

REPUBLIC OF MOZAMBIQUE



ELECTRICIDADE
DE MOÇAMBIQUE, E.P.

TERMS OF REFERENCE (TOR)

CONSULTING SERVICES FOR SUPERVISION OF THE CONSTRUCTION WORKS

MOZAMBIQUE ENERGY FOR ALL PROJECT (PROENERGIA)

October 2019

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1. PROJECT BACKGROUND

The national power utility **Electricidade de Moçambique (EDM)** has taken the lead role in the **Government of Mozambique's (GoM's)** efforts to expand electricity access, complemented by **Fundo de Energia (FUNAE)** for the provision of electricity services for rural areas and community centres. In its most successful years, 2017, EDM was able to connect about 140,000 new customers per year, across the country, but this figure has sharply decreased over the last few years, mainly due to lack of adequate business model. Therefore, only 27 percent the population, County wide, benefit from the electricity services from on grid system.

To accelerate electrification and achieve universal access by 2030, the Government of Mozambique has taken the leadership in defining a new model for electrification namely *National Electrification Strategy* (NES) while preserving the financial viability of the sector.

The NES has attracted the attention and interest from other development partners to finance the first phase of the implementation strategy with around \$200m, including \$82m in grant from IDA.

The proposed Project will support the expansion of access to peri-urban and rural areas by harnessing and extending existing grid network and by piloting mini-grids in off-grid area based on solar power generation. The Project will support three (3) components that aim at connecting on-grid and off-grid households based on a sustainable approach to electrification that incorporates proven international experience, technical assistance and capacity building support.

The on-grid component will be implemented by EDM and will focus on densification and short-range grid extension to ensure massive connection of existing potential customers without electricity in peri-urban and rural areas across the whole country.

While the project is under preparation, EDM is facing a huge demand for household electricity connections which is resulting in the need for extension of distribution network.

In this regard, EDM intends to hire a consultancy services to carry out detailed design reviews and for supervision of the construction works.

1.1. Project Description

To ensure a more cost-effective implementation of the ProEnergia Project as well as the Construction and Installation Services of the supplied material and equipment, EDM intend to hire a consultant Firm for supervision of construction works.

The scope of the project works for this assignment includes monitoring and supervision of: Service connection of approximately 324,000 customers, construction of 1,791km of 33kV Lines; installation of 3,600; 33/0,4kV; 75kVA distribution transformers, construction of 8,028km of 0,4 kV Line.

The consultant service for supervision of the Project is divided into two (2) different Package (areas) covering the Peri urban locations in eleven (11) provinces of South, Central and North regions of Mozambique (see annex c). The same consultant can't be awarded 2 Package at simultaneous. Project areas are separated as detailed below:

- (i) **Package 1:** Covering five (5) provinces, Maputo City, Maputo Province, Gaza, Inhambane, and Sofala (Thirteen different areas).

The works consists of connecting of approximately 159,000 Customers through the construction of approximately 1518 km of 33kV Medium Voltage lines installation of 1486 distribution transformers, Construction of proximately 3176 km of Low Voltage lines in the following selected peri –urban areas within the indicated areas, as shown on table below:

Province names	Project area	No. of target customers
Maputo city (Direcção Regional Cidade de Maputo)	KaMpfumo	3 000
	KaMaxaquene	1 000
	KaMavota	2 500
	KaMubucwane	4 000
	KaGuava	15 000
Maputo province (Direcção Regional Província de Maputo)	Matola	4 000
	Machava	35 000
	Infulene	12 500
	Boane	7 000
Gaza Province	Delegação de Chockwe	15 000
	Delegação de Xai-Xai	15 000
Inhambane Province	Delegação de Inhambane	15 000
Sofala province	Delegação da Beira	30 000
	TOTAL	159000

- (i) **Package 2: Covering** six (6) province, Zambézia, Manica, Tete, Nampula, Cabo Delgado and Niassa from central and North Region.

The works consists of connecting of approximately 165000 Customers through the construction of approximately 1242 km of 33kV Medium Voltage lines installation of 2113 distribution transformers, Construction of proximately 4851 km of Low Voltage lines in the following selected peri –urban areas within the indicated areas, as shown on table below:

Province names	Project area	No. of target customers
Manica province	Delegação de Chimoio	21 000
Tete province	Delegação de Tete	22 500
Zambézia Province	Delegação de Quelimane	15 000
Zambézia province		
Nampula province	Delegação de Mocuba	15 000
Nampula province	Delegação de Nampula	30 000
Nampula province	Delegação de Angoche	6 000
Nampula Province	Delegação de Nacala	22 500
Cabo Delgado province	Delegação de Pemba	15 000
Niassa province	Delegação de Lichinga	9 000
Niassa province	Delegação de Cuamba	9 000
	TOTAL	165000

1.2. Project Implementation Schedule

The overall completion of the construction of distribution system is expected to be completed within 18 months, divided in 2 months for pre-construction period and 16 months for construction period, from the start of the construction works. The defect liability period for all Package will be 12 months from the completion of the works/facility.

The consultant is also required to provide necessary support in preliminary survey, Engineering, Contract Management, carry out all site works supervision (supervisor must be permanent on site), including material management, as well as manage all official correspondence (review and approval of contractor design documentation and procedures, witness, supervise and approve factory inspection and testing of site equipment of the project, Quality Assurance and Quality Control , minutes of site meeting (every week), and monthly meeting and other quarterly (project meeting), project progress reports so that the above-mentioned objectives can be achieved.

Bidding documents have been already prepared and procurement process of the equipment launched by EDM.

2. OBJECTIVE OF THE ASSIGNMENT

The objective of the consultancy services is to ensure that EDM obtain economic solutions of high technical standards and that the project is implemented within the time schedule and in compliance with the World Bank environment and social safeguard policies.

The consulting service shall assist EDM – Project Implementation Unit (PIU) to Implement the Project as follows:

- (i) To ensure high standards of quality assurance in the execution and completion of work within stipulated time period;
- (ii) Comprehensive supervision of project implementation activities carried out by the Contractor to ensure complete compliance with the drawings, technical specifications and various stipulations contained in the Contract Documents
- (iii) Efficient construction supervision by personnel who are experienced in least-cost technologies and methods of construction supervision and contract management;
- (iv) Act independently and on behalf of EDM to supervise and take immediate corrective measures/actions, if necessary, to all activities associated with Construction to ensure compliance of requirements of Contract Agreement in order to have a sound Project;
- (v) Prepare and submit Monthly Progress Reports to EDM on the financial, technical and Environmental and Social safeguards progress aspects of the project as well as M&E;
- (vi) Assist the PIU in arriving at an amicable settlement in the event of any dispute;
- (vii) Assist the EDM-PIU for effective project monitoring by providing project management and monitoring support.
- (viii) The Supervision Engineer Consultant shall be required to inspect, examine and perform any site tests of all supplied material and equipment, if necessary, to verify if they meet the requirement specifications before final installation.
- (ix) To ensure Environmental and Social Safeguards compliance during construction works as defined by ProEnergia's Environmental and Social Management Framework (ESMF).
- (x) To ensure that mitigation actions included in the ProEnergia's Resettlement Policy Framework (RPF) are applied. Particularly on the implementation of site-specific RAP/ARAP and Labor Influx Management as needed. Gender and GBV/SEA Risk Management and Mitigation Procedures should be monitored and ensure mitigations from contractors are implemented.

