Kenya Power

The Kenya Power & Lighting Co. Ltd.
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Stima Plaza, Kolobot Road

Our Ref: KP1/6E.3/PT/2/18/A65 – A66 **2nd July, 2018**

Dear Sir/ Madam:

CLARIFICATION No. 6 OF BIDDING DOCUMENT FOR IPC NO: KP1/6E.3/PT/2/18/A65 and KP1/6E.3/PT/3/18/A66 PROCUREMENT OF SINGLE PHASE PRE-PAID METERS AND MINIATURE CIRCUIT BREAKERS FOR THE LAST MILE CONNECTIVITY PROJECT ISSUED ON TUESDAY, 24TH APRIL 2018

The following responses are made to clarifications sought on various issues in the Bidding Document for Procurement of single phase pre-paid Meters and Miniature Circuit Breakers for the Last Mile Connectivity Project.

No.	Bidder's Query	Client's Response/Clarification/Answer
1	According to the Amendment No.3, see the picture one, the model is corrected to NDB1-63C63 2P, the rated current of this model is 63A. **Picture One:** the new specifications. The MCB shall be of tripping characteristics type C and current rating of 63Amps. See the Picture two, from the Amendment No. 3. The rated current and No. of Poles are changed. In this condition, the products model and price will be changed. See the picture three, from the Amendment No1, the No. of poles is 2. So, could you check the rated current and No. of Poles?	The No. of poles shall be as indicated in the new MCB specification (KP1/6C/4/1/TSP/011/002) clause 4.2.1.13, table 1: i.e. 1P+N. The rated current shall be as indicated in the same table, i.e. 63Amps. **NB:** The old specification for MCB was withdrawn on 14th June 2018 through amendment no. 3. All past clarifications and amendments on the withdrawn specification became null and void automatically. No reference should be made on the withdrawn specification.

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	Picture Two: Table 1: Technical Parameters of MCB Parameter Description | Unit | Value Rated Voltage | V | 230/400 Rated current | A | 6,10,16,20,32,40, 63 Power frequency withstand Voltage | kVrms | 4 Impulse withstand Voltage | kVpk | 6 No. of poles | | 230V (1- Ph) | 400V (3-Ph) | | 1P+N | 3P+N Tripping Characteristic type | | Type B | Type C | Type D Instantaneous Tripping range according to IEC/EN 60898-1 | | 3-5x I_n | 5-10x I_n | 10-20xI_n In Rated breaking capacity | kA | 6 | 6 | 10 Energy Limitation Class | | 3 | 3 | 3 Mounting | | DIN rail (DIN EN50052) Mechanical Endurance | cycles | 20,000 Electrical Endurance | cycles | 10,000 Conductor Size | mm² | Up to 25 Degree of protection | IP | 55 **Picture 3:** c) "Clause 4.2.35 has been amended from "The MCB shall have one protected pole" to "The MCB shall have both "Live" and "Neutral" poles protected, and both shall operate simultaneously"	
2	We check the documents but there is no summary of technical data sheet of MCBs in tender documents such as attached. Could you please send me the summary of the technical data sheet for MCBs	Refer to clause 4.2.1.13 (table 1)of the Specifications for the MCBs issued through amendment no. 3 dated 14th June 2018

<table>
<tr><th>No.</th><th>Bidder's Query</th><th>Client's Response/Clarification/Answer</th></tr>
<tr><td></td><td>
<table>
<tr><td>Kenya Power</td><td>ENERGY- Using PLC as Medium of Communication Between MCU and LIU</td><td>Date of Issue</td><td>2017-10-12</td></tr>
<tr><td></td><td></td><td colspan="2">Page 14 of 33</td></tr>
</table>
4.3.4 The meters shall be connectable for 2-wire systems, a permanent connection drawing of which shall be printed on the meter body. Stickers of any kind shall not be accepted

