



Call-Off Contract No. (105/2022)

Two years Call - Off Contract for Supply of Low Voltage Copper and Aluminum Cables

(54 pages)

Tenderer:

- Name:
- Address:
- Telephone / Cellular:
- Fax:
- Website:
- E-Mail:
- Contact Person:

Tender summary mentioned in page (4-7) shall be fill by the tenderer, otherwise his tender will not be considered.

Tender Document Cost = 30 JD.



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**Invitation to Call - Off Contract
NO. (105/2022)**

Dear Sir;

You are kindly requested to tender for the supply of the below mentioned materials as per the quantities and technical specifications enclosed herewith on call-off basis for a period of two (2) years by filling in the schedules, signing the form of tender, and forward the complete tender documents to the attention of IDECO general manager addressed as seen on the cover page, All bids must be accompanied with a Bid Bond of **not less than 5% of the highest alternative offered price valid for 120 days from the closing date**, otherwise your tender will not be considered. The bid bond shall be enclosed in the same envelope of the tender and must be delivered to Tenders Secretary Office Located in Northern Station Building - Supplies Department – Hakama Street not later than 2 pm (local time) due **November 16, 2022**.

Table 2

Item No.	Quantity (KM)	Material Description	Stock Code
1	3.5	Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable	6145-1023
2	6.5	Rated 0.6/1kV V, 1x120 mm ² , copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable	6145-1060
3	11	Rated 0.6/1kV, 1X35 mm ² , copper circular compacted conductor, PVC - insulated / PVC sheath, non-armored cable with carbon black content	6145-1007

Tender Summary for Tender No. 105/2022

These 3 pages must be completely filled out by the bidder; otherwise it may be a reason for exclusion from the bidding competition:

Name of bidder:		
Address:		
Telephone/Cellular/Fax		
E- Mail		
Contact Person:		
Name of the manufacturer and country of origin:		
The value of the bid bond and the bank issued from:		
The total value of the bid:	Currency	
	Total price	Including Sales taxes & Custom
		Exclude Sales taxes & Custom
		exempt
Total price in writing		
Delivery	Ex-works delivery	
	Aqaba port delivery	
	IDECO stores delivery	
Testing	Place of manufacturing	
	Place of testing	
Cost for inspection & testing:		

Official signature and seal / Bidder

Irbid Electricity Company Use:

Chairman of the Committee

Deputy Chairman of the Committee

Committee member

Committee member

Committee member

Committee member

Committee member

Departures

Departures from	Technical specifications	Required	offered
	Special requirements	Required	offered

Official signature and seal / Bidder

Irbid Electricity Company Use:

Chairman of the Committee

Deputy Chairman of the Committee

Committee member

Committee member

Committee member

Committee member

Committee member

- 1- **General Condition:** We committed to implementing all items mentioned in the general conditions within the bid document number (), 16 items, and the subcategories of these items.
- 2- **Tendering Instructions:** We committed to implementing all items mentioned in the tendering instructions within the bid document number (), 34 items, and the subcategories of these items.
- 3- **General Requirement (Standards and Regulation) :** We committed to implementing all items mentioned in the general conditions within the bid document number (), 13 items, and the subcategories of these items.
- 4- **Inspection and testing:** We committed to implementing all items mentioned in the inspection and testing within the bid document number (), 8 items, and the subcategories of these items.
- 5- **Special Requirements:** We committed to implementing all items mentioned in the special requirements within the bid document number (), 15 items, and the subcategories of these items.
- 6- We committed to fill out all the required pages with the bid documents, without any discrepancies with similar information contained in the Tender Summary.
- 7- We committed that in case there is a difference in the prices provided by us, the lower price will be approval.
- 8- Based on the above we sign.

Official signature and seal / Bidder

<u>Irbid Electricity Company Use:</u>
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Chairman of the Committee

Deputy Chairman of the Committee

Committee member

Committee member

Committee member

In case there are any comments or additional terms or other offers by the bidder; it must be mentioned or Brief about it in the summary of this page:

Official signature and seal / Bidder

Irbid Electricity Company Use:

Chairman of the Committee

Deputy Chairman of the Committee

Committee member

Committee member

Committee member

Committee member

Committee member

GENERAL CONDITIONS

1. Preamble

1.1. These General Conditions shall apply, save as varied by express agreement accepted in writing by both parties.

1.2. Definition of Terms:

The "**Purchaser**" shall mean "Irbid District Electricity Co. Ltd." Hereinafter called "IDECO", and shall include IDECO's legal personal representatives and duly appointed engineers. The "**Engineer**" shall mean "Irbid District Electricity Co." Engineers or persons for the time being or from time to time duly appointed in writing by the purchaser to act as Engineer or the purpose of the contract.

The words "approved" and "approval" where used in these conditions or in the specification shall mean "approved by" and "approval of" the purchaser respectively. The "Vendor" shall mean the "Contractor" who's tender has been accepted by the purchaser and shall include the Vendor's. (Contractor's) legal personal representatives, successors and permitted assigns, "**F.O.B. Price**" shall mean the cost of the equipment delivered free on board the ship or truck or aircraft, all port charges and handling charges (also heavy lift if applicable) included.

The contractor must insure the material against all risks from the time it leaves the works until it is placed "F.O.B". "C&F price" shall mean F.O.B. price plus freight including unloading at the port of destination. All Marine Insurance will be effected by the purchaser. The contractor must provide full details of the material to be shipped in good time for IDECO to arrange for Marine Insurance before the material is actually shipped.

"**The call - off purchase order**" means formal request for delivery to be issued by IDECO specifying equipment to be supplied, delivered, and tested by the contractor upon request by IDECO.

"Parties" means IDECO and contractor / vendor.

2. **IDECO will sign a Framework Agreement with successful supplier which governs the relationship between the company and the supplier, and upon signing the agreement. The supplier should submit a design package for each awarded type, in addition a milestone table to be established to determine the durations of supply activities; i.e.: design submittal, FAT advanced notice, release of shipment, ETC; where each purchase order date should be considered as the initial milestone date.**

3. Formation of call - off Contract

3.1. **The contract shall enter into force upon the date of awarding (hereinafter referred to as the "Effective Date") and shall be valid for 2 years thereafter and until the parties fulfill all their obligations hereunder.**

3.2. **IDECO has a right during the agreement validity to amend the contract up to extra one year.**

3.3. **The contract is not a commitment to purchase by the buyer. Commitment to purchase will only be made when IDECO issues an official purchase order under the terms of the agreement.**

- 3.4. The call off contract shall remain valid for on – call delivery for a period of two years from the date of signing the contract (agreement), and/or the expiration of the total contract quantity, whichever first occurs.**
- 3.5. The required materials under this contract shall be required partially in accordance with number of call-off purchase orders during agreement validity for on-call delivery for a period of two years from the date signing agreement, and/or the expiration of the total contract quantity, whichever first occurs.**
- 3.6. Notwithstanding that the contract and correspondence in connection with the contract shall be in the English language, the contract shall be and be deemed to be a Jordan contract and shall accordingly be governed by and construed according to the laws for the time being in force in the Hashemite Kingdom of Jordan.**
- 3.7. Power to Vary The Work:** alternations, amendments, omissions, additions, suspensions, or variations of the work, (hereinafter referred to as "variations") under the contract as shown by the contract drawings or the specification shall be made by the contractor except as directed in writing by the purchaser, but the purchaser shall have full power, subject to the provision hereinafter contained, from time to time during the execution of the contract by notice in writing to instruct the contractor to make such variation without prejudice to the contract and the contractor shall carry out such variations, and be bound by the same conditions, as far as applicable, as though the said variations occurred in the specification. If any suggested variations would, in the opinion of the contractor, if carried out, prevent him fulfilling any of his obligations or guarantees under the contract, he shall notify the purchaser thereof in writing, and the purchaser shall decide forthwith whether or not the same shall be carried out, and if the purchaser confirms his instructions, the contractor's obligations and guarantee shall be modified to such an extent as may be justified. The difference in cost, if any, occasioned by any such variations, shall be added to or deducted from the contract price as the case may require. The amount of such difference, if any, shall be ascertained and determined in accordance with the rates specified in the schedule of prices so far as the same may be applicable, and where the rates are not contained in the said Schedule, or are not applicable they shall be settled by the purchaser and the contractor jointly. But the purchaser shall not become liable for the payment of any charge in respect of any such variations, unless the instruction for the performance of the same shall have been given in writing by him. In the event of the purchaser requiring any variation, such reasonable a proper notice shall be given to the contractor as will enable him to make his arrangements accordingly, and in cases where goods or materials are already prepared, or any designs, drawings, or patterns made or work done that requires to be altered a reasonable sum in respect thereof shall be allowed by the purchaser. Provided that no such variations shall, except with consent in writing of the contractor, be such as will involve an increase or decrease of the total price payable under the contract by more than 25 percent thereof. The power given to the purchaser to make any alteration, amendment, omission, addition or variation to, from or in any part of the works shall include power to vary from time to time the date for the completion of the works or any part thereof.
- 3.8. IDECO shall have the absolute right during the validity of the contract up to the last delivery to increase or decrease the quantity of the items or not to order some items in such manner that does not exceed 25% of the total contract value.**
- 3.9. IDECO has a complete right not to award all items under this contract to one supplier, partial awarding per item or per quantity for a single item might be applicable and the suppliers do not have the right to object.**

3.10. IDECO has a complete right to substitute certain items instead of other items by increasing or decreasing the required quantity in purchase order.

3.11. Precedence: In the event of any discrepancy or contradiction between the provisions of the conditions of contract and of the specification, the conditions of contract shall take precedence.

4. Drawings and Descriptive Documents

4.1. The weights, dimensions, capacities, prices, performance rating and other data included in catalogues, prospectuses, circulars, advertisement, illustrated matter and price lists constitute an approximate guide. These data shall not be binding save to the extent that they are by reference expressly included in the contract.

4.2. Any drawings or technical documents intended for use in the construction of the material or of part thereof and submitted to the purchaser prior or subsequent to the formation of the contract remain the exclusive property of the Vendor. They may not, without the Vendor's consent, be utilized by the purchaser or copied, reproduced, transmitted or communicated to a third party. Provided, however, that the said plans and documents shall be the property of the purchaser.

14.1 If it is expressly so agreed, or

24.1 If they are referable to a separate preliminary development contract on which no actual construction was to be performed and in which the property of the Vendor in the said plans and documents was not reserved.

4.3. Any drawings or technical documents intended for use in the construction of the material or of part thereof and submitted to the Vendor by the Purchaser prior or subsequent to the formation of the contract remain the exclusive property of the Purchaser. They may not, without his consent be utilized by the Vendor or copied, reproduced, transmitted or communicated to a third party.

4.4. The Vendor shall, if required by the purchaser, furnish free of charge to the purchaser at the commencement of the Guarantee Period, as defined in clause 9, information and drawings other than manufacturing drawings of the material in sufficient detail to enable the purchaser to carry out the erection, commissioning, operation and maintenance (including running repairs) of all parts of the material. Such information and drawings shall be the property of the purchaser and the restrictions on their use set out in paragraph 2 hereof shall not apply thereto. Provided that if the Vendor so stipulates, they shall remain confidential.

