

TENDER SPECIFICATION

STN-1192/2024

FOR

**ABT COMPATIBLE OPEN ACCESS METERS OF 0.2S
CLASS ACCURACY**

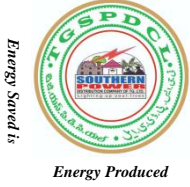
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NOTE:

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 and 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 against this tender.**
7. *The Bids received with any details revealing the prices in the Online PQ stage/offline Technical bid or any other mode other than in online commercial bid will be liable for rejected.*
8. **In e-procurement commercial stage, if F&I charges are applicable then the firm must mention the 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.**
10. **Applicable tax collected at source (TCS) is as per Government of India.**

**CHIEF GENERAL MANAGER (P&MM)
TGSPDCL**



**SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA
LIMITED
TGSPDCL (erstwhile TSSPDCL)**

e-Procurement Tender Notice (Paper Notification)

TGSPDCL intends to float tenders for procurement of (a) ABT Compatible Open Access Meters of 0.2S Class Accuracy (b) 11KV 800A DB AB Switches (c) 12V 42AH SMF VRLA Batteries (d) 33KV CTs of 25/1A (e) 33KV CTs of 50/1A on e-procurement platform.

The detailed description and for further details of each item above, please visit www.tssouthernpower.com and www.tender.telangana.gov.in.

Phone: 040-23431360, 1033, 1035, 1026

Sd/-
CHIEF GENERAL MANAGER (P&MM)
TGSPDCL

ONLINE VERSION**Tender Notice No : STN-1192/2024**

Notice Inviting Tender Details		
S.No	Description	
1	Department Name	TGSPDCL (erstwhile TSSPDCL), Hyderabad.
2	Office	Purchases & Material Management Wing, Corporate Office, TGSPDCL, Hyderabad.
3	Tender Number	STN-1192/24
4	Tender Subject	ABT Compatible Open Access Meters of 0.2S Class accuracy
5	Delivery Schedule	The delivery of materials shall commence within 30 days from the date of receipt of the purchase order and shall complete in Three months or as per TGSPDCL delivery schedule
6	Tender Type	Open
7	Tender Category	Product
8	Bid Security (INR)	(i) 2.36% of the Ex-works quoted value (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-II. In case of BG, should be in favour of CGM/P&MM/CO/ TGSPDCL/HYD whose validity should not be less than 135 days from the date of opening of tender. (OR) Online in e-proc platform.
10	Processing Fee (INR)	<i>NIL</i>
11	Transaction Fee	Transaction fee: 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. TSTS. The amount payable to M/s. TSTS is non refundable. Corpus Fund: Successful bidder has to pay an amount of 0.04% on quoted value through demand draft in favour of Managing Director, TSTS, Hyderabad towards corpus fund at the time of concluding agreement.
12	Transaction Fee Payable to	TSTS
13	Date & time of pre-bid meeting with manufacturer	05-06-2024 at 12:00 Hrs.
14	Schedule Sale opening date	29-05-2024 from 17:00 Hrs
15	Schedule Sale closing Date	14-06-2024 Upto 12:00 Hrs.
16	Bid Submission Closing Date & time	14-06-2024 Upto 12:00 Hrs
17	Bid submission	On Line
18	Pre-Qualification& Technical Bid Opening Date (Qualification and Eligibility Stage and Technical Bid Stage)	14-06-2024 at 15:00 Hrs
19	Price Bid Opening Date (Financial Bid Stage)	18-06-2024 at 12:00 Hrs
20	Place of Tender Opening	O/o Chief General Manager/P&MM TGSPDCL, 4 th Floor, Corporate Office, Mint Compound, Hyderabad – 500 004.
21	Officer Inviting Bids/ Contact Person	Chief General Manager/P&MM/TGSPDCL/HYDERABAD
22	Address/E-mail id	O/o. Chief General Manager/P&MM TGSPDCL, 4th Floor, Corporate Office, Mint Compound, Hyderabad – 500 004

23	Contact Details: Telephone & E-mail	Ph. No. 040-23431033, 23431360 E-mail : cgmppmm@tssouthernpower.com
24	Eligibility Criteria	As per Section VI
25	Procedure for Bid Submission	<p>Bids shall be submitted online on www.tender.telangana.gov.in platform</p> <ol style="list-style-type: none"> 1. The participating bidders in the tender should register themselves free of cost on e-procurement platform in the website www.tender.telangana.gov.in. 2. Bidders can log-in to e-procurement platform in Secure mode only by signing with the Digital certificates. 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. 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"> a) Bid Security should be furnished <p style="text-align: center;"><i>i) In the form of DD in favour of Pay Officer/ TGSPDCL/Hyderabad (or) Alternatively BG from Nationalized/Scheduled bank in favor of Chief General Manager/P&MM/TGSPDCL/Hyd as per format-II enclosed</i></p> <ol style="list-style-type: none"> ii) If exempted give details of Bid Security Exemption in case of Govt. firms. b) Quantity offered c) Proof of manufacturer- valid certificates d) Letter of authorization to sign bids. e)“GSTR 3B”For the last Financial year. f) Financial Turnover certified by CA for last 5 years g) Details of previous supplies along with PO copies and delivery challan copies for 40% qualification and 20% performance as per tender document. h) Copies of previous supply orders and relevant purchase order copies mentioned in the performance certificates in support of the above. i) Drawings, Guaranteed Technical Particulars of the product, other relevant documents attached to the bid. j) Type test certificates (in recognized NABL). k) Duly filled and signed proforma as per Format 6. l) Transaction fee payable to M/s. TSTS. <p>5. The rates should be quoted in online only</p>
		<p>6. After uploading the documents the copies of the uploaded statement, certificates, documents, original Demand Drafts or Bank Guarantees in respect of Bid Security (except the Price bid/offer/break-up of taxes) are to be submitted by the bidder to the Chief General Manager/P&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, 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.

CHIEF GENERAL MANAGER (P&MM)
TGSPDCL

SECTION - II
SALIENT FEATURES OF THE BID

SUPERSCRPTION ON THE TENDER COVER

- Specification No : **STN-1192/2024**
 Material : **ABT Compatible Open Access Meters of 0.2S Class accuracy**
 Officer to whom the bid will be addressed : **CGM/P&MM, Corporate Office/TGSPDCL/Hyd**
 Superscription on the bid cover and the outer envelope :
- a. Specification No. : **STN-1192/24**
 - b. Due date and time for online & hard copy submission : **14-06-2024 at 12:00 Hrs**
 - c. Date and time of online opening : **14-06-2024 at 15:00 Hrs**
 - d. Payment of bid security
 - i) If paid give details: DD No. _____ Dt. _____ for Rs. _____
 - ii) If exempted give details
 - e. Payment of testing charges DD No. _____ Dt. _____ for Rs. _____
 - f. Whether 90 days validity offered(yes/no). _____
 - g. Whether bid is made accepting payment terms Clause....(yes/no).
 - h. Whether delivery is as per delivery schedule indicated....(yes/no)
 - i. Whether the sample (if specified) has been enclosed/sent...(yes/no)
 - j. 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 feature 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
 - h. Bid Security form
 - i. Performance Security form (applicable for successful bidder)
 - j. Contract form (applicable for successful bidder)
 - k. Performance Statement
 - l. Details to be furnished by the Manufacturer(**Format-A**)
 - m. 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 Condition of Contract
- ii) Technical

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

CHIEF GENERAL MANAGER (P&MM)
TGSPDCL

SECTION - III
GENERAL TERMS AND CONDITIONS OF CONTRACT

A. Introduction

1. Definitions

1.1 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

2.1 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 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 materials (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

7.1 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 and e-procurement website 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 appropriate Price Schedule (**online**) 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. **GSTR 3B** returns certificate
- vi. Schedule of Deviations
 - i. Commercial
 - ii. 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:

12.1 The Bidder will complete the Bid form and the appropriate Price Schedule (**online**) 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 applicable GST, 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 applicable GST 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 EXWORKS and applicable GST taxes payable on the finished Materials / equipment with individual breakup for GST, packing and forwarding, freight and insurance etc.

14. Taxes :

- 14.1 A bidder will be entirely responsible for quoting the correct 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 such 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 & within the delivery schedule will be to the account of TGSPDCL. 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 sub-vendor items. Taxes (GST) 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 per item 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 VI. 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 2.36% of the Total Ex-works value of the materials offered against the bid or the amount specified by the Purchaser or part quantity may furnish proportionate bid security. This amount should be paid by way of a crossed demand draft drawn on any Nationalized/scheduled 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. from Nationalized/Scheduled bank 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 price 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.37.
 - ii. To furnish performance security in accordance with Clause No.38.
- 19.10 In cases where the Bid Cover Contains superscription of having furnished Bid Security by way of **DD/BG** but if the same is not found within, such Bids will be rejected and bidder will run the risk of being banned.

