

**TENDER SPECIFICATION**

**STN-1536/2025-26**

**FOR**

**LT TVR 100/5A 0.5S (CAT-C) DLMS & IRDA along with  
CTs, TTB in PP box**

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NOTE:

1. Payment terms, Delivery period, Performance Bank Guarantee, Taxes and Duties” should be in line with the terms and conditions of the specification. If any bidder does not meet any one of the conditions, such tender will not be considered. Please note that the conditional offers are also not considered. Hence the bidder shall submit the tender in line with the terms and conditions of the specification.
2. The bidders shall check the website [www.tssouthernpower.com](http://www.tssouthernpower.com) and [www.tender.telangana.gov.in](http://www.tender.telangana.gov.in) for amendments, if any, upto one day prior to the date of tender opening. The amendments shall be binding on the bidders.
3. The purchaser will not be responsible for any damage that may be caused to the samples at any time.
4. The bidder shall furnish required Bid Security amount and validity as per specification. If the bidder fails to furnish bid security amount and bid validity as stipulated in the specification, such tender bid will not be considered for further evaluation.
5. The prospective bidders shall attend the pre-bid meeting (date and time in NIT) for any queries. The discussed queries shall be submitted in the form of a letter during pre bid meeting or within 24 hrs of pre bid meeting. Any new queries received after pre bid meeting are not liable to be considered.
6. The bid evaluation will be carried out based on the documents uploaded through [www.tender.telangana.gov.in](http://www.tender.telangana.gov.in) against this tender.
7. The Bids received with any details pertaining to prices in the offline mode will be liable for rejection.
8. In e-procurement commercial stage, if F&I charges are applicable then mention whether F&I charges entered are exclusive/inclusive of GST in the remarks section. If not mentioned in remarks, F&I charges will be considered as inclusive of GST.
9. EMD Exemption is considered only for Government Firms.

Ph : 040 – 23431033, 23431448

Fax : 040 - 23431034

**CHIEF ENGINEER (P&MM)**  
**TGSPDCL**

**SECTION- I****SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED****e-Procurement Tender Notice (Paper Notification)**

TGSPDCL intends to float tender for procurement of (a) LT TVR 100/5A 0.5S (CAT-C) DLMS & IRDA along with CTs, TTB in PP box (b) 3-Ph 315 KVA CU Wound DTR BIS EE Star 2, L-2 (c) 3-Ph 500KVA CU Wound DTR BIS EE Star 2, L-2 on e-procurement platform.

For further details of each item above, please visit [www.tgsouthernpower.org](http://www.tgsouthernpower.org), [www.tender.telangana.gov.in](http://www.tender.telangana.gov.in), [www.auction.telangana.gov.in](http://www.auction.telangana.gov.in).

Phone: 040-23431360, 1033, 1035, 1026

**CHIEF ENGINEER (P&MM)  
TGSPDCL**

**ONLINE VERSION**  
**Tender Notice No : STN-1536 /2025**

<b>Notice Inviting Tender Details</b>		
<b>S.No</b>	<b>Description</b>	
1	Department Name	TGSPDCL
2	Office	Purchases & Material Management Wing, Corporate Office, TGSPDCL
3	Tender Number	STN-1536/2025
4	Tender Subject	LT TVR 100/5A 0.5S (CAT-C) DLMS & IRDA along with CTs, TTB in PP box.
5	Delivery Schedule	The delivery of materials shall commence in <b>45 days</b> and complete within <b>3 (THREE)</b> months from the date of receipt of purchase order
6	Tender Type	Open
7	Tender Category	NA
8	Bid Security (INR)	(i) 2% of the Ex-works quoted value ( <b>plus GST as applicable</b> ) (or) (ii) Exemption letter of Bid Security in case of Govt. firms.
9	Bid Security Payable to	In the form of DD in favour of Pay Officer/TGSPDCL / Hyd or BG from Nationalized/Scheduled Bank as per format 2(a). <b>The validity of the bank guarantee shall be upto bid validity+45 days from the date of tender opening</b>
10	Processing Fee (INR)	NIL
11	Transaction Fee	<u>Transaction fee:</u> All the participating bidders who submit the bids have to pay an amount @ 0.03% of their final bid value online with a cap of Rs.10,000/- for quoted value of purchase upto Rs.50 crores and Rs.25000/- if the purchase value is above Rs.50 crores & service tax applicable as per GST as levied by Govt. of India on transaction fee through online in favour of M/s. TGTS. The amount payable to M/s. TGTS is non refundable. <u>Corpus Fund:</u> Successful bidder has to pay an amount of 0.04% on quoted value through demand draft in favour of Managing Director, TGTS, Hyderabad towards corpus fund at the time of concluding agreement.
12	Transaction Fee Payable to	TGTS, Hyderabad
13	Date & Time of pre-bid meeting with manufacturer	<b>24-02-2026 at 11.30 Hrs.</b>
14	Schedule Sale opening date	<b>17-02-2026</b> from 17:00 Hrs
15	Schedule Sale closing Date	<b>04-03-2026</b> Upto 13:00 Hrs.
16	Bid Submission Closing Date & time	<b>04-03-2026</b> Upto 13:00 Hrs
17	Bid submission	On Line
18	Pre-Qualification & Technical Bid Opening Date (Qualification and Eligibility Stage and Technical Bid Stage)	<b>04-03-2026</b> at 15:00 Hrs.
19	Price Bid Opening Date (Financial Bid Stage)	<b>06-03-2026</b> at 12:00 Hrs
20	Place of Tender Opening	O/o Chief Engineer/P&MM TGSPDCL., 4 <sup>th</sup> Floor, Corporate Office, Mint Compound, Hyderabad – 500 004.
21	Officer Inviting Bids/ Contact Person	Chief Engineer/P&MM/TGSPDCL/HYDERABAD
22	Address/E-mail id	O/o. Chief Engineer/P&MM TGSPDCL., 4th Floor, Corporate Office, Mint Compound, Hyderabad – 500 004
23	Contact Details/Telephone, Fax	Ph. No. 040-23431448, 040-23431319

24	Eligibility Criteria	As per Section VI
25	Procedure for Bid Submission	<p><b>Bids shall be submitted online on <a href="http://www.eprocurement.gov.in">www.eprocurement.gov.in</a> platform</b></p> <ol style="list-style-type: none"> <li>1. The participating bidders in the tender should register themselves free of cost on e-procurement platform in the website <a href="http://www.eprocurement.gov.in">www.eprocurement.gov.in</a>.</li> <li>2. Bidders can log-in to e-procurement platform in Secure mode only by signing with the Digital certificates.</li> <li>3. The bidders who are desirous of participating in e-procurement shall submit their technical bids, price bids as per the standard formats available at the e-market place.</li> <li>4. The bidders should scan and upload the following documents in support of technical bids. The bidders shall sign on all the statements, documents certificates uploaded by him, owning responsibility for their correctness/authenticity:       <ol style="list-style-type: none"> <li>a) Bid Security should be furnished           <ol style="list-style-type: none"> <li>i) In the form of DD in favour of Pay Officer/TGSPDCL/Hyderabad <b><u>(or) Alternatively BG (plus GST @18%) from Nationalized/Scheduled Bank as per form-II enclosed</u></b></li> <li>ii) If exempted give details of Bid Security Exemption in case of Govt. firms.</li> </ol> </li> <li>b) Quantity offered</li> <li>c) Proof of manufacturer.</li> <li>d) Latest “Sales Tax Clearance Certificate”</li> <li>e) Financial Turnover certified by CA for last 5 years with UDIN No.</li> <li>f) <b>Details of previous supplies along with PO copies and delivery challan copies for qualification requirement as per tender document.</b></li> <li>g) <b>Performance Certificates issued by Head of Purchasing Authority (as per spec)</b></li> <li>h) Copies of relevant purchase order copies mentioned in the performance certificates in support of the above.</li> <li>i) Technical Particulars of the product, other relevant documents attached to the bid.</li> <li>j) Duly filled and signed proforma as per <b>Format A</b>.</li> <li>k) Transaction fee payable to M/s. TGTS.</li> </ol> </li> </ol> <p><b>5. The rates should be quoted in online only</b></p>
		<ol style="list-style-type: none"> <li>6. After uploading the documents, the copies of the uploaded statements, certificates, documents, original Demand Drafts in respect of processing fee and Bid Security (except the Price bid/offer/break-up of taxes) are to be submitted by the bidder to the Chief Engineer/P&amp;MM/TGSPDCL so as to reach before the date and time of opening of the technical bid. Failure to furnish any of the uploaded documents, certificates, before the date and time of opening of technical bid will entail in rejection of the bid. The Department shall not hold any risk on account of postal delay. Similarly, if any of the certificates, documents, etc., furnished by the tenderer are found to be false / fabricated / bogus, the bidder will be disqualified, blacklisted,</li> </ol>

		<p>action will be initiated as deemed fit and the Bid Security will be forfeited.</p> <p>7. The department will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents.</p> <p>8. The Documents that are uploaded online on e-market place will only be considered for Technical Bid Evaluation.</p> <p>9. Important Notice to Contractors, Suppliers and Department users</p> <p>(i) In the endeavor to bring total automation of processes in e-Procurement, the Govt. has issued orders vide G.O.Ms.No. 13 dated. 5.7.2006 permitting integration of electronic Payment Gateway of ICICI/HDFC Banks with e-procurement platform, which provides a facility to participating suppliers/ contractors to electronically pay the transaction fee online using their credit cards.</p>
26	Rights reserved with the Department	TGSPDCL reserves the right to accept or reject any or all of the tenders received without assigning any reasons therefore. The TGSPDCL also reserves the right to split the tender and place orders on more than one tenderer at its discretion
27	General Terms and Conditions	As per tender documents.

**SECTION-II**  
**SALIENT FEATURES OF THE BID**

**SUPERSCRPTION ON THE TENDER COVER**

Specification No : **STN-1536 /2025**  
Material : **LT TVR 100/5A 0.5S (CAT-C) DLMS & IRDA along with CTs, TTB in PP box.**

Officer to whom the bid will be addressed: **CE/P&MM, Corporate Office/TGSPDCL/Hyd**

Superscription on the bid cover and the outer envelope :

- a. Specification No. : **STN-1536/2025**
- b. Due date and time for online submission : **04-03-2026 upto 13:00 Hrs**
- c. Date and time of online opening : **04-03-2026 at 15:00 Hrs**
- d. Payment of bid security
  - i) If paid give details: **DD/BG** No. \_\_\_\_\_ Dt. \_\_\_\_\_ for Rs. \_\_\_\_\_
  - ii) If exempted give details
- e. Whether 90 days validity offered .....(yes/no).
- f. Whether bid is made accepting payment terms Clause....(yes/no).
- g. Whether delivery is as per delivery schedule indicated....(yes/no)
- h. Whether the sample (if specified) has been enclosed/sent...(yes/no)
- i. Whether the quotation is in two parts .... (Yes/no)

**Content of Bidding Documents:**

The materials / equipment required, bidding procedures, and contract terms are prescribed in the bidding documents as listed below:

- a. Notice Inviting Bids.
- b. Salient features of the contract.
- c. Standard General terms and conditions of contract.
- d. Standard Technical specification and drawings wherever necessary.
- e. Qualification Requirements.
- f. Schedule of requirements (Delivery Schedule)

**SAMPLE FORMS.**

- g. Bid Form and Price Schedules
- h. Bid Security Form
  - i. Contract Form
  - ii. Performance Security form
- i. Proof of Manufacturers
- j. Performance Statement
- k. Details to be furnished by the Manufacturer (Format-A)
- l. Schedule of Deviations (Technical & Commercial)

The Bidder is expected to examine all instructions, forms, terms and technical specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect will be at Bidder's risk and may result in the rejection of its bid.

Deviations from standard bidding document

- i. General terms and Conditions of Contract
- ii Technical

The above deviations supercede the existing terms of GCC and Technical Specification

CHIEF ENGINEER (P&MM)  
TGSPDCL

## SECTION-III GENERAL TERMS AND CONDITIONS

### A. Introduction

#### 1. Definitions

In this Contract, the following terms will be interpreted as indicated:

- (a) "The Contract" means the agreement entered into between the Purchaser and the Supplier, as recorded in the contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- (b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.
- (c) "The Materials/equipment" means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract.
- (d) "The Services" means those services ancillary to the supply of the Materials / equipment, such as transportation and insurance, and any other incidental Services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.
- (e) "GCC" means the General Terms and Conditions of Contract contained in the section.
- (f) "The Purchaser" means the organization purchasing the Materials / equipment.
- (g) Vendor is a supplier who has registered with the purchaser for supply of materials/equipment.
- (h) "The Supplier" means the firm supplying the Materials / equipment and Services under this Contract.
- (i) "Day" means calendar day.

#### 2. Applicability

These General Conditions of contract will apply to the extent that they are not superseded by provisions of Salient features of the Bid.

#### 3(a) Standards

The Materials / equipment supplied under this Contract will conform to the Standards mentioned in the Technical specifications, and, when no applicable standard is mentioned, the authoritative standards appropriate to the Materials / equipment' i.e., BIS, such standards will be the latest. All material will be of the best class and will be capable of satisfactory operation under tropical conditions without distortion or deterioration.

#### 3(b) Interchangeability:

All similar materials and removable parts of similar equipment will be interchangeable with each other. A specific confirmation of this should be furnished in the bid.

#### 4. Scope of Work:

This specification covers design, manufacture, testing and delivery FADS (Free At Destination Stores) of the materials described at Section-IV and Technical Specification at section-V.

**5. Eligible Bidders:**

The **Manufacturers** who have registered themselves with department of industries of State/Central Govt. with full manufacturing and testing facilities for supply of the material/equipment listed in Section No. IV of Bid specification.

**B. THE BIDDING DOCUMENTS**

**6. Contents of Bidding Document:**

6.1 The Materials / equipment required, bidding procedures, and contract terms are prescribed in the bidding documents as listed below:

1. Notice Inviting Bid
2. Technical Specifications
3. Schedule of Requirements (Delivery Schedule)
4. Bid Form and Price Schedules (online only)
5. Salient Features of the Bid
6. General Terms and Conditions of Contract
7. Qualification Requirements
8. Bid Security
9. Performance Security Form
10. Schedule of Deviations

6.2 The Bidder is expected to examine all instructions, forms, terms and Technical specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not responsive to the bidding documents in every respect will be at Bidder's risk and may result in the rejection of its bid.

**7. Clarification of Bidding Documents**

A prospective Bidder requiring any clarification of the bidding documents may notify the Purchaser in writing or by cable (hereinafter, the term cable is deemed to include telex and facsimile) at the Purchaser's address. The Purchaser will respond in writing to any request for clarification of the bidding documents, which it receives no later than fifteen (15) days prior to the deadline for the submission of bids. Written copies of Purchaser's response (including an explanation of the query but without identifying the source of inquiry) will be put on Website of the purchaser or intimated by mail.

**8. Amendment to Bidding Documents:**

8.1 At any time prior to the deadline for submission of bids, the Purchaser, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the bidding documents by amendment.

8.2 All such amendments also would be made available on the website of TGSPDCL and e-procurement website and such amendments will be binding on the respective Bidders.

8.3 In order to allow prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

## C. PREPARATION OF BIDS

### 9. Language of Bid:

The bid prepared by the Bidder including all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, will be in English.

### 10. Cost Associated with Bidding:

The Bidder will bear all costs associated with the preparation and submission of its bid, and the Purchaser, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

### 11. Documents Constituting the Bid:

11.1 The bid prepared by the Bidder will comprise the following components:

- i. Bid Security in accordance with Clause No.19.
- ii. A Bid Form and Price Schedule (only for online submission) completed in accordance with Clause No.12 and 13.
- iii. Documentary evidence establishing in accordance with Clause No.18 that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted.
- iv. Documentary evidence establishing that the Materials / equipment and ancillary services to be supplied by the Bidder are as per the Technical specification of the bidding documents; and
- v. Tax clearance certificate
- vi. Schedule of Deviations
  - (a) Commercial
  - (b) Technical

All the Schedules will be duly filled but not necessary in the sheets attached to the specification unless full details required in the schedules are furnished the Bids will be liable for rejection.

