



Kenya Power

**TENDER NO. KP1/9A.2/OT/63/ICT/17-18 SUPPLY &
INSTALLATION OF AIR CONDITIONERS AND
ASSOCIATED WORKS FOR STIMA PLAZA DATA
CENTRE**

DATE OF TENDER DOCUMENT: APRIL, 2018

**ALL TENDERERS ARE ADVISED TO READ CAREFULLY THIS TENDER DOCUMENT
IN ITS ENTIRETY BEFORE MAKING ANY BID**

TENDER DOCUMENT FOR SERVICES

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TABLE OF CONTENTS

Section	Contents	Page No.
SECTION I – INVITATION TO TENDER.....		3
SECTION II – TENDER SUBMISSION CHECKLIST		4
SECTION III – INSTRUCTIONS TO TENDERERS (ITT).....		8
SECTION IV – SCHEDULE OF REQUIREMENTS.....		28
SECTION V – PRICE SCHEDULE FOR GOOD AND SERVICES		39
SECTION VI - EVALUATION CRITERIA.....		46
SECTION VII – GENERAL CONDITIONS OF CONTRACT.....		55
SECTION VIII – SPECIAL CONDITIONS OF CONTRACT.....		66
SECTION IX - TENDER FORM.....		68
SECTION X - CONFIDENTIAL BUSINESS QUESTIONNAIRE FORM		70
SECTION XI A - TENDER SECURITY FORM – (BANK GUARANTEE)		73
SECTION XI B - TENDER SECURITY FORM (SACCO SOCIETY, DEPOSIT TAKING MICRO FINANCE INSTITUTIONS, WOMEN ENTERPRISE FUND & YOUTH ENTERPRISE FUND)		76
SECTION XI C - TENDER SECURITY – (LETTERS OF CREDIT)		79
SECTION XII - MANUFACTURER’S/ PRINCIPAL’S AUTHORIZATION FORM		81
SECTION XIII - DECLARATION FORM.....		82
SECTION XIV – DRAFT LETTER OF NOTIFICATION OF AWARD		83
SECTION XV – DRAFT LETTER OF NOTIFICATION OF REGRET		84
SECTION XVI - CONTRACT AGREEMENT FORM.....		85
SECTION XVII A - PERFORMANCE SECURITY FORM (BANK GUARANTEE).....		90
SECTION XVII B - PERFORMANCE SECURITY (LC)		92
SECTION XVIII - SUPPLIER EVALUATION FORM.....		94
SECTION XIX - PRE-BID MEETING ATTENDANCE FORM.....		97
SECTION XX - THE TECHNICAL SPECIFICATIONS		98

SECTION I – INVITATION TO TENDER

APRIL 2018

TENDER NO. TENDER NO. KP1/9A.2/OT/63/ICT/17-18 DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE

1.1 The Kenya Power & Lighting Company Limited hereinafter referred to KPLC invites bids from eligible Tenderers **DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE**. Interested eligible Tenderers may obtain further information from the General Manager- Supply Chain, The Kenya Power & Lighting Company Ltd at Stima Plaza, 3rd Floor, Kolobot Road, P.O. Box 30099 – 00100 Nairobi, Kenya.

1.2 Obtaining tender documents.

1.2.1 Tender documents detailing the requirements may be viewed at KPLC E-Procurement Web Portal found on the KPLC website (www.kplc.co.ke) beginning on **25th April, 2018**.

1.3 Submission of Tender documents

Completed Tenders are to **be saved as PDF** documents marked **TENDER NO. KP1/9A.2/OT/63/ICT/17-18 DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE** and submitted through the KPLC E-Procurement Web Portal found on the KPLC website (www.kplc.co.ke) so as to be received on or before **16th May 2018** at **10:00 A.M**

1.4 Prices

Prices quoted should be inclusive of all taxes and delivery costs to the required site (where applicable) and must be in Kenya Shillings or a freely convertible currency shall remain valid for one hundred and twenty (120) days from the closing date of the tender.

1.5 Opening of submitted Tenders

Tenders will be opened promptly thereafter in the presence of the Tenderer's or their representatives who choose to attend in KPLC Auditorium at Stima Plaza, Kolobot Road, Parklands, Nairobi.

SECTION II – TENDER SUBMISSION CHECKLIST

A. Tender Submission Format

This order and arrangement shall be considered as the Tender Submission Format. Tenderers shall tick against each item indicating that they have provided it.

No.	Item	Tick Where Provided
1	Tender Security – Bank Guarantee or Letters of Credit (issued by Banks Licensed by the Central Bank of Kenya), Guarantee by a deposit taking Microfinance Institution, Sacco Society, the Youth Enterprise Development Fund or the Women Enterprise Fund.	
2	Declaration Form	
3	Duly completed Tender Form	
4	Certificate of Confirmation of Directors and Shareholding (C.R.12) for registered companies and if not a registered company a business name for those trading as a sole proprietor or a partnership registered under the Kenyan law or equivalent certification for foreign tenderers	
5*	Copy of PIN Certificate	
6*	Copy of Valid Tax Compliance Certificate	
7	Confidential Business Questionnaire (CBQ)	
8*	Certificate of Confirmation of Directors and Shareholding (C.R. 12) or equivalent (for foreign tenderers)	
9	Type Test Certificates and their Reports and or Test Certificates and their Reports	
10	Valid and current ISO 9001 Certificates or for locally manufactured or produced goods, valid Mark of Quality Certificate or Standardization Mark Certificates from the Kenya Bureau of Standards (KEBS).	
11	Catalogues and or Manufacturer’s drawings where applicable.	
12	Duly completed Schedule of Guaranteed Technical Particulars	
13	Principals Authorisation and warranty where applicable	
14	Names with full contact as well as physical addresses of previous customers of similar goods and reference letters from at least four (4) previous customers	
15	Statement on Deviations	
16	Price Schedule(s)	

17	Schedule of requirements duly filled indicating services offered	
18	Audited Financial Statements. The audited financial statements required must be those that are reported within eighteen (18) calendar months of the date of the tender document. (For companies or firms that are registered or incorporated within the last one calendar year of the Date of the Tender Document, they should submit certified copies of bank statements covering a period of at least six months prior to the date of the tender document. The copies should be certified by the Bank issuing the statements. The certification should be original).	
19	Any other document or item required by the Tender Document. (The Tenderer shall specify such other documents or items it has submitted)	

***NOTES TO TENDERERS**

1. Valid Tax Compliance Certificate shall be one issued by the relevant tax authorities and valid for at least up to the tender closing date. All Kenyan registered Tenderers must provide a valid Tax Compliance Certificate.
2. All Kenyan registered Tenderers must provide the Personal Identification Number Certificate (PIN Certificate).
3. Foreign Tenderers must provide equivalent documents from their country of origin as regards Tax Compliance and PIN certificates OR statements certifying that the equivalent documentation is not issued in the Tenderer's country of origin. The Statement(s) that equivalent documentation is not issued by the Tenderer's country should be original and issued by the Tax authorities in the Tenderer's country of origin.

TABLE OF PARAGRAPHS ON INSTRUCTIONS TO TENDERERS

Paragraph No.	Headings	Page No.
3.1	Definitions	8
3.2	Eligible Tenderers	9
3.3	Eligible Goods	9
3.4	Joint Venture	10
3.5	Cost of Tendering	10
3.6	Contents of the Tender Document	10
3.7	Clarification of Documents	11
3.8	Amendment of Documents	11
3.9	Language of Tender	12
3.10	Documents Comprising the Tender	12
3.11	Tender Form	12
3.12	Tender Prices	13
3.13	Tender Currencies	13
3.14	Tenderer's Eligibility and Qualifications	13
3.15	Conformity of Services to Tender Documents	14
3.16	Demonstration(s), Inspection(s) and Test(s)	15
3.17	Warranty	15
3.18	Tender Security	16
3.19	Validity of Tenders	17
3.20	Alternative Offers	17
3.21	Number of Sets of and Tender Format	17
3.22	Preparation and Signing of the Tender	18
3.23	Sealing and Outer Marking of Tenders	18
3.24	Deadline for Submission of Tenders	19
3.25	Modification and Withdrawal of Tenders	19
3.26	Opening of Tenders	19
3.27	Process to be Confidential	20
3.28	Clarification of Tenders and Contacting KPLC	20
3.29	Preliminary Evaluation and Responsiveness	20
3.30	Minor Deviations, Errors or Oversights	21
3.31	Technical Evaluation and Comparison of Tenders	21
3.32	Financial Evaluation of Tenders	21
3.33	Preferences	22
3.34	Debarment of a Tenderer	22

3.35	Confirmation of Qualification for Award.....	22
3.36	Award of Contract	22
3.37	Termination of Procurement Proceedings	22
3.38	Notification of Award.....	23
3.39	Signing of Contract.....	23
3.40	Performance Security	23
3.41	Corrupt or Fraudulent Practices.....	24

SECTION III – INSTRUCTIONS TO TENDERERS (ITT)

3.1 Definitions

In this tender, unless the context or express provision otherwise requires: -

- a) *Any reference to any Act shall include any statutory extension, amendment, modification, re-amendment or replacement of such Act and any rule, regulation or order made there-under.*
- b) *“Date of Tender Document” shall begin with the first day and end on the last day of the month appearing on the cover page of the Tender Document.*
- c) *“Day” means calendar day and “month” means calendar month.*
- d) *“KEBS” wherever appearing means the Kenya Bureau of Standards or its successor(s) and assign(s) where the context so admits.*
- e) *“PPOA” wherever appearing means The Public Procurement Oversight Authority or its successor(s) and assign(s) where the context so admits.*
- f) *Reference to “the tender” or the “Tender Document” includes its appendices and documents mentioned hereunder and any reference to this tender or to any other document includes a reference to the other document as varied supplemented and/or replaced in any manner from time to time.*
- g) *“The Procuring Entity” means The Kenya Power and Lighting Company Limited or its successor(s) and assign(s) where the context so admits (hereinafter abbreviated as KPLC).*
- h) *“The Tenderer” means the person(s) submitting its Tender for the provision of services in response to the Invitation to Tender.*
- i) *Where there are two or more persons included in the expression the “Tenderer”, any act or default or omission by the Tenderer shall be deemed to be an act, default or omission by any one or more of such persons.*
- j) *Words importing the masculine gender only, include the feminine gender or (as the case may be) the neutral gender.*
- k) *words importing the singular number only include the plural number and vice-versa and where there are two or more persons included in the expression the “Tenderer” the covenants, agreements and obligations expressed to be made or performed by the Tenderer shall be deemed to be made or performed by such persons jointly and severally.*
- l) *Citizen contractors-a firm shall be qualified as a citizen contractor if its owners and shareholders are Kenyan citizens*
- m) *Local contractors- a firm shall be qualified as a local contractor if it is registered in Kenya.*

3.2 Eligible Tenderers

- 3.2.1 This Invitation to Tender is open to all Tenderers eligible as described in the Appendix to Instructions to Tenderers. Successful Tenderers shall provide the services in accordance with this tender and the ensuing contract. Agreements between undertaking to directly or indirectly fix purchase or selling prices or any other trading conditions. Where this is discovered, the undertakings involved will not be eligible for award and all undertakings involved shall be disqualified.
- 3.2.2 Notwithstanding any other provisions of this tender, the following are not eligible to participate in the tender:-
- a) KPLC's employees, its Board or any of its committee members.
 - b) Any Minister or Assistant Minister of the Government of the Republic of Kenya (GoK)
 - c) Any public servant of GoK.
 - d) Any member of a Board or Committee or any department of GoK.
 - e) Any person appointed to any position by the President of Kenya.
 - f) Any person appointed to any position by any Minister of GoK.
- 3.2.3 For the purposes of this paragraph, any relative i.e. spouse(s) and child(ren) of any person mentioned in sub-paragraph 3.2.2 is also ineligible to participate in the tender. In addition, a Minister shall include the President, Vice-President or the Attorney General of GoK.
- 3.2.4 Tenderers shall provide the qualification information statement that the Tenderer (*including all members of a joint venture and subcontractors*) is not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by KPLC to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the services under this Invitation to Tender.
- 3.2.5 Tenderers shall not be under declarations of ineligibility for corrupt, fraudulent practices and are not amongst persons mentioned in sub-paragraphs 3.2.2 and 3.2.3 above.
- 3.2.6 Tenderers who are not under these declarations shall complete the Declaration Form strictly in the form and content as prescribed at Section XIII.
- 3.2.7 Those that are under the Declaration for corrupt and fraudulent practices whether currently or in the past shall not complete the Form. They will submit a suitable Form giving details, the nature and present status of their circumstances.

3.3 Eligible Goods

- 3.3.1 All goods to be supplied under the contract shall have their origin in eligible source countries. These countries are as described in the Appendix to Instructions to Tenderers.
- 3.3.2 For purposes of this clause, "origin" means the place where the goods are mined, grown, or produced. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

3.3.3 The origin of goods is distinct from the nationality of the Tenderer.

3.4 Joint Venture

3.4.1 Tenders submitted by a joint venture of two or more firms, as partners shall comply with the following requirements: -

- a) The Tender Form and in case of a successful tender, the Contract Agreement Form, shall be signed so as to be legally binding on all partners of the joint venture.
- b) One of the partners shall be nominated as being lead contractor, and this authorization shall be evidenced by submitting a Power of Attorney signed by legally authorized signatories of all the partners.
- c) The Power of Attorney which shall accompany the tender, shall be granted by the authorized signatories of all the partners as follows:-
 - (i.) for local bidders, before a Commissioner of Oaths or a Notary Public or Magistrate of the Kenyan Judiciary.
 - (ii.) for a foreign bidder, before a Notary Public, or the equivalent of a Notary Public, and in this regard the bidder shall provide satisfactory proof of such equivalence.
- d) The lead contractor shall be authorized to incur liability and receive instructions for and on behalf of any and all the partners of the joint venture and the entire execution of the contract including payment shall be done exclusively with the lead contractor.

3.4.2 All partners of the joint venture shall be liable jointly and severally for the execution of the contract in accordance with the contract terms, and a relevant statement to this effect shall be included in the authorization mentioned in paragraph 3.3.1 (b) above as well as in the Form of Tender and the Contract Agreement Form (in case of the accepted tender).

3.4.3 A copy of the agreement entered into by the joint venture partners shall be submitted with the tender.

3.5 Cost of Tendering

3.5.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender. KPLC will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

3.5.2 The price to be charged for the Tender Document shall be as indicated in the Invitation to Tender but in any case not exceeding Ksh 1,000/=.

3.6 Contents of the Tender Document

3.6.1 The Tender Document comprises the documents listed below and Addendum (where applicable) issued in accordance with paragraph 3.7 of these Instructions to Tenderers: -

- a) *Invitation to Tender*
- b) *Tender Submission Checklist*
- c) *Instructions to Tenderers*

- d) *Appendix to Instructions to Tenderers*
- e) *Schedule of Requirements*
- f) *Price Schedule for Services*
- g) *Evaluation Criteria*
- h) *General Conditions of Contract*
- i) *Special Conditions of Contract*
- j) *Tender Form*
- k) *Confidential Business Questionnaire Form*
- l) *Tender Security Forms*
- m) *Principal or Manufacturer's Authorization Form*
- n) *Declaration Form*
- o) *Contract Form*
- p) *Performance Security Forms*
- q) *Details of Service*
 - (i.) *General Requirements*
 - (ii.) *Specific Details of Services*

3.6.2 The Tenderer is expected to examine all instructions, forms, provisions, terms and specifications in the Tender Document. Failure to furnish all information required by the Tender Document or to submit a tender not substantially responsive to the Tender Document in every respect will be at the Tenderer's risk and may result in the rejection of its Tender.

3.6.3 All recipients of the documents for the proposed Contract for the purpose of submitting a tender (whether they submit a tender or not) shall treat the details of the documents as "Private and Confidential".

3.7 Clarification of Documents

A prospective Tenderer requiring any clarification of the Tender Document may notify the Procurement Manager in writing or by post at KPLC's address indicated in the Invitation to Tender. KPLC will respond in writing to any request for clarification of the Tender documents, which it receives not later than seven (7) days prior to the deadline for the submission of Tenders, prescribed by KPLC. Written copies of KPLC's response (*including an explanation of the query but without identifying the source of inquiry*) will be sent to all prospective Tenderers that have duly received the Tender Document.

3.8 Amendment of Documents

3.8.1 At any time prior to the deadline for submission of Tenders, KPLC, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Tenderer, may modify the tender documents by amendment.

- 3.8.2 All prospective Tenderers that have received the tender documents will be notified of the amendment(s) (*hereinafter referred to or otherwise known as addendum*) in writing and will be binding on them.
- 3.8.3 In order to allow prospective Tenderers reasonable time in which to take the amendment into account in preparing their Tenders, KPLC, at its discretion, may extend the deadline for the submission of Tenders.

3.9 Language of Tender

The Tender prepared by the Tenderer, as well as all correspondence and documents relating to the tender, exchanged between the Tenderer and KPLC, shall be written in English language, provided that any printed literature furnished by the Tenderer may be written in another language provided that they are accompanied by an accurate English translation of the relevant passages in which case, for purposes of interpretation of the Tender, the English translation shall govern. The English translation shall be on the Tenderer's letterhead and shall be signed by the duly authorized signatory signing the Tender and stamped with the Tenderer's stamp.

3.10 Documents Comprising the Tender

The Tender prepared and submitted by the Tenderers shall include but not be limited to all the following components: -

- a) *Declaration Form, Tender Form and a Price Schedule completed in compliance with paragraphs 3.2, 3.11, 3.12 and 3.13.*
- b) *Documentary evidence established in accordance with paragraph 3.15 that the Tenderer is eligible to tender and is qualified to perform the contract if its tender is accepted.*
- c) *Documentary evidence established in accordance with paragraph 3.15 that the services and any ancillary thereto to be provided by the Tenderer conform to the tender documents, and,*
- d) *Tender Security furnished in accordance with paragraph 3.18*
- e) *A detailed list of previous customers as prescribed for similar services on tender and their contact addresses shall be submitted with the Tender for the purpose of reference, or for evaluation where the Details of Service so dictate.*

3.11 Tender Form

The Tenderer shall complete and sign the Tender Form and all other documents furnished in the Tender Document, indicating the services to be performed, a brief description of the services, quantity (where applicable), and prices amongst other information required.

3.12 Tender Prices

- 3.12.1 The Tenderer shall indicate on the appropriate Price Schedule, the unit prices (where applicable) and total tender price of the services it proposes to provide under the contract.
- 3.12.2 Prices indicated on the Price Schedule shall be of all costs for the services including insurances, duties, Value Added Tax (V.A.T) and other taxes payable. No other basis shall be accepted for evaluation, award or otherwise.
- 3.12.3 Tender prices to be submitted (quoted) by the Tenderer shall remain fixed for the contract duration.
- 3.12.4 A price that is derived by a disclosed incorporation or usage of an international accepted standard formula shall be acceptable within the meaning of this paragraph.

3.13 Tender Currencies

- 3.13.1 For services that the Tenderer will provide from within or outside Kenya, the prices shall be quoted in Kenya Shillings, or in another freely convertible currency in Kenya. The currency quoted must be indicated clearly on the Price Schedule of Services.
- 3.13.2 The exchange rate to be used for currency conversion shall be the Central Bank of Kenya selling rate ruling on the Tender closing date. *(Please visit the Central Bank of Kenya website).*

3.14 Tenderer's Eligibility and Qualifications

- 3.14.1 Pursuant to paragraph 3.2, the Tenderer shall furnish, as part of its Tender, documents establishing the Tenderer's eligibility to tender and its qualifications to perform the contract if its Tender is accepted.
- 3.14.2 The documentary evidence of the Tenderer's qualifications to perform the contract if its Tender is accepted shall be established to KPLC's satisfaction –
 - a) *That, in the case of a Tenderer offering to perform the services under the contract which the Tenderer is not the Principal, the Tenderer has been duly authorized by the Manufacturer, Principal or Producer to provide the services. The authorization shall strictly be in the form and content as prescribed in the Manufacturer's or Principal's Authorization Form in the Tender Document*
 - b) *That the Tenderer has the financial capability necessary to perform the contract. The Tenderer shall be required to provide the documents as specified in the Appendix to Instructions to Tenderers including a current Tax Compliance Certificate issued by the relevant tax authorities.*
 - c) *That the Tenderer has the technical and production capability necessary to perform the contract.*
 - d) *that, in the case of a Tenderer not doing business within Kenya, the Tenderer is or will be (if awarded the contract) represented by an agent in Kenya equipped, and able to carry out the Tenderer's maintenance, repair, spare parts and stocking obligations prescribed in the Conditions of Contract and or in the Details of Service.*

e) *That the Tenderer is duly registered and is a current member of a recognized body or institution accredited and or pertaining to that service.*

3.14.3 The Tenderer will furnish KPLC with a copy of the accreditation or recognition certificate as applicable. KPLC reserves the right to subject the certificate to authentication.

3.14.4 Tenderers with a record of unsatisfactory or default in performance obligations in any contract shall not be considered for evaluation or award. For the avoidance of doubt, this shall include any Tenderer with unresolved case(s) in its obligations for more than two (2) months in any contract.

3.15 Conformity of Services to Tender Documents

3.15.1 The Tenderer shall furnish, as part of its tender, documents establishing the conformity to the Tender Document of all services that the Tenderer proposes to perform under the contract.

3.15.2 The documentary evidence of the eligibility of the goods shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.

3.15.3 The documentary evidence of conformity of the goods to the Tender Document may be in the form of literature, drawings and data, and shall consist of: -

a) *A detailed description of the essential technical and performance characteristics of the goods whether in brochures, catalogues, drawings or otherwise,*

b) *A list giving full particulars, including available source and current prices of spare parts, special tools and other incidental apparatus necessary for the proper and continuing functioning of the goods for a minimum period of two (2) years, following commencement of the use of the goods by Kenya Power, and,*

c) *Duly completed Schedule of Guaranteed Technical Particulars (GTP) as per Tender Specifications demonstrating substantial responsiveness of the goods and service to those specifications and, if any, a statement of deviations and exceptions to the provisions of the Technical Specifications.*

For (a), (b) and (c) above, the literature, drawings and data shall be those from the Manufacturer.

3.15.4 For goods from outside Kenya, the Tenderer shall be required to demonstrate that the goods or products conform to required standards by evidence of:

a) A Type Test Certificate and its Reports issued by:-

i) *An International Testing or Standards Body or*

ii) *The National Testing or Standards Authority of the country of manufacture or production or*

iii) *An International Standards Organization or International Electro-technical Commission (ISO/IEC) 17025 accredited independent testing laboratory or*

b) Where (a) above is not required in the tender specifications, a Test Certificate and its Reports issued by the National Testing or Standards Authority of the country of manufacture or production.

- 3.15.5 For goods manufactured or produced in Kenya, the Tenderer shall be required to demonstrate that the goods conform to required standards and specifications by evidence of:–
- a) A Type Test Certificate and its Reports issued by KEBS.
 - b) Where (a) above is not required in the tender specifications, a Test Certificate and its Reports issued by KEBS or any Testing Authority approved by KEBS.
- 3.15.6 For paragraphs 3.14.4 and 3.14.5, the Tenderer shall submit with its Tender a copy of the accreditation or recognition or approval certificate, as applicable, for the testing authority. Kenya Power reserves the right to subject the certificate to authentication.
- 3.15.7 Additional evidence of conformity of the goods to the Tender Document shall include sample(s) where required.
- 3.15.8 For purposes of the documentary and other evidence to be furnished pursuant to subparagraphs 3.14.3, 3.14.4 and 3.14.5 above, the Tenderer shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by Kenya Power in its Technical Specifications, are intended to be descriptive only and not restrictive. The Tenderer may adopt higher standards, brand names, and or catalogue numbers in its Tender, provided that it demonstrates to Kenya Power’s satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

3.16 Demonstration(s), Inspection(s) and Test(s)

- 3.16.1 Where required in the tender, all Tenderers shall demonstrate ability of performance of the required service in conformity with the Details of Services.
- 3.16.2 KPLC or its representative(s) shall have the right to inspect/ test the Tenderer’s capacity, equipment, premises, and to confirm their conformity to the tender requirements. This shall include the quality management system. KPLC’s representative(s) retained for these purposes shall provide appropriate identification at the time of such inspection/ test.
- 3.16.3 KPLC shall meet its own costs of the inspection/ test. Where conducted on the premises of the Tenderer(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to KPLC.
- 3.16.4 Demonstration, Inspection/ Test Report(s) shall be completed upon conclusion of the inspection/ tests. This Report will be considered at time of evaluation and or award.

3.17 Warranty

- 3.17.1 Where required in the Tender, all Tenderers must also provide a Warranty that warrants that the services to be provided under the contract are new, unused and or are of the most recent or current specification and incorporate all recent improvements in design and materials unless provided otherwise in the Tender. The Warranty shall also warrant that the services in the Tenderer’s bid have no defect arising from manufacture, materials or workmanship or from any act or omission of the Tenderer that may develop under normal use or application of the services under the conditions obtaining in Kenya.

3.17.2 The Warranty will remain valid for **one (1) year** after the services, or any part thereof as the case may be, have been used or provided or performed as indicated in the contract.

3.18 Tender Security

3.18.1 The Tenderer shall furnish, as part of its Tender, a tender security for the amount specified in the Appendix to Instructions to Tenderers.

3.18.2 The tender security shall be either one or a combination of the following:-

- a) an original Bank Guarantee that is strictly in the form and content as prescribed in the Tender Security Form (Bank Guarantee) in the Tender Document.
- b) For Local bidders, Standby Letters of Credit (LC). All costs, expenses and charges levied by all banks party to the LC shall be prepaid by the Tenderer. The LC must contain all the mandatory conditions of payment to KPLC as prescribed in the Tender Security (Letters of Credit) provided in the Tender Document.
- c) For Foreign bidders, Standby Letters of Credit (LC) confirmed by a bank in Kenya. All costs, expenses and charges levied by all banks party to the LC including confirmation charges shall be prepaid by the Tenderer. The LC must contain all the mandatory conditions of payment to KPLC as prescribed in the Tender Security (Letters of Credit) provided in the Tender Document.
- d) An original Guarantee by a deposit taking Microfinance Institution, Sacco Society, Youth Enterprise Development Fund or the Women Enterprise Fund, that is strictly in the form and content as prescribed in the Tender Security Form

3.18.3 The tender security is required to protect KPLC against the risk of the Tenderer's conduct which would warrant the security's forfeiture pursuant to paragraph 3.18.1.

3.18.4 The Tender Security shall be denominated in Kenya Shillings or in another freely convertible currency, and shall be issued by a commercial bank located in Kenya and licensed by the Central Bank of Kenya or a deposit taking Microfinance Institution, Sacco Society, Youth Enterprise Development Fund or the Women Enterprise Fund. The bank or institution must be located in Kenya.