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.19 will also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security.

21. GSTR return Certificates:

- 21.1 Copies of Income Tax, **GSTR 3B** return 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 ^o C
(b)	Maximum ambient air temperature (under sun)	50 ^o C
(c)	Maximum daily average ambient air temperature	35 ^o C
(d)	Maximum yearly average ambient air temperature	30 ^o 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 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.

23.2 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 : Bid Security, Technical Bid & Qualification Requirements
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 Prices **(shall be on-line only)**

Bids received with any details pertaining to prices in the offline mode will be liable for rejected.

(ii) The Part-I of 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-19), 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 inner and outer 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: or BG 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 samples (if specified) has been enclosed/ sent...YES/NO
- (i) Whether the bid is quoted in two parts (clause 24.1).... (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 (On-line only) 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

- 26.1 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 at bid opening will not be considered further for evaluation, irrespective of the circumstances.

28. Clarification of Bids

- 28.1 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 GST 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.

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 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, & any other levies, packing & forwarding, freight charges, insurance (transit & storage) as quoted by the bidder, interest on advance if any, erection, servicing other charges as called for.

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

The following criteria may be adopted for applicable GST for evaluation

- a. It is the responsibility of the bidder to quote all applicable GST correctly without leaving any column unfilled. Where GST is not applicable the bidder should enter "NA". If no GST is le-viable 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 term, price schedule, applicable GST 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 applicable GST quoted by the Bidder. It is the responsibility of the bidder to quote all Applicable GST correctly without leaving any column unfilled. Where not applicable the column may be filled as "NA". If no GST is le-viable 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 applicable GST 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 term, price schedule, submission of Types test certificates (as per Clause 4 section VI), applicable GST 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:

- 33.1 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 **by 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

- 35.1 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/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 Nationalized/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 black listed 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

41.1 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:

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

42.2 Un-loading charges of the materials at the destination stores shall be arranged by the consignees at TGSPDCL cost.

43. Delivery:

43.1 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 indicted. 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 Store) 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 61.

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 Regd. 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 material, not of acceptable quality or not conforming to the specification, the materials will be rejected. The material has to be re-offered for inspection. In such a case the 2nd inspection charges are to 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 @ 0.25% of Ex-works price of material offered for inspection (inclusive of GST, 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 General Manager (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

48.1.1 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 **before taking into stock**.

48.1.2 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

49.1 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

50.1 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

51.1 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 Purchase 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 **10 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 in the Contract. 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 material 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 18 months 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.
- 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.
- 53.2 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.
- 53.3 Form 13 shall be issued subject to material taken into stock in good condition (i.e. 105 entry in SAP module)
- 53.4 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.
- 53.5 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.

53.6 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.

53.7 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.

54. Prices

54.1 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

55.1 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

56.1 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

57.1 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 Materials.

- 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 measure 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 or all of the Materials / equipment or to perform the Services within the period(s) specified in the Contract, the Purchaser will, without prejudice to its other remedies under the Contract, 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. Once the maximum is reached the Purchaser may consider termination of the contract.

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. Materials/Equipment which are not of acceptable quality or are not confirming to the specification would be deemed to be not delivered For penalty, the number of days would be rounded off to the nearest week and penalty calculated accordingly.

The penalty specified above will be levied and would be adjusted against subsequent pending bills.

60. Risk Purchase

Incase 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

62.1 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 measure.

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 acts as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within 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
 - (e) also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf will be borne by each party itself.
 - (f) 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 the Supplier.

66. Jurisdiction

- 66.1 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

68.1 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.

**CHIEF GENERAL MANAGER (P&MM)
TGSPDCL**

SECTION-IV
SCHEDULE OF REQUIREMENT
STN-1192/2024

Sl. No.	Description	Qty. (Nos.)	Free at Destination Stores
1.	HT three phase four wire CT / PT operated 1 Amp or 5 Amp fully Static & AMR compatible Four Quadrant TOD Tri- vector Energy Meter with ABT feature, required for HT Consumers' Installations / CPP / IPP / Co - Generation / Wind Mill or as an interface meter	125	Any district stores in TSSPDCL jurisdiction.

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 each 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 30 days and complete within 3(THREE) months from the date of receipt of purchase order.

TSSPDCL Stores:

District	Store Name
Mahaboobnagar	Mahaboobnagar
Nalgonda	Nalgonda
Medak	SangaReddy
Siddipet	Siddipet
RangaReddy	RangaReddy
Hyderabad	City-Hyd Stores
Wanaparthy	Wanaparthy
Suryapet	Suryapet

SECTION-IV

TECHNICAL SPECIFICATION OF 0.2S ACCURACY CLASS ABT COMPATIBLE OPEN ACCESS METERS

1.0 SCOPE:

- a) The specification covers the design, engineering, manufacture, assembly, testing, supply, delivery and commissioning of Electronic HT tri-vector meters suitable for ABT (Availability Based Tariff), Four Quadrant, Bi- Directional power flow, solidly earthed system with balanced and un-balanced loads for a power factor range from zero to unity (lagging and leading), with accuracy class 0.2s.
- b) The meters shall be used for *tariff metering* for Bulk load/Scheduled/Open Access consumers (with ABT & TOD) and also for Inter Utility Boundary points between Generation, Transmission & Distribution (with ABT).
- c) The meter shall comply with DLMS Indian companion specification for Category B. The meters shall be suitable for communication with external devices like DCU, modem etc., which shall be able to communicate with AMR system for remote data transfer.
- d) The meter as a self-contained device for measurement of active, apparent and reactive energy and certain other parameters as described in subsequent paragraphs of this specification shall be suitable for being connected directly to Voltage Transformers (VT) / Capacitive Voltage Transformers (CVT) having a rated secondary line-to-line voltage of 110 V and to Current Transformers (CT) having a rated secondary current of 5/1A , 3- element 4-wire. The reference frequency shall be 50 Hz. The energy meter shall be suitable for Projection mounting type, suitable for mounting in metering panels / metal box.
- e) The meters shall be re-configurable at site for change of time block as specified by the Commission.
- f) The specification contains only the major aspects of the meter to be supplied as per this tender. Any item left out in this document, but which are essential for the satisfactory performance of the meter and the implementation of AMR through third party shall be deemed to be included in the scope.
- g) The meter manufacturer shall coordinate with AMR service provider for integration issues. The meter has to comply with IS 15959 part1, which is open protocol. All OBIS codes shall comply with IS15959 part-1. Other OBIS codes which are proprietary and not specified in IS 15959 has to be provided to AMR service provider for integration purpose.
- h) The meter manufacturer shall provide necessary software key and other support required for Base Computer Software (BCS) for conversion for entire life of the meter i.e. beyond warranty period (10 Years)

2.0 STANDARDS:

Unless otherwise specified elsewhere in this specification, the meter shall conform in all respects including performance and testing thereof to the following Indian/ International Standards to be read with up-to-date and latest amendments/revisions thereof.

Sl. No	StandardNo.	Title
1	IS14697:2021	AC static transformer operated watt-hour and VAR-Hour meters, class 0.2s,
2	CBIP325	Manual on Standardization of AC static electrical energy meters.
3	IEC62052-11	Electricity metering equipment (AC)–General requirements, tests and test conditions.
4	IEC62053-22,23	Static meters for active energy(class 0.2S)
5	IS 15959:2011 (With amendments)	Data exchange for Electricity meter reading, tariff & Load control.

6	IEC-62056-51/IS15959	Data Security
7	IS:15959	Tamper Conditions

Meters matching with requirements of other national or international standards which ensure equal or better performance than the above-mentioned standards shall also be considered. When the meters offered by the bidder confirms to standards other than those specified above, salient points of difference between standards adopted and the standards specified in this specification shall be clearly brought out for acceptance in the relevant schedule. A copy of such standards along with their English translation shall invariably be furnished along with the offer.

3.0 ENVIRONMENTAL CONDITIONS:

3.1 Climatic Conditions:

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

Sl.No.	Parameter	Range/Value
1	Max. ambient air temperature (Deg. C)	70
2	Min. ambient air temperature (Deg. C)	-10
3	Average daily ambient air temperature (Deg.C)	55
4	Max. Relative Humidity(%)	95
5	Max. altitude above mean sea level (m)	1000
6	Average Annual rainfall (mm)	925
7	Max. wind pressure (kg./sq.m)	200
8	Isoceraunic level(days per year)	50
9	Seismic level (Horizontal acceleration)	0.3g.
10	Average No. of thunder storms days/years	40
11	Average number of rainy days/years	90
12	Average number of months/tropical monsoon Condition per year	3
13	Noise level	45dB

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 ELECTRICAL SPECIFICATIONS:

Class of Accuracy (Active Energy and Reactive Energy)	: 0.2S for KWH and KVARH
Type of Meter	: 3 Element, 4 Wire. (3 Phase, 4 Wire)
Supply Voltage and Range	: 3 Phase, Phase to Phase 110V with (PT Secondary) variation - 30% to 20%
Reference Frequency and Range	: 50 Hz, +/- 5%
Power factor Range	:Zero lagging through Unity to Zero leading.
Basic Current (Ib)	: 5/1A.
Maximum Current (Imax)	: 200% of Ib.
Starting Current (Is)	: 0.1% of Ib at UPF.

