

**OFFICE OF CHIEF LOAD DESPATCHER, SLDC  
ODISHA POWER TRANSMISSION CORPORATION LTD  
TENDER SPECIFICATION NO. SLDC-02/2023-24**

**TENDER FOR DESIGN, DEVELOPMENT, SUPPLY, INSTALLATION, TESTING &  
COMMISSIONING OF**

1. 0.2S ACCURACY CLASS AC TRI VECTOR ABT COMPLIANT ENERGY METERS.
2. AMR (CDCS-MDAS) SOFTWARE (AT DC & DR) ALONG WITH DCU AND ASSOCIATED HARDWARE.
3. COMPREHENSIVE AMC FOR AMR SOLUTION & 0.2S ACCURACY CLASS AC TRI VECTOR ABT COMPLIANT ENERGY METERS.

**STATE LOAD DESPATCH CENTER, OPTCL, ODISHA.  
(e-tendering mode only)**

**PART-I**

**SECTION-I: INSTRUCTION TO BIDDERS**

**SECTION-II: GENERAL TERMS AND CONDITIONS OF CONTRACT**

**SECTION-III: LIST OF ANNEXURES**

**SECTION IV: SCOPE OF WORK**

**SECTION-V: TECHNICAL SPECIFICATION.**

**SECTION-VI-A: COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR  
AMR & HARDWARE**

**SECTION-VI-B: COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR  
ENERGY METER**

**PART-II**

**SECTION-VII: PRICE BID**

**SECTION-VIII: PRICE BID FOR COMPREHENSIVE ANNUAL MAINTENANCE  
CONTRACT FOR ENERGY METERS**

Table 1: Schedule of Dates

1	Request for online tender documents	From Date 07.11.2023 (10.00 Hrs) To Date 06.12.2023 (12.30 Hrs)
2	Pre-Bid Meeting	Date: 20.11.2023 (11.00 Hrs)
3	Last date of submission of online tender	Date: 06.12.2023 (16.30 Hrs)
4	Date of opening of Tender	Date: 07.12.2023 (11.00 Hrs)

**NOTICE INVITING TENDER**  
**OFFICE OF CHIEF LOAD DESPATCHER, SLDC**  
**ODISHA POWER TRANSMISSION CORPORATION LTD**  
**TENDER SPECIFICATION NO. SLDC-02/2023-24**

1. For and on behalf of the STATE LOAD DESPATCH CENTER, OPTCL, the undersigned invites bids from firms for “Design, Development, Supply, Installation, Testing & Commissioning of 0.2S Accuracy Class AC Tri Vector ABT compliant Energy Meters, AMR (CDCS-MDAS) Software (at DC & DR) along with DCU and associated hardware and Comprehensive AMC for AMR Solution & Energy meters for State Load Despatch Center, OPTCL, Odisha.” Under two-part bidding system in e- tendering mode only as per the following details.

Table 2 Tender Details

Tender Specification No.	Description of work	Quantity /Unit	EMD (₹)	Cost of Tender document (₹)	Tender Processing Fee (₹)	Last date of receipt & opening of tender
SLDC-02/2023-24	Design, Development, Supply, Installation, Testing & Commissioning Of 0.2S Accuracy Class AC Tri Vector ABT compliant Energy Meters, AMR (CDCS-MDAS) Software (at DC & DR) along with DCU and associated hardware and comprehensive AMC for AMR Solution and Energy Meters	1 Lot	48,20,000/ -	25,000/+ GST @ 18% =29500	5000/+ GST @ 18%= 5900/-	Dated 06.12.2023 (16.30 Hrs)  &  Dated 07.12.2023 (11.00 Hrs)

The bidders can view the tender documents from Tender Portal for free of cost.

**TENDER COST:**

The bidders who want to submit bids will have to pay non-refundable amount Rs. 29,500/- (Rupees Twenty-nine thousand five hundred) only including GST @ 18%) towards the tender cost, in the form of Demand

ABT METERS & AMR UNDER SAMAST PROJECT

draft/Pay order, drawn in favor of the Power System, OPTC Ltd, Bhubaneswar. They have to also submit notarized hard copy of GST registration certificate on or before the date & time of opening of techno-commercial bid (Part-I).

**TENDER PROCESSING FEE:**

The bidders will have to submit non-refundable amount of Rs.5,900/- (Rupees Five thousand nine hundred) only including GST @ 18%) towards the tender processing fee to K.S.E.D.C.Ltd, in e-payment mode. The e-payment of above amount is to be made to enable the bidder to down load the bid proposal sheets & bid document in electronic mode.

**EMD**

The Bidder must submit the EMD as per Clause No. 11 of Part-I (ITB)

**SUBMISSION OF TENDER COST, TENDER PROCESSING FEE & EMD:**

The bidder will deposit the tender cost, tender processing fee & EMD prior to last date & time for opening of techno-commercial bid (Part-I) as notified in tender notice.

**The demand draft/pay order for tender cost, processing fees are to be Submitted along with the EMD at the office of the undersigned on or before the last date & time of opening of technical bid (Part-I).**

The bidders will scan the Demand Draft/Pay order/ Bank guarantee, towards EMD and upload the same in the prescribed form in .gif or .jpg format in addition to sending the original as stated above.

The prospective bidders are advised to register their user ID, Password, company ID from website [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) by clicking on hyper link “Register Me”.

Any clarifications regarding the scope of work and technical features of the tender can be had from the undersigned during office hours.

Minimum qualification criteria of bidders: AS STIPULATED IN CLAUSE NO 38.0 SECTION-II, PART-I (G.T.C.C) OF THE TENDER SPECIFICATION.

**N.B:-All subsequent addendums / corrigendum to the tender will be hosted in [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) only. Interested Bidders are requested to visit e-tender portal for update information of tender (Corrigendum/addendum etc.).**

**CHIEF LOAD DESPATCHER, SLDC,  
OPTCL, BHUBANESWAR**

**TENDER SPECIFICATION:**

**PART – I**

**SECTION – I: INSTRUCTION TO BIDDERS**

**SECTION – II: GENERAL TERMS AND CONDITIONS OF CONTRACT (G.T.C.C.)  
(COMMERCIAL)**

**SECTION – III: LIST OF ANNEXURES (COMMERCIAL)**

**SECTION – IV: SCOPE OF WORK**

**SECTION – V: TECHNICAL SPECIFICATION**

**SECTION – VI: SPECIFICATION FOR COMPREHENSIVE AMC OF AMR SOLUTION**

**SECTION-VI-B: COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR ENERGY METER**

**PART – II**

**SECTION – VII: PRICE BID**

**SECTION-VIII: PRICE BID FOR COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR ENERGY METERS**

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# **COMMERCIAL SPECIFICATIONS**

## **PART I**

### **SECTION I**

#### **INSTRUCTIONS TO BIDDERS**

## PART I

### SECTION I: Instruction to Bidders

#### Submission of Bids

The bidder will submit the bid in Electronic Mode only i.e., [www.tenderwizard.com/](http://www.tenderwizard.com/) OPTCL. The bidder must ensure that the bids are received in the specified website of the OPTCL by the date and time indicated in the Tender notice. Bids submitted by telex/telegram will not be accepted. No request from any bidder to the SLDC, OPTCL to collect the Bids in physical form will be entertained by the SLDC, OPTCL.

The SLDC, OPTCL reserves the right to reject any bid, which is not deposited according to the instruction, stipulated above. The participants to the tender should be registered under GST Laws.

- I. For all the users it is mandatory to procure the Digital Signatures of Class-III.
- II. Bidders /Suppliers are requested to follow the below steps for Registration:
  - i. Click “Register”, fill the online registration form.
  - ii. Pay the amount of Rs. 2360/- through e-payment in favor of K S E D C Ltd Payable at Bangalore.
  - iii. Send the acknowledgment copy for verification.
  - iv. As soon as the verification is being done the e-tender user id will be enabled.
- III. After viewing Tender Notification, if bidder intends to participate in tender, he has to use his e-tendering User Id and Password which has been received after registration and acquisition of DSCs.
- IV. If any Bidder wants to participate in the tender, he will have to follow the instructions given below:
  - i. Insert the PKI (which consist of your Digital Signature Certificate) in your System (Note: Make sure that necessary software of PKI be installed in your system).
  - ii. Click / Double Click to open the Microsoft Internet Explorer (This icon will be located on the Desktop of the computer).
  - iii. Go to Start > Programs > Internet Explorer.
  - iv. Type [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) in the address bar, to access the Login Screen.
  - v. Enter e-tender User Id and Password, click on “Go”.
  - vi. Click on “Click here to login” for selecting the Digital Signature Certificate.

- vii. Select the Certificate and enter DSC Password.
- viii. Re-enter the e-Procurement User Id Password
- V. To make a request for Tender Document Bidders will have to follow below mentioned steps.
  - i. Click “Un Applied” to view / apply for new tenders.
  - ii. Click on Request icon for online request.
- VI. After making the request Bidders will receive the Tender Documents which can be checked and downloaded by following the below steps:
  - i. Click to view the tender documents which are received by the user.
  - ii. Tender document screen appears.
  - iii. Click “Click here to download” to download the documents.
- VII. After completing all the formalities Bidders will have to submit the tender and they must take care of following instructions.
  - i. Prior to submission, verify whether all the required documents have been attached and uploaded to the particular tender or not.
  - ii. Note down / take a print of bid control number once it displayed on the screen
- VIII. Tender Opening event can be viewed online.
- IX. Competitors bid sheets are available in the website for all.
- X. For any e-tendering assistant contact help desk number mentioned below.

Bangalore – 080- 40482000.

The participants to the tender should be registered under GST Laws.

## 1. Division of Specification.

The specification is mainly divided into two parts viz. Part-I & Part-II.

### **Part-I Consists of**

- |                  |   |
|------------------|---|
| i. Section-I     | Instruction to Bidders.                 |
| ii. Section-II   | General Terms & conditions of contract. |
| iii. Section-III | List of Annexures                       |
| iv. Section IV   | Scope of Work                           |

- v. Section-V Technical Specification.
- vi. Section-VI-A Specification for Comprehensive AMC for AMR and Hardware
- vii. Section-VI-B Specification for Comprehensive AMC for Energy meters

**Part-II Consists** of

Section-VII: Schedule of prices as per Annexure-V

## 2. Tenders will be in Two Parts.

The Bidders are required to submit the tenders in two parts Part-I, technical and commercial and Part-II “Price Bid”.

## 3. Pre-Bid Meeting:

A pre-bid conference shall be held as per the following program. The interested bidders may raise the queries, if any, in writing for the works, 03 days prior to the pre-bid conference, which shall be clarified during the pre-bid conference along with other issues raised in the pre-bid conference. All the clarifications / amendments to the bidding document shall be uploaded in OPTCL’s website/e-Tender Portal of OPTCL. Queries after the pre-bid conference will not be entertained. The SLDC, OPTCL shall not be under any obligation to entertain/respond to suggestions made or to incorporate modifications sought for by the prospective bidders during the pre-bid meeting or thereafter.

Table 3 Pre-bid conference venue

Sl No	Date and time of Pre-bid conference	Venue
1	<b>As indicated in the e-NIT under Table-1</b>	Conference hall of SLDC, 1 <sup>st</sup> Floor, Mancheswar, GRIDCO Colony, OPTCL, Bhubaneswar

- i. The bidder or its authorized representative is invited to attend pre-bid meeting to be held on the date, time and location specified at TABLE-1 above in BDS. The purpose of the meeting will be to clarify the exact scope of work, and any issues regarding the bidding documents and the technical specifications for its clarification, if raised at that stage by the bidders. The Purchaser shall not be under any obligation to entertain /respond to suggestions made or to incorporate modifications sought for by the prospective bidders.
- ii. Any modification/amendment of the bidding documents shall be made by the Purchaser exclusively through the issue of an amendment pursuant to clause 4
- iii. Non-attendance at the pre-bid meeting will not be a cause for disqualification of bidders but at the same time shall not entitle them to raise any query at a later date.
- iv. Any essential requirement not included in the Price Schedules but required for successful

commissioning and operation of Works as per scope of Contract shall be indicated by the bidders in the price bid and any additional information shall be submitted before the pre-bid meeting by the date specified in the document.

- v. The Purchaser shall make related modifications/amendments as may be considered necessary based on this form in the bidding documents as per provisions mentioned in this clause-4
- vi. Bidders shall not be permit to indicate any additional requirements in the bid for any reason whatsoever after the Purchaser has considered such amendments.
- vii. Bidder's to communicate all correspondence related to pre-bid meeting and any other information in the following email: [samast@sldcorissa.org.in](mailto:samast@sldcorissa.org.in)

#### **4. Amendment of bidding documents**

- i. At any time after pre-bid meeting, but not later than ten (10) days prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issue of an addendum/amendment
- ii. The addendum/amendment will be uploaded in the e-tendering portal and all such amendments/addendums will be binding upon them. SLDC, OPTCL shall assume that the information contained therein will have been taken into account by the bidder in its bid. SLDC, OPTCL will bear no responsibility or liability arising out of non-compliance of the same in time or otherwise by the bidder.
- iii. In order to afford prospective bidders reasonable time in which to take the addendum/amendment into account in preparing their bids, SLDC, OPTCL may, at its discretion, extend the deadline for the submission of bids.
- iv. In order to afford prospective bidders reasonable time in which to take the addendum/amendment into account in preparing their bids, SLDC, OPTCL may, at its discretion, extend the deadline for the submission of bids.
- v. For the information of bidders, the addendum/ amendments shall be uploaded on the e-tendering portal. The bidders may visit the website from time to time in their own interest.

#### **5. Opening of Bids.**

- i. The part-I will be opened on the date and time fixed by the SLDC, OPTCL for opening of bids in electronic mode in presence of such of the Bidders or their authorized representatives [limited to one person only] on the due date of opening of tender who opt remain present. After scrutiny of the technical particulars and other commercial terms, clarifications, if required, will be sought for from the bidders. The Bidders will be allowed 15 days' time for

such activity.

- ii. On receipt of technical clarification, the bids will be reviewed, evaluated and those not in conformity with the technical Specification / qualifying experience, will be rejected. If any of the technical proposals requires modification to make them comparable, discussion will be held with the participating bidders.
- iii. All the responsive bidders will be given opportunity to submit the revised technical and revised price proposals as a follow up to the clarification (modification if any) published through corrigendum on the technical proposals. The qualified bidders will be given opportunity to submit revised price proposals within 15 days from the date of such discussion and publishing the corrigendum or within time frame mutually agreed, whichever is earlier.
- iv. When the revised price proposals are received, the original price proposals will be returned to the bidders unopened along with their original technical proposals. Only the revised technical and price proposals will be considered for bid evaluation. The price bids [Part-II] of such of the Bidders, whose tenders have been found to be technically and commercially acceptable, including those supplementary revised price bids, submitted subsequently, will be opened in the presence of the bidder's representative on a date and time which will be intimated to all technically and commercially acceptable Bidders.
- v. The bidders are required to furnish sufficient information to the Purchaser to establish their qualification, capacity to manufacture and/or supply the materials/perform the work. Such information will include details of bidder's experience, its financial, managerial and technical capabilities.
- vi. The bidders are also required to furnish details of availability of appropriate technical staff and capability to perform after sales services. The above information will be considered during scrutiny and evaluation of bids and any bid which does not satisfactorily meet these requirements, will not be considered for price bid evaluation.
- vii. The price bids of the technically and otherwise acceptable bids will only be evaluated as per the norms applicable in terms of this Specification.

## **6. Purchaser's Right Regarding Alteration of Quantities Tendered.**

- i. Deviation to the revised scope of works is not permissible under the contract. However, at any time during the execution of the contract, SLDC, OPTCL reserve the right to vary the quantity of any item with reference to the BOQ to any extent within the limit of  $\pm 25\%$  of the BOQ of the LOA at the same unit rate and terms conditions contained in the LOA. However, any increase in the BOQ quantity of an item beyond 25% of the BoQ of the LOA shall be lower of price available in BoQ (i.e. in LOA) or Rate Contract or Cost Data.

- ii. In case a new item(s) are required during the execution of the contract for which unit rates are not available in BOQ, the same shall be the least of the available Rate Contract Price or Cost Data Price or Average unit rate of the same items from works awarded during last one year as available with SLDC, OPTCL.
- iii. The Purchaser reserves the right to remove any item in BOQ without assigning reasons thereof, at the time of issuance of Purchase Order/LOI.
- iv. The increase in quantity w.r.t items in BOQ or inclusion of new item(s), however, shall always be subject to the prior approval of the competent authority.
- v. Accordingly, the Contract price shall be adjusted based on the approved unit rates for the variation in quantities as above.

## **7. Procedure and opening time of tenders.**

Tenders will be opened in the office of the Chief of Load dispatcher, SLDC, OPTCL on the specified date and time in presence of the Bidders or their authorized representatives [limited to one person only] in case of each bidder who may desire to be present, at the time of opening the bids.

## **8. Bidder's Liberty to deviate from Specification.**

The Bidder may deviate from the specification while quoting, if in his opinion, such deviation is in line with the Developers, manufacturer's standard practice and conducive to a better and more economical offer. All such deviations should however be clearly indicated giving full justifications for such deviation. [Read with Clause-9, Section-II of the Specification]. Such deviations may be accepted if purchaser is fully convinced and satisfied or else bidder's proposal will be rejected. Acceptance of this deviation is purely under the discretion of the purchaser.

## **9. Purchaser's right to accept/reject bids:**

The purchaser reserves the right to reject any or all the tenders without assigning any reasons whatsoever if it is in the interest of SLDC, OPTCL, under the existing circumstances. [Read with clause-10, Section-II of the specification].

## **10. Mode of submission of Tenders.**

- i. Tenders will be submitted in electronic mode only. ([www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL))
- ii. Telegraphic or FAX tenders will not be accepted under any circumstances.

## **11. Earnest money deposit:**

The tender will be accompanied by Earnest Money deposit of value specified in the notice inviting tenders against bid. Tenders without the required EMD as indicated at **Annexure-VIII** will be

rejected out rightly.

The earnest money deposit will be furnished in one of the following forms subject to the conditions mentioned below:

- i. **Bank Draft:** -To be drawn in favor of Power System, OPTC Ltd, Bhubaneswar. In case of demand draft.
- ii. Bank Guarantee: To be drawn in favour of Odisha Power Transmission Corporation limited, Bhubaneswar.
- iii. Bank Guarantee from any Nationalized/Scheduled Bank strictly as per enclosed proforma vide **Annexure-VI** to be executed on non-judicial stamp paper worth Rs.29.00 or as applicable, as per prevailing laws in force and to be accompanied by SFMS, the confirmation letter.