3.18.5 The Tender Security shall be valid for **thirty (30) days** beyond the validity of the tender.

3.18.6 KPLC shall seek authentication of the Tender Security from the issuing bank or insurance company. It is the responsibility of the Tenderer to sensitize its issuing bank or insurance company on the need to respond directly and expeditiously to queries from KPLC. The period for response shall not exceed **three (3) days** from the date of KPLC's query. Should there be no conclusive response by the bank/institution within this period, such Tenderer's Tender Security may be deemed as invalid and the bid rejected.

3.18.7 Any Tender not secured in accordance with this paragraph will be rejected by KPLC as non-responsive, pursuant to paragraph 3.29.

- 3.18.8 The unsuccessful Tenderer's Tender Security will be released as promptly as possible, in any of the following circumstances: -
- a) *The procurement proceedings are terminated*
 - b) *KPLC determines that none of the submitted Tenders is responsive*
 - c) *A contract for the procurement is entered into*
 - d) *The Tenderer does not qualify for Financial Evaluation in accordance with paragraph 3.32.*
- 3.18.9 The successful Tenderer's Tender Security will be released upon the successful Tenderer's signing the contract, pursuant to paragraph 3.39 and furnishing an authentic Performance Security, pursuant to paragraph 3.40.
- 3.18.10 The Tender Security shall be forfeited –
- a) *if the Tenderer withdraws its Tender after the deadline for submitting Tenders but before the expiry of the period during which the Tenders must remain valid*
 - b) *if the Tenderer rejects a correction of an arithmetic error*
 - c) *if the Tenderer fails to enter into a written contract in accordance with paragraph 3.39*
 - d) *if the successful Tenderer fails to furnish the performance security in accordance with paragraph 3.40*
 - e) *if the Tenderer fails to extend the validity of the tender security where KPLC has extended the tender validity period in accordance with paragraph 3.19.*

3.19 Validity of Tenders

- 3.19.1 Tenders shall remain valid for **one hundred and twenty (120) days** after the date of tender opening as specified in the Invitation to Tender or as otherwise may be prescribed by KPLC, pursuant to paragraph 3.23. A Tender that is valid for a shorter period shall be rejected by KPLC as non-responsive.
- 3.19.2 In exceptional circumstances, KPLC may extend the Tender validity period. The extension shall be made in writing. The tender security provided under paragraph 3.18 shall also be extended. A Tenderer shall not be required nor permitted to modify its tender during the extended period.

3.20 Alternative Offers

Only main offers shall be considered, as alternative offers are not acceptable.

3.21 Number of Sets of and Tender Format

- 3.21.1 The Tenderer shall prepare three complete sets of its Tender, identifying and clearly marking the "ORIGINAL TENDER", "COPY 1 OF TENDER", and "COPY 2 OF TENDER" as appropriate. Each set shall be properly bound. The copies shall be a replica of the Original. Each copy will be deemed to contain the same information as the Original.

- 3.21.2 The Tender shall be bound and divided clearly in descending order as listed in the Tender Submission Checklist. The divisions are for clear identification and marking of the respective documents or information that are serially numbered in the Checklist.
- 3.21.3 The order and arrangement as indicated in the Tender Submission Checklist will be considered as the Tender Formats.
- 3.21.4 Any Tender not prepared and signed in accordance with this paragraph, in particular subparagraphs 3.21.1, 3.21.2 and 3.21.3 shall be rejected by KPLC as non-responsive, pursuant to paragraph 3.29.

3.22 Preparation and Signing of the Tender

- 3.22.1 The Original and all copies of the Tender shall be typed or written in indelible ink. They shall be signed by the Tenderer or a person or persons duly authorized to bind the Tenderer to the contract.
- 3.22.2 The authorization shall be indicated by a written Power of Attorney granted by the Tenderer to the authorized person before any of the following persons:-
- a) *For local Tenderers, a Commissioner of Oaths or a Notary Public or a Magistrate of the Kenyan Judiciary.*
 - b) *For foreign Tenderers, a Notary Public in the country of the Tenderer.*
- In either case above, the Power of Attorney shall accompany the Tender.
- 3.22.3 All pages of the Tender, including un-amended printed literature, shall be initialed by the person or persons signing the Tender and serially numbered.
- 3.22.4 The Tender shall have no interlineations, erasures, or overwriting except as necessary to correct errors made by the Tenderer, in which case such corrections shall be initialed by the person or persons signing the Tender.
- 3.22.5 KPLC will assume no responsibility whatsoever for the Tenderer's failure to comply with or observe the entire contents of this paragraph.
- 3.22.6 Any Tender not prepared and signed in accordance with this paragraph may be rejected by KPLC as non-responsive, pursuant to paragraph 3.29.

3.23 Sealing and Outer Marking of Tenders

- 3.23.1 The Tenderer shall seal the Original and each Copy of the Tender in separate envelopes or packages, duly marking the envelopes or packages as "ORIGINAL", "COPY 1 OF TENDER" and "COPY 2 OF TENDER". The envelopes or packages shall then be sealed in outer envelopes or packages.
- 3.23.2 The inner and outer envelopes or packages shall -
- a) *be addressed to KPLC at the address given in the Invitation to Tender,*
 - b) *bear the tender number and name as per the Invitation to Tender and the words, "DO NOT OPEN BEFOREas specified in the Invitation to Tender.*
- 3.23.3 All inner envelopes or packages shall also indicate the name and full physical, telephone, e-mail, facsimile and postal contacts of the Tenderer to enable the Tender to be returned

unopened in circumstances necessitating such return including where Tenders are received late, procurement proceedings are terminated before tenders are opened.

3.23.4 If the envelopes or packages are not sealed and marked as required by this paragraph, KPLC will assume no responsibility whatsoever for the Tender's misplacement or premature opening. A tender opened prematurely for this cause will be rejected by KPLC and promptly returned to the Tenderer.

3.24 Deadline for Submission of Tenders

3.24.1 Tenders must be received by KPLC by the time and at the place specified in the Invitation to Tender.

3.24.2 KPLC may, at its discretion, extend this deadline for submission of Tenders by amending the tender documents in accordance with paragraph 3.8, in which case all rights and obligations of KPLC and the Tenderer previously subject to the initial deadline, will therefore be subject to the deadline as extended.

3.25 Modification and Withdrawal of Tenders

3.25.1 The Tenderer may modify or withdraw its Tender after it has submitted it, provided that written notice of the modification, including substitution or withdrawal of the Tender is received by KPLC prior to the deadline prescribed for submission of tenders.

3.25.2 The Tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of paragraphs 3.21, 3.22 and 3.23. A withdrawal notice may also be sent by facsimile, electronic mail, cable or telex but followed by an original signed confirmation copy, postmarked not later than the deadline for submission of Tenders.

3.25.3 No Tender may be modified after the deadline for submission of Tenders.

3.25.4 No Tender may be withdrawn in the interval between the deadline for submission of tenders and the expiration of the period during which the Tender must remain valid. Any withdrawal of a Tender during this interval shall result in forfeiture of the Tenderer's Tender Security.

3.26 Opening of Tenders

3.26.1 KPLC shall open all Tenders promptly after the tender closing date and time, at the location specified in the Invitation to Tender or as may otherwise be indicated.

3.26.2 The Tenderer's names, tender modifications or withdrawals, the presence or absence of requisite Tender Security, the number of sets of tender documents duly received and such other details as KPLC, at its discretion, may consider appropriate, will be announced at the opening.

3.26.3 At the Tender opening, tender prices, discounts, and such other details as KPLC, at its discretion, may consider appropriate will be read out.

3.26.4 The Tenderers or their representatives may attend the opening and those present shall sign a register evidencing their attendance.

3.27 Process to be Confidential

- 6.3.2 After the opening of tenders, information relating to the examination, clarification, evaluation and comparisons of tenders and recommendations arising there-from shall not be disclosed to a Tenderer or other person(s) not officially concerned with such process until conclusion of that process.
- 3.27.2 Any effort by a Tenderer to influence KPLC or any of its staff members in the process of examination, evaluation and comparison of tenders and information or decisions concerning award of Contract may result in the rejection of the Tenderer's tender.

3.28 Clarification of Tenders and Contacting KPLC

- 3.28.1 To assist in the examination, evaluation and comparison of Tenders KPLC may, at its discretion, ask the Tenderer for a clarification of its Tender. The request for clarification and the response shall be in writing, and no change in the prices or substance of the Tender shall be sought, offered, or permitted.
- 3.28.2 The Tenderer is required to provide timely clarification or substantiation of the information that is essential for effective evaluation of its qualifications. It is the responsibility of the Tenderer to provide in writing the clarification or substantiation which should reach KPLC within **five (5) days** from the date of KPLC's query. Such writing may include by electronic mail, facsimile or postal mail. Should there be no conclusive response within this period, it shall result in the Tenderer's disqualification.
- 3.28.3 Save as is provided in this paragraph and paragraph 3.26 above, no Tenderer shall contact KPLC on any matter related to its Tender, from the time of the tender openings to the time the contract is awarded.
- 3.28.4 Any effort by a Tenderer to influence KPLC in its decisions on tender evaluation, tender comparison, tender recommendation(s) or contract award may result in the rejection of the Tenderer's Tender.

3.29 Preliminary Evaluation and Responsiveness

- 3.29.1 Prior to the detailed Technical and Financial evaluation, KPLC will determine the substantial responsiveness of each Tender. For purposes of this tender, a substantially responsive Tender is one that conforms to the requirements of Preliminary Evaluation. KPLC's determination of a Tender's responsiveness is to be based on the contents of the Tender itself without recourse to extrinsic evidence.
- 3.29.2 KPLC will examine the Tenders to determine whether they conform to the Preliminary Evaluation Criteria set out in Section VI Evaluation Criteria.
- 3.29.3 Notwithstanding the contents of the foregoing sub-paragraphs, if a Tender is not substantially responsive, it will be rejected at the earliest stage of evaluation by KPLC and cannot subsequently be made responsive by the Tenderer by correction of any non-conformity.

3.30 Minor Deviations, Errors or Oversights

- 3.30.1 KPLC may waive any minor deviation in a Tender that does not materially depart from the requirements of the goods and or services set out in the Tender Document.
- 3.30.2 Such minor deviation –
- 3.30.2.1 Shall be quantified to the extent possible,*
 - 3.30.2.2 Shall be taken into account in the evaluation process, and,*
 - 3.30.2.3 Shall be applied uniformly and consistently to all qualified Tenders duly received by KPLC.*
- 3.30.3 KPLC may waive errors and oversights that can be corrected without affecting the substance of the Tender.

3.31 Technical Evaluation and Comparison of Tenders

- 3.31.1 KPLC will further evaluate and compare the Tenders that have been determined to be substantially responsive, in compliance to the Details of Services set out in the Tender Document and as per the prescribed Evaluation Criteria.
- 3.31.2 The Operational Plan is a critical aspect of the Tender. KPLC requires that the Services shall be performed at the time specified in the Schedule of Requirements. KPLC's evaluation of a tender will also take into account the Operational Plan proposed in the Tender. Tenderers offering to perform longer than KPLC's required delivery time will be treated as non-responsive and rejected.

3.32 Financial Evaluation of Tenders

- 3.32.1 The financial evaluation and comparison shall be as set out in the Summary of Evaluation Process. The comparison shall be
- a) of the price including all costs as well as duties and taxes payable on all the materials to be used in the provision of the Services.
 - b) deviations in Payment Schedule from that specified in the Special Conditions of Contract
- 3.32.2 Where other currencies are used, KPLC will convert those currencies to the same currency using the selling exchange rate ruling on the date of tender closing provided by the Central Bank of Kenya.
- 3.32.3 Arithmetical errors will be rectified on the following basis – if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail.
- 3.32.4 The Tenderer will be notified of the correction of the arithmetical error(s). If the Tenderer does not accept the correction of the error(s), its Tender will be rejected, and its Tender Security forfeited.

3.33 Preferences

In the evaluation of tenders, exclusive preference shall be given to citizen contractors where the amount of the tender as evaluated is below **KShs. 50 Million** in respect of services.

- 6.3.2 For purposes of this paragraph the Tenderer shall submit with its Tender, a valid copy of certificate of Confirmation of Directorships and Shareholding issued **and signed** by either the Registrar of Companies or Registrar of Business Names. This certificate must not be more than three (3) months old from the Date of the Tender Document. Kenya Power reserves the right to subject the certificate to authentication.

3.34 Debarment of a Tenderer

A Tenderer who gives false information in the Tender about its qualification or who refuses to enter into a contract after notification of contract award shall be considered for debarment from participating in future public procurement.

3.35 Confirmation of Qualification for Award

- 3.35.1 KPLC may confirm to its satisfaction whether the Tenderer that is selected as having submitted the lowest evaluated responsive tender is qualified to perform the contract satisfactorily.
- 3.35.2 The confirmation will take into account the Tenderer's financial, technical, and performance capabilities. It will be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to paragraph 3.13 as well as confirmation of such other information as KPLC deems necessary and appropriate. This may include factory, office and other facilities inspection and audits.
- 3.35.3 An affirmative confirmation will be a prerequisite for award of the contract to the Tenderer. A negative confirmation will result in rejection of the Tenderer's Tender, in which event KPLC will proceed to the next lowest evaluated responsive tender to make a similar confirmation of that Tenderer's capabilities to perform satisfactorily.

3.36 Award of Contract

- 3.36.1 KPLC will award the contract to the successful Tenderer whose Tender has been determined to be substantially responsive, compliant with the evaluation criteria and has been determined to be the lowest evaluated tender, and further, where deemed necessary, that the Tenderer is confirmed to be qualified to perform the contract satisfactorily.
- 3.36.2 Award will be done as indicated in the Appendix to Instructions to Tenderers.

3.37 Termination of Procurement Proceedings

- 3.37.1 KPLC may at any time terminate procurement proceedings before contract award and shall not be liable to any person for the termination.
- 3.37.2 KPLC shall give prompt notice of the termination to the Tenderers, and, on request from any Tenderer, give its reasons for termination within fourteen (14) days of such request.

3.38 Notification of Award

- 3.38.1 Prior to the expiration of the period of tender validity, KPLC shall notify the successful Tenderer in writing that its Tender has been accepted.
- 3.38.2 The notification of award shall not constitute the formation of the contract until one is finally signed by both parties.
- 3.38.3 Simultaneously, and without prejudice to the contents of paragraph 3.27, on issuance of Notification of Award to the successful Tenderer, KPLC shall notify each unsuccessful Tenderer.
- 3.38.4 A notification of the tender outcome does not reduce the validity period for any tender security whether the Tenderer is successful or not, except where such tender security is officially released to the Bank and/or the Tenderer and such Bank discharged of all its obligations by KPLC prior to the expiry of its stated validity period.

3.39 Signing of Contract

- 3.39.1 At the same time as KPLC notifies the successful Tenderer that its Tender has been accepted, KPLC will send the Tenderer the Contract Agreement provided in the Tender Document together with any other necessary documents incorporating all agreements between the Parties.
- 3.39.2 Within **seven (7) days** of the date of notification of award, the successful Tenderer shall only sign the Contract Form and all the documents specified in that Form and return them to KPLC within that period of seven (7) days.
- 3.39.3 KPLC shall sign and date the Contract in the period between not earlier than seven (7) days from the date of notification of contract award and not later than thirty (30) days after expiry of tender validity. Further, KPLC shall not sign the contract until and unless the authentic performance security is received in accordance with paragraph 3.40.
- 3.39.4 Failure of the successful Tenderer to sign the Contract, the award shall be annulled and its tender security forfeited in which event KPLC shall notify the next lowest evaluated Tenderer that its Tender has been accepted.
- 3.39.5 Paragraph 3.38 together with the provisions of this paragraph 3.39 will apply with necessary modifications with respect to the Tenderer notified under sub-paragraph 3.39.4.

3.40 Performance Security

- 3.40.1 Within **fourteen (14) days** of the date of notification of award from KPLC, the successful Tenderer shall furnish KPLC with a Performance Security which shall be either one or a combination of the following:
 - a) an original Bank Guarantee that is strictly in the form and content as prescribed in the Performance Security Form (Bank Guarantee) in the Tender Document.
 - b) For Local bidders, Standby Letters of Credit (LC). All costs, expenses and charges levied by all banks party to the LC shall be prepaid by the Tenderer. The LC must

contain all the mandatory conditions of payment to KPLC as prescribed in the Tender Security (Letters of Credit) provided in the Tender Document.

- c) For Foreign bidders, Standby Letters of Credit (LC) confirmed by a bank in Kenya. All costs, expenses and charges levied by all banks party to the LC including confirmation charges shall be prepaid by the Tenderer. The LC must contain all the mandatory conditions of payment to KPLC as prescribed in the Tender Security (Letters of Credit) provided in the Tender Document.
- 3.40.2 The Performance Security shall be issued by a commercial bank licensed by the Central Bank of Kenya. The bank must be located in Kenya.
- 3.40.3 The successful Tenderer shall furnish a Performance Security being the sum of **ten percent (10%)** of the contract price.
- 3.40.4 KPLC shall seek authentication of the Performance Security from the issuing bank. It is the responsibility of the successful Tenderer to sensitize its issuing bank on the need to respond directly and expeditiously to queries from KPLC. The period for response shall **not exceed three (3) days** from the date of KPLC's query. Should there be no conclusive response by the Bank within this period, such successful Tenderer's Performance Security may be deemed as invalid.
- 3.40.5 Failure of the successful Tenderer to furnish an authentic Performance Security, the award shall be annulled and the Tender Security forfeited, in which event KPLC may notify the next lowest evaluated Tenderer that its Tender has been accepted.
- 3.40.6 Paragraph 3.38, 3.39 together with the provisions of this paragraph 3.40 will apply with necessary modifications, and as far as circumstances permit, with respect to the Tenderer notified under sub-paragraph 3.40.4.

3.41 Corrupt or Fraudulent Practices

- 3.41.1 KPLC requires that Tenderers observe the highest standard of ethics during the procurement process and execution of contracts. When used in the present Regulations, the following terms are defined as follows: -
- a) *“Corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of public official in the procurement process or in contract execution;*
 - b) *“Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of KPLC, and includes collusive practice among Tenderers (prior to or after Tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive KPLC of the benefits of free and open competition.*
- 3.41.2 KPLC will reject a proposal for award if it determines that the Tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

3.41.3 Further, a Tenderer who is found to have indulged in corrupt or fraudulent practices risks being debarred from participating in public procurement in Kenya.

APPENDIX TO INSTRUCTIONS TO TENDERERS

The following information regarding the particulars of the tender shall complement and or amend the provisions of the Instructions to Tenderers *hereinafter abbreviated as ITT*. Wherever there is a conflict between the provisions of the ITT and the Appendix, the provisions of the Appendix herein shall prevail over those of the ITT.

No.	ITT Reference Clause	Particulars of Appendix
1	3.2.1 Eligible Tenderers	<i>Eligible bidders</i>
2	3.3.1 Origin of Eligible goods	<i>Any country is eligible</i>
3	3.6 Time for Completion of Works	<i>6 months</i>
4	3.10.3 Site Visit and Pre-Bid Meeting	<i>N/A</i>
5	3.10.6 Attendance of pre-bid meeting or site visit	<i>N/A</i>
6	3.10 Documents Comprising the Tender – List of Previous Customers	<i>The Tenderer shall submit at least four (4) names with full contact as well as physical addresses of previous customers of similar services and letters from the previous customers confirming completion of the contracts on schedule.</i>
7	3.13 Tender Currency	<i>For avoidance of doubt, the currency of the tender must be in Kenya Shillings for local bidders (for foreign bidders the convertible currency at the tender opening exchange rate)</i>
8	3.14.2 (a) Manufacturer’s / Principal’s Authorization	<i>A form of the minimum standard requirements is attached in the detailed technical requirements</i>
9	3.14.2 (b) Documentary evidence of financial capability	<i>The audited financial statements required must be those that are reported within eighteen (18) calendar months of the date of the tender document.</i>
10	3.14.2 (c) and (d) Documents of evidence of eligibility	<i>As indicated in 3.14.4 and 3.14.5</i>
11	3.14.2 (e) Tenderer’s membership of a recognized or accredited institution.	<i>Provide all Membership and Accreditation</i>
12	3.15.2 (a) Catalogues, Brochures, Manufacturer’s/ Principal’s Drawings	<i>All technical documents and specifications pertaining to the product MUST be provided</i>

13	3.17.2 Warranty	<i>Warranty of one (1) year or manufacturer's guarantee (whichever is longer) and SLA is required.</i>
14	3.18.1 Tender Security	<i>Kshs.300,000/-. However, the original tender security shall be dropped in the tender box situated at 3rd floor Stima Plaza</i>
15	3.21 Number of sets of and Tender Format	<i>There will be only one document submitted on the e-procurement portal.</i>
16	3.22 Preparation and signing of the tender	<i>There will be only one document submitted on the e-procurement portal. Bidders shall ensure they upload all the required documents into the portal.</i>
17	3.23 Sealing and Outer Marking of Tenders.	<i>For the purposes of this tender, this is not applicable as the tender is being submitted electronically. However, the original tender security in a clearly labelled envelope shall be deposited in the tender security box on 3rd floor supply chain reception on or before the opening date</i>
18	3.25 Opening of Tenders	<i>The tender shall be opened electrically at Stima Plaza auditorium on 16.05.2018 at 10:30 a.m. and bidders are encouraged to participate.</i>
19	3.36.2 Mode of Award of Contract	<i>The bid with the highest Evaluated Bid Score</i>
20	3.40 Performance Security	<i>Performance bond shall be. 10 % of the Total Contract value.</i>

SECTION IV – SCHEDULE OF REQUIREMENTS

4.0 Scope of Work

The proposed Supply & Installation of Air Conditioners and Associated Works for Stima Plaza Data Centre shall cover covers the design, supply, deliver, installation, fixing, connection, testing, labeling, commissioning of works, cleaning, complete and working to every detail as described below and in the related specifications and /or on the drawings to the satisfaction of the KPLC.

4.1 Technical Requirements

No.	Parameter	Requirement	Bidders Compliance
1.0	<p>Air Cooling Unit</p> <p>Capacity and Performance</p>	<p>Tenderer is advised to visit the site and ascertain site conditions prior to filling in the rates</p> <p>Precision Air Conditioning (PAC) system</p> <p>In-row, floor standing type 35kW Unit</p> <p>Hybrid PAC system with (water cooled energy-saving Indirect Free Cooling, direct expansion with variable-speed DC scroll compressor) a closed refrigerant circuit for indoor installation with a net cooling capacity of 35 kW to maintain 22±1°C and 50% ± 5 RH. N+1 cooling redundancy.</p> <p>The Hybrid PAC should switch to energy saving mode as soon as the ambient air temperature permits (i.e. Indirect free cooling utilized), heat to be exchanged via an external dry cooler that is sharable as indicated in Fig. 1 below.</p>	
		<p>The unit shall be complete with:</p> <p>1.1 All main components provide full service accessibility from the front and rear.</p>	
		<p>1.2 Must be connected to an external heat exchanger for operation.</p>	
		<p>1.3 The refrigerant circuit to be fully operational on delivery.</p> <p>1.4 Horizontal air conduction through the unit from the return air inlet side to the air blow-out on the front.</p>	

		<p>1.5 Constant supply air temperature by proportional control of the DC compressor speed in DX and MIX-mode, in Free Cooling (FC) mode by the opening degree of the control valve for the free cooling coil.</p> <p>1.6 Refrigerant be environmental friendly; 410A type.</p>	
		<p>1.7 The filters shall be 30% efficient per ASHRAE Standard 52.1, UL Class2 (MERV8 per ASHRAE 52.2)</p> <p>1.8 Monitoring and Configuration: The master display shall allow monitoring and configuration of the air-conditioning unit through a menu-based control.</p> <p>1.9 Variable Speed Fans: The unit is equipped with variable speed, electrically commutated, backward incline fans complete with Inlet Volute.</p>	
		<p>1.10 PAC should support on-site and remote monitoring. The unit shall include a network management card to provide management through a computer network through TCP/IP.</p> <p>1.11 Compressor: The unit shall be configured with a variable speed reciprocating hermetic compressor using a matched Variable Frequency Drive (VFD).</p>	
		<p>1.12 Humidifier shall be able to modulate capacity</p> <p>1.13 Internal re-heaters.</p>	
		<p>1.14 The unit should allow for dual power supply, the A and B power sources should have separate, simultaneous display on the power report and failure alarm; separate lightning protection components. In case of an incoming UPS signal the functions cooling, heating, de/humidification to be limited & fan speeds adjustable.</p>	
		<p>1.15 Operating temperature range 100-480C</p> <p>1.16 Internal fire sensing and alarm complete with unit Shutdown system.</p>	
		<p>1.17 The unit shall be such that if the power</p>	

		supply goes off, it will restart automatically after power is restored. 1.18 Allow for the Refrigeration and drainage pipework complete with pipe insulation and gms sheet cladding anchored firmly	
		1.19 Digital display / touch pad and alert for alarms, intelligent microprocessor control, expander module	