5. Materials Packing and Shipping Marks

All materials, equipment and goods shall be very well packed, in seaworthy containers and/or wooden cases, etc. These should protect the material during shipping, handling, unloading, and for a reasonable period of storage at Aqaba and latter storage at IDECO stores. Packing for indoor materials should be done in such manner as to adequately ensure no ingress of moisture during the shipping and storage periods. Packing of fragile equipment (e.g. including instruments and porcelain) should be done in a way which ensures a reasonable resistance to impact breakage during transport. Packing shall in general be adequate and in compliance with the best international practice. A descriptive and fully itemized list shall be prepared for the contents of each packing case. A copy of this list shall be placed in a waterproof envelope under a metal or other suitable plate securely fastened to the outside of one end of the case. And its position adequately indicated by stenciling on the case. Where appropriate drawing

showing the erection marking of the items concerned shall be placed inside the case, IDECO will supply the successful tenderer with a drawing of its shipping mark for utilization. All packing cases, crates, barrels and drums shall remain the property of the purchaser.

6. Inspection and Testing

- 6.1.** If expressly agreed in the contract, the purchaser shall be entitled to have the quality of the materials used and the parts of the instruments, both during manufacture and when completed, inspected and checked by his authorized representatives. Such inspection and checking shall be carried out at the place of manufacture during normal working hours after agreement with the Vendor as to date and time.
- 6.2.** If as a result of such inspection and checking the purchaser shall be of the opinion that any materials or parts are defective or not in accordance with the contract, he shall state in writing his objections and the reasons therefore.
- 6.3. TESTS:** Acceptance tests will be carried out and, unless otherwise agreed, will be made at the Vendor's works and during normal working hours. If the technical requirements of the tests are not specified in the contract, the tests will be carried out in accordance with the general practice obtaining in the appropriate branch of the industry in the country where the material is manufactured.
- 6.4.** The Vendor shall give to the purchaser sufficient notice of the tests to permit the purchaser's representatives to attend. If the purchaser is not represented at the tests, the tests report shall be communicated by the Vendor to the purchaser and shall be accepted as accurate by the purchaser.
- 6.5.** If on any test (other than a test site, where test on site are provided for in the contract) the material shall be found to be defective or not in accordance with the contract, the Vendor shall with all speed make good the defect or ensure that the plant complies with the contract. Thereafter, if the purchaser so requires, the test shall be repeated.
- 6.6.** Unless otherwise agreed, the Vendor shall bear all the expenses of tests carried out in his works.
- 6.7.** If the contract provides for tests on site, the terms and conditions governing such tests shall be such as may be specially agreed between the parties.

7. Passing of Risk

Save as provided in paragraph 7.6, the time at which the risk shall pass shall be fixed in accordance with the International Rules for the Interpretation of Trade Terms (Incoterms) of the International Chamber of Commerce in force at the date of the formation of the contract.

- 8. Delivery:** Unless otherwise agreed the delivery period shall run from the date of the formation of the contract as defined in clause 2.
 - 8.1.** Should delay in delivery be caused by any of the circumstances mentioned in clause 10 or by an act or omission of the purchaser and whether such cause occur before or after the time or extended time for delivery, there shall be granted subject to the provisions of paragraph 5 hereof such extension of the delivery period as is reasonable having regard to all the circumstances of the case.

- 8.2. If a fixed time for delivery is provided for in the contract and the Vendor fails to deliver within such time or any extension thereof granted under paragraph 2 hereof, the purchaser shall be entitled, on giving to the Vendor within a reasonable time notice in writing, to claim a deduction of the price payable under the contract. Such deduction shall be calculated at the rate of **one half of one percent** of that part of the price payable under the contract which is properly attributable to such portion of the plant as cannot in consequence of the said failure be put to the use intended for each complete week of delay commencing on the due date of delivery, **but shall not exceed a maximum percentage deduction of ten percent from the purchase order value**, Such deduction shall be allowed when a payment becomes due on or after delivery. Save as provided in paragraph 5 hereof, such deduction of price shall be to the exclusion of any other remedy of the purchaser in respect of the Vendor's failure to deliver as aforesaid.
- 8.3. If the time for delivery mentioned in the contract is an estimate only, either party may after the expiration of two thirds of such estimated time require the other party in writing to agree a fixed time. Where no time for delivery is mentioned in the contract, this course shall be open to either party after the expiration of six months from the formation of the contract. If in either case the parties fail to agree, either party may have recourse to arbitration, in accordance with the provisions of clause 13, to determine a reasonable time for delivery and the time so determined shall be deemed to be the fixed time for delivery provided for in the contract and paragraph 3 hereof shall apply accordingly.
- 8.4. If any portion of material in respect of which the purchaser has become entitled to the maximum deduction provided for by paragraph 3 hereof, or in respect of which he would have been so entitled had he given the notice referred to therein, remains undelivered, the purchaser may by notice in writing to the Vendor require him to deliver and by such last mentioned notice fix a final time for delivery which shall be reasonable taking into account such delay as has already occurred. If for any reason whatever the Vendor fails within such time to do everything that he must do to effect delivery, the purchaser shall be entitled by notice in writing to the Vendor, and without requiring the consent of any court, to terminate the contract in respect of such portion of the material and thereupon to recover from the Vendor any amount not exceeding that part of the price payable under the Contract which is properly attributable to such portion of the material as could not in consequence of the Vendor's failure be put to the use intended.
- 8.5. If the purchaser fails to accept delivery on due date, he shall nevertheless make any payment conditional on delivery as if the material had been delivered. The Vendor shall arrange for the storage of the material at the risk and cost of the purchaser. If required by the purchaser, the Vendor shall insure the material at the cost of the purchaser. Provided that if the delay in accepting delivery is due to one of the circumstances mentioned in clause 10 and the Vendor is in a position to store it in his premises without prejudice to his business, the cost of storing the material shall not be borne by the purchaser.
- 8.6. Unless the failure of the purchaser is due to any of the circumstances mentioned in clause 10, the Vendor may require the purchaser by notice in writing to accept delivery within reasonable time. If the purchaser fails for any reason whatever to do so within such time, the Vendor shall be entitled by notice in writing to the purchaser, and without requiring the consent of any court, to terminate the contract in respect of such portion of the material as is by reason of the failure of the purchaser aforesaid not delivered and thereupon to recover from the purchaser any loss, suffered by reason of such failure up to an amount not exceeding the value of the material, the delivery of which has not been accepted.

9. Force Majeure

9.1. Notwithstanding the provisions of causes 7, the supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.

9.2. For purposes of this clause, "Force Majeure" means an event beyond the control the supplier not involving the supplier's fault or negligence. Such events may include, but are not restricted to, acts to the purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and fright embargoes.

9.3. If a Force Majeure situation arises, the supplier shall promptly notify the purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the purchaser in writing, the supplier shall continue to perform its obligations under the contract as far as is reasonably practical, and shall all reasonable alternative means for performance not prevented by the Force Majeure event.

9.4. Payment:

9.4.1 Terms of Payment:

1. The company prefers to deal with the supplier on an open account basis, and the payment to be made for each purchase order as the following:

- a. The supplier has to send the following documents: (Invoice origin + five copies), (Certificate of origin + five copies), (Bill of lading 3-negotiable + 5 non-negotiable), (Test certificate (where applicable) + 6 copies), to IDECO company/ financial department, and these documents shall be legalized shipping.
- b. 100% of Payment will be released within one month after the receipt of goods and acceptance at IDECO stores.
- c. Payment will be released on first week of each month.

2. In case the supplier insists on L/C as a method of payment, all /LC charges will be borne by the supplier and charge to his own account for each purchase order and the terms will be as follows:

- a. The L/C will be confirmed and irrevocable but has to be acceptance L/C and the supplier has to send the following documents: (Invoice origin + five copies), (Certificate of origin + five copies), (Bill of lading 3-negotiable + 5 non-negotiable), (Test certificate (where applicable) + 6 copies), and these documents shall be legalized shipping.
- b. 100% of Payment will be released after submitting IDECO's acceptance certificate to the bank within one month after receipt of goods at IDECO's stores.
- c. Payment will be released on first week of each month.

9.4.2 **Currency of Payment:** The contract price will normally be paid in the currency or currencies in which the price has been stated. The purchaser, however, reserves the right to make payments in the currencies of the countries of origin of goods and services at the exchange rates applicable at the time of payment of the contract price.

9.4.3 Any advance payments made by the purchaser are payments on account and do not constitute a deposit, the abandonment of which would entitle either party to terminate

the contract.

- 9.4.4** If delivery has been made before payment of the whole sum payable under the contract, material delivered shall, to the extent permitted by the law of the country where the plant is situated after delivery, remain the property of the Vendor until such payment has been effected. If such law does not permit the Vendor to retain the property in the material, the Vendor shall be entitled to the benefit of such other rights in respect thereof as such law permits him to retain. The purchaser shall give the Vendor any assistance in taking any measures required to protect the Vendor's right of proper or such other rights as aforesaid.
- 9.4.5** A payment conditional on the fulfillment of an obligation by the Vendor shall not be due until such obligation has been fulfilled, unless the failure of the purchaser is due to an act or omission of the purchaser.
- 9.4.6** If the purchaser delays in making any payment, the Vendor may postpone the fulfillment of his own obligations until such payment is made, unless the failure of the purchaser is due to an act or omission of the Vendor.
- 9.4.7** If delay by the purchaser in making any payment is due to one of the circumstances mentioned in clause 10, the Vendor shall not be entitled to any interest on the sum due.
- 9.4.8** Save as aforesaid, if the purchaser delays in making any payment, the Vendor shall on giving to purchaser within a reasonable time notice in writing be entitled, and without requiring the consent of any court, to terminate the contract and thereupon to recover from the purchaser the amount of his loss up to the value of the material, the payment for which has been unreasonably delayed.

10. Guarantee:

- 10.1.** Subject as hereinafter set out; the Vendor undertakes to remedy any defect resulting from faulty design, materials or workmanship.
- 10.2.** This liability is limited to defects which appear during the period (hereinafter called the Guarantee Period) of fifteen months from date of dispatch ex-works or twelve months from the date of setting to work whichever shall be the later.
- 10.3.** In fixing this period due account has been taken of the time normally required for transport as contemplated in the contract.
- 10.4.** In respect of such parts (whether of the Vendor's own manufacture or not) of the material as are expressly mentioned in the contract, the Guarantee Period shall be such other period (if any) as is specified in respect of each of such parts.
- 10.5.** The Guarantee period shall start from the later of the dates mentioned in paragraph 2 above. If, however dispatch ex-works is delayed for a period in excess of three months due to a cause beyond the control of the Vendor the Guarantee Period shall not extend beyond eighteen months from the date the material was ready for dispatch ex-works.
- 10.6.** The Guarantee period is based on the continuous use of the material in service for 24 hours every day.

