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	SPECIFICATION FOR	2
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	CUSTOMER MONITORING	
	AND THIRD-PARTY	
	PREPAYMENT VENDING	
	SUPPORT SERVICES	

FOREWORD

This specification was prepared by the following Work Group members:

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The work group appointed by the Interim Study Committee, which, at the time of approval, comprised of the following members:

Study Committee	Name	Department and Section
Emergency Documents	Nolubabalo Makana	Metering Services
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2016

1. INTRODUCTION

City Power Johannesburg SOC Ltd ("City Power") invites suitably qualified and experienced service providers to provide Third-Party Prepayment Vending Support Services, Revenue Enhancement Services, Customer Monitoring, Consumer Indexing, Advanced Metering Infrastructure (AMI) support, meter audit, system integration, commissioning, maintenance and related support services.

The successful bidder shall provide and manage approved third-party vending channels on behalf of City Power while leveraging City Power's existing Prepayment Vending System and Head-End System.

This specification further requires the provision of customer monitoring, analytics, revenue assurance and non-technical loss reduction capabilities.

2. DEFINITIONS AND ABBREVIATIONS

Abbreviation	Meaning
AMI	Advanced Metering Infrastructure
CIS	Customer Information System
HES	Head-End System
MDMS	Meter Data Management System
GIS	Geographic Information System
STS	Standard Transfer Specification
FBE	Free Basic Electricity
EFT	Electronic Funds Transfer
POPIA	Protection of Personal Information Act
KPI	Key Performance Indicator
SLA	Service Level Agreement

3. LEGISLATIVE AND REGULATORY FRAMEWORK

The procurement and implementation of this contract shall comply with:

- Constitution of the Republic of South Africa, Section 217;
- Municipal Finance Management Act, Act 56 of 2003;
- MFMA Supply Chain Management Regulations;
- National Treasury SCM Circulars and Practice Notes;
- Preferential Procurement legislation and regulations;
- Local Government: Municipal Systems Act;
- Electricity Regulation Act;
- NERSA requirements;
- Protection of Personal Information Act (POPIA);
- Occupational Health and Safety Act; and
- City Power policies and procedures.

4. APPLICABLE STANDARDS

All systems, software, equipment and services shall comply with the latest applicable editions of:

4.1 NRS Standards

- NRS 057 Electricity Metering Code
- NRS 047 Electricity Supply Quality
- NRS 048 Quality of Supply
- NRS 049 Electricity Retailing
- NRS 009-2-1 Functional and Performance Requirements
- NRS 009-2-2 Credit Dispensing Units
- NRS 009-6-10 XMLVend
- NRS 095 AMI Requirements
- NRS 097 Grid Interconnection (where applicable)
- NRS 055 Revenue Protection

4.2 SANS / IEC Standards

- SANS/IEC 62055 STS Suite
- IEC 62055 Electricity Payment Metering Systems
- SANS/IEC 62052 Metering Equipment
- SANS/IEC 62053 Meter Accuracy Standards
- SANS/IEC 62056 DLMS/COSEM
- ISO 8583 Financial Transaction Messaging
- SANS/IEC 62351 Cybersecurity
- SANS/ISO/IEC 27001 Information Security
- SANS 10142 Wiring Code

All proposed solutions shall possess all applicable certifications.

5. BACKGROUND

City Power Johannesburg SOC Ltd ("City Power") is responsible for the distribution and sale of electricity within the City of Johannesburg Metropolitan Municipality and currently supplies electricity to a significant customer base comprising both conventional and prepaid electricity consumers.

City Power currently operates an established Prepayment Vending System, Head-End System (HES), Meter Data Management Systems (MDMS), Customer Information Systems (CIS), Revenue Management Systems, Geographic Information Systems (GIS) and other supporting enterprise applications.

The utility continues to experience challenges relating to revenue leakage, non-technical losses, meter tampering, illegal connections, inaccurate customer information, and customer migration between conventional and prepaid metering platforms. In addition, the increasing deployment of smart metering technologies and Advanced Metering Infrastructure (AMI) requires enhanced monitoring, analytics and reporting capabilities to improve operational decision-making.

City Power therefore intends appointing suitably qualified service provider(s) to provide third-party prepaid vending support services, customer monitoring, revenue enhancement services and associated support functions in order to improve revenue collection efficiencies, strengthen revenue assurance, improve customer service and support the reduction of non-technical losses.

6. OBJECTIVES

The primary objective of this tender is to appoint suitably qualified service provider(s) capable of providing comprehensive third-party prepaid vending support services whilst enhancing City Power's existing revenue management capabilities.

