The Kenya Power & Lighting Co. Ltd.
***Central Office** – P.O. Box 30099, Nairobi, Kenya*
Telephone – 254-02-3201000-Telegrams 'ELECTRIC'- www.kenyapower.co.ke
Stima Plaza, Kolobot Road

Our Ref: KP1/6A.1/PT/8/16/A58 **23rd March, 2017**

M/s
Dear Sir/ Madam:

AMENDMENT No.1: ON ICB No: KP1/6A.1/PT/8/16/A58 FOR DESIGN, SUPPLY, INSTALLATION OF ADVANCED METERING INFRASTRUCTURE (AMI) SYSTEMS TO SUPPORT REVENUE RECOVERY AND PROTECTION

1. **RELATIONSHIP WITH THE PRINCIPAL BID DOCUMENT.**
   Save where expressly amended by the terms of this Addendum, the Principal Bid Document shall continue to be in full force and effect.
   The provisions of this Addendum shall be deemed to have been incorporated in and shall be read as part of the Principal Bid Document.

A) **CHANGES HAVE BEEN MADE; VOLUME 1 SECTION 11 – BID DATA SHEET AS FOLLOWS;**

ITB 20.1	A Bid Security shall be required and shall be inform of **bank guarantee.** The amount of the bid security shall be **USD$ 200,000** or **KES 20,400,000** or equivalent in a convertible currency.
D. Submission and Opening of Bids	
ITB 23.1	For bid submission purposes, the Purchaser's address is: Attention: The General Manager, Corporate Affairs & Company Secretary The Kenya Power and Lighting Company Stima Plaza, Kolobot Road, Parklands 7th Floor P.O Box 30099 - 00100 Nairobi, Kenya Telephone: +254 – (0)711031731 The deadline for the submission of bids is: **Date 25th April, 2017** Time: 10:00Hrs East African Time
ITB 26.1	The bid opening shall take place at: Street Address: **STIMA PLAZA , KOLOBOT ROAD** Floor/Room number: **GROUND FLOOR- AUDITORIUM** City : **NAIROBI** Country: **KENYA** Date: **25th April, 2017** Time: 10.30a.m

B) <u>CHANGES HAVE BEEN MADE; VOLUME 1 SECTION 11I – EVALUATION AND QUALIFICATION CRITERIA AS FOLLOWS;</u>

Factor	2.3 Financial Situation					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
			All partners combined	Each partner	At least one partner	
2.3.2 Average Annual Turnover	Minimum average annual turnover of **USD 27 Million**, calculated as total certified payments received for contracts in progress or completed, within the last Five (5) years	Must meet requirement	Must meet requirement	Must meet Twenty percent (20%) of the requirement	Must meet Seventy percent (70%) of the requirement	Form FIN –3.2
2.3.3 Financial Resources	The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet: (i) the following cash-flow requirement: **USD 3.3 Million** and (ii) the overall cash flow requirements for this contract and its current commitments.	Must meet requirement	Must meet requirement	Must meet Twenty percent (20%) of the requirement	Must meet Seventy percent (70%) of the requirement	Form FIN –3.3

Factor	2.4 Experience					
Sub-Factor	Criteria					Documentation Required
	Requirement	Bidder				
		Single Entity	Joint Venture, Consortium or Association			
			All partners combined	Each partner	At least one partner	
2.4.1 General Experience	Experience under contracts in the role of contractor, subcontractor, or management contractor for at least the last Three [3] years prior to the applications submission deadline, and with activity in at least nine (9) months in each year.	Must meet requirement	N / A	Must meet requirement for the role defined in the JV	N / A	Form EXP-2.4.1
2.4.2 Specific Experience	A minimum number of similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, supplier, joint venture member management contractor or sub-contractor between 1st January 2010 and application submission deadline: 1 (one) similar contract of minimum value **US$ 16 million** or 2 (two) contracts each of minimum contract value of US$ 8 million or three contracts of value of **$ 5.3** million.	Must meet requirement	Must meet requirement[i]	N/A	N/A	Form EXP 4.2(a)

C) CHANGES HAVE BEEN MADE; VOLUME 2 –TECHNICAL SPECIFICATIONS

The listed clauses have been amended to read;

2.1.5 Additional requirements of Communication Module

The Meter shall be able to communicate with a remote central system (AMI Head End) using a plug in modem/module, through the; Fiber, PLC, RF Mesh, RF point to point, or 3G networks.

The meter shall communicate with either Data concentrator (downstream communication) or directly to Head End System.

If the communication is to Data Concentrator, the Data concentrator shall then communicate to the Head system (Upstream Communication).
The downstream and upstream communication can either be through wireless (Radio, GPRS etc.) or wired communication (Fiber, Optics, PLC etc.)

Additional Clause 3.3.2 Architecture and System Requirements
3.3.2.1 The system must have at least the following layers bounded by independent programs: application server, communication server and database server; all with its corresponding redundancy.