### 12. Bid Form:

The Bidder will complete the Bid form and the appropriate Price Schedule (only for online submission) furnished in the bidding documents, indicating the Materials/equipment to be supplied, a brief description of the Materials / equipment, quantity and prices.

### 13. Bid Prices:

- 13.1 The prices quoted shall be **FIRM**. Bids will be called for with prices FADS inclusive of packing and forwarding, GST and other legally permissible duties and levies wherever applicable, handling charges to cover the transport by road from destination railway station to site/stores and insurance (transit and storage at site for 45 days).
- 13.2 Even though composite price is given the break-up for all the duties, taxes, freight, insurance, packing and forwarding etc., shall be furnished.
- 13.3 It is the responsibility of the Bidder to inform himself of the correct rates of duties and taxes leviable on the materials at the time of bidding.
- 13.4 The proforma credit available to the bidder on the purchases of inputs (raw materials) consequent to the introduction of "MODVAT" Scheme may be taken into account while quoting the prices.

- 13.5 The Bidder shall indicate on the appropriate Price Schedule (online submission) the unit prices (where applicable) and total bid price of the Materials / equipment it proposes to supply under the contract.

Prices indicated on the price schedule (online) shall be entered separately in the following manner.

The price of the Materials / equipment quoted EX-WORKS and all other duties and taxes payable on the finished Materials / equipment with individual breakup for Taxes and Duties, packing and forwarding, freight and insurance etc.

#### **14. Taxes and Duties**

- 14.1 A bidder will be entirely responsible for quoting the correct taxes and duties, other local taxes or levies if any, license fees, etc., he has to incur until completion of the contract. For the purpose of evaluation the bidder should clearly indicate the GST and any other levies payable. Failure to furnish the details leads to loading as indicated in the evaluation criteria.
- 14.2 If the rates of statutory levies assumed by the Bidder are less than the actual rates prevailing at the time of bidding, the Purchaser will not be responsible for such errors. If the rates of statutory levies assumed by the Bidder are later proved to be higher than the actual / correct rates prevailing at the time of bidding, the difference will be passed on to the credit of the Purchaser.
- 14.3. Deemed Export Benefits: This is not applicable for local purchases with TGSPDCL funds.
- 14.4. Applicable Tax Collected at Source (TCS) is as per Government of India.

#### **15. Statutory Variations**

Any variation up or down in statutory levy or new levies introduced after signing of the contract under this specification will be to the account of TGSPDCL provided that during delivery schedule. In cases where delivery schedule is not adhered to by the supplier and there are upward variation / revision after the agreed delivered date the supplier will bear the impact of such levies and if there is downward variation / revision, the TGSPDCL will be given credit to that extent.

In case of subvendor items Taxes & Duties are inclusive in tender price. No Statutory variation is applicable. Further price variations in respect of sub-vendor items will be considered on tender prices”.

This is allowed only once during delivery period i.e. at the time of delivery of goods at factory”.

#### **16. Bid Currencies:**

Prices shall be quoted in Indian Rupees; and will be paid in Indian Rupees Only.

#### **17. Quantity to quote:**

Bidder shall quote a minimum quantity of at least 20% of the total quantity indicated in the bid Specification. Offers less than the minimum prescribed are liable for rejection.

#### **18. Documents Establishing Bidder’s Eligibility and Qualifications**

The Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract if its bid is accepted.

The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted will establish to the Purchaser's satisfaction:

- (a) that the Bidder has the financial, technical, and production capability necessary to perform the contract;

- (b) that the Bidder meets the qualification criteria listed in Section IV. In addition the Bidder may furnish full particulars regarding supply of the material in question made so far to TGSPDCL during the last 5 years and other reputed utilities.

### 18.1 Documents Establishing Materials / equipment Conformity to Bidding Documents.

The Bidder shall furnish as part of its bid, documents establishing conformity to the bidding documents of all Materials / equipment and services, which the Bidder proposes to supply under the Contract.

The documentary evidence of conformity of the Materials / equipment and the services to bidding documents may be in the form of literature, drawings, and data, and will consist of:

- (a) a detailed description of the essential technical and performance characteristics of the Materials /equipment;
- (b) the bidder should specifically mention about furnishing the test certificates and a specimen form of test certificate should be furnished along with the bid.
- (c) a list giving full particulars, including available sources and current prices of spare parts, special tools etc., necessary for the proper and continuing functioning of the Materials / equipment following commencement of the use of the Materials / equipment by the Purchaser; and
- (d) an item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the Materials / equipment and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

For purposes of the commentary to be furnished pursuant to above, the Bidder will note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Purchaser in its Technical Specifications, are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

### 19. Bid Security

- 19.1 The Bidder shall furnish, as part of its bid, a Bid Security in the amount of **2% (plus GST as applicable)** of the Total Ex-works value of the materials offered against the bid. This amount should be paid by way of a crossed demand draft drawn on any schedule bank in favour of the Pay Officer, TGSPDCL and payable at headquarters of the Purchaser. The crossed DD should invariably be furnished along with the bids. **Alternatively the bidders may furnish a B.G. in original in lieu of DD as per the proforma attached.** Fax / photocopies of the bid security will not be accepted and will be rejected.
- 19.2 The fact of having enclosed bid security by **DD/BG** along with the bid should be clearly super scribed on the bid envelope.
- 19.3 Submission of BID SECURITY by way of cheque, cash, money order, call deposit will not be accepted and will be considered as disqualification.

19.4 Payment of BID SECURITY will be waived at the discretion of the TGSPDCL in the case of fully owned Government undertaking of the Central or State Government. Such undertakings should immediately apply and obtain exemption before submitting their Bids. They need only refer to the details of such exemption in their Bids. Exemption accorded by any organization other than TGSPDCL will not be considered.

19.5 Requests for exemption from payment of BID SECURITY will not be entertained in any other case.

19.6 Any bid not secured as above will be rejected by the purchaser.

19.7 Unsuccessful Bidders' Bid Security will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiry of the period of bid validity prescribed by the Purchaser.

19.8 The successful Bidder's Bid Security will be discharged upon the Bidder signing the contract.

19.9 **The Bid Security may be forfeited:**

(a) if a Bidder:

- i. Withdraws its bid or alters its prices during the period of bid validity specified by the Bidder on the Bid Form, or
- ii. Does not accept the correction of errors pursuant to Clause No.30.2; or
- iii. Offers post Bid rebates, revisions or deviations in quoted prices and / or conditions or any such offers which will give a benefit to the Bidder over others will not only be rejected outright but the original Bid itself will get disqualified on this account and the Bidder's BID SECURITY will be forfeited.

(b) In the case of a successful Bidder, if the Bidder fails:

- i. To sign the contract in accordance with Clause No.38.
- ii. To furnish performance security in accordance with Clause No.39.

19.10 In cases where the Bid Cover Contains superscription of having furnished Bid Security by way of **DD/B.G.** but if the same is not found within, such Bids will be rejected and bidder will run the risk of being banned.

**Note : The bidder shall furnish required Bid Security amount and validity (The validity of the bank guarantee shall be upto bid validity +45 days from the date of tender opening ) as per specification. If the bidder fails to furnish bid security amount and as stipulated in the specification, such tender bid will not be considered for further evaluation.**

## **20. Period of Validity of Bids.**

20.1 Bids shall remain valid for the period of ninety (90) days from the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period will be rejected.

The bidders should clearly super scribe on the sealed envelopes of the bids about the validity. Bids not containing superscription of validity will be rejected and returned unopened.

20.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses there to will be made in writing (or by cable). The Bid Security provided under Clause No.20 will also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security.

**21. Tax Clearance Certificates:**

Copies of Income Tax, Sales Tax and Turnover Tax certificates for the latest period from the appropriate authority will invariably be enclosed to the bid. In the case of proprietary or partnership firm it will be necessary to produce the certificate / certificates for the proprietor or proprietors and for each of the partners as the case may be. If the Bidder has already produced the certificate during the calendar year in which the bid is made, it will be sufficient, if particulars are given.

**22. Service Conditions**

22.1 The equipment / materials offered will be entirely satisfactory for operation under the climatic conditions indicated below:

(a)	Maximum ambient air temperature (in shade)	45 <sup>0</sup> C
(b)	Maximum ambient air temperature (under sun)	50 <sup>0</sup> C
(c)	Maximum daily average ambient air temperature	35 <sup>0</sup> C
(d)	Maximum yearly average ambient air temperature	30 <sup>0</sup> C
(e)	Maximum humidity	100%
(f)	Altitude above M.S.L.	Up to 1000M
(g)	Average No. of thunder storm days per annum	50
(h)	Average No. of dust storm days per annum	Occasional
(i)	Average No. of rainy days / annum	90
(j)	Average Annual Rain fall	925mm
(k)	Normal tropical monsoon period	4 months
(l)	Maximum wind pressure	150 kg/Sq.M.

22.2 Due consideration will be given to any special devices or attachments put forward by the Bidder which are calculated to enhance the general utility and the safe and efficient operation of the equipment / materials.

**23. Format and Signing of Bid.**

23.1 The Bidder shall prepare an original, clearly marking "ORIGINAL BID".

23.2 The original of the bid shall be typed and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. The person or persons signing the bid will initial all pages of the bid, except for printed literature.

23.3 Any interlineations, erasures, or overwriting will be valid only if they are initialed by the person or persons signing the bid.

**D. Submission of Bids**

**24. Submission, Sealing and Marking of Bids.**

24.1 The tenderers are required to submit their bids in two parts as under:

- (i) Part-I (a) : Bid Security, Transaction Fee, Technical & Qualification Requirements.

- (b) : Technical Bid shall contain full technical particulars and commercial terms and conditions but without prices. This should not contain any cost information whatsoever.

Part-II : Price Bid – containing Price (**shall be on-line only**)  
**Bids received with any details pertaining to prices in the offline mode will be liable for rejection.**

- (ii) The Part-I of the tender should be furnished in a sealed cover superscribing tender enquiry number, name of material, name of the bidder and date of tender opening.
- (iii) Part-I of the bid will be opened on the due date of tender opening. In case the bidders have been granted Bid Security exemption (clause-20.4), documentary evidence for the same must be furnished. The firms whose Bid Security is not received as specified in the tender document, the price bids will not be opened and their bids will be rejected summarily.
- (iv) The price bids of only those bidders whose technical bids, on examination, are determined to be technically and commercially acceptable and meeting the specified Qualification Criteria will be opened at a later date.

### **Sealing and Marking of Bids.**

24.2 The Bidder shall seal the bid in envelope.

### **24.3 The envelopes will be addressed to the Purchaser:**

24.4 The sealed cover as well as the outer envelope should be super scribed as follows:

- (a) Bid Enquiry No.  
 (b) Due date and time for online submission.  
 (c) Date and time for online opening.  
 (d) Payment of Bid Security  
     (i) If paid, give details: D.D. No. Date:  
     (ii) If not paid or exempted, give details.  
 (e) Whether 90 days validity offered.....YES / NO  
 (f) Whether the quotation is made accepting Payment terms clause .... YES/NO  
 (g) Whether the delivery is as per delivery schedule indicated.... YES/NO  
 (h) Whether the sample (if specified) has been enclosed/ sent...YES/NO  
 (i) Whether the bid is quoted in two parts (clause 25.1).... (YES/NO)

24.5 Bids not super scribed as above are liable to be rejected.

24.6 The Bidder shall invariably complete the Bid in full. Details to be furnished by the bidder and Schedule of Prices attached to the specification and enclose the same to the bid without fail. .

24.7 The bids shall be in bound volumes (With the documents in the volume not detachable). All pages of the bid except in-amended printed literature shall be initiated by the person/persons signing the bid. The page number shall be referred in Index. All pages including literature, type test reports of the bid shall be numbered and the page numbers shall be continuous. Soft copy of the technical and commercial bids and designs with drawings shall be given in Floppy disc/ CD also. Summary sheet in the given format on the top of the bid duly signed and sealed by the bidder.

24.8 The time of actual receipt in the office only will count for the acceptance of the bid and either the date of bid, date stamp of post office or date stamp of any other office will not count. The TGSPDCL will not be responsible for any postal or any other transit delays.

- 24.9 Telegraphic quotations will not be entertained under any circumstances. Clarification, amplifications, and / or any other correspondence from the Bidder subsequent to the opening of bid will not be entertained. The Bidders are advised to ensure that their bids are sent in complete shape at the first instance itself.
- 24.10 The inner envelopes shall also indicate the name and address of the Bidder to enable the bid to be returned unopened in case it is declared "late".
- 24.11 If the outer envelope is not sealed and marked as required above, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.

**25. Deadline for Submission of Bids.**

- 25.1 Bids together with modifications if any, or other withdrawals must be received by the Purchaser not later than the deadline for submission of bids specified in the Salient features of the Bid.
- 25.2 The Purchaser may, at its discretion, extend this deadline for the submission of bids by amending the bidding documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

**26. Late Bids**

Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser will be rejected and returned unopened to the Bidder.

**26.2 Modification and Withdrawal of Bids.**

The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification, including substitution or withdrawal of the bids, is received by the Purchaser prior to the deadline prescribed for submission of bids.

The Bidder's modification or withdrawal notice will be prepared, sealed, marked, and dispatched. A withdrawal notice may also be sent by cable, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of bids. No bid may be modified after the deadline for submission of bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified. Withdrawal of a bid during this interval may result in the forfeiture of its Bid Security.

**E. Opening and Evaluation of Bids**

**27. Opening of Bids by the Purchaser**

- 27.1 The Purchaser will open all bids meeting above criteria, at the time, on the date, and at the place specified.
- 27.2 The Bidders' names, bid modifications or withdrawals, discounts, and the presence or absence of requisite Bid Security and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening.
- 27.3 Bids that are not opened and read out at bid opening will not be considered further for evaluation, irrespective of the circumstances.

## 28. Clarification of Bids

During evaluation of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.

## 29. Preliminary Examination

- 29.1 The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
- 29.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail, and the total price will be corrected. If the Supplier does not accept the correction of the errors, its bid will be rejected, and its Bid Security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail. If the supplier does not accept the correction of the errors, its bid will be rejected and its Bid Security may be forfeited.
- 29.3 The Purchaser may waive any minor informality, nonconformity, or irregularity in bid which does not constitute a material deviation, provided such waiver doesn't prejudice or affect the relative ranking of any Bidder.
- 29.4 Prior to the detailed evaluation, the Purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions, such as those concerning Bid Security, and Taxes and Duties will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.
- 29.5 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

**Note : Payment terms, Delivery period, Performance Bank Guarantee, Taxes and Duties” should be in line with the terms and conditions of the specification. If any bidder does not meet any one of the conditions, such tender will not be considered. Please note that the conditional offers are also not considered. Hence the bidder shall submit the tender in line with the terms and conditions of the specification.**

## 30. Evaluation and Comparison of Bids.

- 30.1 The Purchaser will evaluate and compare the bids, which have been determined to be Substantially responsive.
- 30.2 The Purchaser's evaluation of a bid will take into consideration one or more of the following factors

All the bids, which are opened, read out and considered for evaluation will be checked for qualification requirements in respect of technical and commercial aspects. Such of the bids, which do not meet the qualification requirements, will not be evaluated further. The bid is to be checked for its conformity to the technical specification. If it does not meet the technical specification, the Bid will not be evaluated further. However, if in the opinion of the purchaser the bidder has offered equipment / material better than the technical specification the same may be considered. The bid may be rejected for the following reasons:

1. Not in the prescribed form
  2. Insufficient bid security or bid not accompanied by the required bid security or proof of bid security exemption
  3. Bids not properly signed
  4. The bidder is a vendor who is banned from further business transactions and the period of ban is still in force.
  5. Bid received after the due date and time
  6. The bid is through telegram or fax
- Further, the purchaser may enquire from the bidder in writing for any clarification of the bid. The response of the bidder will also be in writing. However no change in the prices or substance of the bid will be sought, offered or permitted.
  - Bids will be examined for completeness and for any computational errors.
  - Arithmetical errors will be rectified on the following basis.
    - Where there is a discrepancy between the unit price and total price, the unit price will prevail and the total price will be corrected accordingly.
    - Where there is a discrepancy between words and figures, the amount in words will prevail.
    - Failure on the part of the bidder to agree to the above corrections will result in rejection of his offer and forfeiture of his bid security.
  - It will be ensured that the required sureties have been furnished and that the documents have been properly signed.
  - The purchaser's evaluation of a bid will take into consideration one or more of the following factors
    - (a) Delivery schedule offered in the bid;
    - (b) Deviations in payment schedule from that specified in the general terms and conditions of the contract and technical deviations.
    - (c) The cost of components, mandatory spare parts, and service;
    - (d) The availability of spare parts and after-sales services for the equipment offered in the Bid;
    - (e) The projected operating and maintenance costs during the life of the equipment;
    - (f) The performance and productivity of the equipment offered;
    - (g) Other specific criteria indicated in the Bidding documents.