**NOTE:**

- i. The validity of the EMD in the form of Bank Guarantee will be at least for 240 days from the date of opening of tender failing which the tender will be liable for rejection
- ii. No interest will be paid on the Earnest Money Deposit.
- iii. The Earnest Money Deposit shall be furnished in any one of the forms indicated above (i.e., Through Bank Draft, Bank Guarantee).
- iv. No adjustment towards EMD will be permitted against any outstanding amount with the SLDC/OPTCL.
- v. The chart showing particulars of EMD to be furnished by Bidders of different categories is placed at Annexure-VIII.
- vi. In the case of un- successful Bidder, the EMD will be refunded after the tender is decided. In the case of successful Bidder, this will be refunded only after furnishing of security money referred to a clause-19 of Section-II.
- vii. Suits, if any, arising out of this clause will be filed in a Court of law to which the jurisdiction of High Court of ODISHA extends.
- viii. EMD will be forfeited if the bidder fails to accept the letter of intent and/or purchase order issued in his favor or to execute the order, placed on them.

Tenders not accompanied by Earnest Money will be disqualified.

**12. Validity of the Bids: -**

The tenders should be kept valid for a period of **180** days from the date of opening of the tender, failing which the tenders will be rejected.



**13.Price: -**

- i. Bidders are requested to quote- 'FIRM' Price. No deviation from FIRM PRICE will be entertained irrespective of deviation as in clause No.9 of section -II Part- I.
- ii. The price quoted by the bidder for Comprehensive AMC shall not be less than 20% of quoted price against AMR Solution with data acquisition system (Excluding meter & Meter panel, DCU, IT hardware cost), failing which the bidder will be disqualified for the competitive bidding.

**14.Revision of tender price by Bidders:**

- i. After opening of tenders and within the validity of period, no reduction or enhancement in price will be entertained. If there is any change in price, the tender will stand rejected and the EMD deposited will be forfeited.
- ii. After opening of price bid if the validity period is not sufficient to place purchase order, the bidder may be asked by the purchaser to extend the validity period of the bid under the same terms and condition as per the original tender.
- iii. However, the bidder is free to change any or all conditions including price except delivery period of their bids at their own risk, if they are asked by the purchaser to extend the validity period of the bid prior to opening of price bid.

**15.Bidders to be fully conversant with the clauses of the Specification: -**

Bidders are expected to be fully conversant with the meaning of all the clauses of the specification before submitted their tenders. In case of doubt regarding the meaning of any clause, the bidder may seek clarification in writing from the Chief Load Despatcher, SLDC. This, however, does not entitle the Bidder to ask for time beyond due date, fixed for receipt of tender.

**16.Documents to Accompany Part-I Bids.**

Bidders are required to submit tenders in the following manner:

- i. Declaration Form. [As per Annexure-I]
- ii. Earnest Money. [As per Annexure-VIII], Tender Cost.
- iii. Technical specification and Guaranteed Technical Particulars conforming to the Purchaser's Specification along with drawings, literatures and all other required Annexures, duly filled in.
- iv. Photostat copies of type test certificates of 0.2S Accuracy class Tri-vector ABT compliant energy Meters, Hardware materials/equipment offered as stipulated in the Technical

- Specification.
- v. Abstract of Terms & conditions in prescribed proforma as per Annexure-XIX.
  - vi. General Terms & Conditions of supply offer as per Section-II, Part-I of the Specification.
  - vii. List of orders executed for similar Project, ABT Meter manufacturing, supply, AMR with software modules and hardware materials/equipment during preceding 5(five) years indicating the customer's name, Purchase Order No. & Date, date of supply and date of commissioning etc.
  - viii. Data on experience as per [As per Annexure IX] and Clause-7 of Section-II of the Specification.
  - ix. GST Compliance Rating. The GST Identification Number (GSTIN) under GST Laws and permanent account number [PAN] of the firm under Income tax Act are required.
  - x. Audited Balance sheet & profit loss accounts of the bidder, for past (3) three years.
  - xi. Schedule of quantity and delivery in the prescribed Proforma vide Annexure, as appended.
  - xii. List of Orders in hand to be executed.
  - xiii. Deviation schedule.
  - xiv. The bidder should not have any pending litigation or arbitration with SLDC/OPTCL/GRIDCO with regard to any project or related activity. The bidder should certify/declare the same in unequivocal terms by way of an affidavit duly sworn before a magistrate/notary.

### **17. Documents/Papers to accompany in Part-II Bid.**

Part – II, Section-VII of the tender will consist of the Schedule of prices in the prescribed proforma.

### **18. Conditional Offer:**

Conditional offer will not be accepted.

### **19. General: -**

- i. In the event of discrepancy or arithmetical error in the schedule of price, the decision of the purchaser will be final and binding on the Bidder.
- ii. For evaluation, the price mentioned in words will be taken if there is any difference in figures and words in the price bid.
- iii. Notice inviting tender will form part of this specification.
- iv. The price bids of the technically and otherwise acceptable bids will only be evaluated. The

EMD of others, if any, will be returned to the bidders.

- v. It should be distinctly understood that the part-II of the bid will contain only details/documents relating to price, as outlined in clause-17 mentioned herein above. Inclusion of any of the documents/information etc. will render the bid liable for rejection.

## **20. Expenses against FAT:**

Expenses of SLDC, OPTCL's representative for witnessing the inspection & testing of the offered ABT Meters, DCU and other Hardware equipment/ materials during inspection and testing at developer's/ manufacturer's work place.

The testing and inspection of the ABT Meter/DCU/ equipment/ materials / software at Developer's/ manufacturer works are in the scope of work of the Supplier/bidder.

SLDC, OPTCL inspecting officer, / authorized representative by SLDC, OPTCL on receipt of offer for inspection from the bidder/supplier, proceeds to the manufacturer works/premises to witness the Type/Acceptance/Routine test.

### **Important:**

It is hereby informed to all the bidders that the relevant clauses of the contract specification, pertaining to inspection and testing of ABT Meters/DCU/equipment/materials/software, are hereby supplemented with following additional terms and conditions.

The expenses under the following heads, in respect of SLDC, OPTCL's representative for witnessing the inspection & testing of the offered ABT Meter /DCU/equipment/materials/software at the inspection and testing site, will be borne by the supplier/bidder.

#### **a. Hotel Accommodation:**

Single room accommodation in 4-star hotel for the SLDC, OPTCL/ authorized representative by SLDC, OPTCL inspecting officer of the rank of Assistant General Manager (Grade E-6) and above or other representative nominated by SLDC/OPTCL.

Single room accommodation in 3-star hotel for the SLDC, OPTCL inspecting officer of the rank below Assistant General Manager (Grade E-6) or other representative nominated by SLDC/OPTCL.

**N.B.:** It is the responsibility of the supplier to arrange the hotel accommodation matching with their inspection and testing schedule, so that the inspecting officer can check-in the hotel one day prior to the date of inspection and check out after the completion of the inspection, subject to availability of the return travel ticket. In case of extended duration of inspection or non-availability of the return travel ticket, Developer supplier/manufacturer will arrange for the extended stay of the inspecting officer in the Hotel accordingly. In case there is no hotel with prescribed standard in and around the place of inspection, the Developer

supplier/manufacturer will suggest alternative suitable arrangement at the time of offer for inspection, which is subjected to acceptability of SLDC, OPTCL inspecting officer.

**b. Journey of the inspecting officer authorized representative by SLDC, OPTCL:**

- i To and from travel expenditure from the Head Quarters of the inspecting officer to the place of inspection/testing will be borne by the bidder supplier/ manufacturer. Journey from the Head Quarters of the inspecting officer to the nearest Air Port by train (Ist/ IInd A.C) & A/C Taxi then by Air to the place of inspection/testing or to the nearest place of inspection/testing and then by train (Ist/IInd A.C) & A/C taxi to the place of inspection/testing will be arranged by the bidder supplier/manufacturer.
- ii For train journey, inspecting officer of the rank Assistant General Manager and above will be provided with 1st class AC ticket and inspecting officer below the rank of Assistant General Manager will be provided with 2nd class AC ticket.
- iii The Air-ticket / train-ticket booking/cancellation is the responsibility of the supplier / supplier.
- iv Moreover, if during the journey there is an unavoidable necessity for intermediate travel by road/ waterway/sea-route, the bidder/supplier will provide suitable conveyance to the inspecting officer for travel this stretch of journey or bear the cost towards this. Any such possibilities will be duly intimated to SLDC, OPTCL at the time of their offer for inspection.

**c. Local Conveyance:**

At the place of the inspection/testing, for local journey of the inspecting officer between hotel and inspection/testing site and or any other places, Air-conditioned four-wheeler vehicle in good condition will be provided by the bidder/ supplier/ manufacturer.

**d. Following points are also to be considered:**

All the above expenses will be deemed to be included in the bidder's quoted price for that

- i Supplier/bidder/manufacturer may assume that only in 40% of the inspection and testing offer cases, SLDC, OPTCL inspecting officer, not below the rank of Assistant General Manager will do the due inspection.
- ii Bidder/supplier/manufacturer will judiciously plan the inspection/testing schedule and place of inspection/testing, so that optimum number of inspection/testing and minimum time will be required to cover all the equipment/materials of the relevant contract package.
- iii It will be the responsibility of the Bidder/Supplier to organize the above tour related matters of SLDC, OPTCL inspecting officer or other representative nominated by

SLDC/OPTCL including the matters related to overseas inspection/testing, if any.

## **21. EVENTS OF DEFAULT:**

Each of the following events or occurrences shall constitute an event of default (“Event of Default”) under the Contract:

Contractor fails or refuses to deliver materials/equipment or to execute work conforming to the technical specifications or otherwise or fails to execute the works assigned to them within the period specified in LOA or any extension thereof.

- a. Contractor becomes insolvent or unable to pay its debts when due, or commits any act of bankruptcy, such as filing any petition in any bankruptcy, winding-up or reorganization proceeding, or acknowledges in writing its insolvency or inability to pay its debts; or the Contractor’s creditors file any petition relating to bankruptcy of Contractor;
- b. Contractor otherwise fails or refuses to perform or observe any term or condition of the Contract and such failure is not remediable or, if remediable, continues for a period of 30 days after receipt by the Contractor of notice of such failure from SLDC, OPTCL.
- c. Contractor fails or refuses to pay any amount due under the Contracts.

## **22. TERMINATION OF CONTRACT ON SLDC, OPTCL’S INITIATIVE:**

- a. The SLDC,OPTCL reserves the right to terminate the Contract either in part or in full due to reasons other than those mentioned under clause entitled ‘Contractor’s Default’. The SLDC,OPTCL shall in such an event give fifteen (15) day’s notice in writing to the Contractor of his decision to do so.
- b. The Contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and Contracts to the extent they are related to the work terminated and terms satisfactory to SLDC,OPTCL, stop all further sub-contracting or purchasing activity related to the work terminated, and assist SLDC,OPTCL in maintenance, protection, and disposition of the works acquired under the Contract by SLDC,OPTCL.
- c. In the event of such a termination the Contractor shall be paid compensation, equitable and reasonable, dictated by the circumstances prevalent at the time of termination.

## **23. CONTRACTOR’S DEFAULT:**

If the Contractor shall neglect to execute the works with due diligence and expedition or refuse or neglect to comply with any reasonable order given to him, in writing by the Engineer-In-Charge in connection with the works or shall contravene the provisions of the Contract, SLDC, OPTCL

may give notice in writing to the Contractor to make good the failure, negligence or contravention complained of. If the Contractor fails to comply with the notice within thirty (30) days from the date of serving the notice, then and in such case SLDC ,OPTCL shall be at liberty to employ other workmen and forthwith execute such part of the works as the Contractor may have neglected to do or if SLDC, OPTCL shall think fit, without prejudice to any other right he may have under the Contract to take the work wholly or in part out of the Contractor's hands and re-Contract with any other person or persons to complete the works or any part thereof and in that event SLDC ,OPTCL shall have free use of all Contractors equipment that may have been at the time on the site in connection with the works without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same, and SLDC ,OPTCL shall be entitled to retain and apply any balance which may otherwise be due on the Contract by him to the Contractor, or such part thereof as may be necessary, to the payment of the cost of executing the said part of the works or of completing the works as the case may be. If the cost of completing of works or executing part thereof as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess. Such payment of excess amount shall be independent of the price reduction schedule for delay, which the Contractor shall have to pay if the completion of works is delayed.

In addition, such action by SLDC ,OPTCL as aforesaid shall not relieve the Contractor of his liability to price reduction schedule for delay in completion of works as defined in this Section.

Such action by SLDC ,OPTCL as aforesaid under this clause shall not entitle the Contractor to reduce the value of the Contract performance Guarantee nor the time thereof. The Contract Performance Guarantee shall be valid for the full value and for the full period of the Contract including guarantee period.

## **24. SUSPENSION OF WORK:**

- a The SLDC ,OPTCL reserves the right to suspend and reinstate execution of the whole or any part of the works without invalidating the provisions of the Contract. Orders for suspension or reinstatement of the works will be issued by the Engineer-In-Charge to the Contractor in writing. The time for completion of the works will be extended for a period equal to duration of the suspension.
- b Any necessary and demonstrable cost incurred by the Contractor as a result of such suspension of the works will be paid by SLDC ,OPTCL, provided such costs are substantiated to the satisfaction of the Engineer-In-Charge. The SLDC ,OPTCL shall not be responsible for any liabilities if suspension or delay is due to some default on the part of the contractor or his sub-contractor.

## 25. Litigation/Arbitration

- a Bidder has to furnish detailed information on any litigation or arbitration arising out of contracts completed or under execution by it over the last five years. A consistent history of litigation by or against the bidder may result in rejection of bid.
- b The bidder should not have any pending litigation or arbitration with SLDC, OPTCL with regard to any project or related activity. The bidder should certify/declare the same in unequivocal terms by way of an affidavit duly sworn before a magistrate or notary. Bid furnished by the bidder will not be eligible for consideration if it is not accompanied by the affidavit. Further, the bid/LOA/LOI will be liable for outright rejection/cancellation at any stage if any information contrary to the affidavit/declaration is detected.

## 26. Short closure conditions

Closing conditions shall be implemented in case both the owner and bidder have conditions that must be met or waived, and may also include joint conditions. Conditions may include any of the following:

- a. Closing certificates that state representations and warranties have been satisfied by both parties.
- b. Each party's representations and warranties are valid as of the closing and/or signing date
- c. Provision of fully executed ancillary documents by both parties
- d. Deal specific conditions by the buyer that specific issues are addressed, such as pending liabilities
- e. Joint condition that no pending litigation would prevent the deal from closing
- f. Joint condition that the transaction is legal by law

Failure to meet any of the obligations gives either party the right to terminate the transaction.

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**PART-I**  
**SECTION-II**

**GENERAL TERMS AND CONDITIONS OF CONTRACT**  
**[G.T.C.C.]**



## PART-I

### SECTION-II :GENERAL TERMS AND CONDITIONS OF CONTRACT [G.T.C.C.]

#### 1.0 Scope of the contract:

The scope of the contract shall be Design, Development, Supply, Installation, Testing & Commissioning of 0.2S Accuracy Class AC Tri Vector ABT compliant Energy Meters, AMR (CDCS-MDAS) Software (at DC & DR) along with DCU and associated Hardware and Comprehensive AMC for AMR Solution & Energy meters as per the specification, and rendering services in accordance with the technical specification and bill of quantity as a part for implementation of SAMAST solution in SLDC OPTCL as detailed.

- a. 0.2S accuracy Class AC Tri Vector ABT compliant Energy Meters.
- b. DCU, LAN switch and other associated hardware with cables and connector to be installed at different grid substations of OPTCL.
- c. AMR (CDCS-MDAS) Software to be installed at existing Data Center & Disaster Recovery Center servers of SLDC/OPTCL.
- d. Comprehensive AMC for AMR solution & AMC for 0.2S accuracy Class AC Tri Vector ABT compliant Energy Meters.

#### 2.0 Definition of terms:

For the purpose of this specification and General Terms and Conditions of contract [GTCC], the following words will have the meanings hereby indicated, except where otherwise described or defined.

- i. “The Bidder” means any eligible FIRM or COMPANY registered under Company act 1956 (Amended in 2013) or Limited Liability Partnership (LLP) registered under the LLP Act, 2008 and should have been in operation in India, whose primary business is meter manufacturing and implementation and must have relevant experience in AMR solution software installation as on the date of bid opening and will have their registered offices in India.
- ii. “The Purchaser” will mean the CHIEF LOAD DESPATCHER for and on behalf of SLDC, OPTCL., Bhubaneswar.
- iii. “Joint Venture / Consortium “shall mean a commercial enterprise undertaken jointly by two or more parties which otherwise retain their distinct identities. In this tender, only two members are allowed in case of JV.
- iv. “The Lead Bidder” shall mean the party in a Joint Venture/ Consortium having the primary responsibility for successful implementation of the project

- v. “The Engineer” shall mean the Engineer appointed by the Purchaser for the purpose of this contract.
- vi. “Limited Liability Partnership (LLP)” shall mean an alternative corporate business firm that gives the benefits of limited liabilities of a company and the flexibility of a partnership
- vii. “Purchaser’s Representative” shall mean any person or persons or consulting firm appointed and remunerated by the Purchaser to supervise, inspect, test and examine workmanship and materials of the equipment to be supplied.
- viii. “The supplier” shall mean the bidder whose bid has been accepted by the purchaser and will include the bidder’s executives, administrators, successors and permit Bed assignees.
- ix. “Software / Equipment” shall mean and include all IT / OT services, machinery, apparatus, materials, and articles to be provided under the contract by the suppliers.
- x. “Contract Price” shall mean the sum named in or calculated the bid.
- xi. “General Condition” shall mean these General Terms and Conditions of Contract.
- xii. “The Specification” shall mean both the technical as well as commercial parts of the specification annexed to or issued with GTCC and will include the schedules and drawings, attached there to as well as all samples and pattern, if any.
- xiii. “Month” shall mean “Calendar month”.
- xiv. “Writing” shall include any manuscript, type written, printed or other statement reproduction in any visible form and whether under seal or under hand.
- xv. “Basic Price (Taxable value for Goods & Services) at the point of destination” shall mean the price quoted by the bidder for equipment, material & services at the consignee’s store/site. The cost is inclusive of packing, forwarding, freight, insurance and all expenses and taxes & duties at the end of the supplier excluding Goods & Service Tax. The Goods & Service Tax will be shown in a separate column item wise alongside the Basic Price quoted at the applicable rate in the Tax Invoice. The applicable rate of GST will refer to the HSN/SAC code of the material/service supplied. The Basic Price and GST thereon will be the “FOR Destination Price” as quoted by the bidder.
- xvi. The term “Contract document” shall mean and include GTCC, specifications, schedules, drawings, form of tender, Notice Inviting Tender, covering letter, schedule of prices or the final General Conditions, any special conditions, applicable to the particular contract.
- xvii. Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act, failing that in the Odisha General Clauses Act.

### 3.0 Manner of execution:

All ABT Meter/DCU/equipment/materials/software supplied under the contract shall be manufactured in the manner, set out in the specification, or where not set out, to the reasonable satisfaction of the Purchaser's representative.

