



a world class African city



TITLE **Terms of Reference for Engineering, Procurement and Construction Contract (EPC)**

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## Table of Contents

BACKGROUND.....	3
STRATEGIC ALIGNMENT .....	3
ENGINEERING, PROCUREMENT AND CONSTRUCTION PROGRAM .....	3
1. INTRODUCTION.....	4
2. OBJECTIVE .....	4
3. SCOPE OF WORK.....	4
4. REQUIREMENTS OF THE PROJECT .....	6
5. DURATION AND BRIEFING.....	7
6. DOCUMENTATION.....	7
7. Training .....	8

## **BACKGROUND**

City Power Johannesburg (SOC) Ltd is a state-owned company accountable for providing electricity services to all its customers within the City of Johannesburg region. As the electricity distribution service provider of the City of Johannesburg (CoJ), City Power's core competency is to purchase, distribute and sell electricity within its licensed area of supply. City Power strives to support the City of Johannesburg to address the South African challenge of security and quality of electricity supply, to enable consumers, who reside in the City of Johannesburg jurisdiction, to reliably attain electricity at a defined quality and at affordable transparent rates. However, South Africa and the world in general is seeing a change in the energy landscape, infiltrated by new smart technologies, alternative energy sources and advanced load management techniques. The change provides an opportunity in the electricity distribution industry for companies to position themselves as an Engineering Procurement and Construction (EPC) provider to support or offer services to other utilities, private and public institutions, own use and other local municipalities to bridging the gap between the energy transition phase including any works necessary to improve current grid conditions and ensure compliance and compatibility.

## **STRATEGIC ALIGNMENT**

The key elements of City Power's 2024 to 2032 business plan include reducing its reliance on Eskom and Kelvin as sources of power and actively engage alternative sources of power where it is financially and technically feasible, prioritize the digitized energy mix program, reduction of technical & non-technical losses and positioning City Power as an EPC service provider to other entities, government's, own use, departments and any other client including those outside the boundaries of City Power jurisdiction. The initiative is aimed at increasing the financial sustainability for the company while ensuring that City Power remains relevant in the ever changing and growing energy space.

## **ENGINEERING, PROCUREMENT AND CONSTRUCTION PROGRAM**

The Positioning of City Power as an EPC Provider Program seeks to establish City Power as a trusted and reliable Engineering, Procurement, and Construction (EPC) provider in the energy sector, leveraging its expertise to design, procure, build, and manage energy infrastructure projects. This initiative enables City Power to diversify its business model by offering end-to-end solutions for renewable energy installations, microgrid development, software development, condition monitoring, general building works, network maintenance, Refurbishment, Infrastructure Asset Management and electrical infrastructure development projects for municipalities, own use and private entities. By capitalizing on its technical capabilities and local knowledge, the program opens new revenue streams while fostering partnerships with Independent Power Producers (IPPs), other government entities and other key stakeholders. Additionally, it aligns City Power with the growing demand for sustainable energy solutions, reinforcing its reputation as a forward-thinking leader in the energy transition, champion in the engineering construction and renewable energy industry.

## **1. INTRODUCTION**

City Power desires to be an industry leading energy utility which is constantly adapting to the ever-changing landscape by exploring new opportunities, new technologies and offering industry expert advice, support and services to the market including for own use or benefit by positioning itself as an Engineering, Procurement and Construction (EPC) service provider. The initiative is part of a broader strategy to use City Power as an implementation agent and/or service provider to accelerate service delivery in other municipalities, entities and departments, support new developments, enhance own operations and systems, research and develop prototypes, and any other related business utility outside City Power boundaries. To realize this objective, it is imperative for City Power to acquire the services of world class and suitably qualified service providers to assist and partner with in the journey of being an EPC.

## **2. OBJECTIVE**

The objective of this Terms of Reference is to detail the areas of responsibility to assist in the scoping towards appointing qualified service providers for the implementation of Engineering Procurement and Construction services for City Power including sourcing of funding, grants, and donations to execute works, as and when required.

## **3. SCOPE OF WORK**

For City Power to achieve the objective of being an industry leading Engineering Procurement and Construction service provider in the energy sector, this term of reference is drafted to guide and unfold the critical aspects that will enable the implementation of the EPC program to transform the electricity and energy supply landscape. To ensure prudent, transparent and successful implementation of the EPC program, City Power requires the expertise of suitably qualified and experienced service providers with diverse skills, engineering industry expertise, engineering designs experts, electrical generation, transmissions and distribution knowledge and proven seasoned installation contractors who will serve as business partners. The scope of work shall include all the stipulated elements within this document. The Service Provider shall be responsible for all the work to be executed within the terms of reference. The Service Provider shall:

### **3.1. Engineering Designs**

3.1.1. Compile a high-level project development for presentation before the Planning Evaluation Committee (PEC) and detailed designs to the Technical Evaluation Committee (TEC). The consultant will also be expected to compile reports and presentations for submission to any other external governance structures depending on where City Power is assigned to do work or assistance is needed outside City Power's jurisdiction.

3.1.2. Compile a comprehensive network master plan and road maps for the Generation, Transmission, Distribution, Secondary Plant, Alternative Energy, Public Lighting and reticulation networks including the integration of other sources of energy into the electrical network.

3.1.3. The drafting and compilation of new equipment specifications, standards, procedures, policy, guidelines and drawing for equipment to be used by City Power for both own use and for third parties.