- 10.7.** A fresh Guarantee Period equal to that stated in paragraph 2 hereof shall apply, under the same terms and conditions as those applicable to the original material, to parts supplied in replacement of defective parts or to parts renewed in pursuance of this clause. This provision shall not apply to the remaining parts of material, the Guarantee Period of which shall be extended only by a period equal to the period during which the material is out of action as result of a defect covered by this clause.
- 10.8.** In order to be able to avail himself of his rights under this clause the purchaser shall notify the Vendor in writing without delay of any defects that have appeared and shall give him every opportunity of inspecting and remedying them.
- 10.9.** On receipt of such notification the Vendor shall remedy the defect forthwith and at his own expense. Save where the nature of the defect is such that it is appropriate to effect repairs on site, the purchaser shall return to the Vendor any part in which a defect covered by this clause has appeared, for repair or replacement by the Vendor, and in such case the delivery to the purchaser of such part properly repaired or a part in replacement thereof shall be deemed to be a fulfillment by the Vendor of his obligations under this paragraph in respect of such defective part.
- 10.10.** The Vendor shall bear all the costs and risks of the transport of defective parts or equipment and their replacements.
- 10.11.** Where, in pursuance of paragraph 9 hereof, repairs are required to be effected on site, the conditions covering the attendance of the Vendor's representatives on site shall be such as may be specially agreed between the parties.
- 10.12.** Defective parts replaced according to this clause shall be placed at the disposal of the Vendor.
- 10.13.** If the Vendor refuses to fulfill his obligations under this clause or fails to proceed with due diligence after being required so to do, the purchaser may proceed to do the necessary work at the Vendor's risk and expense, provided that he does so in a reasonable manner.
- 10.14.** The Vendor's liability does not apply to defects arising out of materials provided, or out of a design stipulated, by the purchaser.
- 10.15.** The Vendor's liability shall apply only to defect that appears under the conditions of operation provided for by the contract and under proper use. It does not cover defects due to causes arising after the risk in the material has passed in accordance with clause 6. In particular, it does not cover defects arising from the purchaser's faulty maintenance or erection, or from alterations carried out without the Vendor's consent in writing, or from repairs carried out improperly by the purchaser, nor does it cover normal deterioration.
- 10.16.** Save as in this clause expresses, the Vendor shall be under no liability in respect of defects after the risk in the material has passed in accordance with clause 6, even if such defects are due to causes existing before the risk so passed. It is expressly agreed that the purchaser shall have no claim in respect of personal injury or of damage to property not the subject matter of the contract or of loss of profit unless it is shown from the circumstances of the case that the Vendor has been guilty of gross misconduct.

10.17. The vendor is required to transport all the defective or not in accordance materials, from our stores within a month from date of notification. All costs and expenses of transportation shall be borne by the vendor. Unless otherwise agreed. IDECO has the right to deal with the defective materials in a proper way.

10.18. Gross misconduct "does not comprise any and every lack of proper care or skill, but means an act or omission on the part of the Vendor implying either a failure to pay due regard to serious consequences which a conscientious contractor would normally foresee as likely to ensue, or a deliberate disregard of any consequences of such act or omission.

11. Relief:

11.1 The following shall be considered as cases of relief if they intervene after the formation of the contract and impede its performance: industrial disputes, and any other circumstances (e.g. fire, mobilization, requisition, embargo, currency restrictions, insurrection, shortage of transport, general shortage of materials and restrictions in the use of power) when such other circumstances are beyond the control of the parties.

11.2 The party wishing to claim relief by reason of any of the said circumstances shall notify the other party in writing without delay on the intervention and on the cessation thereof.

11.3 The effects of the said circumstances so far as they affect the timely performance of their obligation by the parties, are defined in clauses 7 and 8. Save as provided in paragraph 7.5, 7.7, and 8.7, if by reason of any of the said circumstances, the performance of the contract within a reasonable time becomes impossible, either party shall be entitled to terminate the contract by notice in writing to the other part without requiring the consent of any court.

11.4 If the contract is terminated in accordance with paragraph 3 hereof, the division of the expenses incurred in respect of the contract shall be determined by agreement between the parties.

11.5 In default of agreement it shall be determined by the arbitrator which party has been prevented from performing his obligations and that party shall bear the whole of the said expenses. Where the purchaser is required to bear the whole of the expenses and has before termination of the contract paid to the Vendor more than the amount of the Vendor's expenses, the purchaser shall be entitled to recover the excess. If the arbitrator determines that both parties have been prevented from performing their obligation, he shall apportion the said expenses between the parties in such manner as to him seems fair and reasonable, having regard to all the circumstances of the case.

11.6 For the purposes of this clause "expenses" means actual out of pocket expenses reasonably incurred, after both parties shall have mitigated their losses as far as possible. Provided that as respects material delivered to the purchaser the Vendor's expenses shall be deemed to be that part of the price payable under the contract which is properly attributable thereto.

12. Limitation of Damages:

12.1. Where either party is liable in damages to the other these shall not exceed the damage which the party in default could reasonably have foreseen at the time of the formation of the contract.

12.2. The party who sets up a breach of the contract shall be under a duty to take all necessary

measures to mitigate the loss which has occurred provided that he can do so without unreasonable inconvenience or cost. Should he fail to do so, the party guilty of the breach may claim a reduction in the damages.

13. Rights at Termination: Termination of the contract from whatever cause arising shall be without prejudice to the rights of the parties accrued under the contract up to the time of termination.

14. Arbitration and Law Applicable:

14.1 Any dispute, question or controversy shall arise between the purchaser and the contractor concerning this contract the matter in dispute shall be referred to an arbitration committee composed of three (3) arbitrators. One arbitrator shall be nominated by the purchaser and one by the contractor, and the third arbitrator shall be appointed by both parties. If either party fails to appoint his arbitrator within one month of the appointment of the arbitrator by the other party, or if the two parties fail to agree on the third arbitrator within two months of the date of the request to refer the dispute to arbitration, such arbitrator shall be appointed by the president of the highest court in Jordan at the request of either or both parties.

14.2 The decision of the arbitrators shall be final and binding on both the purchaser and the contractor. Any such reference shall conform to the statutory enactment or regulation governing arbitration as may be in force in Jordan at the time. The assessment of costs incidental to the reference and award respectively shall be at the discretion of the arbitration committee.

15. Ordering Procedures and Delivery Period

15.1. IDECO Company prefer Delivery period for each call - off purchase order for the required material within 90 days, and the priority will be given to the contractor who decrease the delivery period for purchase orders.

15.2. The contractor shall determine the delivery period which should be considered as the contractual delivery period for each call-off purchase order where this period is an important factor during the evaluation and priority should be given to earlier.

15.3. The purchaser will issue official call-off purchase orders for the required quantity including the date of adjust price as per London Metal Exchange (LME).

15.4. The contractor shall send to the purchaser a revised price letter for the required quantity in the call-off purchase order, and the total value for each call-off purchase order will be calculated in according to the formula mentioned, and based on LME Copper & Aluminum closing price.

15.5. The purchaser has to send a final awarded letter for each call-off purchase order containing the final total order value for the required items, enabling the contractor or his representative to pay the stamps fees.

15.6. The contractor shall determine the minimum and maximum value per each purchase order, and determine the number of times of purchase orders can be delivered within two years. And the priority will be given to the contractor who minimize the purchase order value and maximize the number of times of purchase orders.

Tendering Instructions

1. The Tender shall be made in one copy of the accompanying form; however, all blanks and schedules shall be filled up in ink, and signed without alteration to the form of tender. If any such alteration were made, or if these Instructions were not fully complied with, the tender may be rejected. The tenderer; however, is at liberty to add any further details that he may deem desirable and, in the event of his so doing, shall print or type such details and annex the added matter to the tender submitted by him. Such additional details shall not be binding upon the purchaser unless they shall be subsequently incorporated in the contract.
2. One copy of the tender, and its accompanying documents, filled up as directed, together with the drawings, catalogs, and relevant documents called for, must be enclosed in a secure envelope endorsed (Tender for Contract) No. **(105/2022)** but bearing no other mark from which the identity of the tenderer can be ascertained.
3. All correspondences in connection with this tender and all matters accompanying the tender that are relevant to its examination shall be in English language and expressed in metric units.
4. The tender is to be held open for acceptance or rejection for a validity period of (120) days from the time fixed for opening the tenders.
5. Tenders received prior to the time fixed for opening of tenders will be securely kept, unopened. Tenders received after that time will be rejected. The purchaser bears no responsibility for premature opening of tenders not properly addressed or identified.
6. Tenders may be withdrawn by formal request received in writing from the tenderer prior to the time fixed for opening. If for any reason the tender should be withdrawn after the time fixed for opening and before expiry of the said validity period, the purchaser has the right to retain the full value of the tender bond.
7. The successful tenderer shall abide by the commercial and professional regulations as required by the Ministry of Industry & Trade, Engineering Association and other relevant Institutions in Jordan.
8. Tenderers attention is drawn to the action of customs officers in the discharge of their duties. Whereby air parcels are frequently opened in their own interests and in order to preserve the confidential nature of the tender price, tenderers are urged to pay attention to the:
 - a. To dispatch the completed tender document and any covering letter only by Air Mail which should be endorsed and labeled in the manner laid down in paragraph 10 of the Instructions to Tendering.
 - b. Technical literature and the like may reasonably be sent by Air Parcel or Air Freight but since this would then be separated from the actual Tender, each parcel should contain specific evidence identifying the Tender to which the contents refer.
 - c. The purchaser will not consider late or incompletely delivered tenders or literature supporting tenders due to the action of any customs officer.
9. In the event that the intending signatory does not manufacture one or more of the main sections of equipment and materials, then the tender submitted should give evidence to show that all the obligations imposed by the documents on the intending signatory have been fully understood and

accepted, where applicable, by the manufacturer(s) to whom it would be intended to sub-contract one or more of the main sections of the equipment and materials.

10. For overseas transport of the contractor and his Sub-contractors, suppliers and manufactures must give priority to Jordan shipping national lines, and to Arab shipping companies and their subsidiaries for the shipping of goods, materials provided such companies ships call at the port of export. The contractor shall also give priority to the Royal Jordanian Airlines for air freight shipment and transport of personnel.
11. Tenderer must submit country of origin and name of manufacturer for the offered goods.
12. The foreign bidders who participate in this tender must submit their bids through a registered local agent or through their registered office in Jordan.
13. For all manufacturers from inside Jordan it is quite essential that they have JQM for their products and the purchaser will have the right to accept or reject their offer if they did not submit the JQM certificate with their offer.
14. If samples were not re-claimed by the tenderer within 60 days from date of order all samples shall remain the property of the purchaser.
15. The purchaser will not be responsible for, nor to pay for, any expenses or losses which may be incurred by a tenderer in the preparation of his tender.
16. If the tenderer has any doubt about the meaning of any portion of the General Conditions, Specifications, Drawings, he shall clarify such doubts before submitting his tender, or in case of any further information can be obtained by an application in writing to the director general.
17. Tenderers are particularly directed that the amount entered on the form of tender shall be a fixed price for performing the contract strictly in accordance with the bound document, and shall be the sum total of all the amounts printed into and entered by the tenderer upon the schedule of prices.
18. Tender price shall include all incidental and contingent expenses.
19. The tender shall be accompanied by a tender bond in the form of a Bank Guarantee valid for at least 120 days from the time fixed for closing date of tender, or certified check in favor of and payable to the purchaser for a sum of.....as a guarantee of good faith. This bond is to be issued by any approved bank in Jordan. The bond will be returned to the unsuccessful tenderer within 120 days from the time fixed for opening the tenders or at such earlier time as a tender shall have been accepted by the purchaser. In the case of the successful tenderer, the bond will, subject to the conditions of contract, be returned as soon as a formal contract agreement and a performance bond have been entered into.
20. **The successful tenderer has to submit a performance bond for each call-off purchase order will be issued by the purchaser equal to (10) percent of the total call-off purchase order value within (30) days from date of the final awarded letter for purchase order.**
21. **The performance bond for each call-off purchase order should be valid for period of (15) months from the date of the purchase order.**