### 4.0 Inspection and Testing:

- (i) The purchaser's representative shall be entitled at all reasonable times during manufacture to inspect, examine and test at the supplier's premises, the materials and workmanship of all equipment /materials to be supplied under this contract and if part of the said equipment is being manufactured in other premises, the supplier shall obtain for the purchaser's representative permission to inspect, examine and test as if the equipment were being manufactured in the contractor's premises. Such inspection, examination and testing shall not release the supplier from his obligations under the contract.
- (ii) The Supplier shall give to the purchaser adequate time/notice (at least clear 15 days for inside the state suppliers and 20 days for outside the state suppliers) in writing for inspection of materials indicating the place at which the equipment/material is ready for testing and inspection and shall also furnish the shop Routine Test Certificate, Calibration certificates of Testing instruments, calibrated in Govt. approved laboratory with authenticity letter of that laboratory along with the offer for inspection. A packing list along with the offer, indicating the quantity which can be delivered in full truck load/Mini truck load to facilitate issue of dispatch instruction shall also be furnished.
- (iii) Where the contract provides for test at the Premises of the supplier or any of his sub-suppliers, the supplier will provide such assistance, labour, materials, electricity, fuel and instruments, as may be required or as may be reasonably demanded by the Purchaser's representative to carry out such tests efficiently. The supplier is required to produce routine test Certificate, before offering their materials/equipment for inspection & testing. The test house/laboratory where tests are to be carried out must be approved by the Govt. A letter pertaining to Govt. approved agency must be furnished to the purchaser along with the offer for inspection.
- (iv) After completion of the tests, the Purchaser's representative will forward the test results to the Purchaser. If the test results conform to the specific standard and specification, the Purchaser will approve the test results and communicate the same to the supplier in writing. The supplier will provide at least five copies of the test certificates to the Purchaser.
- (v) The Purchaser has the right to have the tests carried out at his own cost by an independent agency whenever there is dispute regarding the quality of supply.
- (vi) If the firm fails to present the offered items for inspection/testing as per their inspection call due to any reason(s) during the visit of inspecting officer at the testing site, the firm will have to bear

all expenses towards repetition of inspection and testing of the total offered quantity or part thereof.

## **5.0 Training facilities.**

The supplier shall provide all possible facilities for training of Purchaser's Technical personnel, when deputed by the Purchaser for acquiring firsthand knowledge in assembly of the equipment, its erection, commissioning and for its proper operation and maintenance in service, wherein it is thought necessary by the purchaser. Similar training facility to be made available for the AMI-MDAS software, its operation, report generation.

## **6.0 Rejection of ABT Meters / AMR Software/ Hardware.**

In the event any of the ABT meters/ equipment/materials/software, supplied by the contractor is found defective due to faulty design, bad workmanship, bad materials used or otherwise not in conformity with the requirements of the Specification, the Purchaser shall either reject the equipment or ask the supplier in writing to rectify or replace the defective equipment free of cost to the purchaser. The contractor on receipt of such notification shall either rectify or replace the defective equipment free of cost to the purchase within 15 days from the date of issue of such notification by the purchaser. If the supplier fails to do so, the Purchaser may: -

- i At its option replace or rectify such defective equipment/materials and recover the extra costs so involved from the supplier plus fifteen percent and/or.
- ii Terminate the contract for balance work/supplies, with enforcement of penalty Clause as per contract for the undelivered goods and with forfeiture of Performance Guarantee/Composite Bank guarantee.
- iii Acquire the defective equipment/materials at reduced price, considered equitable under the circumstances.

## **7.0 Experience of Bidders:**

The Bidders should furnish information regarding experience particularly on the following points:

- i Name of the Equipment manufacturer:
- ii Standing of the firm and experience in manufacture of ABT Meters/ equipment/material quoted and supply and installation of AMR software.
- iii Description of ABT Meters /DCU/equipment/material / software similar to that quoted, supplied and installed during the last five years from Govt. utilities.
- iv Details as to where installed etc.
- v Testing facilities at manufacturer's works.

- vi If the manufacturer is having collaboration with another firm [s], details regarding the same.
- vii A list of purchase orders of identical material/equipment offered as per technical specification executed during the last five years along with user's certificate. User's certificate shall be legible and must indicate user's name, address, designation, place of use, and satisfactory performance of the equipment/materials for at least two years from the date of commissioning from Govt. utilities. Bids will not be considered if the past manufacturing experience is found to be un-satisfactory or is of less than 5 (five) years on the date of opening of the bid and bids not accompanying user's certificate will be rejected.
- viii The bidder shall have executed at least two Turnkey contracts of value each not less than 10 Crores in last five years of similar projects. Documentary evidence in support of the same shall be submitted with the bid.

## **8.0 Language and measures:**

All documents pertaining to the contract including specifications, schedule, notices, correspondence, operating and maintenance instructions, drawings or any other writing will be written in English language. The metric system of measurement will be used exclusively in this contract.

## **9.0 Deviation from specification:**

It is in the interest of the bidders to study the specification, specified in the tender schedule thoroughly before tendering so that, if any deviations are made by the Bidder, (both commercial and Technical), the same are prominently brought out on a separate sheet under heading "Deviations Commercial" and "Deviations Technical".

A list of deviations will be enclosed with the tender. Unless deviations in scope, technical and commercial stipulations are specifically mentioned in the list of deviations, it will be presumed that the bidder has accepted all the conditions, stipulated in the tender specification, notwithstanding any exemptions mentioned therein.

## **10.0 Right to reject/accept any tender:**

The purchaser reserves the right either to reject or to accept any or all tenders if the situation so warrants in the interest of the purchaser. The purchaser has exclusive right to alter the quantities of ABT Meters /Software/ hardware materials/ equipment / services / AMC at the time of placing final purchase order. After placing of the order, the purchaser may defer the delivery of the Software development/ materials. It may be clearly understood by the Bidder that the purchaser need not assign any reason for any of the above action [s].

## 11.0 Supplier to inform himself fully:

The supplier will examine the instructions to bidders, general conditions of contract, specification and the schedules of quantity and delivery to satisfy himself as to all terms and conditions and circumstances affecting the contract price. He will quote price [s] according to his own views on these matters and understand that no additional allowances except as otherwise provided there in will be admissible. The purchaser will not be responsible for any misunderstanding or incorrect information, obtained by the supplier other than the information given to the supplier in writing by the purchaser.

## 12.0 Patent rights Etc.

The supplier will indemnify the Purchaser against all claims, actions, suits and proceedings for the infringement of any patent design or copy right protected either in the country of origin or in India by the use of any equipment supplied by the manufacturer. Such indemnity will also cover any use of the equipment, other than for the purpose indicated by or reasonably to be inferred from the specification.

### **Intellectual Property Rights & Royalties**

- i. Royalties and fees for patents covering ABT Meters /DCU/ Software / Equipment/Materials, articles, apparatus, devices or processes used in the Works will be deemed to have been included in the Contract Price. The Supplier will satisfy all demands that may be made at any time for such royalties or fees and he alone will be liable for any damages or claims for patent infringements and will keep the Purchaser indemnified in that regard.
- ii. The Supplier will, subject to the Purchaser's compliance with (iii) indemnify and hold harmless the Purchaser, his successors or assignees, its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright or other intellectual property right registered or otherwise existing at the date of the Contract by reason of :
  - a. The installation of the Works by the Supplier or the use of the Works in the country where the Site is located; and
  - b. The sale of the products produced by the Works in any country. Such indemnity will not cover any use of the Works or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Works or any part thereof, or any products produced thereby in association or combination with any other ABT Meters /DCU/Equipment/ Materials/software not supplied by the Supplier, pursuant to the Contract Agreement.

- iii. If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in (ii), the Purchaser will promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser 's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. If the Supplier fails to respond the Purchaser within thirty (30) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser will be free to conduct the same on its own behalf.
- iv. The Purchaser will, at the Supplier 's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and will be reimbursed by the Supplier for all reasonable expenses incurred in so doing.
- v. Advertising: Any advertising stating the subject of this Contract by the Supplier in India or in foreign countries will be subject to approval of the Purchaser prior to the publication. Publication of approved articles, photographs and other similar materials will carry acknowledgment to the Purchaser.

### 13.0 Delivery:

- (i) Time being the essence of the contract; the ABT Meters, DCU/ AMR software & hardware will be supplied within the delivery period, specified in the contract. The Purchaser, however, reserves the right to reschedule the delivery and change the destination if required. The delivery period will be reckoned from the date of placing the Letter of Intent/Purchase order, as may be specified in LOI/Purchase order.
- (ii) The expected completion of the project is estimated as twelve (12) months from the date of awarding the LOA
- (iii) The desired delivery period shall be as indicated at **ANNEXURE-XV**
- (iv) The bidder shall supply and install the meters, hardware materials and software in sync with each other so that SAT and go-live can be executed seamlessly.

### 14.0 Dispatch instructions.

- I. The equipment's /materials should be securely packed and dispatched directly to the specified site at the supplier's risk by Road Transport only.
  - i The equipment/materials shall be securely packed and dispatched directly to the specified site at the supplier's risk.
  - ii Loading & unloading of Ordered Materials: It will be the sole responsibility of the supplier for loading and unloading of materials both at the factory site and at the destination site/store. The Purchaser will have no responsibility on this account.



- iii All design document drawings and software source code (if customized for SLDC, OPTCL) submitted by the Supplier will be the property of Purchaser. The Purchaser reserves the right to use the same in its future project without any further reference and additional charges to the Supplier for such use. The Purchaser's Design Document, Software Source Code, Drawings, Specification and other information submitted by the Purchaser to the Supplier will remain the property of the Purchaser. They will not, without the consent of the Purchaser, be used, copied or communicated to a third party by the Supplier unless necessary for the purposes of the Contract. Any error in any such Design Document, Source Code drawing/Specification etc. will not absolve the Supplier of his responsibility.

## **II. Loading & unloading of Ordered Materials.**

It will be the sole responsibility of the supplier for loading and unloading of materials both at the factory site and at the destination site/store.

The Purchaser shall have no responsibility on this account.

### **15.0 Supplier's Default Liability**

- (i) The Purchaser may, upon written notice of default to the supplier, terminate the contract in circumstances detailed hereunder.
  - (a) If in the judgment of the Purchaser, the supplier fails to make delivery of ABT Meters /hardware equipment/material/Software within the time specified in the contract or within the period for which if extension has been granted by the Purchaser in writing in response to written request of the supplier.
  - (b) If in the judgment of the Purchaser, the supplier fails to comply with any of the provisions of this contract.
- (ii) In the event, Purchaser terminates the contract in whole or in part as provided in Clause-15 (i) of this section, the Purchaser reserves the right to purchase upon such terms and in such a manner as he may deem appropriate in relation to the software/equipment/material similar to that terminated and the supplier will be liable to the Purchaser for any additional costs for such similar Hardware/Software/ equipment/ material and/or for penalty for delay as defined in Clause-22 of this section until such reasonable time as may be required for the final supply of equipment.
- (iii) In the event the Purchaser does not terminate the contract as provided in clause 15 (i) of this Section, supplier will be liable to the Purchaser for penalty for delay as set out in Clause-22 of this section until the equipment is accepted. This will be based only on written request of the supplier and written willingness of the Purchaser.

### **16.0 Force Majeure**

The supplier will not be liable for any penalty for delay or for failure to perform the contract for ABT METERS & AMR UNDER SAMAST PROJECT



reasons of force majeure such as acts of God, acts of the public enemy, acts of Govt., Fires, floods, epidemics, Quarantine restrictions, strikes, Freight Embargo and provided that the supplier will within Ten (10) days from the beginning of delay on such account notify the purchaser in writing of the cause of delay. The purchaser will verify the facts and grant such extension, if facts justify.

### **17.0 Extension of time**

If the delivery of Software/ equipment/material /services is delayed due to reasons beyond the control of the supplier, the supplier will without delay give notice to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice may or may not agree to extend the contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.

### **18.0 Guarantee period: - (As per Section VI of Part I).**

- a) The tendered **ABT Meters & Hardware (DCU, Switches etc.)** shall be in warranty for 5 (five) years from the date of installation and commissioning
- b) AMR software and Data acquisition system shall be one year warranty from go live.

The supplies covered by this specification should be guaranteed for satisfactory operation and against defects in Manufacturing and design of ABT Meters, DCU, IT hardware materials, AMR software and workmanship during above period from the date of commissioning of the scope covered under this contract. The above guarantee certificate will be furnished in triplicate to the purchaser for his approval. Any defect noticed during this period should be rectified by the supplier free of cost to the purchaser provided such defects are due to faulty Manufacturing / design, bad workmanship or bad materials used, within one month upon written notice from the purchaser failing which provision of Clause 22 (ii) of this section will apply.

The terms and conditions for services during warranty / AMC period is detailed in Section VI-A&VI-B of Part I

### **19.0 B.G. towards security deposit, 100% payment and performance guarantee:**

#### **(i) B.G for AMR solution and MDAS supply and Installation-**

A Composite Bank Guarantee as per the Proforma enclosed at Annexure-VII of the specification for 10% [ten percent] of the Total Landing cost (Taxable Value plus GST thereon) of the purchase order (without AMC), will be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of **Chief Load Despatcher, SLDC**, Bhubaneswar within 30 days from the date of issue of the purchase order, The BG will be executed on non-judicial stamp paper worth of Rs.29.00 [Rupees twenty-nine] only or as per the prevalent rules, valid for a period of 26 months ( 12 months implementation + 12 months warranty after go-live +2 months), for scrutiny and acceptance, failing which the purchase order will be liable for cancellation

without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at Bhubaneswar, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.

**(ii) B.G for Supply and Installation of ABT compliant Energy Meters/DCU/IT hardware.**

A Composite Bank Guarantee as per the Proforma enclosed at Annexure-VII of the specification for 10% [ten percent] of the Total Landing cost (Taxable Value plus GST thereon) of the purchase order (without AMC), will be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of **Chief Load Despatcher, SLDC**, Bhubaneswar within 30 days from the date of issue of the purchase order. The BG will be executed on non-judicial stamp paper worth of Rs.29.00 [Rupees twenty-nine] only or as per the prevalent rules, valid for a period of 74 months (12 months implementation + 60 months warranty +2 months), for scrutiny and acceptance, failing which the purchase order will be liable for cancellation without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at Bhubaneswar, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.

**Note: Bidders may submit initially B.G with a validity period of 36 (Thirty six) months, which shall be extended further for a period of 38 (Thirty eight) months against Clause no 19 (ii) above.**

- (iii) BG FOR CAMC:** Performance BG will be furnished by the supplier separately against the AMC cost and period as per relevant clauses of Section VI-A and VI-B of Part I (Comprehensive AMC)
- (iv)** No interest is payable on any kind of Bank Guarantee.
- (v)** In case of non-fulfillment of contractual obligation, as required in the detailed purchase order/Specification, the composite Bank guarantee will be forfeited.

## 20.0 Import License

In case imported materials are offered, no assistance will be given for release of Foreign Exchange. The firm should arrange to import materials from their own quota. Equipment of indigenous origin will be preferred

## 21.0 Payment terms and conditions:

- A.** Being Manufacturer of ABT Meters and AMR related works contract under GST Laws, the on-account payments will be made as below.

Table 4 Payment terms

Sl.No.	Deliverables	Hardware payment	AMR Software payment
1	Supply of 0.2S Class ABT compliant energy Meters, DCU, hardware and accessories.	<b>70%</b> (Seventy) taxable value with 100% GST of the material price component will be paid after due certification of the engineer in charge and verification by the respective consignee on submission of Tax Invoices.	
2	Installation, Testing & Commissioning of ABT Meters, DCU, hardware and accessories.	<b>20%</b> (Twenty) taxable value of the Material price component will be paid on progressive basis depending on the actual work done i.e. on completion of installation, testing and commissioning of the respective items and on certification of the same by the Engineering in charge and verification by the respective substation Engineering in charge.	
3	Development, testing and installation of AMR software at existing AMR(MDAS) server at DC and DR.		<b>50%</b> (Fifty) taxable value with 100% GST of the software price component will be paid after successful UAT and Due certification of the Engineering in charge on submission of Tax Invoices.
4	Integration of AMR software with SAMAST software modules.		<b>40 %</b> (Forty) taxable value of the software price component will be paid after successful operation of AMR software at existing AMR(MDAS) server at DC and DR with the existing ABT compliant meters installed at OPTCL network observing its accuracy of data for a period of 3 (three) months from date of commissioning and due certification of the Engineering in charge.

5	Go-Live of AMR solution and integration with SAMAST software modules.	<b>10%</b> (ten) taxable value of the material price component shall be paid within sixty (60) days after successful go-live of the ABT meters and successful integration with SAMAST software module and after due certification of the Engineering charge.	<b>10%</b> (Ten) of taxable value of the software price component shall be paid within sixty (60) days after successful go-live of the AMR solution software at existing AMR(MDAS) server at DC and DR and after due certification by the Engineering in charge.
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**B. Payment shall be made after compliance of the following terms and conditions.**

- i. Contract Performance Bank Guarantee at the rate of 10% (Ten per cent) of Total Taxable Value of contract plus GST thereon must be submitted within 30 days from the date of issue of purchase order. The CPBG must be confirmed through SFMS and the same is to be approved and accepted by the purchaser.
  - ii. Guarantee certificate of all major items such as ABT compliant energy Meters, DCU, AMR Software, Switches etc.
  - iii. TDS / Cess under GST and other Laws will be deducted, as applicable.
  - iv. Any imposition of new tax or revision of tax will be paid/reimbursed at the time of dispatch, scheduled or actual whichever is lower (i.e. If delivery is within schedule period, tax variation as applicable will be paid, and if delivery is made beyond schedule date, any additional financial implication due to statutory variation in tax will be to bidder's account).
  - v. Test certificate by the Purchaser.
  - vi. The payment will be made after due certification and verification thereof by the Engineering in Charge /Nodal officer.
  - vii. The terms of payment for Comprehensive AMC will be paid as per Clause 18 of Section VI (Specification for comprehensive AMC)
- C.** The supplier will furnish contract performance Bank Guarantee of 10% amount for Comprehensive AMC to SLDC, OPTCL as indicated in Clause-19 above within 30 (Thirty) days from the date of issue of the LoA.

## 22.0 Price Reduction Schedule for Delay in Completion of Supply under Purchase Order/Contract.

- i. If the Supplier fails to deliver the ABT Meters/DCU/Software/equipment/complete installation, commissioning & go-live within the delivery schedule, with reference to the payment terms specified in the Purchase Order/Contract including delivery time extension, if any, granted with waiver of Price Reduction Schedule, the Purchaser will recover from the Supplier, Price Reduction Schedule for a sum of half per cent (0.5 per cent) of the Taxable Value of the un-delivered software/ equipment /materials/service for each calendar week of delay or part thereof. For the purpose of supply, the date of receipted challan will be reckoned as the date of delivery. For others the date of due date as mentioned in the delivery schedule. The total amount of Price Reduction Schedule will not exceed five per cent (5%) of the Taxable Value of the un-delivered software equipment/materials/service. Equipment will be deemed to have been delivered only when all its components, accessories and spares as per technical Specification are also delivered. If certain components, accessories, and spares are not delivered in time, the equipment/materials will be considered delayed until such time as the missing components, accessories and spares are delivered.
- ii. During the guarantee period, if the Supplier fails to rectify/replace the equipment/material / install within 15 days from the date of intimation of defect by the purchaser, then the Price Reduction Schedule at the rate of half percent (0.5%) of the Total Taxable Value for each calendar week of delay or part thereof will be recovered by the purchaser. For this purpose, Price Reduction Schedule will be reckoned from the 30th day from the date of issue of letter on defectiveness of equipment/material. The total amount of Price Reduction Schedule in this case will not exceed 10% (TEN PERCENT) of the Purchase Order/Contract amount except GST (i.e. Total Taxable Value). If the defects, so intimated are not rectified or equipment/materials not replaced by the supplier within the guarantee period, then whole of the C.P.B.G. will be forfeited by the purchaser, without any intimation to the supplier.
- iii. **Price reduction Schedule for Comprehensive AMC:** As per relevant clause of Section-VI-A and VI-B (Specification for comprehensive AMC)

## 23.0 Insurance

The Supplier will undertake insurance of stores covered by this Specification unless otherwise stated. The responsibility of delivery of the stores at destination in good condition rests with the Supplier. Any claim with the Insurance Company or transport agency arising due to loss or damage in transit must be settled by the supplier. The Supplier will undertake free replacement of materials damaged or lost, which will be reported by the consignee within 30 days of receipt of the materials at destination without waiting for the settlement of their claims with the carriers and underwriters.