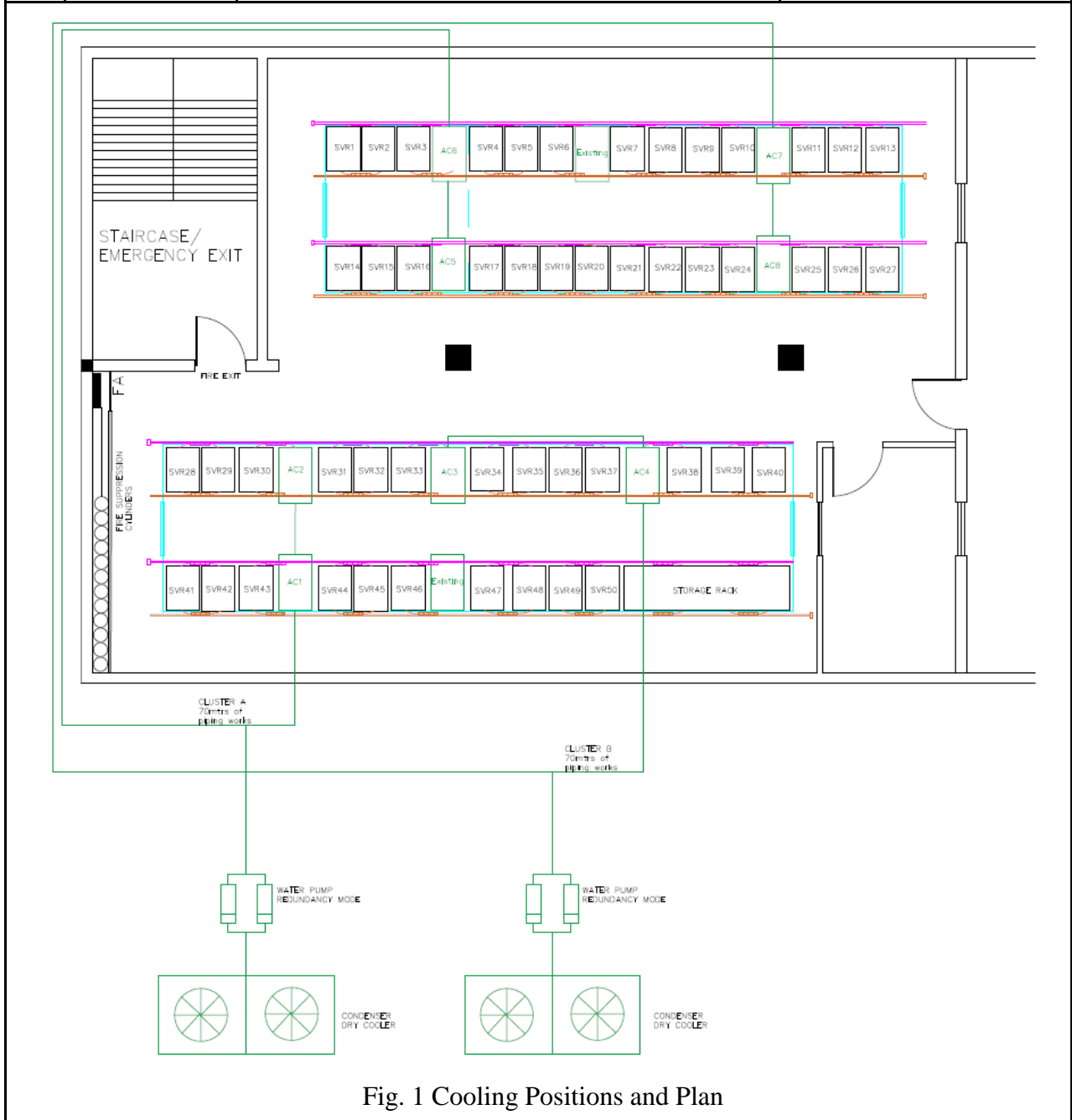


Fig. 1 Cooling Positions and Plan

<p>2.0</p>	<p>Cold Aisle Thermal Containment</p>	<p>2.1 Bidders shall supply and built an effective Aisle Containment.</p> <div data-bbox="548 380 1036 751" data-label="Image"> </div> <p>Fig. 2 Aisle Containment</p> <p>2.2 The system shall be comprised of wall beams, end-of-row frames, dual sliding doors, and ceiling structures for roof containment</p>	
		<p>2.3 The aisle containment system shall be configurable to roof containment (typically used for Cold Aisle Containment)</p>	
		<p>2.4 The system is independent of the cabinets; hence cabinets can be rolled-in/out easily.</p>	
		<p>2.5 System height shall be adjustable from 42 RU to 52 RU with expandable containment length.</p>	
		<p>2.6 Tool-less blanking panels shall be used to seal the area above shorter cabinets. Unoccupied cabinet space shall be sealed with full height blanking panels.</p> <p>2.7 Cool Shield Airstrip shall be fixed to prevent loss of air.</p>	
<p>3.0</p>	<p>Structured cabling</p>	<p>3.1 All fiber connections to be Optical mode 3 or 4 (OM3/OM4) fiber cable.</p> <p>3.2 All server racks will be connected with X24 Copper of minimum Category 6A</p> <p>3.3 X12 MM fiber.</p> <p>3.4 The external cables/antennas will be rerouted and properly secured with appropriate cable</p>	

	managers/trays. 3.5 All terminated nodes will be certified with Fluke Cable analyzer.	
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4.0 **Power Distribution System:** The Data Centre is supplied by 3No armored cables (2No. clean power and 1No. raw power; 120mm sq copper and aluminum type). The plan is to have all the three incomers terminated on 2No. power panels for ease of termination, maintenance and monitoring. The data centre is supplied with use of conventional cabling which has congested the cable trays. With introduction of busbar we envisage improve air circulation and effective deployment.



Fig. 3. Conventional power supply to data centre

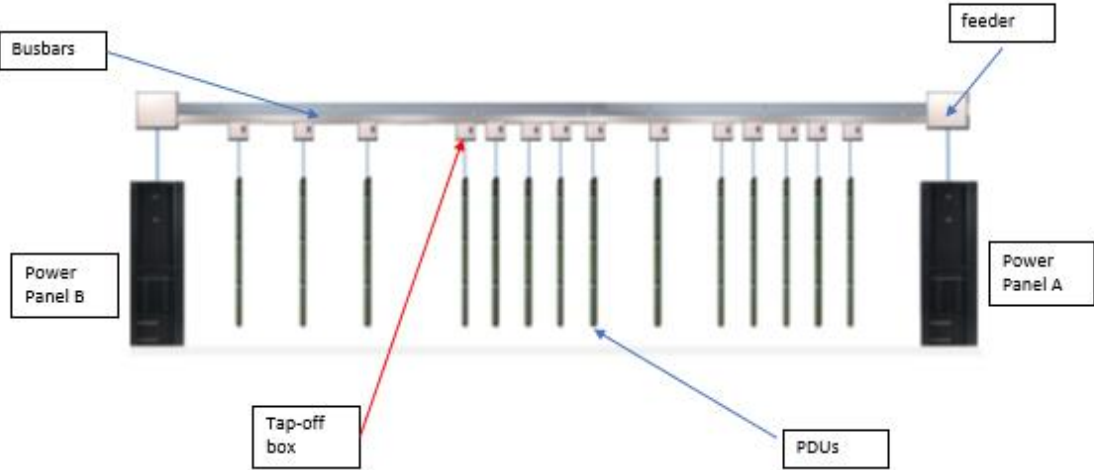



Fig. 4. Busbar power supply to data centre; increase reliability & flexibility

	4.1 Supply and install 2No. Power panel of type	
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		<p>42U cabinet each with:</p> <ul style="list-style-type: none"> - 2No Incomer Isolators UPS & RAW power - 4No. outgoing feeder MCCB to the busbars - 6No outgoing feeder MCCB to ACs installed within the DC 	
		<p>4.2 Supply and install 3 phase Busbar Trunking Systems, with monitoring.</p> <p>4.3 Meets International Electrotechnical Commission (IEC) Standard, IEC 61439-1, edition 2.0 – Low Voltage Switchgear and Control gear Assemblies, Part 1: Type Tested and Partially Type Tested Assemblies</p> <p>4.4 Ampacity: 250A</p> <p>4.5 Neutral Ampacity: Minimum of 200% of rating</p> <p>4.6 Short circuit rating must be: 22 kAIC up to 600V</p> <p>4.7 Conductors: 3 phase conductors, 1 neutral conductor solid copper, tin plated</p> <p>4.8 Grounding: Aluminum casing or 1 dedicated conductor solid copper, tin plated</p>	
		<p>4.9 Plug in units shall have CB and industrial socket (Single & 3 Phase)</p>  <p style="text-align: center;">Fig 5. Sample Plug-in Unit</p>	
		<p>4.10 PDUs & STS</p> <p>4.11 Power Input Configuration (Acceptable Input Voltage: 220-240 VAC +6%, -10%, Input Current per Phase: 32A, Phase Type: 1/3-phase, Input Frequency(Hz): 50, Input</p>	

		<p>Plug: IEC309 332P6, Input Cord Length: 3.0m)</p> <p>4.12 Output Power Configuration (Output Voltage: 220-240 VAC, Total Number of Outlets: 24, Total # of IEC C13 Outlets: 20, Total # of IEC C19 Outlets: 4)</p>	
		<p>4.13 Power system shall be grounded such that the maximum resistance to ground in 5 ohms.</p>	
		<p>4.14 Lighting System</p> <p>4.15 LED Lights (600 x 600) mm</p> <p>4.16 Luminance in all room:500 Lux Light color: standard white or daylight white: 5.300K Color rendering properties:2 A equals 90</p> <p>4.17 Safety lights/Emergency:</p> <p>4.18 The emergency exits need to be indicated with permanently illuminated emergency exit signs.</p>	

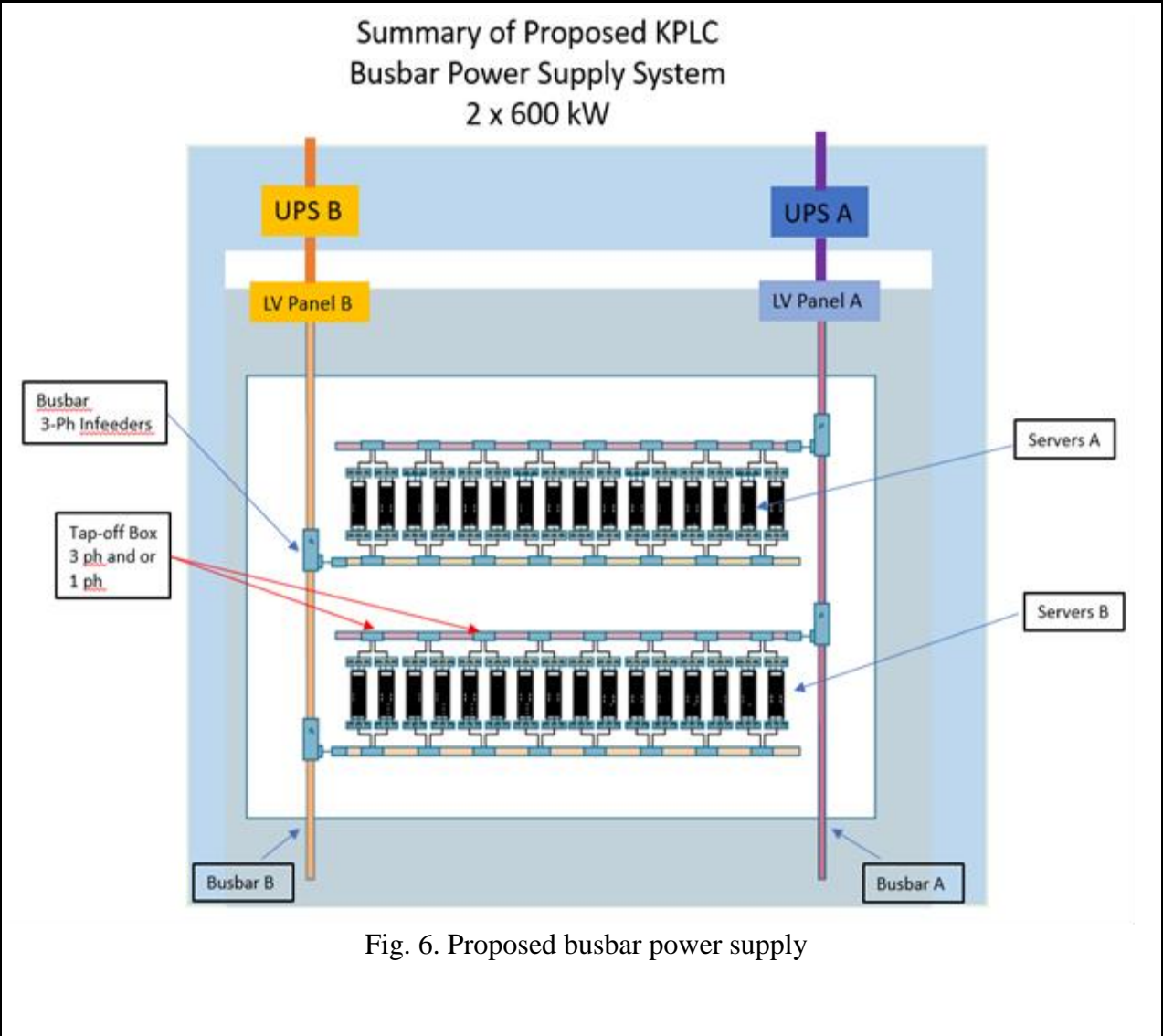


Fig. 6. Proposed busbar power supply

5.0	Data Centre Infrastructure Management (DCIM) shall provision the Operations and Maintenance of entire Data Centre infrastructure.	
	<p>5.1 It should monitor data centre multi-vendor physical infrastructure: power, cooling, security, and environment. Real-time monitoring, reports, and instant fault notification and escalation enable quick assessment and resolution of critical infrastructure events that can adversely affect IT system availability.</p> <p>5.2 DCIM should be one-off license.</p>	

6.0	Civil Works	6.1 Detailed structural details of proposed changes to accommodate new cooling and equipment as illustrated below.	
		6.2 Removal of existing Raised Floor, removal of existing cable trays & baskets, dismantling of existing wooden framed/aluminium partition with Novapan board and glass/door without disturbing the surrounding areas including disposal of all debris, demolished materials etc. as per the directions of the Engineer in charge (a storage facility will be provided at Ruaraka stores).	
		6.3 Reuse of existing partitions to achieve proposed changes.	
		6.4 Fire-resistant, durable paints must be applied to all areas on walls and floors.	
		6.5 Providing and fixing of air tight, fire rated door 1200 x 2440 mm size single leaf, fire rated steel door (two hours) with SS ball bearing butt hinges, mortice lock, heavy duty door closer of approved make and all other accessories (smooth entry of 42 U rack is envisaged through this door)	
		6.6 Supply and installation of Anti-Static PVC Vinyl Flooring to cover the Data Centre floor. Providing and applying epoxy to base floor of plenum area on top of the epoxy primer coating	
		6.7 The launching room is to be equipped with a work table/test bench and 4No. office chairs (with adjustable seat height, tilt tension, tilt lock, adjustable arms)	
		6.8 The Data Centre must be made dust free by sealing all windows and related orifice by proper sealant	

a. Propose restructuring of the Data Centre

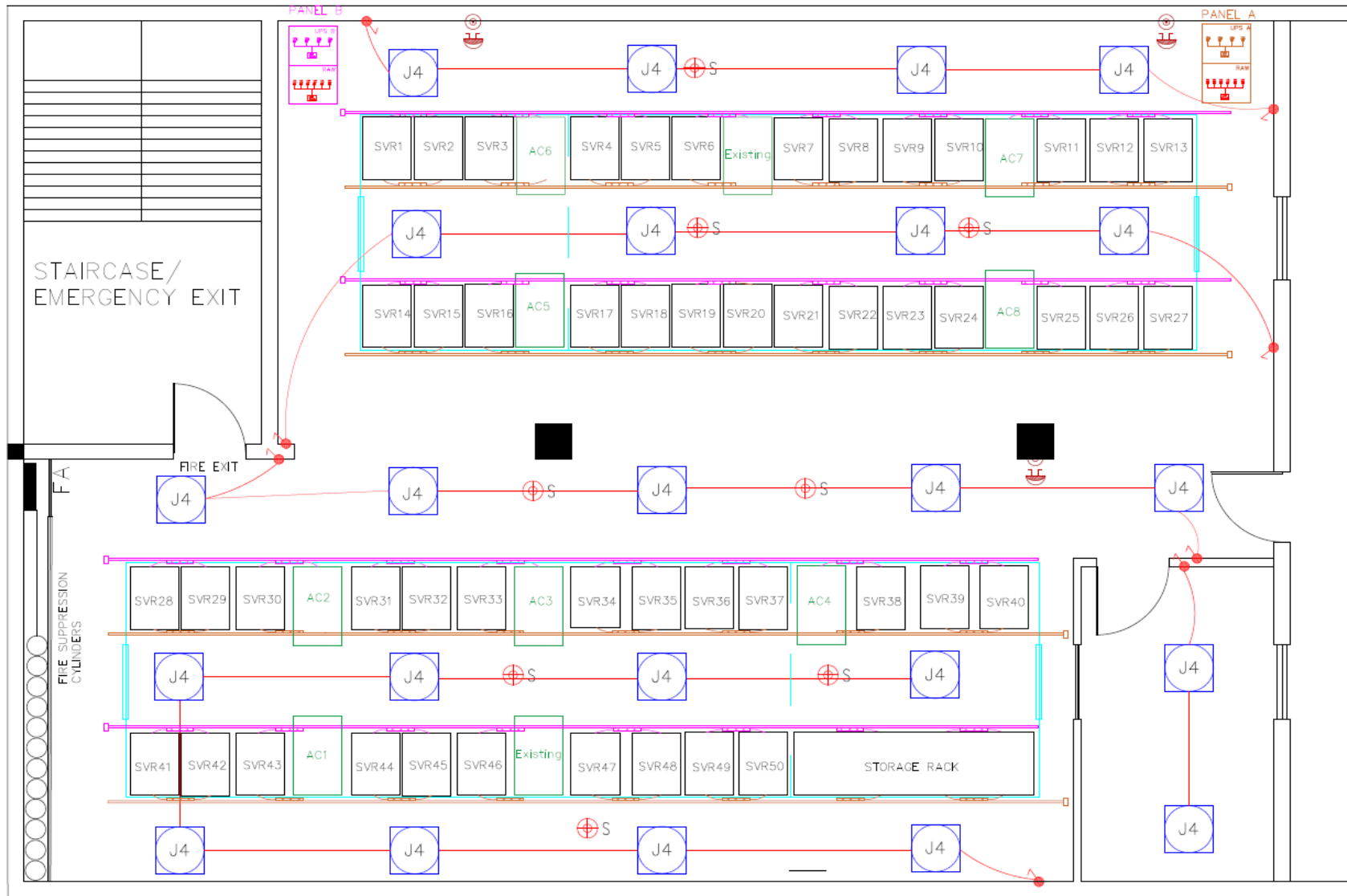


Fig. 7 Propose restructuring of the Data Centre

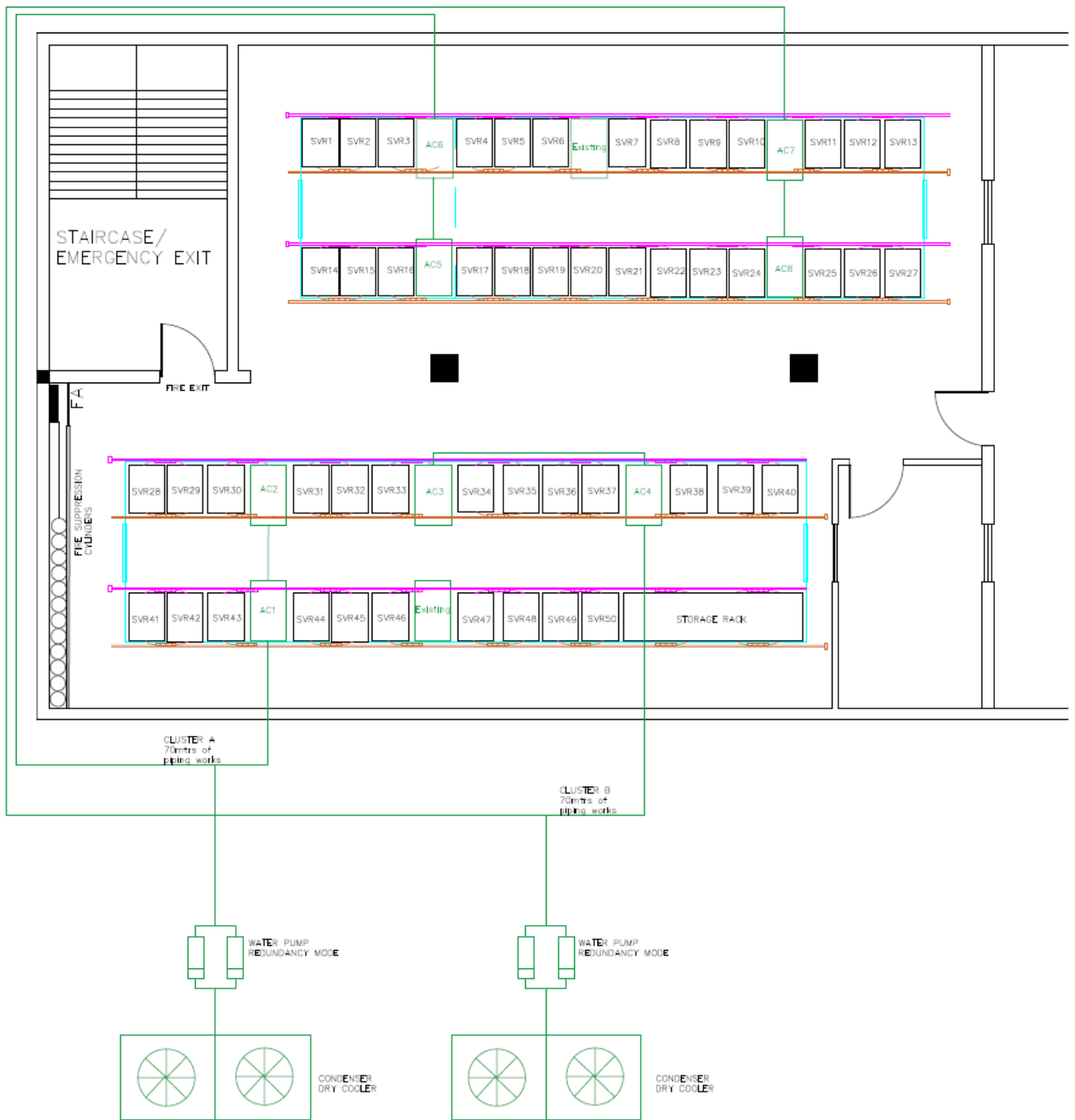


Fig. 8 Cooling Positions and Plan

SECTION V – PRICE SCHEDULE FOR GOODS AND SERVICES

COOLING & ASSOCIATED WORKS

Item	Descriptions	Unit	Qty	Warranty	Delivery schedule	Unit cost (vat inclusive)	Total cost (vat inclusive)
<u>NO</u>							
	<u>PART A</u>						
A	Cooling & Containment System						
	<i>Supply, installation and commissioning of:-</i>						
A.1	Supply & installation of Air Conditioning Units	No.	8				
A.1.1	<p>Precision Air-conditioning system</p> <p>In-row, closed control, floor standing type 35kW unit</p> <p>Hybrid PAC system with (water cooled energy-saving Indirect Free Cooling, direct expansion with variable-speed DC scroll compressor) a closed refrigerant circuit for indoor installation with a net cooling capacity of 35 kW to maintain 22±1°C and 50% ± 5 RH. N+1 cooling redundancy.</p> <p>The Hybrid PAC should switch to energy saving mode as soon as the ambient air temperature permits (i.e. Indirect free cooling utilized), heat to be exchanged via an external dry cooler that is sharable as indicated in Fig. 8.</p>						
A.1.2	- Allowance for Refrigerant Charging Vacuuming						
A.1.3	- Associated Cable Trunks for Piping and Anchoring						
A.1.4	- Supply Associated Piping, wiring						
A.1.5	- Isolator switches						

A.1.6	- Online monitoring IP						
A.2	Repositioning & installation of 2No. In-row Air Conditioning Units	Lot	1				
A.3	Supply & installation of Thermal Containment System	Set	2				
A.3.1	POD 1	Set	1				
	- Containment Doors: 2No. x Door Sections Complete with Framing						
	- Roof Section: Clear Polycarbonate Swivel Action						
	- Roof Section Adjustable Length						
	- 20No. Top of cabinet blanking panels						
	- Length 11.2m						
A.3.2	POD 2	Set	1				
	- Containment Doors: 2No. x Door Sections Complete with Framing						
	- Roof Section: Clear Polycarbonate Swivel Action						
	- 20No. Top of cabinet blanking panels						
	- Roof Section Adjustable Length						
	- Length 11.2m						
A.4	Aisle Containment Full Blanking Panel 42 RU high x 600mm wide, with:	No.	10				
	- Color: Black						
	- Polycarbonate type						
	- Supply Associated aluminum frames						
A.5	Joint sealing tape of polyurethane soft form with acrylic dispersion impregnation	rolls	10				
A.6	25-foot long Magnetic Strip rolls	rolls	20				
A.7	Extractor Fans	No.	4				

B	Power reticulations & Distribution system						
	<i>Supply, installation and commissioning of:-</i>						
B.1	Power Panel of type 42U cabinet with:	Set	2				
B.1.1	- 1No Incomer UPS 400A MCCB/Isolators						
B.1.2	- 4No. outgoing feeder 250A MCCB to the busbars						
	- 1No outgoing feeder 250A MCCB to DBs installed within the DC						
B.1.3	- 1No Incomer Raw 400A MCCB/Isolators						
	- 6No. outgoing feeder 250A MCCB to the ACs						
B.2	Busbars						
B.2.1	250A, Busbar, with:	Mtrs	110				
	- Including mounting brackets						
	-						
B.2.2	250A Busbar Trunking Infeed Box With 250A TPN MCCB, with:	No.	4				
	- Measurement with bus protocol: Ethernet (Modbus TCP / IP)						
B.2.3	Busbar Trunking Tap Off Box, with :	No	20				
	- 3 x 3-pole, 32 A MCB						
	- 3No. of Industrial Sockets						
	- Power per socket 11kVA						
	- Rated breaking capacity Icu = 25 kA in accordance with IEC 60947-2						
B.2.4	Busbar Trunking Tap Off Box, with :	No	35				
	- 3 x single-pole, 32 A MCB						
	- 3No. of Industrial Sockets						
	- Power per socket 7kVA						
	- Rated breaking capacity Icu = 25 kA in accordance with IEC 60947-2						
B.3	Wiring 4core x 95sq.mm PVC.SWA cable	Mtrs	100				

B.4	HANGER/BOLT JOINT	Lot	1				
B.5	Data cabinet - PDUs	No.	10				
B.5.1	- Vertical IP PDU- 1PH 230VAC 32A, 24 outlets:20 x C13, 4 x IEC C19, plug IEC60309 32A, Zero U Vertical PDU, I x Ethernet						
B.6	3Ph Industrial, 5Pin Socket/Plug	No.	10				
B.7	SP Industrial, 3Pin Socket/Plug	No.	10				
B.8	Cable Glands	No.	20				
B.9	Cable lugs	No.	50				
B.10	Faceplate	Lot	1				
B.11	LED Lights (600 x 600) mm	No.	24				
B.12	Emergency lights	No.	6				
B.13	Motion Sensor Switch	No	6				
B.14	Wall Switch	No	6				
B.15	Wiring Single core x 2.5sq.mm PVC.SWA cable	Mtrs	300				
B.5	Wyr-Grid Pathway- Cable basket for cooper cable	Lot	1				
B.6	Earthing System for DC	Lot	1				
C	Connectivity						
	<i>Supply, installation and commissioning of:-</i>						
C.1	Cable trays & Trunking	Lot	1				
	- 2.0mm gauge, 200 x 100 mm Trunking						
	- Fibre ways						
	- UTP ways						
C.2	Re-termination of existing fibre cables (LC-LC)	Lot	1				
C.3	Twin Outlets, Cat 6A	No.	50				
C.4	305M, Cat. 6A UTP cables	No.	4				
C.5	24Port, Cat. 6A Patch panels	No.	10				
C.6	5M, Cat. 6A Patch Cords	No.	100				