3.3.2.2 The GUI interface shall be integrated in such a manner that the same data entry can be used in all operations of the system, in order to avoid duplication of work;

3.3.2.3 The messages and screens of the system shall be exhibited in the national language of the country; during the phase of acceptance test they shall be exhibited in English or Spanish, but the final delivery must be in the national language of the country;

3.3.2.4 The MRS must have the resources of auditing trail and recording of transactions that were made: who made, when and where they were made;

3.3.2.5 Capacity of increase of the hardware components as required for the improvement of performance (horizontal scalability);

3.3.2.6 Ability to migrate to a hardware platform for better performance (vertical scalability);

3.3.2.7 Scalability of the components considering the following aspects:

- Processing Capacity; Data storage

o Increase in the number of simultaneous clients without loss of performance;
3.3.2.8 It shall allow "hot standby" for:

- Application servers;
- Communication servers;
- Database servers

3.3.2.9 The system interfaces shall be Windows friendly;

3.3.2.10 It shall have capacity for remote operation, through access from a local network or through the Internet in safe environments, enabling configurations, programming and control of the applications.

Clause -10.3.3 A more detailed table for installations distribution is provided in Annex 4.

Clause 5.5.8.6 To read." The meters shall be capable of measuring energy and also record reversed units".

Clause 5.1.2 The meters are for use in Advanced Metering Infrastructure (AMI) system. The Meter shall be able to communicate with a data concentrator, relay or collector through; Fiber technology, RF technology, PLC technology or a mixed RF-PLC technology.

Clause 5.5.6.7 The load disconnect switch shall have the following characteristics:

a) Mechanical life at maximum power, PF=1: At least 3,000 cycles

b) Maximum switching current: At least 100 A

c) Maximum overload current: At least 110 A (30 min)

d) Maximum switching voltage: At least 265 V AC

e) Short circuit < 3mS: 3,000 A

f) Insulation strength (4kV, 50 Hz, 1 min):
Contact to contact: 2 kV
Coil to contact: 4 kV

g) Impulse strength (1.2 / 50µS to IEC 62052-11):
Contact to contact: > 4 kV
Coil to contact: > 8 kV

Clause 5.5.8.4 The meter shall allow KPLC to select measurement of KVARH and KVAH to include or not to include harmonics in the measurement. Thus, choosing vector (phasor) or apparent power.

Clause 6.2 [13] IEE1901.2 standards for high speed (up to 500 Mbit/s at the physical layer) communication devices via electric power lines

Clause 7.5.10.6 The manufacturer shall meet the full costs of six (6) Engineers, for concentrator inspection and acceptance testing at the manufacturer's facility, except the cost of Engineers' transportation from Kenya to the nearest major airport. The factory inspection and factory acceptance tests shall run for duration of three (3) working days each.

Clause 9.8.16.3 a) An archiving procedure should be implemented enabling efficient data storage for the time of at least 6 years, and subsequent transfer to storage media providing permanent storage.

Clause 9.9.2.6 The hardware shall have a minimum of four (4) 10 GB speed Network Interface Cards (NICs) with sufficient capacity for the supplied networks. The NICs shall be configured in a team or redundant fashion to support no single point of failure (NSPOF).

The following Clause have been introduced;

Addition Clause 9.8.1.33 The MDMS shall be capable of monitoring and analyzing power quality index and generate alerts to exceptions. The system shall display analysis of power supply quality including distribution transformer load, voltage, monitoring of phase imbalance, distribution transformer power factor monitoring and other functions, to satisfy requirements of power supply quality index and improve power quality.

Addition Clause 9.8.1.34 The MDMS shall be able to indicate loss of energy based on Grid topology and comparison of consumption of meter installed at the output of distribution substation with all meters under the service of the substation. Power supply, energy consumption, Energy loss quantity and Energy loss rate will be indicated.

Additional Clause 9.8.1.35 The MDMS shall have the ability to present Line loss curve of distribution substation and the Energy loss will be monitored based on Grid topology, voltage levels and geographical area.

Additional Clause 9.9.4.7 The works stations shall include redundant power supply, redundant display card and redundant Network Interface Card (NIC).

Additional Clause 10.1.2 The meter box shall be supplied complete with its low voltage (LV) Circuit breaker. The LV Air Circuit Breaker (ACB) requirements are as follows;

6.3.1 The circuit breaker shall comply with IEC 60947-1&2 standards.

6.3.2 The rated current of circuit breaker shall be configured to be 1.5-2 times of rated capacity.

6.3.3 The circuit breaker controller shall support both manual and automatic mode of operation.

6.3.4 The circuit breaker rated voltage shall be 3phase-600Vac.

6.3.5 The circuit breaker (ACB) for LVCT metered customers shall be able to support remote disconnection and reconnection through the system software.

6.3.6 The circuit breaker shall automatically trip when the current through it exceeds a pre-determined value.

6.3.7 The breaker shall be equipped with provision for manual trip test

Additional Annex 7: Guaranteed Performance features for down link communication (Meter and DCU)

Additional Annex 8: Guaranteed Technical Particulars for MDMS

Additional Annex 9: Guaranteed Technical Particulars for MRS

Yours faithfully,
For: KENYA POWER & LIGHTING COMPANY LIMITED.

Eng. MICHAEL ADHIAMBO
MANAGER-PROJECTS DEVELOPMENT