BURDEN:

Voltage Circuit	: Shall not exceed 1W and 4VA per Phase.
Current Circuit	: Shall not exceed 1VA per Phase.
Clock Time Accuracy	: 10 seconds per month drift or better.

Meter shall have the intelligence to synchronize the time locally from station control room or remotely from AMR system through software as per IS 15959 DLMS ICS.

General requirements:

- a) The meters shall be suitable for being connected directly to voltage transformers (VTs/CVTs) having a rated secondary line-to-line voltage of 110V, and to current transformers (CTs) having a rated secondary current of 5/1A. Any further transformers/transducers required for their functioning shall be in-built in the meters. Necessary isolation and/or suppression shall also be built-in, for protecting the meters from surges and voltage spikes that occur in the VT and CT circuits of extra high voltage switchyards. The reference frequency shall be 50Hz. The primary and secondary ratings for CT and VT shall be given by TGSPDCL at the time of giving the Purchase order
- b) The meter shall communicate with Data Concentrator Unit (DCU)/Access Point over Modbus, Serial, TCP/IP and DLMS Protocol.
- c) The meter shall count the number of cycles in VT output during each successive 15/5- minutes block, and divide the same by 900/300 to arrive at the average frequency. The least count of the frequency data shall be 0.001 Hz. The frequency data shall be stored in the meter's memory in Hertz up to third decimal. Further frequency data in output report shall be truncated upto three decimals. The average frequency of the previous 15/5-minutes block shall also be displayed, on demand in Hertz.
- d) They shall also be totally sealed and tamper proof, with no possibility of any change for calibration at site except for Clock correction and conversion from 15 min to 5 min (if required), CT/PT Ratio, TOD, kVAh configuration (Lead as Lead / Lead as UPF), Display order...etc.
- e) The meters shall safely withstand the usual fluctuations arising during faults etc. In particular, VT secondary voltages 120% of rated applied continuously and 190% of Vref for 3.0 seconds, and CT secondary current 200% of rated applied continuously and **20 times** of rated applied for 0.5 seconds shall not cause any damage to or mal-operation of the meters.
- f) The meters shall safely withstand, without any damage or mal-operation reasonable mechanical shocks, earthquake forces, ambient temperature variations, relative humidity, other external factors etc. in accordance with IS- 14697 (and its amendments) & CEA (Installation and Operation of Meters) Regulations 2006 (and its amendments).They shall have an **IP-51** category dust-tight construction, and shall be capable of satisfactory operation in an indoor, non-air conditioned installation & outdoor installation in a panel or Metering Cubicle.
- g) The meters shall continue to function for the remaining healthy phase(s), in case one or two phases of VT supply fails. In case of a complete VT supply failure, the computation of average values shall be calculated and recorded along with the time only for the period during which the VT supply was available in the configured timeblock. However, the integrated parameters (active / reactive energy) shall not be affected and shall be recorded as actuals.
- h) The meters shall be supplied with Test terminal blocks (TTB) for on-site testing for which the TTB requirements are given below.

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 is to be made. The test terminal block shall also have extended terminal cover such that when it is placed in position 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.

i) Accuracy of IEMs under transients, frequency variations, voltage variations, unbalance, harmonics. Electromechanical influence and reverse phase rotation etc., shall be maintained as per IS 14697 and its amendments.

j) The equipment (Meters) procured shall have compliance with the "Make in India (MII)" orders issued by various Ministries/Organizations/Departments of GOI from time to time. All the related documents shall be submitted by the manufacturer before bid Finalization.

5.0. TECHNICAL / FUNCTIONAL REQUIREMENTS:

5.1 Meter case

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 service and 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 Stabilized material so that the window does not turn yellow after some years.

The cases shall be designed for simple mounting on a plane, vertical surface such as a control/relay panel front. Terminals shall have a suitable construction with barriers and cover, to provide a secure and safe connection of CTs and VTs leads through stranded copper conductors.

All meters of the same model shall be totally identical in all respects except for their unique identification codes. The meter case and meter terminal block and cover shall meet the IS 14697 in all requirements like shock, dust proof, creepage distances and insulation etc., The meter shall be properly sealed and tamper evident, with no possibility of any adjustment at site as per IS 15959 (and its amendments) & CEA (Installation and Operation of meters Regulations 2006 (and its amendments)).

5.2 Type of installation : Indoor and Outdoor in Panel/Metering Box

5.3 Energy Measurement

(a) The active energy (Wh) measurement shall be carried out on 3-phase, 4-wire principle, with an accuracy as per class 0.2 S of IS:14697. The energy shall be computed directly in CT and VT secondary quantities, and indicated in watt hours. The meter shall compute the net active energy (Wh) during each successive 15/5- minutes block, and store it in its memory upto second decimal (Depending on commissioning of meter) with plus sign if there is net Wh import and with a minus sign if there is net Wh export.

(b) The meter shall provide the instantaneous active power flow data, analog values (MW) (sent out / received) in each successive 1 min block, and send the values (MW) upto two decimal place to AMR control centre - As per National Power Committee Guidelines Clause 1.2(b).

(c) The Reactive energy (VARh) measurement (four quadrant) shall be carried out on 3-phase, 4-wire principle, with an accuracy as per class 0.2S of IS:14697. The meter shall compute the net Reactive energy (VARh) during each successive 15/5- minutes block, and store it in its memory up to second decimal with plus sign if there is net VARh import and with a minus sign if there is net VARh export. It shall also display on demand the net VARh sent out during the previous time block. Further, VARh data in output report shall be truncated upto second decimal.

(d) The meter shall also compute the reactive power (VAR) on 3-phase, 4-wire principle, with an accuracy as per class 0.2S of IS:14697, and integrate the reactive energy (VARh) algebraically into two separate registers, one for the period for which the average RMS voltage is higher

than 103.0%, and the other for the period for which the average RMS voltage is below 97.0%.

The current reactive power (VAR) and cumulative reactive energy (VARh) readings of the two registers (>103% and <97%) shall be displayed on demand. The voltage range of +/- 3% (i.e. 97 to 103) shall be configurable as and when required in future.

The reactive power and reactive energy transmittals shall be computed in VAR/VARh directly calculated in CT and VT secondary quantities. When lagging reactive power is being sent out from substation bus bars, VAR display shall have a plus sign or no sign and VARh registers shall move forward. When reactive power flow is in the reverse direction, VAR display shall have negative sign and VARh registers shall move backwards. Generally, the standard PT ratios are 11kV /110 V, 33kV /110 V, 132 kV /110 V, 220 kV /110 V, 400 kV /110 V.

(e) The meter shall continuously compute the average of the RMS values of the three line-to-neutral VT secondary voltages as a percentage of 63.51 V, and display the same on demand. The accuracy of the voltage measurement/computation shall be at least 0.2%. The voltage data shall be stored in the meter's memory in volts (line voltage e.g. 110V) up to second decimal. Further, voltage data in output report shall be truncated upto second decimal.

(f) The harmonics shall be filtered out while measuring Wh, VARh and VAh and only fundamental frequency quantities shall be measured/computed.

(g) Errors for different power factors shall be as defined in IS 14697 and its amendments.

(h) No rounding off to the next higher last decimal shall be done for voltage and frequency displays. All 15/5 minute Wh figures shall however be rounded off to the nearest last decimal.

(i) The three line-to-neutral voltage shall be continuously monitored and in case any of these falls below defined threshold (80% of Vref), meter shall have suitable indication on LED/ LCD. The meter shall also have provision for low voltage event logging in meter memory in case of any phase voltage going below a defined threshold. The time blocks in which such a voltage failure occurs/persists shall also be recorded in the meter's memory with a symbol "*" if 3 Phase RMS voltage applied to the IEM is in between 25% to 80% of Vref and if Voltage is less than 25% of Vref, meter should record Zero voltage symbol "Z".

(j) When the incoming supply is not available to the meter, facility should be provided to download data on backup system (battery) independently on all the ports & see on display on offline mode.

5.4 Immunity to External Factors

The meter shall be immune to external influences like magnetic induction, vibration, electrostatic discharge, switching transients, surge voltages, oblique suspension, harmonics etc. and shall conform to the standards mentioned in this specification.

The energy recorded during such tamper shall be registered in a separate register in addition to main register. The meter accuracy shall not be affected by AC/DC magnetic field as per CBIP publication No. 325 with latest amendments.