In addition the Purchaser's evaluation of a bid will take into account the net landed cost of the material at the final destination. For the purpose of evaluation net landed cost is arrived at by adding all elements of the basic price, allowable discount, excise duty, any other levies, packing & forwarding, freight charges, insurance (transit & storage) as quoted by the bidder, interest on advance if any, erection, servicing and other charges, **inclusive of GST** as called for.

In addition any variation up or down in taxes and duties / new levies introduced subsequent to bid opening and before award will be considered for comparison purposes.

The following criteria may be adopted for taxes and duties for evaluation

- a. It is the responsibility of the bidder to quote all taxes and duties correctly without leaving any column unfilled. Where taxes and duties are not applicable, the bidder should enter “NA”. If no duty / tax is leviable the same may be entered as “NIL”. If any column is left blank or filled vaguely like “as applicable”, the same will be loaded with the maximum of the other eligible Bids.
- b. Where there is an exemption of GST, the documentary evidence to that effect will be enclosed by the supplier.
- c. The bidders for supply and works shall invariably possess the TIN number and PAN Number for the bids above Rs. 5.00 lakhs and this must be verified before entering into contract.
- Prior to detailed evaluation, the responsiveness of each bid will be determined. A substantially responsive bid is one that conforms to all the terms and conditions of the bidding documents without material deviations. For this purpose superscription, qualification requirement, bid security, validity, delivery, payment terms, price schedule, taxes and duties will be deemed to be the critical provisions and deviations in any one of these items will be deemed to be a material deviation.

The purchaser may waive any minor informality, non-conformity or irregularity in the bid which does not constitute a material deviation, provided such waiver does not affect the relative ranking of any bidder. The purchaser will clearly indicate in the bid specification the methodology for evaluation of bids.

- (a) Bid price, which will include all, costs of manufacture and services at manufacturing place as well as, Transportation to destination stores, packing and forwarding, insurance and all Taxes & other legally permissible duties & levies payable.
  - (b) Delivery schedule offered in the bid.
  - (c) Deviations in payment schedule from that specified in the general terms and conditions of the contract.
  - (d) The cost of components, mandatory spare parts, and service
  - (e) The availability of spare parts and after-sales services for the equipment offered in the Bid;
  - (f) The projected operating and maintenance costs during the life of the equipment;
  - (g) The performance and productivity of the equipment offered; and/or
  - (h) Other specific criteria indicated in the Bid Specification.
- 30.3(a) The Purchaser’s evaluation of a bid will take into account the Net Landed Cost of the Material at destination stores inclusive of all taxes and duties and **inclusive of GST** quoted by the Bidder. It is the responsibility of the bidder to quote all Taxes and Duties correctly without leaving any column unfilled. Where not applicable the column may be filled as “NA”. If no duty / tax is leviable, the same may be filled as “NIL”. If any column is left blank, the same is loaded with maximum of other eligible Bids.
- 30.3(b) Any statutory variations of taxes and duties and new levies imposed after opening of the bid and before award of the contract will be taken into consideration for the purpose of evaluation.

- 30.4 A substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. For this purpose superscription, qualification requirement, bid security, validity, delivery, payment terms, price schedule, taxes and duties will be deemed to the critical provisions and deviations in any one of these things will be deemed to be a material deviation.

**31. Contacting the Purchaser.**

- 31.1 From the time of the bid opening to the time of contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bid, it should do so in writing.
- 31.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison, or contract award will result in the rejection of the Bidder's bid.

**F. Award of Contract.**

**32. Post Qualification**

- 32.1 In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily.
- 32.2 The determination will take into account the Bidder's financial, and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualification submitted by the Bidder, as well as such other information as the Purchaser deems necessary and appropriate.

**33. Award Criteria:**

The Purchaser will award the contract to the successful Bidder / Bidders whose bid has/have been determined to be substantially responsive.

However it is not binding on TGSPDCL to accept the lowest or any other Bid. It reserves the right to place orders on different Bidders.

**34. Purchaser's Right to Vary Quantities at Time of Award**

- 34.1 The Purchaser reserves the right at the time of contract award to increase or decrease **upto 50%** of the quantity of Materials / equipment and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.
- 34.2 The purchaser reserves the right to vary the ordered quantity by **+/- 50%** during the execution of the contract.

**35. Purchaser's Right to Accept Any Bid and to Reject Any or All Bids**

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders.

**36. Notification of Award**

- 36.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the Successful Bidder in writing by registered letter or by cable, to be confirmed in writing by registered letter, that its bid has been accepted.

- 36.2 The notification of award will constitute the formation of the Contract.
- 36.3 Upon the successful Bidder's furnishing of the performance security, the Purchaser enters into contract with successful Bidder / Bidders. The Purchaser will notify each unsuccessful Bidder and will discharge its Bid Security.

**37. Signing of Contract:**

The Purchaser notifies the successful Bidder that its bid has been accepted. Within 30 (thirty days) of receipt of notification of award of Contract, the successful Bidder will sign and date the contract. Failure to comply with this stipulation will entail cancellation of the contract besides forfeiture of the bid security.

**38. Performance Security:**

- 38.1 Within Fifteen (15) days of receipt of the notification of Contract award. The successful Bidder will furnish to the Purchaser the performance security for an amount 10% of the contract value for proper fulfillment of the contract, which will include the warranty period, and completion of performance obligations including Warranty obligations. The Performance Security will cover 60 days beyond the date of completion of performance obligations including Warranty obligations.

In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected / replaced material will be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value will be extended 60 days over and above the extended warranty period.

- 38.2 The proceeds of the performance security will be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

- 38.3 The performance security will be...
- (a) A bank guarantee issued by a **nationalized bank/Scheduled bank** acceptable to the Purchaser, in the form provided in the bidding documents.
  - (b) A banker's cheque or crossed DD or Pay Order payable at the Head quarter of the Purchaser in favour of the Purchaser drawn on any scheduled bank.

- 38.4 The performance security will be discharged by the Purchaser and returned to the Supplier not later than sixty (60) days after the expiry date.

- 38.5 **Failure of the successful Bidder to comply with the above requirement will entail cancellation of the award and forfeiture of the Bid Security and the balance to make up the performance security deposit will be deducted from pending payments if any due to the tenderer from TGSPDCL on other orders in addition the company will also become liable for being blacklisted by TGSPDCL**

**39. Corrupt or Fraudulent Practices**

It is essential that the Purchaser as well as Bidder / supplier / contractor for the purposes of this provision, the terms set forth below as follows:

(i) "Corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution, and

(ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the purchaser, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the purchaser of the benefits of free and open competition.

(iii) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(iv) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at anytime determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

**40. Use of Contract Documents and Information:**

40.1 The Supplier will not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, of any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person will be made in confidence and will extend only so far as may be necessary for purposes of such performance.

40.2 The Supplier will not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.

40.3 Any document, other than the Contract itself, will remain the property of the Purchaser and will be returned ( in all copies) to the Purchaser on completion of the supplier's performance under the Contract if so required by the Purchaser.

40.4 The Supplier will permit the Purchaser or his authorized representative to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the Supplier.

**41. Patent Rights**

The Supplier will indemnify the Purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Materials / equipment or any part thereof.

**42. Places / Locations:**

Particulars of site location and nearest rail heads to which the equipments / material have to be supplied will be given to successful Bidders.

**43. Delivery:**

Delivery period will be reckoned from the date of signing of the contract. The delivery quoted will be firm, definite, unconditional and on the basis of receipt of materials at destination in good condition without any bearing on the procurement of raw materials or any similar prerequisites. The commencement date and date of delivery will be indicated. The preferred delivery time, which is the essence of this specification, is indicated in the schedule. Final deliveries are however, subject to confirmation at the time of Contract. Delay in delivery of materials FADS – (Free At Destination Stores) due to non-availability of railway booking, non-allotment of wagons and any such reasons will not be considered. It is the responsibility of the supplier to make alternative arrangements for transporting the materials by road or rail so as to see that the material reaches the destination within the stipulated period. The Purchaser reserves its right to defer the delivery date at any time after orders are placed without any change in the conclusion of contract other conditions supply. The delivery period, which will be reckoned from the date of the Contract, will be guaranteed under penalty as in Clause 60.

#### 44. Inspections and Tests

- (i) The supplier will keep the Purchaser informed in advance of the time of the starting and the progress of manufacture of equipment in its various stages so that arrangement could be made for inspection. The accredited representative of the TGSPDCL will have access to the supplier's or his subcontractor's work at any time during working hours for the purpose of inspecting the materials during manufacturing of the materials/equipment and testing and may select test samples from the materials going into plant and equipment. The supplier will provide the facilities for testing such samples at any time including access to drawings and production data at no charge to Purchaser. As soon as the materials are ready the supplier will duly send intimation to TGSPDCL by Registered Post and carry out the tests in the presence of representative of the TGSPDCL.
- (ii) The TGSPDCL may at its option get the materials inspected by the third party if it feels necessary and all inspection charges in this connection will be borne by the TGSPDCL. In case of materials not of acceptable quality or not conforming to the specification, the materials will be rejected. You have to re-offer the material for inspection. In such a case the 2nd inspection charges are to the suppliers account. In case the materials are rejected in the 2nd inspection also, the TGSPDCL reserves the right to cancel the order.
- (iii) The dispatches will be affected only if the test results comply with the specification. The dispatches will be made only after the inspection by the TGSPDCL Officer is completed to the TGSPDCL satisfaction or such inspection is waived by the competent authority.
- (iv) The acceptance of any quantity of materials will in no way relieve the supplier of its responsibility for meeting all the requirements of this specification and will not prevent subsequent rejection if such materials are later found to be defective.
- (v) The supplier will give 15 days advance intimation to enable the Purchaser to depute his representative for witnessing the acceptance and routine tests.
- (vi) Should any inspected or tested materials / equipment fail to conform to the specification, the Purchaser may reject the materials and supplier will either replace the rejected materials or make alterations necessary to meet specifications requirements free of costs to the Purchaser.
- (vii) In the case of transformers, instrument transformers and meters, inspection will be conducted every year, for the first 5 years on a 2% sample of the quantities supplied. Samples will be collected at random to establish that the guaranteed technical parameters are as per the submitted bid by the supplier. In the case of non-adherence, the purchaser may take suitable action on the supplier including cancellation of vendor registration and banning further dealings, depending on the gravity of the deviation. These random inspections may be entrusted to a third party.
- (viii) Inspection not carried out due to non-readiness of the material even after contacting / confirmed over phone from the supplier about availability of material and physical verification at the supplier premises, the charges @ 0.35% of Ex-works price of material offered for inspection (inclusive of service tax and all other taxes & duties, travelling expenses, boarding and lodging charges at the place of inspection and all incidental charges) shall be paid by supplier subject to a maximum of Rs. 10,000.00 .

#### 45. Name Plate:

Equipment should be provided with name plate giving full details of manufacture, capacities and other details as specified in the relevant ISS or other specification stipulated. The contract No. and date and year of supply and the words "TGSPDCL" must be etched on the name plate.

**46. Packing**

46.1 The Supplier will provide such packing of the Materials / equipment as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing will be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights will take into consideration, where appropriate, the remoteness of the Materials / equipment' final destination and the absence of heavy handling facilities at all points in transit.

46.2 The packing, marking, and documentation and outside the packages will comply strictly with such special requirements as will be expressly provided for in the Contract and in any subsequent instructions ordered by the Purchaser. The supplier will be required to make separate packages for each consignee, each package will be marked on three sides with proper paint / indelible ink with the following;

1. Contract Number
2. Supplier's name
3. Packing list reference number

46.3 The supplier, whenever dispatches material to a destination should prepare the following information in the form of packing slip in quadruplicate and send the same to the consignee and obtain his acknowledgement. The consignee will return to the supplier one copy of the packing slip with his remarks. The proforma of packing slip will be as follows:

**PACKING SLIP**

1. Contract No. & Date.
2. Quantity allotted to the stores and rate applicable.
3. Quantity so far supplied to the stores and the rate applied.
4. Quantity now supplied and the rate applied.
5. Total quantity supplied under the Contract with rates applied.
6. Programme for supplying the balance quantity to the Stores.

**47. Delivery Documents**

47.1 Delivery of the Materials/equipment will be made by the Supplier in accordance with the terms specified in the contract.

The latest test certificates containing the result of the tests as per the relevant ISS or other specification stipulated must be submitted to the CHIEF ENGINEER (P&MM) and got approved by him.

47.2 Documents to be submitted by the Supplier are specified as under...

- (i) Insurance certificate;
- (ii) Supplier's certificate certifying that the defects if any pointed out during inspection have been rectified (3 copies).
- (iii) Manuals in Six sets and one set of reproducible drawings.

The Purchaser will receive the above documents soon after the dispatch of materials and if not received, the supplier will be responsible for any consequent expenses.

**48. Insurance**

- 48.1 The Materials / equipment supplied under the Contract will be fully insured against loss or damage incidental to manufacture or acquisition, transportation and delivery and also storage for **45** days at destination stores.
- 48.2 The bidder shall a) Initiate and pursue insurance claim till settlement, and b) Promptly arrange for repair and/or replacement of any damaged items in full irrespective of settlement of insurance claim by the under Writers. c) All costs because of insurance liabilities covered under the contract will be to supplier's account. The supplier shall provide the Purchaser with a copy of all insurance policies and documents taken out by him in pursuance of the 'Contract'. Such copies of documents shall be submitted to the purchaser immediately after such insurance coverage. The supplier shall also inform the Purchaser in writing at least sixty (60) days in advance, regarding the expiry, cancellation and/or change in any of such documents and ensure revalidation/renewal etc., as may be necessary well in time.

The risks that are to be covered under the insurance shall be comprehensive and shall include but not limited to, the loss or damage in transit, storage, due to theft, pilferage, riot, civil commotion, weather conditions, accident of all kinds, fire, flood, war risk (during ocean transportation) bad or rough handling etc. The scope of such insurance shall cover the entire contract value.

The insurance will be in an amount equal to 100% FADS value of Materials / equipment on all risks basis. The policy will have a provision for extension to cover further storage if necessary at destination stores / site at TGSPDCL cost. **The insurance beneficiary shall be TGSPDCL.**

**49. Transportation**

The Supplier is required under the Contract to transport the Materials / equipment to a specified place of destination defined as normally the district stores, transport to such place of destination, including insurance and storage, will be arranged by the Supplier, and the related costs will be included in the Contract Price only.

**50. Incidental Services**

The Supplier may be required to provide any or all of the following services, including additional services, if any.

- (a) Performance or supervision of on-site assembly and/or start-up of the supplied Materials / equipment;
- (b) Furnishing of tools required for assembly and/or maintenance of the supplied Materials / equipment;
- (c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Materials / equipment;
- (d) Performance or supervision or maintenance and/or repair of the supplied Materials / equipment, during warranty period, provided that this service will not relieve the Supplier of any warranty obligations under this contract; and
- (e) Training of the Purchaser's personnel, at the Suppliers' plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Materials / equipment.

**51. Spare Parts**

The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier.