3. PROJECT IMPLEMENTATION ARRANGEMENTS

3.1. Project Management Structure at EDM

The Project Implementation Unit (PIU) established under EDM will manage the completion of the Project.

The PIU comprises of staff from EDM will be full time assigned to the project and comprise of the one Project Manager, one Deputy Project Manager, one Financial Manager and Accountant, one Procurement Manager and Procurement Specialist, one Environmentalist and one Social Specialist, one Regional Supervisor per region, one Distribution Engineer, Engineering Coordinator and sixteen site supervisors, that will be availed to each project areas. (see organization chart in annex A).

The PIU comprises also with a supporting experts team comprises of one Planning and Engineering Expert, one Procurement, Logistic and Operation expert, and three young engineers.

4. SCOPE OF THE CONSULTANCY SERVICES

4.1. PRE-CONSTRUCTION PHASE

a) Preliminary Field survey:

- (i) The consultant is required to perform preliminary survey for the sites that will be early indicated by EDM for construction and to make sure the minimization of the environmental and social impacts and avoid resettlement impacts. Final project design will be carried out for areas that are not environmentally sensible and where economic or physical displacement is not expected. Otherwise PAPs need to be adequately compensated before the commencement of the works.. As such final design drawings will be superimposed with the cadastral drawings of these environmental sensitive areas and which will be identified by the Environmental and Social Management Plans In the event of any economic or physical displacement, RAP/ARAP must be prepared, implemented before the commencement of the civil works and should be prepared by EDM
- (ii) The consultant is required through site visits, to check and validate the contractor's distribution line route in harmony with strip maps of environmental sensitive areas and socio-economic activities of occupation of the distribution rout.
- (iii) support and review/approve the supply and installation contractor's detailed engineering design for the respective electricity distribution projects, including scope verification, line route survey using real-time kinetic (RTK) GPS/GNSS equipment, network modelling using PLSCAD, structure spotting and pegging, and cadastral mapping.

b) ESMP – Environmental and Social Management Plan

- (i) The consultant shall provide capacity support in safeguards through seminars, workshop and on-the-job training to Contractors' approved staff and EDM indicated staff with regards to ESMP (The ESMP shall be made available by the PIU).
- (ii) Review the environmental and social acceptability of the construction methodology (both temporary and permanent works), relevant design plans and documents submitted. Where necessary, the Consultant shall seek and recommend the least environmental impact alternative in consultation with the designer, the Contractor(s), and PIU;
- (iii) Approval of Contractors' ESHS policies, ESHS component specific work procedures and management plans, community engagement plans, Grievance Redress Mechanisms as well as the labour management systems including codes of conduct and compliance

to provisions of relevant national laws, gender sensitivity and GBV prevention and response measures, implementation of the sexual harassment policy, HIV/AIDs prevention program. The Consultant shall ensure that the Contractors' policies, work procedures and plans are complied with and shall periodically evaluate and report on their implementation progress.

- (iv) Oversee the preparation of the construction ESMP and ensure its adherence to the revised project brief, proposed mitigation measures for social risks, EIA certificate of approval EHS Policy and associated requirements and World Bank safeguards requirements.

4.2. CONSTRUCTION PHASE

a) Approval of Contractor's Plans, Design and Drawings

- (i) Check whether all the contractor's calculation notes and assumptions, the drawings, diagrams and documents submitted are prepared according to the contract specifications. Approve detailed designs, drawings and quality plans of all equipment covered in consultation and with approval of the EDM.
- (ii) Approve detailed designs, construction ESMP, drawings and quality plans of all equipment covered in consultation and with approval of the Client
- (iii) Scrutinize and review the detailed work programs and implementation schedule including resource planning by all the contractors for the overall project.
- (iv) In the event of any resettlement, review the preparation of site specific RAP/ARAP preparation and implementation, Labour Management Plan and Gender, GBV/SEA related mitigation measures and risks.
- (v) Advise EDM on the status and management of pending compensations, as well as the impact on delayed project completion in terms of time and increased costs.

b) Supervision of Site Activities

- (i) Review and comment contractor's works schedule
- (ii) Confirm that the contractor's schedule of personnel is as stated in the contract and recommend changes in the contractor's personnel where necessary
- (iii) ensure coordination and supervision of all the works, materials and equipment delivery and stored, construction procedures in compliance with the relevant Standards (including environmental and social safeguard policies) and Codes of practice,
- (iv) Consult and confirm with the Client that all the PAPs have been duly compensated before tampering with their respective properties in accordance with the Bank social safeguard policy as well the National requirements.
- (v) Check the preliminary tests prior to the works on the concrete formulas and ratios proposed by the contractor (where applicable);
- (vi) Supervise the performance of all tests required to ensure the good quality of all materials used in construction, in particular soils, rocks, aggregates, cement, etc. and analyse test results to ensure good-quality construction;
- (vii) Supervise the works to ensure works are carried out in compliance with the specifications and contract plans including procurement of materials and deployment of personnel as well as equipment.
- (viii) Supervise the excavations (areas to be backfilled, foundations for poles where applicable) including environmental aspects (erosion, river crossings);

- (ix) Supervise all construction and installation activities of the distribution lines and networks including contractor's construction procedures, schedules, delivery, handling, positioning and installation of poles.
- (x) Advise, monitor and ensure full implementation of the construction ESMP and occupational Health and Safety Management Plan.
- (xi) Conduct regular site inspections and review the status of implementation and effectiveness of the environmental mitigation measures against the ESMF and/or ESMP (Environmental and Social Management Plan) and contract documents;
- (xii) Provide regular feedback through environmental audit and investigation results of any non-compliance of the ESMF and ESMP.
- (xiii) Instruct the Contractor(s) to take actions to reduce or remedy impacts, within a specified timeframe, and carry out additional monitoring according to the contractual requirements and procedures in the event of non-compliances or complaints;
- (xiv) Instruct the Contractor(s) to stop activities which generate severe adverse impacts or creates high risk of injury or death, and/or when the Contractor(s) fails to implement the ESMP requirements / remedial actions.
- (xv) Advise the Client on the need to assess and compensate PAPs in the event of any proposed variation orders being considered.
- (xvi) Assist the Client with regard to all questions relating to the contract, in particular compliance with insurance and time extensions and claims, etc.;
- (xvii) In case of change (variation) orders, completion time extension and/or financial claims arising from the contractors, make in depth assessment and recommendations to the executing agency based on the day-to-day records and applicable conditions of contract.
- (xviii) Ensure enforcement of standard contract billing procedures, verification and certification of all contractor billing before submission to executing agency for issue of authorization of payment,
- (xix) Witness and approve the contractor's on site tests and commissioning for each equipment, accessories and materials covered by the Project.
- (xx) Monitor construction methods and quality control; certify that the quality of works conforms to the specifications, norms, standards and drawings;
- (xxi) Supervise and monitor construction of all project components, verify modifications of designs as required by site conditions and issue variation orders to all the contractors; check measurements for works completed and verify bills for payments to all the contractors as per the conditions of contract;