5.5 Data Security : Data Security shall be as per

- i. IS 15959 (three layers of security) and its amendments and IEC-62056-51.
- ii. Cyber Security guide lines issued by Ministry of Power, Government of India, CEA & CERC time to time &
- iii. The technical standards for communication system in Power Sector laid down by the Authority (CEA).

5.6 Sealing Points

Sealing provision shall be made available to the following:

- i) Meter body or cover
- ii) Meter terminal cover
- iii) Test terminal block
- iv) MD reset button
- v) Optical port.

5.7 Auxiliary power

a. The meters shall normally operate with the power drawn from the VT secondary circuit (line-to-line voltage of 110V); provided that there shall be provision to operate the meters from AC and DC (Range 110V to 220V DC) auxiliary power supply. Necessary isolation and/or suppression shall also be built-in as per IS 14697 and its amendments, for protecting the meters from surges and voltage spikes from extra high voltage switchyards. The reference frequency shall be 50Hz. Also, the meter shall be suitable of $\pm 15\%$ tolerance for DC supply.

b. An automatic backup for continued operation of the meter's calendar-clock, and for retaining all the data stored in its memory, shall be provided through a long-life RTC battery, which shall be capable of supplying the required power for at least 2 years. The meters shall be supplied duly fitted with the RTC batteries, which shall not require to be changed for at least 10 years, as long as total VT supply interruption does not exceed two years. When the Incoming supply to the meter is not available, the facility should be provided to download data on backup system (battery) independently on all ports

c. Battery to view Display parameters in power failure condition- Which is replaceable type & provided under Top cover having sealing arrangement).
As per NPC Guidelines clause 1.1 (iv)

5.8 Name plate and Marking of meter : It shall be as per IS 14697.

5.9 Instantaneous parameters

The meters shall display the following parameters on demand (by pressing the push button) and automatically. In automatic display each parameter shall be displayed for at least 10 sec. Both forward and backward scroll provision shall be available for on-demand display. (Separate push buttons shall be provided for MD Reset, scrolling UP and scrolling DOWN)

Parameters required in Auto Scrolling Display:

1. LCD Segment check
2. Meter serial number
3. Realtime clock, Date & Time
4. Current-IR
5. Current- IY
6. Current- IB
7. Voltage-VRN for 3 Φ /4W
8. Voltage -VYN for 3 Φ /4W
9. Voltage -VBN for 3 Φ /4W
10. Signed Power Factor – Rphase
11. Signed Power Factor – Yphase
12. Signed Power Factor – Bphase
13. System Power Factor – PF
14. Frequency
15. Apparent Power – kVA
16. Signed Active Power – kW (-Import, +Export)
17. Signed Reactive Power – kVAr (+Lag, -Lead)
18. Cumulative Active Energy – kWh – Import
19. Cumulative Active Energy – kWh – Export

20. Cumulative Apparent Energy – kVAh – Import
21. Cumulative Apparent Energy – kVAh – Export
22. Cumulative Reactive Energy Kvarh – Quadrant 1
23. Cumulative Reactive Energy Kvarh – Quadrant 2
24. Cumulative Reactive Energy Kvarh – Quadrant 3
25. Cumulative Reactive Energy Kvarh – Quadrant 4
26. Maximum Demand – (kVA) Import with date & Time of occurrence
27. Maximum Demand – (kVA) Export with date & Time of occurrence
28. Cumulative MD (MVA) Import
29. Cumulative MD (MVA) Export
30. Billing date (Date and Time of Last MD reset)
31. Cumulative MD reset count
32. Raising demand (Import & Export) (KVA) and elapsed time
33. Average frequency of the previous 15/5- minute block
34. Net Wh transmittalin the previous 15/5- minute block, with+/- sign
35. Net Varh transmittalin the previous 15/5- minute block, with+/- sign
36. Net Reactive high.
37. Net Reactive low.
38. Average percentage voltage
39. Total Voltage Harmonic Distortion VTHD (R,Y,B separately)
40. Total Current Harmonic Distortion ITHD (R,Y,B separately)
41. Number of power failures.
42. Cumulative Power failure duration.
43. Low battery indication
44. Cumulative tamper count
45. Cumulative programming count
46. Programmed CT and PT ratios set in the meter.
47. a. Voltage Sequence
b. Current Sequence.

Navigation keys to be provided at the meter front plate to navigate the display menu.

Parameters required in Push button Display:

Apart from the parameters mentioned above from 1 to 48, any other parameter (TOD etc.,) if required in both Import & Export modes are to be displayed. Out of the provision of 8 time zones, 6 time zones are to be programmed.

Time zones 1 to 6

48. Cumulative KWH Import
49. Cumulative KWH Export
50. Cumulative KVAH Import
51. Cumulative KVAH Export
52. Maximum Demand –(kVA) Import
53. Maximum Demand –(kVA) Export

Further to the above, the following historical data is required to be displayed in both Import & Export modes :

Cumulative KWH

54. Cumulative KWH at previous reset – History 0
55. Cumulative KWH at previous reset – History 1
56. Cumulative KWH at previous reset – History 2
57. Cumulative KWH at previous reset – History 3
58. Cumulative KWH at previous reset – History 4
59. Cumulative KWH at previous reset – History 5

CumulativeKVAH

60. Cumulative KVAH at previous reset – History 0
61. Cumulative KVAH at previous reset – History 1
62. Cumulative KVAH at previous reset –History 2
63. Cumulative KVAH at previous reset – History 3
64. Cumulative KVAH at previous reset – History 4
65. Cumulative KVAH at previous reset – History 5

Billing MD

66. Billing MD at previous reset – History 0
67. Billing MD at previous reset – History 1
68. Billing MD at previous reset – History 2
69. Billing MD at previous reset – History 3
70. Billing MD at previous reset – History 4
71. Billing MD at previous reset – History 5

Power Factor

72. Billing PF at previous reset – History 0
73. Billing PF at previous reset – History 1
74. Billing PF at previous reset – History 2
75. Billing PF at previous reset – History 3
76. Billing PF at previous reset – History 4
77. Billing PF at previous reset – History 5
78. TOD - Energies.

Test Mode Parameters:

1. Cumulative Active Energy–kWh–Import
2. Cumulative Active Energy–kWh–Export
3. Cumulative Apparent Energy–kVAh–Import
4. Cumulative Apparent Energy–kVAh–Export
5. Cumulative Reactive Energy Kvarh–Quadrant 1
6. Cumulative Reactive Energy Kvarh– Quadrant 2
7. Cumulative Reactive Energy Kvarh–Quadrant 3
8. Cumulative Reactive Energy Kvarh–Quadrant 4
9. Raising demand (Import & Export) (KVA) and elapsed time

5.10 LOAD SURVEY PARAMETERS

The following parameters for load survey purpose and shall be logged with a block period of 15/5 minutes. The data storage required for the load survey parameters shall be minimum 60 days for 15 min integration period and 20 days for 5 min integration period in non-volatile memory with life time of the meter.

1. Meter Sl.No.
2. Average Frequency with three decimal points.
3. Average Power factor (Export)
4. Average Power factor (Import)
5. Real time clock, date & time
6. Voltage VRN
7. Voltage VYN
8. Voltage VBN
9. Date and time blocks of failure of VT supply on any phase, asastar(*)/(Z) symbol.
10. Current IRN
11. Current IYN
12. Current IBN
13. Net Active Energy(KWH) with sign

14. Net Reactive Energy(KVARh) with sign
15. Active Energy(KWH) & KW Import
16. Active Energy(KWH) & KW Export
17. Apparent Energy (KVAH) & KVA Import
18. Apparent Energy (KVAH) & KVA Export
19. Reactive Energy(KVARH) Lag & KVAR Lag Import
20. Reactive Energy (KVARH) Lead & KVAR Lead Import
21. Reactive Energy(KVARH) Lag & KVAR Lag Export
22. Reactive Energy (KVARH) Lead & KVAR Lead Export
23. Total harmonic distortion of voltage (phase wise)
24. Total harmonic distortion of current (phase wise)

5.11 Billing parameters

The parameters listed below for billing purpose **and are logged at each day midnight (00.00Hrs)** and stored in non-volatile memory for minimum 60 days.

- 1) Cumulative Active Energy (kwh) – Import (In eight digits including one decimal).
- 2) Cumulative Active Energy (kwh) – Export (In eight digits including one decimal).
- 3) Cumulative Active Energy Total (kwh) — Import (In eight digits including one decimal)
- 4) Cumulative Active Energy Total (kwh) — Export (In eight digits including one decimal)
- 5) Cumulative Apparent Energy (kvah) – Import (In eight digits including one decimal)
- 6) Cumulative Apparent Energy (kvah) – Export (In eight digits including one decimal)
- 7) Cumulative Reactive Energy(kvarh)(Lag) – While KW is Import
- 8) Cumulative Reactive Energy(kvarh)(Lead) – While KW is Import
- 9) Cumulative Reactive Energy(kvarh) (Lag) – While KW is Export
- 10) Cumulative Reactive Energy(kvarh)(Lead) – While KW is Export
- 11) Net reactive low(during voltage < 97%)
- 12) Net reactive high(during voltage >103%)

Note: Scale MF shall be One(1) invariably.