- (a) Such spare parts as the Purchaser may choose to purchase from the Supplier, provided that this election will not relieve the supplier of any warranty obligations under the contract; and

- (b) In the event of termination of production of the spare parts:
- (c) Advance notification to the Purchaser of the impending termination.
- (d) Time to permit the Purchaser to procure needed requirement; and following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

## **52. Warranty**

- 52.1 The supplier will warrant for the satisfactory functioning of the material/equipment as per specification for a minimum period of **5 years** from the date of receipt of the material/equipment in good condition.
- 52.2 The Supplier warrants that the Materials / equipment supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise the special guarantee sought in technical specification. The supplier further warrants that all Materials / equipment supplied under this Contract will have no defect, arising from a design and / or materials as required by the Purchaser's specifications or from any act of omission of the Supplier, that may develop under normal use of the supplied Materials / equipment.
- 52.3 All the materials will be of the best class and will be capable of satisfactory operation in the tropics under service conditions indicated in clause 23.1 without distortion or deterioration. No welding filling or plugging of defective parts will be permitted, unless otherwise specified, they will conform to the requirements of the appropriate Indian, British or American Standards. (Where a standard specification covering the material in question has not been published, the standards of the American Society for testing of Materials should be followed).
- 52.4 The entire designs and construction will be capable of withstanding the severest stresses likely to occur in actual service and of resisting rough handling during transport.
- 52.5 Unless otherwise specified the warranty period will be 5 years from the date of acceptance of the Materials / equipment. The Supplier will, in addition, comply with the performance guarantees specified under the contract. If, for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the supplier will at its discretion either, Make such changes, modifications, and/or additions to the Materials / equipment or any part thereof as may be necessary in order to attain the contractual guarantees specified in the contract at its own cost and expense and to carry out further performance tests as per the relevant standards.
- 52.6 The Purchaser will promptly notify the supplier in writing of any claims arising under this warranty.
- 52.7 "Upon receipt of such notice, the Supplier will within 30 days repair or replace the defective Materials / equipment or parts thereof, free of cost at the ultimate destination. The supplier will take over the replaced parts/Materials/equipment at the time of their replacement. No claim whatsoever will lie on the Purchaser for the replaced parts/Materials /equipment thereafter". In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material will be extended to a further period of 12 months. . The WGP defective meters shall be transported from the various TGSPDCL destinations to their manufacturing factory and replace them with healthy meters and test them for accuracies and IRDA performance and also resetting all the values to zero and transport back to the respective TGSPDCL desinations free of cost by the manufacturer.

52.8 If the Supplier, having been notified, fails to remedy the defect(s) within the above period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense duly deducting the expenditure from subsequent bills / bank guarantee and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

### **53. Payment**

53.1 "100% payment will be arranged on or after 30 days from the date receipt of material/equipment at the destination/stores (i.e.103 entry in SAP module) duly transferring the said amount to the bank account of the supplier by the purchaser bank. The supplier will have to predefine the Bank details while entering into contract for electronic transfer of payments.

**Note:**

- i) The date of delivery would be the date on which the stores officer certifies the receipt of materials at stores in good condition 103 entry in SAP module in respective of the date of check measurement.
- ii) Form 13 shall be issued subject to material taken into stock in good condition (i.e., 105 entry in SAP module).
- iii) The supplier should invariably submit test certificates as soon as despatch is made so that the test certificates can be checked up and approved well before it becomes due for payment. Routine Test Certificates of the entire lot shall be submitted to the Consignee.
- iv) The performance guarantee to be executed in accordance with this specification shall be furnished on a stamp value of Rs.100/- The performance guarantee shall be from any Nationalized/Scheduled Bank. Performance Guarantee to the extent of 10% value of purchase order valid upto 2 months over and above the guarantee period to draw 100% payment.

The performance guarantee has to be extended suitably by you in accordance with the guarantee clause, so that the last consignment against the order is covered by the guarantee.

- v) If you have received any over payments by mistake or if any amounts are due to the TGSPDCL due to any other reason, when it is not possible to recover such amounts under the contract resulting out of the subject specification, the TGSPDCL reserves the right to collect the same from any other amounts and/or bank guarantee given by you due to or with the TGSPDCL.
  - vi) When you do not at any time, fulfill your obligations in replacing / rectifying etc., of the damaged/ defective materials in part or whole promptly to the satisfaction of the TGSPDCL officers, the TGSPDCL reserves the right not to accept the bills against subsequent despatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damages occurring to the consignment so despatched.
- 53.2 The 100% payment mentioned above is subject to on submission of performance security as per Clause-39 by the supplier.
- 53.3 The supplier should invariably submit test certificates and other documents, the purchaser specifies as soon as dispatch is made so that they can be checked and approved well in advance.

- 53.4 The performance guarantee to be executed in accordance with this specification will be furnished on a stamp paper of value Rs.100/-. The Bank Guarantee will be extended if required suitably. In accordance with the provisions of Clause No.39.
- 53.5 If the supplier has received any over payments by mistake or if any amounts are due to the TGSPDCL due to any other reason, when it is not possible to recover such amounts under the contract resulting out of this specification, the TGSPDCL reserves the right to collect the same from any other amount and / or Bank Guarantees given by the company due to or with the TGSPDCL.
- 53.6 When the supplier does not at any time, fulfill his obligations in replacing/rectifying etc., of the damaged/defective materials in part or whole promptly to the satisfaction of the TGSPDCL Officers, the TGSPDCL reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damage occurring to the consignments so dispatched.

#### **54. Prices**

Prices charged by the Supplier for Materials / equipment delivered and Services performed under the Contract will not vary from the prices quoted by the supplier in its bid, with the exception of any price adjustment authorized in the contract.

#### **55. Change Orders**

The Purchaser may at any time, by a written order given to the Supplier make changes within the general scope of the Contract in any one or more of the following:

- (a) Drawings, designs, or specifications, where Materials / equipment to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) The method of shipment or packing;
- (c) The place of delivery; and/or
- (d) The Services to be provided by the Supplier.

#### **56. Contract Amendments**

No variation in or modification of the terms of the Contract will be made except by written amendment by the Purchaser and accepted by the supplier.

#### **57. Assignment**

The Supplier will not assign, in whole or in part, its obligations to perform under this Contract, except with the Purchaser's prior written consent.

#### **58. Delays in Supplier's Performance**

- 58.1 Delivery of the Materials / equipment will be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Schedule of Requirements.
- 58.2 If at any time during performance of the Contract, the Supplier should encounter conditions impeding timely delivery of the Materials / equipment, the Supplier will promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser will evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, in which case the extension will be ratified by the parties by amendment of the Contract.

- 58.3 Except as provided under force majeure clause a delay by the Supplier in the performance of its delivery obligations will render the Supplier liable to the imposition of liquidated damages unless an extension of time is agreed upon without the application of liquidated damages.

**59. Penalty for delay in supplies**

The delivery of materials as per the agreed schedule of delivery is the essence of the contract and no extension of the time for delivery would be allowed except under recognized force majeure conditions.

For supplies made beyond the agreed delivery schedule, penalty shall be levied for an amount of equivalent to ½ % of the ex-works value of the material not delivered within the prescribed time limit for every week of delay or part thereof subject to a maximum of 5% of cost of the undelivered portion within scheduled time.

The date of certified receipt of material at destination stores in good condition will be taken as the date of delivery. For calculation of penalty, the date of receipt (i.e., 103 entry in SAP module) of material at destination stores is the "Date of Delivery" subject to the condition that, the materials is received in good condition. For penalty, the number of days would be rounded off to the nearest week and penalty calculated accordingly.

Any variation up or down in Excise Duty, or Sales Tax or other statutory levies, or new levies introduced after placing of the order, under this specification, shall be to the TGSPDCL's account, provided that, the delivery schedules are adhered to by the supplier. In case, if there are increase in excise duty or sales tax or other statutory levies or new levies after the agreed delivery dates, the supplier shall bear the impact of these levies and if there is downward variation/revision TGSPDCL shall be given credit to that extent.

In case you do not adhere to the delivery schedule the TGSPDCL reserves the right to purchase the balance quantity from the open market and recover expenditure incurred from you. This is in addition to the right of the TGSPDCL mentioned in first para of this clause and under law

**60. Risk purchase:**

In case of supplier who has not adhered to the delivery schedule, the TGSPDCL reserves the right to purchase the balance quantity from the open market/floating another tender and recover the extra expenditure thus incurred from the supplier.

**61. Termination for Default**

- 61.1 The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in part:

- i. If the Supplier fails to deliver any or all of the Materials / equipment within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser.
- ii. If the Supplier fails to perform any other obligation(s) under the Contract.
- iii. If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

- 61.2 In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Materials / equipment or services similar to those undelivered, and the Supplier will be liable to the Purchaser for any excess costs for such similar Materials / equipment or Services. However, the Supplier will continue performance of the Contract to the extent not terminated.

**62. Termination for Insolvency**

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or not affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

**63. Termination for Convenience**

63.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination will specify the termination is for the Purchaser's convenience, the extent to which performance of the supplier under the Contract is terminated, and date upon which termination becomes effective.

63.2 However the Materials / equipment that are complete and ready for shipment within thirty (30) days after the supplier's receipt of notice of termination will be accepted by the Purchaser at the Contract terms and prices.

**64. Force Majeure**

64.1 The Supplier will not be liable for forfeiture of its performance security, penalty for late delivery, 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.

64.2 For purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not restricted to, wars or revolutions fires, floods, epidemics, quarantine restrictions, and freight embargoes.

64.3 If a Force Majeure situation arises, the supplier will promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier will continue to perform its obligations under the Contract as far as is reasonably practice, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event.

No price variance will be allowed during the period of force majeure.

**65. Settlement of Disputes**

65.1 If any dispute or difference of any kind whatsoever will arise between the Purchaser and the Supplier in connection with or arising out of the Contract, the parties will make every effort to resolve amicably such dispute or difference by mutual consultation.

65.2 If, after thirty (30) days the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.

65.3 Any dispute of difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause will be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Materials / equipment under the Contract.

65.4 Arbitration proceedings will be conducted in accordance with the following rules of procedure. The dispute resolution mechanism will be as follows:

- (a) In the case of a dispute or difference arising between the Purchaser and a Supplier relating to any matter arising out of or connected with this agreement, such dispute or difference will be settled in accordance with the Arbitration and Conciliation Act, 1996. The Arbitral Tribunal will consist of three Arbitrators one each to be appointed by the Purchaser and the supplier the Third Arbitrator will be chosen by the two Arbitrators so appointed by the parties and will act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator will be appointed by The Institution of Engineers (India).
- (b) If one of the Parties fails to appoint its Arbitrator in pursuance of Sub-Clause (a) within 30 days after receipt of the notice of the appointment of its Arbitrator by The Institution of Engineers (India), will appoint the Arbitrator. A certified copy of the order of the Institution of Engineers (India), making such an appointment will be furnished to each to the parties.
- (c) Arbitration Proceedings will be held at Purchaser's Headquarters, and the language of the Arbitration Proceedings and that of all documents and communication between the parties will be English.
- (d) The decision of the majority of Arbitrators will be final and binding upon both parties. The cost and expenses of Arbitration Proceedings will be paid as determined by the Arbitral Tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc., of its proceedings as also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf will be borne by each party itself.
- (e) Where the value of the Contract is Rs. One Crore and below, the disputes or differences arising will be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely The Institution of Engineers (India).

65.5 Notwithstanding any reference to arbitration herein,

- (a) The parties will continue to perform their respective obligations under the Contract unless they otherwise agree; and
- (b) The Purchaser will pay the Supplier any monies due to the Supplier.

## **66. Jurisdiction**

All and any disputes or differences arising out of or touching this contract will be decided by the Courts or Tribunals situated in Purchaser's Headquarters only. No suit or other legal proceedings will be instituted elsewhere.

## **67. Notices**

67.1 Any notice given by one party to the other pursuant to this Contract will be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address.

67.2 A notice will be effective when delivered or on the notice's effective date, whichever is later.

## **68. Foreign Exchange**

No Foreign Exchange is available or expected for this purchase. Offers which do not require release of F.E. or procurement of import license by TGSPDCL only will be considered. Where some of the components are to be imported the manufacturer will have to make their own arrangements for import license etc., and should not look for any assistance from TGSPDCL.

**SECTION – IV**  
**SPECIFICATION NO. STN-1536/2025**

**SCHEDULE OF MATERIALS**

Sl. No.	Description of Material	Qty. in (Nos.)	Stores
1.	3 element, 4 wire CT operated LT Electronic Trivector Meters of class 0.5S accuracy with DLMS protocol (CAT-C1) operating on 3 x 240V AC with 4 Nos. CTs of 100/5A (0.5S Class) and housed in pilfer proof box with internal wiring over the power factor range from zero lag-unity-zero lead on three phase 50 cycles net work with 30 min. integrating period for MD with test terminal block (TTB) along with IRDA port and a RS232 port terminated with RJ11. <b>(The IRDA line of sight Communication Distance shall be 1 meter (Minimum)).</b>	6,500	FADS at TGSPDCL stores

**Note: -**

1. In e-procurement commercial stage, **if F&I charges are applicable then mention whether F&I charges entered are exclusive/inclusive of GST in the remarks section. If not mentioned in remarks, F&I charges will be considered as inclusive of GST.**
2. The tenderer should quote the rates for free at destination stores and shall fill the price schedule in e-procurement platform.
3. 2 Nos. (two) samples of quoted item shall be submitted at the time of submission of bid. Bids received without samples will be rejected.  
  
The purchaser will not be responsible for any damage that may be caused to the samples at any time
4. Delivery: To commence in 45 days and complete within 3 (THREE) months from the date of receipt of purchase order.

**TGSPDCL Stores:**

**Stores**

Mahaboob Nagar  
Nalgonda  
Medak  
Siddipet  
Ranga Reddy  
City-Hyderabad.  
Wanaparthy  
Suryapet

**Circle**

Mahaboob Nagar  
Nalgonda  
Sanga Reddy  
Siddipet  
Cybercity  
Banjarahills.  
Wanaparthy.  
Suryapet

**CHIEF ENGINEER/P&MM**

**SECTION – V**  
**QUALIFICATION REQUIREMENTS - STN-1536/2025**

1. The bidder should be a manufacturer who must have designed, manufactured, tested and supplied to power utilities at least 40% of the quoted quantity of the goods/equipment of same or higher class {supplies of LTCT Meters (with CTs & Box) with IRDA port} indicated in the “Schedule of Requirement” in one continuous period of 12 months during the last 5 years period and its financial turnover during any one year of the last five years should have been equal or more than 100% value of the material now quoted.  
(Financial turnover certified by a CA shall be enclosed)

At least 20% of similar material {supplies of LTCT Meters (with CTs & Box) with IRDA port} offered against this Specification should be in successful operation since 2 years as on the date of opening of the Bid with documentary evidence.

**( Performance Certificates issued by head of purchase wing will only be considered)**

Fresh bidders can be given order upto 15% of total quantity as a trial order if equipment is justified.

**Any company/vendor/supplier/contractor that is blacklisted/debarred by any other power utility is not eligible to participate in the tenders.**

**The bidders shall have to furnish an undertaking in the prescribed format regarding any relation to the promoters of blacklisted / debarred companies by any utility. Any false information furnished in the declaration while rendering bid, such contract is liable for termination as well as recovery of damages.**

2. The bidder should furnish the information on all past supplies and satisfactory performance in proforma under Form 4 attested by a gazzeted officer. Copies of Purchase Orders, invoices and other documents in support of the above supplies should be enclosed.
3. All bids submitted will also include the following information:
  - i. Copies of original documents defining the constitution or legal status, place of registration and principle place of business of the company or firm or partnership, etc.,
  - ii. The bidder should furnish a brief write-up, backed with adequate data, explaining his available capacity and experience (both technical and commercial) for the manufacture and supply of the required equipment within the specified time of completion after meeting all their current commitments.
  - iii. The bidder should clearly confirm that all the facilities exist in his factory for inspection and testing and these will be made available to the purchaser or his representative for inspection.
  - iv. Reports on financial standing of the Bidder such as profit and loss statement, balance sheets and auditor’s report for the past five years, bankers certificates etc.
4. The bidder shall furnish Type Test Reports. The type tests must have been conducted on the material offered as per the relevant IS/CBIP in recognized NABL laboratory as per the latest revision of the Technical Specification and the date of Type tests will not be later than **5 years**. In addition to this DLMS certification is to be enclosed. The Bids received without type test reports will be treated as Non-Responsive.

5. Even though the bidder meets the above qualifying criteria, they are subject to be disqualified if they have...
  - a. made misleading or false representations in the forms statements and attachments submitted in proof of qualification requirements and / or
  - b. record of poor performance such as not properly completing the contract, inordinate delays in supply completion, litigation history or financial failure etc.
6. Notwithstanding anything stated above the purchaser reserves the right to assess bidder's capability and capacity to perform the contract should circumstances warrant such an assessment in the overall interest of the purchaser.
7. 2 Nos. sample meters of the item mentioned in the tender schedule shall be handed over at the time of bid submission (hard copy) otherwise the tender shall be rejected.