c) Inspection, testing and acceptance during manufacturing

The work includes inspection and factory test witnessing of equipment and materials for the project. The equipment and materials to be supplied under this project should be inspected and tested in the manufacturers testing stations.

The consultant shall be responsible for quality assurance of all equipment and material to be supplied under the project.

The consultant shall also:

- (i) Ensure contractor's compliance with deadlines for manufacturing, testing, shipping and supplying equipment on site;
- (ii) Ensure that equipment and materials conforms with contract specifications and standards;
- (iii) Ensure that the equipment and materials do not contain any internationally banned

chemicals or substances and also ensure that specifications (environmental related like noise levels of transformers) are in line with the national environmental requirements and standards.

- (iv) Examine any modification in relation to the contract specifications that the contractor may wish to make. Any modification leading to additional costs must be submitted to the Client for approval;
- (v) Examine and approve the program for factory testing and acceptance proposed by the contractor, participate in works acceptance procedures and draw up the reports for each works inspection;
- (vi) Ensure that all equipment and materials have been subjected to type tests already and certified and all additional test described in the Bid documents have to be performed accordingly.
- (vii) Participate at factory acceptance tests (FAT) and others for main items of equipment (i.e. transformers, cables/conductors, insulators, poles, meters and line fittings), at contractor/suppliers factories in collaboration with the Client. The Consultant together with the Client's personnel shall inspect and witness all FATs for above mentioned equipment supplied under all contracts. It is not required to assign permanently an inspector in the manufacturer's country.

The Consultant proposal shall include at least seven (7) test witnessing at factory per each type of material (travel expenses including allowances will be born from the equipment supplier).

Written reports shall be provided by the Consultant on each test witnessed by the Consultant together with the Client. The Consultant shall be responsible for quality assurance of all materials to be supplied under all contracts.

d) Inspection of material and equipment deliveries

The Consultant shall ensure that equipment and materials delivered to the Contractor's warehouse are in conformity with the stipulated specifications and work schedules;

- (i) Check that materials delivered meet technical specifications;
- (ii) Inspect and monitor damages, defects and accordingly reject unacceptable materials, and ensure corresponding replacement of damaged equipment and materials;
- (iii) Issue delivery and acceptance certificates for goods;
- (iv) Checking proper storage of materials and equipment as per the manufacturer's storage procedure and recommendation.
- (v) Check Contractor's materials ordering schedule; Check the quantities of equipment/materials supplied;
- (vi) Maintain records of all plant, labour and materials used in the construction of the Works;

e) Monitor mobilization and progress of works and services:

- (i) The Consultant shall organize monthly meetings between the Client and all the contractors to review progress of the project and resolve any problem encountered during the progress of construction. Minutes of the meetings shall be prepared by the Consultant and signed by all the participating parties. The Consultant shall be responsible to chair the meetings and handling of the minutes.

- (ii) Prepare monthly progress reports, draft project completion report one month before the completion of the services and final project completion report within one month of the completion of the services;
- (iii) The Consultant will verify that all new customers are correctly integrated to EDM's Commercial Management System (CMS) and report monthly the number of new customers in the system, installed through the ProEnergia project.
- (iv) Maintain detailed records of scope of the completed works.
- (v) Approve interim certificates for progress of payments and verify the quantities for such certificates and recommend for payment to the Client;
- (vi) Verify and certify all the contractors' invoices to ascertain that the invoiced amount conforms to the works done;
- (vii) Monitor cost and project accounting;
- (vi) Examine the contractor's claims for variations/extension, additional compensation, etc., and prepare recommendation for approval by the Project Coordinator;
- (vii) Assist in resolution of contractual issues in liaison with the Client;
- (viii) Check and certify 'as-constructed' drawings/reports for the works prepared by all the contractors at the end of assignment and ensure that the client receives as constructed drawings for all LV & MV lines done. The 'as constructed' drawings/reports shall be registered in the Electrical Distribution Network as required by the Client;
- (ix) Ensure the monitoring and reporting in table form on all project relevant guarantees pursuant to the relevant financier's guidelines and obligations of EDM towards the Financiers to ensure that these guarantees will remain in place until the complete fulfilment of all claims under the services agreements secured by such guarantee. The Consultant shall also inform the Client immediately and in a timely manner before the expiring of the guarantee if relevant problems occur with the extension of the guarantee and if necessary will assist the Client with the call on the guarantee;
- (x) Advise EDM on the status and management of pending compensations, as well as the impact on delayed project completion in terms of time and increased costs.

f) Measurement and payment

- (i) Make measurements and keep measurement records;
- (ii) Check the consumption of the materials of executed items from the original bills/stores of the suppliers;
- (iii) Issue interim certificates for progress payments;
- (iv) Certify completion of part or all of the works;
- (v) Prepare quarterly cash flow projections for the PIU in a format acceptable to the PIU. Cash flows should identify budget estimates for all outstanding work;
- (vi) Analyse any contractual claim submitted by the Contractor and prepare a report for the PIU addressing the contractual basis, in terms of both technical and financial issues, for the claim and recommendations for a response to the Contractor;
- (vii) Quality Control

g) Works completion and site tests and commissioning

At the end of the construction works the consultant shall:

- (i) Notify the Client on the readiness of the project to enable mobilization of key stakeholders.
- (ii) Coordinate all the tests to be performed by the contractor in line with the equipment and network test protocols. Carry out final inspection of the works, witness commissioning tests, perform acceptance procedures for all equipment, and issue the corresponding completion certificates in accordance with the relevant conditions of contract with prior consent of the Client.
- (iii) Ensure that the Contractor prepared and submitted the as-built drawings, operation and maintenance manuals as per the requirement and quantity specified in the contracts.
- (iv) Review for adequacy and completeness of the as-built drawings, operation and maintenance manuals provided by contractors.
- (v) Undertake a structure by structure audit exercise with the participation of the Client (as needed) and prepare the report. The Client shall provide the structure audit template.
- (vi) Approve the contractor's as-built drawings.
- (vii) Ensure availability of hand-over requirements including manuals, drawings, list of PAPs compensated and wayleaves consent forms for handover to the service provider.
- (viii) All the areas (if any) and support facilities like storage yards are restored and decommissioned in line with the Contractor's decommissioning plans.
- (ix) Carry final environmental and social checks to ensure that no environmental liabilities are left behind by the Contractors. Prepare an environmental and social management closure report.
- (x) Upon completion of the project construction activities of all Contracts/Package, the Consultant shall prepare a Project Completion Report (PCR) which will form a comprehensive record of the designs, construction and installation works accomplished as well as the environmental and social performance including the number of infringements, resolutions, work accidents, etc.