The Mid night parameters and events shall also be available in the converted file.

Historical Data Recording: Meter shall be capable of recording in its Non- Volatile Memory (NVM) the historical data consisting of billing energy, demand, TOD registers both import and Export, minimum of Twelve such data sets shall be stored and it should be possible to retrieve these data through communication port on common meter reading instrument (CMRI) or RMR.

5.12 Programmable parameters

1. Real time clock
2. Demand integration Period.
3. Block Capture Time **(All new meters shall be re-configurable at site for change of time block)**
4. Billing Date/MD reset date.
5. Time Zones (1to8).
6. Load survey Integration period
7. Lag only to Lag+ Lead and vice versa

Provisions shall be made to program the above parameters at site using CMRI, Laptop or using Base computer software from remote station with proper security system. Logging of programmable parameter changed event (date & time) along with display of the same under on Demand & snapping of billing data at that time shall be stored and can be retrievable with CMRI and RMR and Laptop.

5.13 Name plate details

- i) Meter Serial Number
- ii) Manufacturer Name
- iii) Firm ware version for meter
- iv) Meter type (3P-4W)
- v) Internal CT Ratio
- vi) Internal PT Ratio
- vii) Meter year of manufacture
- viii) Meter Constant - Pulse/ kWh, kVArh.
- ix) The meter should be labeled with the PSDF Scheme details as:

PSDF/TSSPDCL-08/Oct-17/185

5.14 Display:

The meter shall have a display of Seven Segment liquid crystal display (LCD) for measured values with one digit indicating legend. However, the kWh/MWh, kVArh/MVArh and kVAh/MVAh should have high resolution display to facilitate testing with desired accuracy within reasonable time. It shall be possible to read these high-resolution values using CMRI and laptop. The display shall be continuously with backlight digital type and with non-destructive read out.

In case of multiple values presented by a single display, it must be possible to display the contents of all relevant memories. When displaying the memory, identifications of each tariff/parameter shall be available.

The register shall be able to record and display starting from zero, for a minimum of 1500 hours, the energy corresponding to rated maximum current at reference voltage and unity power factor. Register should not rollover in between this duration.

RESOLUTION:

- | | | |
|------------|---|------------------|
| 1. Voltage | – | 0.1V |
| 2. Current | – | 0.001A |
| 3. P.F. | – | 0.001 |
| 4. Energy | – | 0.001 MWH |
| 5. Demand | – | 0.1KVA/ KW/0.001 |

MVA/MW (Note:-Resolution Depending on commissioning of meter)

The CT/PT ratios will be intimated at the time of approval of GTP to the successful bidder.

5.15 Maximum Demand (MD) Recording:

The maximum demand is to be monitored during each demand interval set with 15/5 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 up to 10 shall be stored in the memory. The maximum demand shall be computed in block method only.

NOTE:-

- 1) The software for programming of meters for 15/5 minutes integration period shall be given to TGSPDCL free of cost.
- 2) The programming shall be possible from CMRI, Laptop & Remote server at TGSPDCL.
- 3) The material shall have the facility to record and communicate all the parameters in 15/5 Minutes time blocks.

MD Reset:

The meter shall have the following provisions regarding MD reset.

- 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), Windows based Laptop capable of communicating with the meter and from remote communication center.
- 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, Windows based Laptop and from remote communication center with date and time.

5.16. Time of Day Tariff (TOD) / Time of Use (TOU):

The meter shall contain provisions for differential pricing of energy and/or maximum demand. The meter shall be capable of being set in to minimum of 8 time zones. (Optionally more time zones can be offered). The entire hours of one day or seven days of one week or **60** days shall be grouped in specific time slots, each slot being associated with specific metered register(s). The meter shall have a real time clock based on a quartz crystal with a battery totally independent of power supply.

It should be possible to change the time period for the TOD recording through a CMRI, Laptop & Remote communication using a proper security system. Meter shall be capable to log such changes with date and time stamping. The main control for this change shall be available in the base computer system.

5.17 Communication Capability:

The meter shall be provided with **four ports** (hardware ports) for communication of the measured / collected data and configuration of the meter.

- a) One of these ports shall be compatible for Ethernet traffic through which all the data stored in the meter's memory shall be transferred to DCU. The data between Meter and DCU is exchanged using Ethernet standard frame structures defined in IS15959
- b) The second port shall be galvanic isolated Optical communication port as per IEC 1107/ANSI on its front for admin access / meter configuration / tapping all data stored in its memory using laptop along with required optical to USB converter. The admin port is password protected for access and the meter configuration is to be done through admin port using Laptop and optical to USB convertor. Optical to USB convertor cable of suitable length is to be supplied (1 Cable for every 5 nos. Meters).
- c) Third and Fourth Port ports shall be RS232 & RS485 with DLMS protocol as per IS 15959 and shall be used for meter data access in case of any eventuality.

All the four ports shall communicate simultaneously at a time and communicate independently.

- d) The galvanic isolation of these ports is such that no external electrical induction on cable degrades the performance of the meter. Meter data shall be tamper-proof.
- e) The meter shall support open protocol communication conforming to DLMS/COSEM so that third party data acquisition software from a central control center shall communicate with the meter. A test certificate from an accredited lab in this regard shall be furnished as per the Cybersecurity guidelines of MOP.
- f) All the four ports shall communicate simultaneously. All the ports shall be of universal type conforming to relevant standard so that these can be easily connected to a DCU, CMRI, GPRS MODEM, Laptop, PC, Ethernet etc.
- g) The ports shall be integral part of body and sealable. All of the parameters available in the register of the meter shall be user selectable through CMRI, laptop and Remote communication center.

The manufacturer shall supply the meter compatible software, Protocol software required for Windows based Laptop (based on Windows 7 and its higher version OS), CMRI, Base Computer, RMR.

It is the responsibility of the meter manufacturer to provide the required software and all the facilities required by the TGSPDCL to use the Windows based Laptop, DOS based hand held CMRI for reading and retrieving the data from the meter or to retrieve the available data through GPRS / OFC/Ethernet to the central computer station and regenerating appropriate reports required by the TGSPDCL. After loading the software in the purchaser's base computer station/ central computer station, the meter manufacturer shall demonstrate the data transfer through hand held CMRI, Windows based Laptop, Ethernet, GPRS and regeneration of appropriate reports to the purchaser.

The data element size and its overhead speed of transmission shall be such that the entire billing data can be transferred within minimum possible time. The baud rate preferable is 9600. It should not possible to change software configuration and recorded data edit in the meter by any means except for programmable parameters agreed.

"The successful bidder need to supply the Manufacturer specific OBIS codes required (for the parameters not defined in IS 15959) to read meters data through GPRS / OFC / 4G/5G to AMR project implementers to collect the online block wise stored MRI instantaneous data of all the meters. And the meter shall not become sluggish when frequently extract the data through AMR project."

Communication cable:

The meter manufacturer shall supply :

The Energy meter communication cable of 1500mm length for communicating with Energy meter and Windows based Laptop(Optical to USB). The cable should be flexible shielded and the two ends of the cable shall be stress relieved.

One number RS232 & Optical cable of suitable length for every meter.

Software requirements for downloading:

The Manufacturer shall provide the necessary software which would enable a local IBM Compatible PC to:

h) Upload/import meter data (binary files) in the software for further processing. While uploading,

There shall be provision to upload all selected files with single key-stroke.

ii) Convert the binary file(s) to text file(s). There should be provision to select multiple files based on filename, convert all selected files with single key- stroke and store the text files in the same location where binary files are stored.

iii) Display the collected data on PC's screen in text format, with forward/backward rolling.

iv) The Phasor diagram should be provided in BCS (Base Computer Software) for the downloaded data.

v) Print out in text format the data collected from one or more meters, starting from a certain date and time, as per operator's instructions, Transmit the collected data, in binary format, through an appropriate communication link to the central computer, starting from a certain date and time, as per operator's instructions, and Store the collected data in binary format, on a CD/Pen Device. In addition to above, in general the software should be able to convert DLMS/COSEM compliant IEMs data to existing format as well as in tabular **(.csv)** format as applicable.