**SECTION-VI**  
**STN-1536 /2025**  
**LT CT Meters of 100/5A CT ratio of DLMS, IRDA protocol with PP Box**

**1.0. SCOPE:**

1.1 This specification covers design, engineering, manufacture, assembly, inspection, testing at manufacturers work before dispatch and supply of 3 element, 4 wire CT operated LT Electronic Trivector Meters of class 0.5S accuracy with DLMS protocol operating on 3 x 240V AC with 4 Nos. CTs of 100/5A (0.5S Class) and housed in pilfer proof box with internal wiring over the power factor range from zero lag-unity-zero lead on three phase 50 cycles net work with 30 min. integrating period for MD with test terminal block (TTB) along with IRDA port and a RS232 port terminated with RJ11. **(The IRDA line of sight Communication Distance shall be 1 meter (Minimum).** (with latest amendments if any).

1.2 The bidder must possess BUREAU OF INDIAN STANDARD certification for the material being quoted. Tenders without BIS Certification will not be considered in the tender process. Bids of indigenous manufacturers of meters will be preferred. However authorized representatives/agents in respect of imported meters are also permitted to participate in the tender. The rates shall be quoted in Indian Rupees only. No assistance for release of FE/ Import LICENSE will be given by TGSPDCL.

1.3 It is not the intent to specify completely herein all the details of the design and construction of material. However the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in a manner acceptable to the purchaser, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and/or the commercial order or not.

**2.0 STANDARDS APPLICABLE :**

Unless otherwise specified elsewhere in this specification, the performance and testing of the meters shall conform to the following Indian / International Standards and all related Indian / International Standards to be read with upto-date and latest amendments / revisions thereof :

Sl. No.	Standard No.	Title
1.	IS 14697 – 1999	AC Static Transformer Operated Watt-hour and VAR-Hour Meters, class 0.2S & 0.5S.
2.	<b>CBIP Technical Report No. 325</b>	Specification for AC Static Electrical Energy Meters.
3.	<b>IS:15959:2011 (with latest amendments)</b>	Date Exchange for Electricity meter reading, Tariff and Load Control Companion specification.
4.	IS : 9000	Basic Environmental Testing Procedures for Electronic & Electrical Items.
5.	IS: 2705/Part I, II & III , IS 16227-122 : 2016	Specification for Current Transformers
6.	IS:5133, IS 14772 : 2020	Specification for boxes for enclosures to electrical accessories

**2.2** Equipment conforming to other internationally accepted standards, which ensure equal or higher quality than the standards mentioned above would also be acceptable. In case the Bidders who wish to offer material conforming to the other standards, salient points of difference between the standards adopted and the specific standards shall be clearly brought out in relevant schedule. Four copies of such standards with authentic English Translations shall be furnished along with the offer. In case of conflict, the order of precedence shall be (i) CBIP Technical Report No.325 with latest ISS (ii) amendments (iii) IEC (iv) Other standards. In case of any difference between provisions of these standards and provisions of the specification, the provisions contained in this specification shall prevail.

### **3.0 SERVICE CONDITIONS:**

#### **3.1 Climatic Conditions:**

The material to be supplied against this specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

<b>Sl. No.</b>	<b>Location</b>	<b>In the state of Andhra Pradesh</b>
i.	Max. ambient air temperature (Deg. C)	50
ii.	Min. ambient air temperature (Deg. C)	7.5
iii.	Average daily ambient air temperature (Deg. C)	35
iv.	Max. Relative Humidity (%)	74
v.	Max. altitude above mean sea level (m)	1000
vi.	Average Annual rainfall (mm)	925
vii.	Max. wind pressure (kg./sq.m)	200
viii.	Isoceraunic level (days per year)	50
ix.	Seismic level (Horizontal acceleration)	0.3 g.
x.	Average No. of thunderstorms days/years	40
xi.	Average number of rainy days/years	90
xii.	Average number of months/tropical monsoon condition per year	3
xiii.	Noise level	45 dB

Moderately hot and humid tropical climate, conducive to rust and fungus growth. The climatic conditions are also prone to wide variations in the ambient conditions. Smoke is also present in the atmosphere. Heavy lightning also occurs during June to October.

### **4.0 PRINCIPAL PARAMETERS:**

#### **4.1 Supply System:**

<b>Sl. No.</b>	<b>Item</b>	<b>Specification</b>
1.	Type of Installation	Outdoor
2.	System voltage	240 V phase to neutral (3-phase 4 wire system) 415V phase to phase.
3.	Rated secondary current (Ib) (connected through CT)	5A. Multiplying factor to arrive at actual primary values wherever applicable shall be calculated from the CT ratio of the installed CTs.
4.	System frequency	50Hz +/-5%
5.	No. of phases	Three
6.	System of earthing	Solidly grounded

**4.2 POWER SUPPLY VARIATION:**

The extreme power supply variation which an operating meter should withstand without damage and without degradation of its meteorological characteristics when it is subsequently operated under its operating conditions:

Voltage	-30% to +20%
Frequency	+/-5%
PF range	Zero lag – Unity – Zero lead.

However manufacturer can offer meters which can withstand higher variations.

**4.3 ACCURACY:**

Class of accuracy of meters shall be 0.5S for both active and reactive energy. The accuracy should not drift with time.

**4.4 POWER CONSUMPTION:**

i) Voltage Circuits: The active and apparent power consumption in each voltage circuit including power supply of the meter at reference voltage, reference temperature and reference frequency shall not exceed 1.5 Watt and 8VA per phase.

ii) Current Circuit: The apparent power taken by each current circuit of the meter shall not exceed 1VA per phase at basic current and reference frequency and reference Temperature.

**4.5 STARTING CURRENT:**

The meter should start registering the energy at 0.1% Ib and unity power factor.

**4.6 MAXIMUM CURRENT:**

The rated maximum current of the meter shall be 120% Ib at which the meter purports to meet the accuracy requirements.

**5.0. GENERAL & CONSTRUCTIONAL REQUIREMENTS:****5.1 MATERIAL USED:**

The meter shall be made out of high quality materials to ensure higher reliability and long life with a polycarbonate meter casing. It should be compact and of reliable design to make it immune to vibrations and shocks in normal transportation and should be capable of withstanding several stresses likely to occur in actual service. The latest state of the art technology of surface mounting of components etc., may be used for the purpose. The soldering if any shall be perfect without dry solders.

The components shall be of high quality and comply with international industrial standard practices. The construction of the meter shall be such as to permit sealing of the meter cover, terminal cover etc. independently to ensure that the internal parts are not accessible for tampering etc. without breaking the seals. The meter window shall be transparent and made out of UV Stablized material so that the window does not turn yellow after some years.

## 5.2 GENERAL:

i) Meters shall be designed and constructed in such a way so as to avoid causing any danger during use and under normal conditions. However, the following should be ensured:

- a) Personnel safety against electric shock.
- b) Personnel safety against effects of excessive temperature.
- c) Protection against spread of fire.
- d) Protection against penetration of solid objects, dust and water.

ii) All insulating materials used in the construction of meters shall be non-hygroscopic, non- ageing and of tested quality. All parts that are likely to develop corrosion shall be effectively protected against corrosion by providing suitable protective coating.

iii) The meter shall have an operation indication device such as a blinking LED/LCD. The operation indicator shall be visible from the front window.

iv) The meter shall conform to the degree of protection IP 51 of IS 12063/ IEC:529 for protection against ingress of dust, moisture and vermins.

v) The meter shall be supplied with a transparent extended terminal-block cover (ETBC).

vi) The terminal block, the ETBC and the meter case shall ensure reasonable safety against the spread of fire and should not be ignited by thermic overload of live parts in contact with them.

vii) The terminal block shall be of high grade non-hygroscopic, fire-retardant, low-tracking, fire-resistant, high grade engineering plastic (not Bakelite) which should form an extension of the meter case, meeting the requirement of clause No.6.4 of IS: 14697/Clause No. 4.2.4 of IEC 1036-1996.

## 5.3. TERMINAL ARRANGEMENTS:

The meters shall have tin-plated brass terminals. The terminals shall be marked properly on terminal block for giving external connections. A diagram of connections should be provided inside the cover of terminal block. The terminal cover shall be extended such that when it is placed in position it is not possible to approach the connections or connecting wires. The terminals and the screws shall be suitable to carry up to 150% of I<sub>max</sub> safely. The terminals shall have suitable construction with barriers and covers to provide secure and safe connections of Current Transformers and Voltage Transformers leads of stranded copper conductors of 2.5sq.mm size.

## 5.4. TEST TERMINAL BLOCK (TTB) WITH COVER:

A separate TTB is to be provided. Suitable provision shall be made in the test terminal block for disconnecting the meter for testing purposes and for the purposes of testing the meter. The test terminal block shall have provision for isolating the meter from the instrument transformer secondary connections. Proper arrangements for sealing of test terminal blocks cover are to be made. The test terminal block shall also have extended terminal cover such that when it is placed in position it is not possible to approach the connections or connecting wires. The live parts and current terminals shall not be accessible from the rear of TTB to prevent tampering. The TTB cover should be transparent cover through which, the metering connection can be viewed clearly. The screws used for connecting the wires should have sufficient head for tightening. Also, the terminal grooves should have the capacity/diameter to fix 2.5 Sq.mm wires freely without any difficulty. Also the CT screws should have sufficient head, so that during testing of the meter, the screw opening/tightening should be sufficient to act.

The TTB should not be conjusted and the TTB drawing should be got approved by the Chief General Manager/P&MM.

### 5.5. SEALING OF METER:

Proper sealing arrangement should be provided on meter to make it tamper proof and avoid mishandling by unauthorized persons. Meter cover shall be provided with minimum of 2Nos. sealing provision. The meter terminal block and test terminal block (TTB) with minimum 1No. each sealing screw and one number separate sealing arrangement to the MD reset push button. Separate sealing arrangement for RJ11 port to be used for communication to CMRI / LAPTOP should also be provided. The meter should be designed and constructed in such manner to make it pilfer proof once it is sealed. The meter shall contain two push buttons for UP scrolling and Down scrolling apart from MD reset button and Battery button.

### 5.6. ENVIRONMENTAL ASPECTS:

Meter shall be designed and constructed to be capable of withstanding all severe stresses and vibration and dust environments likely to be encountered in actual practice as the meter will be installed outdoor in boxes.

If any special precautions etc. are required as the meters are supposed to be installed in outdoor you may please specify them.

### 5.7. IMMUNITY TO ELECTRO MAGNETIC DISTURBANCE:

The meter shall be designed in such a way that conducted or radiated electromagnetic disturbance as well as electrostatic discharge do not damage or substantially influence the meter. The test report from any NABL accredited lab conducting the test as prescribed in the CBIP technical report **No. 325 (with latest amendments)** and ISS and test result be submitted.

### 5.8. NAME PLATE MARKING:

The name plate shall be clearly marked etched /embossed as per relevant Standards. The name plate shall indicate name of the project, purchaser's name, purchase order number and date, month and year of manufacture etc. The word "TGSPDCL" must be etched on the name plate. The name plate shall be provided in such a manner that it is not exposed to the open and is secured against removal. The words '5 years guaranteed' shall also be etched on the name plate.

### 5.9. GUARANTEED TECHNICAL PARTICULARS:

The technical particulars as detailed in the specification shall be guaranteed and a statement of guaranteed technical particulars shall be furnished in the relevant formats.

### 6.0 MEASURING PARAMETERS:

6.1 The meter should be capable of measuring the following electric parameters of poly phase supplies in all the four quadrants at all power factors lagging or leading.

Active energy	kWh
Reactive energy	kVAh (lag & lead)
Apparent energy	kVAh
Max. demand with date & time	kVA ,KW
Power factor	
Elapsed time and rising demand	KVA
MD reset count	
Cumulative MD	KVA ,KW
Display of No. of MD resets	Previous 12 Nos. MD values with date & time ( manual) in KVA and KW

Recording of missing potential & reversal of current with date and time	
Real time and date	
TOD register	
Phase Voltages (instantaneous)	
Phase Currents (instantaneous)	
Tamper and fraud details	
Self diagnostics	
Frequency	
Internal multiplying factor of CTs & PTs	

**NOTE:** Meter should be suitable for lag + lead only tariff. It shall be made possible to program lag + lead only Tariff to Lag Tariff as and when required by TGSPDCL using a software tool given by the manufacturer.

i) The parameters kWh, kVARh, kVAh, maximum demand and rising demand with elapsed time shall be displayed continuously in cyclic order on the meter to know the above parameters at any instant. The details of (i) Display Parameters (Auto display in cyclic order) (ii) Display Parameters (Push button) (iii) Readout Parameters (through CMRI/ RMR) are specified below:

ii) At the start of each sequence of display LED, LCD healthiness anomaly and real time and date shall be displayed.

#### **6.2 Display Parameter (Auto display):**

1. Complete LCD Test, System Service Test, System Current Test
2. Meter Number
3. Date
4. Time
5. Active Energy KWH
6. Reactive Energy KVARH Lag
7. Reactive Energy KVARH Lead
8. Apparent Energy KVAH
9. MD in KVA
10. Date and Time of MD Occurrence
11. Rising Demand with elapse time
12. Cum MD in KVA
13. Resets
14. Voltage R
15. Voltage Y
16. Voltage B
17. Current R
18. Current Y
19. Current B
20. Inst PF
21. Frequency
22. Tamper Count

#### **6.3 Display Parameters (Push Button):**

1. Complete LCD Test, System Service Test, System Current Test
2. Meter Number
3. Date
4. Time
5. Active Energy KWH

6. Reactive Energy KVARH Lag
7. Reactive Energy KVARH Lead
8. Apparent Energy KVAH
9. MD in KVA and KW
10. Date and Time of MD Occurrence
11. TOD KWH (**00.00 hrs. to 06.00 hrs**)
12. TOD KVAH (**00.00 hrs. to 06.00 hrs**)
13. TOD KWH (**06.00 hrs. to 10.00 hrs**)
14. TOD KVAH (**06.00 hrs. to 10.00 hrs**)
15. TOD KWH (**10.00 hrs. to 14.00 hrs**)
16. TOD KVAH (**10.00 hrs. to 14.00 hrs**)
17. TOD KWH (**14.00 hrs. to 18.00 hrs**)
18. TOD KVAH (**14.00 hrs. to 18.00 hrs**)
19. TOD KWH (**18.00 hrs. to 22.00 hrs**)
20. TOD KVAH (**18.00 hrs. to 22.00 hrs**)
21. TOD KWH (**22.00 hrs. to 24.00 hrs**)
22. TOD KVAH (**22.00 hrs. to 24.00 hrs**)
23. Rising Demand with elapse time
24. Cum MD in KVA and KW
25. Resets
26. Voltage R
27. Voltage Y
28. Voltage B
29. Current R
30. Current Y
31. Current B
32. Inst PF
33. Frequency
34. Tamper Count
35. Last Billing 1 TO 12 KWH
36. Last Billing 1 TO 12 KVARH Lag
37. Last Billing 1 TO 12 KVARH Lead
38. Last Billing 1 TO 12 KVAH
39. Last Billing MD 1 TO 12 IN KVA AND KW
40. Last Billing 1 to 12 Date and Time of MD Occurrence
41. Last Billing 1 TO 12 P.F
42. CT Ratio
43. Instantaneous Active power in KW in R,Y,B phases and Total Power (KVA and KW)
44. NVM Status
45. Phase Accosiation(Voltage sequence and current sequence)
46. Battery status
47. Present Running Tamper status

#### **6.4 Read out Parameters with CMRI/RMR:**

- 1) Meter Serial Number, Model & Make.
- 2) All parameters at clause 6.3
- 3) Energy Registers
- 4) Billing Registers
- 5) T.O.D Registers
- 6) Load Survey Data
- 7) Tamper & Fraud (all event details with date & time)
- 8) Self diagnostic details (real time calendar, Battery status (bat fail/Fine) )**

**TEST MODE:**

1. KWH
2. KVARH Lag
3. KVARH Lead
4. KVAH
5. Rising Demand with elapse time

(\* NOTE: However, the above parameters which are mentioned, should be as per DLMS document for CAT-C1 meters and other parameters should be downloaded through BCS software which is mandatory for the supplier to provide the software for downloading and reading from the BCS software.