## 24.0 Payment Due from the Supplier

All costs and damages, for which the supplier is liable to the purchaser, will be deducted by the purchaser from any money, due to the supplier, under any of the contract (s), executed with SLDC or OPTCL.

## 25.0 Rating under Goods and Services Tax and Balance sheet and profit & Loss Account:

The following documents are to be submitted at the time of Tender Submission:

- i. Compliance rating under Goods and Services Tax for immediately preceding financial year.
- ii. Audited Balance Sheet and Profit & Loss Account of the bidder for the previous three years to assess the financial soundness of the bidder(s).
- iii. GST registration certificate and PAN Card Copy.
- iv. Tax holiday/exemption certificate under GST or any other Act.
- v. TDS exemption certificate under the Income Tax Act or any other act.

## 26.0 Certificate of Exemption from Goods and Services Tax

Offers with exemption from Goods and Services Tax will be accompanied with authenticated attested Photostat copy of exemption certificate. Any claim towards Goods and Services Tax will be paid on actual basis subject to payment of GST by the supplier. In case Outward supply details of the supplier of Goods in GSTR-1 do not match with GSTR -2 of SLDC, OPTCL on GSTN portal, the same will be adjusted through debit/credit advice issued by SLDC, OPTCL under intimation to the supplier after allowing cooling period of 3 months after the date of supply.

## 27.0 Supplier's Responsibility.

Notwithstanding anything mentioned in the Specification or subsequent approval or acceptance by the Purchaser, the ultimate responsibility for Meter Manufacturing, supply and Installation, AMR solution etc used and satisfactory performance will rest with the Bidders. The Supplier(s) will be responsible for any discrepancy noticed in the documents, submitted by them along with the bid(s).

## 28.0 Validity

Prices and conditions contained in the offer should be kept valid for a minimum period of **180** days from the date of opening of the tender, failing which the tender will be rejected.

## 29.0 Evaluation

- i. Evaluation of bids for 0.2S accuracy class AC Tri- vector ABT compliant energy meter suitable for energy accounting/auditing & also interface meters, DCU/ Interfacing Devices at metering points, AMR Software will be on the basis of the FOR DESTINATION PRICE (By Road

Transport) including Goods and Service tax & other levies as may be applicable. The FORD PRICE shall consist of the following components.

- a. Goods and Services Tax
  - b. Cost of materials, packing, freight, insurance etc.
  - c. Other levies, if any.
- ii. Comprehensive AMC charges for AMR and Hardware for 5 years for AMR solutions and data acquisition system.
  - iii. Any other items, as deemed proper for evaluation by the purchaser.
  - iv. Loading will be made for items not quoted by the bidder at the highest rate quoted by other bidders unless particular item is included in other items.
  - v. Any imposition of new tax or revision of tax will be considered between due date of submission of bids and the date of price bid opening.
  - vi. Comprehensive AMC charges for Energy meter for seven years after warranty of 5 years from the date of installation.

### **30.0 Evaluation Procedures of Technical & Price Bid:**

#### **I. Evaluation of Technical Part of Bid:**

- a) The bids shall be independently evaluated. Prior to detailed Bid evaluation, SLDC, OPTCL will determine the substantial responsiveness of each Bid with respect to the Qualifying Requirement, Bid Capacity & other Bid Document requirements based on attachments uploaded (in .pdf formats) and Keyed in Schedules (in .XLS formats) contained in the official e-tender portal of OPTCL and any other documents required to be furnished as per the clarifications sought for by SLDC,OPTCL. A substantially responsive Bid is one, which conforms to the terms, condition and specification of the Bid Documents including e-tendering provisions without material deviation. A material deviation is one which affects or is likely to affect in a substantial way the scope of work, quality or performance of the works, or which limits in any substantial way, inconsistent with the Bidding Documents and formats/schedules mentioned in e-tendering provision, SLDC,OPTCL's rights or the Bidders' obligations as envisaged in the Bidding Documents and would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids. Further examination of only such Bids as are determined to be substantially responsive shall be taken up, unless otherwise determined by SLDC,OPTCL may waive any minor informality or non-conformity or irregularity in a bid, which does not constitute a material deviation, provided such waiver, does not prejudice or affect the relative ranking of any Bidder.
- b) The complete scope of supplies and work/services has been defined in the Bidding Documents. Only those Bidders who take complete responsibility and who Bid for the



complete scope of supplies and work/services as contained in the Bidding Document shall be considered for further evaluation.

- c) A bidder may be Technically eligible based on the Qualifying Requirement mentioned above except Bid Capacity Qualification.
- d) Thereafter, the price bid of the eligible bidder(s) shall be opened based on the available bid capacity.

## **II. Weightage shall be given to the Following factors in the Evaluation & Comparison of Bids.**

In comparing bids and in making awards, the Purchaser will consider other factors such as compliance with Specification, **minimum qualification criteria as per clause-38, outright rejection of tenders clause-42 of this tender**, relative quality, adaptability of Supplies or services, experience, financial soundness, record of integrity in dealings, performance of materials/equipment/software earlier supplied, ability to furnish repairs and maintenance services, the time of delivery, capability to perform including available facilities such as adequate shops, plants, equipment and technical organization.

## **III. Evaluation of Price Bid:**

- a) **Opening of Price Part of Bid:** Price Bid of those Bidders, whose Bids are considered Technically responsive and meeting the available Bid Capacity Qualification Criteria shall be opened separately.
- b) **Evaluation of Price Bid:** The Bid Price quoted under the different component of the Price Schedule i.e. (i) Supply, (ii) Erection & Commissioning (iii) Comprehensive AMC for AMR and Hardware (iv) Comprehensive AMC for ABT compliant Energy Meters as quoted by bidder shall be evaluated separately in the following manner.
- c) **Arithmetical Correction:**
  - i. The price of all such items(s) against which bidder has not quoted rates/amount (viz. items left blank or against which “nil”/ “-“ / “0” is indicated) in the schedule will be deemed to have been quoted free of cost or included in other item(s) and covered in the total quoted bid price.
  - ii. The Bidder should ensure that the unit prices for the same item furnished in various price schedules are consistent with each other. In case of any inconsistency in the Unit prices furnished in the price proposal of the bidder, the same shall be identified by SLDC,OPTCL and SLDC,OPTCL shall consider the highest unit price of the bidder for the purpose of evaluation. However, the contract shall be awarded at the lowest unit price





of the bidder. The prices quoted by the Bidders shall be checked for arithmetic correction, if any, based on rate and amount filled by the Bidder in the respective price schedule.

iii. If there is a discrepancy between unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and total price shall be corrected. If there is a discrepancy in the quantity mentioned by the bidder from the quantity mentioned in the tender, the tendered quantity will prevail.

**d) To arrive at the total evaluated prices following methodology shall be applied.**

- i. Price evaluation shall be made considering the total evaluated price inclusive of CGST plus OGST or IGST as the case may be, at applicable rate.
- ii. Price evaluation shall be made considering the Bill of Quantity (BOQ) specified in the Tender Document. In case of any deviation to the BOQ by the bidder, the BOQ specified in the Tender document shall be final and binding on the bidder.

e) Prices received in the price bid sheet (.XLS Format) shall be used for Tabulation / Price Bid Comparison. The soft form of price bid Keyed in to the .XLS format shall be final and binding on the Contractor.

f) The total evaluated prices of all the Bidders, shall be compared to determine the lowest evaluated price.

**IV. E-Reverse Auction procedure shall be resorted to as follows.**

Table 5 E-Reverse Auction

<b>STRATEGY FOR E-REVERSE AUCTION</b>	
1	Bidders are required to go through the guide lines given below and submit their acceptance to the same.
2	e-Reverse Auction (RA) will be conducted in e-tender portal of OPTCL on specified date and time, while bidders shall quote from their own offices/places of their choice. Internet connectivity shall be ensured by the respective agencies/bidders themselves.
3	KEONICS shall arrange for demonstration/ training (if not trained earlier) of bidder’s nominated person(s), to explain all the rules related to e-Reverse Auction/ Business Rule document to be adopted.
4	The strategy to be used for reverse auction shall be “DYNAMIC TEMPLATE BIDDING”
<b>Procedure for electronic Reverse Auctioning (e-RA):</b>	
5	a. The e-RA shall be conducted on <a href="http://www.tenderwizard.com/OPTCL">www.tenderwizard.com/OPTCL</a> only. b. Bidder has to submit letter towards agreement to the Process related Terms & Conditions for e-Reverse Auction, as per (Reverse Auction Process Compliance Form at Annexure-XX). In non-receipt of the same, vendors will not be allowed to participate in e-RA. c. e-RA shall be carried out after opening of Price bids and completion of Price bid evaluation,



	<p>which will be intimated only to the techno-commercially qualified bidders by OPTCL as per procedure given below.</p> <p>d. OPTCL reserves the right to conduct e-RA and it is obligatory on part of bidder(s) invited to participate in e-RA process once they have responded to the techno-commercial bid.</p>
6	<p>Prior intimation/ Notice for RA invitation will be given to techno-commercially qualified bidders regarding the date &amp; time of opening of the e-RA.</p> <p>The start bid price (SBP) for e-Reverse Auction of each bidder under a particular package shall be the L1 evaluated price for the subject package including Taxes &amp; Duties for the total scope for subject Package. Taking the above discovered L1 price as the upper limit e-RA will be conducted to determine the lowest possible price.</p> <p>Reverse Auction will be conducted amongst first 50% of the technically qualified bidders arranged in order of prices from lowest to highest, as L1, L2, L3-----Ln, and L1 price will be discovered. Minimum of 3 bidders shall be eligible for e RA. (e.g. If 4 bidders are financially evaluated then the L1, L2 and L3 bidders shall be eligible for e-RA). Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of technically qualified bidders is odd (e.g., if 7 bids are technically qualified, then RA will be conducted amongst L1 to L4).</p> <p>However, in case only two bidders are found to be responsive, e-RA would be carried out with both the parties without any elimination. However, OPTCL reserves the right to invite the evaluated L1 bidder for negotiation without conducting the e-RA.</p> <p>In case of price submitted by any bidder is found to be abnormal, OPTCL reserves the right to reject the bid of the bidder(s).</p> <p>Rank of bidders would be displayed as per the total cost to OPTCL, i.e. including Taxes and Duties payable by OPTCL as per the provisions of the bidding document &amp; after e-RA process is over.</p>
7	<p>Names of bidders/ vendors shall not be disclosed during the e-RA process. Names of bidders/ vendors shall be anonymously masked in the e-RA process.</p> <p>In case of RA, start/ reference price and step value of decrement shall be indicated to the bidders at the start of the auction. Any participating bidder can bid one or multiple step decrement lower than the prevailing lowest bid at that time. The Bidder shall be able to view Bid Start Price, Bid Decrement Value, Prevailing Lowest Bid value, last Bid Placed by him and time left for bidding.</p> <p>(i) The step value of decrement in a package to be offered by bidder (the minimum amount of reduction in the total bid price including all taxes &amp; duties during auction), shall be kept at 0.15% of L1 bidder's final evaluated price (or) at approved amount as decided by OPTCL.</p> <p>(ii) Bidders can only quote any value lower than their previous quoted price. However, at no stage, increase in Price will be permissible.</p> <p>(iii) At any point during Reverse Auction, bidding Price field (Total price) shall remain enabled for the bidders. The total reverse auction period shall be unlimited and the initial auction period (1<sup>st</sup> slot) will be of thirty (30) minutes with provision of auto extension by (10)</p>

	<p>ten minutes from the schedule/ extended closing time. If any fresh lower bid is received in last ten (10) minutes of auction period or extended auction period, the reverse auction process shall get extended automatically for another ten(10) minutes. In case, there is no bid received during schedule/extended slot, Auction shall get closed automatically without further extension.</p> <p>(v) However, bidders are advised not to wait till the last minute or last few seconds to enter their bid during the period of e-reverse auction to avoid complication related with internet connectivity, network problem, system crash down, power failure etc.</p>
8	<p>After conclusion of e-Reverse Auction i.e. (Closing Price in Reverse Auction will be taken as offered price by the L1 bidder), decrease in price of individual head of the template shall be considered proportionately on all individual line items of the respective head of the price schedule of the successful L1 bidder.</p> <p>Any bid received at the tender wizard server end subsequent to closure of the e-RA shall be summarily rejected and shall not be considered as a valid bid under whatsoever circumstances. For this purpose, tender wizard server log shall prevail.</p> <p>The bidder shall not involve himself or any of his representatives in price manipulation of any kind directly or indirectly by communicating with other bidders.</p> <p>During Reverse Auction, If no bid is received within the specified time, OPTCL, at its discretion, may decide to close the reverse auction process/ proceed with conventional mode of tendering [ Evaluation of Part-II (price bid) submitted by bidders earlier].</p>
9	<p>Consequent upon completion of e-Reverse Auction, OPTCL’s decision on award of contract shall be final and binding on the bidders.</p> <p>OPTCL shall be at liberty to call the L1 bidder for further process/ negotiation and also at liberty to cancel the e-reverse auction process/ re-tender at any time, without assigning any reason thereof. OPTCL can decide to reschedule or cancel any reverse auction: the bidders shall be informed accordingly.</p> <p>OPTCL/ Service Provider shall not have any liability to bidders for any interruption or delay in access to the e-Tender site/ Reverse Auction link irrespective of the cause.</p>

### 31.0 FINANCIAL REQUIREMENTS:

#### 31.1 MINIMUM AVERAGE ANNUAL TURNOVER (MAAT)

The minimum average annual turnover (MAAT) of the last three years (FY 20-21, FY21-22 and FY22-23) for the Bidder will be **INR 73.00 Crore** in similar Projects for the single bidder or sum of both the partners in case of JV. In case of JV, the average annual turnover of lead bidder will be minimum 50% of the eligible MAAT value, the average annual turnover of JV Member (other than Lead bidder) will be minimum 25% of the eligible MAAT value. However, the total amount for the JV partners shall not be less than 100% of eligible MAAT value. The Minimum Average Annual Turnover (MAAT) requirement of the bidder (The Average of Last Three Financial Years preceding

to the year of NIT) as indicated in the following Table-Fin-1 shall not be less than **the above-mentioned amount**. Turnover of the bidding company on standalone basis only (excluding its associate companies on Standalone Basis) shall be considered for arriving at Annual Turnover.

*Note:*

*i. In case of bidder participated through Joint Venture/ Consortium, the MAAT shall be considered together.*

### **Table-Fin-1**

#### **MAAT Schedule**

(Name of Bidder or Joint Venture/Consortium Partner)

Sl. No	Financial Year	Last Three Years Annual Turnover (excluding associate companies) on Standalone Basis of the <b>Lead Bidder</b> (in INR Crores)	Last Three Years Annual Turnover (excluding associate companies) on Standalone Basis of the <b>JV Bidder (Other Partner)</b> (in INR Crores)
1			
2			
3			
<b>A. Total</b>			
<b>B. Average = (A/3)</b>			

#### **Note:**

The bidder has to furnish the certificate from the Chartered Accountant (CA) certifying the Last Three Years Annual Turnover in similar projects of the company only (excluding its Associated Companies) on Standalone Basis based on audited accounts of the last three Financial Years. In case the bidder has executed any project in Joint Venture/ Consortium, the Last Three Years Annual Turnover similar projects certified by the Chartered Accountant (CA) should reflect his share of the turnover only.

In case of Joint Venture/Consortium above (Fin-1) of the Bidder(s) shall be furnished independently by each partner duly certified by Chartered Accountant (CA). However, similar projects (excluding Associate Companies) on Standalone Basis for other partner of the Joint Venture/ Consortium not necessarily required.

#### **31.2 LIQUID ASSETS AND ACCESS TO CREDIT FACILITY:**

Bidder shall be financially sound and stable. The liquid assets (Cash at Bank & Fixed Deposit) and Un-Utilised credit facility (both Fund & Non-Fund based) available from bank(s) duly certified by the Bank(s) within one Month prior to the date of Tender opening, as indicated in the following format

**Annexure-XVI** should not be less than **Rs. 7.30 Crore [15% (Fifteen Percent) of estimated cost of the package(s)/works]**. For this purpose, the liquid Assets and Un-Utilised Credit facilities of Partners of Joint Venture/Consortium shall be considered together.

*Note: Liquid Assets and Credit facilities (Un-Utilised) are applicable independently for each package irrespective of the no. of packages in which bidder has participated.*

**Table-Fin – 2**

(Name of Bidder or Joint Venture/Consortium Partner)

**Liquid Assets and Un-Utilised Credit Facility Schedule**

Package/ Work Quoted for	Estimated Cost of the Package/ Work (Rs. in Lakh)	Liquid Assets as on ....		Un-Utilised Credit Facility as on ....	
		Description	(Rs.in Cr)	Description	(Rs.in Cr)
		Cash in Hand		Cash Credit	
		Cash at Bank		LC and BG	
		Fixed Deposits		Others (Pl Specify)	
		Total Liquid Assets		Total Un- Utilised Credit Facility	

Grand Total: Total Liquid Assets + Total Un-Utilised Credit Facility.

**Note:**

(i) The above Table – FIN-2 of the Bidder(s) to be certified by Chartered Accountant (CA). In case of Joint Venture/Consortium above (Fin-2) shall be furnished independently by each partner duly certified by Chartered Accountant (CA).

**(ii) The date of position of Liquid Assets and Un-Utilised Credit Facility Schedule Certified by Bank and CA should be same.**

**31.3 NET WORTH:**

Net worth of bidder as per the audited financial results shall be **positive** on the last day of the preceding financial year.

Net Worth means the sum total of the paid-up share capital and free reserves (excluding reserves created out of the revaluation of assets, write back of depreciation provisions and amalgamation & Capital Reserve) net of P&L A/C (Dr. balance) and miscellaneous expenses to the extent not adjusted or written off.