C.7	3M, Cat. 6A Patch Cords	No.	100				
C.8	30M, MM, 50um, Duplex, Fibre Patch Cords	No.	50				
C.9	20M, MM, 50um, Duplex, Fibre Patch Cords	No.	50				
C.10	50mm Flex Conduit	Mtrs	200				
C.11	42U Data Cabinet with 2No. PDUs	No.	6				
C.12	12 core, MM, OM3/OM4, indoor, fibre cable	Mtrs	1000				
C.13	6 Duplex, 50um, Fibre Adaptors plates	No.	20				
C.14	12 port, Duplex, Fibre tray	No	10				
C.15	SFP 1Gbps Modules (Part No. GLC SX, MM) Duplex LC Connector	No	20				
D	Civil works						
D.1	Demolition	Lot	1				
	- Demolition of existing DC						
D.2	Partitioning	Lot	1				
	- Reuse existing partitions to reconstruct the data centre as per drawing Fig. 5						
D.3	Fire rated doors	No.	1				
D.4	Office door	No.	1				
D.5	Work station complete with chairs	Set	1				
D.6	Frosted glazing film and blocking of existing drawers below the windows	Lot	1				
D.7	Anti-Static PVC Vinyl Flooring mat	Mtrs Sq	350				
E	Data Center Infrastructure Management						
	<i>Supply, installation and commissioning of:-</i>						
E.1	Supply and installation of DCIM with the following capabilities	Lot	1				
	- 3G modem for SMS alerts						
	- 15No. temperature sensors						
	- Power feed monitors						
	- PDUs monitors						

	- Access control						
	- Facility monitoring (door sensors)						
	- Water sensors						
	- 42" Monitoring Screen						
F	Contingency plan						
F.1	Ensure production environment uptime	Lot	1				
F.2	To cover the re-arrangement of Fire Suppression system	Lot	1				
G	FAT, Training & Tools						
G.1	Factory acceptance test and training	No.	2				
G.2	Training to certification in Data Centre Operation & Management	No.	4				
G.3	PC & Network Maintenance Tool Kit	No.	3				
G.4	Power Quality Clamp on Meter	No.	3				
H	Installation, testing, labelling and commissioning	Lot	1				
	Sub Total Cost (A...H)						
	<u>PART B</u>						
I	Support of DC						
	Year 2 - Maintenance of Air Conditioners - Maintenance of Power distributions equipment - Provide support in decommissioning and installation of new Units - Cable management	Lot	1				
	Year 3	Lot	2				

	- Maintenance of Air Conditioners - Maintenance of Power distributions equipment - Provide support in decommissioning and installation of new Units - Cable management						
	Sub Total Cost						
	Total Cost						

NOTES:

1. Works will be undertaken within occupied premises and working times. Any works which may be off-normal will need to be agreed upon with the client. This must be taken into account in pricing and any resultant costs must be included in the unit rates during the bidding process. No claims whatsoever will be entertained as a result of this.
2. The price quoted above will be inclusive of all local training for Kenya Power staff and hand over related costs including fixing the dates for the site visits and equipment trainings.
3. Reuse of exist cable trays and DBs to be factored in contingency works.
4. **MANUALS**
All operational and training manuals to be provided.
5. **TRAINING SCHEDULE**
Provide training schedules for the technical staff and the users.
6. **IMPLEMENTATION PLAN & DESIGN PLANS**
Bidders to include the project implementation Plan/Schedule showing the milestones from project effective date. This will be preferably in Gantt Chart indicating clearly the shortest time the project will take. Design plans/drawings to be included.
7. Prepare of "As Built" drawings after testing and commissioning

SECTION VI - EVALUATION CRITERIA

Evaluation of duly submitted tenders will be conducted along the following stages: -

6.1 Part 1 - Preliminary Evaluation Criteria Under Paragraph 3.28 of the ITT. These are mandatory requirements. This shall include confirmation of the following: -

6.1.1 *Submission of Tender Security- Checking its validity, whether it is Original; whether it is issued by a local bank; whether it is strictly in the format required in accordance with the sample Tender Security Form(s).*

6.1.2 *Submission of Declaration Form(s) duly completed and signed.*

6.1.3 *Submission and considering Tender Form duly completed and signed.*

6.1.4 *Submission and considering the following:-*

6.1.4.1 *For Local Tenderers;-*

a) *Company or Firm's Registration Certificate*

b) *PIN Certificate.*

c) *Valid Tax Compliance Certificate.*

d) *Names with full contact as well as physical addresses of previous customers of similar goods and reference letters from at least four (4) previous customers.*

6.1.4.2 *For Foreign Tenderers;-*

a) *Company or Firm's Registration Certificate*

b) *PIN Certificate or its equivalent in the country of bidder or a statement from the tax authorities in the Tenderer's country of origin indicating that such certificate or its equivalent is not issued.*

c) *Valid Tax Compliance Certificate or its equivalent in the*

country of bidder or a statement from the tax authorities in the Tenderer's country of origin indicating that such certificate or its equivalent is not issued.

d) *Names with full contact as well as physical addresses of previous customers of similar goods and reference letters from at least four (4) previous customers.*

6.1.5 *That the Tender is valid for the period required.*

6.1.6 *Valid NCA Certification (Building, Mechanical and Electrical) for the respective Class*

6.1.7 *The tenderer must be Manufacturer's authorized system integrator for sale, support and services of the Equipment. The tenderer partner must attach Authorization Certificates for all the quoted products from respective Manufacturer.*

6.1.8 *The tenderer must provide a list of all spare parts complete with part numbers for all the quoted products from respective Manufacturer.*

6.1.8 *Site/survey visit signed and stamped form by authorized staff for all the sites.*

6.1.9 *Submission and considering the Confidential Business Questionnaire: -*

- a) *Is fully filled.*
 - b) *That details correspond to the related information in the bid.*
 - c) *That the Tenderer is not ineligible as per paragraph 3.2 of the ITT.*
- 6.1.10 *Submission of Copies of relevant Type Test Certificates and their Reports or Test Certificate and their Reports from the designated bodies.*
- 6.1.11 *Submission of a copy of accreditation certificate for the testing body to ISO/ IEC 17025.*
- 6.1.12 *Submission of a copy of:-*
- a) *the Manufacturer's valid quality management system certification i.e. ISO 9001- 2008 for goods from outside Kenya.*
 - b) *valid KEBS Diamond Mark of Quality Certificate or KEBS Standardisation Mark Certificate for goods manufactured in Kenya.*
- 6.1.13 *If required in the Tender Document, submission of the following-*
- a) *Samples*
 - b) *Catalogues and/or Brochures and/or Manufacturer's Drawings*
 - c) *Schedule of Guaranteed Technical Particulars as per tender specifications.*
- 6.1.14 *Record of unsatisfactory or default in performance obligations in any contract shall be considered. This shall include any Tenderer with unresolved case(s) in its performance obligations for more than two (2) months in any contract.*
- 6.1.15 *Notwithstanding the above, considering any outstanding orders where applicable and the production capacity indicated by the Tenderer.*
- 6.1.16 *Completely filled Technical Schedule indicating Brand, Model/ Country of origin as per specification in the tender*

Tenders will proceed to the Technical Stage only if they qualify in compliance with Part 1 above, Preliminary Evaluation under Paragraph 3.28.

6.2 Part II - Technical Evaluation Criteria Under Paragraph 3.30 of the ITT.

The detailed technical evaluation consists of the following:

Parts II (a) – These are mandatory requirements

6.2.1 Evaluation of the following technical information against Tender Requirements and Specifications: -

6.2.1.1 *For goods manufactured outside Kenya, applicable relevant valid ISO 9001-2008 certification*

6.2.1.2 *For goods manufactured in Kenya - valid KEBS Diamond Mark of Quality Certificate or KEBS Standardization Mark Certificate*

6.2.1.3 *Type Test Certificates and their Reports or Test Certificates and their Reports from the designated bodies for full compliance with Tender Specifications*

6.2.1.4 *The accreditation certificate for the testing body to ISO/ IEC 17025.*

6.2.1.5 *As contained in the following documents –*

	Item	Manufacturer's Authorization (A)	Manufacturer's Warranty (B)	Catalogues and or Brochures and or Drawings (C)	Schedule of Guaranteed Technical Particulars as per Technical Specifications. (D)
i	Air Conditioning Units				
ii	Thermal Containment				
iii	Busbar Trunking System				
iv	Cable trays & trunking				
v	Data Center Infrastructure Management				

Tenderers will proceed to the next evaluation stage if they qualify in compliance with Parts II (a) above.

Part II (b) - Technical Evaluation under clause 3.20 of the ITT.

It will include the following stages: The following will be scored.

6.2.2 Detailed Technical Evaluation

<i>NO.</i>	<i>EVALUATION CRITERIA</i>	<i>Maximum Marks</i>	<i>PG</i>
6.2.2.1	<p><i>Previous experience: Details of similar Contracts undertaken successfully within the last 5 years and evidenced by letters of reference from clients, completion certificates for the respective projects up to maximum 5No. Projects.</i></p> <p><i>Project with value of over KShs. 50 million - Score 3</i> <i>Project with value of over KShs. 30 million - Score 2</i> <i>Project with value of over KShs. 10 million - Score 1</i></p>	15	
6.2.2.2	<p><i>Tenderer must provide a written statement affirming that within the last five (5) years, has provided maintenance and management services for at least one large data center designed as a Tier III or Tier IV facility which required an uptime of at least 99.9%.</i></p>	10	
6.2.2.3	<p><i>Qualified Key personnel as required under clause 3.20.2 in the tender relevant to the works who will actively be involved in the proposed contract.</i></p> <ol style="list-style-type: none"> <i>1. Project Manager – 1No with at least Bachelor’s degree in related field and 5-year experience in managing implementation of data centers and should be a certified Data Center Engineering Specialist – 1no.</i> <i>2. Electrical Engineer – 1no with at least 5 years’ experience in similar works,</i> <i>3. Electrical Technicians with at least three (3) years’ experience with involvement in similar works - 1 No. holding at least Diploma in Electrical Engineering</i> <i>4. Mechanical engineer – 1no with at least 5 years’ experience in similar works with at least a Bachelor’s degree</i> <i>5. Mechanical Technicians with at least three (3) years’ experience with involvement in similar works - 1 No.</i> 	10 2 scores for each category up to 5 or more.	

	<i>holding at least Diploma in Mechanical Engineering</i>		
6.2.2.4	<i>The tenderer must be Manufacturer's authorized system integrator for sale, support and services of the Equipment. The tenderer partner must attach Authorization Certificates for all the quoted products from respective Manufacturer.</i>	<i>Authorization Certificates for all the equipment from respective Manufacturers</i> 5	
		S/NO	Name of Manufacturer
		1	
		2	
		3	
		4	
		5	
6.2.2.5	<i>The tenderer must provide detail plan about how existing Data Centre Operations will run during this project. Tenderer will solely be responsible for operational continuity till the end of project and migration of operations.</i>	<i>Complete plan</i> 10	
6.2.2.6	<p><i>i. Hybrid PAC system (state make and country of origin) (10 score)</i></p> <p><i>a. water/glycol-cooled energy-saving Indirect Free Cooling, direct expansion with variable-speed DC scroll compressor.</i></p> <p><i>b. Refrigerant type.</i></p> <p><i>c. Remote monitoring. Ethernet enable.</i></p> <p><i>d. External heat exchanger</i></p> <p><i>ii. DCIM system (5 score)</i></p> <p><i>iii. Power supply bus-bar trunking system (state make and country of origin) (5 score)</i></p> <p><i>iv. 42U power panel (5 score)</i></p> <p><i>v. Cable trays & cable ways (5 score)</i></p> <p><i>vi. Product catalogues and or manuals attached. Relevant Manufacturer Brochures for items in the</i></p>	40	

	<i>technical schedule with equipment to be supplied highlighted and meets specification (5 score)</i> vii. <i>Completely filled Technical Schedule indicating Brand, Model/ Country of origin as per specification in the tender (5 score)</i>			
6.2.2.7	<i>Equipment. Give a list and type of relevant equipment owned by the company evidenced by ownership documents. Where not owned by the company, provide documentary evidence of leased equipment as required under clause 3.20.2</i>	5	Owned	5
			Leased	3
6.2.2.8	Contractor <i>i) Registration with NCA (Building, Mechanical and Electrical) for the respective Class</i> <i>ii) Certificate of Registration under Company's Act</i> <i>iii) Valid Tax Compliant Certificate</i>	3		
6.2.2.9	<i>Proof of local presence</i>	2		
	TOTAL	100		

Note:

Tenderers will proceed to Financial Evaluation stage only if they score a minimum score of 70% in Parts II (b) above.

6.3 Part III – Financial Evaluation Criteria under Paragraph 3.31 of the ITT.

These are mandatory requirements.

NO.	EVALUATION CRITERIA
6.3.1	a) Confirmation of the authenticity and sufficiency of the submitted Tender Security
	b) Confirmation of and considering schedule of rates and prices and/or priced Bill of Quantities duly completed and signed.
	c) Checking that the Tenderer has quoted prices based on all costs including insurances, duties, levies, Value Added Tax (V.A.T), Withholding Tax and other taxes payable and delivery to the premises of KPLC or designated site(s)
	d) Where applicable, Conducting a financial comparison, including conversion of tender currencies into one common currency
	e) Checking for any arithmetical errors
	f) Taking into account the cost of any deviation(s) from the tender requirements
6.3.2	<p>Ascertaining the financial capability through Last Financial Year's audited financial statements issued within the last 18 months which Statements should conform to International Accounting Standards One (IAS 1) which includes the following:-</p> <p>a) Turnover in the Last Financial Year i.e. twelve months of at least 40% of the total tendered value.</p> <p>b) Checking and considering that the Tenderer's solvency ratios are acceptable to KPLC and meet the threshold of:-</p> <p>(i) Solvency ratio of Debt to Assets Ratio which should be at least 1:1</p> <p>Or</p> <p>(ii) for companies or firms that are registered or incorporated within the last one calendar year of the Date of the Tender Document, a spot cash balance of a minimum of 20% of the Tender Price. The same should be as evidenced in the certified copies of bank statements at least in ALL days of the month of the Date of the Tender Document.</p>
6.3.3	Provide documentary evidence of liquid assets and/or credit facilities, net of other contractual commitments and exclusive of any advance payments which may be made under the contract.
6.3.4	<p>Considering information submitted in the Confidential Business Questionnaire against other information in the bid including:-</p> <p>a) Declared maximum value of business</p>

- 6.4 The bid evaluation will take into account technical factors in addition to cost factors. The weight for price is 30% while the weight for technical specifications is 70%. Bidders must conform to the specific Technical Requirements in Section XX.

$$B = \frac{C_{LOW}}{C} X + \frac{T}{T_{HIGH}} (1 - X)$$

Where :

C = Evaluated Bid Price

C_{LOW} = the lowest of all Evaluated Bid Prices among responsive bids

T = Technical Score awarded to the bid

T_{HIGH} = the highest of all Evaluated Technical Score among responsive bids

X = weight for the Price as specified in the BDS

The bid with the highest Evaluated Bid Score (B) among responsive bids shall be termed the **Lowest Evaluated Bid** and is eligible for Contract award.

***NOTES: -**

1. For purposes of evaluation, the exchange rate to be used for currency conversion shall be the selling exchange rate ruling on the date of tender closing provided by the Central Bank of Kenya. (Visit the Central Bank of Kenya website).
2. Total tender value means the Tenderer's total tender price inclusive of Value Added Tax (V.A.T) for the goods and services it offers to supply.
3. For companies or firms that are registered or incorporated within the last one calendar year of the Date of the Tender Document, they should submit certified copies of bank statements covering a period of at least six months prior to the date of the tender document. The copies should be certified by the Bank issuing the statements. The certification should be original.
4. The spot balance of 20% required will be that which is seen in the certified bank statements at least in any day of the month of the Date of the Tender Document.

TABLE OF CLAUSES ON GENERAL CONDITIONS OF CONTRACT

Clause No.	Headings	Page No.
7.1	Definitions	55
7.2	Application	55
7.3	Country of Origin	55
7.4	Standards	56
7.5	Use of Contract Documents and Information	56
7.6	Patent Rights.....	56
7.7	Performance Security	56
7.8	Approval before Manufacture	57
7.9	Inspection and Tests	57
7.10	Pre-Shipment Verification of Conformity (PVoC)	58
7.11	Packaging and Labelling	58
7.12	Delivery and Documents for Foreign Goods	59
7.13	Delivery and Documents for Domestic Goods	59
7.14	Transportation	60
7.15	Insurance	60
7.16	Payment	60
7.17	Interest	61
7.18	Prices	61
7.19	Variation of Contract.....	61
7.20	Assignment	62
7.21	Subcontracts	62
7.22	Project Manager	62
7.23	Defects	62
7.24	Completion and taking over	63
7.25	Retention/Defects Liability	63
7.26	Termination of Contract	63
7.27	Liquidated Damages	64
7.28	Warranty.....	64
7.29	Resolution of Disputes	64
7.30	Language and Law	64
7.31	Waiver	65
7.32	Force Majeure.....	65

SECTION VII – GENERAL CONDITIONS OF CONTRACT

The General Conditions of Contract *hereinafter referred abbreviated as the GCC* shall form part of the Conditions of Contract in accordance with the law and KPLC’s guidelines, practices, procedures and working circumstances. The provisions in the GCC will apply unless an alternative solution or amendment is made under other parts of the Contract including the Special Conditions of Contract.

7.1 Definitions

In this contract, the following terms shall be interpreted as follows: -

- a) *“Day” means calendar day and “month” means calendar month.*
- b) *“The Contract” means the agreements entered into between KPLC and the Contractor, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.*
- c) *“The Contract Price” means the price payable to the Contractor under the contract for the full and proper performance of its contractual obligations.*
- d) *“The Services” means services or art thereof to be provided by the Contractor and includes all of the materials and incidentals, which the Contractor is required to perform and provide to KPLC under the contract.*
- e) *“The Procuring Entity” means The Kenya Power and Lighting Company Limited or its successor(s) and assign(s) where the context so admits (hereinafter abbreviated as KPLC).*
- f) *“The Contractor” means the individual or firm providing the services under this contract or his/ her/ its permitted heir(s), personal representative(s), successor(s) or permitted assign(s) where the context so admits. For the avoidance of doubt this shall mean the successful Tenderer(s) pursuant to the tender.*
- g) *Wherever used in the contract, “performance” shall be complete or be deemed to be complete, unless the circumstances indicate otherwise, when the services have been performed in accordance with the Contract and where KPLC does not signify its approval to the Contractor, but without giving notice of dissatisfaction, on the expiration of thirty (30) days from date of documented completion of performance of the service.*

7.2 Application

These General Conditions shall apply to the extent that provisions of other parts of the contract do not supersede them.

7.3 Country of Origin

7.3.1 For purposes of this clause, “Origin” means the place where the goods were mined, grown, or produced.

7.3.2 The origin of Goods and Services is distinct from the nationality of the Supplier.

7.4 Standards

The Services supplied under this contract shall conform to the standards mentioned in the Details of Service.

7.5 Use of Contract Documents and Information

- 7.5.1 The Contractor shall not, without KPLC's prior written consent, disclose the contract, or any provision thereof or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of KPLC in connection therewith, to any person other than a person employed by the Contractor in the performance of the contract.
- 7.5.2 The Contractor shall not, without KPLC's prior written consent, make use of any document or information enumerated in clause 7.5.1 above.
- 7.5.3 Any document, other than the contract itself, enumerated in clause 7.5.1 shall remain the property of KPLC and shall be returned (including all copies) to KPLC on completion of the Contractor's performance under the contract if so required by KPLC.

7.6 Patent Rights

The Contractor shall indemnify KPLC against all third party claims of infringement of patent, trademark, or industrial design rights arising from provision of the services or any part thereof.

7.7 Performance Security

- 7.7.1 Within fourteen (14) days of the date of the notification of contract award, the Contractor shall furnish to KPLC the Performance Security which shall be either one or a combination of the following:-
 - a) an original Bank Guarantee that is strictly in the form and content as prescribed in the Performance Security Form (Bank Guarantee) in the Tender Document.
 - b) Confirmed Standby Letters of Credit (LC). All costs, expenses and charges levied by all banks party to the LC including confirmation charges shall be prepaid by the successful Tenderer. Certain mandatory conditions of the LC shall be as prescribed in the Performance Security Form (LC) in the Tender Document.
- 7.7.2 The Performance Security shall be issued by a commercial bank licensed by the Central Bank of Kenya. The bank must be located in Kenya.
- 7.7.3 The Performance Security shall be the sum of ten percent (10%) of the contract price. It shall be in the currency of the contract price.
- 7.7.4 Failure of the Contractor to furnish the Performance Security, the award shall be annulled and the Tender Security forfeited, in which event KPLC may notify the next lowest evaluated Tenderer that its Tender has been accepted.
- 7.7.5 The proceeds of the Performance Security shall be payable to KPLC as compensation for any loss resulting from the Contractor's failure to comply with its obligations in accordance with the contract without KPLC being required to demonstrate the loss it has suffered.

- 7.7.6 The Performance Security shall be valid for a minimum of sixty (60) days after satisfactory delivery for both Foreign and Local Contractors.
- 7.7.7 KPLC shall seek authentication of the Performance Security from the issuing bank. It is the responsibility of the Contractor to sensitize its issuing bank on the need to respond directly and expeditiously to queries from KPLC. The period for response shall not exceed three (3) days from the date of KPLC's query. Should there be no conclusive response by the Bank within this period, such Contractor's Performance Security may be deemed as invalid and the Contract nullified, unless information to the contrary is received by KPLC two (2) days before the expiry of the Contractor's Tender Security.
- 7.7.8 Subject to the provisions of this contract, the Performance Security will be discharged by KPLC and returned to the Contractor not earlier than thirty (30) days following the date of completion of the Contractor's obligations under the contract, including any warranty obligations, under the contract.

7.8 Approval before Manufacture

- 7.8.1 All technical details and design drawings for the items to be supplied shall be submitted by the Supplier to Kenya Power for approval before manufacture.
- 7.8.2 Should the Supplier fail to observe this condition of approval before manufacture, Kenya Power may decline to accept the goods, or the Supplier shall either replace them or make alterations necessary, but in any case, Kenya Power shall incur no liability howsoever.

7.9 Inspection and Tests

- 7.9.1 KPLC or its representative(s) shall have the right to inspect and/or to test the services to confirm their conformity to the contract specifications. KPLC shall notify the Contractor in writing in a timely manner, of the identity of any representative(s) retained for these purposes. Such visit and or inspection/ test shall in no way prejudice KPLC's rights and privileges.
- 7.9.2 In appropriate circumstances, Inspection/ Test Report(s) shall be completed upon conclusion of the inspection/ tests.
- 7.9.3 The inspections and tests may be conducted in the premises of the Contractor or its subcontractor(s). If conducted on the premises of the Contractor or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to KPLC.
- 7.9.4 Should any inspected or tested services fail to conform to the specifications, KPLC may reject the Service(s), and the Contractor shall either replace or remedy the rejected services or make alterations necessary to meet specification requirements free of cost to KPLC.
- 7.9.5 KPLC's right to inspect, test and where necessary, reject the services after provision shall in no way be limited or waived by reason of the services having previously been inspected, tested and passed by KPLC or its representative(s) prior to the services performance / delivery.

- 7.9.6 For the avoidance of doubt, any acknowledgement by KPLC on the Contractor's or sub-contractor's document shall not be conclusive proof or evidence of satisfactory performance without duly authorized approval by KPLC.
- 7.9.7 Nothing in this clause 7.7 shall in any way release the Contractor from any warranty or other obligations under this Contract.

7.10 Pre-Shipment Verification of Conformity (PVoC)

- 7.10.1 All Suppliers of imported goods and or products must obtain a Certificate of Conformity issued by an authorized KEBS appointed partner prior to shipment.
- 7.10.2 The Certificate is a mandatory customs clearance document in Kenya. KEBS has appointed Global Inspections South Africa (Pty) Ltd, (GSIA), China Certification and Inspection (Group) Company Ltd (CCIC), Agency Societe Generale de Surveillance S.A. (SGS) and INTERTEK, to perform the PVoC program on their behalf depending on the country of supply origin. The cost of pre-shipment verification shall be borne by the Supplier.

7.11 Packaging and Labelling

- 7.11.1 The Supplier shall provide such packaging of the goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the contract.
- 7.11.2 The method of packaging, labeling and marking shall comply strictly with such special requirements as shall be specified and attached to the Tender and particular Order.
- 7.11.3 The labeling, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the contract.
- 7.11.4 The goods shall be packed in good condition suitable for sea/air/road/rail dispatch. Hazard in transit to the final destination shall include rough handling and storage in tropical conditions.
- 7.11.5 The Supplier shall enclose a packing list in each package and all documents relating to the Order shall show the Stores Code Number detailed against the items.
- 7.11.6 The Supplier shall ensure that all cases or packages shall be marked (painted) with bright pink bands five (5) inches in width so as to form a diagonal cross on every face. All bundles and pieces must bear a conspicuous bright pink colour mark to ensure identification in any position in which they may appear on un-loading.
- 7.11.7 The Supplier shall ensure that all lettering shall be no less than seven decimal five centimeters (7.5cm) or three inches (3”) high and each package shall be marked with the shipping mark exactly as shown below: -

*Kenya Power Company Limited,
 Order No.....,
 Care of the Procurement Manager,
 Nairobi via Mombasa, Kenya (or other port of entry if not Mombasa)*

7.12 Delivery and Documents for Foreign Goods

7.12.1 Delivery and or shipment of the goods shall be made by the Supplier to the place and in accordance with the terms specified by Kenya Power in its Schedule of Requirements.

7.12.2 For imported goods, upon shipment, the Supplier shall notify Kenya Power and the insurance company, by paper mail or facsimile the full details of the shipment including Order number, description of goods, quantity, the vessel, the airway bill number and the date, port of discharge. The Supplier shall courier, one copy to Kenya Power and another to the insurance company, a set of the following documents: -

- a) *The Supplier's invoice showing the goods description, quantity, unit price, total amount*
- b) *Non-negotiable airway bill or bill of lading*
- c) *Packing list identifying contents of each package*
- d) *Insurance certificate, where applicable*
- e) *Manufacturer's and or Supplier's credit number, Type Test and or Test Reports and their respective Certificates and KPLC's Official Order number shall be quoted on the shipping documents*
- f) *Approved drawings, brochures, catalogues and technical details*
- g) *Inspection Certificate issued by the nominated inspection agency, as per Clause 7.10 PVoC, and the Supplier's inspection report*
- h) *Summary of Acceptance Test reports signed and approved by KPLC for the items offered, and,*
- i) *Certificate of Origin of the goods.*

7.12.3 It is the responsibility of the Supplier to ensure shipping documents are received by Kenya Power at least one (1) week before the vessel docks or lands.