- 22. If the contractor fails for any reason to submit the required performance bond within (30) days from order letter date, the purchaser has the right to confiscate the bid bond and any other submitted performance bond, and the awarding letter for issued call-off purchase order will be cancelled too.**
- 23. If the successful tenderer fails for any reason to submit the required performance bond within (30) days, the purchaser has the complete right to reserve the value of materials supplied, and payment will not release till the successful tenderer submit the required performance bond. And the bid bond will not return to the tenderer unless the performance bond shall submit to the purchaser according to tender conditions.**
- 24. The tenderer shall state in his tender the name or names of the sureties, insurance company, or bank proposed for guaranteeing the performance of the contract.**
25. Prices are highly recommended to be on the basis of C&F IDECO STORES. However, C&F AQABA port or Amman customs are also accepted.
- 26. Stamp duty and award fees are payable on Jordanian contracts according to Jordanian laws and, after the placing of a contract, it is the contractor's responsibility to purchase legal stamps to the requisite amount depending on the contract value for each purchase order.**
27. If after receipt of tenders, the purchaser finds any difference between prices shown on the form of tender in writing and in numerals, then the price shown in writing shall be considered correct by the purchaser and the tenderer. If any discrepancies are found between the total in the price schedule and the total obtained by adding the products of each quantity and its particular rate then, whether the price shown on the form of tender in numerals or in writing corresponds or not, the total obtained by adding the products of the quantities and their particular rates shall be considered by the purchaser and the tenderer as the tender price.
28. Tender revaluation will be consistent with the terms and conditions set forth in the tender document. In addition to the tender price adjusted to correct arithmetical errors, other relevant factors such as the time of completion of delivery or construction, operating costs where applicable, or the efficiency and compatibility of the equipment, the availability of service and spare parts, and reliability of construction methods proposed will be taken into consideration, to the extent and in the manner specified in the tender documents, in determining the evaluated tender most advantageous to the purchaser. For comparison of all tenders, the currency or currencies of the tender price for each tender will be valued in terms of Jordanian Dinars. The rates of exchange to be used in such valuation will be the selling rates published by the central bank of Jordan and applicable to similar transactions, on the day tenders are opened unless there should be a change in the value of the currencies before the award is made. In the latter case, the exchange rates prevailing at the time of the decision to notify the award to the successful tenderer may be used.
- 29. The purchaser does not bind himself to accept the lowest or any tender, nor to assign any reason for the rejection of any tender, nor to purchase the whole of the equipment and materials specified. The purchaser has the right to purchase part of the tender, even if it is only one item from the schedule of rates and prices.**
30. The tenderer shall submit with his tender in order of the relevant clauses, a statement of any departures from specifications, or he can fill in the related schedule attached herewith. Notwithstanding any description, drawings, or literature which may be submitted, all details other than those in the statement of departures shall be assumed to be in accordance with the specification.

31. Although IEC standards for workmanship, equipment and materials, have been selected in this specification as a basis of reference, standards and specifications of other countries and recommendations of other international standard organizations will be acceptable provided that they are substantially equivalent to the designated standards and provided further that the tenderer submits for approval detailed specification which he proposes to use.
32. References to brand names or catalog numbers, if any, in this specification have been made only for that equipment for which it has been determined that a degree of standardization is necessary to maintain certain essential features. In certain instances, such references have also been made for purpose of convenience to specify the requirements. In either case offers of alternative goods which have similar characteristics and provide performance and quality at least equal to those specified are acceptable.
33. Where compliance with a specific standard specification is called for the standard specification used shall be that in force at the time of tender.
34. **After Awarding Tenders, winner tenderer will be assessment according to quality of good, delivery period, service after sale, and assessment weight will be considered in coming tenders' evaluation.**
35. Where the contractor, who was awarded the bid, ceased or failed in implementing the conditions of the bid; IDECO Company has the right to take the appropriate decision on the confiscation of the amount of guarantee or insurance provided by the bidder upon his participation in the tender, In addition, the IDECO company has the right to the restriction of participation of this bidder in all of the company's bids for the duration seen appropriate.
36. **The purchaser has the complete right to reply on contractor's clarifications during 7 days, and during this period there is not exemption from incurred penalty for the event.**
37. **The Irbid Electricity Company shall be entitled to penalize the contractor (late to supply the required materials by tender or tender) the value of the fine due to the Irbid Electricity Company imposed by the Regulatory Authority of the Energy Sector as a result of the company's failure to comply with the required periods in executing the specified subscriber transactions Treatment is the delay of the supplier in the supply of material or materials necessary in the implementation of transactions subscribers.**

General Requirements Standards and Regulations

- The following general requirements will apply, in so far as they may be applicable, to material to be supplied under this particular contract.

1. Design and Construction:

In complying with the requirements of the specification both with respect to arrangement and detail, design is to conform to the best current engineering practice. Each of the several parts of the material is to be of the maker's standard design provided that this design is in general accordance with the specification.

The essence of design should be simplicity and reliability in order to give long continuous service with high economy and low maintenance cost. Particular attention should be paid to internal and external access in order to facilitate inspection, cleaning and maintenance. The design dimensions and materials of all parts are to be such that they will not suffer damage as a result of stresses under the most severe conditions. Fully detailed specifications of the several parts of the material are to be submitted describing particularly the materials to be used. The materials used in the construction of the material are to be of the highest quality and selected particularly to meet the duties required of them. Mechanisms are to be constructed to avoid sticking due to rust or corrosion. Workmanship and general finish are to be of the highest class throughout. All similar parts of the material are to be interchangeable.

All equipment is to operate without undue vibration and with the least possible amount of noise and is not to cause a nuisance. All equipment is to be designed to minimize the risk of fire and any damage, which may be caused in the event of fire.

The equipment is also to be designed to prevent ingress of all vermin, accidental contact with live parts and to minimize the ingress of dust and dirt. The use of materials, which may be liable to attack by termites or other insects, is to be avoided.

2. Compliance with Standards:

Although the standards for workmanship, material, and equipment have been selected in these specifications as a basis of reference, standards and specifications of the other bank member countries and recommendations of standards international organizations will be acceptable provided they are substantially equivalent to the designated standards and provided furthermore that the contractor submits for approval detailed specifications which he proposes to use. Reference to brand names or catalog numbers if any in these specifications have been made only for that equipment for which it has been determined that a degree of standardization is necessary to maintain certain essential features. And in certain cases such references have also been made for purposes of convenience to specify the requirements, in either case offers of alternative goods, which have similar characteristics and provide performance and quality at least equal to those specified are acceptable. If the contractor offers materials, equipment, design calculations or tests, which conform to standards other than those specified, full details of the differences between the proposed standards and that specified in so far as they affect the design or purpose of the equipment, are to be supplied by the contractor if called upon to do so by the engineer, where required by the engineer for approval purposes, the contractor shall supply, without charge, duplicate copies of the proposed standards with English translations of the relevant portions. The contractor shall have available in his place of business (or in his supplier's works) the relevant copies of standards or codes used for the use of the Engineer.

3. Statutory Regulations

The materials, equipment and instruments forming part of this contract are to comply in all respect with any relevant local statutory regulations, by laws & orders currently in force.

4. Language

English language shall be used in all documents contained in the tender and in all correspondence between the contractor and engineer. Whenever anything is required under the terms of the contract to be written marked, printed or engraved, the English language shall be used and duplicated in Arabic except where otherwise provided in this specification.

5. Correspondences

All correspondences on matters arising out of the contract shall be addressed by the contractor to Engineer and not directly to but copied to the purchaser.

7. Units of Measurement

In all correspondence, in all technical schedules, on all drawings and for all instrument scales, SI units of measurement are to be employed. On drawings where IEC or other units have been used it will be in order if the equivalent SI measurement is suitably marked in addition.

8. Contractor's Responsibilities

Unless stated specifically to the contrary in the tender with full supporting explanations, the contractor will be deemed to have concurred as a practical manufacturer with the design and layout of the works as being sufficient to ensure reliability and safety in operation, freedom from undue stresses and satisfactory performance in all other essentials as a working material.

9. Compliance with Specification

Notwithstanding any descriptions, drawings or illustrations which may have been submitted with the tender, all details other than those shown on the schedule of departures will be deemed to be in accordance with the specification and the standard specification and codes referred to therein.

No departures from the specification except those shown on the schedule of departures and approved by the purchaser are to be made without the written approval of the Engineer.

10. Drawings and catalogues

The Tenderer must submit with his offer all the specification indicating rating, weights, and dimension and time current characteristics of the offered materials.

Before the work is put in hand, dimensioned drawings and diagrams showing all details of the material, and materials to be used are to be submitted to the engineer for approval.

No wiring or connection diagrams shall be submitted for approval unless prior approval has been obtained for schematic diagrams, which are to include control and protection schematics showing the facilities being provided and the working of the schemes.

The drawings are to be submitted in quadruplicate and as soon as possible after the commencement date of the contract, and in any case in sufficient time to permit modifications to be made, if such deemed necessary by the Engineer without delay in the delivery of the contract work. The drawings submitted are to be modified as necessary if requested by the Engineer and resubmitted for final approval. If the contractor requires urgent approval of any drawing to avoid delay in the delivery of the contract works, he is to advise the Engineer accordingly when submitting the drawing. One copy of each drawing and diagram shall be sent direct to the purchaser. It is to be understood, however, that approval of the drawings will not exonerate the contractor from any responsibility in connection with the work. After all items of material have been manufactured and accepted three 35mm negatives of each drawing previously approved is to be

provided together with one reproducible on gauge polyester base film or similar and two prints on heavy gauge white paper from such drawings as may be required to show the detail and arrangement of the material as made. All drawings submitted by the contractor or by any sub-contractor are to have the following particulars in the lower right hand corner in addition to the contractor's name:

IRBID DISTRICT ELECTRICITY COMPANY, CONTRACT NUMBER (105/2022).

11. Program of work

Within one month of acceptance of the tender, the contractor is to forward to the engineer four copies of chart detailing the material manufacture and delivery Program for the complete contract work for his comment or approval. Copies of the approved chart, as required by the engineer, are to be provided by the contractor. The chart is to indicate the various phases of work for all items of the contractor from the commencement of the contract to its final completion, e.g. design, ordering, of materials, manufacture and delivery. If at any time during the execution of the contract it is found necessary to modify the approved chart, the contractor is to inform the engineer and submit a modified chart for approval. Such approval is not to be deemed to be consent to any amendment of the completion date stated in the schedule.