Event	Description
1	R-Phase-PT link Missing (Missing Potential)- Occurrence
2	R-Phase- PT link Missing (Missing Potential)- Restoration
3	Y-Phase- PT link Missing (Missing Potential)- Occurrence
4	Y-Phase- PT link Missing (Missing Potential)- Restoration
5	B-Phase- PT link Missing (Missing Potential)- Occurrence

6	B-Phase- PT link Missing (Missing Potential)- Restoration
7	Over voltage in any phase- Occurrence
8	Over voltage in any phase - Restoration
9	Low voltage in any phase - Occurrence
10	Low voltage in any phase - Restoration
11	Voltage unbalance - Occurrence
12	Voltage unbalance - Restoration
13	Current unbalance -Occurrence
14	Current unbalance - Restoration
15	Phase- R CT reverse - Occurrence
16	Phase- R CT reverse - Restoration
17	Phase- Y CT reverse - Occurrence
18	Phase- Y CT reverse - Restoration
19	Phase- B CT reverse - Occurrence
20	Phase- B CT reverse - Restoration
21	Phase -R CT Open - Occurrence
22	Phase -R CT Open - Restoration
23	Phase -Y CT Open - Occurrence
24	Phase -Y CT Open - Restoration
25	Phase -B CT Open - Occurrence
26	Phase -B CT Open - Restoration
27	Influence of AC/DC or permanent magnet - Occurrence
28	Influence of AC/DC or permanent magnet - Restoration
29	Power failure - Occurrence
30	Power failure - Restoration
31	R,Y,B CT Bypass Occurences and Restorations
32	Invalid voltage Occurences and Resorations
33	Invalid Phase Association Occurences and Restorations
34	Low Power Factor Occurences and Restorations
35	Meter cover open Occurence
36	Over Current Occurences and Restorations
37	Neutral disturbance Occurences and Restorations
38	Power quality parameters

The above software shall further ensure that absolutely no tampering (except total erasures) of the collected metering data is possible during its handling by the PC. The software shall be suitable for the commonly available PCs, and shall be supplied to Owner in a compatible form to enable its easy loading into the PCs available (or to be installed by the Owner/others) at the various substations.

Software/Firmware:

The meter shall have a feature of upgrading to the latest firm ware at the factory premises.

5.18 Tamper Events Records

The following shall be captured for every event occurrence. On each event captured "Cumulative tamper count" value shall be incremented.

Tamper Information: Minimum **300** events (Occurrences and Restorations) 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 i.e. slot wise (i). Voltage tampers (80) (ii). Current tampers (80) and (iii)

other tampers (140)

The Tamper logics shall be got approved by CGM/P&MM of TGSPDCL along with the GTP, Drawings, Display parameters approval which shall be obtained by the manufacturer after getting the Purchase Order. The tamper logics for various Tampers as defined by TGSPDCL are given below

Sl. No.	Type of tamper	Requirement	Occurance		Restoration	
			Voltage	Current	Voltage	Current
1	Missing Potential	Phase Wise	$V_x \leq 80\%$ of V_{ref} irrespective other phase Voltage	$I_x > 2\%$ I_b Where x is Tampered Phase	$V_x > 80\%$ v_{ref} irrespective to any other phase	-
2	CT Open	Phase Wise	$V_x > 30V$	$I_x < 2\%$ of Base Current	$V_x > 30V$	Avg. current of all 3 phases $> 10\%$ of I_{max}
3	CT Missing	Phase Wise	$V_{ref} > 30V$	$I_x < 1\%$ of Base Current	$V_{ref} > 30V$	$I_x > 2\%$ of Base Current
4	Current Unbalance	-	-	$I_{max} - I_{min} > 30\%$ of I_b	-	$I_{max} - I_{min} < 30\%$ of I_b
5	Potential Unbalance	-	$V_{max} - V_{min} > 10\%$ V_{ref}	No minimum Current Req'd	$V_{max} - V_{min} < 10\%$ V_{ref}	No minimum Current Req'd
6	Current Reversal	Phase Wise (1ph, 2ph, 3ph)	-	$I_x > 5\%$ Base Current, direction of current reverse and PF value > 0.2	-	$I_x > 10\%$ Base Current, direction of current forward and PF value > 0.2
		In case of 3-phase CTs are reversed, the meter should log the tamper event.				
7	Low PF	-	-	I_r or I_y or $I_b > 10\%$ Base Current with PF < 0.5	-	I_r or I_y or $I_b > 10\%$ Base Current with PF > 0.5
8	Meter Cover Open	-	-	No minimum Current Req'd	-	-
9	Magnetic Tamper	-	-	-	-	No minimum Current Req'd
10	Power OFF	-	$V=0$ in all three phases	-	-	-
11	CT By-pass	-	-	Vector sum of $(I_r + I_y + I_b) > 20\%$ I_b & $I_{ph} > 2\%$ I_b in all phases	-	Vector sum of $(I_r + I_y + I_b) < 20\%$ I_b & Avg. current of all 3 phases $> 10\%$ of I_{basic} .
12	High Voltage	-	$> 115\%$ of V_{ref}	-	$< 110\%$ of V_{ref}	-
13	Low Voltage	-	$0 > V_{ref} < 75\%$ of V_{ref}	-	$> 80\%$ of V_{ref}	-
14	Over Current	-	-	$> 120\%$ of I_b	-	$< 120\%$ of I_b
15	Invalid Voltage	-	PT missing event should not persists. Phase angles deviated $> +/- 10$ degree from their respective fundamental	-	Phase angles deviated $< +/- 10$ degree from their respective fundamental	-

			values		values	
16	Neutral disturbance	Chopped signal – In any spurious signal injected to the neutral of meter, either offered meter will be immune or if gets affected it will log the event & register energy on reference voltage, actual current & UPF.				
17	Invalid Phase Association	-	When Voltage & Current sequence is different	-	When voltage & current sequence is same.	-

Persistence Time Details for Occurrence Restoration :

Sl. No.	Event Name	Compartment	P Time Occurrence	P Time Restoration
1	PT Miss	1	3 Min	3 Min
2	Voltage Unbalance	1	3 Min	3 Min
3	Current Reversal	2	3 Min	3 Min
4	CT Open	2	3 Min	3 Min
5	Current Unbalance	2	3 Min	3 Min
6	CT By pass	2	3 Min	3 Min
7	Over Current	2	3 Min	3 Min
8	Power failure	3	3 Min	3 Min
9	Very LPF	5	3 Min	3 Min
10	High Voltage	1	3 Min	3 Min
11	Low Voltage	1	3 Min	3 Min
12	Invalid Voltage	8	3 Min	3 Min
13	Invalid Phase Association	8	3 Min	3 Min
14	Current Missing	2	3 Min	3 Min
15	Neutral Disturbance	5	20 Sec	30 Sec
16	Cover Open	6	-	-
17	Magnetic Interference	5	-	-

Compartment wise allocation :

Compartment Numbers	Compartment Names	Number of Tamper
1	Voltage Related	80
2	Current Related	80
3	Power Failure	20
4	Transaction Events	10
5	Other Events	50
6	Non Roll Over Events	10
7	Communication Events	10
8	Non BIS Events	20
10	Non BIS Events without snapshot	10
11	Non BIS Diagnostic Events	10

5.19. Self-Diagnostics Features

The meters shall be capable of performing complete self-diagnostic check to monitor all circuits for any malfunctioning to ensure proper functioning of the meter all the time. The meter shall have indications for unsatisfactory/ non-functioning of the following.

1. Time and calendar

2. Real Time clock (RTC)
3. *RTC battery*
4. *Non-Volatile Memory*

The said malfunctioning should be flagged as LED indication on meter display of the IEMs, as per CBIP 325 Clause (6.1).

5.20 Pulse Outputs

Each meter shall be provided with optical test output device (visual), as per IS 14697 and its amendments for checking the accuracy of active & reactive energy measurement. It shall be possible to couple this device to suitable testing equipment also.

The meter shall have a test output (pulses) accessible from the front and be capable of being monitored with suitable testing equipment. The operation indicator must be visible from the front. The resolution of the test output shall be sufficient to conduct satisfactorily accuracy test at the lowest load in less than 5 minutes and starting current test in less than 10 minutes. Test outputs are required for both kwh and kvarh.

5.21 Calendar

30-year calendar with automatic leap year adjustment. The calendar and clock shall be correctly set at the manufacturer's works.

5.22 Time accuracy and Time synchronization

The meter shall have a built-in calendar and clock, having an accuracy of 10 seconds per month or better. The calendar and clock shall be correctly set at the manufacturer's works. The date (year-month-day) and time (hour-min.-sec.) shall be displayed on the meter front (shall be configurable).

The Meter shall have the intelligence to synchronize remotely from AMR system through software and DLMS protocol and can be possible through a single click from the software itself while connecting the meter with PC. Limited time synchronization through meter communication port (RS-485 or Ethernet) shall be possible at site. When an advance or retard command is given, twelve subsequent time blocks shall be contracted or elongated by five seconds each. All clock corrections information (GPS time, meter time at receipt of synchronization signal) shall be registered in the meter's memory and suitably shown in the meter data report and the also shall be shared to AMR system. The maximum time drift per annum shall be as per IS 14697.