7.12.4 Any goods or products supplied without timely delivery or submission of the above mentioned shipping documents will not be released to importers until their quality is determined and will be held at the Supplier's expense.

7.12.5 Any late submission of shipping documents shall be treated as part of non-performance on the part of the Supplier and the Procurement Entity shall be entitled to call up the Performance Security. In addition Kenya Power shall upon demand, be entitled to receive any other amounts in excess including demurrage costs.

7.13 Delivery and Documents for Domestic Goods

7.13.1 Delivery of the goods shall be made by the Supplier to the place and in accordance with the terms specified by Kenya Power in its Schedule of Requirements.

7.13.2 The Supplier shall notify Kenya Power of the full details of the delivered goods by delivering together with the goods a full set of the following documents:-

- a) *Copies of the Supplier's invoice showing the goods description, quantity, unit price and total price*

- b) *Delivery note*
 - c) *Manufacturer's and or Supplier's warranty certificate*
 - d) *Packing list identifying contents of each package*
- 7.13.3 It is the responsibility of the Supplier to ensure that the delivery documents are received by Kenya Power at the designated delivery point at the time of delivery.
- 7.13.4 Any late or non-submission of the delivery documents shall be treated as part of non-performance on the part of the Supplier and Kenya Power shall be entitled to call up the Performance Security.

7.14 Transportation

- 7.14.1 Where the Supplier is required under the contract to deliver the goods FOB, transport of the goods, up to and including the point of putting the goods on board the vessel at the specified port of loading shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the contract price.
- 7.14.2 Where the Supplier is required under the contract to deliver the goods CFR to Kenya, transport of the goods to the port of discharge or such other point in Kenya as shall be specified in the contract shall be arranged and paid for by the supplier and the cost thereof shall be included in the contract price.
- 7.14.3 Where the Supplier is required under the contract to deliver the goods CFR, no further restriction shall be placed on the choice of the shipping line and or airline.
- 7.14.4 Where the Supplier is required to effect the delivery under any other terms, for example by post or to another address in the source country, the Supplier shall be required to meet all transport expenses until delivery.
- 7.14.5 In all the above cases, transportation of the goods after delivery shall be the responsibility of Kenya Power.

7.15 Insurance

- 7.15.1 The Contractor shall be responsible for and keep in force current appropriate insurance covers for its property and persons engaged in the performance and or provision of the Services under the contract.
- 7.15.2 The Contractor shall (except in respect to losses, injuries or damage resulting from any act or neglect of KPLC) indemnify and keep indemnified KPLC against all losses and claims for injuries or damage to any person or property whatsoever which may arise out of or in consequence of the contract and against all claims, demands, proceedings, damages, costs, charges, and expenses whatsoever in respect thereof or in relation thereto.

7.16 Payment

- 7.16.1 Payments shall be made promptly by KPLC and shall not be less than thirty (30) days from completion of satisfactory performance and submission of invoice together with other required and related documents or as otherwise prescribed in the contract.

7.16.2 Payment shall primarily be through KPLC's cheque or Real Time Gross Settlement (RTGS) or telegraphic transfer. Where applicable, a copy of a valid Performance Security, stamped, certified as authentic by KPLC, shall form part of the documents to be presented to KPLC before any payment is made.

7.16.3 A Contractor who requests for a Letter of Credit (*hereinafter abbreviated as LC*)–

- a) *Shall meet the LC bank charges levied by its bank while KPLC shall meet the LC bank charges levied by its bank.*
- b) *Any extension and or amendment charges and any other costs that may result from the Contractor's delays, requests, mistakes or occasioned howsoever by the Contractor shall be to the Beneficiary's account.*
- c) *The maximum number of extensions and amendments shall be limited to two (2).*
- d) *Notwithstanding sub-clause 7.11.3 (a), should the Contractor require a confirmed LC, then all confirmation and any other related charges levied by both the Contractor's and KPLC's bank shall be to the Beneficiary's account.*
- e) *The LC shall be opened only for the specific Order within the validity period of the contract.*
- f) *LCs shall be partial for partial performance or full for whole performance as per the contract.*
- g) *The Contractor shall be required to submit a proforma invoice for each lot for use in the placement of order and opening of the LC. The proforma invoice shall be on total all-inclusive costs basis.*
- h) *A copy of the Performance Security, stamped and certified as authentic by KPLC, whose expiry date should not be less than sixty (60) days from the LC expiry date, shall form part of the documents to be presented to the Bank before any payment is effected.*

7.16.4 KPLC shall have the sole discretion to accept or decline any Contractor's payment request through Letters of Credit without giving any reason for any decline.

7.17 Interest

Interest payment by KPLC is inapplicable in the contract.

7.18 Prices

7.18.1 Subject to clause 7.14 herein below, prices charged by the Contractor for services performed under the contract shall be fixed for the period of the contract with no variations.

7.13.2 A price that is derived by a pre-disclosed incorporation or usage of an internationally accepted standard formula shall not be deemed to be a price variation within the meaning of this clause.

7.19 Variation of Contract

KPLC and the Contractor may vary the contract only in accordance with the following: -

- a) *the quantity variation for goods and services shall not exceed ten percent (10%) of the original contract quantity.*
- b) *the quantity variation must be executed within the period of the contract.*

7.20 Assignment

The Contractor shall not assign in whole or in part its obligations to perform under this contract, except with KPLC's prior written consent.

7.21 Subcontracts

- 7.21.1 The Contractor shall notify KPLC in writing of all subcontracts awards under this contract if not already specified in the tender. Such notification, in the original tender or obligation under the Contract shall not relieve the Contractor from any liability or obligation under the Contract.
- 7.21.2 In the event that an award is given and the contract is sub-contracted, the responsibility and onus over the contract shall rest on the Contractor who was awarded.

7.22 Project Manager

- 7.22.1 KPLC shall appoint a Project Manager who shall be an employee of KPLC and who will be responsible for supervising the execution of the Works. The names and contacts of the person appointed as the Project Manager shall be communicated to the Contractor once such appointment is made.
- 7.22.2 Except where otherwise specifically stated, the Project Manager will decide contractual matters between KPLC and the Contractor.
- 7.22.3 The Project Manager may delegate any of his duties and responsibilities to another KPLC employee and thereafter notify the Contractor of the person to whom such duties are delegated.

7.23 Defects

- 7.23.1 The Project Manager shall inspect the Contractor's work and notify the Contractor of any defects that are found. Such inspection shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a defect and to uncover and test any Works that the Project Manager considers may have a defect. Should the defect be found, the cost of uncovering and making good shall be borne by the Contractor.
- 7.23.2 The Project Manager shall give notice to the Contractor of any defects before the end of the Defects Liability Period which begins after issuance of the Certificate of Acceptance by KPLC to the Contractor. The Defects Liability Period shall be extended for as long as defects remain to be corrected.
- 7.23.3 When notice of a defect is given; the Contractor shall correct the notified defect within the length of time specified by the Project Manager's notice. If the Contractor has not corrected

a defect within the time specified in the Project Manager's notice, the Project Manager will assess the cost of having the defect corrected by other parties and such cost shall be treated as a variation and be deducted from the Contract Price.

7.23.4 The Project Manager shall issue the Contractor with a Defects Liability Certificate after the defects are corrected.

7.24 Completion and taking over

7.24.1 Upon assessment by the Project Manager that the Works are complete, KPLC shall issue the Contractor with a Certificate of Acceptance.

7.25 Retention/Defects Liability

7.25.1 KPLC shall retain 10% of the Contract Price for the duration of the Defects Liability Period after issuing the Certificate of Acceptance for the whole of the Works.

7.26 Termination of Contract

7.26.1 KPLC may, without prejudice to any other remedy for breach of contract, by written notice sent to the Contractor, terminate this contract in whole or in part due to any of the following:

-

- a) *if the Contractor fails to perform any or all of the services within the period(s) specified in the contract, or within any extension thereof granted by KPLC.*
- b) *if the Contractor fails to perform any other obligation(s) under the contract.*
- c) *if the Contractor, in the judgment of KPLC has engaged in corrupt or fraudulent practices in competing for or in executing the contract.*
- d) *by an act of force majeure.*
- e) *if the Contractor becomes insolvent or bankrupt*
- f) *if the Contractor has a receiving order issued against it, compounds with its creditors, or an order is made for its winding up (except for the purposes of its amalgamation or reconstruction), or a receiver is appointed over its or any part of its undertaking or assets, or if the Contractor suffers any other analogous action in consequence of debt.*
- g) *if the Contractor abandons or repudiates the Contract.*

7.26.2 In the event that KPLC terminates the contract in whole or in part, it may procure, upon such terms and in such manner as it deems appropriate, services similar to those undelivered or not rendered, and the Contractor shall be liable to KPLC for any excess costs for such similar services and or any other loss PROVIDED that the Contractor shall not be so liable where the termination is for convenience of KPLC.

7.26.3 The Parties may terminate the Contract by reason of an act of force majeure as provided for in the contract.

7.26.4 The Contract may automatically terminate by reason of an act of force majeure as provided for in the Contract.

7.27 Liquidated Damages

Notwithstanding and without prejudice to any other provisions of the contract, if the Contractor fails to perform any or all of the services within the period specified in the contract, KPLC shall, without prejudice to its other remedies under the contract, deduct from the contract prices, liquidated damages sum equivalent to 0.5% of the performance price per day of delay of the delayed due services up to a maximum of ten percent (10%) of the performance price of the delayed due services.

7.28 Warranty

- 7.28.1 Where applicable, the Contractor warrants that the Services provided under the contract are of the highest quality or current specification and incorporate all recent improvements unless provided otherwise in the contract. The Contractor further warrants that any materials/ equipment provided under this contract shall have no defect arising from manufacture, materials or workmanship or from any act or omission of the Contractor that may develop under normal use of the materials/ equipment provided under the conditions obtaining in Kenya.
- 7.28.2 This Warranty will remain valid for one (1) year after the services, or any part thereof as the case may be, have been performed as indicated in the contract.
- 7.28.3 KPLC shall promptly notify the Contractor in writing of any claims arising under this Warranty.
- 7.28.4 Upon receipt of such a notice, the Contractor shall, with all reasonable speed, remedy the defective services without cost to KPLC.
- 7.28.5 If the Contractor having been notified, fails to remedy the defect(s) within a reasonable period, KPLC may proceed to take such remedial action as may be necessary, at the Contractor's risk and expense and without prejudice to any other rights which KPLC may have against the Contractor under the contract.

7.29 Resolution of Disputes

- 7.29.1 KPLC and the Contractor may make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the contract.
- 7.29.2 If, after thirty (30) days from the commencement of such informal negotiations both parties have been unable to resolve amicably a contract dispute, either party may resort to resolution before a recognized local forum for the resolution of disputes.

7.30 Language and Law

The language of the contract and the law governing the contract shall be the English language and the laws of Kenya respectively unless otherwise stated.

7.31 Waiver

Any omission or failure by KPLC to exercise any of its rights or enforce any of the penalties arising from the obligations imposed on the Contractor shall in no way, manner or otherwise howsoever, alter, amend, prejudice, vary, waive or be deemed to alter, amend, prejudice, vary, waive or otherwise whatsoever any of KPLC's powers and rights as expressly provided in and as regards this contract.

7.32 Force Majeure

7.32.1 Force majeure means any circumstances beyond the control of the parties, including but not limited to:

- a) *war and other hostilities (whether war be declared or not), invasion, act of foreign enemies, mobilization, requisition or embargo;*
- b) *ionizing radiation or contamination by radio-activity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosives or other hazardous properties of any explosive nuclear assembly or nuclear components thereof;*
- c) *rebellion, revolution, insurrection, military or usurped power & civil war;*
- d) *riot, commotion or disorder except where solely restricted to employees servants or agents of the parties;*
- e) *un-navigable storm or tempest at sea.*

7.32.2 Notwithstanding the provisions of the contract, neither party shall be considered to be in default or in breach of its obligations under the Contract to the extent that performance of such obligations is prevented by any circumstances of *force majeure* which arise after the contract is entered into by the parties.

7.32.3 If either party considers that any circumstances of *force majeure* are occurring or have occurred which may affect performance of its obligations it shall promptly notify the other party and provide reasonable proof of such circumstances.

7.32.4 Upon the occurrence of any circumstances of *force majeure*, the Contractor shall endeavour to continue to perform its obligations under the contract so far as is reasonably practicable. The Contractor shall notify KPLC of the steps it proposes to take including any reasonable alternative means for performance, which is not prevented by *force majeure*. The Contractor shall not take any such steps unless directed so to do by KPLC.

7.32.5 If the Contractor incurs additional costs in complying with KPLC's directions under sub clause 7.23.4, then notwithstanding the provisions of the contract, the amount thereof shall be agreed upon with KPLC and added to the contract price.

7.32.6 If circumstances of *force majeure* have occurred and shall continue for a period of twenty one (21) days then, notwithstanding that the Contractor may by reason thereof have been granted an extension of time for performance of the contract, either party shall be entitled to serve upon the other seven (7) days' notice to terminate the contract. If at the expiry of the period of twenty-eight (28) days, *force majeure* shall still continue, the contract shall terminate.

SECTION VIII – SPECIAL CONDITIONS OF CONTRACT

The Special Conditions of Contract *hereinafter abbreviated as SCC* shall form part of the Conditions of Contract. They are made in accordance with the law and KPLC’s guidelines, practices, procedures and working circumstances. They shall amend, add to and vary the GCC. The clauses in this section need not therefore, be completed but must be completed by KPLC if any changes to the GCC provisions are deemed necessary. Whenever there is a conflict between the GCC and SCC, the provisions of the SCC shall prevail over those in the GCC.

No.	GCC Reference Clause	Particulars of SCC
1.	Terms of Payment	<p>The credit period shall be thirty (30) days. Payment shall be 80% from satisfactory delivery and submission of invoice together with other required and related documents and 15% after Installation and commissioning. 5% Retention</p> <p>Payment for premier support will be paid annually in advance.</p>
2.	<p>The minimum insurance covers shall be;</p> <ol style="list-style-type: none"> 1. The minimum cover for insurance of the Works, Plant and Materials in respect of the Contractor’s faulty design 2. The minimum cover for loss or damage to Equipment 3. The minimum cover for other property 4. The minimum cover for personal injury or death insurance <ul style="list-style-type: none"> • For the Contractor’s employees • And for other people 	<p>Five Hundred Thousand (KES. 500,000.00)</p> <p>AS PER WORK INJURY BENEFITS</p> <p>AS PER TENDER</p> <p>Five Hundred Thousand (KES. 500,000.00)</p>

3.	Project Manager	The Project Manager appointed by KPLC: Name: Christopher Mwogi Address: P.O Box 30099,00100, Nairobi, Kenya Email: cmwogi@kplc.co.ke Phone +254711 0311256
4.	Defects Liability Period	2 year for replacement parts or software patches
5.	The proportion of payment to be retained (in Percent)	5%
6.	The Price Adjustment Clause (Shall/shall not apply)	SHALL NOT APPLY
7.	The liquidated damages for the whole of the works in Ksh (per week)	Five Hundred Thousand (KES. 500,000.00)
8.	Maximum Limit of liquidated damages	10% of Contract Value
9.	Performance Security (as a percentage of the Contract Price)	10% of Contract Value
10.	Completion Period for the works (in weeks)	TO BE INSERTED BY THE TENDERER
11.	The rate of exchange for calculation of foreign currency payments	The ruling interbank market rate on the date of actual payment
12.	Advance payment (Shall/ Shall not be granted)	SHALL NOT
13.	Percentage of Retention(Of the Interim Payment Certificate)	5% of Interim Payment Certificate
14.	Maximum Limit of Retention Money	10 % of Contract Price
15.	Minimum amount of interim certificates	2% of Contract Price
16.	Time after which payment to be made after Final Payment Certificate signed by Project Manager and date of receipt of Invoice.	60 days

Signature of Tender.....

Date.....

SECTION IX - TENDER FORM

Date:

Tender No.

To:

The Kenya Power & Lighting Company Limited,
Stima Plaza,
Kolobot Road, Parklands,
P.O Box 30099 – 00100,
Nairobi, Kenya.

Ladies and Gentlemen,

1. Having read, examined and understood the Tender Document **TENDER NO. KP1/9A.2/OT/63/ICT/17-18 DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE** including all Addenda, the receipt of which is hereby duly acknowledged, we, the undersigned Tenderer, offer to support and maintenance services in accordance and conformity with the said tender document and in particular the Schedule of Prices that are made part of this Tender.
2. We undertake, if our Tender is accepted, to perform and provide the services in accordance with the Schedule of Requirements.
3. If our Tender is accepted, we will obtain the guarantee of a bank in a sum of equivalent to ten percent (10%) of the contract price for the due performance of the contract, in the form(s) prescribed by The Kenya Power & Lighting Company Limited.
4. We agree to abide by this Tender for a period of.....days (**Tenderer please indicate validity of your Tender**) from the date fixed for tender opening as per the Tender Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
5. This Tender, together with your written acceptance thereof and your notification of award, shall not constitute a contract, between us. The contract shall be formed between us when both parties duly sign the written contract.
6. We understand that you are not bound to accept any Tender you may receive.

Yours sincerely,

Name of Tenderer

Signature of duly authorised person signing the Tender

Name and Capacity of duly authorised person signing the Tender

Stamp or Seal of Tenderer

***NOTES:**

1. KPLC requires a validity period of at least one hundred and twenty (120) days.
2. This form must be duly signed, stamped and/or sealed.

SECTION X - CONFIDENTIAL BUSINESS QUESTIONNAIRE FORM

All Tenderers are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2 (c), whichever applies to your type of business. You are advised that it is a serious offence to give false information on this form.

<p>Part 1 – General</p> <p>Business Name.....</p> <p>Location of business premises.....</p> <p>Plot No.Street/ Road</p> <p>Postal Address Postal Code</p> <p>Tel No.....</p> <p>Facsimile.....</p> <p>Mobile and/ or CDMA No.....</p> <p>E-mail:</p> <p>Nature of your business</p> <p>Registration Certificate No.....</p> <p>Maximum value of business which you can handle at any time KSh.....</p> <p>Name of your BankersBranch... ..</p> <p>*Names of Tenderer’s contact person(s)</p> <p>Designation/ capacity of the Tenderer’s contact person(s)</p> <p>Address, Tel, Fax and E-mail of the Tenderer’s contact person(s)</p> <p>.....</p> <p>.....</p>

Part 2 (a) Sole Proprietor

Your name in full
NationalityCountry of origin
*Citizenship details.....

Part 2 (b) Partnership

Give details of partners as follows: -

Names	Nationality	*Citizenship Details	Shares
1.....			
2.....			
3.....			
4.....			
5.....			

Part 2 (c) Registered Company

Private or Public

State the nominal and issued capital of company-

Nominal KSh.....

Issued KSh.....

Give details of all directors as follows

Name	Nationality	*Citizenship Details	Shares
1.....			
2.....			
3.....			
4.....			
5.....			

Name of duly authorized person to sign for and on behalf of the Tenderer

.....

Capacity of the duly authorized person.....

Signature of the duly authorized person.....

NOTES TO THE TENDERERS ON THE QUESTIONNAIRE

1. *The address and contact person of the Tenderer provided above shall at all times be used for purposes of this tender.*
2. *If a Kenyan citizen, please indicate under “Citizenship Details” whether by birth, naturalization or registration.*
3. *The details on this Form are essential and compulsory for all Tenderers. **Failure to provide all the information requested shall lead to the Tenderer’s disqualification.***
4. *For foreign Tenderers please give the details of nominal and issued share capital in the currency of the country of origin of the Tenderer.*

SECTION XI A - TENDER SECURITY FORM – (BANK GUARANTEE)

(To Be Submitted On Bank’s Letterhead)

Date:

To:

The Kenya Power & Lighting Company Limited,
Stima Plaza,
Kolobot Road, Parklands,
P.O Box 30099 – 00100,
Nairobi, Kenya.

WHEREAS (name of the Tenderer) (hereinafter called “the Tenderer”) has submitted its Tender dated **TENDER NO. KP1/9A.2/OT/63/ICT/17-18 DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE** (hereinafter called “the Tender”);

KNOW ALL PEOPLE by these presents that **WE**.....ofhaving our registered office at.....(hereinafter called “the Bank”), are bound unto The Kenya Power and Lighting Company Limited (hereinafter called “KPLC” which expression shall where the context so admits include its successors-in-title and assigns) in the sum of for which payment well and truly to be made to the said KPLC, the Bank binds itself, its successors, and assignees by these presents.

We undertake to pay you, upon your first written demand declaring the Tenderer to be in breach of the tender requirements and without cavil or argument, the entire sum of this guarantee being (amount of guarantee) as aforesaid, without you needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This tender guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the date below.

This guarantee is valid until theday of.....20.....

EITHER

SEALED with the)
COMMON SEAL)

of the said **BANK**) _____
 thisday) **BANK SEAL**
 of20....)
)
 in the presence of :-)
)
 _____)
)
 and in the presence of:-)
)
 _____)

OR

SIGNED by the **DULY AUTHORISED REPRESENTATIVE(S)/ ATTORNEY(S)** of the **BANK**

 Name(s) and Capacity (ies) of duly authorised representative(s)/ attorney(s) of the Bank

 Signature(s) of the duly authorised person(s)

NOTES TO TENDERERS AND BANKS

1. *Please note that no material additions, deletions or alterations regarding the contents of this Form shall be made to the Tender Security to be furnished by the Tenderer. If any are made, the Tender Security shall not be accepted and shall be rejected by KPLC. For the avoidance of doubt, such rejection will be treated as non-submission of the Tender Security where such Security is required in the tender.*

2. *It is the responsibility of the Tenderer to sensitize its issuing bank on the need to respond directly and expeditiously to queries from KPLC. The period for response shall not exceed three (3) days from the date of KPLC's query. Should there be no conclusive response by the Bank within this period, such Tenderer's Tender Security shall be deemed as invalid and the bid rejected.*

3. *The issuing bank should address its response or communication regarding the bond to KPLC at the following e-mail address – “guarantees@kplc.co.ke”*

4. *The Tender validity period is one hundred and twenty (120) days as set out in the Invitation to Tender (at Section I of the Tender document) or as otherwise may be extended by KPLC. Therefore the Tender Security must at all times be valid for at least 30 days beyond the tender validity period.*

SECTION XI B - TENDER SECURITY FORM (SACCO SOCIETY, DEPOSIT TAKING MICRO FINANCE INSTITUTIONS, WOMEN ENTERPRISE FUND & YOUTH ENTERPRISE FUND)

(To Be Submitted On Institutions Letterhead)

Date:

To:

The Kenya Power & Lighting Company Limited,
Stima Plaza,
Kolobot Road, Parklands,
P.O Box 30099 – 00100,
Nairobi, Kenya.

WHEREAS..... (hereinafter called “the Contractor”) has undertaken, in pursuance of your **TENDER NO. KP1/9A.2/OT/63/ICT/17-18 DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE** (hereinafter called “the Contract);

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with an Institution’s guarantee by an acceptable Institution for the sum specified therein as security for compliance of the Contractor’s performance obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Contractor a Guarantee;

THEREFORE WE HEREBY AFFIRM that we are Guarantors and responsible to you, on behalf of the Contractor, up to a total of..... (*amount of the guarantee in words and figures*) and we undertake to pay you, upon your first written demand declaring the Contractor to be in default under the Contract and without cavil or argument, any sum or sums within the limits of

(*amount of guarantee*) as aforesaid, without you needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until theday of.....20....

EITHER

SEALED with the)
COMMON SEAL)
of the said **INSTITUTION**)

)

thisday) _____
) INSTITUTE SEAL
 of20....)
 in the presence of :-)
)
 _____)
)
 and in the presence of:-)
)
 _____)

OR

SIGNED by the **DULY AUTHORISED**
REPRESENTATIVE(S)/ ATTORNEY(S) of
 the **INSTITUTION**

 Name(s) and Capacity(ies) of duly authorised representative(s)/ attorney(s) of the **Institution**.

 Signature(s) of the duly authorised person(s)

NOTES TO SUPPLIERS AND INSTITUTIONS

1. *Please note that no material additions, deletions or alterations regarding the contents of this Form shall be made to the Tender Security to be furnished by the Tenderer. If any are made, the Tender Security shall not be accepted and shall be rejected by KPLC. For the avoidance of doubt, such rejection will be treated as non-submission of the Tender Security where such Security is required in the tender.*

2. *It is the responsibility of the Tenderer to sensitize its issuing institution on the need to respond directly and expeditiously to queries from KPLC. The period for response shall not exceed three (3) days from the date of KPLC's query. Should there be no conclusive response by the institution within this period, such Tenderer's Tender Security shall be deemed as invalid and the bid rejected.*

3. *The issuing institution should address its response or communication regarding the Tender Security to KPLC at the following e-mail address – “guarantees@kplc.co.ke”*

4. *The Tender validity period is one hundred and twenty (120) days as set out in the Invitation to Tender (at Section I of the Tender document) or as otherwise may be extended by KPLC. Therefore the Tender Security must at all times be valid for at least 30 days beyond the tender validity period.*

SECTION XI C - TENDER SECURITY – (LETTERS OF CREDIT)

The Mandatory Conditions to be included in the Letters are in two parts, A and B.

Part A

Form of Documentary credit - “Irrevocable Standby”

Applicable rules - “Must be UCP Latest Version” i.e. UCP 600 (2007 REVISION) ICC Publication No. 600.

Place of expiry - At the counters of the advising bank.

The SBLC should be available – “By Payment”

Drafts should be payable at - “SIGHT”

Documents required -

1. Beneficiary’s signed and dated statement demanding for payment under the letter of credit no..... (*Insert LC No.*) as.....(*Name of applicant*) (hereinafter called the “Tenderer”) indicating that the “Tenderer” has defaulted in the obligations of the Tenderer as stated by the Beneficiary.
2. The Original Letter of Credit and all amendments, if any.

Additional Conditions -

1. All charges levied by any bank that is party to this documentary credit are for the account of the applicant.
2. There should be no conditions requiring compliance with the specific regulations or a particular country’s Law and regulations.

Charges - All bank charges are for the account of the applicant.

