the study outcomes, it was found that all the five sites (Ererte, Gobecho I &II and Sodecha in Sidama region and Leku Megira in Oromia region), feature various deficiencies related to technical malfunctions, organizational- and management-related shortcomings as well as an underused potential of productive use of the generated electricity (for those sites that are operational). The result of study further revealed that all the hydropower plants can be rehabilitated to operate with optimized energy generation but with varying rehabilitation cost per kilowatt generated and with addition of anchor loads, extra household connection and commercial activity as productive use of energy to increase technical and financial sustainability of the project.

Following the need assessment at each site, the GBE has chosen three out of the five mini-grid sites whose rehabilitation costs are within the project's budget and that have promising prospects of increased application of productive use as well as technical and financial sustainability. The tender for the technical rehabilitation of the said three mini-grid sites will be launched mid-2021.

GBE Ethiopia is herewith tendering a consultancy service in support of the supervision of the technical rehabilitation, which includes civil engineering and electro-mechanical works amongst others. The **general objective** of the assignment is to ensure the

thorough, complete and timely preparation and execution of works according to the contract.

The specific objectives are as follows:

- To review the technical rehabilitation steps (civil and electromechanical work) suggested by the needs-assessment, and refine and complement the rehabilitation proposal with missing technical specification, technical drawings and revised BoQ

- To professionally prepare and support the tendering process for the construction works.

- To ensure the conformity of the civil and electrotechnical work to be done in accordance with the technical and financial planning documents according to construction contracts and in respect of GIZ construction standards as well as minimum security, safety and health standards.

- To ensure the completion of the works according to GIZ quality standards and support subsequently testing, commissioning and take-over by GIZ.

The consulting firm (hereinafter: Consultant) will receive from GIZ the earlier developed technical rehabilitation needs assessment reports for all three hydropower as well as the draft description of works and BoQ at the beginning of the assignment. The Consultant will also receive some – thought in parts incomplete – designs for both, civil-engineering and electromechanical components that were developed ahead of the installation. The Consultant will further receive the MHP construction guidelines, developed by EnDev to guide the preparation of the tender documents and conduct the supervision.

Important 1: The assignment has to be conducted in respect of the health and safety provisions from the Government of Ethiopia regarding the ongoing COVID pandemic.

Important 2: The assignment stretches over six months because some of the electromechanical equipment is yet to be ordered and shipped to Ethiopia. Hence, the works will start with the civil engineering works and basic electrical installations, whereas the installation of a turbine & generator and other equipment will follow at a later stage of the assignment.

2. Tasks to be performed by the Consultant

2.a. Geographical scope of tasks

The three MHP mini-grid sites in Sidama can all be accessed from Hawassa, requiring a field car. Details are provided in below table:

No..	Site name, region, year established, GPS	Operational capacity (kW) / potential capacity (kW)	Operator model	Number of connections		
				Households	Social Institutions	Productive Users
1	Ererte, 2010 6°33'26.80"N 38°40'8.40"E	5 / 21	Cooperative	514	12	13
2	Gobecho II, 2011 6°34'39.70"N 38°41'50.00"E	0 / 21-24	Cooperative	108	8	8
3	Hagere-Sodicha, 2011 6°37'26.60"N 38°31'5.30"E	28 / 43	Cooperative	327	22	12

2.b. Thematic scope of the works

The scope of the works stretches over two phases

Phase 1: will cover review of the existing study documents, draft description of works and BoQ, refining of description of works, bill of quantity, production of technical drawings and preparation of the tender documents for planned construction works. GIZ templates will be used for the development of the said tender documents.

Phase 2: will cover the supervision of supply and construction work, quality control, trouble-shooting support, development of testing and commissioning documents, support of the testing and commissioning and take-over by GIZ, as well as the development of a final report with as-built-drawings where necessary.

2.c. Description of Work

Work package 1: Review of reports, inception reporting, preparation of tender documents

- Review of the rehabilitation needs assessment report that was developed by GIZ and consultants in 2020
- Review of the system design documents developed before the installation of the systems.
- Review of the MHP construction guidelines of EnDev
- Review the existing draft description of works and BoQ.
- Inception report outlining the Consultant's understanding of the assignment, workplan, activities and identified challenges and corresponding mitigation measures.
- Conduct field trips to all three sites for
    - cross-checking and complementing the description of works and BoQ for each site and identify necessary adjustments to be in line with the aforementioned MHP construction guidelines
- Revise and complement the description of works and BoQ according to the field trip findings, which also includes the development of technical drawings.
- Prepare tender documents for the technical rehabilitation works, including description of works, BoQ, technical drawings, as well as technical qualification and other requirements for the bidders

Work package 2: Support the technical assessment of the bids

- At the end of the tender process, advice GIZ staff (who is exclusively mandated to conduct the technical assessment of the bids) with his/her expert opinion after reviewing the technical bids.
- The SE will support GIZ in the contract negotiations with the prospective contractor(s) by advising GIZ on technical and financial aspects to pay particular attention to.