h) The Consultant's Quality Assurance Plan shall include but not be limited to the following:

- (i) Check the setting out of the Contractor.
- (ii) Check the Calibration of the Contractor's Plants and Equipment
- (iii) Evolves a system of Quality Assurance of works, including, but not limited to establishing testing frequencies and acceptance criteria for all construction activities based on the Specifications mentioned in the construction contract agreement or international best practice where such Specifications is not mentioned in the construction contract;
- (iv) Testing and sampling frequencies shall be in accordance with the instructions of the PIU
- (v) Inspect the performance of the work with regard to workmanship, compliance with the specifications all necessary testing required for acceptance of any item of work;
- (vi) Inspect all material sources nominated by the Contractor and recommend the same for approval to the PIU;
- (vii) Assess and check the laboratory and field tests carried out by the Contractors and carry out independent tests;

- (viii) Issue orders to the Contractor to remove or make good any work which is found to be:
 - Not in accordance with the drawings;
 - Not in accordance with the specifications in terms of either work method or materials specification;
 - Covering work which has not been inspected for acceptance or reflected as unacceptable;
- (ix) Maintain records of all testing work, including cross referencing to items of work to which each test refers and location from which any samples were obtained for testing.
- (x) In general the purpose of quality audit exercise is to ensure that the works are:
 - Executed according to the designs, drawings and specifications as specified in the bidding documents / applicable standards, and that good engineering practices are followed in construction.
 - True to desired lines, levels and finishing.
 - Executed following the EMP provisions included in the bidding documents and in general follow the agreed provisions in the ESMF.
 - Executed following the relevant laws / statutes and practices / guidelines related to workers welfare, safety at worksite, insurances, etc.
- (xi) Assess independently the quality of construction vis-à-vis the standards specified in the bidding documents and good engineering practices including disaster resistant construction standards.
- (xii) Review the degree of quality control exercised during the construction by the contractor maintaining adequate arrangements / practices (tests, numbers, frequency, approach and timing etc.) / documentation (QC registers, test reports, observations of supervisory staff, compliances etc) and the degree of monitoring done by the line department identify non-compliances and suggests necessary improvements and compliance methodologies.
- (xiii) Through the agreed Audit strategy and a series of test procedures:
 - Review that the materials have been procured stored and used in accordance with the quality standard requirements set forth in the contract agreement.
 - Review that the workmanship of the work confirms to specified standards.
 - Review that the test reports of the materials / workmanship that were tested by the contract as required in the individual contract document are satisfactory.
- (xiv) Carry out additional testing of the materials and works where necessary at site or in the approved laboratories. Care should be taken to minimize the additional testing and shall preferably be carried out where a prima facie doubt arises related to quality of works and / or compliance of standards.

- (xv) Review the action taken on the earlier reported non-compliances and re-certify including following up with the heads of implementing agencies for action on earlier reported non-compliances.
- (xvi) Assist the PIU in resolving the issues related to non compliances. The consultant's responsibility does not end by merely pointing the defects rather they should facilitate the follow up action required to rectify the defects.
- (xvii) Create photo documentation of quality related issues including its compliances with date and geo tags
- (xviii) Check and report on compliance to:
 - Environment Management Plans (EMP) defined in the contract document and the Resettlement Action Plans (RAP)(if any)
 - Environment laws / regulations of Govt. of Mozambique and rules formulated by the concerned State Government.
 - Labor laws/ regulations applicable to construction sites.
 - Safety management at the construction sites.
- (xix) Review contractors' work program and advice on need for corrective measures in cases where such matters are referred by the Engineers.
- (xx) Review the works progress in accordance with agreed milestones and work schedules and provide regular updates to including need for increasing resources and/ or change in work plan for timely execution.
- (xxi) Subject to quality of works covered under every bill submitted, counter-sign the Quality certificate as applicable.
- (xxii) In case any specific quality testing is required by the PIU for any work within the site, it shall be carried out and report shall be furnished with a reasonable time.
- (xxiii) To the extent possible field testing and sampling shall be done in the presence of Engineer/Contractor's representative and the process should be photo documented with geo tagging.
- (xxiv) It is proposed that the some field visits shall also be carried out without advance information to be decided randomly.
- (xxv) Upon field inspection and tests the Consultants, where required and in critical cases through the Project Manager in Charge shall arrange to issue 'stop work' notice in consultation with PIU, to the contractors and assist in remedying the defects. This shall be done only in exceptional cases where continuance of works may jeopardize the ultimate quality and safety of structure, safety of workers and of third parties etc.
- (xxvi) The Contract Documents are the basis of all works to be undertaken under the Project. These are standard documents which will be made available to the Consultant.

(xxvii) The Supervision Consultant will process interim and final payments to the contractor.

(xxviii) Interim monthly payments shall be based on interim payment certificates processed by the Supervision Consultant following claims filed by the Contractor within the ambit of the Contract. The Supervision Consultant will be accountable for the quality and the quantities of the work. Whenever final measurements are to be made, the Supervision Consultant's Project Manager will inform the Contractor several days in advance. The representative of PIU participation in such measurements will not be mandatory; however, he may wish to participate or be represented by his representative, to check any measurement.

(xxix) The Supervision Consultant shall, provide any of the following Services (a) prepare reports, including technical appraisals, additional contract documentation and/or reviewing and commenting on Contractor's proposals, as may be required for any additional work required for the successful completion of the Project; and (b) provision of any other specialist services as may be required from time to time.

(xxx) All Additional Services, other than minor extras which do not materially affect the scope of work, will be authorized by the PIU at the rates established in the Construction Supervision Contract, or, when services require the use of specialists not listed in the Contract, as mutually agreed upon.

4.3. Post-Construction Phase

a) Assistance During the Defect Liability Period

The consultant shall:

- Undertake quarterly site inspection, identify snags and issue instructions to the contractor to rectify all snags.
- Ensure that all defects and remarks are properly cleared/removed by the contractors before the end of the defect liability period.
- Assist and advise the Client with regard to any matter that may be subject to adjudication, arbitration, inquiry or litigation up to delivery certificate of completion.
- Maintain detail records of relevant events & activities, drawings & documents, minutes of meetings.
- At the end of the liability period, the Consultant shall undertake project closure activities, final project site inspection (to prepare an Operational Acceptance Certificate) and prepare a final project closure report including:
 - Highlight on the performance of the facility during the DLP;
 - All snags recorded during DLP and the status on their rectification by the project closure date;
 - Record of the equipment manufacturers and the rating of the equipment during DLP;
 - Recommendations for future projects;
 - Performance on environmental and social safeguards including social risk management.