*Confirmation instructions – (See notes below)

Part B

The proceeds of these Letters are payable to KPLC -

- a) if the Tenderer withdraws its Tender after the deadline for submitting Tenders but before the expiry of the period during which the Tenders must remain valid.

- b) if the Tenderer rejects a correction of an arithmetic error
- c) if the Tenderer fails to enter into a written contract in accordance with the Tender Document
- d) if the successful Tenderer fails to furnish the performance security in accordance with the Tender Document.
- e) if the Tenderer fails to extend the validity of the tender security where KPLC has extended the tender validity period in accordance with the Tender Document.

NOTES TO TENDERERS AND BANKS.

1. *Please note that should the Tender Security (LC) omit any of the above conditions the LC shall not be accepted and shall be rejected by KPLC. For the avoidance of doubt, such rejection will be treated as non-submission of the LC where such LC is required in the Tender.*
2. *It is the responsibility of the Tenderer to sensitize its issuing bank on the need to respond directly and expeditiously to any queries from KPLC. The period for response shall not three (3) days from the date of KPLC's query. Should there be no conclusive response by the Bank within this period, such Tenderer's Tender Security shall be deemed as invalid and the bid rejected.*
3. ***The issuing bank should address its response or communication regarding the bond to KPLC at the following e-mail address – “guarantees@kplc.co.ke”***
4. *The Tender validity period is one hundred and twenty (120) days as set out in the Invitation to Tender (at Section I of the Tender document) or as otherwise may be extended by KPLC. Therefore the Tender Security must at all times be valid for at least 30 days beyond the tender validity period.*
5. *All Guarantees issued by foreign banks must be confirmed by a local bank in Kenya.*

SECTION XII - MANUFACTURER’S/ PRINCIPAL’S AUTHORIZATION FORM

(To Be Submitted On Manufacturer’s/ Principal’s/ Producer’s Letterhead)

To:

The Kenya Power & Lighting Company Limited,
Stima Plaza,
Kolobot Road, Parklands,
P.O Box 30099 – 00100,
Nairobi, Kenya.

WHEREAS WE (*name of the manufacturer/ principal*) who are established and reputable manufacturers/ principal of (*name and description of the services*) having offices or factories at (*full address and physical location of offices or factory(ies)*) do hereby confirm that (*name and address of Supplier*) is authorized by us to transact in the services required against your Tender No **KP1/9A.2/OT/63/ICT/17-18** in respect of the above good and services.

WE HEREBY extend our full guarantee and warranty as per the Conditions of Contract for the services offered for provision by the above firm against the Invitation to Tender.

DATED THIS..... DAY OF.....20.....

Signature of duly authorised person for and on behalf of the Manufacturer/ Principal.

Name and Capacity of duly authorised person signing on behalf of the Manufacturer/ Principal.

NOTES TO TENDERERS & MANUFACTURERS/ PRINCIPALS/ PRODUCERS

Only a competent person in the service of the Manufacturer/ Principal should sign this letter of authority.

SECTION XIII - DECLARATION FORM

Date _____

To:

The Kenya Power & Lighting Company Limited,
P.O Box 30099 – 00100,
Stima Plaza, Kolobot Road, Parklands,
Nairobi,
KENYA.

Ladies and Gentlemen,

The Tenderer i.e. (full name and complete physical and postal address) _____
_____ declare the following: -

- a) That I/ We have not been debarred from participating in public procurement by anybody, institution or person.
- b) That I/ We have not been involved in and will not be involved in corrupt and fraudulent practices regarding public procurement anywhere.
- c) That I/We or any director of the firm or company is not a person within the meaning of paragraph 3.2 of ITT (Eligible Tenderers) of the Instruction to Tenderers.
- d) That I/ We are not insolvent, in receivership, bankrupt or in the process of being wound up and is not the subject of legal proceedings relating to the foregoing.
- e) That I/ We are **not** associated with any other Tenderer participating in this Tender.
- f) That I/We do hereby confirm that all the information given in this tender is accurate, factual and true to the best of our knowledge.

Yours sincerely,

Name of Tenderer

Signature of duly authorised person signing the Tender

Name and Capacity of duly authorised person signing the Tender

Stamp or Seal of Tenderer

SECTION XIV – DRAFT LETTER OF NOTIFICATION OF AWARD

To:

(Name and full address of the Successful Tenderer).....

Dear Sirs/ Madams,

RE: NOTIFICATION OF AWARD OF TENDER NO.

We refer to your Tender dated..... and are pleased to inform you that following evaluation, your Tender has been accepted as follows: -

.....
.....

This notification does not constitute a contract. The formal Contract Agreement, which is enclosed herewith shall be entered into upon expiry of seven (7) days from the date hereof but not later than thirty (30) days after expiry of tender validity pursuant to the provisions of the Public Procurement and Disposal Act, 2005 *(or as may be amended from time to time, or replaced)*.

Kindly sign, and seal the Contract Agreement. Further, initial and stamp on all pages of the documents forming the Contract that are forwarded to you with this letter. Thereafter return the signed and sealed Contract together with the documents to us within seven (7) days of the date hereof for our further action.

We take this opportunity to remind you to again note and strictly comply with the provisions as regards the Tender Security, Signing of Contract and Performance Security as stated in the Instructions to Tenderers.

We look forward to a cordial and mutually beneficial business relationship.

Yours faithfully,

FOR: THE KENYA POWER & LIGHTING COMPANY LIMITED

GENERAL MANAGER, SUPPLY CHAIN

Enclosures

SECTION XV – DRAFT LETTER OF NOTIFICATION OF REGRET

To: (Name and full address of the Unsuccessful Tenderer).....**Date:**

Dear Sirs/ Madams,

RE: NOTIFICATION OF REGRET IN RESPECT OF TENDER NO.

We refer to your Tender dated..... and regret to inform you that following evaluation, your Tender is unsuccessful. It is therefore not accepted. The brief reasons are as follows:-

1.
2.
3. etc...

The successful bidder was _____.

However, this notification does not reduce the validity period of your Tender Security. In this regard, we request you to relook at the provisions regarding the Tender Security, Signing of Contract and Performance Security as stated in the Instructions to Tenderers.

You may collect the tender security from our *Legal Department (Guarantees Section), on the 2nd Floor, Stima Plaza, Kolobot Road, Parklands, Nairobi* only after expiry of eighteen (18) days from the date hereof on Mondays and Wednesdays ONLY between 9.00 a.m to 12.30 pm and 2.00p.m to 4.00p.m.

It is expected that by that time KPLC and the successful bidder will have entered into a contract pursuant to the Public Procurement and Disposal Act, 2005 (*or as may be amended from time to time or replaced*). When collecting the Security, you will be required to produce the original or a certified copy of this letter.

We thank you for the interest shown in participating in this tender and wish you well in all your future endeavours.

Yours faithfully,

FOR: THE KENYA POWER & LIGHTING COMPANY LIMITED

GENERAL MANAGER, SUPPLY CHAIN

SECTION XVI - CONTRACT AGREEMENT FORM

THIS AGREEMENT made this.....day of.....**20.... BETWEEN THE KENYA POWER & LIGHTING COMPANY LIMITED**, a limited liability company duly incorporated under the Companies Act, Chapter 486 of the Laws of Kenya, with its registered office situated at Stima Plaza, Kolobot Road, Parklands, Nairobi in the Republic of Kenya and of Post Office Box Number 30099-00100, Nairobi in the Republic aforesaid (*hereinafter referred to as the “KPLC”*) of the one part,

AND

..... (*Contractor’s full name and principal place of business*) a duly registered entity according to the laws of (*state country*) and of Post Office Box Number..... (*full address physical and postal of Contractor*) in the Republic aforesaid, (*hereinafter referred to as the “Contractor”* of the other part;

WHEREAS KPLC invited tenders for certain goods, that is to say for **DESIGN, SUPPLY & INSTALLATION OF AIR CONDITIONERS AND ASSOCIATED WORKS FOR STIMA PLAZA DATA CENTRE** under Tender Number **KP1/9A.2/OT/63/ICT/17-18**.

AND WHEREAS KPLC has accepted the Tender by the Contractor for the services in the sum of (*KPLC specify the total amount in words which should include any payable taxes, duties and insurance where applicable e.g. Value Added Tax*) (*hereinafter called “the Contract Price”*).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS: -

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract and the Tender Document.
2. Unless the context or express provision otherwise requires: -
 - a) reference to “this Agreement” includes its recitals, any schedules and documents mentioned hereunder and any reference to this Agreement or to any other document includes a reference to the other document as varied supplemented and or replaced in any manner from time to time.
 - b) any reference to any Act shall include any statutory extension, amendment, modification, re-amendment or replacement of such Act and any rule, regulation or order made thereunder.
 - c) words importing the masculine gender only, include the feminine gender

- or (as the case may be) the neutral gender.
- d) words importing the singular number only include the plural number and vice-versa and where there are two or more persons included in the expression the “*Contractor*” the covenants, agreements obligations expressed to be made or performed by the Contractor shall be deemed to be made or performed by such persons jointly and severally.
 - e) where there are two or more persons included in the expression the “*Contractor*” any act default or omission by the Contractor shall be deemed to be an act default or omission by any one or more of such persons.
3. In consideration of the payment to be made by KPLC to the Contractor as hereinbefore mentioned, the Contractor hereby covenants with KPLC to perform and provide the services and remedy any defects thereon in conformity in all respects with the provisions of the Contract.
 4. KPLC hereby covenants to pay the Contractor in consideration of the proper performance and provision of the services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.
 5. The following documents shall constitute the Contract between KPLC and the Contractor and each shall be read and construed as an integral part of the Contract: -
 - a) this Contract Agreement
 - b) the Special Conditions of Contract as per the Tender Document
 - c) the General Conditions of Contract as per the Tender Document
 - d) the Price Schedules submitted by the Contractor and agreed upon with KPLC.
 - e) the Details of Service as per KPLC’s Tender Document
 - f) the Schedule of Requirements
 - g) KPLC’s Notification of Award dated.....
 - h) the Tender Form signed by the Contractor
 - i) the Declaration Form signed by the Contractor/ successful Tenderer
 - j) the Warranty
 6. In the event of any ambiguity or conflict between the contract documents listed above, the order of precedence shall be the order in which the contract documents are listed in 5 above except where otherwise mutually agreed in writing.
 7. The Commencement Date shall be the working day immediately following the fulfillment of all the following: -
 - a) Execution of this Contract Agreement by KPLC and the Contractor.

- b) Issuance of the Performance Bond by the Contractor and confirmation of its authenticity by KPLC.
 - c) Issuance of the Official Order by KPLC to the Contractor.
 - d) Where applicable, Opening of the Letter of Credit by KPLC.
8. The period of contract validity shall begin from the Commencement date and end on either -
- a) sixty (60) days after the last date of the agreed performance schedule, or,
 - b) where a Letter of Credit is adopted as a method of payment, sixty (60) days after the expiry date of the Letter of Credit or the expiry date of the last of any such opened Letter of Credit whichever is later.
- Provided that the expiry period of the Warranty shall be as prescribed and further provided that the Warranty shall survive the expiry of the contract.
9. It shall be the responsibility of the Contractor to ensure that its Performance Security is valid at all times during the period of contract validity and further is in the full amount as contracted.
10. Any amendment, change, addition, deletion or variation howsoever to this Contract shall only be valid and effective where expressed in writing and signed by both parties.
11. No failure or delay to exercise any power, right or remedy by KPLC shall operate as a waiver of that right, power or remedy and no single or partial exercise of any other right, power or remedy.
12. Notwithstanding proper completion of performance or parts thereof, all the provisions of this Contract shall continue in full force and effect to the extent that any of them remain to be implemented or performed unless otherwise expressly agreed upon by both parties.
13. Any notice required to be given in writing to any Party herein shall be deemed to have been sufficiently served, if where delivered personally, one day after such delivery; notices by electronic mail and facsimile shall be deemed to be served one day after the date of such transmission and delivery respectively, notices sent by post shall be deemed served seven (7) days after posting by registered post (*and proof of posting shall be proof of service*), notices sent by courier shall be deemed served two (2) days after such receipt by the courier service for Local Suppliers and five (5) days for Foreign Suppliers.
14. For the purposes of Notices, the address of KPLC shall be Company Secretary, The Kenya Power & Lighting Company Limited, 7th Floor, Stima Plaza, Kolobot Road, Post Office Box

Number 30099-00100, Nairobi, Kenya, Facsimile + 254-20-3750240/ 3514485. The address for the Contractor shall be the Contractor's address as stated by it in the Confidential Business Questionnaire provided in the Tender Document.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Kenya the day and year first above written.

SIGNED for and on behalf
of **KPLC**

COMPANY SECRETARY

SEALED with the **COMMON SEAL**
of the **CONTRACTOR**
in the presence of:-

DIRECTOR

Affix Contractor's Seal here

DIRECTOR'S FULL NAMES

and in the presence of:-

DIRECTOR/ COMPANY SECRETARY

DIRECTOR/ COMPANY SECRETARY'S FULL NAMES

DRAWN BY: -

Beatrice Meso,

Advocate,

C/o The Kenya Power & Lighting Company Limited,

7th Floor, Stima Plaza,

Kolobot Road, Parklands,

Post Office Box Number 30099-00100,

NAIROBI, KENYA,

Telephones: + 254-20-3201000/ 731

Facsimile: + 254-20-3514485/ 3750240

SECTION XVII A - PERFORMANCE SECURITY FORM (BANK GUARANTEE)

(To Be Submitted On Bank’s Letterhead)

Date:

To:

The Kenya Power & Lighting Company Limited,
Stima Plaza,
Kolobot Road, Parklands,
P.O Box 30099 – 00100,
Nairobi, Kenya.

WHEREAS.....(hereinafter called “the Supplier”) has undertaken, in pursuance of your Tender Number.....(*reference number of the Tender*) and its Tender dated(*insert Supplier’s date of Tender taken from the Tender Form*) to supply(*description of the goods*) (hereinafter called “the Contract);

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a bank guarantee by an acceptable bank for the sum specified therein as security for compliance of the Supplier’s performance obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Supplier a guarantee;

THEREFORE WE HEREBY AFFIRM that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of..... (*amount of the guarantee in words and figures*) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limits of
(*amount of guarantee*) as aforesaid, without you needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until theday of.....20....

EITHER

SEALED with the)
COMMON SEAL)
of the said **BANK**)
)

thisday) _____
) BANK SEAL
 of20....)
 in the presence of :-)
)
 _____)
)
 and in the presence of:-)
)
 _____)

OR

SIGNED by the **DULY AUTHORISED**
REPRESENTATIVE(S)/ ATTORNEY(S) of
 the **BANK**

 Name(s) and Capacity(ies) of duly authorised representative(s)/ attorney(s) of the Bank

 Signature(s) of the duly authorised person(s)

NOTES TO SUPPLIERS AND BANKS

1. *Please note that no material additions, deletions or alterations regarding the contents of this Form shall be made to the Performance Security Bond (the Bond) to be furnished by the successful Tenderer/ Supplier. If any are made, the Bond may not be accepted and shall be rejected by KPLC. For the avoidance of doubt, such rejection will be treated as non-submission of the Bond where such Bond is required in the tender and Contract.*
2. *KPLC shall seek authentication of the Performance Security from the issuing bank. It is the responsibility of the Supplier to sensitize its issuing bank on the need to respond directly and expeditiously to queries from KPLC. The period for response shall not exceed five (5) days from the date of KPLC’s query. Should there be no conclusive response by the Bank within this period, such Supplier’s Performance Security may be deemed as invalid and the Contract nullified.*
3. *The issuing Bank should address its response or communication regarding the bond to KPLC at the following e-mail address – “guarantees@kplc.co.ke”*

SECTION XVII B - PERFORMANCE SECURITY (LC)

Mandatory Conditions that should appear on the Performance Security (LC).

Form of Documentary credit - “Irrevocable Standby”

Applicable rules - “Must be UCP Latest Version” i.e. UCP 600 (2007 REVISION) ICC Publication No. 600.

Place of expiry - At the counters of the advising bank.

The SBLC should be available – “By Payment”

Drafts should be payable at - “SIGHT”

Documents required -

1. Beneficiary’s signed and dated statement demanding for payment under the letter of credit no..... *(Insert LC No.)* as.....*(Name of Applicant)* (hereinafter called the “Supplier”) indicating that the “Supplier” has defaulted in the performance and adherence to and performance of the contract between the Beneficiary and the Supplier.
2. The Original Letter of Credit and all amendments, if any.

Additional Conditions -

1. All charges levied by any bank that is party to this documentary credit are for the account of the Applicant.
2. (Include) that there should be no conditions requiring compliance with the specific regulations or a particular country’s laws and regulations.

Charges - All bank charges are for the account of the Applicant.

Confirmation instructions – (See notes below)

NOTES TO SUPPLIERS AND BANKS

1. *Please note that should the Performance Security (LC) omit any of the above conditions the LC shall not be accepted and shall be rejected by KPLC. For the avoidance of doubt, such*

rejection will be treated as non-submission of the LC where such LC is required in the tender and Contract.

2. *KPLC may seek authentication of the Performance Security (LC) from the issuing bank. It is the responsibility of the Supplier to sensitize its issuing bank on the need to respond directly and expeditiously to queries from KPLC. The period for*

response shall not exceed five (5) days from the date of KPLC's query. Should there be no conclusive response by the Bank within this period, such Supplier's Performance Security (LC) may be deemed as invalid and the Contract nullified.

3. ***The issuing bank should address its response or communication regarding the bond to KPLC at the following e-mail address – “guarantees@kplc.co.ke”***
4. *All Guarantees issued by foreign banks must be confirmed by a local bank in Kenya.*

SECTION XVIII - SUPPLIER EVALUATION FORM

(This form is for information only and not to be filled in by any bidder. It is for official use by KPLC to evaluate performance of Suppliers during the contract period)

Name of Firm.....Date.....

Category of Product/Service (e.g. Marine Spares

Period of evaluation.....

Evaluation		Re-Evaluation	
Tick as appropriate			

Parameters for supplier evaluation	Maximum Scores	Remarks	Action Taken
A. CUSTOMER SATISFACTION			
A1. Adherence to requirements(quality)			
• Adherence to Specifications			
• Number of rejections			
• Number of complaints from Users			
B. CUSTOMER CONNECTIVITY			
B1. Adherence to delivery period			
• Number of delays			
• Non delivery/More than 3 delays			
C.COMMUNICATION/RESPONSIVENESS			
Total Score			
Score last period			

PERFORMANCE LEVEL DEFINATION;

- ≥75% - KP1 GREEN
- 50% - KP2 AMBER
- 25% - KP3 YELLOW
- ≥25% - KP4 RED

RATING	RATING PER YEAR	MAX. SCORE	ACTUAL SCORE
A1. Adherence to requirements			
• Adherence to Specifications	Compliant	5 marks	
	Not compliant	0 marks	
• Number of rejections	None	5 marks	
	1-2 Rejections	3 marks	
	3 or more	0	
• Number of complaints from Users	None	5 marks	
	1-2 User complaints	3 Marks	
	3 or more	0 marks	
B1. Adherence to delivery period			
• No delay	None	5 marks	
• Number of delays	1-2 Delays	3 Marks	
• Non delivery/More than 3 delays	Failure	0 marks	
C. Communication			
• Easily accessible		5 Marks	
• Partially		3 Marks	
• Not accessible		0 Marks	
D. Responsiveness			
• Replacement of faulty goods	within 7 days	5 Marks	
	within 14 days	3 Marks	
	beyond 14 days	0 Marks	
Total score		30 marks	

Score in Percentage %

WORKINGS

$\frac{\text{Actual score}}{30} \times 100\%$	$\dots\dots\dots \times 100\% = \dots\dots\dots$
30	30

RATING: 75% - V Good, 50% - Good, 25% - Fair, Below 25% - Poor

OBSERVATIONS:

RECOMMENDATION

		Status	Tick as appropriate
1	Grant supplier preferred status	KP1	
2	Work with supplier or develop and improve supplier	KP2 & KP3	
3	Abandon / switch suppliers	KP4	

Name:**Sign:****Date:**

Name:**Sign:****Date:**

Name:**Sign:****Date:**

SECTION XIX - PRE-BID MEETING ATTENDANCE FORM

CONFIRMATION OF PRE-BID MEETING ATTENDANCE

Name of Tenderer.....

Date of Visit.....

Name, position and signature of the Tenderer's staff visiting the site.

Name:.....

Position.....

Qualification

Signature..... Tenderer's Official Stamp.....

Site Visit conducted by Kenya Power Authorised Officer's

Name

Signature.....

SECTION XX - THE TECHNICAL SPECIFICATIONS

PART A - GENERAL REQUIREMENTS

1. Technical documentation shall be in English language. The specific items on offer shall be marked clearly for the goods they intend to supply.
2. The Tenderer shall submit the Schedule of Guaranteed Technical Particulars (GTP) completed by the Manufacturer. In submitting the GTP, cross-references should be made to the documents submitted.
3. Deviations from the tender specifications, if any, shall be explained in detail in writing, with supporting data including calculation sheets, detailed drawings and certified test reports and submitted together with the Tender. In submitting the deviations, cross-references should be made to the documents submitted. KPLC reserves the right to reject the goods if such deviations shall be found critical to the use and operation of the goods.
4. Detailed contact information including title, e-mail, facsimile, telephone or any other form of acceptable communication of the testing and standards body used shall be provided.
5. Where Type Test Certificates and their Reports and or Test Certificates and their Reports are translated into English, all pages of the translations must be signed and stamped by the testing authority.
6. A Copy of the manufacturer's valid quality management system certification i.e. ISO 9001 shall be submitted for evaluation. For locally manufactured goods this requirement is not mandatory but all Test Reports and Certificates shall be certified by the Kenya Bureau of Standard (KEBS) or its appointed agent(s), in which case a letter of Accreditation must be submitted.
7. In all cases where the level of galvanizing and painting is not specifically stated in the detailed Technical Specifications, the general requirement shall be for a uniform coating of thickness not less than 80 microns.
8. Suppliers are required to provide information on proper representative(s) and or workshop for back-up service and or repair and maintenance including their names, telephone, facsimile, e-mail, physical and postal addresses, along with their offers.
9. The Contractor shall bear full responsibility that he has understood the operation of the system. No deviations shall be made from this specification and standards unless waived or modified in writing by the Employer. The Contractor shall obtain from its sub-contractor a statement as to compliance with this specification without exception and/or if there are any exceptions, these shall be described in detail and included in the Contractor's Tender. The Contractor shall add a statement that no other exceptions are taken to this specification.

10. Works to be provided by the Contractor

The Contractor shall provide the Services as described in the scope of the contract

11. Works to be provided by the Employer

The Employer shall provide access to all the sites and equipment covered by the contract.

PART B: BROAD FUNCTIONAL REQUIREMENTS

The Data Centre shall be refurbished based on industry standards. All individual components used in the refurbishment shall conform to data centre best practices and industry standards. The bidder shall be responsible for managing the entire project from commencement to final handing over of the facility to KPLC. The Data Centre complete in all aspects to be handed over with all systems tested and accepted to KPLC.

Construction to be undertaken based on provided design and agreed layout.

On completion of the project a training shall be imparted to the KPLC officials on the various installed components. The equipment/ systems supplied shall be covered under minimum warranty for 1 year from the date of commissioning.

This section describes technical specifications of components, materials and appliances to be delivered, the building work to be executed and the services to be provided as part of the Data Centre Infrastructure. A complete set of requirements which include civil works, equipment, systems, integration, processes, post installation work and subsequent operating support. As such the bidder can be aware of the expectations and offer the equipment and services accordingly. This documentation forms an integral part of the tender.

The intended achievable results from this tender are to prominently achieve Concurrent Maintainable data centre expansion/new retrofit out site covering Power, cooling and monitoring infrastructure completion supporting entire passive infrastructure deployment to achieve smooth and uninterrupted data center operations 24x7 eliminating all single point of failures in Power and cooling with best possible and maximum protection level overall upto Rating/Tier III conformance (Tier-III benchmark guides and specifications for Telecom, Electrical, Architectural, Mechanical, fit out).

1 AIR CONDITIONING UNITS

1.1 General Requirements

- 1.1.1 An integrated cooling system is desirable for Data Centre. Data Centre is to be maintained at $22\pm 1^{\circ}\text{C}$ and $50\% \pm 5 \text{ RH}$. N+1 cooling redundancy is required. Cooling system shall be of Hybrid, In-Row Type Precision Air Conditioning Units on a 24 x7 x 365 days operating basis.
- 1.1.2 The air-conditioning unit shall have a closed refrigerant circuit (direct expansion with variable-speed DC scroll compressor) for indoor installation and a water-cooled energy-saving Indirect Free Cooling. The system will be connected to an external heat exchanger (dry cooler) for operation. The refrigerant circuit will be fully operational on delivery.
- 1.1.3 The units shall be able to switch the air conditioner on and off automatically and alternately for effective usage in pre-defined sequence. Precision Air Conditioning systems specifically designed for stringent environmental control with automatic monitoring and control of cooling, heating, humidification, dehumidification and air filtration function shall be installed.
- 1.1.4 The unit should have power detection functions (such as reverse phase, phase loss, overvoltage, under voltage, high frequency) as well as fault diagnosis, alarm recording, automatic protection, automatic recovery, automatic restart functions. The unit should have

dual power supply, the A and B power sources should have separate, simultaneous display on the power report and failure alarm; separate lightning protection components. In case of incoming UPS signal the functions DX cooling, heating, de/humidification to be limited & fan speeds adjustable.

- 1.1.5 PAC should use environmentally friendly refrigerant and should have linkage and grouping control functions (managed in the same zone in unified manner). Each controller can serve as main controller and implement (automatic switchover to backup units, polling, cascading, prevention of competitive running)
- 1.1.6 Manufacturer must be ISO 9001-, ISO 14001-, ISO 27001- and OHSAS 18001 –certified.
- 1.1.7 The air conditioning unit should be made of integrated Indirect free cooling, for automatic mode selection (DX, mix mode and free cooling) only as a function of outside temperature and heat load.