Work package 3: Supervision of construction works on site

- Act as first point of contact for the construction contractor and sub-contractors if any for construction supervision and contract monitoring
- Ensure the availability of the contractor's equipment and materials before commencement of the construction activities.
- Set up an implementation schedule for all three sites in agreement with the construction contractor. This includes monitoring the deployment of workforce and material as well as the whole implementation in line with the timelines.

- Closely supervise, monitor and verify the on-site the works and workmanship that are to be undertaken strictly in line with
    - the GIZ quality-standards,
    - specifications and BoQs according to bidding documents and construction contract, and
    - relevant Ethiopian standards and regulations for workmanship.
- Oversee the respect of health and safety standards on site;
- Review all technical documents in conjunction with other relevant structural, mechanical, electrical and special systems drawings that are being produced during the implementation;
- Provide designs, specification and BoQs for any additional works identified during implementation of specific civil and electromechanical work contracts, pending approval from the GBE Project Manager.
- Assist the contractor in resolving any unexpected technical difficulties and any other problems that may arise.
- Updates the GBE project manager and coordinators on the progress of works, including any difficulties, challenges and setbacks that may arise.
- Provide recommendation for interim-payments for the works done after advising responsible GIZ staff on the material correctness of submitted invoices (in case of need).

Work package 4: Commissioning, reporting, hand-over support

- Develop inspection, testing and commissioning protocols for all three sites.
- Support the inspection commissioning and take-over of the completed work from contractor by GBE. This includes the development and filling out of checklist for indicating the correct, complete and qualitatively satisfactory delivery of works as per contract with the company who is tasked with the rehabilitation.
- Construction report including schematic drawing and relevant pictures. This also includes an evaluation report on the performance of the company tasked with the rehabilitation.
- Supports the hand-over procedure from GBE to the beneficiary regional government. This consists mainly of participating in the site-inspection with partners and answering technical questions on the rehabilitation process.

2d. Deliverables

Basing on the above work packages in each phase, the following deliverables are expected from the consultant:

- Inception report including work plan construction works, including inspection phases and estimated completion and commissioning time-frames - to be presented to GBE as PowerPoint and in hardcopy;
- Complete set of construction tender documents, including description of works, BoQ, technical drawings, qualification criteria for construction contractor and craftsmen to be involved – to be submitted in hard- and soft-copy;
- Mid-term progress reports on civil & electromechanical works supervision activities;
- Inspection, testing and commissioning protocols for each of the three sites – to be submitted in hard- and soft-copy
- Construction report – to be submitted in hard- and soft-copy
- Presence and input at field visits for handing-over the sites to GIZ's partners.

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term, and at particular locations:

Payment schedule	**Milestone**	**Deadline**
	Inception report including work plan	1 week after signing the contract
40%	Complete set of tender documents	5 weeks after signing the contract
	Mid-term progress report of civil engineering works	At the middle of the period of assignment
20%	Commissioning and take-over protocol for civil engineering works	At the end of the civil engineering rehabilitation works for each site
20%	Commissioning and take-over protocol for electromechanical works	At the end of the electromechanical rehabilitation works for each site
	Construction report	2 weeks before end of the assignment
20%	Hand-over presence and input	At the end of the assignment

Period of assignment: From 1st September 2021 – 28th February 2022

Main Activities and Time Schedule

The assignment is structured in two phases and shall encompass the below listed number of expert days per main activity.

No.	Main activity	Number of expert days	
		Hydraulic/ civil engineer	Electro-mechanical engineer
Phase I			
1	Review existing documentation	3	2
3	Field trips for verifying existing data and compiling missing information.	9	5
4	Develop tender documents for all 3 sites	15	4
5	Support tender evaluation and contract negotiations.	3	2
Phase II			
6	Supervise and take-over of constructions (Civil and electromechanical-on-site)	25	20
7	Develop final report including as-built drawings	5	3
8	Assist in hand-over inspections	6	2
	TOTAL	64	32

3. Concept

In the bid, the bidder is required to show how the objectives defined in Chapter 2 are to be achieved, if applicable under consideration of further specific method-related requirements (technical-methodological concept). In addition, the bidder must describe the project management system for service provision.

Technical-methodological concept

Strategy: The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1). Following this, the bidder presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 2).

The bidder is required to present and explain its approach to **steering** the measures with the project partners and its contribution to the results-based monitoring system.

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 2 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if applicable, take account of the milestones and contributions of other actors in accordance with Chapter 2.

Other specific requirements

None

Project management of the Consultant

The bidder is required to explain its approach for coordination with the GIZ project.