The successful bidder shall be required to support City Power in achieving the following strategic objectives:

- a) Improve the accessibility and availability of prepaid electricity vending services to customers through the provision and management of approved third-party vending channels.
- b) Improve revenue collection and reduce revenue leakage through the implementation of revenue assurance mechanisms, customer monitoring tools and exception management processes.
- c) Improve the quality, integrity and completeness of customer and metering information through consumer indexing, field verification and data reconciliation activities.
- d) Support the deployment, operation and optimisation of Advanced Metering Infrastructure (AMI) technologies and associated communication systems.
- e) Improve customer service through the provision of enhanced reporting, transaction monitoring, customer profiling and analytical capabilities.
- f) Support the identification and reduction of non-technical losses including electricity theft, meter tampering, illegal connections, meter bypasses and abnormal consumption behaviour.
- g) Provide advanced analytics, dashboards and decision-support tools that will enable City Power to make informed operational and strategic decisions.

7. EXISTING SYSTEM ENVIRONMENT

City Power currently operates an existing Prepayment Vending System and Head-End System (HES) which are fully integrated into the utility's operational and revenue management environment.

This tender is not intended to replace, upgrade or substitute the existing Prepayment Vending System or Head-End System. These systems shall remain the official systems of record for all prepaid vending transactions, token generation, customer account management, meter communications, engineering token generation, transaction history, meter event management and associated operational activities.

The successful bidder shall be required to utilize, interface and integrate with these existing systems through approved integration mechanisms, including but not limited to Application Programming Interfaces (APIs), web services, secure database views, file-based interfaces, AI and other industry-standard integration methods approved by City Power.

No bidder shall propose or implement any solution that duplicates, interferes with, modifies or replaces the core functionality of the existing systems without the prior written approval of City Power.

Any proposed integration architecture shall ensure system interoperability, data integrity, security, scalability and minimal disruption to existing business processes.

8. SCOPE OF WORK

The successful bidder shall provide a comprehensive service encompassing third-party vending support, customer monitoring, revenue enhancement, consumer indexing, metering support, system integration, reporting, maintenance and support services.

The scope of work shall include, but not be limited to, the following activities:

8.1. Third-Party Vending Services

The successful bidder shall establish, operate, maintain and support approved third-party vending channels on behalf of City Power.

The bidder shall ensure that prepaid electricity tokens are available to customers on a twenty-four (24) hour per day, seven (7) day per week and three hundred and sixty-five (365) day per year basis.

The bidder shall integrate all vending channels with City Power's existing Prepayment Vending System and ensure secure, reliable and uninterrupted transaction processing.

The service provider shall continuously monitor all vending transactions, investigate failed or incomplete transactions, resolve customer vending complaints and provide transaction reconciliation reports.

The solution shall support vending through various channels including, but not limited to:

- Banking platforms;
- Retail outlets;
- Mobile applications;
- Web-based vending portals;
- Mobile point-of-sale devices;
- Self-service kiosks; and
- Any additional channels approved by City Power.

All vending transactions shall comply with the requirements of the Standard Transfer Specification (STS) and all applicable NRS standards.

8.2. Revenue Enhancement Services

The successful bidder shall provide revenue enhancement services aimed at improving revenue collection efficiencies and reducing non-technical losses.

The bidder shall implement processes, tools and analytical capabilities capable of identifying revenue leakage, abnormal customer behaviour, suspected electricity theft, meter tampering, illegal connections, bypass conditions and other forms of non-technical losses.

The service provider shall further identify customers exhibiting low purchase behaviour, zero vending activity, declining consumption trends or irregular vending patterns and shall provide detailed reports and recommendations to City Power for appropriate intervention.

Revenue assurance reports shall be produced on a monthly basis or at such intervals as determined by City Power.

8.3. Customer Monitoring and Analytics

The successful bidder shall provide a Customer Monitoring, Analytics and Reporting Platform capable of continuously analysing customer vending and consumption behaviour.

The platform shall provide near real-time visibility of customer activity and shall include configurable dashboards, automated alerts, exception reporting, trend analysis, customer profiling and predictive analytics capabilities.

The platform shall enable City Power to proactively identify high-risk customers, monitor revenue trends, analyse customer behaviour patterns and support strategic decision-making.

The platform shall further provide drill-down functionality enabling authorised users to analyse information at customer, meter, feeder, region and network level.

9. THIRD-PARTY VENDING REQUIREMENTS

The bidder shall:

- establish and maintain approved vending channels;
- support online vending on a 24x7x365 basis;
- integrate vending channels to City Power's existing vending system;
- support STS compliant token vending;
- support engineering token generation;
- support FBE token distribution;
- support transaction reversals subject to security controls;
- support reprints;
- support customer lookups;
- support vending history enquiries;
- support debt recovery during vending;
- support retailer and banking channels;
- support mobile vending;
- support web vending;
- support voucher-based vending;
- support EFT integrations;
- support mobile applications.