**Table: Fin-3**

(Name of Bidder or Joint Venture/Consortium Partner)

**Net Worth Schedule as on Dt.....**

Sl. No.	Particulars	Amount (In Rs. Crore)
01	Paid-up share capital	
02	Free Reserves excluding the reserves created out of the following; i. Revaluation of assets. ii. Write Back of depreciation Provisions. iii. Amalgamation. iv. Capital Reserve	
03	Less, P&L A/C (Dr. balance)	
04	Less, Miscellaneous expenses to the extent not written off.	
05	Total: (5=1+2-3-4)	

Note:

1. The above (Table Fin – 3) of the Bidder(s) is to be certified by Chartered Accountant (CA).
2. In case of Joint Venture/Consortium above (Fin-3) of the Bidder(s) shall be furnished independently by each partners duly certified by Chartered Accountant (CA).
3. In case of a bid submitted by a Joint Venture/Consortium, all the partners together shall be required to meet the MAAT, liquid assets and access to credit facility. In respect of Net Worth criteria, both the partners of Joint Venture/Consortium shall have positive Net Worth.

**31.4 BID CAPACITY QUALIFICATION:**

A bidder shall meet the following bid capacity Qualification Criteria along with other Technical Qualifying requirement before his bid is considered for opening of the price bid.

Table 6: Bid Capacity Qualification

i.	Bidder's Bid Capacity	The bid capacity of the bidder shall be considered as 300% of similar project's annual turnover (excluding that of Associated Companies) on Standalone Basis in any financial year during the last 3 financial years reckoned from the year of NIT, which shall be evaluated by SLDC, OPTCL based on the information furnished by the bidder as per the format <b>FIN No. 4 &amp; FIN No. 5.</b>
ii.	Bidder's Participation in the bid	A bidder may participate in the bidding of any of the package(s)/works irrespective of bidder's bid capacity. (Here only one Package)
iii.	Bidder's Technical Eligibility	Bidder shall be Technically eligible based on the qualifying requirement mentioned under Clause- 38

		Qualifying Requirements (QRs) of Bidder except Bidders Bid Capacity.
iv.	Bidder's Price Bid Opening Eligibility based on the Bidder's Bid Capacity Qualification.	<p>The bidder shall be eligible for opening of the Price Bid based on the available bid capacity defined as under;</p> <p><b>Available bid capacity:</b>  <math display="block">= [(3 \times A) - (0.5 \times B) - C]</math>, should be equal to or more than the tendered estimated price  where,  <b>A</b>= Highest of similar project's Annual Turnover of the Bidder (excluding it's Associated Companies on Standalone Basis) in any financial year during last three financial years as per FIN-4.  <b>B</b>= Total order Value of ongoing Work Orders/LOAs placed by OPTCL and Other Organizations on the Bidder on the date of opening of the Technical bid excluding those which have been commissioned as per FIN-5.  <b>C</b>= Package(s)/Works finalized but yet to be awarded in favour of the Bidder by OPTCL (to be computed by OPTCL based on available information).  Note:  In respect of (B) &amp; (C) above for Joint Venture/ Consortium, share of each partner would be as per agreed profit sharing ratio in the Joint Venture /Consortium Agreement. In absence of the same, it would be considered as equal sharing.</p>
v.	Opening of the Price Bid	The price bid of tender of the Technically eligible bidder(s) shall be on the date and time as decided by the SLDC, OPTCL and communicated to the eligible bidder through tender portal. The price bid of the bidder shall be opened subject to meeting the available bid capacity limit considering Para-iv above. If the evaluated price of the bidder becomes (L-I) which exceeds the available bid capacity, the price bid of the bidder shall not be rejected on bid capacity ground.
vi.	Award for the Contract	After opening of the price bids of all the tender under this e-NIT, the price bids of the responsive bidder(s) shall be evaluated adopting the price evaluation methodology to derive the lowest evaluated bidder(s).

**Note:**

In case of Joint Venture/ Consortium, the bid capacity shall be considered as 300% of highest of similar project's annual turnover (excluding it's Associated Companies) on Standalone Basis of the partners together in any financial year during last 3 Financial Years reckoned from the year of NIT, which shall be evaluated by SLDC, OPTCL based on the information furnished by the bidder as per the format **FIN No-4 & FIN No-5**.



**Table (FIN-4)**

(Name of Bidder or Joint Venture/Consortium Partner)

**Bidder's Bid Capacity Schedule (Highest of ABT Meters and AMR Software project's Annual Turn Over)**

Sl. No	Financial Year	For Single entity	For Joint Venture/ Consortium		
			Highest Similar project's Annual Turnover of the company only (excluding its Associated Companies) on Standalone Basis of any year during last 03 FY (In Rs. Cr.)	Highest Similar project's Annual Turnover of the company only (excluding its Associated Companies) on Standalone Basis of any year during last 03 FY (In Rs. Cr.) of the Lead Partner (In Rs. Cr.)	Highest of Similar project's Annual Turnover of the company only (excluding its Associated Companies) on Standalone Basis of any year during last 03 FY (In Rs. Cr.) of the Other Partner (In Rs. Cr.)
01					
02					
03					

**NOTE:** The bidder has to furnish the similar highest Annual Turnover Certificate from the Chartered Accountant (CA) based on Audited Account. In case the bidder has executed any project in Joint Venture/ Consortium, the Similar project's certified the Chartered Accountant (CA) should reflect his share of the project related turnover only. However, project related Turnover (excluding Associate Companies) on Standalone Basis for other partner of the Joint Venture/Consortium not necessarily required.



**Table- (FIN-5):**

(Name of Bidder or Joint Venture/Consortium Partner)

**Total Order Value of Ongoing Work Orders/LOAs placed by OPTCL and Other Organizations**

Sl No	Name of Organization	Description of work	Contract no & date	Total order Value of ongoing Works placed by OPTCL & Other Organizations (in INR)
1				
2				
3				
			Total, i.e. 'B' =	

**NOTE:**

The bidder has to furnish the information in Fin No. 5 duly certified by the Chartered Accountant (CA) based on LOAs/Works Orders/NOA excluding those which have been commissioned.

**32.0 Joint Venture / Consortium:**

The maximum number of members allowed in a Consortium is 2 (Two) including Lead member. The parties will have a valid agreement among them. The agreement will clearly specify the following.

- a) Lead bidder must be Meter Manufacturer and other member must be for AMR solution software developer and hardware components only.
- b) Details of Lead Member and other JV/ consortium members
- c) Outline the financial strengths, technical strengths and the role and responsibility(s) of each of the members of the consortium.
- d) The bidder or any member of JV will agree to OPTCL/SLDC's general conditions of contract and all other conditions in the bid including payment, penalty, and guarantee and implementation schedule.

Bid submitted by a Joint Venture/Consortium Bidder will have following qualifying requirement:

**Table 7 JV Qualifying Criteria**

Sl. No.	Qualifying Requirements	Remarks
01	Status of Joint Venture/Consortium Partners	<p>a) All Partners of Joint Venture/ Consortium will be domiciled companies in India.</p> <p>b) Lead partner of the Joint Venture / Consortium should be a Meter Manufacturing Company in India.</p> <p>c) Both the partners of the Joint Venture/ Consortium together will meet the Technical Qualification &amp; financial qualification criteria.</p> <p>d) Such Joint Venture/ consortium will be formed through Joint Venture/Consortium Agreement as per the format and manner specified in the Annexure XVII to this Tender Documents.</p>
02	No. of Partner(s)	Maximum number of Partners in a Joint Venture/Consortium is limited to TWO (02) only including the lead partner.
03	Lead Partner of Joint Venture/Consortium	<p>One of the partners fulfilling the Technical and financial qualifying criteria prescribed for lead partner will be nominated as Lead Partner by the Joint Venture/Consortium and the lead partner will be exclusively authorized to incur liabilities and receive instruction for and on behalf of Joint Venture/ Consortium and its other partner.</p> <p>This authorization will be evidenced by submitted a power of attorney and Joint Venture/Consortium agreement signed by legally authorized signatories of the partners as per Proforma.</p>
04	Liability of the Joint Venture/Consortium Partner(s)	All partners of the Joint Venture/Consortium will be jointly and severally liable for the execution of the Contract.

**Note:**

- a. The bidder should submit an agreement for Joint Venture/ Consortium duly notarized so as to be legally valid and binding on the partners / members.
- b. The agreement should contain precise demarcation of the responsibility of both the partners of the Joint Venture/ Consortium in respect of Manufacture, design, supply, construction equipment, key

personal, work execution and financing of the project duly indicating the percentage in financing / profit sharing of Joint Venture/ Consortium by each partner.

- c. This agreement will be irrevocable and valid till successful completion of the contract and Guarantee and AMC Period.

### **33.0 Conflict of Interest:**

The bidder or any member of JV will not have a conflict of interest. Any Bidder found to be having a conflict of interest will be disqualified. The bidder will be considered to have conflict of interest with one or more parties in this bidding process, if:

- a. They have a controlling partner in common.
- b. They have a relationship with each other, directly or through common third parties, that puts them in position to have access to information about or influence on the bid of another Bidder.
- c. A bidder submits more than one bid in the bidding process.

### **34.0 Third Party Audit (TPA)**

- a. If SLDC, OPTCL desires, the project shall be validated and certified with respect to tender specification and SLDC requirement, by Third Party Agency engaged by SLDC of its own cost.
- b. The Third-Party agency shall conduct yearly audit of the Project during AMC period.
- c. The supplier shall comply the observations (if any) of the TPA during AMC period based on which AMC charges shall be released.
- d. Supplier shall arrange VAPT before Go-Live.

### **35.0 Go-Live Acceptance**

- a. The Supplier shall give a notice to the SLDC requesting the issue of the Go-Live Acceptance.
- b. Certificate along with all the necessary documents to justify Supplier's claim of Readiness for Go-Live.
- c. After receipt of the Supplier 's notice, the SLDC shall Issue a Go-Live Acceptance Certificate; or
- d. Notify the Supplier in writing of any defect or deficiencies or other reason for the failure of the Go-Live Acceptance Tests.

### 36.0 Fall Back

If the System or Subsystem fails to pass the SAT or Go-Live even after 3 unsuccessful attempts, then SLDC reserves the right to terminate the Contract and if the Contract is terminated, the Performance Security Deposit will be forfeited. The remaining work shall be carried out by SLDC through any other supplier at the risk and cost of the Bidder.

### 37.0 Sub-Contracting:

Sub-Contracting of meter manufacturing and supply, AMR software development and hardware supply are not allowed under this contract.

### 38.0 Minimum Qualification Criteria of Bidders

“The Bidder” means any eligible FIRM or COMPANY registered under Company act 1956 (Amended in 2013) or Limited Liability Partnership (LLP) registered under the LLP Act, 2008 and should have been in operation in India, whose primary business is meter manufacturing, supply and installation, software development and must have relevant experience in implementation of AMR solutions as on the date of bid opening and will have their registered offices in India.

Bidders would be evaluated on the following criteria as per the guide lines given below by the SLDC, OPTCL Odisha.

The bidder should submit the bid on its own or in Joint Venture/Consortium. The bidder ‘s experience as sub-supplier/sub-contracting in any contract will not be taken into account in determining the bidder's experience for meeting the mandatory Technical and Financial Qualification Criteria and Technical Evaluation Criteria.

The Bidder **MUST MEET ALL** the following qualification criteria and will submit the relevant documentary evidences as indicated below:

#### 38.1 General:

In addition to the requirements stipulated under Section, Instruction to Bidders (ITB), the following shall also apply.

- a) The Bidder should be a Manufacturer of 0.2S accuracy class Tri-vector ABT Compliant Energy Meter.
- b) The bidder should have minimum experience of **five years** of manufacturing and supply for 0.2S accuracy class Tri- vector energy meters up to end of the last financial year.
- c) The bidder must possess valid ISO 9001:2015 certification for meter manufacturing, ISO 27001:2013 for information security management system & ISO 14001:2015 for environmental management system and 18001:2015 (OHSAS) for occupational Health & Safety Management (H&S).
- d) The bidder must possess bureau of Indian Standard Certification (ISI mark) for meter manufactured in India.

- e) The Bidder should have adequate infrastructural facility for “After sales service” with support service center in India.

### 38.2 Technical

- a) The bidder must have experience in supply, installation, and commissioning of at least two contracts and experience of supplying 0.2S Accuracy Class ABT Compliant Tri-Vector energy meters with at least **1000 numbers** for any Govt utilities in India in last five (05) years ending on the original date of bid opening.
- b) The bidder must submit Performance certificates issued by the owner for at least **500 nos.** of such ABT Complaint energy meters supplied to Govt. utilities in India along with the bid indicating successful operation for at least **two years** from the date of commissioning.
- c) The bidder should have executed minimum **one AMR Solution** project in any Government utility in India and which is in successful operation since last **one year**.
- d) The Bidder should have conducted **type tests** on 0.2S Accuracy Class A.C Tri-vector ABT Compliant Energy Meter in Government approved laboratory within last **five years** from the date of opening of the tender.
- e) Bidder must have valid NABL accreditation for IEM testing laboratory.
- f) The bidder must have full- fledged set up for executing similar project. Details of execution set up to be deployed by the bidder shall be furnished in their offer.
- g) Bidder have to present/demonstrate the technical solution and overall project approach & methodology, project plan and time schedule for execution of the project and work flows. Bidders shall be able to demonstrate for successful Automatic meter reading with the existing meters of OPTCL. This shall cover following but not limited to aspects of the project.
- i. AMR solution with 5 minutes and 15 minutes block integration
  - ii. Meter time synchronization
  - iii. Data Acquisition software
  - iv. IT Infrastructure
  - v. Data Migration
  - vi. Training
  - vii. Helpdesk for support to SLDC and other users

### 38.3 Financial

- a) Annual turn-over of the bidders / JV Partner (Cumulative in case of JV) should not be less than **Rs.200 Crores** (Rupees Two hundred Crores) in each of the last three financial years. Audited Balance Sheet & profit and loss account for the same must be attached.
- b) The bidder/JV partner (Cumulative in case of JV) shall have executed at **least two similar projects** of value each not less than **Rs 10 Crores** in last five years. Documentary evidence in support of the same shall be submitted with the bid.
- c) **Bidders must meet all the following financial requirements as on 31/03/2023**

- i. Minimum Annual Average Turn Over (MAAT) must be **INR 73.00 Crores**
- ii. Net worth must be **positive**.
- iii. Liquid asset must have **INR 7.30 Crores** in hand.
- iv. Bid capacity must be equal to or more than **INR 49.00 Crores**.

**Note: Even though the Bidders meet the qualifying criteria stipulated in CI 38.1,38.2 and 38.3, they are subject to be disqualified if they have.**

- i. Made misleading or false representations in the forms, statements, and Annexures, submitted in proof of qualification requirements and/ or
- ii. Record of poor performance such as not properly completing the contract, inordinate delays in completion of supply, litigation history or financial failure etc.
- iii. Notwithstanding anything stated above, the purchaser reserves the right to assess the Bidder's capability and capacity to perform the contract within the scheduled time, should circumstances warrant such assessment in the overall interest of the Purchaser.

### **39.0 Jurisdiction of the High Court of Odisha**

Suits, if any, arising out of this contract will be filed by either Party in a court of Law to which the jurisdiction of High court of Odisha extends.

### **40.0 Correspondences**

- i. Any notice to the supplier under the terms of the contract will be served by Registered Post or by hand at the Supplier's Principal Place of Business.
- ii. Any notice to the Purchaser will be served at the Purchaser's Principal Office in the same manner.

### **41.0 Official Address of the Parties to the Contract**

The address of the parties to the contract will be specified: -

- i. **Purchaser:** CHIEF LOAD DESPATHER  
STATE LOAD DESPATCH CENTER,  
Bhubaneswar-751022, Odisha.  
Email- [samast@sldcorissa.org.in](mailto:samast@sldcorissa.org.in)
- ii. **Supplier:** Address  
Telephone No.  
Mail ID Fax No.

## 42.0 Outright Rejection of Tenders

Tenders will be outright rejected if the followings are not complied with.

- i. The bidder will submit the bid in electronic mode only and will submit the tender cost on or before the date and time of opening of technical bid (part-I).
- ii. The bidder will submit the bid in electronic mode only.
- iii. The Tender will not be submitted telegraphically or by FAX.
- iv. The prescribed EMD will be submitted on or before the date and time of opening of technical bid (Part-I).
- v. The Tender will be kept valid for a minimum period of 180 days from the date of opening of tender.
- vi. The Tender will be submitted in single stage two part as specified.
- vii. The schedule of prices should be filled up fully to indicate the break-up of the prices including taxes and duties. Incomplete submission of this schedule will make the tender liable for rejection.
- viii. The Bidder should quote 'FIRM' price only and the price should be kept valid for a minimum period of 180 days from the date of opening of the tender.
- ix. Guaranteed Technical particulars & Abstract of terms and Conditions should be filled in completely.
- x. Detailed information on any litigation or arbitration arising out of contract completed or under execution by it over the last five years. A consistent history of litigation by or against the bidder may result in rejection of bid.
- xi. The bidder should not have any pending litigation or arbitration with SLDC, OPTCL with regard to any project or related activity. The bidder should certify / declare the same in the unequivocal terms by way of an affidavit duly sworn before a magistrate/notary. Bid furnished by the bidder will not be eligible for consideration if it is not accompanied by the affidavit. Further the bid / LOA/ LOI will be liable for outright rejection/ cancellation at any stage if any information contrary to the affidavit / declaration is detected.

## 43.0 Documents to be treated as confidential.

The supplier shall treat the details of the specification and other tender documents as private and confidential and these shall not be reproduced without written authorization from the Purchaser.

The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such

information has been furnished prior to, during or following termination of the Contract.

The obligation of a party under above, however, shall not apply to that information which

- a. Now or hereafter enters the public domain through no fault of that party
- b. Can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party hereto
- c. Otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality

The above provisions of this shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Works or any part thereof

The provisions of this shall survive termination, for whatever reason, of the Contract.

#### **44.0 Scheme/Projects**

The Meter/Software/Hardware/materials/equipment covered in this specification will come under capital works of SLDC with financial support of “PSDF “& SLDC settlement fund.

#### **45.0 Effective Date of Contract:**

The effective date of contract shall be reckoned from the date of issuance of Letter of Award.

#### **46.0 Engineer-In-Charge’s Decision:**

- i. In respect of all matters which are left to the decision of the Engineer-In-Charge including the granting or with-holding of the certificates, the Engineer-In-Charge shall, if required to do so give in writing a decision thereon.
- ii. If, in the opinion of the Contractor, a decision made by the Engineer-In-Charge is not in accordance with the meaning and intent of the Contract, the Contractor may file with the Engineer-In-Charge, within fifteen (15) days after receipt of the decision, a written objection to the decision. Failure to file an objection within the allotted time will be considered as an acceptance of the Engineer-In-Charge’s decision and the decision shall become final and binding.
- iii. The Engineer-In-Charges’ decision and the filing of the written objection thereto shall be a condition precedent to the right to request arbitration. It is the intent of the Contract that there shall be no delay in the execution of the works and the decision of the Engineer-In-Charge as rendered shall be promptly observed.