All the Auto scroll Parameters shall be made available in Battery mode

**6.5 DISPLAY:**

The meter shall have a minimum 7 digit display of liquid crystal display (LCD) with another digit for legend. The minimum character height shall be 10 mm. Provision shall be made to read consumption in either whole units or decimal multiples or submultiples of one unit. The display shall be digital type with non destructive read out. It shall be possible to display content of relevant parameters with another digit displaying legend for identification. The meter should have facility of auto display mode where all parameters automatically scroll with in the specified time and a manual mode where the parameters can be read by push button operation. In auto display mode each parameter shall be on display for 10 seconds. The display "off" period between two cycles shall not exceed 30 seconds. The register should not roll over in between this duration. The meter should have non volatile memory, so that the registered parameters will not be affected by loss of power. A provision shall be made to read the meter parameters such as MD and consumption etc. through the meter cover without actually opening the meter box cover. The nonvolatile memory should have a minimum retention time of 10 years.

**DISPLAY RESOLUTION:**

1. Voltage	=	0.1V
2. Current	=	0.001A
3. P.F.	=	0.001
4. Energy	=	0.001 KWH
5. Demand	=	0.1 KVA / KW = 0.001 MVA/MW.

**6.6 MAXIMUM DEMAND REGISTRATION:**

The maximum demand is to be monitored during each demand interval set with 15/30 minutes integration and the maximum of these in a month shall be stored. Whenever MD is reset the maximum demand value so registered shall be stored along with date and time. Under the current integration period, the rising demand should be displayed continuously along with the elapsed time. The registered demand and the number of times the MD is reset shall also be displayed and the information stored.

**6.7 MD RESET:**

The meter should have provision of maximum demand resetting.

- a) Manually by operation of a button which is to be covered and sealing provision available for such cover.
- b) Resetting shall also be possible through a hand held common meter reading instrument (CMRI) capable of communicating with the meter.

- c) Provision for automatic resetting at the end of certain period may be made available and it should be possible to invoke this through CMRI with date and time.

#### 6.8 LOAD SURVEY CAPABILITY:

The meter should log the following eleven parameters (Kwh, KvarH Lag, KvarH Lead, KvaH, Avg.PF, R-Phase voltage, Y-Phase voltage, B-Phase voltage, R-Phase current, Y-Phase current, B-Phase current) for last 60 days in its memory **Midnight energies (cumulative) for 60 days should also be made available for download containing the parameters Date, Kwh, Kvarh lag, Kvah lead, Kvah, PON time.** The meter shall be programmed to record. The BCS reports shall contain all the reports of Name plate details, Instant data, 12 months Billing data for energies, MD, P.F, Load survey data reports and Mid night energies data data reports for a minimum of 60 days, Tamper reports and other reports etc.

It should be possible to transfer this data on to a base computer station through a DOS based CMRI/through P&T lines. The base computer shall give complete details of load survey particulars both in numeric data form and in graphic form. Necessary software for invoking the base computer station should be provided.

#### 6.9 TIME OF DAY TARIFF/DEMAND:

The meter offered shall contain provisions for multiple tariff metering (time of day metering / demand) and details of the same may be indicated in the tender separately. The meter offered should have a real time clock based on a quartz crystal with a battery totally independent of power supply. The meter shall be capable of being set in to minimum of 8 time zones (optionally more time zones can be offered) in 24 hours cycle to cover morning and evening on and off peak periods separately TOD register shall be provided for active energy, reactive energy, lag & lead and demand data.

The energy in the peak load time zone of 18.00 hrs to 22.00 hrs should be visible in display parameters in Auto Scroll Mode and Push button mode.

The energy in all the TOD zones should be visible in display parameters in Push button mode.

Initially TOD registers for 6 time zones shall be programmed as detailed below to capture kWh, kVAh, kVA, kVAh lead, lag and shall be made them to read on meter display.

T1: 00.00 hrs. to 06.00 hrs.  
 T2: 06.00 hrs. to 10.00 hrs.  
 T3: 10.00 hrs. to 14.00 hrs.  
 T4: 14.00 hrs. to 18.00 hrs.  
 T5: 18.00 hrs. to 22.00 hrs.  
 T6: 22.00 hrs. to 24.00 hrs.  
 and cumulative.

However, it should be possible for TGSPDCL to invoke/change them through the use of a CMRI with 2 level password protection and necessary software should be loaded by the meter supplier into the base computer station of TGSPDCL for this purpose.

(\*) The above parameters are to be read as per DLMS protocol document : (ETD 13 (6211) Table 3, Clause No. F.2 as per the time zones required by TGSPDCL.

**6.10 REMOTE READ OUT FACILITY/COMMUNICATION CAPABILITY:**

(i) The meter shall be provided with a galvanically isolated IRDA communication port and an additional RS-232 port on RJ 11 socket with sealing provision. The meter shall comply as per DLMS-ICS (CAT-C1) specification.

(ii) Software: The following software shall be made available by meter manufacturer to interface with hand held meter reading instrument/CMRI/ RMR.

- (a) Software to be resident in hand held terminal/CMRI for the purpose of reading and programming the specific make(s) of static meters.
- (b) Base computer station software for accepting data from hand held terminal/CMRI, processing, generating reports and down loading instructions from the Base computer station to CMRI.
- (c) Dial up software and protocol software for accepting the data from the meter through P & T lines to the base computer station/ central computer station, processing and generating appropriate reports.
- (d) Any future upgrades (license copy) of software/protocol be furnished to the purchaser at free of cost without any linkage to the guarantee period of the meters. All the parameters available in the registers of the meter shall be user selectable through CMRI.
- (e) An internal rechargeable battery shall be provided to read the meter display locally and data collection locally through IRDA as well as RJ11 Port in the absence of connected PT supply.

**6.11 TAMPER AND FRAUD PROTECTION:**

The meter should have features to prevent/detect common ways of tamper and fraud as per DLMS-ICS-Cat (C).

- a) Phase sequence reversal: The meter should work accurately irrespective of phase sequence of the supply.
- b) CT open/bypassing (57-62)/ (65, 66): The meter must have capability to record shorting/bypassing of one or any phases of the meter with the time and duration.
- c) CT Polarity reversal(51-56): The meter should register Energy consumption correctly even though the CT polarities are reversed with Date & Time along with total No. of such occurrences for all phases during the above period
- d) Missing Potential(1-6): The meter shall be capable of recording occurrences of missing potential phase wise, When  $I > 2\%$  of  $I_b$ , which can happen either owing to a PT fuse blowing or due to internal disconnection of a potential lead and its restoration with date and time along with total number of such occurrences during the above period. Further if the voltage falls below 80% of the rated voltage the same shall be recorded.
- e) Power Failure (101,102): As per DLMS spec, tamper is to be recorded by the meter.
- f) Missing Neutral: The meter shall continue to record accurately even if the neutral of PT supply is accidentally or incidentally disconnected.

- g) External Magnetic Influence: The Meter shall not get influenced by any external permanent/electromagnet(s). The continuous Magnetic Induction of external origin: The value of magneto motive force to be applied as per the stipulations of CBIP **Report No. 325 read** with amendments for Static Electronic Energy Meters.
- h) **The meter should log the cover open tamper with date and time stamp and it should not be possible to reset by any means except the Factory Reset.**
- i) **Every tamper snapshot should also have Kvah reading apart from Kwh reading and along with other parameters of voltages and currents and P.F**
- j) **Further the Tampers of Over Voltage,Over Current ,Neutral Disturbance ,Low P.F and abnormal frequency shall also be logged with date and time stampings**

Tamper Information: Minimum 200 events (occurrences and restoration) with date and time of event shall be recorded. The information shall be logged on first in first out basis and total number of tamper events during the period. All these information should be available in simple and easily understandable format.

The bidder should furnish with detailed explanation how their meters are able to detect/protect/recording the above tamper and fraud features with sketches phase or diagrams if required. The GTP,Drawings of meter,Meter name plate ,Meter Box, TTB, CT's ,Display parameters in all modes and Tamper logics shall be got approved by P&MM Wing before the commencement of production.

**6.12. Self diagnostics features:**

The meter shall have indications for unsatisfactory/non functioning of the following:

- i) Time and calendar
- ii) Real Time Clock Battery
- iii) All display segments and anything else as necessary.

While installing the meter, it should be possible to check the correctness of Current Transformer, Potential Transformer connections to the meter and their polarity from the functioning of the meter for different voltage injections. For this purpose a suitable software for field diagnosis of the meter connections with the help of meter and meter reading instrument should be supplied. The details of the self diagnostic features shall be furnished by the bidder. Any abnormal connection should be reported on the meter display.

**7.0. FLEXIBLE SHIELDED CABLES:**

**NOTE:** One cable of each type for every 50 meters shall be supplied for PC Communication as well as CMRI Communication.

- (i) For PC to RJ11 with built in Converter
- (ii) For CMRI to RJ11

**8.0. SPECIFICATION FOR RESIN CAST RING TYPE CURRENT TRANSFORMER**

The resin cast ring type LT Current Transformers conforming to IS-2705/1992 (Part I,II & III) or the latest version thereof, are of class 0.5S accuracy, 1 VA burden for use in conjunction with -/5A Energy meters being supplied and are to be installed in a moulded box.

**8.1. Ratings:** The Current Transformers shall be of the following details.

Type	Resin cast ring type LT CTs (without bar)
Capacity	100/5A

a) Rated Voltage	440V
b) No. of Cores	One
c) Rated burden	1VA
d) Rated continuous Thermal Current temperature rise over ambient	As per IS 2705/1992 or latest version thereof
e) One minute withstand Power Frequency Voltage	3Kv
Class of Accuracy	0.5S
Material	High grade non-ageing electrical low loss core of superior CRGO silicon sheet steel
i) Core	Super enameled copper wire
ii) Conductor	2/1.22 mm
iii) Insulation	MS Hot dip galvanized
iv) Base	
Secondary Termination	Terminals S1 & S2 shall be clearly marked

## 9.0. TECHNICAL SPECIFICATION FOR PILFER PROOF BOX TO HOUSE THE METER.

### 9.1. TECHNICAL DETAILS:

The box shall be weather proof made out of SMC with flame retardant properties.

It shall be capable of withstanding temperatures of boiling water for 5 minutes continuously without distortion or softening. The thickness of the box shall not be less than 3mm on the load bearing side (i.e., back side of the box) and other sides, door and roof shall not be less than 2.5mm. The box shall have its roof tapering down to both sides for easy flow of water.

The box shall be two separate compartments, the lower chamber to house the 4 Nos. ring type resin cast CTs. The lower chamber shall be provided with 4 Nos. holes of suitable dia with cable glands with PVC check nuts on either side for the incoming and outgoing cables. The upper one to house the meter. The base supports of the meter, CTs shall be raised by about 10mm in the box for ease of wiring. SMC sheet of suitable thickness should be used for CTs fixing on the lower chamber and SMC sheet of suitable thickness should be used for mounting of meter and TTB.

Both the chambers should have provision for sealing independently with a minimum of two seals each.

The boxes shall generally comply with the provisions of IS 5133 and IEC 695. The boxes shall be suitable for outdoor/indoor application. The outdoor box shall have its roof designed for easy flow of rain water without any stagnation on the box. The box shall be with good workmanship.

The dimensions of the box shall be such that there is a minimum clearance of 75 mm on all sides, 25 mm clearance on the front and 10 mm on the back of the meter when the meter is fixed in the box. The clearances in the CT chamber shall be as per IS standards.

Soft rubber gaskets shall be provided all around wherever required for protection against entry of dust and water. It shall comply with IP-33.

- a. Colour: Meter box shall be off white or admiralty gray.
- b. The contents of the box are as follows.

i) Viewing Window: Viewing Window made of a scratch and break resistant transparent clear polycarbonate material, shall be provided on the door for reading the meter without inconvenience. The minimum thickness of viewing shall be 2mm. The viewing window shall be covered with (hinged at top) flap. Size of the viewing window of the Box shall be designed accordingly to facilitate IRDA communication.

The window shall be **fastened/riveted** with meter box from inside. There should not be any ingress of moisture through this window into the box.

ii) Internal hinges: A minimum of 2 Nos. internal hinges of each compartment, well protected against corrosion shall be provided. The hinges of the door should be concealed and they shall be fixed to the flanges provided to the base and cover of the box in such a manner that the door opens by a minimum of 120 degrees.

iii) Handle: Suitable handle or knob shall be provided for opening of the box door/s.

iv) Earthing Bolt : 8mm dia **GI/MS Zinc plated bolts** 2 Nos. washers for earthing all metal parts used for fixing the meter shall be provided. 2 Nos. earthing bolts required for the meter box at right side.

Copper lugs should be supplied for potential clamps.

v) Fixing arrangement: The meter base supports inside the box are raised by about 10mm in the box for ease of wiring. While fixing the meter screws should not protrude outside. For fixing the box to wall or wooden board 8 Nos. key holes of minimum 6 mm dia shall be provided at the four corners of each compartment of the box. The meter and CTs are to be installed in the box and the box in the assembled condition shall have provision to fix it to a pole or on wall.

vi) Latch: The door/s shall be provided with a GI latch or a 'U' clamp to secure it with the base of the box.

vii) Sealing arrangement: Both the compartments shall have provision for minimum 2 Nos. seals on each to make it fully tamper resistant.

viii) Printing: Metallic label containing the letters "TGSPDCL" and the P.O. No. and date shall be printed on the top cover of the box. The name of the manufacture shall be printed on the bottom half of the box. A blank sticker shall also be fixed on the meter box for use of field staff to indicate service No. etc.

ix) The fixing arrangements shall not be complex and it shall be easily approachable for connections when the door is open and is completely tamper resistant once it is sealed.

x) The dimensional drawing giving details of meter box shall be enclosed ion the bid.

## **10.0 TESTS:**

### **10.1 Type tests:**

The Trivector Meters offered shall be fully type tested as per relevant CBIP/IS/IEC at any NABL accredited test laboratories. A copy of Type test reports shall be furnished with the Bid. The Bids received without type tests reports will be treated as non-responsive.

The DLMS conformance latest certificate should also be enclosed (Confirms to DLMS-ICS-CAT-C1 specification).

The CTs offered with the meter shall be fully type tested as per relevant IS standard at any independent NABL accredited test labs. A copy of type test reports shall be furnished with

the bid. The bids received without TTC will be treated as non-responsive. The following type tests for CTs may be furnished.

- (i) Markings & Polarity
- (ii) Determination of error
- (iii) Power Frequency Dry
- (iv) Over Voltage inter-turn test
- (v) Temp. rise test
- (vi) Instrument security factor
- (vii) S.T. Current

The following type tests reports (as per relevant IS) for the Box shall be furnished:

- (i) Markings & Polarity Protection against electric shock
- (ii) Resistance to ageing, to humid condition, to ingress of solid objects & to harmful ingress of water.
- (iii) Mechanical Strength.
- (iv) Resistance to insulating material to abnormal heat & fire.
- (v) Material Identification.
- (vi) Tensile Strength.
- (vii) Flexural Strength
- (viii) Resistance to rusting.

The Relevant Type test reports as per IS pertaining to Meter body shall also be submitted

## 10.2 Acceptance Tests:

The acceptance tests as stipulated in CBIP (with latest amendments ISS/IEC shall be carried out by the supplier in the presence of purchaser's representative. Also the following tests are carried out on mutually agreed quantity of meters from each lot offered for inspection.

- i) Shock Test
- ii) Vibration Test
- i) Magnetic induction of external origin (AC&DC)
- ii) Tamper and Fraud Protection as per clause-5.21.

## 10.3 Routine tests:

All the routine tests as stipulated in CBIP/ISS/IEC and in addition tamper and fraud protection tests as per clause 6.11 shall be carried out and test certificates shall be furnished for the approval of the purchaser.

## 11.0 INSPECTION

The inspection may be carried out by the purchaser at any stage of manufacture. The manufacturer shall grant free access to the purchaser's representative at a reasonable time when the work is in progress. Inspection and acceptance of any equipment under this specification by the purchaser, shall not relieve the supplier of his obligation of furnishing the equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found to be defective.

The supplier shall keep the purchaser informed in advance, about the manufacturing program so that arrangement can be made for inspection.