- The Consultant manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.
- The Consultant reports regularly to GIZ in accordance with the AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH from 2020.

The bidder is required to draw up a **personnel assignment plan** with explanatory notes that lists all the experts proposed in the bid; the plan includes information on assignment dates (duration and expert days) and locations of the individual members of the team complete with the allocation of work steps as set out in the schedule.

4. Personnel concept

The bidder is required to provide personnel who are suited to filling the positions described, on the basis of their CVs (see Chapter 7), the range of tasks involved and the required qualifications.

The below specified qualifications represent the requirements to reach the maximum number of points.

Team leader and civil engineering expert

<u>Tasks of the team leader and hydraulic/civil engineering expert</u>

- Lead and overall responsibility for the execution of all above stated work packages and submission of all above listed deliverables of the Consultant (quality and deadlines)
- Coordinating and ensuring communication with GIZ, partners and others involved in the project
- Personnel management of assigned staff, as well as planning and steering the assignment.
- Regular reporting in accordance with deadlines

- Preparation, supervision and commissioning of civil engineering works of the different components of the micro-hydro rehabilitation as per the above Work Packages 1-4.

Qualifications of the team leader

- Education/training (2.1.1): Masters in hydropower engineering/Civil engineering /hydraulic engineering and related fields with Professional Engineer license: PE-6 or above
- Language (2.1.2): Very good business language skills in English and Amharic. Local language skills are an extra asset.
- General professional experience (2.1.3): 7 years of practical professional experience in the planning and development of small- and micro-hydropower systems, with a focus on civil engineering works.
- Specific professional experience (2.1.4): Supervision and commissioning of the construction or rehabilitation of civil engineering works for 5 micro-hydropower systems.
- Leadership/management experience (2.1.5): 5 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.1.6): not applicable
- Development Cooperation (DC) experience (2.1.7): 3 years of experience in DC projects
- Other (2.1.8): 5 years of work experience in the civil engineering private sector

Expert 1 (Electromechanical engineer)

Tasks of expert 1

- Preparation, supervision and commissioning of electromechanical works of the different components of the micro-hydro rehabilitation in line with the Work Packages 1-4.
  Supporting the Team Leader in developing and submitting all above listed deliverables as well as in any other works and tasks relevant for the accomplishment of the assignment.

Qualifications of expert 1

- Education/training (2.2.1): Electromechanical engineering, electrical engineering, renewable energy or related fields
- Language (2.2.2): Very good business language skills in English and Amharic. Local language skills is an extra asset.
- General professional experience (2.2.3): 7 years of practical professional experience in the planning and development of small- and micro-hydropower systems including the grid-infrastructure, with a focus on electromechanical engineering works.
- Specific professional experience (2.2.4): Supervision and commissioning of the construction or rehabilitation of electromechanical engineering works for 5 micro-hydropower systems and their grid infrastructure.

- Leadership/management experience (2.2.5): 3 years of management/leadership experience as project team leader or manager in a company
- Regional experience (2.2.6): not applicable
- Development Cooperation (DC) experience (2.2.7): 1 year of experience in DC
- Other (2.2.8):

Soft skills of team members

In addition to their specialist qualifications, the following qualifications are required of team members:

- Team skills
- Initiative
- Communication skills
- Sociocultural competence
- Efficient, partner- and client-focused working methods
- Interdisciplinary thinking

5. Costing requirements

Assignment of personnel

Team leader and civil engineering expert: Assignment for **66 expert days**

Expert 1: Assignment for **38 expert days**

Travel

The bidder is required to calculate the travel by the specified experts and the experts it has proposed based on the places of performance stipulated in Chapter 2 and list the expenses separately by daily allowance, accommodation expenses, flight costs, vehicle rent and other travel expenses.

The Consultant is to cater for his/her own transport throughout the entire assignment, be it in the capital or in the field.

Workshops, training

Not applicable

Other costs

- Per-diems or allowances for field guides / community representatives and any other payments that may arise during the field visit for collecting data and evidence have to be covered by the Consultant and included in the price bid

Flexible remuneration item

Not applicable

6. Inputs of GIZ or other actors

GIZ and/or other actors are expected to make the following available:

- All documents relevant for the preparation of the assignment, that are on file
- Introduction to the communities and local stakeholders (e.g. on woreda level)
- Support letters, where needed

7. Requirements on the format of the bid

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in English (language).

The complete bid shall not exceed 10 pages (excluding CVs).

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long.

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.

Please calculate your price bid based exactly on the aforementioned costing requirements. In the contract the Consultant has no claim to fully exhaust the days/travel/workshops/ budgets. The number of days/travel/workshops and the budget amount shall be agreed in the contract as ‘up to’ amounts. The specifications for pricing are defined in the price schedule.