Note: Approval by the Employer: The Consultant will be required to obtain specific approval of the Client before taking any of the following actions specified below:

- Issuing variation orders
- Approving extensions of time.

Upon closure of Defects Liability Period, the consultant will undertake project closure activities and preparation of the project closure report including;

- Highlight on the performance of the facility during the DLP;
- All snags recorded during DLP and the status on their rectification by the project closure date;
- Record of the equipment manufacturers and the rating of the equipment during DLP;
- Recommendations for future projects.
- Performance on environmental and social safeguards including social risk management

b) Training and transfer of knowledge

The Client considers this Consultant services contract as an opportunity for knowledge transfer to a number of their staff through formal courses combined with on-the-job training while the Client's staff monitor the Consultant and contractors.

During the Consultant's services contract, the Consultant shall organize the following training and transfer of knowledge sessions:

1. Pre-construction: Organize a 2-days classroom-training course on the Construction Supervision, for at least 10 Client staff that would include engineers, financial management specialists, procurement specialists, environmental specialists and socials management specialists. The goal of the session is to receive feedback and comments on the Manual, and to discuss;
2. Construction: One (1) month after mobilization of all contractors: Organize a 1-day classroom training course on the Construction Supervision, for at least 8 Client staff;
3. Construction: Six (6) months after mobilization of all contractors: Organize a 1-day classroom training course on the Construction Supervision, for at least 4 Client staff. The goal of the training session is to review current questions and issues on the construction procedures;
4. Construction: Twelve (12) months after mobilization of all contractors: Organize a 1-day classroom training course on on-the-job training provided by Consultant to the Client for at least 8 Client staff. The goal of the training session is to review current questions and issues on the lessons learned on knowledge transfer through on-the-job training.
 - i. The cost of this training shall be borne entirely by the Consultant (conference/training rooms, coffee breaks, audio-visual support, printed supports, software, fees for trainers, etc.)
 - ii. After the delivery of the formal courses (Risk assessment and mitigation), during the remainder of the pre-construction phase and continuing into the construction phase of the consultant's assignment, the consultant should continue with transfer-of-knowledge program to Client staff and contractors' staff.

- iii. The Consultant should name a coordinator for the proposed program of formal and on-the-job knowledge transfer.
- iv. For the technical proposal, the Consultant shall describe the transfer of knowledge (training) program for both: **(a)** formal classroom courses and **(b)** follow-up on-the-job-training. The proposed program will be scored during technical evaluation in terms of: **(i)** the relevance of training program, **(ii)** training approach and methodology,

c) Management and Administration

1. Quality management

The Consultants shall implement an acceptable Quality Management System (e.g. ISO 9001), either within the framework of their own organization's quality management systems or specifically for this assignment. In particular, the Consultant shall prepare a Project Quality Control Plan that shall define how they intend to ensure Key Deliverables are produced on time, within budget and to the technical standards required. The Project Quality Control Plan shall include:

- (i) Work schedule and timeliness controls;
- (ii) Budget and cost controls (earned value analysis);
- (iii) Technical verification and quality controls;
- (iv) Risk management controls;
- (v) Document controls;
- (vi) Project reviews and progress reporting requirements;
- (vii) Quality Records to be maintained.

The Consultant shall submit the Project Quality Control Plan to EDM for review and approval. EDM reserves the right to carry out audits to assess whether the Consultant is complying with their Quality Management System and Project Control Plan. The Consultant shall include Quality Management issues in their Quarterly Reports.

4.4. REPORTING REQUIREMENTS AND TIME SCHEDULE FOR DELIVERABLES

4.4.1 Reporting Requirements

The consultants will submit all the reports to PIU as per the specified timelines.

The field visits – which shall be an ongoing activity – shall be undertaken as per the audit strategy finalized. Audit reports would be prepared once a week covering the sites visited, and submitted within 3 days of completion of the week.

The reports shall highlight for each contract package, status and progress of work, audit opinion, status of compliance to earlier observations, critical issues, and follow-up actions. Any critical issues needing stoppage of work need to be reported immediately to the PIU, through different means (telephone, SMS, e-mail, fax etc.) In addition to the site level reports, consolidated reports would be submitted every month and quarter, compiling the findings in the site reports, summary audit opinion, corrective actions, progress

of works and issues etc. The Consultant may be also required to make presentations on audit findings at the designated forums as and when required by the client.

Annual review report would be submitted at the end of each construction year and a final review report would be submitted at the end of the project/this consultancy assignment. The monthly, quarterly, annual and final review reports should also include good practices and lessons learnt with regard to quality systems.

In addition, the consultant will comply with any other reporting requirements as agreed in the project inception stage. Reports on non-compliances are to be transmitted immediately (on real time basis through email/ other means) and the communication shall be simultaneous to the concerned engineer, line department and the PIU.

(i) Preliminary Field Survey report

The Preliminary Field Survey shall report the findings during the sites that will be early indicated by EDM for construction. The report shall recommend how should be minimize the environmental and social impacts and avoid resettlement impacts.

The report shall also describe areas, if any, that PAPs needs to be adequately compensated before the commencement of the works.

(ii) Environmental and Social Management Closure Report

The Environmental and Social Management Closure Report shall state any measures for avoidance, minimization and mitigation of adverse environmental and social impacts that might have happened.

The consultant shall incorporate in the report safeguards requirements, specifically with the Risks Mitigation Plan that the contractors shall respond to the Monitoring Indicators that will be specified under the Environmental and Social Management Plan (ESMP) to be generated soon by two independent environmental and social consultants already hired under the process of preparation of the current PERIP Project in order to Enforce acceptable safety standards of installed works and the working environment, especially at live substations, in line with the EMP.

The consultant shall make preparation of Project Implementation Plan for contract management and implementation of Environmental and Social Impact Assessment (ESIAs), EMPs, Resettlement Action Plan (RAPs) and day to day management issues.

