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INCEPTION REPORT

**TURNKEY ELECTRICAL
ENGINEERING SERVICES OVER A
THREE YEAR PERIOD
FOR**

**UBUNTU LOCAL
MUNICIPALITY**

DATE: 25 SEPTEMBER 2018

TAKING CARE OF BUSINESS

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1. EXECUTIVE SUMMARY

The municipality is currently experiencing challenges with the Electrical Network and the situation is deteriorating every year.

The following are some of the major challenges:

- Network Losses are extremely high
- Parts of the Network should be strengthened
- The electrification backlog is increasing every year
- Little to no spare material items in stores
- Network is managed on a reactive basis
- The municipality is dependent on grant funding
- The Eskom account is in arrears and it increases every year

2. SCOPE OF WORK

TCB Engineering has been appointed on a Turnkey basis for Electrical Engineering services for a three-year period. During the three-year period TCB Engineering will compile business plans and apply for funding in the form of grants and/or other forms of funding to identify and implement projects that will address the challenges.

The scope of work for the three year period includes the following:

- Electrification of Houses
- Cost of Supply Studies
- Electricity Tariff applications to NERSA
- Network Planning & Reduction of Losses
- Network Strengthening & Refurbishment
- High Mast Lighting
- Energy Efficiency & Demand Side Management.

The following sections of this report will provide an overview and timeline of the tasks that TCB Engineering will be performing over the three year period of the appointment.

3. IMPLEMENTATION PLAN PER FINANCIAL YEAR

3.1 2018/19 FINANCIAL YEAR

The approved grant funding for the 2018/19 Financial Year under the Integrated National Electrification Program (INEP) from the Department of Energy (DoE) is **R1 000 000.00 (One Million Rand)**. As per the contract that was signed between the Municipality and the DoE, the funds shall be utilised for the Victoria West Eskom Bulk Supply upgrade. The successful upgrade of the bulk supply from Eskom will increase the Municipality's Notified Maximum Demand in order for new households to be electrified.

TCB Engineering have further submitted funding applications under INEP for reallocations of this financial year as well as the 2019/20 financial year.

The following will be prioritised if the municipality receives additional funding during the current financial year.

- **Victoria West, Goutrou** – Electrification Designs
- **Loxton** - Electrification Designs
- **Victoria West, Modderpoel** – Upgrade installation to correct low voltage issues.
- **High Mast Lighting** – Compilation and submission of business plan to apply for funding for high mast lighting for all of the Ubuntu Municipal towns.

At present, the municipality's electricity tariffs are not aligned to the cost at which the municipality procures electricity from Eskom, thus the electricity department is running at a loss. TCB engineering will also priorities the tariff analysis to ensure that a proper tariff application is submitted to NERSA for approval and implementation during the **2019/20 Financial Year**.

3.2 2019/20 FINANCIAL YEAR

3.2.1 Victoria West, Goutrou Electrification

The designs for the electrification of the ±1000 houses will be completed during the **2018/19 financial year**, thus the municipality will be ready for implementation and construction of this project immediately when funding is availed by the DoE. All of the households will be electrified if the full funding amount is available during the **2019/20 financial year**.

3.2.2 Loxton Electrification

The designs for the electrification of the ±40 houses will be completed during the **2018/19 financial year**, thus the municipality will be ready for implementation and construction of this project immediately when funding is availed by the DoE. The construction on this phase will be executed in parallel with the Goutrou project.

3.2.3 High Mast Lighting

The compilation and submission of a business plan for High Mast Lighting to address all the lighting requirements of the Municipal Towns would be submitted during the **2018/19 financial year**, thus the implementation and construction can be executed during the **2019/2020 financial year**.

High Mast Lighting is funded through the Municipal Infrastructure Grant (MIG). It should be noted that other projects such as roads and sewerage are also funded through MIG, thus the municipal management and/or council must already take a decision during the 2018/19 financial year on which of the project categories will be prioritised on the allocated MIG funds for the 2019/20 financial year.

3.2.4 Electrical Network Master Plan

The development and maintenance of a comprehensive Electrical Master Plan will enable the identification of all problem areas and provide a road map to resolve issues, as well as mitigate future occurrences. It will assist the Municipality to transition from the present reactive network management towards a pro-active and long-term scenario.

TCB Engineering will develop an Electrical Master Plan during the **2019/20 Financial year**.

3.3 2020/21 FINANCIAL YEAR

3.3.1 Network Strengthening & Refurbishment

The Network Strengthening and Refurbishment requirements and associated costs will be derived from the Electrical Master Plan (Network Upgrades). TCB Engineering will compile a comprehensive business plan which will be submitted to the DoE to apply for funding to address the municipality's Network Upgrade requirements.

Upon approval and allocation of the funding, TCB Engineering will design and construct the network upgrade solutions, in line with the approvals from the DoE.

3.3.2 Energy Efficiency and Demand Side Management (EEDSM)

The Department of Energy's EEDSM programme envisages that municipalities might reduce their electricity bills by optimizing energy use, improving delivery of services, reducing GHG emission, undertaking retrofitting of existing facilities such as street lighting, traffic signals, municipal buildings, water pumping and waste water treatment plants.

TCB Engineering will compile and submit a Project Proposal which is in line with the DoE's requirements.

4. STANDARDS & GUIDELINES

The services will be implemented with the following guidelines, regulations and standards in accordance with the latest revisions and amendments thereof:

- Engineering Council of South Africa (**ECSA**)
- South African National Standards (**SANS**)
- Eskom Distribution Technology (**D-DT Standards**)

5. FUNDING AND ESTIMATED COSTS

The projects that are regularly funded by various government institution programmes are:

- Electrification
- EEDSM
- High Mast Lighting
- Network Strengthening & Refurbishment

Funding for the following projects is not readily available from government institution programmes:

- Electrical Master Plans
- Cost of Supply Studies

TCB Engineering thus propose that the VAT which will be claimed on the funded projects be ring fenced and utilised to subsidize the cost of the non-funded projects

The estimated cost of the following projects are based on the funding authority's guidelines and recent similar projects that TCB Engineering have been involved in:

Description	Total
Electrification	R 19 500 per Connection
EEDSM	To be determined during detailed proposal
High Mast Lights	R 790 000 per Mast
Electrical Master Plan	R 1 250 000
Cost of Supply Study	R 750 000
Network Strengthening	To be determined during detailed proposal

The typical percentage composition of cost is as follows:

Description	Percentage
Engineering & Design Fees	12%
Material	50%
Labour	38%

6. VALUE ADDS

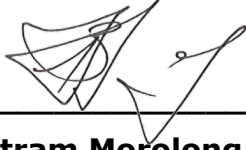
6.1 Operations & Maintenance Support

TCB Engineering will provide operations and maintenance assistance to the Municipality's technical staff by availing resources as and when required during the period of appointment.

6.2 Training & Skills Transfer

TCB Engineering will identify, in conjunction with the municipality, a suitable candidate who shall be trained and mentored. The goal of the training and mentoring will be to enable the candidate to qualify and register as a electrician at the end of the three-year period.

We trust this provides you with a overview of the scope of work and timelines for execution over the following three years. TCB Engineering will gladly assist with additional information should the need arise.



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