The meter shall have feature of time synchronization through RS485 or Ethernet port. It should be capable for time synchronizing as a part of DLMS protocol. However, time shall be set for every 6 months using energy meters software during calibration works.

5.23. The meter shall meet the security profiles, authentication as per IS 15959 and its latest amendments.

5.24 The manufacturer shall provide latest manuals and its configuration tools and software (MRI Down load, Conversion and Time drift) along with each meter.

6.0. TESTS : Type, Routine and Factory Acceptance Tests (FAT) shall be carried out on the meters inline with CEA (Installation and Operation of meters) Regulations 2006 (and its amendments) and relevant standards.

6.1 Type Tests:

Two copies of Type test reports shall be furnished with the Bid for meters manufactured with same voltage and current reference of this specification. The type tests must have been conducted not earlier than **3 years** from the date of opening of the Bid. The Bids received without type tests reports will be treated as non-responsive. The meters shall be subjected to the complete range of type tests & routine tests as per IS 14697 & IS15959 and their amendments and other applicable standards, after final assembly.

Total 2 Nos. meters shall be type tested to conform IS14697, IS15959 and all those performance criteria mentioned in this specification. The bidder shall bear all the expenses of type testing. Further, 2 Nos. additional meters are to be manufactured at free of cost for type testing.

In case of any Meter under test fails in any type tests, the bidder shall arrange to carry out the modifications in all the meters at his own cost. After modification/replacement of the faulty components or firmware fixes, two meters are selected by owners representative from the lot and subjected to full range of type tests. The lot would be accepted when the meters successfully clear type tests.

Successfully Type tested meters shall be separately identified with visible marks and supplied to the owner after necessary refurbishing if any. The type tested meters shall be as good as other meters of the lot. The type tested meters shall not be supplied/installed and the bidder shall provide new replacements at no extra cost to Owner.

Type tests shall be certified or performed by Government NABL accredited laboratories as per CEA (Installation and Operation of meters) Regulations 2006 (and its amendments) and relevant standards using data sheets and test procedures that have been approved by the Owner.

A copy of all the type test certificates shall be submitted to Owner.

6.2 Factory Acceptance and Routine Tests:

6.2.1 Acceptance tests:

The acceptance tests as stipulated in IS 14697 and its amendments shall be carried out by the supplier in the presence of purchaser's representative. No of samples and criteria for conformity from each lot offered for inspection is also as per IS 14697.

The FAT shall be conducted according to the FAT test Plan and Test procedure approved by the Owner and shall cover the following tests as per IS14697 as a minimum:

1. Test of Starting Condition.
2. Test of No-Load Condition.
3. Test of Meter Constant.
4. Insulation Resistance Test.
5. AC High Voltage test.
6. Power frequency withstands voltage and impulse voltage withstand test as per IS14697.
7. Test of Power Consumption.
8. Test of Limits of Error.
9. Test of Repeatability of Error.
10. Functional test i.e. Voltage variations, Frequency variations and Phase Sequence Reversals.
11. 15/5 minutes block average frequency registration.
12. 15/5 minutes block net active power registration.
13. Net kVArh High registration in all four quadrants when voltage is above 103% of VREF.
14. Net kVArh Low registration in all four quadrants when voltage is below 97% of VREF.
15. Communication Test through Ethernet port, RS485 and Optical admin port.
16. Cyber security test as per the CEA (Cyber security in power sector) guidelines 2021.

Acceptance tests for PC software and data downloading using RS-port:

- All meters should be tested to verify that they are suitable for downloading data using Optical port, **Ethernet** and RS-485 ports.
 - All meters should be compatible with optical port, RS 485 port & LAN ports all together at a time (simultaneously) and communicate independently.
 - Downloading meter data to DCU through Ethernet port IEMs along with convertor, Optical Switch, DCU shall be integrated with the PC for demonstration will be verified during technical evaluation stage.
 - Functioning of Time Synchronization.
- Visual Inspection - To verify that the system to be delivered has all required components and is properly configured. Visual inspection shall verify acceptable workmanship and that all equipment, including cables and connectors are appropriately labelled.

6.2.2. Routine tests:

The routine tests as stipulated in IS14697 and its amendments shall be carried out by the supplier for 100% meters supplied and test certificates, technical leaflet shall be closed along with each and every meter.

7.0 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 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.

Material shall be dispatched only after approval of acceptance test reports and on issue of dispatch clearance from concerned.

8.0 TRAINING OF PERSONNEL:

Hands on training program for personnel at Generating Stations/Transmission substation/DISCOM substation shall cover the following:

- Features of IEM, DCU, Communication Interface.
- IS/IEC protocols.
- Extension of Auxiliary Supply, CT/PT connection.
- Real time correction of the Meter through CMRI or PC BCS
- Data downloading from IEM.
- Installation of software in local PC/Laptop.
- System Diagnostics- A comprehensive documentation including product manual, installation manual, O&M manual should be provided to all participants.

Step by Step procedure (on screen shot type and desktop video capture) shall be provided for

- i. Installation/Re-installation of Database handling software into Laptop/PC
- ii. Meter maintenance/site-testing procedure as per relevant IS/IEC standard and video tutorials

to attend minor issues shall also be provided to each site.

iii. Procedure for data downloading from Meter by Laptop/Desktop PC.

9.0 DOCUMENTATION:

All drawings shall conform to International Standards Organization (ISO) 'A' series of drawing 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. Also a soft copy of Drawings shall be submitted.

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. 10 sets of Technical leaflets (user manual) giving operating instructions.

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.

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.

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.

10.0 PACKING & FORWARDING:

10.1 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.

10.2 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.

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

10.4 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.

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

10.6 The Operation, storage and transport of the Interface Energy Meter (IEM) at the extremes of the temperature range should be for a maximum period of 6 hours.

11. QUANTITY AND DELIVERY REQUIREMENTS:

The quantity and delivery requirements will be indicated.

12. SUPERVISION SERVICES/INSTALLATION AND COMMISSIONING:

The Manufacturer shall arrange for unloading of the consignments.

The supplier is expected to provide services of qualified personnel to coordinate with the field Engineers of TSSPDCL for installation, testing at site at various Consumer sites and substations of TGSPDCL throughout the TGSPDCL Jurisdiction during Installation and commissioning of the meters at no cost to TGSPDCL.

13. MANDATORYS PARES & 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, interfacing cables in India and also mention the service agencies.

14. GUARANTEE:

a) The meters should be guaranteed for satisfactory operation for a period of **10 years** from the date of receipt of material at destination stores by the consignee in good condition.

b) *The guarantee would include repair, replacement, part material replacement cost and both way transportation cost (including insurance of transit).*

c) All India service center details along with contact number and mail ID of each centers shall be provided during bidding.

d) Meter software, if upgraded by OEM should be supplied free of cost. Also, patch updations or software updations, software problem etc. should be addressed free of cost.

e) During the guarantee period if the meter while in its normal operation is found defective, it shall be replaced/repared 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.

f) Copy of warranty certificate shall be submitted.

g) For the purpose of ensuring 10 years guarantee, meter may be sealed at manufacturer's

premises after inspection by the TGSPDCL representative and dispatched in sealed condition.

15. QUALITY ASSURANCE PLAN:

15.1 i) The bidder shall invariably furnish the following information along with his offer failing which the offer shall be liable for rejection. Information shall be separately given for individual type of equipment offered.

- ii) The Structure of organization
- iii) The duties and responsibilities assigned to staff ensuring quality of work
- iv) The system of purchasing, taking delivery and verification of materials
- v) The system for ensuring quality of workmanship
- vi) The quality assurance arrangements shall confirm to the relevant requirement of ISO- 9001 on ISO 9002 as applicable.
- vii) Statement giving list of important raw materials, names of sub-suppliers for the raw materials (PCBs, Cards) list of standards according to which the raw material are tested, list of tests normally carried out on raw material in the presence of suppliers representative, copies of test certificates.
- viii) Information and copies of test certificates as on(i)above in respect of bought out items.
- ix) List of manufacturing facilities available
- x) Level of automation achieved and list of areas where manual processing exists.
- xi) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections. List of testing equipment available with the bidder for final testing of equipment specified and test plant limitation, if any vis- a-vis the type. Special acceptance and routine tests specified in the relevant standards. These limitations shall be very clearly brought out in "Schedule of Deviations" from the specified test requirements.

15.2 The Contractor shall within 30days of placement of order, submit the following information to the purchaser.

- i) List of the raw material as well as bought out accessories and the names of sub- suppliers selected from those furnished along with the offer.
- ii) Type test certificates of the raw material and bought out accessories if required by the purchaser.
- iii) Quality Assurance Plan (QAP) withhold points for purchaser's inspection. QAP and purchasers hold points shall be discussed between the purchaser and contractor before the QAP is finalized. The contractor shall submit the routine test certificates of bought out accessories and central excise asses for raw material at the time of routine testing if required by the purchaser and ensure that the quality assurance requirements of specification are followed by the sub- contractor.