#### **47.0 Co-operation Other Contractors & TPIA:**

The Contractor shall cooperate with OPTCL's other Contractors, PMC & Third Party Inspecting Agency (TPIA) and freely exchange with them such technical/commercial information as may be necessary for smooth execution of the project in an efficient and timely manner to avoid unnecessary duplication of efforts.

#### **48.0 Project Management Consultant (PMC)**

The entire project will be monitored by PMC engaged by SLDC for smooth coordination during execution of the project. Bidder will cooperate the PMC as per their roles and responsibility (will be mentioned in bidder's LoA)

#### **49.0 Progress Report On Supply And Utilisation Of Materials/ Equipment:**

During the various stages of the work in pursuance of the Contract, the Contractor shall at his own cost submit Monthly Progress Reports of Meter supply and Installation, Software development, hardware's /other equipment supplied, Utilization of Materials/equipment and status of the materials/equipment in pipeline as may be reasonably required by the Engineer-In-Charge with photographs, test certificates, etc. Such progress reports shall be in the form and size as may be required by the Engineer-In-Charge at the time of project execution.

#### **50.0 Limitation of Liabilities:**

The final payment by SLDC, OPTCL in pursuance of the Contract shall mean the release of the Contractor from all his liabilities under the Contract except for liabilities under Guarantee period. Such contractual liabilities and responsibilities of the Contractor shall prevail till expiry of the Latent Defect Warranty period even after the final payment is released.

Notwithstanding anything to the contrary mentioned herein and to the extent permitted by law, the aggregate liability of Contractor to SLDC, OPTCL, whether in contract, tort or otherwise, will be limited to 100% of the contract value.

#### **51.0 Standards:**

The ABT Meters/ Software developed / Materials supplied and works executed under this Contract shall conform to the IEC/IS, and, when no applicable standard is available, to the authoritative standard appropriate to the software/materials/works and such standards shall be the latest issued by the concerned institution.

## 52.0 Delivery milestones of ABT Meters and Software

ABT Meters, Software and Hardware materials shall be delivered as per the table given below.

**T0-** Date of Issue of LoA

Table 8 Delivery Milestones

Sl. No	Activities	Hardware
1	Supply of ABT Meters with metering Panels, DCU, AMR software with other accessories	T0+4 months
2	Installation, testing and commissioning of ABT Meters, hardware and software with associated Items	T0+10 Months
3	Site Acceptance Test (SAT)	T0+11 Months
4	Go-Live	T0+ 12 months

## 53.0 WORK COMPLETION SCHEDULE:

- i. The Bidder shall include in his proposal of program for supplying and erecting the Materials/equipment covered under this Works in the form of Work Completion Schedule (Bar Chart / PERT) identifying key activities of total work, such as Supply of Materials/Equipment, erection, Installation, Testing & Commissioning of all works within the contract completion period. The work completion schedule shall be reckoned from the date of issue of Letter of Award.
- ii. The Contractor shall submit Work Completion Schedule conforming to the delivery/erection dates for review and approval of SLDC,OPTCL.
- iii. The approved Work Completion Schedule submitted by the contractor shall form part of the contract agreement.
- iv. The work completion schedule shall be revised if the reason of delay in completion of works is not attributable to the Contractor.
- v. The zero date of the work completion schedule shall be considered the date of issue of LOA.

## 54.0 Registration certificate of DPIIT:

As per Office Memorandum No.F.No.6/18/2019-PPD, Ministry of Finance, Dept. of Expenditure Public Procurement Division, New Delhi and Office Memorandum No. FIN-CON-MISC0007/2019/27945/F Dated.16.10.2020 of Finance Department, Govt. of Odisha Any bidder from a country which shares a

land border with India will be eligible to bid in any procurement whether goods, services (Including consultancy services and non-consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority, DPIIT (i.e. Department for Promotion of Industry Pursuant to decision of Govt. of India prescribing imposition of restriction on public procurement from bidders of certain countries on ground of defence of India or matters directly or indirectly related thereto, the Office Memorandum No. 4939/F, dated: 13.02.2012 of Finance Department, Govt of Odisha has been amended vide Office Memorandum No 27945 Dtd 16.10.2020 by inserting sub-para-3 (vii) to para-3 thereof. Prescribing the restriction on procurement made by the State Govt., State Public Sector Undertaking including local bodies etc. and directing no procurement shall be made in violation of such restrictions, it is hereby clarified that the provisions of the same shall be applicable for the tenders for works/procurement/Service in SLDC, OPTCL in both ongoing (Techno-Commercial bid not opened) and future tenders. The tender documents of SLDC,OPTCL shall contain following additional clauses and certificate formats

**A. To be incorporated as qualifying requirement of bidder /certificates in case of tenders for Works (including Turn-key works)**

- I.** Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per requirement of Govt. of India
- II.** “Bidder” (including the term ‘tenderer’, consultant, service provider in certain contexts) means any company, including any member of a consortium or joint venture (that is a company ),
- III.** “Bidder from a country which shares a land boarder with India” for the purpose of this this Order means: -
  - a. An entity incorporated, established or registered as company in such a country ; or
  - b. A subsidiary company of an entity incorporated, established or registered in such a country ;or
  - c. An entity substantially controlled through entities incorporated , established or registered in such a country ; or
  - d. An entity whose beneficial owner is situated in such a country ; or
  - e. An Indian (or other) agent of such an entity ; or
  - f. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

**IV.** The beneficial owner for the purpose of (iii)(d) above will be as under:

**1.** In case of a company the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

**Explanation**

**a.** Controlling ownership interest” means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits or the company.

**b.** Control shall include the right to appointment mmajority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreement;

**2.** Where no natural person is identified under (1) above, the beneficial owner is the relevant natural person who hold the position of senior managing official ;

**V.** An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

**VI.** The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

**Certificate (To be furnished bidder’s company letter head)**

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable evidence of valid registration by the Competent Authority shall be attached.

**B. To be incorporated as qualifying requirement of bidder /certificates in case of tenders for procurement of goods/services(including consultancy and non consultancy)**

**I.** Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per requirement of Govt. of India.

II. “Bidder” (including the term ‘tenderer’, consultant, service provider in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated herein before, including any agency branch or office controlled by such person, participating in a procurement process.

III. Bidder from a country which shares a land boarder with India” for the purpose of this this Order means:-

- a. An entity incorporated, established or registered as company in such a country ; or
- b. A subsidiary company of an entity incorporated, established or registered in such a country or
- c. An entity substantially controlled through entities incorporated , established or registered in such a country ; or
- d. An entity whose beneficial owner is situated in such a country ; or
- e. An Indian (or other) agent of such an entity ; or
- f. A natural person who is citizen of such a country; or
- g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

IV. The beneficial owner for the purpose of (iii)(d) above will be as under :

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

**Explanation**

- a. Controlling ownership interest” means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company.
  - b. Control shall include the right to appointment mmajority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreement;
2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting along or together, or through one or more juridical person, has ownership or entitlement to more than fifteen per cent of capital or profits of the partnership ;
  3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical

person, his ownership of or entitlement to more than fifteen per cent of the property or capital or profits of such association or body of individuals ;

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who hold the position of senior managing official ;

5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen per cent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person

**Certificate (To be furnished bidder's company letter head)**

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evident of valid registration by the Competent Authority shall be attached.]

This provision shall not be applicable where orders or contract has been concluded or LOA or NOA has been issued on or before the date of this order and case falling under Annexure-I of the Office Memorandum dtd 16.10.2020 of the Finance Department, Govt of Odisha as indicated supra.

## **55.0 Change Request and control procedure (After Go-Live)**

- a. SLDC, OPTCL defines additional requirement or changes for a feature
  - i) Software shall be designed to incorporate such changes in regulation with minimum effort and time.
  - ii) The scope of this project includes accommodation of necessary modifications / changes which may require time to time for alteration in business logics due to any central or state level policy/guidelines, OERC or CERC regulations/orders/guidelines, policy decision of distribution licensees, decision of SLDC management, etc. These modifications may be reported time to time during implementation phase as well as during support / AMC period. The modifications required as indicated above may be classified in two categories viz.:
    - b. Minor modification: Modification requiring the efforts up to 10 man-days shall be treated as minor modification requirement.
    - c. Major modification: Any new module/work area development and all other modification requirements arising due to change in operational practice, business logic and regulation, laws, new regulations, procedures etc. which cannot be accommodated within the scope of minor

- modification (effort exceeding 10 man-days) shall be treated as major modification/ change requirement.
- d. Modifications during Warranty / Maintenance period
  - e. The supplier shall be responsible for accommodating 10 (ten) per year at no extra cost.
  - f. The bidders are requested to quote man-day rates for change requests/ major changes separately in price bid (mandatory). Man- day rates shall be considered only for major change requests which are not provided as part of original scope of work of this tender. For the efforts of any changes, Supplier's Project Manager/Nodal officer of SLDC shall mutually agree on the additional scope and effort required for finalizing the number of man days.
  - g. Bugs, lacuna, non-compliance to specifications cannot be treated as a change request.
  - h. Impact on Price:  
Bidder shall calculate the necessary price impact and discuss with SLDC before proceeding for change request
  - i. Change Request Process:  
  
Change request approval process:
    - i. Change request complying above qualification criteria shall be initiated.
    - ii. A change request form is filled up. (A format shown below will be supplied to bidder as part of the contract agreement, ref-Annexure-XVIII)
    - iii. Initiator (SLDC, OPTCL or Bidder's Project Manager) fills up items number 3,4, 5 in the form.
    - iv. The bidder's project manager fills up item's numbers 1, 2, 6, 7 and 8.
    - v. Project Manager from SLDC fills up 9,10, and 11.
    - vi. On approval by SLDC, the project manager of bidder proceeds with implementation.
    - vii. In all respect, the decision of SLDC, OPTCL's is final and no appeals are permitted against it.

**PART-I**

**SECTION – III**

**LIST OF ANNEXURES**



### SECTION – III: LIST OF ANNEXURES

The following schedules and proforma are annexed to this specification and contained in Section-III as referred to in the relevant clauses.

1	Declaration form	ANNEXURE-I
2	Black listing	ANNEXURE-II
3	Schedule of Quantity and Delivery	ANNEXURE-III
4	Abstract of price component [to accompany Part-II of this specification]	ANNEXURE-IV
5	Schedule of prices to accompany Part-II	ANNEXURE-V
6	Bank Guarantee form for earnest money deposit	ANNEXURE-VI
7	Composite Bank Guarantee form for security deposit, payment, and performance	ANNEXURE-VII
8.	Chart showing particulars of E.M.D.	ANNEXURE-VIII
9.	Data on Experience.	ANNEXURE-IX
10.	Schedule of spare parts.	ANNEXURE-X
11.	Schedule of Installations.	ANNEXURE-XI
12	Schedule of deviations (Technical)	ANNEXURE-XII
13.	Schedule of deviations (Commercial)	ANNEXURE-XIII
14	Litigation /Arbitration	ANNEXURE-XIV
15	Delivery Schedule	ANNEXURE-XV
16	Proforma For Bank Balance, Fixed Deposits and Availability of Credit Facilities	ANNEXURE- XVI
17	Proforma of Power of Attorney for Joint Venture/Consortium	ANNEXURE- XVII
18	Change request format	ANNEXURE- XVIII
19	Abstract of GTCC	ANNEXURE- XIX
20	Reverse Auction Process Compliance Form	ANNEXURE- XX

**ANNEXURE-I: DECLARATION FORM****DECLARATION FORM**

To

The CLD, SLDC,  
Bhubaneswar

Sub:- Tender Specification No-\_\_\_\_\_

Sir,

1. Having examined the above specification together with terms & conditions referred to therein \* I/We the undersigned hereby offer to supply the materials/equipment covered therein complete in all respects as per the specification and General conditions, at the rates, entered in the attached contract schedule of prices in the Tender.
2. \* I/We hereby undertake to have the materials/equipment delivered within the time specified in the Tender.
3. \* I/We hereby guarantee the technical particulars given in the Tender supported with necessary reports from concerned authorities.
4. \* I/We certify to have submitted the bid electronically by remitting \*cash/money order/D.D./remitting the cost of tender, herewith and this has been acknowledged by your letter/ money receipt No. \_\_\_\_\_ Dated, \_\_\_\_\_
5. In the event of Tender, being decided in \*my/our favour, \* I/We agree to furnish the Composite B.G. in the manner, acceptable to ORISSA POWER TRANSMISSION CORPORATION LTD., and for the sum as applicable to \*me/us as per clause-19 of section-II of this specification within 15 days of issue of letter of intent/purchase order failing which \*I/We clearly understand that the said letter of Intent/Purchase order will be liable to be withdrawn by the purchaser.

**Bid Security Declaration**

\*I/We further declare that, we will not modify/withdraw the bid after opening of techno-commercial bid(i.e. part-I bid) during its validity period and in such an event we agree that OPTCL would be free to debar us from participating in the tenders floated by OPTCL for a period of three years .

Signed this day of 2023

Yours faithfully

Signature of the Bidder with seal of the company

[This form should be dully filled up by the Bidder and uploaded at the time of submission of tender.]

\* (Strikeout whichever is not applicable)

**Enclosure:****A. Soft Form of Documents (Scanned Copy)**

Sl. No.	Description	.Pdf file reference
1	Declaration form (ANNEXURE-I)	Attach 1.pdf
2	Black listing (ANNEXURE-II)	Attach 2.pdf
3	Schedule of Quantity and Delivery (ANNEXURE-III)	Attach 3.pdf
4	Abstract of price component [to accompany Part-II of this specification] (ANNEXURE-IV)	Attach 4.pdf
5	Schedule of prices to accompany Part-II (ANNEXURE-V)	Attach 5.pdf
6	Bank Guarantee form for earnest money deposit (ANNEXURE-VI)	Attach 6.pdf
7	Composite Bank Guarantee form for security deposit, payment, and performance (ANNEXURE-VII)	Attach 7.pdf
8	Chart showing particulars of E.M.D. (ANNEXURE-VIII)	Attach 8.pdf
9	Data on Experience. (ANNEXURE-IX)	Attach 9.pdf
10	Schedule of spare parts. (ANNEXURE-X)	Attach 10.pdf
11	Schedule of Installations. (ANNEXURE-XI)	Attach 11.pdf
12	Schedule of deviations (Technical) (ANNEXURE-XII)	Attach 12.pdf
13	Schedule of deviations (Commercial) (ANNEXURE-XIII)	Attach 13.pdf
14	Litigation /Arbitration (ANNEXURE-XIV)	Attach 14.pdf
15	Delivery Schedule (ANNEXURE-XV)	Attach 15.pdf
16	Bank Certificate (ANNEXURE-XVI)	Attach 16.pdf
17	JV Agreement (ANNEXURE-XVII)	Attach 17.pdf
18	Change request format (ANNEXURE-XVIII)	Attach 18.pdf
19	Abstract of GTCC (ANNEXURE-XIX)	Attach 19.pdf
20	Reverse Auction Process Compliance Form (ANNEXURE-XX)	Attach 20.pdf

**B. Schedules (XLS format) in the e-Tender Portal of OPTCL:**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Schedules in XLS format</b>
1	Bidders' information	Schedule-I
2	Acceptance of Important Condition of the Contract	Schedule-II
3	Check List	Schedule-III
4	Documents to Qualifying requirement	Schedule-IV
5	Financial qualification	Schedule-V
6	Outright Rejection Criteria	Schedule-VI
7	Documents to Accompany Bids	Schedule- VII

**ANNEXURE-II: PROFORMA OF SELF DECLARATION-BLACK LISTING/  
DEBARRING ACTION**

(To be filled in non-judicial stamp paper of worth Rs.100/- and to be Notarized)

Name of the Bidder: -----

e-Tender Notice No: -----

Sir,

- I. I/We, the undersigned do hereby declare that, I/We have never been blacklisted and / or there were no debarring actions against us for any default in executing the Turnkey Contract or in the performance of the contract entrusted to us in any of the Electricity Transmission Utilities of India.
- II. In the event of any such information pertaining to the aforesaid matter found at any given point of time either during the course of the contract or at the bidding stage, my bid / contract shall be liable for rejection/ cancellation / termination without any notice at the sole discretion of SLDC, OPTCL.

Yours faithfully,

Place-

Date-

Signature of the bidder

With seal

**Note: The bidder shall also disclose, if he was debarred/black listed by any utility in the past and if the debar/blacklisting order was subsequently withdrawn by the utility suo-moto or set aside by any court order.**

(This form shall be duly filled-up, signed by the bidder (including each of the Joint Venture/Consortium partner) & uploaded as an attachment)

**ANNEXURE-III: SCHEDULE OF QUANTITY & DELIVERY****SCHEDULE OF QUANTITY AND DELIVERY ALONG WITH INSTALLATION & COMMISSIONING**

Table 9 Schedule of quantity

Item Sl. No.	Description of Service/Equipment / Materials	Unit of Measure	Quantity
1.	Supply, Installation, and commissioning of 0.2S Accuracy Class Tri- vector ABT Compliant energy meters with DLMS protocol and all other accessories as detailed in Technical Specification.	Nos.	2000
2.	Supply, Installation, and commissioning of Metering Panel suitable for housing maximum eight numbers of 0.2S accuracy class ABT compliant Tri vector energy meter in each panel.	Nos	250
3.	Supply, Installation, and commissioning of DCU with rack mounting panels and all accessories as detailed in Technical Specification.	Nos.	220
4.	Supply, Installation, and commissioning of 16 port industrial grade LAN switch with all accessories as per technical specification for meter LAN	Set	300
5.	Supply, Installation, and commissioning of AMR (CDCS with MDAS) software with all accessories as per technical specification	lot	1
6.	Dismantling, Transporting and depositing of existing meter at OPTCL stores with all accessories complete in all respect	Nos.	1947
7.	Supply, laying and commissioning of CAT-6/RJ-45 network cable (through PVC pipe) for ABT meter, Network Switch, DCU, Communication terminal etc.	Mtr.	12000
8.	Supply, laying and commissioning of 25mm dia PVC pipe saddles and bends for laying of CAT-6/RJ-45 network cable.	Mtr.	10000
9.	Imparting training to the substation personnel after successful installation of hardware and software components.	Nos.	220

10	Imparting training to the SLDC personnel at SLDC after successful installation of hardware and software components.	Nos.	15
11	Comprehensive Annual maintenance contract in respect of software component related to AMR solution for five (5) years.	Years	5
12	Comprehensive Annual maintenance contract in respect of ABT Meters for seven (7) years.	Years	7

Signature of Bidder with seal of Company

## **ANNEXURE-IV: ABSTRACT OF PRICE COMPONENT**

### **Abstract of price component [to accompany Part-II of this specification]**

(To be filled up by the Bidder as indicated in the excel sheet)

NB:- Abstract of price component will be done for Meter/Software/equipment/material offered, for Supply /installation, testing & commissioning and AMC charges, if any. All the above prices will be taken during bid price evaluation.