4.5. Time Schedule for Deliverables

The key deliverables for the assignment along with respective timelines are as follows:

Project Phase	Type of Report	Timing
Pre-Construction	Preliminary Field Survey	Within 60 days after contract effectiveness

	Inception Report	Within 30 days after preliminary field surveys
	Environmental and Social Management Closure Report	Within 30 days of the end of the pre-construction phase
Construction	Approval of Contractor's Plans, Design	Within 7 days after contractor submission
	Monthly progress	Within 7 days of the end of reporting month
	Quarterly	Within 15 days of the end of reporting quarter
	Non-compliance event report/ Critical issue reports	Immediate
	Inspection and SAT	Within 2 days after completion site test
	FAT Reports	Within 5 days of the end of FAT
	Training and transfer of knowledge	Within 5 days of the end of training session
	Completion	Within 30 days after project commissioning
Post-Construction	Project Closure	Within 30 days after completion of Defect Liability Period

Reports shall be delivered in CD ROM/pen drive in addition to specified number of hard copies (All reports shall be submitted in 4 hard copies).

2. Construction Phase

(a) Approval of Contractor's Plans, Design Report

- (i) The report shall review/comment the work plan as well as the all preliminary and final design submitted by the contractors for approval.
- (ii) The draft report shall be submitted for comments/approval to EDM.

(b) Monthly Progress Reports

- (i) The monthly progress report shall report on the activities in progress and completed during the month, the percentage of completion of each task. The progress report will include work charts, S-Curves, the list of any problems that are causing or may cause delays, including proposed measures to correct the problems shall also be reported.

(c) Quarterly Progress Reports (QPRs)

- (i) The Quarterly Progress Reports shall cover all aspects of Project implementation and disbursement schedules, financial summary, including implementation of environmental

and social mitigation measures. The QPRs shall also highlight issues affecting Projects implementation and proper corrective actions.

- (ii) Update activity and staff schedule showing actual against planned progress and achievement milestones/ deliverables. Description of work completed in previous quarter and planned activities for coming quarter. Summary of issues addressed, identification of potential problems, delays, etc.

(d) Non-compliance event report/ Critical issue reports

- (i) The no-compliance event report shall cover all critical issued that may occur at site during the implementation and have to be reported immediately, as stated in **clause 9.2**.

(e) Inspection and SAT

- (i) The inspection report shall compile the inspected materials supplied to the contractor warehouse and shall insure if the material are in accordance with the specification/standards required
- (ii) The SAT report shall compile all tests carried out before/during and/or after installation/commissioning in SAT form. The SAT certification shall be signed by the consultant, contractor and EDM site representative that may be witness the tests.

(f) FAT Reports

- (i) The FAT report shall compile all tests carried out at factory of the Manufacture premises
- (ii) The FAT shall be state all type test carried out, the procedures and its result.
- (iii) All reports shall be signed by the consultant, EDM representative and contractor.

(g) Training and transfer of knowledge

- (i) The training report shall state all training carried out during training session, the participants and the results.

(h) Project Completion Report

- (ii) This report will summarise all aspects of the project implementation, final costs, suggestions and recommendations for future design and construction techniques and routine maintenance practice to be followed after the completion of the work.
- (iii) The draft will be submitted to employer for approval within one month after the project completion. The Employer and the financiers will take four weeks to comment on draft reports.
- (iv) Upon completion of the project construction activities, the Consultant shall prepare a Project Completion Report (PCR). The PCR will form a comprehensive record of the design, construction and erection works accomplished including:
 - A description of changes or modifications to the design,
 - Problems encountered and solutions adopted,
 - Routine maintenance practices to be followed after completion the works,
 - Overall construction volume, quantities and final cost (with comparison of the initial)

- Suggestion and recommendation and
- Lessons learned

(v) The final PCR will incorporate comments from EDM and the Financiers. PCR shall be sent to the International Financiers.

The reports shall be submitted as mentioned below:

Report	No. of Copies	Submitted To
Preliminary Field Survey	Two (2) soft copies memory stick for EDM	Project Coordinator
Environmental and Social Management Closure Report	Two (2) soft copies memory stick for EDM	Project Coordinator
Approval of Contractor's Plans, Design	Two (2) soft copies memory stick for EDM	Project Coordinator
Monthly progress	Two (2) soft copies memory stick for EDM	Project Coordinator
Quarterly	Two (2) soft copies memory stick for EDM	
Non-compliance event report/ Critical issue reports	To be agreed	Project Coordinator
Inspection and SAT	Four (4) hard copies for EDM	Project Coordinator
FAT Reports	Four (4) hard copies for EDM	Project Coordinator
Training and transfer of knowledge	Four (4) hard copies for EDM	Project Coordinator
Project Completion Report	Two (2) soft copies memory stick for EDM	Project Coordinator
Project Closure	Two (2) soft copies memory stick for EDM	Project Coordinator

5. PROJECT TIME SCHEDULE:

Project phases	Time duration
Pre-construction phase	2 months
Construction phase	16 months
Post-construction phase/Defect Liability Period	12 months

6. PROFILE OF CONSULTANT

The consulting firm that is to be selected shall have its core business and experience as consultancy in design and supervision in the power distribution sector, including experience in works inter alia of new connections including experience in training of power utility personnel.

Key personnel to be assigned shall have adequate academic and professional qualifications and substantial experience in the sector. International experience associated with local knowledge and

experience with World Bank financed projects are necessary to carry out the assignment. The Consultant shall employ well-qualified and competent professional staff with experiences on LV and MV distribution system and shall therefore propose a team of experts that is fully able to deliver the services in accordance with the technical requirements defined in this TOR and its Annexes.

For the purpose of evaluation of the quality of the proposed staff, the consultant should be underlined that apart from other important details, the CVs shall clearly indicate the experiences of the staff including types of activities performed and respective client references.

The Consultants are free to propose a staffing plan and skill mix necessary to meet the objectives and scope of services taking in consideration the Person- months provided. If all the required skills are not available within the firm, consultants may associate with others to make up the skills.

7. QUALIFICATIONS AND EXPERIENCE FOR THE CONSULTANT STAFF

The Consultant shall assign a full time Resident Engineer Project Manager responsible for supervision and management of the project i.e. administration of contracts, supervision of contractors in each of 2 consultant Package.

The five contractors Package will be distributed in three (3) Regions, South Region, Central Region and Northern Region.

The Project Manager/team Leader will be responsible for overall coordination of the Project region wise or Package wise and day-to-day communication with EDM and contractors/suppliers.

The Consultant shall also avail one two (2) Distribution Engineer responsible for each Package; one (1) Environment and Social Expert for pre-construction phase only for each Package and sixteen (16) site Supervisors responsible for supervision and divided into six (6) Site supervisors for Package 1 and ten (10) site Supervisors for Package 2.

The Consultancy shall assign also sixteen (16) site story Manager that will be responsible for supervision for controlling all materials/equipment in each of project areas and divided into six (6) Site Story Manager for Package 1 and ten (10) site Story Manager for Package 2.

The Consultant Project Manager shall report to the EDM Electrification Project Manager. The overall responsibility of site supervision shall remain with the consultant.

EDM's Project Implementation structure is attached in Annex A.