The system shall support the latest approved XMLVend standard.

10. REVENUE ENHANCEMENT AND CUSTOMER MONITORING

The solution shall provide:

- identification of non-vending customers;
- zero purchase reports;
- abnormal consumption analysis;
- tamper identification;
- bypass identification;
- theft detection;
- revenue leakage detection;
- customer profiling;
- customer segmentation;
- debt collection monitoring;
- revenue assurance reporting;
- exception reporting.

11. CONSUMER INDEXING REQUIREMENTS

The bidder shall:

- verify customer details;
- verify meter details;
- perform field audits;
- update customer information;
- perform GIS verification;
- update GPS coordinates;
- reconcile customer and meter records.

12. METERING AND AMI SUPPORT SERVICES

City Power shall supply all meters and communication equipment.

The successful bidder shall:

- Audit meters;
- remove conventional meters where instructed;
- commission meters;

- configure communication devices;
- test installations;
- support HES integration;
- maintain installed equipment; and
- Conduct Cut-off/ Disconnection

13. VENDOR MANAGEMENT SERVICES

The service provider shall:

- manage third-party vendors;
- administer vendor agreements;
- train vendors;
- manage vendor onboarding;
- provide vendor support;
- manage vendor terminals;
- provide consumables where applicable;
- reconcile vendor transactions;
- provide vendor performance reports.

Vendor commissions shall be paid in accordance with approved contractual arrangements.

14. SYSTEM INTEGRATION REQUIREMENTS

The bidder shall integrate with:

- Existing Vending System;
- HES;
- MDMS;
- CIS;
- Revenue Systems;
- GIS;
- Financial Systems.

Integration shall support:

- API integration;
- XML integration;
- file-based integration;

- web services;
- industry standard protocols.

15. CUSTOMER MONITORING PLATFORM REQUIREMENTS

The platform shall provide:

- real-time dashboards;
- business rules engine;
- alerts and notifications;
- exception management;
- historical analysis;
- audit trails;
- role-based security;
- GIS visualisation;
- mobile accessibility;
- report scheduling;
- export facilities.

16. ARTIFICIAL INTELLIGENCE AND ADVANCED ANALYTICS

Bidders may propose AI capabilities including:

- anomaly detection;
- theft prediction;
- revenue forecasting;
- predictive maintenance;
- customer risk scoring.

AI outputs shall be:

- transparent;
- explainable;
- auditable;
- POPIA compliant.

AI shall support and not replace operational decision making.

17. PAYMENT CHANNELS

The system shall support:

- cash;
- credit cards;
- debit cards;
- EFT;
- retailer payments;
- banking applications;
- mobile payments;
- FBE tokens.

18. DATA MANAGEMENT AND OWNERSHIP

All customer, metering, transaction and operational data shall remain the sole property of City Power.
The bidder shall:

- comply with POPIA;
- maintain confidentiality;
- provide full data export facilities;
- retain online history for minimum 12 months;
- archive historical records for minimum 5 years.

19. REPORTING REQUIREMENTS

The system shall provide standard reports including:

- Management Summary;
- Transaction Summary;
- FBE Reports;
- Zero Purchase Reports;
- Revenue Reports;
- Tamper Reports;
- Vendor Reports;
- Meter Lifecycle Reports;
- SLA Reports.

Ad hoc reporting capability shall be provided.

20. SERVICE LEVEL REQUIREMENTS

Minimum availability shall be 99.5%.

Support shall include:

- 24x7x365 support;
- Help Desk;
- Incident Management;
- Escalation Procedures;
- Preventative Maintenance;
- Quarterly Reviews.

21. KEY PERFORMANCE INDICATORS

KPIs shall include:

- System Availability;
- Transaction Success Rate;
- Revenue Recovery;
- Reduction in Non-Technical Losses;
- Vendor Availability;
- Customer Resolution Times;
- SLA Compliance.

22. ASSET OWNERSHIP

All meters, communications equipment, software licences, databases and infrastructure shall remain the sole property of City Power.

No ownership rights shall vest in the service provider.

23. SUPPORT, TRAINING AND MAINTENANCE

The bidder shall provide:

- user training;
- administrator training;
- vendor training;
- refresher training;
- technical support;

-
- software maintenance;
 - upgrades.

24. PERFORMANCE MANAGEMENT

Performance shall be measured as per SLA on the following aspects:

- Vending and/or collection performance per area/township;
- Number of active meters' vs number of vending/paying customers;
- Tracking of new connections;
- Resolution of queries;
- Additional revenue;
- Data accuracy and updates;
- Daily/ Weekly/Monthly reconciliation of new customers;
- Income and receive in advance report

Annex A – Bibliography

None

Annex B - Revision information

DATE	REV. NO.	NOTES
June 2026	0	First issue