12. Progress Report and Meetings

a. Progress Reports

At monthly intervals after approval of the Program chart, the contractor is to submit to the Engineer and the purchaser written detailed progress reports in triplicate in an approved form, indicating the stage reached in the design, ordering of material, manufacture and delivery of all components of the material. The reports should include details of any delays and the remedial action proposed. These reports are to be forwarded promptly so that on receipt by the engineer the information contained therein is not more than seven days out of date.

b. Meeting:

If during the execution of the contract the Engineer considers the progress position of any section of the work to be unsatisfactory, he will be at liberty to call such meetings, either in Irbid office, or at the contractor's work, as he deems to be necessary. If required by the Engineer a responsible representative from the contractor's works is to attend such meetings. Access to the contractors and sub-contractor's works is to be granted to the engineer at all reasonable times for the purpose of ascertaining progress.

13. Packing

Each item to be packed properly or protected for shipment and be capable of sustaining heavy handling during transportation from the place of manufacture to the purchasers stores in Irbid and hence to site and to be suitable for storage for a period of 6 to 12 months after to site.

Tube ends and other similar open ends are to be protected from both external damage and ingress of dirt and moisture during transit and while at purchaser's stores. Flanged pipes are to have their open ends protected by adhesive tape or jointing and then be covered with a wooden blank flange secured by service bolts. Precautions are to be taken to protect shafts and journals where they rest on wooden or other supports likely to contain moisture. At such points, wrappings impregnated with anti-rust composition or vapor phase inhibitors are to be used with sufficient strength to resist chafing and indentation due to movement which is likely to occur in transit. Protective wrappings and impregnation are to be suitable for a period of three months. In the case of ball or roller bearings installed in any items of material, precautions are to be taken to avoid indentation of the bearing races.

Metal bindings of cases are to be of corrosion resistant material position with struts or cross battens and not with wood chocks wedged in place, unless they are fastened firmly in place. All struts or cross battens are preferably to be supported by cleats fixed to the case above and below to form ledges on which the batten may rest. Cases are to be unopened after packing to prove that there is no movement of contents.

Where parts are required to be bolted to the sides of the case, large washers are to be used to distribute the pressure and the timber is to be strengthened by means of a pad.

Where practicable, all indoor items such as electric motors, switch and control gear, instruments and panels, machine components, etc., are to be cocooned or covered in polyethylene sheeting, sealed at the joints and the enclosure provided internally with a desiccator. Each crate or package is to contain a packing list in a waterproof envelope. All items of material are to be clearly marked for easy identification against the packing list. All cases, packages, etc. are to be clearly marked on the outside to indicate the total weight, to show where the weight is bearing and the correct position of the slings and are to bear an identification mark relating them to the appropriate shipping documents. Stencil marks on the outside of casings are to be indelible. The Engineer may require inspecting and approving the packing before the items are dispatched but the contractor is to be entirely responsible for ensuring that the packing is suitable for transit and such inspection will not exonerate the contractor from any loss or damage due the faulty packing.

Irbid District Electricity Co.

Form of Bid Bond

Tender No. (105/2022)

Dear Sir,

We are pleased to inform you that we guarantee M/S
for the amount of.....in order to allow them to submit an offer
for the due performance of the undertaking and obligation as specified in their Tender for Contract
No.This Guarantee shall remain valid for a period of one hundred twenty days
from the time fixed for opening the Tenders by IRBID DISTRICT ELECTRICITY CO. LTD.

This Guarantee shall be free from any interest and will be extended or paid in cash upon your first
request in any or required, without the need for natural warning or judicial proceedings and without
any rights to delay, oppose, or stop payment on our part, or on the part of the Tenderer or any of his
representatives whom over. This Guarantee shall be deemed valid until the submittal of a duly
executed Performance Bond.

Signed..... Bank (Surety)

Irbid District Electricity Co. Lt

Form of Performance Bond

Tender No. (105/2022)

Dear Sirs,

At the request of bank (the Foreign Bank) and on behalf of M/S..... Contractor's Name and Address), we..... Bank (the Local Bank) issue in your favor our irrevocable and unconditional Performance Bond No.....in the amount of..... (In word), in this connection we Bank (the Local Bank) hereby consider ourselves responsible forth unconditional payment to you or to your authorized representatives of the above sum on your first written demand in whole or in part notwithstanding any objections on the part of the above named contractor and without any need for natural warning or judicial proceedings.

This Bond will expire on and shall be renewed automatically for a period of months and for consecutive similar periods until it is returned by you to us.

Signed **Bank (Surety)**

Technical Specifications

1. Climate Particulars:

The following is applicable unless otherwise is mentioned:

- | | |
|---|--|
| a. Maximum Ambient Temperature | 50 C° |
| b. Minimum Ambient Temperature | -10 C° |
| c. Design temperature | 75 C° |
| d. Maximum daily range of air temperature | 20 C° |
| e. Maximum Wind Pressure | 700 n/m ² |
| f. Ice Thickness | 10 mm. |
| g. Snow Falls | 1-4 days – 30 cm. |
| h. Site altitude | 0-1400m ASL |
| i. Average annual rainfall | 40cm during November–April |
| j. Relative humidity in the range | 30 to 60%. |
| k. Average number of thunder storms | 15 days / year |
| l. Prevailing wind winter average daily approximately | 5-8 m/s, with gust up to 30 m/s. |
| m. Summer wind average afternoon | 10-13 m/s, during morning generally light and variable, gust speed up to 30 m/s. |

2. Power System Particulars:

The plant and materials supplied shall be suitable in all respect for continuous operation in the existing system having the following data:

Normal Voltage	415V	11KV	33KV
Maximum Voltage	500V	12 KV	36KV
No. Of phases	3	3	3
System frequency (Hz)	50	50	50
No. of wires	5	3	3
Fault level (MVA)	25	350	1500
Fault Current / Duration	*	*	25 kA / 3s
Earth Fault Current / Duration *		3 kA / 3 s	3 kA / 3 s
Neutral point Earthing	Solid	Resistance	Resistance
Conductor arrangement	Vertical	Horizontal	Horizontal

3. **All low voltage equipment must be capable of operating within range of +10% to –15% of the rated voltage, tripping devices shall be capable of operating within the range +10% to –25% of the rated voltage.**
4. **Detailed Technical Specifications for each item are shown in Appendix A. All tables in Appendix A must be filled by the tenderer.**
5. **Drumming:** All cables shall be supplied on robust drums of approved materials and construction suitable to withstand very rough transport and handling and to enable conductors or cables to be pulled out smoothly. Drums shall be non- returnable and, if made from timber, shall be pressure – impregnated against fungal and insect attack. Wooden drums shall be

logged with closely fitting battens in accordance with BS .1559 or such other standard as may be approved. Battens shall be firmly secured to the drum flange using steel tape not less than 25 mm wide and 2 mm thick and stapled to at least every third batten. Drum spindle holes shall be reinforced by steel plates. Drum diameters and the maximum width of drums shall be suitable for the jacks provided under this contract. Each drum shall bear a distinguishing number on the outside of flange. Particulars of the conductor or cable, i.e. Voltage, conductor size and material, number of cores, length type code name and gross and net weights shall also be clearly shown on one flange, together with an approved mark. The gross weight of cable drums shall be clearly shown on one flange. The direction of rolling shall be indicated by an arrow on each flange. The method of marking shall be by gouging, burning or other legible and indelible method approved by the Engineer. Immediately after works tests both ends of cables shall be sealed against the ingress of moisture, dirt and insects and the end projecting from the drum shall be adequately protected against mechanical damage during handling. Cut ends of bare conductors shall be also treated in an approved manner. Where applicable, cables and conductors shall be supplied in maximum drum length, bearing in mind the transport limitations in gaining access to the site. No drum shall contain more than one length.

Maximum Drum Length for Each SIZE for items.

The maximum length in each drum should be as follows:

item	CABLE SIZE	LENGTH IN M
1	Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable	1000 + 10%, - 5 %
2	Rated 0.6/1kV V, 1x120 mm ² , copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable	1000 + 10%, - 5 %
3	Rated 0.6/1kV, 1X35 mm ² , copper circular compacted conductor, PVC -insulated / PVC sheath, non-armored cable with carbon black content	1000 + 10%, - 5 %

Inspection and Testing

1. **General Requirement**

The whole of the material by the contract will be subject to inspection and testing by the engineer during manufacture and on completion. The approval of the engineer or the passing of any such inspection or test will not; however; prejudice the right of the purchaser to reject the material if it fails to comply with the specification when erected or to give complete satisfaction in service. The costs of all tests and inspection shall be borne by the contractor and shall be deemed to be included in the contract price. Before any material is packed or dispatched from the main or sub-contractor's works, all tests called for are to have been successfully carried out in presence of the engineer.

Adequate notice shall be given when the material is ready for inspection or test and every facility shall be provided by the contractor and his inspection and his sub-contractors to enable the Engineer to carry out the necessary inspections and tests.

Triplicate copies of all principal test records and test certificates shall be supplied to the Engineer for all tests carried out in accordance with the provisions of the contract.

2. **Sub-Contractors**

Within two months of acceptance of the tenders the contractor shall forward to the engineer a list of all sub-orders placed or intended. The contractor shall submit three copies of all sub-orders or selected by the engineer for progress or inspection. One copy of all drawings referred to in the sub-order is to be submitted unless otherwise agreed by the engineer. The drawings and sub-orders submitted to the engineer will cover all major components which are subject to electrical and mechanical pressure or stress when the material is in operation and also auxiliaries and stores which will be dispatched to site direct from the sub-contractor's work. For the purpose of this clause inter-works orders are to be treated as sub-order. Sub-orders are to include a statement advising the sub-contractor that the items being order will be subject to inspection and test by the Engineer. It is important that all copies of such orders are clearly marked with the main contractor's name and the following reference:

IRBID DISTRICT ELECTRICITY Co. CONTRACT No (105/2022)

Sub-Contractors are to comply with all the applicable requirements of this specification. Orders issued by the sub-contractor are also to include the main contractor's reference on their sub-order in addition to the above-mentioned heading.

3. **Material Tests**

The contractor shall provide test prices as required by the engineer to enable him to determine the quality of the material supplied free of charge and any cost of the tests shall be borne by the contractor. If any test pieces fail to comply with the requirements of the appropriate specifications for the material in question, the engineer may reject the whole of the material represented by that piece, the contractor's designers and metallurgists will be consulted before any material is so rejected. In the event of the engineer being furnished with the certified particulars of the tests which have been carried out for the contractor by the suppliers of the material, he may, at his own discretion, dispense with the previously mentioned tests entirely.

4. **Tests at Manufacture's Works**

Works tests shall include all routine, electrical, mechanical and hydraulic tests in accordance with the relevant IEC standard or other standard may be approved except where departures there from and modifications thereto are embodied in this specification. For material not covered by an IEC or British standard or specifically mentioned in this specification the tests shall be agreed with the Engineer. After satisfactory completion of the witnessed tests at the works, the material shall be submitted for the engineer's approval preparatory to shipping. No item of material is to be dispatched to site until the Engineer has given his approval in writing.

5. Test Certificates

Triplicate sets of all principal test records test certificates and performance curves shall be supplied for all tests carried out in accordance with the provisions of this contract. These test records, certificates and performance curves shall be supplied for all tests, whether or not they have been witnessed by the engineer. The information given in such test certificates and curves shall be sufficient to identify the material or equipment to which the certificates refers and should also bear the contract reference and heading as given in clause 7.2 of this section.