7.1. The Consultant Staff

a) PACKAGE 1 Key staff qualifications:

- (i) Project Manager – 1
- (ii) Distribution Engineer – 2
- (iii) Site supervisor (Electrical distribution Engineers) – 6

b) Non key staff qualifications:

- (iv) Story Site Manager – 6
- (v) Environmental and Social Expert – 1

c) PACKAGE 2 Key staff qualifications:

- (i) Project Manager – 1
- (ii) Distribution Engineer – 2
- (iii) Site supervisor (Electrical distribution Engineers) – 10

d) Non key staff qualifications:

- (iv) Story Site Manager – 10
- (v) Environmental and Social Expert – 1

7.2. The consultant's Qualification and Experience

The Consultant shall include in his proposal the following mandatory Key and Non-Key Experts. CVs and Statements of Exclusivity and Availability shall however be submitted in the Technical proposal for assessment by the Client, and all the CVs must meet the minimum requirements to be considered compliant. Non-compliant CVs will be rejected. Those who do not meet the requirements shall have to be replaced at negotiations stage.

The requirement for the Consultant to be short-listed for either Package 1 or 2, is that the Consultant shall demonstrate having Supervised at three (3) assignment of similar nature and complexity, each valued at \$1.0 million. Consultants wishing to qualify for the short-listing for the two packages (Packages 1 and 2) shall cumulatively meet the requirements, i.e., six (6) contracts of similar nature and complexity.

In addition, those consultants who will qualify for Packages 1 and 2 cumulatively, shall submit separate teams of experts for each Package, to be considered in the evaluation of Proposals and award of Contracts.

a) Key-Experts

(i) Project Manager

The Project Manager shall have B.Sc. Degree in Electrical Engineering. Post-Graduation in Project Management / Planning / Engineering/ Administration will be an advantage.

He/She shall have twelve (12) years' experience in Electrical Power Systems; ten (10) years' experience in Distribution Power Network Construction of up to 66 kV and seven (7) years' experience in Project Management.

The Project Manager shall have experience in leading/Managing the implementation of at least two (2) Distribution power lines projects of up to 33kV in the last ten (10) years. Having a minimum experience of working on one (1) projects of a similar nature in managing

international turnkey contracts for International Financial Institutions (IFI) funded power sector projects (transmission lines and distribution networks) would be an advantage

The Project Manager shall be fluency in English and Portuguese (is an advantage) and experience in implementing at least one (1) project in SADC countries will be an added advantage.

(ii) Distribution Engineer

The Distribution Engineer shall have B.Sc. Degree in Electrical Engineering, at least ten (10) years of experience in design and construction of distribution system projects up to 66 kV .

The Distribution Engineer shall demonstrate expertise of working in similar nature of projects and conducting technical evaluation of specification, design and test of equipment.

He/She shall have a minimum of two (2) projects experience on turnkey contracts and supervising projects related to distribution lines and/or HV transmission line projects implementation, and construction supervision

(iii) Site supervisor (Electrical distribution Engineers)

The Site Supervisor shall have Graduate/ Diploma in Electrical Engineer and should have eight (8) years' experience in Electrical Power systems.

The Site Supervision shall have experience working in two (2) similar project with distribution network, up to 33kV as an erection supervisor .

Experience of working in the coastal regions will be an added advantage.

He/she shall have language proficiency in English language

b) None-Key Experts

(i) Story Site Manager

The story site Manager shall have a B.Sc. degree in Logistics, Business Administration, Management, Engineering, or areas directly related to logistics operations and a minimum of five (5) years of responsible professional work experience at the international levels in supply/logistics management.

The experience in operation and logistic, preferable with energy sector and projects will be an advantage.

The Story Site Manager shall have excellent communication skills and good written and oral communication skills in English

(ii) Environmental and Social Expert

The Environment and Social Expert shall have at least a graduate in B.Sc. in Environmental, Natural Sciences or Natural Resource Management or related studies .

The Environment and Social Expert should have seven (7) years of experience in environmental and social Impact Assessment, auditing and monitoring. Experience in infrastructure projects is an added advantage.

He/She should have participated in the implementation of environmental and social management plans and resettlement action plans on the ground for at least three (3) similar projects. Experience on environment site supervision of construction works and coordination of teams.

He/She should be proficient in writing and fluent speaking in the English language

Note:

- (i) The supervision consultant will establish their site office in the vicinity of each project location at their own cost.

The Consultants can perform the Services and carry out their obligations with due diligence, efficiency and economy, in accordance generally accepted professional standards and practices. They can observe sound management practices and employ appropriate technologies and methods. The Consultants always act, in respect of any matter relating to the Contract or to the Services, as faithful advisers to the PIU.

The Consultant will give an undertaking that the personnel to be deployed as mentioned above will be continued for the duration of the consultancy. Changes of personnel will be permitted only if the Consultant has given a prior intimation that a personnel deployed has resigned his employment or on health grounds and that he would be substituted with a person of the desired qualifications mentioned above.

During the period of non-availability of the personnel, the Consultant will not be permitted to raise any bill with respect to their remuneration.

8. ESTIMATE OF MAN-MONTHS

The Consultant shall indicate in his proposal sufficient person-months for proper execution of the Project. Considering the technical and financial evaluation, contract shall be awarded to a single consultant whose entire result reflects the evaluation criteria.

The Consultant shall provide a schedule with breakdown for various activities called for in the TOR, including the home office and field activities.

STAFF	Lot 1 - 4 Provinces(Maputo, Matola, Gaza, Inhambane e Sofala)	Month																		
KEY STAFF		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Lot 1
Project Manager	1																			15
Distribution Engineer	2																			34
Site Engineer/ Survey	6																			108
NO KEY STAFF																				
Enviromental specialist	1																			6
Site Storage Manager	6																			90
TOTAL																				253

STAFF	Lot 2 - 6 Provinces(Manica, Tete, Zambezia, Nampula, Niassa e Cabo delgado)	Month																		
KEY STAFF		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	Lot2
Project Manager	1																			15
Distribution Engineer	2																			34
Site Engineer/ Survey	10																			324
NO KEY STAFF																				
Enviromental specialist	1																			6
Site Storage Manager	10																			150
TOTAL																				529

Note: The above staff composition and estimated total person month the Consultant is advised to assess its own estimate and propose staff composition and staff inputs to meet the tasks and performance levels required as described in the Terms of Reference.

9. EMPLOYER INPUT AND COUNTERPART PERSONNEL

12.1 Data and Services to be provided by PIU

The “Client” will provide the following services / facilities to the consultant:

- (i) Access to relevant information on the Projects;
- (ii) Counterpart Personnel;
- (iii) The PIU shall use its best efforts to ensure that the Government of Mozambique will grant to the Consultant and his members, internationally recruited, whose names shall be communicated in advance, all the support to apply for Entry visa and temporary work permits.