1.2 Closed refrigerant circuit

- 1.2.1 Highly efficient, fully hermetic, variable-speed DC scroll compressor
- 1.2.2 High-performance evaporator with large surface area
- 1.2.3 Brazed plate condenser with high efficiency and low terminal temperature difference
- 1.2.4 Filter dryer
- 1.2.5 Level gauge with humidity indicator
- 1.2.6 Electronic expansion valve

1.3 High-performance chilled water heat exchanger.

- 1.3.1 The chilled water heat exchanger to be made of copper core pipes with pressed-on aluminium fins and a self-supporting frame of galvanised sheet steel.
- 1.3.2 The heat exchanger's size, design and location in the unit (on the fan intake side) to be optimised to ensure low pressure drops on the air and water side, maximum utilisation of the heat exchanger surface area and high efficiency.
- 1.3.3 A 2-way ball control valves infinitely adjustable via a 0-10V control signal from the unit's controller. Valve can be operated manually in an emergency. The valve's size, design and internal layout to be optimised to ensure stable control characteristics at full and partial load.
- 1.3.4 Internal unit pipework of copper pipes; pipework on refrigerant side routed for optimum absorption and dissipation of possible vibrations; water-side pipework ideally routed for low pressure drops.
- 1.3.5 Pipework ends in an adapter nipple and external thread for connection to customer's on-site pipework.
- 1.3.6 Gas and injection lines of the refrigerant circuit, and the brazed plate condenser, control valves and pipes on the water side are insulated to prevent the formation of condensate.
- 1.3.7 Special pipe supports are used to absorb the load on the pipework, and for thermal decoupling.
- 1.3.8 Several check joints are integrated at easily accessible points for maintenance purposes.

1.4 Fan Assembly

- 1.4.1 The unit to be equipped with at least three EC fans, which are located behind the front door of the unit, enabling easy access for maintenance purposes.
- 1.4.2 Direct drive, single-inlet fan comprising a free-running impeller with backward curved blades.

- 1.4.3 Low vibration, low-noise operation, non-wearing and maintenance-free.
- 1.4.4 Impeller of plastic
 - 3-dimensional fan blades to increase impeller efficiency
 - Non-corroding and colour-fast
- 1.4.5 Includes protective grille of phosphate-coated steel with black plastic coating.
- 1.4.6 Impeller and motor to be statically and dynamically balanced on two levels
- 1.4.7 The fan is driven by an electronically commutated external rotor motor with integrated electronics with protection rating IP55.
- 1.4.8 Electronically adjustable speed, controlled by the air-conditioning unit controller.
- 1.4.9 Soft start, motor current limiter, fault signal relay, plus status and fault indications all integrated.
- 1.4.10 Further safety in operation ensured by internal overheating protection for the electronics/motor, integrated undervoltage detection and phase failure detection.

1.5 Controller

The system for control of Air conditioning unit to allow:

- 1.5.1 Monitoring and Configuration: The master display shall allow monitoring and configuration of the air-conditioning unit through a menu-based control. Functions include status reporting, set-up, and temperature set points.
- 1.5.2 automatic or manual start after power loss, unit start time delay also selectable for individual components.
- 1.5.3 free allocation of all digital/analog inputs and outputs at respective terminals.
- 1.5.4 service warning according to pre-set time intervals.
- 1.5.5 manual operation of individual components.
- 1.5.6 day and night operation
- 1.5.7 recording of up to 200 alarms with time and date
- 1.5.8 temperature- and humidity recording up to 1440 data points, freely scalable within 1 to 60000 minutes
- 1.5.9 variable alarm delay, selectable alarm priority, text input for auxiliary alarms.
- 1.5.10 1x common alarm
- 1.5.11 sequencing of all connected controller
- 1.5.12 sequencing can be divided in up to 20 zones
- 1.5.13 turn over conditions: unit failure and selectable temperature for Std-By unit activation
- 1.5.14 selectable sequencing time
- 1.5.15 alarm priority configuration
- 1.5.16 Modbus protocol preinstalled or TCP/IP.

1.6 The air conditioning unit to be equipped, controlled and supervised with the following functions:

- 1.6.1 cooling, heating, humidification, dehumidification
- 1.6.2 control and supervision of limit values for temperature of return air and supply air, supervision of supply air humidity.
- 1.6.3 supervision of following signals: airflow, heater, fan speed, compressor, condensation pressure, filter, humidifier, water detector, phase supervision, conductivity measurement, UPS, dry cooler, fire alarm, pumps, 4 auxiliary alarms (external alarms).

1.7 Network Management Card

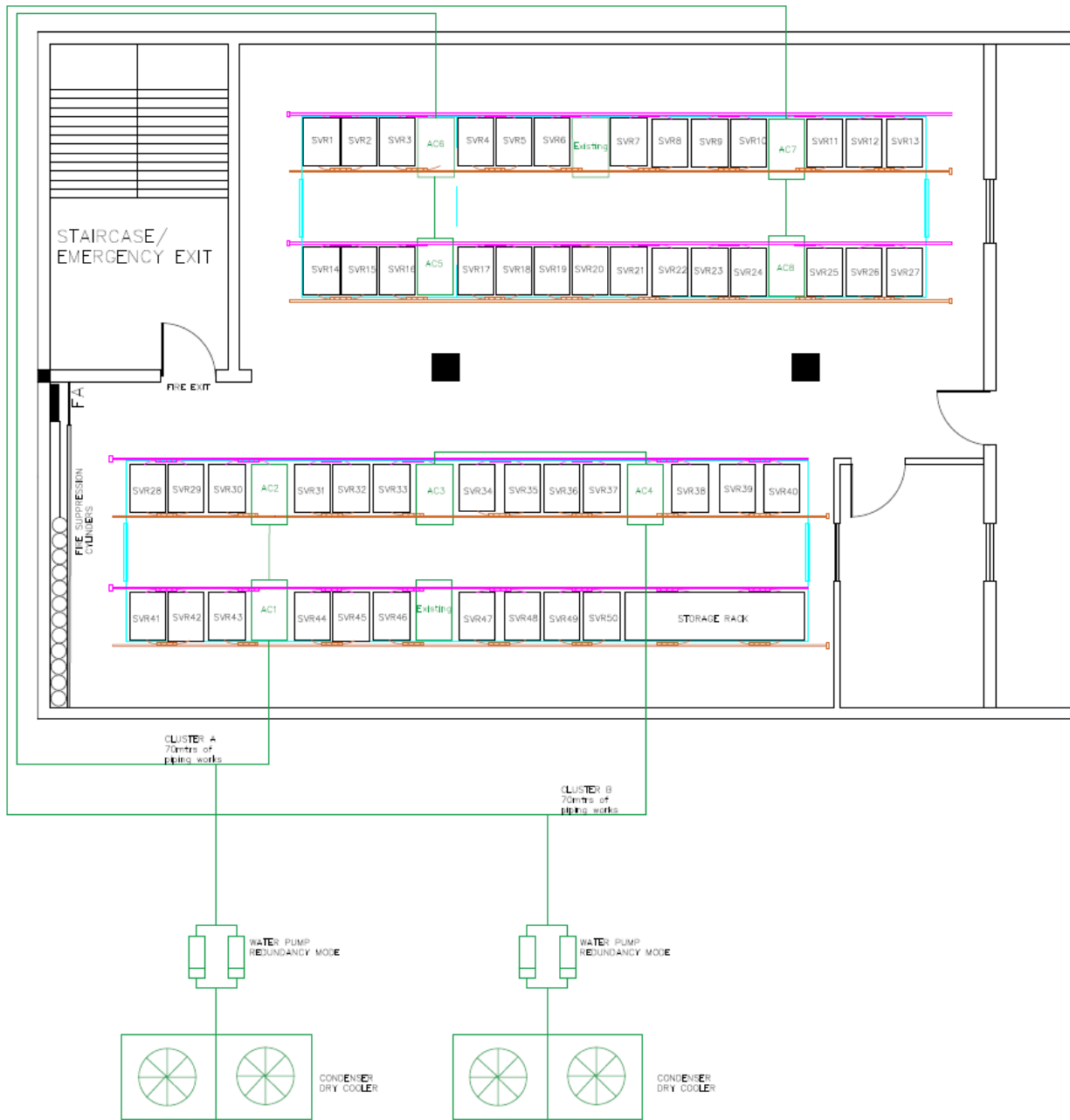
PAC should support on-site and remote monitoring. The unit shall include a network management card to provide management through a computer network through TCP/IP. Bidder can use gateway for same function. Management through the network should include the ability to change set points as well as view and clear alarms.

1.8 Documents and delivery:

The A/C units to be delivered with the following documents:

- 1.8.1 operation instructions manual in English
- 1.8.2 maintenance instructions manual
- 1.8.3 Quick reference guide for the controller system in English.
- 1.8.4 wiring diagram including electric data sheet and cable list
- 1.8.5 refrigeration diagram
- 1.8.6 replacement parts list
- 1.8.7 Declaration of conformity
- 1.8.8 Test certificate of final function, safety test and unit running test.
- 1.8.9 Packaging of the A/C unit standing on a wooden pallet, secured against slipping and mechanical damage.

PROPOSE COOLING POSITIONING IN THE DATA CENTRE

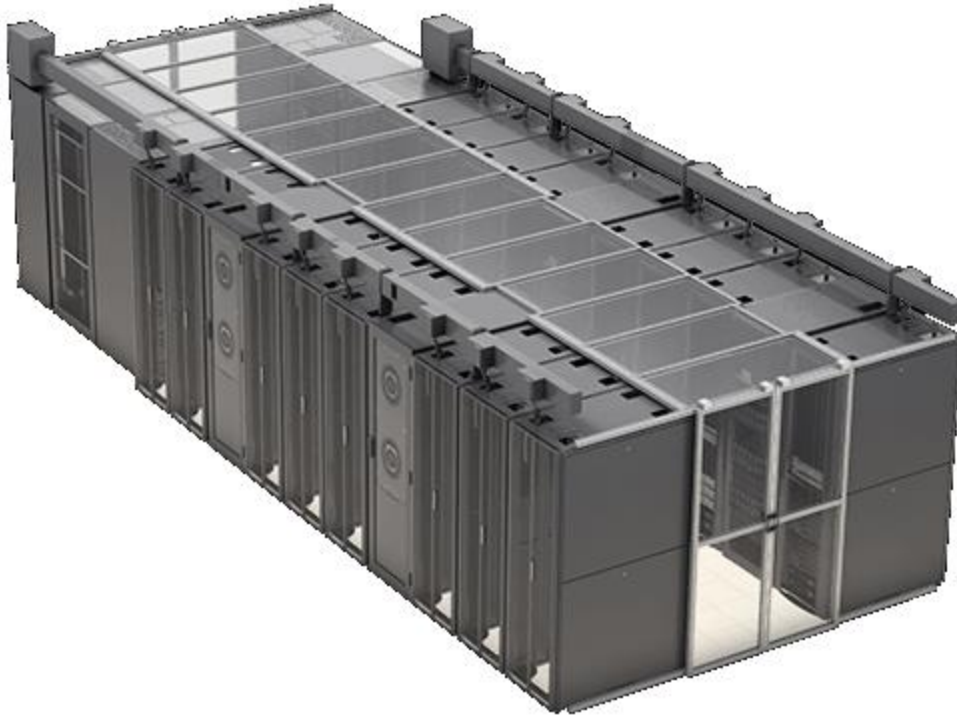


2 THERMAL AISLE CONTAINMENT

- 2.1 The aisle containment system shall be configurable to roof containment (typically used for Cold Aisle Containment) and vertical wall containment (typically used for Hot Aisle Containment).
- 2.2 The system shall be compatible with all major cabinet brands and sizes. This system shall be a floor mounted free structure.
- 2.3 The system shall be comprised of wall beams, end-of-row frames, dual sliding doors, and ceiling structures for roof containment or wall structures for wall containment.
- 2.4 The system is independent of the cabinets; hence cabinets can be rolled-in/out easily. System height shall be adjustable from 42 RU to 52 RU with expandable containment length. Tool-less blanking panels shall be used to seal the area above shorter cabinets. Unoccupied cabinet space shall be sealed with full height blanking panels.



- 2.5 The system shall be deployed on raised or slab floors. The system shall be capable of being added without disrupting existing in-cabinet equipment.
- 2.6 This system shall match both current and future data center infrastructure



- 2.7 Floor mounted, free structure: Can be deployed in new (Greenfield) or existing (Brownfield) data center applications; cabinets can be rolled in/out of position in the aisle without disturbing the structure
- 2.8 Height adjustable frame: Cabinets from 42 RU to 52 RU for added flexibility

3 LAN PHYSICAL INFRASTRUCTURE

3.1 The current connectivity is not as per the industry standards, and having the data center grow over a time, the current situation is a mix of all cabling solution from CAT5e to CAT6A. Our desire is to have the cabling within the racks been upgraded to at least CAT6A. Bidders to include in their bid design and explanation as to what they propose whatever solution.

All server racks will be connected with X24 Copper of minimum Category 6A, and X12 MM fiber. All fiber connections to be OM3/OM4 fiber cable.

Both connections – copper and fiber connections will terminate at the network racks.

3.2 Products

3.2.1 Provide only materials that are new, and the type and quality specified. Where Underwriter's Laboratories, Inc. has established standards for such materials, provide only materials bearing the UL label.

3.2.2 All equipment shall meet or exceed the specifications listed herein.

3.3 Horizontal Cabling and Network Distribution

3.3.1 Where available, all satellite hubs shall be connected to the main hub via fiber optic cable, all communications outlets within the building shall be connected to their respective patch panel via a minimum of Category 6A compliant Unshielded Twisted Pair copper cabling.

3.3.2 Penetrations or floor penetrations shall be fire wall penetrations with fire stop which will be designed to support and protect the cable.

3.3.3 Category 6A Network Cable: Manufacturer: Manufacturer shall BE ISO 9001:2008 certified. The Horizontal Channel SHALL meet the installed performance criteria stated in TIA/EIA-568-B.2-1-2002 and subsequent revisions.

The guaranteed performance parameters shall be supplied in writing before initiation of work.

3.3.4 Station Cable : Category 6A UTP, 4 Pair:

Category 6A UTP, 4 Pair (High Performance) cables shall extend between the station location and its associated TR and consists of 4 pair, 23 gauge, UTP, and shall terminate on eight (8) pin modular jacks provided at each outlet. Cable jacket shall comply with Article 800 NEC for use as a plenum. The 4 Pair UTP cable shall be UL® and c (UL®) Listed Type LSZH rated.

The high performance Category 6A UTP cable shall be of the traditional round design with 4-way separator each pair. The cable shall support Voice, Analog Baseband Video/Audio, Fax, Modem, Switched-56, T-1, ISDN, RS-232, RS-422, RS-485, 10BASE – T Ethernet, Token Ring, 100 Mbps TP-PMD, 100BASE-T Ethernet, 155 Mbps 64-CAP ATM and emerging high-bandwidth applications, including 1 Gbps Ethernet, gigabit ATM, as well as all 77 channels (550 MHz) of analog broadband video.

All UTP cable runs shall be provided with a minimum 10-foot service loop at both ends per BICSI standards in a concentric loop. Service loops shall be secured, supported and protected above the ceiling or in the Wyr-Grid.

3.3.5 Fiber Optic Cable: Fiber optic cable from the main hub to each intermediate hub shall be a 12 fiber, 62.5/125 specified, tight buffer, premises distribution

Use indoors, exterior in conduit and underground in conduit. Impact resistance shall be 1500 impacts minimum. Crush resistance shall be 2200 N/cm minimum.

All fiber optic cable installed in exterior or below grade raceways, or otherwise installed outside of the building shall be rated for outdoor applications. Fiber optic cable installed indoors shall be rated for plenum use. If required, fiber optic cable shall be installed in conduit when routed outdoors or below grade and also where indicated to be installed in conduit in the interior of the building in inner-duct.

Cable installed shall not exceed the manufacturer and industry-recommended minimum bending radius and maximum tensile load.

A minimum 10-foot service loop shall be provided at both ends of all fiber optic cable runs per BICSI standard. Service loops shall be secured and supported above the ceiling or in the cable tray.

Terminate all fiber on “LC” connectors mounted in fiber interconnect panels located in the rack or cabinet at the main and satellite patch location. Fiber backbone cable shall not be spliced.

50 Micron Fiber – 10 GB/S Riser and Campus Backbone Cable: The 50-micron MM fiber shall support single-channel serial transmission, in both the building riser and building backbone to 10 gigabits per second (Gb/s) for a distance of 300 meters with four connections.

The 50-micron fiber shall be backward compatible with legacy applications such as: Ethernet, Token Ring, FDDI, Fast Ethernet and ATM for in-building network distances, ensuring a smooth migration path from 10 Mb/s to 40 Gbps using achievable technology.

It shall support 40 Gb/s short wavelength (850 nm) emerging technology applications using vertical cavity surface emitting lasers (VCSELs) and low bit rate LED applications for legacy systems.

The 50-micron fiber shall be optimized to control differential mode delay (DMD) so that “pulse splitting” at 10 Gbps is eliminated.

The high performance fiber shall use the same termination and test procedures that are currently used for the existing industry’s lower performance 50-micro fiber. Fibers shall be manufactured with D-LUX® 100 coating for maximum color retention and protection.

The 50 micro fiber shall meet or exceed the following standards, as applicable, for OSP or Plenum cables: ICEA S-83-596, ISO/IEC-794, GR-409, EIA/TIA 455, EIA/TIA 492, EIA/TIA 568-B, ANSI-FDDI, IEEE 802, UL 910, OFNP classification as described in the National Electric Code (NEC2), OFN-LS Low Smoke Cables, CSA Certified (OFN FT4/FT6) and approved component industry standards.

3.4 Raceway and Cable Support Requirements

- 3.4.1 Contractor is to follow established guidelines for installation and termination of all cabling and equipment as established in EIA/TIA-568B, EIA/TIA-569A, BICSI Communications Manual, and the National Electric Code (NEC). Work shall be of professional quality, and shall not detract from the aesthetic qualities of the facility.
- 3.4.2 All cabling shall be properly supported and protected in accordance with these guidelines.
- 3.4.3 UTP cabling installed inside the building shall be installed in a raceway from the communications outlet up to the ceiling space where a dropped ceiling is installed. In new buildings, this raceway shall be a concealed conduit in the wall, minimum ¾ inch.
- 3.4.4 Horizontal cable: The Cable Contractor shall install all horizontal cable in conduit, Wyr Grid, duct, or free in the ceilings per the contract documents and industry standards as outlined in the BICSI Communication Manual, EIA/TIA 568B, EIA/TIA 569A, and the following:
 - 3.4.5 All communications cabling used throughout this project shall; -
 - 3.4.5.1 Comply with the requirements as outlined in the National Electric Code (NEC®) Articles 725, 760, 770, and 800 and the appropriate local codes. All copper cabling shall bear CMP (Plenum Rated), CM/CMR (Riser Rated) and/or appropriate markings for the environment in which they are installed. All fiber optic cabling shall bear OFNP (Plenum Rated), PFNR (Riser Rated) and/or appropriate markings for the environment in which they are installed.
 - 3.4.5.2 Separation from sources of EMI: Special care shall be taken in the open ceiling installation of any cabling as to avoid any EMI generating devices. Avoid communications wiring located in spaces with electrical panels, transformers, or other high voltage equipment.
 - 3.4.5.3 Cable Support: Exposed cable installed above ceilings shall be supported by tray or cable hangers. Cable hanger spacing shall not exceed 48 inches on center. Approved cable hangers shall be “J” hooks, Cable hangers shall be attached to roof support structure (Bar joist, Truss, T-Beam, etc.), with appropriate fasteners and shall not be supported from non-structural supports such as ductwork, mechanical piping, conduit, ceiling grid, etc. Type of fastener shall be coordinated in the field.
 - 3.4.5.4 In suspended ceiling and raised floor areas where duct, cable trays or conduit are not available, the Cable Contractor shall bundle, in bundles of 50 or less, station wiring with Velcro ties snug, but not deforming the cable geometry. Cable bundles shall be supported via “J” hooks attached to the existing building structure and framework at a maximum of four (4) foot intervals. Plenum rated Velcro ties will be used in all appropriate areas. The Cable Contractor shall adhere to the manufacturer’s requirements for bending radius and pulling tension of all data and voice cables.
 - 3.4.5.5 Cables shall not be attached to lift out ceiling grid supports or laid directly on the ceiling grid.
 - 3.4.5.6 Cables shall not be attached to or supported by fire sprinkler heads or delivery systems or any environmental sensor located in the ceiling air space.
 - 3.4.5.7 Cable Contractor Responsibility: The Cable Contractor shall be responsible for damage to any surfaces or work disrupted as a result of his work. Repair of surfaces, including painting, shall be included as necessary.
 - 3.4.5.8 Familiarity with Installation Standards: It is the Cable Contractor’s responsibility to be familiar with the installation practices for the telecommunication industry.
 - 3.4.5.9 Routing: Cabling shall be installed over corridor areas or along lines that are parallel to the corridors of the building. Deviations from straight shall be made at right angles. Wall penetrations or floor penetrations shall be made via pre-constructed distribution systems designed to support and protect the cable.

- 3.4.5.10 Velcro Wraps: In addition to cable supports, free run cables shall be bundled and loosely wrapped 24 inches on center (minimum). Use plenum rated Velcro wraps in Fire Penetrations: Fire stop free run cable through fire rated walls in accordance with UL standards and EIA/TIA 569. All fire wall penetrations shall be sealed with a UL listed fire rated assembly and shall be resealed.
- 3.4.5.11 Tension: Cable shall be free from tension at both ends, as well as over the length of each run.
- 3.4.5.12 UTP Splices and Bridge Taps: shall not be permitted.
- 3.4.5.13 UTP Cable Bends: Bend radii shall be greater than four times the cable diameter but a minimum of 25.4mm. Runs shall be free from kinks and twists.
- 3.4.5.14 Harsh, Hazardous, or Corrosive Environments: Cabling shall not be installed where vapors, fumes, corrosives, dust or other industrial byproducts are present without taking appropriate precautions to protect the cables. Protection shall be in accordance with the manufacturer's recommendations and NFPA standards and specifications.
- 3.4.5.15 Penetrations through walls shall be sleeved. Sleeves shall be sized such that fill ratios will not exceed 50% of maximum.
- 3.4.5.16 Provide raceway out of cabinet to ceiling space. Raceway shall be conduit or wire trough. Raceway shall be sized such that fill ratios will not exceed 50% of maximum.
- 3.4.5.17 Cabling shall not be run exposed to general public. Surface mounted raceway is permitted.

3.5 Patch Panels and Interconnection Cabinets

- 3.5.1 UTP patch panels shall be Category 6A rated, minimum 24 port, and rack mounted and approved prior to installation.
- 3.5.2 Patch panels shall be High Performance punch down connecting blocks to RJ-45 type jacks with no exposed PC boards. Snap in modules are also accepted. Patch Panels shall include universal labels color coded for T568A or T568B wiring. Patch panels shall be provided with individual port and patch panel labeling identification areas and shall be labeled with an encoded identification method.
- 3.5.3 Fiber optic cable interconnect cabinets shall be rack mounted enclosures with top, bottom and side cable entry accepting a minimum of 3 OPTICOM Fiber Adapter Panels. Enclosures shall have a slide out/tilt tray for easy access. Provide a protective cover for front enclosure access. Fiber cabinets shall be provided with individual port and patch panel labeling identification areas and shall be labeled with an encoded identification method.
- 3.5.4 Patch Panel instructions to be followed;
 - 3.5.4.1 Termination positions;
 - 3.5.4.2 All pair terminations tight with minimum pair distortions;
 - 3.5.4.3 Twists maintained up to ½ inch.
 - 3.5.4.4 Modular Panel instructions to be followed
 - 3.5.4.5 Cable dressing first;
 - 3.5.4.6 Jackets remain up to the Connecting Block;
 - 3.5.4.7 All pair terminations tight and undistorted;
 - 3.5.4.8 Twists maintained up to 1/8 inch.
 - 3.5.4.9 Identification markings shall be uniform, permanent and readable

3.6 Cable Connectors

- 3.6.1 UTP cable 8 PIN connector RJ-45 jacks shall be printed circuit board (PCB) requiring no punch down tool and be designed to maintain cable pair twists to within 1/8 inch of termination.
- 3.6.2 Electric ivory will be the color of the jack.

3.7 Data Racks, Cabinets/Enclosures

- 3.7.1 We have existing racks, and not unless where absolute necessary, all existing racks will be reused.
- 3.7.2 All racks shall be installed with vertical cable management, front and rear and will be attached or integrated as part of the design shall be approved prior to installation.
- 3.7.3 All racks and cabinets shall be grounded to the building steel or supplemental grounding electrode

3.8 Fiber Patch Cord

- 3.8.1 The 40 Gbps 50 micro multimode fiber optic solution shall utilize factory made patch cords. The patch cords shall be available in 1,2,3,5,10, 20 and 30 meter lengths.
- 3.8.2 Cable type: 3.0mm indoor, Cable outside diameter (OD): 3.0mm
- 3.8.3 Minimum bend radius: 30mm
- 3.8.4 Cable retention strength: 50N, Cable flex: 100 cycles at 4.9N, Cable twist: 10 cycles at 15N
- 3.8.5 Enable Gender and Polarity change on field
- 3.8.6 Gender reversible durability for Multimode: 50 cycles, Polarity reversible durability for Multimode: 50 Cycles
- 3.8.7 Connector durability: 500 mating cycles

3.9 Patch Cords

- 3.9.1 Provide Category 6A Patch Cords for each assigned port on the patch panel. All cords shall conform to the requirements of the proposed Category 6A Standard for Commercial Building Telecommunications Horizontal Cabling and be part of the UL LAN Certification and Follow-up Program. Backward compatible with Category 5 systems.
- 3.9.2 Exceed requirements of ANSI/TIA-568-C.2 Category 6A, IEEE 802.3an-2006, and ISO 11801 Class EA channel standards
- 3.9.3 Meet requirements of IEEE 802.3af and IEEE 802.3at for PoE applications
- 3.9.4 Plug performance in center of TIA/EIA component range, ensuring interoperability and 10GBASE-T Ethernet channel performance

3.10 Miscellaneous Equipment

As per the requirements of the installation, miscellaneous equipment shall be supplied by the Contractor under the base bid, including but not limited to, patch cords, cabinets, pull boxes, hand holes, patch panels, connectors, etc. It is the Contractor's responsibility to identify and bid all miscellaneous equipment necessary to provide a complete and properly functioning system. Any identified equipment shall be subject to approval.

Provide static grounding straps at approved locations in Telecommunications Closets.

4 DCIM

4.1 Following is the desired functionality

- 4.1.1 Centralized Management of the physical infrastructure.
- 4.1.2 Real-time monitoring of entire physical infrastructure through centralized, real-time device monitoring and notification enabling quick assessment of events as they occur.
- 4.1.3 Real-time event notification of critical physical infrastructure situations to reduce mean time to repair, improve efficiency, and maximize uptime. Receive alerts via mobile phones (SMS) and e-mail.
- 4.1.4 Multi-vendor device support for monitoring networked SNMP devices. Enable visibility of SNMP devices through threshold alert notifications, data trending and reporting.
- 4.1.5 Quickly locate devices and alerts through the free search field.
- 4.1.6 Customize the user interface to display devices in critical, warning or normal device statuses.