The purchaser reserves the right to insist for witnessing the acceptance/routine testing of the bought out items. The supplier shall give 15 days for local supply/30 days (in case of foreign supply) advance intimation to enable the purchaser to depute his representative for witnessing the acceptance and routine tests.

**12.0 Training of Personnel:** The supplier shall provide necessary facilities for training personnel at their works/Principals Works relating to design, manufacturer, assembly and testing and operation & maintenance for 4 personnel free of cost. However travel and incidental charges of the personnel will be borne by the Purchaser.

### **13.0 DOCUMENTATION:**

13.1 All drawings shall conform to International Standards Organization (ISO) 'A' series of sheet India Standards Specifications IS:656. All drawings shall be in ink and suitable for micro filming. All dimensions and data shall be in S.I. Units.

13.2 List of drawings and documents:

The bidder shall furnish the following along with bid.

- i) Two sets of drawings showing clearly the general arrangements, fitting details, electrical connections etc.,
- ii) Technical leaflets (users manual) giving operating instructions.
- iii) 3 Copies of Dimensional drawings of the box for each quoted item.

13.3 The manufacturing of the equipment shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the purchaser. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawing shall be at the supplier's risk.

13.4 Approval of drawings/work by purchaser shall not relieve the supplier of his responsibility and liability for ensuring correctness and correct interpretation of the Drawings for meeting the requirements of the latest revision of application standards, rules and codes of practices. The equipment shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of ordering and purchaser shall have the power to reject any work or materials which, in his judgment is not in full accordance therewith.

13.5 The successful bidder shall, within 2 weeks of placement of order, submit three sets of final versions of all the drawings as stipulated in the purchase order for purchaser's approval. The purchaser shall communicate his comments/approval on the drawings to the supplier within two weeks. The supplier shall, if necessary, modify the drawings and resubmit three copies of the modified drawings for their approval. The supplier shall within two weeks of intimation of approval submit 10 prints and two good quality report copies of the approved drawings for purchaser's use.

13.6 Eight sets of operating manuals/technical leaflets shall be supplied to each consignee for the first instance of supply.

13.6.1 One set of routine test certificates shall accompany each dispatch consignment

13.6.2 The acceptance test certificates in case pre-dispatch inspection or routine test certificates in cases where inspection is waived shall be got approved by the purchaser.

**14.0 PACKING & FORWARDING:**

14.1 The equipment shall be packed in crates suitable for vertical/horizontal transport as the case may be, and suitable to withstand handling during transport and outdoor storage during transit. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbol. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc., shall be provided. Any material found short inside the packing cases shall be supplied immediately by supplier without any extra cost.

14.2 Each consignment shall be accompanied with a detailed packing list containing the following information.

- a. Name of the consignee
- b. Details of consignment.
- c. Destination
- d. Total weight of consignment
- e. Handling and packing instructions.
- f. Bill of material indicating contents of each package.

14.3 The supplier shall ensure that the packing list and bill of material are approved by the purchaser before dispatch.

14.4 The packing shall be done as per the manufacturer's standard practice. However, he should ensure the packing is such that, the material should not get damaged during transit by Rail/Road.

14.5 The marking on each package shall be as per the relevant Standards and shall also contain TGSPDCL, P.O. ref, guarantee period, date of manufacture, name of the supplier, make, meter type and number.

**15. QUANTITY AND DELIVERY REQUIREMENTS:**

The quantity and delivery requirements are indicated in Section-VI.

**16. SUPERVISION SERVICES:**

The purchaser will arrange for unloading of the consignments.

**17. MANDATORY SPARES & TOOLS:**

The bidder shall give the list of spares required for the equipment along with price list for them & shall keep a reasonable stock of the same during the warranty period. The bidder shall indicate the sources of spares like battery packs, interfacing cables in India and also mention the service agencies.

**18. SAMPLE:**

2 Nos. Sample meters shall be submitted as indicated in Section-IV qualification requirements. Bids received without samples will be rejected. These sample meters shall be tested at NABL labs for type testing, DLMS conformance testing as per IS available.

**19. TESTING CHARGES:**

The bidder shall be addressed to furnish testing fee for testing of the sample meters those who qualify in the qualification requirements.

**20. GUARANTEE:**

The material should be guaranteed for satisfactory operation for a period of 5 years from the date of receipt of material at destination stores by the consignee in good condition. During the

guarantee period if the meter while in its normal operation is found defective, it shall be replaced by the supplier with a new meter free of cost within 15 days. If the meter is not replaced within 30 days of intimation the supplier should note that the guarantee period will be extended to that extent by the number of days delayed beyond 30 days. If the tenderer does not replace within 180 days the cost of the meter(s) will be recovered from the existing bills / future bills / Bank Guarantees available with the TGSPDCL. The WGP defective meters shall be transported from the various TGSPDCL destinations to their manufacturing factory and replace them with healthy meters and test them for accuracies and IRDA performance and also resetting all the values to zero and transport back to the respective TGSPDCL destinations free of cost by the manufacturer.

For the purpose of ensuring 5 years guarantee meter may be sealed at manufacturer's premises and despatch in sealed condition after inspection by the TGSPDCL representative.

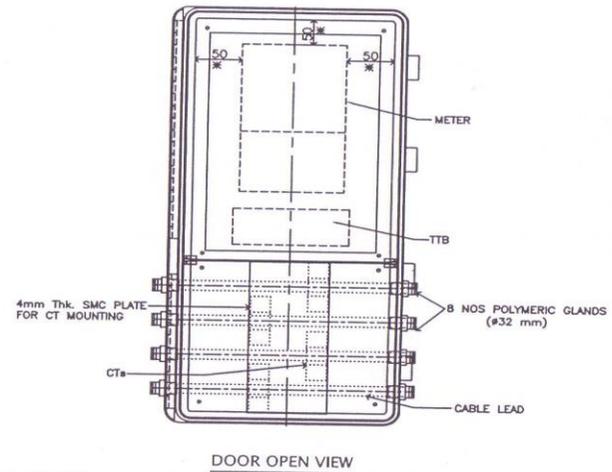
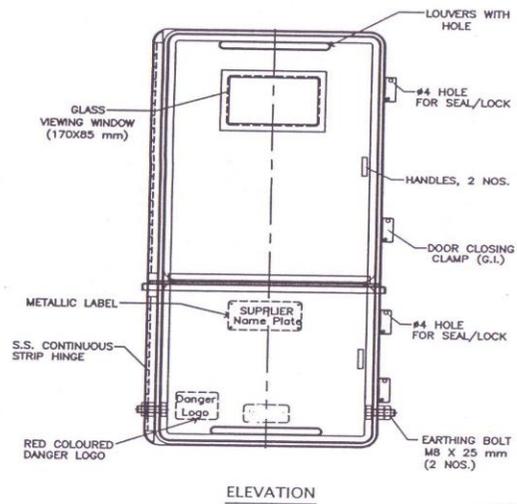
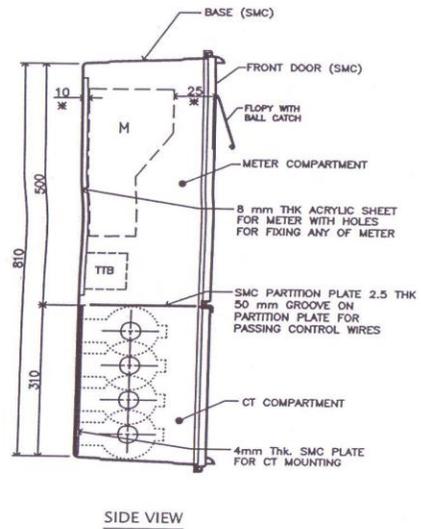
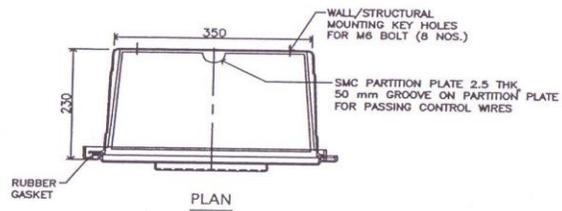
**21. GENERAL:**

- a. Principle of operation of the meter, outlining the methods and stages of computation of various parameters starting from input voltage and current signals including the sampling rate if applicable shall be furnished by the bidder.
- b. The bidder shall indicate the method adopted to transform the voltage and current to the desired low values with explanation on devices used such as CT, VT or Potential divider as to how they can be considered superior in maintaining ratio and phase angle for variation of influence quantities during its service period.
- c. The bidder shall furnish details of memory used in the meter.
- d. Details of testing facilities:

The manufacturer laboratory must be well equipped for testing of the meters. They must have computerized standard power source and standard equipment calibrated not later than a year (or as per standard practice). The details of testing facilities available for conducting (a) The routine tests and (b) Acceptance tests shall be furnished in a statement. Bids without these details will be treated as Non responsive.

**22. TECHNICAL DEVIATIONS:**

Technical deviations to Section-III "Technical Specification" shall be specifically and clearly indicated in the "Schedule – A".



## NOTES :-

- (1) MADE OUT OF (THERMOSETTING PLASTIC) SHEET MOULDING COMPOUND BY THE PROCESS OF HOT PRESS COMPRESSION MOULDING, CONFIRMING TO IS : 13410.
- (2) SMC BASE OR DOOR SHALL NOT SOFTEN OR BEND ON HEATING.
- (3) DOOR FITTED TO BASE BY CONCEALED HINGES.
- (4) TRANSPARENT COVER OF VIEWING WINDOW GLASS FITTED FROM INSIDE OF DOOR.
- (5) DIMENSIONS :  
INSIDE :- H=810mm, W=350mm, D=230mm.  
THICKNESS = 3.0 mm (LOAD BEARING SIDE)  
= 2.5 mm (ALL OTHER SIDES), FLANGES = 4 mm THK
- (6) COLOUR :- OFF WHITE

MARKED \* THUS ARE MIN. CLEARANCE

## COMMUNICATION PROTOCOL

(For Consumer Meters)

Master : Meter Accessing Instrument with IrDA physical layer standard ( CMRI).  
 Slave : Energy Meter (Considered in this document)  
 "IR Transceiver : Should be complaint to the latest IrDA Physical layer standard"  
 i.e., the details is as follows:

### Protocol Information:

#### **General :**

Master : Meter Accessing Instrument with IrDA physical layer standard ( CMRI/ ISBM).  
 Slave : Energy Meter

#### **Technical Details**

Peak wavelength : 850-900 nM  
 Half Angle : 15° Minimum cone  
 Link Distance : 1.5 m from the top of meter cover  
 Speed : 2.4 kbit/s – 115.2 kbit/s( SIR)  
 Modulation : Baseband, no carrier  
 Window : Infrared window

#### **Emitter:**

Intensity in angular range : 40- 500 mW /Sr  
 Rise and Fall time : 600n Sec Maximum

#### **Receiver:**

Irradiance : 4-5x10<sup>5</sup> μ W/ Cm<sup>2</sup>  
 Latency : 10 m Sec

#### **Communication protocol:**

Baud Rate : 9.6 kbps  
 Physical layer, SIR, 1/16 at 9.6 kbps

### I.Steps for getting data from Meter to CMRI

The following procedure is adopted for getting data from Meter to , through IR PORT.

#### **Format:**

- Little Endian
- All values are in Hexadecimal
- Check Sum calculation :
  - if data, then Check Sum =  $\sum \sim$ Data,
  - else Check Sum = 0

#### 1a. Command 1 – from CMRI/ISBM to Meter (Initiation Command)

Transmitting Sync packet (11 bytes, Data Nil, with two starting sync bytes) to meters.

Sync Word	Meter IP	Payload	Command	CMRI/ISBM IP	Data	Checksum
16 bit 95h 95h	24 bit = ffffffh	8 bit	8 bit	24 Bit	Max 242 Bytes	8 bit

#### **Example:**

1 2 3 4 5 6 7 8 9 10 11

Transmitting sync packet from CMRI/ISBM to Meter: **95 95 ff ff ff 0b 96 31 11 05 00**

Sync Word = 0x95 0x95  
 Meter IP = All meters in range = 0x 00 00 00 - 0xFF FF FF  
 Payload = 0x0B = 11d  
 Command = 0x96 = 150d  
 CMRI/ISBM IP = 0x31 0x11 0x05 => 0x051131 = 332081d  
 Check Sum = 0 (because there is no data)

**1b. Response 1 – from Meter to CMRI/ISBM (Initiation Response)**

Meters use wireless Collision Avoidance i.e. all meters which receives the Command 1, gives response in random time slots of 62.5 ms each up to maximum of 0.5s.

Sync Word	CMR IP	Payload	Response	Meter IP	Data	Checksum
16 bit 95h 95h	24 bit = ffffffh	8 bit	8 bit	24 Bit	Max 242 Bytes	8 bit

**Example:** 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19  
Sequence : **95 95 31 11 05 14 96 01 1B B7 01 01 1B B7 05 18 00 80 1E 00**

Name	No of Bytes	Byte Posn	Example	Description
		Offset	Hex Bytes	
Sync Word	2	0,1	95 95	Packet Start identifier
Destination ID	3	2,3,4	31 11 05	MRI ID : 0x051131 =332081 (Decimal)
Pkt Length	1	5	0x14	20 d
Cmd ID	1	6	0x96	0x96 : Response 1- ID
Source ID	3	7,8,9	01 1B B7	Meter ID Eg: 0xB71B01 = 12000001 (Decimal)
No of packets	1	10	0x01	Single packet
Meter ID	3	11,12,13	01 1B B7	Meter ID Eg: 0xB71B01 = 12000001 (Decimal)
Manufacturing DATE	1	14	0x05	0x05(BCD Format) - May
Version Control ID	1	15	0x18	For new vendors meter make
Meter phase	1	16	0x00	00h:Single Phase ,03h:Three Phase
Meter Health Check	1	17	0x80	Meter Status
MD Integration Period	1	18	0x1E	MD Intergaration Period
Check sum	1	19	0x00	Sum of inversion of all the Data Bytes

**2a. Command 2 - from CMRI/ISBM to Meter (Data Command -1)**

The CMRI/ISBM will send below command(s) to particular meter which is responded at first.