## ANNEXURE-V: SCHEDULE OF PRICE

### SCHEDULE OF PRICE..... TENDER SPECIFICATION No.....

(To be filled up by the Bidder as indicated in the excel sheet)

- 1.The bidder should fill up the price schedule properly in excel file in e-tender mode. The tender will be rejected, if the price bid is not submitted in accordance with the price schedule. No post tender correspondence will be entertained on break-up of prices. Also, the supplier should agree for delivery at the desired site.
- 2.The bidder will give an undertaking in part-I of the bid that, entire implication of lower tax and input tax credit benefit have been fully passed on to the purchaser as per anti-profiteering and other provisions under GST Laws while quoting the tender price.
- 3.Conditional offers will not be acceptable.

Signature of Bidder

Name, Designation and Seal

**ANNEXURE-VI: BG FOR EMD****PROFORMA FOR BANK GUARANTEE FORM FOR EARNEST MONEY DEPOSIT**

**(To be Stamped in accordance with Stamp Act and the Non-Judicial Stamp Paper of appropriate value should be in the name of Issuing Bank)**

Ref No: .....

Bank Guarantee No. ....

**Date:**.....**BG Amount:**.....**Validity Period:**.....

This Guarantee Bond is executed this..... day of ..... by us the..... Bank at ..... , P.O..... , Dist....., State..... and Code No.....

Whereas the ODISHA POWER TRANSMISSION CORPORATION Limited, Janpath, Bhubaneswar, a company constituted under the Companies Act-1956 (hereinafter called OPTCL) has invited Tender vide e-NIT No..... Dated..... for the purpose of ..... work under Package(s) No...../ purchase of ----- .

- Now, therefore, in accordance with Notice Inviting Tender (e-NIT) No..... Dated.....of OPTCL, Ms/Shri.....Address..... Wish / wishes to participate in the said tender and as a Bank Guarantee for the sum of Rs..... [ Rupees in **words**----- ] valid for a period of .....days is required to be submitted by the bidder, as per Tender Specification, we the \_\_\_\_\_ ) [indicate the name, Address & Code of the bank] [hereinafter referred to as “Bank”] at the request of Ms/Shri..... [hereinafter referred to as “Bidder”] do hereby unequivocally and unconditionally guarantee and undertake to pay during the above said period on written request by the <Tender Issuing Authority, ODISHA POWER TRANSMISSION CORPORATION Ltd. , Bhubaneswar an amount not exceeding Rs..... to OPTCL., without any reservation. The guarantee would remain valid up to ..... [Date] and if any further extension to this is required, the same will be extended on receiving instruction from ----- on whose behalf this Bank Guarantee has been issued.
- We, the \_\_\_\_\_ [indicate the name of the Bank, Address, Code] do hereby further undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from OPTCL. Any such demand made on the Bank will be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee will be restricted to an amount not exceeding Rs..... ( Rupees in words.....)
- We undertake to pay to OPTCL any money so demanded notwithstanding any dispute or disputes so raised

by the bidder in any suit or proceeding instituted/pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond will be a valid discharge of our liability for payment thereunder and the bidder will have no claim against us for making such payment.

4. We, the \_\_\_\_\_ Bank further agree that the guarantee herein contained will remain in full force and effect during the aforesaid period of \_\_\_\_\_ days [in words]..... (as per Tender Specification) and it will continue to be so enforceable till all the dues of OPTCL under or by virtue of the said Bid have been fully paid and its claims satisfied or discharged or till OPTCL certifies that the terms and conditions of the said Bid have been fully and properly carried out by the said bidder and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us or our Branch Office at Bhubaneswar <Mention Name, Address & Code of the Branch Office at Bhubaneswar of Issuing Bank> in writing on or before \_\_\_\_\_ we will be discharged from all liability under this guarantee thereafter.
5. We the \_\_\_\_\_ Bank further agree with OPTCL that OPTCL will have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bid or to extend time of performance by the said Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by OPTCL against the said Bidder and to forbear or enforce any of the terms and conditions relating to the said Bid and we will not be relieved from our liability by reason of any such variation, postponement or extension granted to the Bidder or for any forbearance, act or omission on the part of OPTCL or any indulgence by OPTCL to the said Bidder or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.
6. This guarantee will not be discharged due to the change in the name, style and constitution of the Bank and/or of the Bidder.
- 7 We \_\_\_\_\_ [indicate the name of Bank, Address & Code] lastly undertake not to revoke this guarantee during its currency except with the previous consent of OPTCL in writing .
- 8 We, the \_\_\_\_\_ Bank (Name, Address & Code) further agree that this guarantee will also be invokable at our place of business at ----- Branch of **Bhubaneswar** (indicate Name, Address & Code of the Branch at Bhubaneswar) in the State of Odisha.”

**“Notwithstanding anything contained herein”**

a) Our liability under the bank guarantee will not exceed Rs.------(Rupees in words----- ----) only.

b) This Bank guarantee will be valid up to -----.

c) We or our Branch at Bhubaneswar <Mention Name, Address & Code.....> will be liable to pay guaranteed amount or any part thereof under this guarantee only if you serve upon us at----- Branch of Bhubaneswar a written claim or demand on or before .....,



The Bank Guarantee is issued in paper form and Advice transmit Bed through SFMS with required details to the beneficiary’s advising bank (ICICI Bank Bhubaneswar, IFSC Code ICIC0000061).

Dated, the \_\_\_\_\_ Day of \_\_\_\_\_

For \_\_\_\_\_ [Indicate name of Bank]

Signature .....  
Full name .....  
Designation .....  
Power of Attorney No. ....  
Date.....  
Seal of the Bank.....

**WITNESS: (SIGNATURE WITH NAME AND ADDRESS)**

(1)  
Signature .....  
Full name .....  
(2)  
Signature .....  
Full name .....

**N.B.:**

1. Name of the Bidder.: .....
2. BG No & Date :.....
3. Amount (In Rs.):.....
4. Validity up to :.....
5. E-NIT No.....
6. Package/Works No.....
7. Name, Address & Code of Issuing Bank:.....
8. Name, Address & Code Bhubaneswar Branch of the Issuing Bank:.....
9. The Bank Guarantee will be accepted after getting SFMS advice as per details below.

**Format for SFMS details**

(The Unique Identifier for field 7037 is “ OPTCL541405793”)

Table 10 Format for SFMS details

Sl. No	PARTICULARS	TYPE	DETAILS
1	Type of Bank Guarantee	Mandatory	EMD
2	Currency & Amount	Mandatory	
3	Validity Period (from—to --)	Mandatory	
4	Effective Date	Mandatory	
5	End date of lodgment of Claim	Mandatory	
6	Place of lodgment of claim	Mandatory	Bhubaneswar, Branch Name----- of Bhubaneswar Branch code----- of Bhubaneswar Branch Address ----- at Bhubaneswar
7	Issuing Branch IFSC Code	Mandatory	
8	Issuing Branch name & address	Mandatory	
9	Name of applicant and its details	Mandatory	
10	Name of Beneficiary and its details	Mandatory	
11	Beneficiary's Bank/Branch and IFSC Code	Mandatory	ICICI Bank Ltd IFSC Code-ICIC0000061
12	Beneficiary's Bank/Branch name and address	Mandatory	ICICI Bank Ltd Bhubaneswar Main Branch, Bhubaneswar
13	Sender to receiver information	Mandatory	
14	Purpose of Guarantee	Mandatory	EMD
15	Reference/Description of the underlined tender/contract	Mandatory	NIT No

**ANNEXURE-VII: CPBG****[PROFORMA FOR COMPOSITE BANK GUARANTEE FOR SECURITY DEPOSIT PAYMENT AND PERFORMANCE]**

**(To be stamped in accordance with Stamp Act and the Non-Judicial stamp paper of appropriate value should be in the name of the Issuing Bank.)**

**Ref No:-** .....  
**Bank Guarantee No.** .....  
**Date:** .....  
**BG Amount:**.....  
**Validity Period:**.....

This Guarantee Bond is executed this..... day of ..... by us the..... Bank at ..... , P.O..... , Dist....., State..... and Code No.....

Whereas the ODISHA POWER TRANSMISSION CORPORATION Limited, Janpath, Bhubaneswar, a company constituted under the Companies Act-1956 (hereinafter called OPTCL) has issued Letter of Award (LOA) No..... Dated..... for the purpose of ..... work under Package No..... (herein after called “the Agreement”) to M/s/Shri ..... , Address..... (herein after called the “Supplier”) for supply, erection, installation & commissioning and associated civil works under the above LoA and whereas OPTCL has agreed (1) to exempt demand of security deposit under the terms and conditions of the LOA (2) to release payment of the cost of the Contract Price to the Supplier on furnishing by the Supplier to OPTCL a Contract Performance Bank Guarantee (CPBG) of the value of 10% of the Contract Price of the said Agreement.

1. Now therefore, in accordance with the terms and conditions of LOA No. \_\_\_\_\_ dated \_\_\_\_\_ for the due fulfillment by the said Supplier of the terms and conditions contained in the said agreement, on production of a Bank Guarantee for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) only, we the bank \_\_\_\_\_ [Indicate bank Name , Address & Code ] (hereinafter referred to as “the Bank”) at the request of M/s/Shri \_\_\_\_\_ supplier do hereby undertake to pay to OPTCL, an amount not exceeding Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) only .
2. We, the \_\_\_\_\_ Bank [indicate the name of the Bank, Address & Code] do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from OPTCL. Any such demand made on the bank will be conclusive as regards the amount due and payable by the bank under this guarantee. However, our liability under this guarantee will be restricted to an amount not exceeding Rs. \_\_\_\_\_ (Rupees----- In Words).
3. We, the ..... Bank also undertake to pay to OPTCL any money so demanded notwithstanding any dispute or disputes raised by the Supplier in any suit or proceeding instituted / pending before any court or tribunal relating thereto, our liability under this present being absolute and irrevocable. The payment so

made by us under this bond will be a valid discharge of our liability for payment thereunder and the Supplier will have no claim against us for making such payment.

4. We, the \_\_\_\_\_ Bank further agree that the guarantee herein contained will remain in full force and effect during the aforesaid period of \_\_\_\_\_ days and it will continue to be so enforceable till all the dues of OPTCL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till OPTCL certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said supplier and accordingly discharges this guarantee.

Unless a demand or claim under this guarantee is made on us or our Branch Office at Bhubaneswar <Mention Name, Address & Code of the Branch Office at Bhubaneswar of issuing Bank> in writing on or before ..... (Date), we will be discharged from all liability under this guarantee thereafter.

5. We, the \_\_\_\_\_ Bank [indicate the name of the Bank, Address & Code] further agree with the Board that OPTCL will have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Bid or to extend time or performance by the said supplier(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by, OPTCL against the said supplier(s) and to forbear or enforce any of the terms and conditions relating to the said Bid and we will not be relieved from our liability by reason of any such variation postponement or extension being granted to the said supplier(s) or for any forbearance, act or omission on the part of OPTCL or any indulgence by OPTCL to the said supplier(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.

6. This guarantee will not be discharged due to the change in the name, style or constitution of the Bank and/or of the supplier(s).

7. We, the \_\_\_\_\_ Bank [indicate the name of the bank, Address & Code ] lastly undertake not to revoke this guarantee during its currency except with the previous consent of OPTCL in writing.

8. We, the \_\_\_\_\_ Bank (Name, Address & Code) further agree that this guarantee will also be invocable at our place of business at **Bhubaneswar** (indicate Name, Address & Code of the Branch at Bhubaneswar) in the State of Odisha.

**“Not withstanding anything contained herein”**

a) Our liability under the bank guarantee will not exceed Rs.------(Rupees in words----- ----) only.

b) This Bank guarantee will be valid up to -----.

c) We or our Branch at **Bhubaneswar** <Mention Name, Address & Code.....> will be liable to pay guaranteed amount or any part thereof under this guarantee only if you serve upon us at----- Branch of



Bhubaneswar a written claim or demand on or before .....

The Bank Guarantee is issued in paper form and Advice transmit Bed through SFMS with required details to the beneficiary’s advising bank (ICICI Bank Bhubaneswar, IFSC Code ICIC0000061).

Dated, the \_\_\_\_\_ Day of \_\_\_\_\_

For \_\_\_\_\_ [Indicate name of Bank]

Signature.....

Full Name.....

Designation.....

Power Of Attorney.....

Dated.....

Seal of the Bank.....

**WITNESS: (SIGNATURE WITH NAME AND ADDRESS)**

1. Signature.....

Full Name.....

2. Signature.....

Full Name.....

**N.B.:**

- 1. Name of the Supplier.: .....
- 2. BG No & Date :.....
- 3. Amount (In Rs.):.....
- 4. Validity up to :.....
- 5. LOA No.....
- 6. Package No.....
- 7. Name, Address & Code of Issuing Bank:.....
- 8. Name, Address & Code of Bhubaneswar Branch of the Issuing Bank:.....
- 10. The Bank Guarantee will be accepted after getting SFMS advice as per details below.

**Format for SFMS details**



(The Unique Identifier for field 7037 is “OPTCL541405793”)

Sl. No	PARTICULARS	TYPE	DETAILS
1	Type of Bank Guarantee	Mandatory	Contract Performance
2	Currency & Amount	Mandatory	
3	Validity Period(from—to --)	Mandatory	
4	Effective Date	Mandatory	
5	End date of lodgment of Claim	Mandatory	
6	Place of lodgment of claim	Mandatory	Bhubaneswar, Branch Name----- of Bhubaneswar Branch code----- of Bhubaneswar Branch Address ----- at Bhubaneswar
7	Issuing Branch IFSC Code	Mandatory	
8	Issuing Branch name & address	Mandatory	
9	Name of applicant and its details	Mandatory	
10	Name of Beneficiary and its details	Mandatory	
11	Beneficiary's Bank/Branch and IFSC Code	Mandatory	ICICI Bank Ltd IFSC Code-ICIC0000061
12	Beneficiary's Bank/Branch name and address	Mandatory	ICICI Bank Ltd Bhubaneswar Main Branch, Bhubaneswar
13	Sender to receiver information	Mandatory	
14	Purpose of Guarantee	Mandatory	Contract Performance
15	Reference/Description of the underlined tender/contract	Mandatory	LOA No----

**ANNEXURE-VIII: EMD**

**CHART SHOWING PARTICULARS OF EARNEST MONEY DEPOSIT FURNISHABLE BY  
BIDDERS-**

Table 11 Earnest Money Deposit

1.	Central and State Government Undertakings	Exempted
2.	All other inside & outside state units.	The amount of EMD as specified in the specification /Tender Notice in shape of bank guarantee /DD.

NB: - REFUND OF E.M.D.

- [a] In case of unsuccessful bidders, the EMD will be refunded immediately after the tender is decided. In case of successful bidder, this will be refunded only after furnishing of Composite Bank Guarantee referred to in clause No.19 of Section-II of this specification.

Suits, if any, arising out of EMD will be filed in a court of law to which the jurisdiction of High Court of ODISHA extends.

- [b] Earnest Money will be forfeited if the bidder fails to accept the letter of intent/purchase order, issued in his favour or revises the bid price[ s] within the validity period of Bid.

## ANNEXURE-IX: EXPERIENCE

### DATA ON EXPERIENCE

- (a) Name of the Meter Manufacturer & Hardware Manufacturer.
- (b) Standing of the firm as manufacturer of Hardware /equipment quoted.
- (c) Description of meter / equipment similar to that quoted [supplied and installed during the last five years with the name of the organizations to whom supply was made].
- (d) Details as to where implemented / installed etc.
- (e) Meter Manufacturing and Testing facilities suppliers premises.
- (f) A list of purchase orders, executed during last three years.
- (g) A list of similar Meter/Software /Hardware/ equipment of specified Architecture/ Design, Developed /manufactured, tested and commissioned which are in successful operation for at least one year from the date of commissioning with legible user's certificate. User's full complete postal address/fax/phone must be indicated. (Refer clause No.7 of the Part-I, Section-II of the specification).

Place:

Date:

Signature of Bidder

Name, Designation, Seal

**ANNEXURE-X-A: SPARE PARTS****SCHEDULE OF SPARE PARTS FOR FIVE YEARS OF NORMAL OPERATION & MAINTENANCE DURING AMC OF AMR AND HARDWARE**

Table 12-A Spare Parts -AMR &amp; Hardware

SL.No	Particulars	Quantity	Unit delivery rate	Total price

Place:

Date:

Signature of Bidder

Name, Designation, Seal

**Note:**

- i. Bidders to include the cost of all spare parts required during CAMC in the Comprehensive AMC price schedule.**
- ii. No additional cost towards spare parts will be entertained during CAMC period.**

**ANNEXURE-X-B: SPARE PARTS****SCHEDULE OF SPARE PARTS FOR FIVE YEARS OF NORMAL OPERATION & MAINTENANCE DURING AMC OF ENERGY METERS**

Table 13-B Spare Parts -Energy meters

SL.No	Particulars	Quantity	Unit delivery rate	Total price

Place:

Date:

Signature of Bidder

Name, Designation, Seal

**Note:**

- i. Bidders to include the cost of all spare parts required during CAMC in the Comprehensive AMC price schedule.**
- ii. No additional cost towards spare parts will be entertained during CAMC period.**



**ANNEXURE-XI: SCHEDULE OF INSTALLATIONS**

SCHEDULE OF INSTALLATIONS OF METER, AMR, HARDWARE AND SOFTWARE.

Table 14 Schedule Of Installations.

Meter/Software/Hardware	Projects/Scheme	Place of installation and complete postal address	Year of commissioning

Place: -

Date

Signature of Bidder:

Name, Designation, Seal

**ANNEXURE-XII: TECHNICAL DEVIATION****TECHNICAL DEVIATION SCHEDULE.**

Bidder will enter below particulars of his alternative proposal for deviation from the specification, if any.

**TO ACCOMPANY PART-I**

(To be filled up by the bidder as indicated in the excel sheet)

**Bidder's Name & Address**

To  
The CLD,  
SLDC, Bhubaneswar.

Ref.:

1. E- NIT No:.....

**Sub: Technical Deviation Sheet.**

Dear Sirs,

The following are the Technical Deviations and exceptions from the specifications and documents for the subject works. These deviations are exhaustive, except for these deviations, the entire package/works shall be performed as per your specifications and documents.

<b>Volume/Clause</b>	<b>Ref./Page No.</b>	<b>As specified in the Technical Specification</b>	<b>Technical deviations , if any</b>

- Note:
1. Continuation sheets, of like size and format, may be used as per Bidder's requirements and annexed to this Schedule.
  2. The deviations, if any, shall be brought out separately for each of the equipment/Materials/works.
  3. Deviations mentioned other than the above shall constitute Nil/No deviation.

**Date:**

**(Signature) .....**

**Place:**

**(Printed Name) .....**

**(Designation) .....**

**(Common Seal) .....**

**(This form shall be duly filled-up, signed by the bidder & uploaded as an attachment)**

ABT METERS & AMR UNDER SAMAST PROJECT

## ANNEXURE -XIII: COMMERCIAL DEVIATION SHEET

### COMMERCIAL DEVIATION SCHEDULE.

Bidder will enter below particulars of his alternative proposal for deviation from the specification, if any.

#### **TO ACCOMPANY PART-I**

(To be filled up by the bidder as indicated in the excel sheet)

Bidder's Name & Address

To  
The CLD,  
SLDC, Bhubaneswar.

Ref.:  
E- NIT No:.....