15.3 The Quality Assurance Programme shall give a description of the Quality System and Quality Plans with the following details.

- i. Quality System:
 - The Structure of the Organization
 - The duties and responsibilities assigned to staff ensuring quality of work.
 - The system of purchasing, taking delivery of verification of materials.
 - The system of ensuring of quality workmanship.
 - The system of control of documentation.
 - The system of retention of records.

- The arrangement of contractor internal auditing.

A list of Administrator and work procedures required to achieve contractors quality requirements. These procedures shall be made readily available to the purchaser for inspection on request.

ii) Quality Plans:

- An outline of the proposed work and program sequence.
- The structure of contractors organizations for the contract.
- The duties and responsibilities ensuring quality of work
- Hold and notification points.
- Submission of engineering documents required by this specification.
- The Inspection of the materials and components on request.
- Reference to contractors work procedures appropriate to each activity.
- Inspection during fabrication/construction.
- Final inspection and test.

16. OTHER INFORMATION:

- 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.
- 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.
- The bidder shall furnish details of memory used in the meter.
- 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.

17. Demonstration of IEMs:

It is mandatory to demonstrate the capability of meter to capture **15/5** min Load survey data and 1 min instantaneous power flow data along with compatibility with DCU in DLMS protocol before mass fabrication. For this purpose, successful bidder shall bring with them the required switch and demo version of Meter reading software during demonstration. **The demo of the meters to check the features as per the specification will be carried out after opening of the technical bid and before opening of the price bid for further evaluation.** The successful bidder shall also co-ordinate with AMR system developer/service provider for demonstration/seamless integration with AMR system.

18. SCHEDULES

The Bidder shall submit the following schedules(as per Standard Format), which is part and parcel of the Specification.

- Schedule- A: Guaranteed Technical Particulars

GUARANTEED TECHNICAL PARTICULARS FOR HT ELECTRONIC TRIVECTOR METER suitable for ABT.

Sl. No	Description	Required in Specification	To be filled by the Bidder
1	Name of the Manufacturer and Origin.	To be filled by the Bidder	
2	Type of meter/model	Static, 3phase, 4wire	
3	Accuracy class	0.2S	
4	Meter case	Polycarbonate	
5	Battery life for clock	To be filled by the Bidder	
6	Parameters in meters		
	a) Instantaneous parameters	As per clause 5.9	
	b) Load Survey parameters	As per clause 5.10	
	c) Billing parameters	As per clause 5.11	
7	P.F.Range	0 Lag–Unity–0 Lead	
8	Basic Current (Ib)	1A	
9	Maximum Current	> 200% of Ib	
10	Minimum starting current	0.1% of Ib	
11	Rated Voltage	Ph-N:110/ $\sqrt{3}$ V Phase to Phase:110V	
12	Variation of voltage at which meter functions normally	-30% to+20% of Vref	
13	Reference Frequency and range	50Hz+/-5%.	
14	Power Loss in Voltage & Current circuits	Voltage Circuit –Less than 1W and 4VA per phase. Current Circuit – Less than1VA per phase.	
15	Dynamic range	To be filled by the Bidder	
16	MD reset Provisions	a) Manually b) Through authenticated CMRI or remote communication command c) Automatic resetting at present date & time.(Clause5.15)	
17	No.of digits of display and height of character	Liquid Crystal Display (LCD) with backlit Character height and number of characters to mentioned.	
18	Non-volatile memory storage capacity	10 years	
19	Principle of operation	To be filled by the Bidder	
20	MD Integration period (Programmable)	15/5 minutes (Clause5.15)	
21	Weight of meter	To be filled by the Bidder	
22	Dimensions	To be filled by the Bidder	
23	Warranty	10 years from the date of supply.	
24	Outline drawings & Leaflets	To be filled by the Bidder	
25	a) Remote meter-readout facility	Clause5.17	
	b) Communication protocol used	DLMS	
	c) Sealing provision	As per clause 5.16	
	d) Baudrate of data Transfer from meter to CMRI/RMR	Preferable 9600	
	e) Manufacturers Seal	Shall be provided	
26	Base Computer Software works On which operating system	To be filled by the Bidder	
27	Type Test Certificates	To be furnished by the bidder	
		Minimum of 8 time zones	

28	Time of Day Zones (programmable)	(00:00 to 6:00 Hrs 6:00 to 10:00 Hrs 10:00 to 14:00 Hrs 14:00 to 18:00 Hrs 18:00 to 22:00 Hrs 22:00 to 24:00 Hrs)	
29	Whether meter measures both fundamental & Harmonic Energy	Fundamental energy required (energy Recording corresponding to 50hz duly filtering out Harmonics)	
30	Real Time Clock Accuracy	10 seconds per month drift or better.	
31	Anti-Tamper Features	As per clause 5.18	
32	Data retention by NVM without battery backup and unpowered condition	10 years	
33	Self-Diagnostic Feature	As per clause 5.19	
34	Programmable Parameters	As per clause 5.12	
35	Name plate details	As per clause 5.13	

SECTION-VI
QUALIFICATION REQUIREMENTS

1. The bidder should be a manufacturer who must have designed, manufactured, tested and supplied to **Govt. power utilities/Distribution Power Utilities (inclusive private distribution power utilities)** at least 40% of the quoted quantity of the goods / equipment of same or higher class 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.

The bidder must possess BIS (Copy of original) certification as per IS: 14697 - 1999 (amended up to date) covering the material being quoted. Tenders received without BIS certification will be rejected.

At least 20% of similar material offered against this specification should be in successful operation since at least 2 years as on the date of opening of the Bid. (Performance Certificates issued by Head of Purchasing Authority shall 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 which is blacklisted/ debarred by any other utility and whose promoters, firms or companies were already blacklisted/debarred by another utility is not eligible to participate in the tenders.

2. **The bidders shall have to furnish an undertaking in the prescribed format given in the section-8 regarding any relation the promoters of blacklist/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.**
3. The bidder should furnish the information on all past supplies and satisfactory performance in proforma under Form 5 attested by a CA. Copies of purchase orders, invoices and other documents in support of the above supplies should be enclosed. (Performance Certificate from Purchase Order issuing authority only.)
4. 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, factory license, ISO certifications 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.
5. The bidder will furnish Type Test Results. The type tests must have been conducted on the material offered as per the relevant IS/International standards in any NABL accredited laboratory (**NABL**) as per the latest revision of the Technical Specification and the date of Type tests will not be older than **3 years**. The Bids received without type test reports will be treated as Non-Responsive. **If any change in design was made latest type tests shall be furnished along with approved drawings.**

6. 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.
7. 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.
8. Samples: Two samples of the above material offered against this specification shall accompany the tender and are non-returnable. The tenders received without samples are liable for rejection.

SECTION-VII

SAMPLE FORMS

1. BID FORM (Form-I)

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 for the sum of. (total bid amount in words and in figures) or such other sums as may be ascertained in accordance with the schedule of prices attached 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 up to (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. BID SECURITY FORM (Form-II)

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
 - b) 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(tender opening date) the period of the bid validity, i.e. total for 135 days from the date of tender opening, 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 **Nationalized/Scheduled Bank**.

3. PERFORMANCE SECURITY FORM (Form-III)

To: _____(Name of Purchaser)

WHEREAS.....(Name of Supplier)
(hereinafter called "the Supplier") has undertaken, in pursuance of Contract No.....dated.....200 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 (Nationalized/Scheduled) 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. 200.

Signature and Seal of Guarantors

.....
Date.200.
.....
.....
Address:.....
.....
.....

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

4. CONTRACT FORM (Form-IV)

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.

5. PROFORMA FOR PERFORMANCE STATEMENT (Form-V)

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 _____

Note: Copies of Performance certificates issued by concerned Purchase order issued authority to be enclosed as proof.

6. DETAILS TO BE FURNISHED BY THE MANUFACTURER (Form-VI)

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 Security is enclosed	:	
7. State whether the quotation in two parts has been submitted.	:	
8. State whether 20% minimum quantity for each item 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.	:	
14. Quantity offered for supply	:	
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 Security exemption letter enclosed, if exempted in case of Govt. firms.	:	
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	:	
26. Whether declaration in regard to relation to promoters of blacklisted/debarred companies by any power utility enclosed	:	

7. SCHEDULE OF DEVIATION (Form-VII)

(i) TECHNICAL (Form-VII A)

Sl. No.	Requirements / Equipment	Specification Clause No.	Deviations	Remarks

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:

(ii) COMMERCIAL (Form-VII B)

Sl. No.	Requirements / Equipment	Specification Clause No.	Deviations	Remarks

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:

8. Declaration by the Company (Form-VIII)

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