6. Rejection of Plant

IF Any item of material or component which fails comply with the requirements of this specification in any respect whatsoever at any stage of manufacture, test, erection or on completion at site may be rejected by the engineer either in whole or in part as he considers necessary, and after adjustment or modification if so directed by the Engineer, the contractor shall submit the item for the item for the further inspection and / or test. In the event defects of such a nature that the requirements of this specification cannot be fulfilled by adjustment or modification shall be replaced by the contractor, at his own expense, to the entire satisfaction of the engineer.

7. Maintenance

The contractor is to guarantee the efficient and good working of the material supplied under the contract for a period of twelve months (Gregorian) from the date of delivery of the material to Irbid, in accordance with the General conditions of contract.

8. Tests

All tests meet the requirements of latest international standard mentioned in the contract or any relevant standard and as shown in [Appendix A](#).

Special Requirements

The Below mentioned requirements shall have a precedence in all of the preceding specifications and requirements, and the tenderer is kindly requested to strictly follow.

1. The Tender Calls for: {»} variable Prices.
2. The manufacturer shall print IDECO Contract No. (**105/2022**), country of origin and purchase order No. () along with the stock code corresponding to the certain material as seen in the Stock Code Tape in the invitation to tender table no.2 - page (3), and the message already described above. And QR code contain the following message shall be printed on nameplate of required materials. (**IDECO Tender No. 105/2022, Purchase order No., Stock code xxxx xxxx as mentioned in table No.2., Serial number, Manufacturer name, Manufacturing date**).
3. Catalogues: a set of the manufacturer's catalogues shall be attached to the tender.
4. The material required in each purchase order shall be inspected by two IDECO engineers, and All Inspection Costs (Visa, Air Tickets, Hotel, Accommodation, Transportation, etc.) of at least (2) IDECO representative engineers, at the manufacturer house, for each purchase order shall be borne by the contractor.
5. When the visit to a factory is required for evaluation purposes before signing the agreement, the tenderer must do all necessary arrangement for this visit; the related cost of visit by IDECO team will be borne by the manufacturer.
6. The contractor shall nominate third party laboratory and cost of inspection by third party as shown in Schedule No. 13, in case the attendance of ideco engineers is not applicable due to any reason.
7. Same as mentioned in the previous technical specifications, No further special Requirements.
8. The material safety data sheet (MSDS) of all equipment / materials is required to be submitted with the offer.
9. The tenderer shall consider the USD as the only accepted reference currency under this contract.
10. The contractor shall have calibrated equipment's by authorized party for inspection purposes.
11. PCB'S test shall be conducted in IDECO laboratory, and based on the test results, the required transformers will be approved or not.
12. The technical drawing approval shall be submitted during 7 days from order letter date, any delay in this period from contractor side, the delivery period will start after 7 days from order letter. (In case the contractor offered delivery period from order letter date and drawing approval).
13. **The purchaser has the complete right to reply on contractor's clarifications during 7 days, and during this period there is not exemption from incurred penalty for the event.**
14. After Awarding Tenders, winner tenderer will be assessment according to quality of good, delivery period, service after sale, and assessment weight will be considered in coming tenders' evaluation.
15. Euro one certificate shall be submitted during clearance process, in case the country of origin of the required materials from Europe countries.
16. The manufacturer shall print 128 c bar code in each item as below shape, and bar code character will be submitted to manufacturer at awarding date.



Departures from Technical Specifications and / or Special Requirements

➤ The Tenderer is kindly requested to fill in the below schedule if applicable:

Schedule 1 (Departures).

No.	Required Specification	Departure

Remarks:

- ❖ ...
- ❖ ...
- ❖ ...

Signed:

On behalf of:

Address:

.....

Date2022

Manufacturing and Delivery

- ✓ **Below schedule shall be completed by the tenderer and the periods entered shall be binding on the contractor. All periods entered below are to be in weeks and relate to the placing of the contract. Material shall be shipped uniformly throughout the contract.**
- ✓ **The tenderer shall determine the minimum value per each purchase order, and determine the number of times purchase orders can be delivered within two years. And the priority will be given to tenderer who minimize the purchase order value and maximize the number of times of purchase orders.**

Schedule 2 (Manufacturing & Delivery)

Required	Data for Item (1) Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable	Data for Item (2) Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable	Data for Item (3) Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable
Manufacturer			
Manufacturing Place			
Inspection Place			
No. of purchase orders within 2 years			
Manufacturing Period and Delivery (week) to from purchase order date			
Minimum value per each purchase order. (USD) Based on Cu=8,000 USD/MT			
Maximum Value per each purchase order (USD) Based on Cu=8,000 USD/MT			

PRICE ADJUSTMENT FORMULA

➤ **LME PRICE ADJUSTMENT FORMULA FOR COPPER:**

Final Price = Quoted Price + [[(CLME (CU) – BLME (CU)) x V.F(CU)]
--

Where:

1. **P0:** Quoted Price per unit. (KM) based on the basic price of copper = **8,000** USD/MT.
2. **CLME:** Current copper Price as Per London Metal Exchange Closing Price at awarding date of Purchase Order (**Cash Seller**).
3. **BLME:** the basic price of Copper.
4. **V. F:** Variation factor for copper.

PRICE VARIATION DATA **Schedule 3**

ITEM	Material	Copper Weight of all conductors per 1000 meters (kg)	Variation Factor for Copper V.F
1	Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable		
2	Rated 0.6/1kV V, 1x120 mm ² , copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable		
3	Rated 0.6/1kV, 1X35 mm ² , copper circular compacted conductor, PVC -insulated / PVC sheath, non-armored cable with carbon black content		

Price Summary and Delivery – Schedule No. 4

- The tenderer shall enter in the appropriate columns of this schedule the prices at which each item will be supplied. Prices shall include shipment and delivery to the selected destination seen below based on the following selected transportation obligations.
- transportation obligations shall be indicated by **putting a tick** at the proper following choice:
 CFR - Aqaba Port CPT- Amman Customs CPT- IDECO Stores
- IDECO Company is not exempted from custom duties, sales taxes, import license fees and any other tariffs.
- The tenderer is required to fill in the below tables for **quoted price**, based on the basic price of copper = **8,000 USD** per metric ton as per London metal exchange.
-
- The suppliers shall consider the following equation for final price according to LME.
Final Price = Quoted Price +[(LME(CU) at awarding dated – LME(CU) quoted price) x V.F(CU)].
- The tenderer is required to determine the **CU** weight of all conductors as per Kg\km.
- The tenderer is required to determine the variation factor for copper.
- The tender shall consider the USD as the only accepted reference currency under variable price.

Schedule 4

No.	Quantity (KM) Within 2 years	Material	Unit Price Per KM (USD) Based on CU=8000 USD/MT (P0)	Total Price (USD) Based on CU=8000 USD/MT
1	3.5	Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable		
2	6.5	Rated 0.6/1kV V, 1x120 mm ² , copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable		
3	11	Rated 0.6/1kV, 1X35 mm ² , copper circular compacted conductor, PVC -insulated / PVC sheath, non-armored cable with carbon black content		
Total Contract Price (in words)				

Name(s) of Sureties:

Name(s) and Address of Tenderer:

Tele / Fax:

Signature:

Answer Back Code:

Position of Signatory:

Inspection Details

- In case of foreign material origin, and inspection of material is required, the bidder shall fill up the following table.
- The inspection is required for each purchase order and for 2 IDECO Engineers at least, and the cost shall be borne by the contractor until otherwise agreed.

Schedule No. 13

NO.	Description	
1	Inspection cost in the country of origin per engineer. (If not included in the main offer).	
2	Air flight class.	
3	Transportation cost during the period of inspection (Included/not included).	
4	Residential Hotel Rank.	
5	Daily meals (included/Not included), Number of meals.	
6	Third party for inspection	
6.1	Third party name	
6.2	Inspection cost by third party	

Main Offer details

- The bidder shall fill the following table otherwise his offer may be not considered.

Schedule No.14

NO.	Description	
1	Value and currency of Bid Bond	
2	Payment method (open account/ LC/ Other)	
3	Offer validity	

Tender Agreement Summary
Call off Contract No. (105/2022)

Dear Sir;

1. Having examined the conditions of Contract, specification and schedule for the above Works, the undersigned, offer to manufacture, supply, work, test, and deliver the mentioned works described in the specification and schedules and in accordance with the mentioned conditions of contract, for the sum ofor such other sum as may be ascertained in accordance with the mentioned conditions.
2. We agree that this tender shall be held open for acceptance or rejection for validity period of **120 days** from the date fixed for opening tenders and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
3. Unless and until a formal agreement is prepared and executed, this tender, along with your written acceptance thereof, shall constitute a binding contract between us.
4. If our offer is accepted, we will deliver to Irbid District Electricity Co. Ltd. Within **(30) days** of being called upon to do so a performance bond by bank or insurance company (to be approved in either case by the purchaser) to be jointly and severally bound with us in a sum equal to **10%** of the value of the contract. The form of the performance bond will be as attached hereto. We propose the following Bank or insurance company as surety (or sureties) in this respect: -
.....
5. We undertake if our tender is accepted and on receipt of your acceptance to commence and manufacture, works test, and complete for delivery **ex-works** the whole of the Works offered within (.....) weeks starting from the date of **Order Letter**, and to deliver on the dock at (.....port) - Jordan the whole of the works offered within a further (.....) weeks, or to **IDECO stores** within a further (.....) weeks.
6. We undertake to insure the materials against all risks from the time they leave the works until they are placed on board ship. We understand that marine insurance will be effected by Irbid District Electricity and we will provide details of the materials to be shipped in good time for Irbid District Electricity to arrange for the said marine insurance.
7. A guarantee Period will apply to each section of the works of fifteen months from the date of dispatch ex-works or twelve months from the date of setting to work whichever shall be the later.
8. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated thisday of / / 2022.

Signature.....in the capacity of

Duly authorized to sign Tender for and on behalf of.....

Address..... Occupation.....

Appendix A

Technical Specifications



Irbid - Jordan | Phone: +962 2 7201500 ,+962 2 7201555 | Fax: +962 2 7245495 | P.O.Box: (46) Zip Code: 21110
Email: Ideco@IDECO.com.jo | Website: www.IDECO.com.jo

Item No.1 Rated 600/1000 V, 4x16 mm², copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable:

Technical Specifications

1. **Drumming:** All cables shall be supplied on robust drums of approved materials and construction suitable to withstand very rough transport and handling and to enable conductors or cables to be pulled out smoothly. Drums shall be non- returnable and, if made from timber, shall be pressure – impregnated against fungal and insect attack. Wooden drums shall be logged with closely fitting battens accordance approved standard (preferred BS .1559). Battens shall be firmly secured to the drum flange using steel tape not less than 25 mm wide and 2 mm thick and stapled to at least every third batten. Drum spindle holes shall be reinforced by steel plates. Drum diameters and the maximum width of drums shall be suitable for the jacks provided under this contract. Each drum shall bear a distinguishing number on the outside of flange. Particulars of the conductor or cable, i.e. Voltage, conductor size and material, number of cores, length type code name and gross and net weights shall also be clearly shown on one flange, together with an approved mark. The gross weight of cable drums shall be clearly shown on one flange. The direction of rolling shall be indicated by an arrow on each flange. The method of marking shall be by gouging, burning or other legible and indelible method approved by the Engineer. Immediately after works tests both ends of cables shall be sealed against the ingress of moisture, dirt and insects and the end projecting from the drum shall be adequately protected against mechanical damage during handling. Cut ends of bare conductors shall be also being treated in an approved manner. Where applicable, cables and conductors shall be supplied in maximum drum length, bearing in mind the transport limitations in gaining access to the site. No drum shall contain more than one length.