4.3.5 The meter shall have Reference Standard Electrical Design Parameters as in Table 1.

Table 1: Summary of Electrical Parameters

<table>
<tr><td colspan="2">Measurement and Control Unit</td></tr>
<tr><td colspan="2">Electrical Parameters</td></tr>
<tr><td>Accuracy</td><td>kWh Class 1 (IEC 62053-21)</td></tr>
<tr><td>Rated Nominal Voltage (U_n), Frequency (Hz)</td><td>230V, 50Hz ± 5%</td></tr>
<tr><td>Load switching voltage range</td><td>0.4 U_n to 1.3 U_n</td></tr>
<tr><td>Base Reference current, I_b</td><td>5A</td></tr>
<tr><td>Max. Voltage circuit burden</td><td>2W and 10 VA @230V, 50Hz, 30° c</td></tr>
<tr><td>Max. Current circuit burden</td><td>4VA @ 5A, 50Hz, 20° c</td></tr>
<tr><td>Maximum Current I_{max} (A)</td><td>80 A.</td></tr>
<tr><td>Protective class</td><td>Class II (double insulated)</td></tr>
<tr><td>Accurate metering range</td><td>0.05 I_b to 1.2 I_{max}</td></tr>
<tr><td>Starting current</td><td>0.2% I_b</td></tr>
<tr><td>Running with no-load</td><td>No more than one pulse on application of 0.4 U_n - 1.3 U_n</td></tr>
<tr><td>Short circuit current</td><td>50 I_{max}</td></tr>
<tr><td>Meter Constant</td><td>1000 imp/kwh</td></tr>
<tr><td colspan="2">Disconnection Device</td></tr>
<tr><td>Type</td><td>Single pole latching contactor, 100 A.</td></tr>
<tr><td colspan="2">Insulation: Over voltage and Surge Protection</td></tr>
<tr><td>Insulation classification</td><td>Protective Class II</td></tr>
<tr><td>Insulation level</td><td>At least 4 kV rms for 1 minute</td></tr>
<tr><td>Over voltage withstand</td><td>400 VAC for 48 hours</td></tr>
<tr><td>Voltage impulse withstand</td><td>At least 6 kV, 1.2/50µs (IEC 62052-11) with 2Ω source impedance</td></tr>
<tr><td>Current impulse withstand</td><td>At least 5kA, 8/20 µs</td></tr>
<tr><td>Lightning Surge Withstand</td><td>At least 30kA, 4/10 us</td></tr>
</table>
</td><td></td></tr>
<tr><td>3</td><td>We suggest all bidders submit both the meters and MCB samples during the bid submission, so that KPLC would be able to evaluate the tender documents and samples at the same time, to choose the best qualified supplier as the awarder bidder.</td><td>Submission of Meter and MCB samples is not required at bid submission stage. However, the successful bidder shall submit Meter Samples as required under Technical Specifications for Single Phase Split Prepayment Meters (KP1-6C-4-1-TSP-14-011-02) for testing and approval before manufacture (reference to ITB 11.1 (k)).</td></tr>
<tr><td>4</td><td>Clarification No.3, the response of Question Clause 16, KPLC saying the MCB shall be 2P; Amendment No.3 - AFD-EU-EIB - Meters & MCBs; Technical parameters of the MCB shall be as per table 1 below:
<table>
<tr><td>Parameter Description</td><td>Unit</td><td colspan="2">Value</td></tr>
<tr><td rowspan="2">No. of poles</td><td rowspan="2"></td><td>230V(1-Ph)</td><td>400V (3-Ph)</td></tr>
<tr><td>1P+N</td><td>3P+N</td></tr>
</table>
Questions:
MCB shall only be 230V(1-Ph), 1P+N? No 2P+N or 3P+N required, right?</td><td>See answer to question no 1 above.</td></tr>
</table>

No.	Bidder's Query	Client's Response/Clarification/Answer
5	Amendment No.3 - AFD-EU-EIB - Meters & MCBs 4.2.1.13， degree of protection: IP55， **Question:** Since the MCB will not be exposed to outdoor, normally, the degree of protection of MCB with IP20 will be enough, no need to require IP55, please confirm.	Requirements of clause 4.2.1.13 of MCB technical specifications issued through amendment no. 3 shall apply.
6	Amendment No.3 - AFD-EU-EIB - Meters & MCBs 2. NORMATIVE REFERENCES **Question:** IEC60898-1 is the standard of MCB, while IEC60947 is the standard of MCCB. The tender invites tender for MCB only, therefore, our MCB will not comply with IEC60947, please confirm.	It is hereby confirmed that the Normative References in the MCB specification are correct. Requirements of clause 4.2.1.1 of MCB technical specifications issued through amendment no. 3 shall apply.
7	Amendment No.3 - AFD-EU-EIB - Meters & MCBs 4.1 Service conditions e) Pollution (IEC 60947-1)- Very Heavy: class IV; **Question:** Normally class II will be enough, will it acceptable or not?	Requirements of clause 4.1 (e) of MCB technical specifications issued through amendment no. 3 shall apply.
8	Amendment No.3 - AFD-EU-EIB - Meters & MCBs 4.2.4.2 The insulating material shall be pigmented grey (RAL7035) and the operating handle shall be red. **Question:** During the bid sample submission, the insulating material will be white, and the operating handle shall be blue. But after the contract is confirmed, we would be able to produce the same color firmly comply with the requirement. Will the samples be acceptable during the bid evaluation?	Refer to item no. 3 of this document above which states "Submission of Meter and MCB samples is not required at bid submission stage. However, the successful bidder shall submit Meter Samples as required under Technical Specifications for Single Phase Split Prepayment Meters (KP1-6C-4-1-TSP-14-011-02) for testing and approval before manufacture (reference to ITB 11.1 (k))."
9	Amendment No.3 - AFD-EU-EIB - Meters & MCBs 4.2.8.2 A proven design of external sealing shall be used for this purpose and shall form part of the device. A provision for terminal cover scaling shall be made. **Question:** The MCB is normally installed in the meter box. The meter and meter box will have the tamper protection	Requirements of clause 4.2.8.2 of MCB technical specifications issued requiring external sealing or terminal cover sealing shall not be applicable.

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	function. And the MCB has no function of energy measurement. Therefore, there is no need to add external sealing or terminal cover scaling for MCB. Please confirm.	

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

DANIEL MUGA
Ag. GENERAL MANAGER – SUPPLY CHAIN