The following will be availed by the Client to assist in providing the relevant data:

- (i) One Electrical Engineer with knowledge of Distribution network for each of the 10 Provinces

The Consultant will be provided access to all such information as necessary to plan and execute the assignment. It shall include:

- (i) List of sites
- (ii) Contracts/tenders for selected sites, including special specifications
- (iii) Project documents available in public domain such as ESMP, procurement plan, Manuals etc.
- (iv) Access to sites, and support of the EDM local Delegation
- (v) Preliminary Site Survey
- (vi) Standards to be applied (Construction) Drawings & Specifications

9.1. Review and monitoring of consultant's work

- (i) Consultants performance and quality of work will be continuously reviewed by the PIU.
- (ii) There would be formal review, annually by a committee set up at PIU at the Inception stage.
- (iii) Unsatisfactory performance will invite action including pre closure of contract in accordance with the contract provisions

Note: The client will NOT provide office accommodation or transport to the Consultant

10. FACILITIES TO BE PROVIDED BY THE CONSULTANT

For each project area, the Consultant shall provide the following:

- (i) Regional Office
- (ii) Office/Accommodation for the non resident supervisors which will be from the head office and located in region
- (iii) Office equipment required to perform the assignment (lap top, printer, office furniture, means of communication (modems and telephone)

The consultant shall provide:

- (i) Competent licensed drivers for each vehicle (9 vehicles for package 1 and 13 vehicles for Package 2)
- (ii) All necessary fuel, lubricant, tools, spares, full maintenance
- (iii) Insurance and licenses for normal operation on and off site and on and off duty.

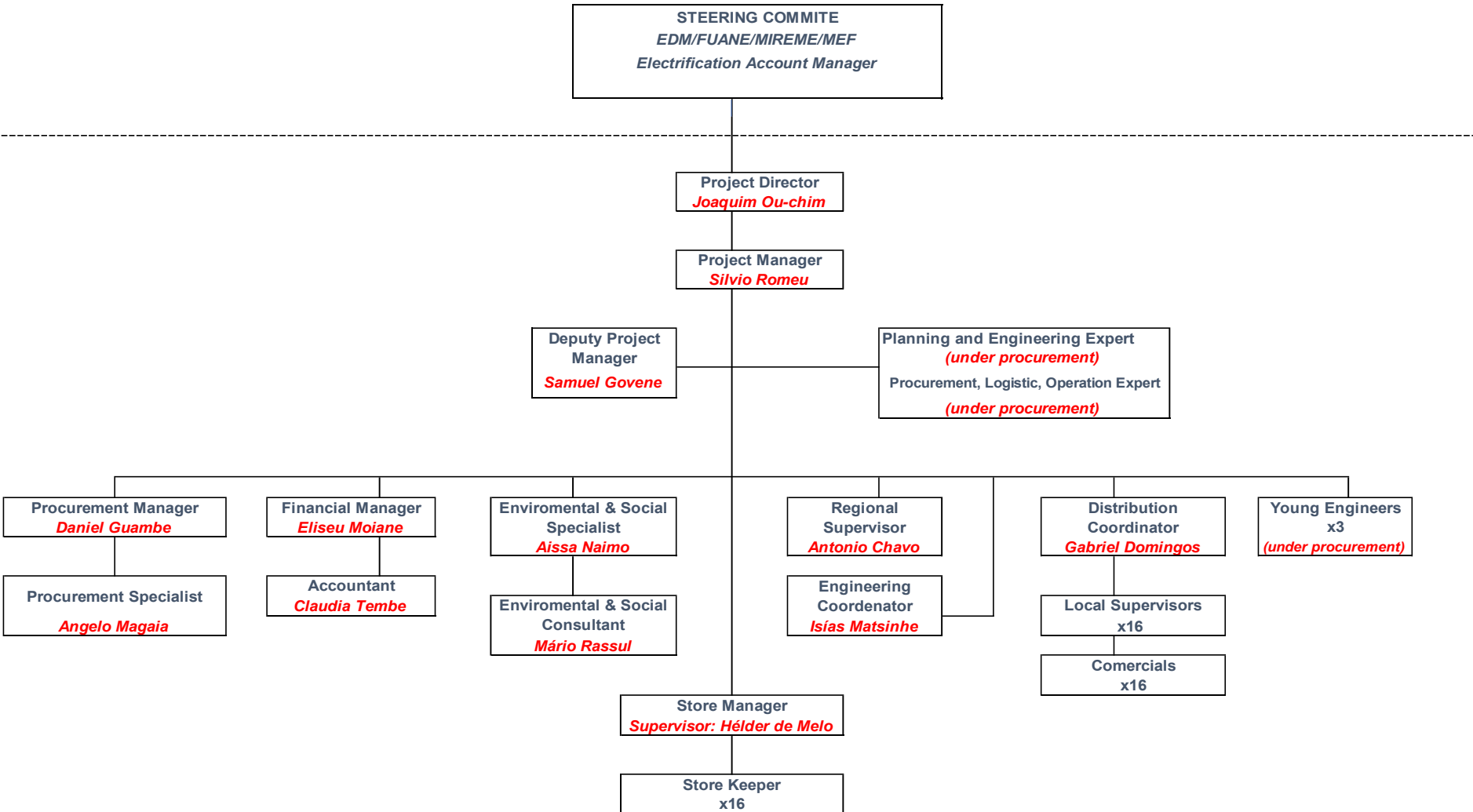
The price in the financial proposal shall include all running and maintenance cost for vehicles allocated to the consultant for the duration of the Consultant Services Contract such as insurance, fuel, lubricant, tools, spares, full maintenance, etc.

11. ANNEXES

ANNEX A: EDM PIU Organization chart
ANNEX B: Tentative Time frame and Work Plan
ANNEX C: Geographical Map of the Country

ANNEX A: EDM PIU Organization Chart

ORGANIGRAM OF THE PROENERGIA PROJECT



ANNEX B: Indicative Time Schedule

Years Months	Duration	Planned	2020												2021												2022													
	(Months)	Start	End	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Contract award	30	Jan-20	Jun-22																																					
Pre-construction phase	2	Jan-20	Mar-20																																					
Preliminary field survey	1,5	Jan-10	Feb-20																																					
Enviroment & Social Management Plan	1	Jan-20	Feb-20																																					
Construction phase	16	Feb-20	Jun-21																																					
Approval of Contractor's Design and Drawings	1	Feb-20	Mar-20																																					
supervision of site activities	14	Mar-20	May-21																																					
Works completion and site tests and commissioning	5	Nov-20	Apr-21																																					
Post - coonstruction phase	12	Jun-21	Jun-22																																					
Assistance during the defect liability period	12	Jun-21	Jun-22																																					



Site commissioning of the year 2020 new connections



Site commissioning of the year 2021 new connections

ANNEX C: Geographical Map of Mozambique