Maximum Drum Length for Each SIZE for items.

The maximum length in each drum should be as follows

CABLE SIZE	LENGTH IN M
Rated 600/1000 V, 4x16 mm ² , copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable.	1000 + 10% , - 5 %

2. **Cable Marking:** The PVC over sheath shall be embossed with a legend which includes identification of the manufacturer and the following: **IDECO / ELECTRIC CABLE 600/ 1000 V AND length of Drum /m AND TENDER No. --/----**. The letters and figures shall be raised and shall consist of upright block characters arranged along one lines approximately equally spaced around the circumference of the cable. The size of the letters and numerals shall be suitable for cable size. The gap between the end of one set embossed characters and the beginning of the next, shall be not greater than 1 m. All the cables shall be numerated for the total length of each drum at equal intervals of one meter.
3. **Technical specification for Rated 600/1000 V, 4x16 mm², copper circular compacted conductor XLPE insulated / PVC sheath, non-armored cable**
 - a. **General:** This section applies to multi- core cables (XLPE) CROSS-LINKED POLYETHYLENE and (PVC) POLYVINYL CHLORIDE insulated according to IEC 60502-1 or other approved standard.
 - b. **Conductors:** Conductors shall be copper circular compacted Stranded CLASS 2, for required items according to IEC 60228.
 - c. **Insulation:** The Insulation shall be XLPE according to IEC 60502-1.
 - d. **Core Identification:** RED, YELLOW, BLUE AND BLACK FOR FOUR CORES CABLE.
 - e. **Laying –Up:** Laying up of cables according to IEC 60502, IEC 60811, and BS 5467.

- f. **Outer sheath:** Outer sheath to be PVC as per IEC 60502-1 and/ or as per BS EN 50363, and this outer sheath shall be embossed with name of manufacturer followed by “Low Voltage Electrical Cables - IDECO **PURCHASE No. --/----**” as per IEC 60502, IEC60811 and BS. 5467.

Technical particulars and guarantees
Rated 600/1000 V, 4x16 mm², copper cable

No	Description	Unit	Particulars
1	Line voltage of 3-phase circuit	kV	0.6/1
2	Number of cores		4
3	Class of cable		
4	Conductor		
	- Cross sectional area	mm ²	16
	- Material		Copper
	- Over all dimension	mm	
	- Thickness of insulation over conductors	mm	
5	Filler Material		
6	Number of wires per core		
7	Completed cables		
	Over all diameter	mm	
	Weight per meters	kg	
	Minimum drum length	m	
8	Insulation		
	- Type of curing		
	- Minimum radial thickness		
9	Outer covering		
	Material		
	Minimum average thickness	mm	
10	Cable drum		
	Diameter	m	
	Width	m	
	Weight loaded	kg	
11	Maximum rated temperature	°C	
12	Maximum Dc Resistance per Meter of cable At 20 C	μΩ	
13	Maximum AC resistance of conductor per meter of cable at maximum conductor Temperature	μΩ	
14	Insulation resistance per Meter of cable		
	At 20 °C	MΩ	
	At maximum rated temperature	MΩ	
15	Equivalent star reactance per meter of three phase circuit at 50 HZ	PF	
16	Charging current per phase per 1000 Meter of conductor at normal voltage		
17	Maximum electrostatic capacitance per phase per meter of cable	PF	
18	Minimum radius which cable can be bent around	mm	

19	Ultimate tensile strength	KN	
----	---------------------------	----	--

**** Cross – section drawing showing each part of the cable, dimensions and thickness to be submitted with the tender document**

4. Low Voltage Cables Tests

a. Routine tests

Routine tests are normally carried out on each manufactured length of cable. The number of lengths to be tested may however be reduced or an alternative test method adopted, according to agreed quality control procedures.

Cables shall be subjected to all routine tests specified in IEC 60502-1, routine tests required by this standard are as follows:

- 1- Measurement of the electrical resistance of conductors.**
- 2- Voltage test.**

b. Sample tests

Cables shall be subjected to all sample tests specified in IEC 60502-1, sample tests required by this standard are as follows:

- 1- Conductor examination.**
- 2- Check of dimensions.**
- 3- Hot set test for insulations and elastomeric sheaths.**

c. Type tests

Cables shall be subjected to all type tests specified in IEC 60502-1; when type tests have been successfully performed on a type of cable covered by this standard with a specific conductor cross-sectional area and rated voltage, type test certificate will be accepted as for cables of the same type with other conductor cross-sectional areas and/or rated voltages, provided the following three conditions are all satisfied:

- 1- The same material, i.e. insulation and semi-conducting screens, and manufacturing Process is used.**
- 2- The conductor cross-sectional area is not larger than that of the tested cable.**
- 3- The rated voltage is not higher than that of the tested cable.**
- 4- Approval shall be independent of the conductor material.**

- Type tests required by this standard are as follows:**

- a) Insulation resistance measurement at ambient temperature.**

- b) Insulation resistance measurement at maximum conductor temperature in normal operation**
- c) Voltage test for 4 h.**
- d) Cables of rated voltage 1, 8/3, (3, 6) kV shall also be subjected to an impulse test on a separate Sample of completed cable, 10 m to 15 m in length.**
- e) Measurement of thickness of insulation.**
- f) Measurement of thickness of non-metallic sheaths (including extruded separation sheaths, but excluding inner coverings).**
- g) Tests for determining the mechanical properties of insulation before and after ageing.**
- h) Tests for determining the mechanical properties of non-metallic sheaths before and after ageing.**
- i) Additional ageing test on pieces of completed cables.**
- j) Loss of mass test on PVC sheaths of type ST2.**
- k) Pressure test at high temperature on insulations and non-metallic sheaths.**
- l) Test on PVC insulation and sheaths and halogen free sheaths at low temperatures.**
- m) Test for resistance of PVC insulation and sheaths to cracking (heat shock test).**
- n) Ozone resistance test for EPR and HEPR insulations.**
- o) Hot set test for insulations and elastomeric sheaths.**
- p) Oil immersion test for elastomeric sheaths.**
- q) Water absorption test on insulation.**
- r) Fire tests.**
- s) Measurement of carbon black content of black PE over sheaths.**
- u) Special bending test.**
- v) Determination of hardness of HEPR insulation.**
- w) Determination of the elastic modulus of HEPR insulation.**
- x) Shrinkage test for PE over sheaths.**
- y) Additional mechanical tests on halogen free over sheaths.**
- z) Water absorption test for halogen free over sheaths.**

Applicable standards

Number	standard
0.0	IEC 60502
1.0	IEC 60811
2.0	BS 5467
3.0	BS 50363
4.0	IEC 60228
5.0	BS 1559

Item No.2: Rated 0.6/1kV V, 1x120 mm², copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable

Technical specification

1. **Drumming:** All cables shall be supplied on robust drums of approved materials and construction suitable to withstand very rough transport and handling and to enable conductors or cables to be pulled out smoothly. Drums shall be non- returnable and, if made from timber, shall be pressure – impregnated against fungal and insect attack. Wooden drums shall be logged with closely fitting battens accordance approved standard (preferred BS .1559). Battens shall be firmly secured to the drum flange using steel tape not less than 25 mm wide and 2 mm thick and stapled to at least every third batten. Drum spindle holes shall be reinforced by steel plates. Drum diameters and the maximum width of drums shall be suitable for the jacks provided under this contract. Each drum shall bear a distinguishing number on the outside of flange. Particulars of the conductor or cable, i.e. Voltage, conductor size and material, number of cores, length type code name and gross and net weights shall also be clearly shown on one flange, together with an approved mark. The gross weight of cable drums shall be clearly shown on one flange. The direction of rolling shall be indicated by an arrow on each flange. The method of marking shall be by gouging, burning or other legible and indelible method approved by the Engineer. Immediately after works tests both ends of cables shall be sealed against the ingress of moisture, dirt and insects and the end projecting from the drum shall be adequately protected against mechanical damage during handling. Cut ends of bare conductors shall be also being treated in an approved manner. Where applicable, cables and conductors shall be supplied in maximum drum length, bearing in mind the transport limitations in gaining access to the site. No drum shall contain more than one length.

Maximum Drum Length for Each SIZE for items.

The maximum length in each drum should be as follows

CABLE SIZE	LENGTH IN M
Rated 0.6/1kV V, 1x120 mm ² , copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable.	1000 + 10% , - 5 %

2. **Cable Marking:** The PVC over sheath shall be embossed with a legend which includes identification of the manufacturer and the following: **IDECO / ELECTRIC CABLE 600/ 1000 V AND length of Drum /m AND TENDER No. --/----**. The letters and figures shall be raised and shall consist of upright block characters arranged along two or more lines approximately equally spaced around the circumference of the cable. The size of the letters and numerals shall be suitable for cable size. The gap between the end of one set embossed characters and the beginning of the next, shall be not greater than 1 m. All the cables shall be numerated for the total length of each drum at equal intervals of one meter.

3. Low Voltage Cables specifications for the required item.

- General:** This section applies to single core cables (XLPE) CROSS-LINKED POLYETHYLENE insulated according to IEC 60502-1 or other approved standard.
- Conductors:** Conductor shall be Stranded copper conductor **class 5**, according to IEC 60228.
- Insulation:** The Insulation shall be XLPE for the required item according to IEC 60502-1.
- Core Identification:** Core identification shall be according to BS 5467.
- Outer sheath:** Outer sheath to be PVC as per IEC 60502-1 and/ or as per BS EN 50363, and this outer sheath shall be embossed with name of manufacturer followed by “Electrical Cables 600/1000 V and IDECO **Tender No. --/----** “as per IEC 60502-1, IEC60811 or equivalent and BS. 5467.

Technical particulars and guarantees
Low Voltage Copper Cables: 1x120 mm² cable

No.	Description	Unit	Particulars 1x120 mm ²
1	Voltage between phases of 3-phase circles	kV	0.6/1kV
2	Number of cores		1
3	Class of cable		
	Conductor		
4	- Cross sectional area	mm ²	120
	- Material		Copper
	- Over all dimension	mm	
	- Thickness of insulation over conductors	mm	
6	Core wires No/ diameter		
	Completed cables		
7	-Over all diameter	mm	
	-Weight per meters	kg	
	-Minimum drum length	m	
	Insulation		
8	- Type of curing		
	- Minimum radial thickness		
	Outer covering		
9	-Material		
	-Minimum average thickness	mm	
	Cable drum		
10	-Diameter	m	
	-Width	m	
	-Weight loaded	kg	
11	-Maximum rated temperature	°C	
12	-Maximum Dc Resistance per Meter of cable At 20 C	μΩ	
13	-Maximum AC resistance of conductor per meter of cable at maximum conductor Temperature	μΩ	
14	-Insulation resistance per Meter of cable		
	-- At 20 °C	MΩ	
	-- At maximum rated temperature	MΩ	
15	-Equivalent star reactance per meter of three phase circuit at 50 HZ	PF	
17	-Maximum electrostatic capacitance per phase per meter of cable	PF	
18	-Minimum radius which cable can be bent around	mm	
19	-Ultimate tensile strength	KN	

**** Cross – section drawing showing each part of the cable, dimensions and thickness to be submitted with the tender document**

4. Low Voltage Cables Tests

d. Routine tests

Routine tests are normally carried out on each manufactured length of cable. The number of lengths to be tested may however be reduced or an alternative test method adopted, according to agreed quality control procedures.