Sync Word	Meter IP	Payload	Command	CMRI/ISBM IP	Data	Checksum
16 bit 95h 95h	24 bit	8 bit	8 bit	24 Bit	Max 242 Bytes	8 bit

**Example:**

CMRI/ISBM Command set for packet 1: **95 95 01 1B B7 0B 00 31 11 05 00**

Sync Word = 95h 95h  
Meter Serial Number = Meter IP = 0x011BB7 => 0xB71B01 = 12000001d  
Payload = 0x 0B = 11d  
Command = 00 (Command for first packet) / Billing Data  
CMRI/ISBM IP = 0x31 0x11 0x05 => 0x051131 = 332081d  
Check Sum = 00

**2b. Response 2 - from Meter to CMRI/ISBM ( Billing data only)**

Meter will give the billing data as bellow,

Sync Word	CMR IP	Payload	Response	Meter IP	Data	Checksum
16 bit 95h 95h	24 bit	8 bit	8 bit	24 Bit	Max 242 Bytes	8 bit

#### In detail explanation of Packet 1 of Response 2

Name	No of Bytes	Byte Posn	Example	Description
		Offset	Hex Bytes	
Sync Word	2	0,1	95 95	Packet Start identifier
Destination ID	3	2,3,4	31 11 05	MRI ID : 0x051131 =332081(Decimal)
Pkt Length	1	5	0x00 - 0xF8	248 bytes
<b>Cmd ID</b>	1	6	0x00 - 0xFF	<b>00h : Billing Data</b>
Source ID	3	7,8,9	01 1B B7	Meter ID Eg: 0xB71B01 = 12000001(Decimal)
RTC – Time	3	10,11,12	00 00 00	hh:mm:ss (24 Hours format)
RTC – Date	3	13,14,15	00 00 00	DD:MM:YY
Instantaneous Voltage R	2	16,17	00 00	Least count 0.1 (240.1 volts)
Instantaneous Voltage Y	2	18,19	00 00	Least count 0.1 (240.1 volts)
Instantaneous Voltage B	2	20,21	00 00	Least count 0.1 (240.1 volts)
Instantaneous Current R	2	22,23	00 00	Least count 0.01 (12.89 amps)
Instantaneous Current Y	2	24,25	00 00	Least count 0.01 (12.89 amps)
Instantaneous Current B	2	26,27	00 00	Least count 0.01 (12.89 amps)
Cum. kWh	4	32 - 35	00 00 00 00	Least count 0.01
Cum. kVAh	4	44 - 47	00 00 00 00	Least count 0.01
LBPI kvAMD	2	48,49	00 00	Least count 0.01
MD Time	2	50,51	00 00	HH:mm (24hr format)
MD Date	3	52,53,54	00 00 00	DD:MM:YY
Make Code	3	55,56,57	00 00 00	XXX (TEXT format)
Phase	1	58	0x03	00h:Single Phase ,03h:Three Phase
Meter Multiplier factor	2	59,60	0001	XXXX (Fixed value 1)
MD Reset Count	2	77,78	00 00	00 - 65535

### 3. Command 3 – from CMRI/ISBM to Meter (Closing Command)

CMRI/ISBM will send the below command to the meter to stop / close the communication

Sync Word	Meter IP	Payload	Command	CMRI/ISBM IP	Data	Checksum
16 bit 95h 95h	24 bit = ffffffh	8 bit	8 bit	24 Bit	Max 242 Bytes	8 bit

**Example:**

CMRI/ISBM Command set for Closing command : **95 95 01 1B B7 0B 9e 31 11 05 00**

Sync Word = 95h 95h  
Meter Serial Number = Meter IP = 0x011BB7 = 12000001d  
Payload = 0x0B = 11d  
Command = 0x9e = 158d  
CMRI/ISBM IP = 0x31 0x11 0x05 => 0x051131 = 332081d  
Checksum = 0x00

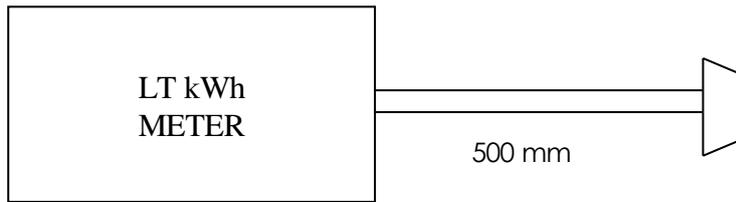
\* After receiving closing command from CMRI / ISBM, the meter should not respond to broadcast command till 15 minutes.

\* **Meter has to display "DONE" in case of billing data**

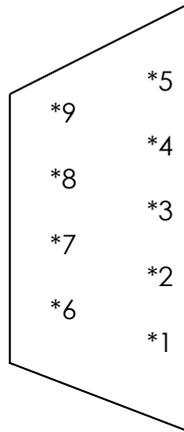
**Data is then downloaded for each valid meter in sequence.**

**The CMRI restarts the process 3 times till no meter response is found.**

**APPENDIX**  
**9 PIN MALE CONNECTOR**



RS 232C 9 PIN D TYPE MALE CONNECTOR



PIN FUNCTION LISTING:

PIN	SIGNAL NAME
01	NC (Not connected)
02.	Transmit Data TXD
03	Receive Data RXD
04	NC
05	Signal ground (SG)
06	NC
07	NC
08	NC
09	Power supply (+4.75V to +12.5V)

**ACRONYMS**

<b>Reference Abbreviations</b>	<b>Name and Address</b>
IEC	International Electro Technical Commission Bureau Central de la Commission Electro Technique International, Rue de verembe Geneva, Switzerland.
ISO	International Organization for Standardization, Danish Board of Standardization Aurehoegyvej – 12, DK – 2900, Heel prup, DENMARK.
ISS	Indian Standard Bureau of Indian Standards Nanak Bhavan, 9, Bhadur Shah Zafar Marg, NEW DELHI – 110 002, INDIA.
CBIP	Central Board of Irrigation and Power Malcha Marg, Chankyapuri, NEW DELHI-110 021. INDIA.
CT	Current Transformer
PT	Potential Transformer
Deg.C	Degrees centigrade
Max	Maximum
Accn.	Acceleration
db	Decibels
MD	Maximum Demand
TOD	Time off day
Min.	Minimum
CMRI	Common Meter Reading Instrument
ICS	Indian Companion Specification
DLMS	Device Message Language Specification

**SCHEDULE - F**  
**I - GUARANTEED TECHNICAL PARTICULARS FOR**  
**LT ELECTRONICS TRIVECTOR METERS**

Sl.No.	Characteristics	
1.	Maker's name and country.	
2.	Type of Meter/model.	
3.	Accuracy class.	
4.	Power consumption for phase. i. Voltage circuit ii. Current circuit	
5.	Minimum starting current (% Ib)	
6.	Parameters measured	
7.	No. of digits of display and height of character.	
8.	P.F Range.	
9.	Variation of voltage at which meter functions normally.	
10.	Particulars of readout. a) Continuous display. b) Manually on display c) Auto display i) Parameters. ii) Scrolling period. iii) Display off period between two cycles. d) With CMRI/RMR.	
11.	Details of Meter base and cover i. Type of material ii. Dimensions and weight	
12.	Non volatile memory retention time in absence of power.	
13.	Memory capacity (KB)	
14.	Details of tamper and fraud provisions a) On display. b) With meter reading instrument and data transfer. c) Detailed explanation how the tamper detection made is furnished or not?	
15.	Guarantee for satisfactory operation of meter.	
16.	Standards to which the meter confirms	
17.	Overload capacity	
18.	Dynamic range.	
19.	a) Meter terminal block having sealable extended terminal cover. b) Connection diagram inside the terminal cover. c) Maximum safe current the terminals and screws shall carry.	
20.	Change in errors (accuracy) due to variation in voltage, frequency and temperature to be furnished. a) Voltage. i) +20% to +10-% ii) +10% to - 10%. iii) -10% to -20% iv) -20% to -30%. b) Frequency variation. i) 50 +10-% Hz. ii) 50 + /-5% Hz. c) Temperature.	

21.	Detailed explanation how the tamper detection made is furnished are not	
22.	Sealing of the meter (Nos. of seals) a) Meter cover. b) Terminal Block cover. c) Others, if any.	
23.	Whether meter carries any certification mark.	
24.	Self diagnostic features (provide details)	
25.	Principle of operation (provide details)	
26.	Any additional measuring parameters	

**II-GUARANTEED TECHNICAL PARTICULARS FOR CTs**

<b>Sl.No.</b>	<b>Particulars</b>	<b>Guaranteed</b>
1	Maker's Name and Address	
2	Type/Capacity	
3 a)	Rated Voltage	
b)	Highest system voltage	
c)	No. of cores	
d)	Rated output	
e)	Rated continuous thermal current temperature rise over ambient	
f)	One minute withstand power frequency voltage	
4	Class of Accuracy	
5	Dimensions in mm	
a)	Inner diameter of the CT	
b)	Outer diameter of the CT	
c)	Height of center of the CT from base	
6	Secondary Termination	

**III-GUARANTEED TECHNICAL PARTICULARS OF BOX**

<b>Sl. No.</b>	<b>Characteristics</b>	
1.	Manufacturer' name	
2.	Material used for box body	
3.	Material withstanding temperature	
4.	Dimensions of box (L x W x H)	
5.	Thickness (mm)	
6.	Color	
7.	Viewing window Material Dimensions Whether shade arrangement to window provided or not	
8.	No. of Hinges	
9.	Handle provisions	
10.	Earthing provision	
11.	Sealing Arrangements	
12.	Inlet & Outlets	
13.	Gasket Whether gasket is provided for (each) door and window Material of the gasket	
14.	Suitable for outdoor installation	

**SCHEDULE - G**  
**DETAILS OF TESTING FACILITIES**

Sl. No.	Name of test	Details of testing Facilities available	Remarks
1.	Test of raw materials		
	a.		
	b.		
2.	Routine tests		
	a.		
	b.		
3.	Acceptance Tests		
	a.		
	b.		
4.	Type Tests		
	a.		
	b.		

Name of the firm

Name and Signature of  
the Bidder:

Designation

Date:

**Note:- In case, testing facilities are not available for certain tests, indicate in the remarks column from which testing house(s)/Institution(s) these tests will be got carried out.**

**SECTION-VII**  
**SAMPLE FORMS**

**1. BID FORM**

Date. ....

TO: (Name and Address of Purchaser)  
Gentlemen and/or Ladies:

Having examined the Bidding documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver. .... (Description of Materials / equipment) in conformity with the said bidding documents in accordance with the schedule of prices quoted online herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the Materials / equipment in accordance with the delivery schedule specified in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to. 10% of the Contract Price for the due performance of the Contract, in the form prescribed by the Purchaser.

We agree to abide by this Bid upto ..... (for the Bid Validity Period) specified in Clause and it will remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, will constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

We certify / confirm that we comply with the eligibility requirements as per clause of the bidding documents.

Dated this. ....day of. ....200

\_\_\_\_\_  
\_\_\_\_\_  
[Signature]

[in the capacity of]

Duly authorized to sign Bid for and on behalf of \_\_\_\_\_

**2. (a) BID SECURITY FORM**

Whereas. .... (hereinafter called "the Bidder") has submitted its Bid dated (date of submission of bid) for the supply of. ....(name and /or description of the Materials / equipment) (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE. ....(name of bank) having our registered office at. ....(address of bank)(hereinafter called "the Bank"), are bound unto. ....(name of Purchaser) (hereinafter called "the Purchaser") in the sum of \_\_\_\_\_for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_ day of \_\_\_\_\_ 200 .

THE CONDITIONS of this obligation are:

1. If the Bidder
  - a) withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
  - a) does not accept the correction of errors in accordance with the Bid Specification, or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity;
  - (a) fails or refuses to furnish the performance security, in accordance with the Bid Specification.
  - (b) fails or refuses to execute the Contract Form if required; or

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including forty five (45) days after ..... (Date of tender opening) the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

. ....  
(Signature of the Bank)

**NOTE:** This will be executed on a Rs.100/- non-judicial stamp paper issued by a scheduled Bank.

**2. (b) PERFORMANCE SECURITY FORM**

To: \_\_\_\_\_ (Name of Purchaser)

**WHEREAS**.....(Name of Supplier)  
(hereinafter called "the Supplier") has undertaken, in pursuance of Contract No.....dated.....2005  
to supply. ....(Description of Materials / equipment and Services)  
(hereinafter called "the Contract").

**AND WHEREAS** it has been stipulated by you in the said Contract that the Supplier will furnish you  
with a Bank Guarantee by a recognized Bank for the sum specified therein as security for compliance  
with the Supplier's performance obligations in accordance with the Contract.

**AND WHEREAS** we have agreed to give the Supplier a Guarantee:

**THEREFORE WE** hereby affirm that we are Guarantors and responsible to you, on behalf of the  
Supplier, up to a total of. .... (Amount of the Guarantee in Words and Figures) and we  
undertake to pay you, upon your first written demand declaring the Supplier to be in default under the  
Contract and without cavil or argument, any sum or sums within the limit of..... (Amount of  
Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or  
the sum specified therein.

This guarantee is valid until the. ... day of. .... 2009 .

Signature and Seal of Guarantors

.....  
Date. ....2009.

.....

Address:.....

.....

.....

**NOTE:** This will be executed on a Rs.100/- non-judicial stamp paper by a scheduled Bank.

### **3. CONTRACT FORM**

**THIS AGREEMENT** made the. .... day of. .... 200 Between. ....(Name of Purchaser) of the one part and. ....(Name of Supplier) of the other part:

**WHEREAS** the Purchaser invited bids for certain Materials / equipment and ancillary services viz., .....(Brief description of Materials / equipment and Services) and has accepted a bid by the Supplier for the supply of those Materials / equipment and services in the sum of. ....(Contract Price in Words and Figures)(hereinafter called "the Contract Price").

**NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:**

1. In this Agreement words and expressions will have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents will be deemed to form and be read and construed as part of this Agreement, viz.:
  - (a) the Bid Form and the Price Schedule submitted by the Bidder;
  - (b) the Schedule of Requirements;
  - (c) the Technical Specifications;
  - (d) the General Conditions of Contract;
  - (e) the Purchaser's Notification of Award.
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Materials / equipment and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Materials / equipment and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the Materials / equipment and services which will be supplied/ provided by the Supplier are as under:

Sl. No.	Brief Description of Materials / Equipment & services	Quantity to be supplied	Unit Price Rs.	Total Price Rs.	Delivery Terms

**TOTAL VALUE:** (Rupees \_\_\_\_\_ only)

**DELIVERY SCHEDULE:**

**IN WITNESS** whereof the parties hereto have caused this Agreement to be executed on the day and year first above written.

Signed, Sealed and Delivered by the  
said. ....(for the Purchaser)  
in the presence of. ....

Signed, Sealed and Delivered by the  
said. ....(for the Supplier)  
in the presence of. ....

**NOTE:** To be executed on a Rs.100/- Non-judicial stamp paper.

**4. PROFORMA FOR PERFORMANCE STATEMENT**

Bid No. \_\_\_\_\_

Date of Opening \_\_\_\_\_

Time \_\_\_\_\_ Hours

Name of the Firm \_\_\_\_\_

Order placed by (full address of purchaser)	Order No. and Date	Description and quantity of ordered equipment	Date of Completion of Delivery	
			As per Contract	Actual

Remarks indicating reasons for late delivery, if any	Has the equipment been satisfactorily functioning? (Attach a Certificate from the Purchaser)

Signature of the Bidder \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**5. DETAILS TO BE FURNISHED BY THE MANUFACTURER (FORMAT-A)**

1. Specification No.	:	
2. Name of the Material	:	
3. Quantity to be procured	:	
4. Last date and time for submission of Bid	:	
5. Date and time for opening of Bid	:	
6. State whether Bid guarantee is enclosed	:	
7. State whether the quotation in two parts has been submitted.	:	
8. State whether 20% minimum quantity is quoted	:	
9. Whether willing to furnish performance B.G. @ 10% if order is placed	:	
10. Whether month wise delivery schedule indicated	:	
11. Prices whether Firm	:	
12. Whether any other tax / duty payable. If so give details and the same is included / not included.	:	
13. State whether TGSPDCL terms of payment are accepted	:	
<b>14. Quantity offered for supply</b>	:	
15. State whether 90 days validity offered	:	
16. Whether sample is enclosed (if specified)	:	
17. Whether the material / equipment offered conforms to the relevant TGSPDCL Specification	:	
18. Whether you have executed orders of the TGSPDCL previously for these items. (Please give details)	:	
19. Similar details in respect of supplies made to other utilities	:	
20. Whether Bid guarantee exemption letter enclosed, if exempted.	:	
21. Whether sales tax clearance certificate enclosed	:	
22. Whether Income-tax clearance certificate enclosed.	:	
23. Whether Warranty clause accepted	:	
24. Whether Penalty clause accepted	:	
25. Whether delivery schedule accepted	:	

**6. SCHEDULE OF DEVIATION****(i) TECHNICAL**

<b>Sl. No.</b>	<b>Requirements / Equipment</b>	<b>Specification Clause No.</b>	<b>Deviations</b>	<b>Remarks</b>

It is hereby conformed that except for deviations mentioned above, the offer conforms to all the other features specified in Technical Specification Section \_\_\_\_ of this Bid Document

Place :

Signature of the Bidder :

Date :

Name :

Business address :

**6. SCHEDULE OF DEVIATION****(ii) COMMERCIAL**

<b>Sl. No.</b>	<b>Requirements / Equipment</b>	<b>Specification Clause No.</b>	<b>Deviations</b>	<b>Remarks</b>

It is hereby conformed that except for deviations mentioned above, the offer conforms to all the other features specified in Commercial Specification Section \_\_\_\_ of this Bid Document

Place :

Signature of the Bidder :

Date :

Name :

Business address:

**DECLARATION FORM****Declaration to be given by the Company in regard to relation to promoters of Blacklisted / debarred companies by any power utilities.**

I declare that, myself or any of the representatives of my company / firm do not have any relatives with promoters of blacklisted / debarred companies by any utilities.

It is certified that the information furnished above is true to the best of my knowledge and belief. It is hereby undertaken that in the event of the above information found to be false or incorrect at a later date, the TGSPDCL is entitled to terminate the contract/agreement entered into besides recovering damages as may be found necessary, with due notice.

**Signature of authorized representative**