4.2 The DCIM shall integrate, monitor and manage the following systems:

- 4.2.1 Power supply system.
- 4.2.2 UPS.
- 4.2.3 HVAC and Precision AC.
- 4.2.4 Dry contact and FPS general alerts and alarms including VEDSA integration
- 4.2.5 Each malfunctioning and fault of the technical infrastructure service systems must trigger a trouble alarm. In addition, appropriate reporting including historical analysis and trend monitoring shall be provided.

4.3 Environmental Monitoring System: Environmental monitoring solutions provide early warning of conditions that lead to equipment failure, allowing you to react to changes and minimize the impact on network availability.

4.4 Following functionality is required for the monitoring of Data Centre closets environment

- 4.4.1 Remote device management
- 4.4.2 Temperature monitoring
- 4.4.3 Humidity monitoring
- 4.4.4 Fault notification
- 4.4.5 Data logging
- 4.4.6 Event logging
- 4.4.7 Expandable
- 4.4.8 Password Security
- 4.4.9 Read-only Access
- 4.4.10 Remote device management
- 4.4.11 Monitor at minimum the temperature and relative humidity. It should have historical records capabilities. The historical data will be used to analyze seasonal changes and other outside influences. The temperature and humidity information is to be gathered from all areas of the Data Center using sensors.
- 4.4.12 Integration with a tracking system for all parts of the Data Center which can include the in-room air conditioners and humidifiers, cooling support systems, power backup, water detection, security.
- 4.4.13 The monitoring system should have critical alarm capabilities. At the very least, the system should be set to notify when conditions move outside the set parameters.

4.4.14 The monitoring system can use SNMP/Modbus protocol to integrate into overall Data Center management systems.

4.4.15 Integrated environmental sensors (temperature, humidity, airflow, door)

4.4.16 External temperature sensor.

4.4.17 External humidity sensor.

4.4.18 Leak Sensor

4.5 Functional Procedure for Complete DCIM Suite Environment Monitoring: -

4.5.1 Infrastructure management solution that allows data center administrators to manage environmental conditions i.e. temperature, humidity, Water leak, Smoke, vibrations and digital

4.5.2 Environmental Monitoring: Prevent equipment failure from a full range of threatening environmental conditions. Key integrated sensors include temperature, humidity/dew point, airflow, and audio.

4.5.3 Inputs and outputs. It is also capable of monitoring infrastructure appliances such as UPS, precision cooling units, generator sets etc to provide following info.

4.5.4 Monitoring of the health and status of the equipment

4.5.5 Monitoring of environmental conditions i.e. temperature and humidity, leak and smoke.

4.5.6 Monitor the improved communication speed in transmitting control or commands to the equipment and parameter setting Records Data and Logs of historical information of alarms and notifications.

4.5.7 3rd Party Communication, SNMP, Modbus 485, Dry contacts, Analog Signals

4.5.8 Temp and Temp/Hum Sensor

4.5.9 By default, (without the optional THUB) it can support up to 32 sensors. Digital Input Sensor (Door Sensor, Water Leak Sensor, Smoke Sensor, Motion Sensor, Vibration Sensor)

4.6 Remote Management

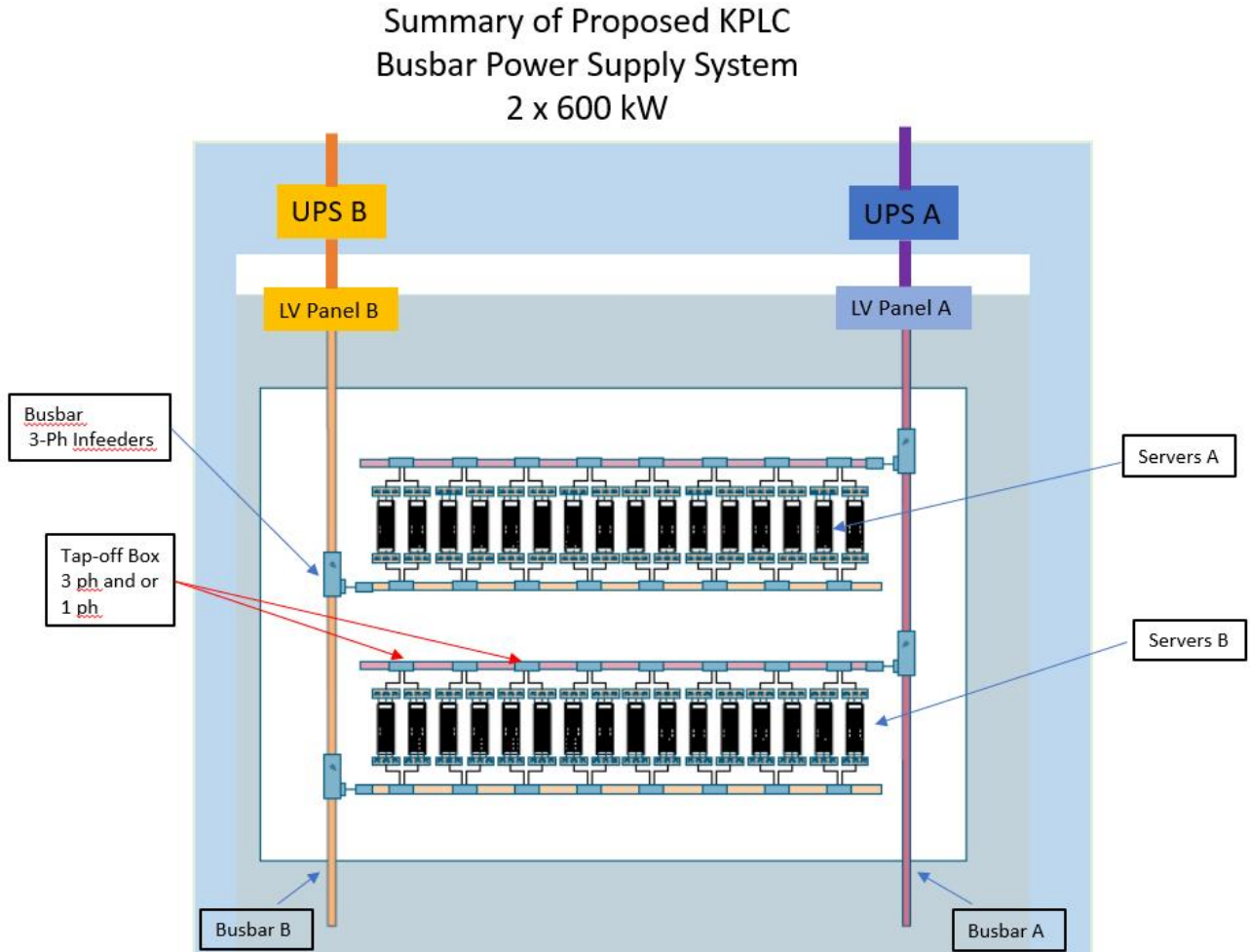
4.6.1 Full video surveillance of the facility that includes recording, replay and image Capture.

4.6.2 Offers a user friendly GUI to setup and ménage Data Center.

4.6.3 Real Time monitoring on environmental Power and Cooling and security in Data Center.

5 POWER DISTRIBUTION SYSTEM

5.1 The Data Centre is supplied by 3No armored cables (2No. clean power and 1No. raw power; 120mm sq copper and aluminum type) terminating on 3No. DBs. These DBs will be upgraded and overall distribution within the data centre allow for future expansion.



5.2 Power Panel/Distribution Boards

- 5.2.1 All power panel/distribution boards shall be manufactured according to the latest international standards IEC 61439-1:2011 and IEC 61439-2:2011; LV Switchgear and Control Gear Assemblies and supplied from manufacturer certified by KEBS.
- 5.2.2 The entire equipment must be KEBS Certified / type tested low voltage switchboard and should comply with the specifications defines in the IEC Standard
- 5.2.2.1 KEBS Certified/Type tested LV Switchboard must be submitted with Shop drawings and must include time-current coordination curves for each type and rating of over current protective device included in switchboards. Submit on translucent log-log graft paper; include selectable ranges for each type of over current protective device.

5.2.2.2 Shop drawings must include Field Quality-Control Reports:

- a. Test procedures used.
- b. Test results that comply with requirements.
- c. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

5.2.2.3 Closeout submittals for switchboards and components to include in emergency, operation, and maintenance manuals. Include the following:

- a. Routine maintenance requirements for switchboards and all installed components.
- b. Manufacturer's written instructions for testing and adjusting over current protective devices.
- c. Time-current coordination curves for each type and rating of over current protective device included in switchboards. Submit on translucent log-log graft paper; include selectable ranges for each type of over current protective device.

5.2.2.4 Where applicable, Air Circuit Breakers (A.C.Bs), Miniature circuit breakers (M.C.B's) and molded case circuit breakers (MCCBs), all should be with —PAD lock control knob and shall be of the molded pattern and their switching levers shall be in such a way that they are accessible through the safety plate for operation.

5.2.3 The switchboards must have Colour Touch Screen Display is required with LCD display on Main LT Panel Door (for Breaker ON/OFF/Trip Status & energy analyser should be installed for both main LV & MCC) the analyser should have communication interface of appropriate protocol for integration with DCIM.

5.3 Power Supply Busbar Trunking Systems

5.3.1 This specification covers the electrical characteristics and general requirements for a Busbar Trunking System. The system shall be designed primarily for overhead power distribution of electrical power. Once installed, the Busbar Trunking will provide simple, versatile, fast and economic means of distributing power. Loads fed from Busbar Trunking plug-in units can be added or removed without shutting down the Busbar Trunking.

5.3.2 Specification includes:

5.3.2.1 Three-phase Busbar Trunking System with the following features:

- 5.3.2.1.1 Extruded aluminum busway housing with conductors
- 5.3.2.1.2 Power Feed
- 5.3.2.1.3 Plug-in units for power distribution
- 5.3.2.1.4 Monitoring
- 5.3.2.1.5 Installation tool and joint kits
- 5.3.2.1.6 Optional accessories

5.3.3 Standards and Certification

5.3.3.1 The Busbar Trunking shall be designed and manufactured to the following standards:

- 5.3.3.1.1 Electrical Testing Laboratories (ETL) (US/Canada) Certified to UL 857.
- 5.3.3.1.2 International Electrotechnical Commission (IEC) Standard, IEC 61439-1, edition 2.0 – Low Voltage Switchgear and Controlgear Assemblies, Part 1: Type Tested and Partially Type Tested Assemblies

- 5.3.3.1.3 International Electrotechnical Commission (IEC) Standard, IEC 61439-6, edition 1.0 – Low Voltage Switchgear and Controlgear Assemblies, Part 6: Particular Requirements for Busbar Trunking Systems (Busways).
- 5.3.3.1.4 CCC (China) Certified to GB 7251.1-2013.
- 5.3.3.1.5 CE (Europe) Certified to IEC 61439-1 and IEC 61439-6.
- 5.3.3.1.6 VDE (Germany) Certified to IEC 61439-1 and IEC 61439-6.
- 5.3.3.1.7 NOM (Mexico) Certified to NOM-003-SCFI-2000
- 5.3.3.1.8 National Electric Code (NEC) – Article 368 – Busways
- 5.3.3.1.9 National Fire Protection Agency (NFPA) – 70, National Electric Code (NEC)
- 5.3.3.1.10 National Electrical Manufacturers Association (NEMA) - AB1, Molded Case Circuit Breakers and Molded Case Switches (if applicable)
- 5.3.3.1.11 National Electrical Manufacturers Association (NEMA) – KS-1, Enclosed and Miscellaneous Distribution Equipment Switches (600 VAC) (*if applicable*)

5.3.4 System Description

5.3.4.1 Electrical Requirements

- 5.3.4.1.1 System voltage: 415V, 3 phase
- 5.3.4.1.2 Frequency: 50/60 Hz.
- 5.3.4.1.3 Ampacity: 250A
- 5.3.4.1.4 Neutral Ampacity: Minimum of 100% of rating
- 5.3.4.1.5 Short circuit rating must be: 35 kAIC up to 600V; 200kAIC up to 600V is obtainable with certain system configurations
- 5.3.4.1.6 Conductors: 3 phase conductors, 1 neutral conductor solid copper, tin plated
- 5.3.4.1.7 Grounding: Aluminum casing or 1 dedicated conductor solid copper, tin plated

5.3.4.2 Operational Requirements

- 5.3.4.2.1 Environmental Conditions: The Busbar Trunking shall be capable of operating continuously in the following environmental conditions without mechanical or electrical damage, degradation or derating of operating capability.
- 5.3.4.2.2 Operating temperature: busway shall operate with continuous load with no derating up to 40 degrees Celsius, 0.95 at 50 degrees Celsius, 0.925 at 55 degrees Celsius and 0.9 at 60 degrees Celsius
- 5.3.4.2.3 Relative humidity: 0 to 95 percent, noncondensing
- 5.3.4.2.4 Altitude: Sea level to 4,000 feet (1220m)

5.3.4.3 Manufacturers Qualification

- 5.3.4.3.1 A minimum of 10 years' experience in the manufacturing of the busway products.

5.3.5 Submittals

- 5.3.5.1 Submittals shall be in accordance with specified procedures. Submit shop drawing and product data for record purposes prior to shipment. Shop drawings for Busbar Trunking must include:
 - 5.3.5.1.1 Detailed equipment assemblies and dimensions, weights, location and identification of each field connection
 - 5.3.5.1.2 Wiring Connection: For power and monitoring wiring
 - 5.3.5.1.3 Orientation of plug-in units face in final installation

- 5.3.5.1.4 Include plug-in schedule with detailed description
- 5.3.5.2 Provide electrical characteristics and connection requirements for the system and accessories.
- 5.3.5.3 Indicate special receiving and handling procedures.
- 5.3.6 Warranty
 - 5.3.6.1 The Busbar Trunking manufacturer shall guarantee the entire system against defective material and workmanship for a period of one (1) year.
 - 5.3.6.2 Additional years of warranty and ability for start-up services must be an option if required per drawings.
 - 5.3.6.3 Warranty shall only cover Busbar Trunking product components.
- 5.3.7 Product Components
 - 5.3.7.1 *Busbar Trunking Housing*
 - 5.3.7.1.1 Extruded aluminum housing certified to serve as a 100% ground. The housing should be properly extruded with a slot to receive rod mount hangers to hang from a ceiling. This housing should be open on the bottom to accept plug-in units anywhere along its length. This opening shall pass UL's hypothetical finger probe test.
 - 5.3.7.1.2 All conductors shall be made of copper, or of copper/aluminum for 800T5 and 1200T5 systems, and sized to handle 100% of its rating continuously up to the maximum ambient temperature. The conductors shall be electrically isolated from the housing. All insulators must be UL and IEC compliant.
 - 5.3.7.1.2.1 Ground conductor: An internal, 100% ground conductor is to be supplied if shown on the drawings
 - 5.3.7.1.2.2 Oversized neutral: An oversized, 200% neutral conductor shall be supplied if shown on the drawings
 - 5.3.7.1.3 Busbar Trunking housing sections shall be joined together by a 'press fit' that requires no bolted connection and no future maintenance
 - 5.3.7.1.4 Busbar Trunking can included data channel built into the housing to accommodate optional, color-coded data cabling accessories
 - 5.3.7.2 *Power Feed*
 - 5.3.7.2.1 The power feed shall provide the connections from the incoming cables to the Busbar Trunking system. The power feed shall have internal connection to a section of Busbar Trunking conductors. End feeds, top feeds, center feeds and bottom feeds shall be available depending upon what Busbar Trunking system is required. Feeds shall have the option to be designed with mechanical or compression type lugs.
 - 5.3.7.3 *Plug-In Units*
 - 5.3.7.3.1 Plug-in units shall be polarized to avoid incorrect installation
 - 5.3.7.3.2 Plug-in units can be added, removed or repositioned without de-energizing the busway
 - 5.3.7.3.3 Plug-in units shall use either a circuit breaker or a fuse for branch circuit protection as shown in the schedule on the project drawings

- 5.3.7.3.4 Plug-in units shall be capable of being built with customer-specified circuit protection, outlets and accessories
- 5.3.7.3.5 Plug-in units shall have a soldered wire connection on each stab that picks up power from the busway. This wire shall then be directly connected to the line side of the circuit breaker. The use of crimp connectors is prohibited.
- 5.3.7.3.6 Plug-in units shall not require any tools to mount to the busway
- 5.3.7.3.7 Plug-in units shall not have a mechanism in order to engage the electrical connection to the busway conductors
- 5.3.7.3.8 Plug-in units shall have locking clips or bolt-on tabs to secure units to the busway
- 5.3.7.3.9 Plug-in units that include drop cords shall be manufactured with cord grips and receptacles as specified in the drawings
- 5.3.7.3.10 Plug-in units shall be configured by the manufacturer to balance the load based on quantity of plug-in unit types provided
- 5.3.7.3.11 Plug-in units shall have the ability to provide up to a 400 amp load in certain plug-in unit configurations
- 5.3.7.3.12 Plug-in units shall have a minimum of 10kAIC and the ability to obtain a maximum of 200kAIC
- 5.3.7.3.13 Plug-in units shall be interchangeable within each Busbar Trunking

5.3.8 Accessories

- 5.3.8.1 Closure strip and access panels shall be available for conductor access points to minimize accidental contact or build-up of debris
- 5.3.8.2 Integrated cable management solutions as part of the aluminum housing, capable of handling accessories such as the data channel cover, hinged wire way, data cable strap, and multi-use mounting bracket
 - 5.3.8.2.1 Data channel covers are color-coded for integrated cable management solutions
- 5.3.8.3 Universal Server Cabinet Mounting Brackets shall be available as an alternative hanging solution; meant for mission critical applications

5.3.9 Monitoring

5.3.9.1 *Power Feed Monitoring:*

The power feed is to be provided with the following power measurements and remote monitoring interface:

- 5.3.9.1.1 Input Voltage (L/L and L/N)
- 5.3.9.1.2 Current per Phase (Min/Max)
- 5.3.9.1.3 Voltage per Phase (Min/Max)
- 5.3.9.1.4 Neutral Current
- 5.3.9.1.5 Power Factor
- 5.3.9.1.6 Frequency
- 5.3.9.1.7 Power (Active, Reactive, Apparent)
- 5.3.9.1.8 Demand (kWH)
- 5.3.9.1.9 Current Peak Demand
- 5.3.9.1.10 Accuracy is better than 0.5%

- 5.3.9.1.11 Communications is Modbus RTU, Modbus TCP, Ethernet SNMP, BACnet and optional wireless
- 5.3.9.1.12 LED colored, 4.9 inch (125mm) display

5.3.9.2 *Plug-In Unit Monitoring (OPTIONAL):*

The plug-in units as indicated on the schedule on the project drawings shall have the following power measurements and remote monitoring interface.

- 5.3.9.2.1 Input Voltage (L/L and L/N)
- 5.3.9.2.2 Current per Phase (Min/Max)
- 5.3.9.2.3 Voltage per Phase (Min/Max)
- 5.3.9.2.4 Power Factor
- 5.3.9.2.5 Frequency
- 5.3.9.2.6 Power (Active, Reactive, Apparent)
- 5.3.9.2.7 Demand (kWH)
- 5.3.9.2.8 Current Peak Demand
- 5.3.9.2.9 Communications is Modbus RTU, Modbus TCP, Ethernet SNMP, BACnet and optional wireless plus available daisy chain Ethernet topology
- 5.3.9.2.10 Optional display

5.3.10 Installation

- 5.3.10.1 The contractor shall install Busbar Trunking in accordance with the manufacturer's instructions.
 - 5.3.10.1.1 Busbar Trunking runs shall consist of lengths as shown on the drawings.
 - 5.3.10.1.2 The plug-in unit orientation shall be indicated on the drawings.
 - 5.3.10.1.3 Hanging of the Busway: The Busbar Trunking shall be hung from a structure above the busway, using the supplied busway hangers. The hangers shall connect to the busway, and to an all thread rod provided by the installing contractor. The spacing of the hangers along the busway is 10 feet (3 meters).
 - 5.3.10.1.4 The busway shall be installed with the open access channel facing downward, or to the side for special applications. Special installation shall be agreed upon by the manufacturer.
 - 5.3.10.1.5 Connecting Sections of Busbar Trunking: At a junction of Busbar Trunking sections, the installer will use a Joint Kit (includes Housing Couplers and Bus Connector) and an Installation Tool supplied by the manufacturer. Two sections are joined together by a 'press fit' that requires no bolted connection and no future maintenance.
 - 5.3.10.1.6 End of Runs: End caps will be provided to install at the end of each run.
 - 5.3.10.1.7 Closure Strip: The closure strip is an optional accessory that can be cut and fitted to cover the bottom opening of the Busbar Trunking housing to prevent dust and debris. Closure Strip can be field modified for fit.
- 5.3.10.2 All Busbar Trunking joints are non-bolted, compression fit and shall require no maintenance after installation

5.3.11 Documentation

- 5.3.11.1 Operation, Installation and Maintenance to be provided
- 5.3.11.2 Installation Instructions to be provided

5.3.11.3 Product drawings shall be rendered and provided at the time of ordering

5.4 Power Distribution Units (Data cabinet - PDU)

5.4.1 Where additional PDUs are required the bidder to consider adding more IP PDUs as per requirement. The PDUs to be rated at least 32A.

5.4.2 The PDU should have the following minimum characteristics

Power Input Configuration

- Acceptable Input Voltage: 220-240 VAC +6%, -10%
- Input Current per Phase: 32A
- Phase Type: 1-phase
- Maximum Input Power(kVA): 7.68
- Input Frequency(Hz): 50
- Input Plug: IEC309 332P6
- Input Cord Length: 3.0m

Output Power Configuration

- Output Voltage: 220-240 VAC
- Total Number of Outlets: 24
- Total # of IEC C13 Outlets: 20
- Total # of IEC C19 Outlets: 4

5.4.3 Each module should be hot-swappable. Each circuit breaker remote monitoring through TCP/IP shall be required and connectivity with DCIM shall be ensured.

5.5 Grounding

5.5.1 The campus power system shall be grounded such that the maximum resistance to ground in 5 ohms. Grounding resistance at computer panels shall be minimized and preferably less than 5 ohms.

5.5.2 All power circuits shall have a separate copper equipment grounding conductor. Isolated ground conductors are not required.

5.5.3 All equipment racks, cable trays, surge suppressors, and cabinets shall be bonded to the building grounding system. No daisy chain of multiple racks in a telecommunication room. All rack shall be grounded and bonded separately. Cable tray shall be grounded and each piece shall be bonded to the next piece.

5.5.4 All grounding connections shall be tested for resistance to ground. The Cable Contractor shall provide a certification letter stating the tests have been performed and meet the requirements.

6 OTHER REQUIREMENTS

6.1 Owner Provided Materials

- 6.1.1 The system hardware electronics shall be provided by the KPLC and installed by the KPLC or KPLC trade contractor under separate contract. All other equipment, materials, hardware, and incidentals required to complete the installation shall be provided by the Contractor. Site visit to provide clear scope of equipment for anticipated system electronics.
- 6.1.2 KPLC provided equipment shall be installed, connected, and tested by KPLC supplier, independently of the system infrastructure. In addition, Owner's supplier shall warrant Owner provided material.

6.2 Fire Wall Penetrations

Fire stopping of fire wall penetrations shall meet the requirements of UL, NFPA, and all applicable building codes.

6.3 Labeling and Identification

- 6.3.1 Each cable shall be labeled with a unique identifier standard to NITA-U. All network system components shall be labeled, including rooms, racks, cabinets, patch panels, individual ports in each patch panel, communication outlets, etc. The system identification administration shall meet the requirements of TIA/EIA-606A. All color coding shall meet the TIA-606A standard. No labels are to be written by hand. Each cable, faceplate jack, and/or Patch panel ports, shall be labeled at each end and referenced on the as-built cable map and database.
- 6.3.2 Each patch panel shall be labeled sequentially left-to-right, top-to-bottom, with the room number and port letter, such that the ports can be located easily on the panel.
- 6.3.3 All fibers in each fiber optic cable shall be identified at each end on the interconnect cabinet. Fibers shall be identified in accordance with TIA-606A standard.

6.4 Documentation:

- 6.4.1 Provide printed copies of all test results for each port and each fiber.
 - 6.4.1.1 UTP data test results shall include:
 - 6.4.1.2 Port identification number
 - 6.4.1.3 Cable type
 - 6.4.1.4 Clear identification of "pass" or "fail" with limits
 - 6.4.1.5 Cable number
 - 6.4.1.6 Test equipment model and serial numbers
 - 6.4.1.7 Date Reference setup (including UL verified VP settings)
 - 6.4.1.8 Operator (crew members)
 - 6.4.1.9 Cable capacitance
 - 6.4.1.10 Loop resistance
 - 6.4.1.11 Near-end crosstalk (ten test frequencies min. 0.772 MHz – 250 MHz)
 - 6.4.1.12 Attenuation
 - 6.4.1.13 Line map
 - 6.4.1.14 Cable length
 - 6.4.1.15 Fiber results shall include:
 - 6.4.1.16 Cable type and identification number.

6.4.1.17 Manufacturer's published attenuation level. In no case shall the attenuation exceed 2.5dB end-to-end.

6.4.1.18 Tested attenuation result and clear indication of "pass" or "fail" with limits.

6.5 System Commissioning

6.5.1 Upon completion of the aforementioned tests and before system acceptance. Owner certification tests may be performed on a sample basis (10% of installed channels) on various portions of the network as determined by the Owner. The tests shall be witnessed by the Contractor, Engineer and the Owner or Owner's designated representatives.

6.5.2 If, in the opinion of the Engineer, failure rates are excessive, then the Owner shall have the option to have the complete system tested independently at no additional cost to the Owner.

6.6 Inspection

6.6.1 All work shall be performed in a high-quality manner and the overall appearance shall be clean, neat and orderly. The following points will be examined and shall be satisfactorily complied with:

6.6.2 The design documentation shall be complete. All cables shall be properly labeled, from end-to end.

6.6.3 All terminated cables shall be properly tested in accordance with the specifications for the specific category as well as tested for opens, shorts, polarity reversals, transposition and presence of AC and/or DC voltage

6.6.4 The cable type shall be suitable for its pathway. The cables to be bundled in parallel

6.6.5 The pathways shall follow manufacturer's guidelines. All cable penetrations shall be installed properly, and fire stopped according to code excessive cable bending to be avoided Potential EMI and RFI sources to be considered. Cable Fill shall be correct.

6.6.6 Hanging supports shall be within 1.2.5 meters (four feet)

6.6.7 Hanging cable shall not exhibit any sag

7 PROPOSE RESTRUCTURING OF THE DATA CENTRE