Cables shall be subjected to all routine tests specified in IEC 60502-1, routine tests required by this standard are as follows:

- 1- Measurement of the electrical resistance of conductors.
- 2- Voltage test.

e. Sample tests

Cables shall be subjected to all sample tests specified in IEC 60502-1, sample tests required by this standard are as follows:

- 1- Conductor examination.
- 2- Check of dimensions.
- 3- Hot set test for EPR, HEPR and XLPE insulations and elastomeric sheaths.

f. Type tests

Cables shall be subjected to all type tests specified in IEC 60502-1; when type tests have been successfully performed on a type of cable covered by this standard with a specific conductor cross-sectional area and rated voltage, type test certificate will be accepted as for cables of the same type with other conductor cross-sectional areas and/or rated voltages, provided the following three conditions are all satisfied:

- 1- The same material, i.e. insulation and semi-conducting screens, and manufacturing Process is used.
- 2- The conductor cross-sectional area is not larger than that of the tested cable.
- 3- The rated voltage is not higher than that of the tested cable.
- 4- Approval shall be independent of the conductor material.

➤ Type tests required by this standard are as follows:

- a) insulation resistance measurement at ambient temperature.
- b) insulation resistance measurement at maximum conductor temperature in normal operation
- c) voltage test for 4 h.
- d) Cables of rated voltage 1,8/3 (3,6) kV shall also be subjected to an impulse test on a separate sample of completed cable, 10 m to 15 m in length.
- e) Measurement of thickness of insulation.
- f) Measurement of thickness of non-metallic sheaths (including extruded separation sheaths, but excluding inner coverings).
- g) Tests for determining the mechanical properties of insulation before and after ageing.
- h) Tests for determining the mechanical properties of non-metallic sheaths before and after ageing.
- i) Additional ageing test on pieces of completed cables.
- j) Loss of mass test on PVC sheaths of type ST2.
- k) Pressure test at high temperature on insulations and non-metallic sheaths.
- l) Test on PVC insulation and sheaths and halogen free sheaths at low temperatures.
- m) Test for resistance of PVC insulation and sheaths to cracking (heat shock test).
- n) Ozone resistance test for EPR and HEPR insulations.
- o) Hot set test for EPR, HEPR and XLPE insulations and elastomeric sheaths.
- p) Oil immersion test for elastomeric sheaths.
- q) Water absorption test on insulation.
- r) Fire tests.
- s) Measurement of carbon black content of black PE over sheaths.

- t) Shrinkage test for XLPE insulation.
- u) Special bending test.
- v) Determination of hardness of HEPR insulation.
- w) Determination of the elastic modulus of HEPR insulation.
- x) Shrinkage test for PE over sheaths.
- y) Additional mechanical tests on halogen free over sheaths.
- z) Water absorption test for halogen free over sheaths.

Applicable standards	
Number	standard
0.0	IEC 60502-1
1.0	IEC 60228
2.0	BS 5467
3.0	BS EN 50363
4.0	
5.0	

Item No.3: Rated 0.6/1kV V, 1x120 mm², copper circular conductor XLPE insulated / PVC sheath, FLEXIBLE, non-armored cable:

1. **Drumming:** All cables shall be supplied on robust drums of approved materials and construction suitable to withstand very rough transport and handling and to enable conductors or cables to be pulled out smoothly. Drums shall be non- returnable and, if made from timber, shall be pressure – impregnated against fungal and insect attack. Wooden drums shall be logged with closely fitting battens accordance approved standard (preferred BS .1559). Battens shall be firmly secured to the drum flange using steel tape not less than 25 mm wide and 2 mm thick and stapled to at least every third batten. Drum spindle holes shall be reinforced by steel plates. Drum diameters and the maximum width of drums shall be suitable for the jacks provided under this contract. Each drum shall bear a distinguishing number on the outside of flange. Particulars of the conductor or cable, i.e. Voltage, conductor size and material, number of cores, length type code name and gross and net weights shall also be clearly shown on one flange, together with an approved mark. The gross weight of cable drums shall be clearly shown on one flange. The direction of rolling shall be indicated by an arrow on each flange. The method of marking shall be by gouging, burning or other legible and indelible method approved by the Engineer. Immediately after works tests both ends of cables shall be sealed against the ingress of moisture, dirt and insects and the end projecting from the drum shall be adequately protected against mechanical damage during handling. Cut ends of bare conductors shall be also being treated in an approved manner. Where applicable, cables and conductors shall be supplied in maximum drum length, bearing in mind the transport limitations in gaining access to the site. No drum shall contain more than one length.

Maximum Drum Length for Each SIZE for items.

The maximum length in each drum should be as follows

CABLE SIZE	LENGTH IN M
Rated 0.6/1kV, 1X35 mm², copper circular compacted conductor, PVC -insulated / PVC sheath, non-armored cable with carbon black content.	1000 + 10% , - 5 %

2. **Cable Marking:** The PVC over sheath shall be embossed with a legend which includes identification of the manufacturer and the following: **IDECO / ELECTRIC CABLE 600/ 1000 V AND length of Drum /m AND TENDER No. --/----**. The letters and figures shall be raised and shall consist of upright block characters arranged along two or more lines approximately equally spaced around the circumference of the cable. The size of the letters and numerals shall be suitable for cable size. The gap between the end of one set embossed characters and the beginning of the next, shall be not greater than 1 m. All the cables shall be numerated for the total length of each drum at equal intervals of one meter.
3. **Low Voltage Cables specifications for the required item.**
 - f. **General:** This section applies to single core cables (PVC) POLYVINYL CHLORIDE insulated according to IEC 60502-1 or other approved standard.
 - g. **Conductors:** Conductor shall be Stranded copper conductor class 2, according to IEC 60228.
 - h. **Insulation:** The Insulation shall be PVC –with carbon black content according to IEC 60502-1.
 - i. **Core Identification:** Core identification shall be according to BS 5467.
 - j. **Outer sheath:** Outer sheath to be PVC as per IEC 60502-1 and/ or as per BS EN 50363, and this outer sheath shall be embossed with name of manufacturer followed by “Electrical Cables 600/1000 V and IDECO Tender No. --/---- “as per IEC 60502-1, IEC60811 or equivalent and BS. 5467.

Technical particulars and guarantees
Low Voltage Copper Cables: 1x35 mm² cable

No.	Description	Unit	Particulars 1x35 mm ²
1	Voltage between phases of 3-phase circles	kV	0.6/1kV
2	Number of cores		1
3	Class of cable		
	Conductor		
4	- Cross sectional area	mm ²	35
	- Material		Copper
	- Over all dimension	mm	
	- Thickness of insulation over conductors	mm	
6	Core wires No/ diameter		
	Completed cables		
7	-Over all diameter	mm	
	-Weight per meters	kg	
	-Minimum drum length	m	
	Insulation		
8	- Minimum radial thickness		
	Outer covering		
9	-Material		
	-Minimum average thickness	mm	
	Cable drum		
10	-Diameter	m	
	-Width	m	
	-Weight loaded	kg	
11	-Maximum rated temperature	°C	
12	-Maximum Dc Resistance per Meter of cable At 20 C	μΩ	
13	-Maximum AC resistance of conductor per meter of cable at maximum conductor Temperature	μΩ	
14	-Insulation resistance per Meter of cable		
	-- At 20 °C	MΩ	
	-- At maximum rated temperature	MΩ	
15	-Equivalent star reactance per meter of three phase circuit at 50 HZ	PF	
17	-Maximum electrostatic capacitance per phase per meter of cable	PF	
18	-Minimum radius which cable can be bent around	mm	
19	-Ultimate tensile strength	KN	

**** Cross – section drawing showing each part of the cable, dimensions and thickness to be submitted with the tender document**

4. Low Voltage Cables Tests

g. Routine tests

Routine tests are normally carried out on each manufactured length of cable. The number of lengths to be tested may however be reduced or an alternative test method adopted, according to agreed quality control procedures.

Cables shall be subjected to all routine tests specified in IEC 60502-1, routine tests required by this standard are as follows:

- 1- Measurement of the electrical resistance of conductors.
- 2- Voltage test.

h. Sample tests

Cables shall be subjected to all sample tests specified in IEC 60502-1, sample tests required by this standard are as follows:

- 1- Conductor examination.
- 2- Check of dimensions.
- 3- Hot set test for EPR, HEPR and XLPE insulations and elastomeric sheaths.

i. Type tests

Cables shall be subjected to all type tests specified in IEC 60502-1; when type tests have been successfully performed on a type of cable covered by this standard with a specific conductor cross-sectional area and rated voltage, type test certificate will be accepted as for cables of the same type with other conductor cross-sectional areas and/or rated voltages, provided the following three conditions are all satisfied:

- 1- The same material, i.e. insulation and semi-conducting screens, and manufacturing Process is used.
- 2- The conductor cross-sectional area is not larger than that of the tested cable.
- 3- The rated voltage is not higher than that of the tested cable.
- 4- Approval shall be independent of the conductor material.

➤ Type tests required by this standard are as follows:

- a) insulation resistance measurement at ambient temperature.
- b) insulation resistance measurement at maximum conductor temperature in normal operation
- c) voltage test for 4 h.
- d) Cables of rated voltage 1,8/3 (3,6) kV shall also be subjected to an impulse test on a separate sample of completed cable, 10 m to 15 m in length.
- e) Measurement of thickness of insulation.
- f) Measurement of thickness of non-metallic sheaths (including extruded separation sheaths, but excluding inner coverings).
- g) Tests for determining the mechanical properties of insulation before and after ageing.
- h) Tests for determining the mechanical properties of non-metallic sheaths before and after ageing.
- i) Additional ageing test on pieces of completed cables.
- j) Loss of mass test on PVC sheaths of type ST2.
- k) Pressure test at high temperature on insulations and non-metallic sheaths.
- l) Test on PVC insulation and sheaths and halogen free sheaths at low temperatures.
- m) Test for resistance of PVC insulation and sheaths to cracking (heat shock test).
- n) Ozone resistance test for EPR and HEPR insulations.
- o) Hot set test for EPR, HEPR and XLPE insulations and elastomeric sheaths.
- p) Oil immersion test for elastomeric sheaths.
- q) Water absorption test on insulation.
- r) Fire tests.

- s) Measurement of carbon black content of black PE over sheaths.
- t) Shrinkage test for XLPE insulation.
- u) Special bending test.
- v) Determination of hardness of HEPR insulation.
- w) Determination of the elastic modulus of HEPR insulation.
- x) Shrinkage test for PE over sheaths.
- y) Additional mechanical tests on halogen free over sheaths.
- z) Water absorption test for halogen free over sheaths.

Applicable standards	
Number	standard
0.0	IEC 60502-1
1.0	IEC 60228
2.0	BS 5467
3.0	BS EN 50363
4.0	
5.0	