3.1.4. Drafting and compilation of proposal for new equipment, systems and networks as prototype for proof of concept, which are accompanied by detailed financial modelling and/or studies.

### **3.2. Project Management**

3.2.1. Provide day to day management of the project, program and portfolio activities in line with New Engineering Contract (NEC latest revision).

3.2.2. The review of designs, schedules and drawings including the approval of amendments.

3.2.3. Provide professional supervision and sign off on all project documentation.

### **3.3. Engineering Construction Works**

3.3.1. Analyze project files and construct (refurbishment, new, alterations, replacement, retrofit and upgrade) engineering works for the implementation of the built program within the following disciplines,

- Energy Generation,
- Transmission Networks (UHV, EHV, HV),
- Distribution Networks (HV/MV),
- Reticulation Networks (MV/LV),
- Secondary Plant including DC supplies, Integrated Security Systems etc,
- Township reticulation and Service Connections including conversion etc,
- Metering including statistical meters and associated primary plant equipment,
- Public Lighting including solar lights, solar high mast,
- Electrification of formal and informal settlements,
- Solar Rooftop, Electric Vehicles, Charging Stations Microgrids and Battery Energy Storage Systems etc.
- General Building including alterations, furniture, engineering and laboratory workshops requirements,
- Insurable Events (including Emergency Works)
- Any other construction works that aligns with the above categories including proof of concepts,

3.3.2. Supply install, and/or retrofit existing inefficient energy consuming equipment with smart energy efficient energy consuming equipment (i.e. solar water geysers, air conditioners, LED lights, with smart sensors and thermostats) as a fully functional turnkey project.

### **3.4. Grid Performance and Monitoring**

- 3.4.1. Build and monitor network electrical networks on software programs for purposes of monitoring network performance and energy losses.
- 3.4.2. Provide a network performance management tool, SCADA system and telecommunications network systems including the establishment of nerve Centre or network performance management Centre for the electrical network.
- 3.4.3. Supply and installation of performance management units or devices (PMU) in the electrical network for purposes of measuring power quality parameters.

### **3.5. Network Maintenance**

- 3.5.1. Provide Labour services including the supply of spares for maintenance of the electrical networks from Generation, Transmission, Distribution, Reticulation, Secondary Plant, Solar Rooftop and microgrids and Public Lighting including Solar lights and solar high mast.
- 3.5.2. City Power may from time to time request the service provider to assist with the provision of materials depending on the need and stock availability at the warehouse.

### **3.6. Infrastructure Asset Management**

- 3.6.1. Provide specialised tools for the implementation of predictive maintenance techniques at various parts of the network.
- 3.6.2. Provide specialized inspection services, network & energy audits and asset data verification for all assets.
- 3.6.3. Obtain Energy Performance Certificates (EPCs) for buildings as per the regulation for the mandatory display and submission of energy performance certificates (EPC's), under section 19(1)(b) of the National Energy Act, 1998 (Act No. 34 of 2008).
- 3.6.4. Create, Analyze and update the asset technical register including the cleaning and updating of functional location data sets on various asset class.

## **4. REQUIREMENTS OF THE PROJECT**

The invitation applies to qualified and suitable service providers to provide Engineering Procurement and Construction services to City Power to assist in the following.

- 4.1. Meeting City Power's financial needs through the monetisation of engineering procurement and construction services for outside borders business and City Power own use.
- 4.2. The development of investments and new concepts that will facilitate the reduction of energy, operational and financial costs. These investments and concepts are expected to be in line and consistent with the regulatory, legal, social, economic and environmental frameworks as prescribed by international standards.
- 4.3. The implementation of works as specified in this terms of reference document is not restricted to City Power area of supply only.

## **5. DURATION AND BRIEFING**

- 5.1. The work of the Engineering Procurement and Construction service providers shall be carried out hand in hand with City Power, and that the duration of which shall be based on contract agreement with the winning bidders.
- 5.2. City Power reserve the right to request the Engineering Procurement and Construction service providers to brief City Power's involved stakeholders at the end of each program in a workshop type of a meeting. The briefing shall be in the presentation format.
- 5.3. Routine reports shall be provided including the capturing of meeting minutes where the Engineering Procurement and Construction must provide Secretariat function.

## **6. DOCUMENTATION**

Engineering Procurement and Construction service providers shall provide all documentation on handover to City Power, other municipalities and/or applicable third parties at the end of the project (Hard copies and electronic format). All reports shall be submitted to the Programme Manager in line with predefined and agreed timelines.

- 6.1. Presentations.
- 6.2. Feasibility studies reports.
- 6.3. Detailed designs.
- 6.4. Impact assessments reports.
- 6.5. Minutes.
- 6.6. Implementation Plan
- 6.7. All documentation utilized for achieving the goals of the Sustainable Energy Mix Strategy.

All the project information shall remain confidential and the property of City Power unless handed over the respective municipality, utility or entity. The Engineering Procurement and Construction or its subsidiaries companies shall not take part in any tender relating to the above and shall not disclose this information to any third party unless those involved or upon authorization to do so by City Power.

## **7. Training**

Training of key City Power personnel shall be required for the daily operation and preventative maintenance/troubleshooting of the solutions or systems at commissioning stage. This training shall be provided by the Contractor and priced for in the request for quotation (RFQ) submission. The training programme shall cover all aspects of operations and preventative maintenance/troubleshooting of the systems and sub-components. It shall be preferable to have a combination of theoretical and practical training for the key personnel as identified by City Power.