**Sub: Commercial Deviation Sheet.**

**Dear Sirs,**

We hereby undertake to execute the work without any deviation to the Commercial terms and conditions of the Works contained in the tender specifications.

Sl. No.	Tender Clause Reference	Page Ref. No.	Commercial Deviation, if any

Date:

Place:

**(Signature of the Bidder)**

( Printed Name) .....

(Designation) .....

(Common Seal) .....

**Note: 1. Deviations, if any, mentioned elsewhere shall constitute Nil/No deviation.**

***(This form shall be duly filled-up, signed by the bidder & uploaded as an attachment as a token of acceptance towards the NIL/NO deviation to the Commercial Terms and Conditions)***



**ANNEXURE-XIV: LITIGATION****LITIGATION HISTORY**

Table 15 Litigation History

Year	Award for or against bidder	Name of client, cause of litigation and matter in dispute	Disputed amount (current value in Rs.)

Place: -

Date

Signature of Bidder:  
Name, Designation, Seal



**ANNEXURE-XV: DELIVERY SCHEDULE**

**Delivery Schedule**

Table 16 Delivery Schedule

Description of Item	Start Date	End Date	Duration	Risks/ Dependencies

Place: -

Date

Signature of Bidder:  
Name, Designation, Seal



**ANNEXURE- XVI: BANK CERTIFICATE**

**PROFORMA FOR BANK BALANCE, FIXED DEPOSITS AND AVAILABILITY OF CREDIT FACILITIES**

**BANK CERTIFICATE**

This is to certify that M/s. .... (Full Name & Address), who are submitting their bid to SLDC, **OPTCL** against their Tender Specification vide Ref. No.....& Date .....is our Customer for the past..... Years.

Their financial transactions with our Bank have been satisfactory. Their Current A/c Balance & Fixed Deposit Balance as on <Date> <Month> <Year> is also indicated below:

SL.NO.	TYPE OF ACCOUNT(CURRENT/ FD/RD/ANY OTHER)	ACCOUNT NUMBER	BALANCE as on Dt..... (Rs. in Cr)

They enjoy the following fund based and non fund based limits (Cash Credit, Bank Guarantees, L/C and other credit facilities) with us against which the extent of utilization as on <Date> <Month> <Year> is also indicated below:

SL.NO.	TYPE OF FACILITY	SANCTIONED LIMIT AS ON DATE	UTILISATION AS ON DATE	AVAILABLE AS ON DATE (Rs. in Cr)



This letter is issued at the request of M/s .....

Sd/-

Name of Bank.....

Name of Authorised Signatory .....

Designation .....

Phone No. ....

Address .....

SEAL OF THE BANK.

N.B. : To be issued by the Issuing Bank in their Letter Head.

**ANNEXURE- XVII: JV Agreement****PROFORMA OF JOINT VENTURE/CONSORTIUM AGREEMENT**

(On Non-Judicial Stamp Paper of Appropriate Value to be  
Purchased in the Name of Joint Venture/Consortium)

JOINT VENTURE/CONSORTIUM AGREEMENT BETWEEN ..... AND  
..... FOR BID SPECIFICATION NO.....OF (OPTCL)

THIS JOINT VENTURE/CONSORTIUM AGREEMENT executed on this .....day of .....Two thousand and .....between M/s.....a company incorporated under the laws of ..... and having its Registered Office at..... (hereinafter called the “Lead Partner” which expression shall include its successors, executors and permitted assigns) and M/s..... a company incorporated under the laws of ..... and having its Registered Office at (hereinafter called the “Other Partner” which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract (in case of award) against the Tender Specification No.:..... for Supply, Erection, Installation, Testing & Commissioning and Associated Civil Works under the Package/Works No:..... of OPTCL, a Govt of Odisha Undertaking, having its. Registered Office at OPTCL Office, Janapath, Bhubaneswar (hereinafter called the “OPTCL”).

WHEREAS OPTCL invited bids as per the above mentioned Specification for the engineering, supply and erection, testing and commissioning of Equipment/ Materials including associated civil works stipulated in the bidding documents under subject Package/works No.....

AND WHEREAS Qualification Requirement of the Bidder as per Instruction To Bidder (ITB), forming part of the bidding documents, stipulates that a Joint Venture/Consortium of two qualified firms as partners, meeting the requirement for the bid as applicable may bid, provided the Joint Venture/Consortium fulfills all other requirements jointly and in such a case, the BID shall be signed by the Lead partners legally bind both the Partners of the Joint Venture/Consortium, who will be jointly and severally liable to perform the Contract and all obligations thereunder.

AND WHEREAS the Joint Venture/Consortium agreement shall be attached to the bid and the contract performance guarantee will be submitted separately as per the format enclosed with the bidding document without any restriction of liability for either party.

AND WHEREAS the bid has been submitted to OPTCL vide Bid Proposal No .....dated ....by Lead Partner based on the Joint Venture/Consortium agreement between the Partners under these presents and the bid in accordance with the requirements of Qualification Requirement of the Bidders, has been signed by the partners.

NOW THIS AGREEMENT WITNESSETH AS UNDER:

In consideration of the above premises and agreement both the Partners to this Joint Venture/Consortium do hereby now agree as follows:

1. In consideration of the award of the Contract by OPTCL to the Joint Venture/Consortium partners, we, the Partners to the Joint Venture/Consortium agreement do hereby agree that M/s..... shall act as Lead Partner and further declare and confirm that we shall jointly and severally be bound unto OPTCL for the successful performance of the Contract and shall be fully responsible for the engineering, supply, erection and successful performance of the equipment and workmanship in accordance with the Contract.
2. In case of any breach of the said Contract by the Lead Partner or other Partner, we do hereby agree to be fully responsible for the successful performance of the Contract and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if OPTCL suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the Materials/equipment and Works in meeting the performance guaranteed as per the specification in terms of the Contract, the Partner(s) of these presents undertake to promptly make good such loss or damages caused to OPTCL, on its demand without any demur. It shall not be necessary or obligatory for OPTCL to proceed against Lead Partner to these presents before proceeding against or dealing with the other Partner.
4. The financial liability of the Partners of this Joint Venture/Consortium agreement to OPTCL, with respect to any of the claims arising out of the non-performance of the obligation set forth in the relevant conditions of the Contract shall, however, not be limited in any way so as to restrict or limit the liabilities of any of the Partners of the Joint Venture/Consortium agreement.
5. It is expressly understood and agreed between the Partners to this Joint Venture/Consortium agreement that of each of the Partners shall be as delineated hereunder.
  - a. the sharing of responsibilities and obligation.
  - b. Extent of participation of each party in the Joint Venture/Consortium.
  - c. Commitment of each party to furnish the Performance Security to the extent of his participation in the Joint Venture/Consortium.
  - d. Responsibility of each Partner of Joint Venture/Consortium (in terms of Physical and Financial involvement).
  - e. Working Capital arrangement of Joint Venture/Consortium.
  - f. Provision that NEITHER party of the Joint Venture/Consortium shall be allowed to sign, pledge, sell or otherwise dispose all or part of its respective interests in Joint Venture/Consortium to any party including existing partner (s) of the Joint



Venture/Consortium. The OPTCL derives right for any consequent action (including blacklisting) against any or all Joint Venture/Consortium partners in case of any breach in this regard.

- g. Management Structure of Joint Venture/Consortium with details.
  - h. Lead Partner to be identified who shall be empowered by the Joint Venture/Consortium to incur liabilities on behalf of Joint Venture/Consortium and to receive instructions for and on behalf of the Partners of Joint Venture/Consortium, whether jointly or severally, and entire execution of contract (including Payment) shall be Carried out exclusively through lead partner.
  - i. the Profit Sharing Ratio of the partners of the Joint Venture/Consortium.
6. This Joint Venture/Consortium agreement shall be construed and interpreted in accordance with the laws of India and the courts of Bhubaneswar/Cuttack (Odisha) shall have the exclusive jurisdiction in all matters arising there under.
  7. In case of an award of Contract, We the Partners to the Joint Venture/Consortium agreement do hereby agree that we shall be jointly and severally responsible for furnishing a contract performance security from a bank in favour of OPTCL in the forms acceptable to OPTCL for value of 10% of the Contract Price in the profit sharing ratio of our share in the Joint Venture/Consortium Agreement.
  8. It is further agreed that the Joint Venture/Consortium agreement shall be irrevocable and shall form an integral part of the Contract, and shall continue to be enforceable till OPTCL discharges the same. It shall be effective from the date mentioned above for all purposes and intents.

IN WITNESS WHERE OF the Partners to the Joint Venture/Consortium agreement have through their authorized representatives executed these presents and affixed Common Seals of their companies, on the day, month and year mentioned above.

1. Common Seal.....of **For Lead Partner** has been affixed in my/our pursuant to the Board of Director’s dated.....

(Signature of authorized resolution representative)

Signature.....	Signature
Name.....	Name
Designation.....	Designation
(Common Seal of the company)	

2. Common Seal.....of **For Other Partner** has been affixed in my/our pursuant to the Board of Director’s dated.....



(Signature of authorized representative)

Signature.....

Signature

Name.....

Name

Designation.....

Designation

(Common Seal of the company)

**WITNESS**

1. Signature:

Name:

Official Address:

2. Signature:

Name:

Official Address:



## ANNEXURE-XVIII: CHANGE REQUEST FORMAT

### Change Request Form Format

#### State Load Despatch Centre, OPTCL

**1. Project Name: Sub System Name: Module Name:**

**2. Request Number & Date of Request:**

**3. Requester:**

Requester Email Id/ Contact Phone Number

Requester Project Role: End User / Project Coordinator/Vendor PM etc.

Name, Designation and Signature of the Requester:

Clause number, para etc.>

**4. Subject/Reference:**

<Deviation reference to the scope viz. Name of Requirements Document, clause number, para etc.>

**5. Description of Change:**

Problem definition

**6. Proposed Changes:**

High level explanation of solution

**7. Impact Analysis:**

Resources, Schedules and modifications as a result of the Change – locations where software needs to be updated – changes in database to be taken care of - impact on on-going training and handholding etc.

**8. Effort Estimation:**

Number of person-days

**9. Evaluation for Acceptance of Change Request:**

Evaluation Comments

Name, Designation and Signature of Evaluator

Date of Evaluation

**10. Priority:** High / Medium / Low

**11. Approved:** Yes / No

Name, Designation and Signature of Approver

Date of Approval

Expected Date of Start of Work

Expected Date of Completion Work

## **ANNEXURE- XIX: ABSTRACT OF GTCC**

ABSTRACT OF GENERAL TERMS AND CONDITIONS OF CONTRACT

[ COMMERCIAL] TO ACCOMPANY PART-I:

(To be filled up by the tenderer as indicated in the excel sheet for “Acceptance of Important Terms and Conditions – Schedule-II)

## **ANNEXURE-XX (Reverse Auction Process Compliance Form)**

(To be submitted on letter head of the bidding company with sign and stamp and along with technical bid)

**To  
The CLD,  
SLDC, Bhubaneswar.**

Sub: Agreement to the Process related Terms & Conditions for e-Reverse Auction.

Dear Sir,

This letter is to confirm that:

- The undersigned is authorized representative of the company.
- We have studied the Commercial Terms and the Business rules governing the Reverse Auction as mentioned in your tender and confirm our agreement to that.
- We also confirm that we have gone through the auction manual and have understood the functionality of the same thoroughly.
- We, hereby, confirm that we will honor the Bids placed by us during the tendering/ e- Reverse auction process as called as e-RA.
- We also confirm that we will accept our Rank / Position that will be displayed when the Bidding Time for the Online Reverse Auction is over.

With regards,

Signature with Designation with company seal Name & Address

Person having power of attorney for the subject package.

# **PART-I**

## **SECTION IV**

### **SCOPE OF WORK**

#### **FOR DESIGN, DEVELOPMENT, SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF**

1. 0.2S ACCURACY CLASS AC TRI VECTOR ABT ENERGY METERS.
2. AMR (CDCS-MDAS) SOFTWARE (AT DC & DR), DCU ALONG WITH HARDWARE.
3. COMPREHENSIVE AMC FOR AMR SOLUTION AND AMC FOR ENERGY METERS

## SECTION IV: SCOPE OF WORK

The scope of the contract shall be Design, Development, Supply, Installation, Testing & Commissioning of 0.2S Accuracy Class AC Tri Vector ABT compliant Energy Meters, AMR (CDCS-MDAS) Software (at DC & DR) along with Hardware and Comprehensive AMC for AMR Solution & AMC for Energy Meters as per the specification, and rendering services in accordance with the technical specification and bill of quantity as a part for implementation of SAMAST solution in SLDC OPTCL as detailed.

- a. 0.2S accuracy Class AC Tri Vector ABT Energy Meters.
- b. DCU, LAN switch and other associated hardware with cables and connector to be installed at different grid substations of OPTCL.
- c. AMR (CDCS-MDAS) Software to be installed at existing Data Center & Disaster Recovery Center servers of SLDC/OPTCL.
- d. Comprehensive AMC for AMR solution software along with data acquisition system installed at DC and DR.
- e. Comprehensive AMC for Energy Meters

### 1 DETAILED SCOPE OF WORK:

The major scope of the project is listed below, which is not exhaustive and covers only the major requirement. Any changes that may require on account of changes in the rules and regulations and any item not listed specifically herein but required for fulfilling the objectives will be deemed to be included in the scope.

- a) Supply, installation, and commissioning of 0.2 S class AC static ABT (DLMS) complaint Tri vector Energy Meters, suitable for energy accounting and auditing with capability to record various parameters on 15 minutes/5 min/ regulation specified time block basis as per requirement at the interface points, which shall be intimate by SLDC, OPTCL.
- b) Supply, installation, and commissioning of DCU, along with the associated power supply at all interfacing points/ substations.
- c) Supply, installation of LAN Switch at all interfacing points/ substations.
- d) Supply and laying of Ethernet cable (Rj-45) CAT-6 LAN/ Network cable in PVC conduit including termination of ABT meter, DCU and Communication terminal of substation.
- e) Supply and installation of IT hardware including laying of LAN cable and termination complete in all respect.
- f) Supply, installation, and commissioning of Central Data Collection System (AMR) With CDCS-MDAS Software at DC and DR of SLDC, OPTCL.
- g) Integration of all DCU and ABT meters with CDCS at AMR(MDAS) server of SLDC DC &

DR and making meter data ready for use in Application server (Application server not in the Bidder's scope)

- h) Providing Technical support for all hardware and software so as to run the system up to specified availability requirement for six years, one year free of cost after Go-live of project and next five years under Annual technical support/ AMC contract.
- i) Imparting training to SLDC, OPTCL personnel at SLDC HQ and Operating personnel of substations/ interfacing points including AMC/ Technical support.
- j) Installation of meter, DCU and network LAN switch in existing substation/ State generating station/IPPS/ICTs in the OPTCL Transmission network are in the scope of this Tender. Future substations of OPTCL expected to be commissioned within 1 year, will come under the scope of bidder automatically at the same terms and condition of this Tender.

## 2 Scope of the Contractor

- a) Providing DCU at each substation of OPTCL for transfer of Energy meter data to SLDC/OPTCL Data Centre/ Disaster Recovery center.
- b) Providing LAN switch/s for connecting meter to DCU at each substation
- c) 5G modems for GSM connectivity. (Where no other communication channels are available).
- d) All station wiring using shielded cat6/RJ45 cable connecting meters and DCU via LAN Switch. If distance is greater than 50m OFC cable shall be used for connection. Wiring required for placement of 5G modem antenna for optimum signal strength.
- e) Supplier will provide comprehensive AMC support to SLDC to meet up with service levels for the solution to be measured on monthly basis, in accordance with the Service Level Agreement (SLA).
- f) At present there are about 2600 Energy Meters (IEMs) including existing and replacement for billing and audit purposes, installed at about 210 locations within the State. At present, there are 50 Nos. of interface points with inter-state transmission system. ABT complaint energy meters have been installed by PGCIL at these interface points. Some additional locations/ interface points may also come up during commissioning of the project or after commissioning of the project.
- g) The successful bidder will prepare detailed Project implementation schedule (Pert/Gantt chart) and submit to SLDC, OPTCL for approval before execution of work.
- h) Details of Comprehensive AMC & Service Level Agreement are as Scope of Warranty & AMC Section VI-A and VI-B of Part I of this document.

- i) Training Requirements of the Owner's (SLDC, OPTCL) personnel will be as per the Training section of this document.
- j) The scope includes recurring, non-recurring, license, permissions, liaison etc along with the fees, charges, etc. if any for all ABT Meter, hardware, software, installation, etc. for commissioning, warranty period and for the AMC period.
- k) The bidder will also be responsible for incidentals related/ unrelated which may crop up to complete the project within the agreed timelines. Any permission, license/ tripartite agreement with the communication service provider to be executed, etc. if required to be obtained for the Project from any competent authorities, as may be prescribed/ required for its use/ for performance enhancement/ achieving Service Levels, should be in the name of SLDC, OPTCL.
- l) However, any reasonable assistance required by bidder from the Purchaser so that any licenses/ permissions, etc. as may be required, will be provided, but any expenditure on this account will have to be borne by the bidder. All such support required from SLDC, OPTCL must be brought out clearly in the proposed solution. However, such activity should be undertaken in time bound manner so as not to delay the Project commissioning from the proposed schedule.
- m) The Software upgradation/change of the system supplied & installed by the bidder will be comprehensive and will be provided by the Supplier at no additional cost to the Purchaser. At the end of the Comprehensive AMC, all the faulty software/equipment will be got rectified by the bidder before handing over the same to Purchaser. Further, the hardware/software support for entire warranty and AMC period must be provided by the bidder and its corresponding back-end arrangements with OEM must be declared in the contract. CAMC period may also be extended on mutually agreed terms if required at later stage.
- n) In short, the bidder will have absolute responsibility for the Project from Start to Finish, for End-to-End complete Solution for Implementation and during warranty and AMC period, which would be further extendable as mutually agreed terms if required at later stage. This includes but not limited to sites surveys, planning, design, detailed engineering, procurement, manufacture, assembly, factory testing, packing, supply & delivery at site, handling, insurance of all types/ events/ purposes & storage at sites along with all the accessories, interfacing requirements i.e. wires/ cables/ connectors/ Terminal blocks/ enclosures/ cabinets, lock & key arrangement, site preparations, earthing, erection, installation, integration, networking, testing at site, end to end testing, guaranteed availability tests, performance testing, commissioning, training, purchaser's capacity building to independently handle, maintain & further develop the system, finally handing over (however custody of the implemented equipment/ sub-systems/ system will be of Purchaser from the day it is paid for/ declared commissioned)

- o) Project after the expire of AMC period, the bidder should have the willingness to extend the AMC contract for further period as per mutual agreement, supporting & providing the necessary information to the Purchaser / third party in case AMC agreement is not extended by any party due to any reason. Implementation and AMC also includes further development of the system, the need for which may evolve during working with the system, due to new requirements or due to change in policies.
- p) The supplier will ensure that the supplied equipment have been got tested as per relevant contemporary Indian or International Security Standards e.g. related elements against ISO/IEC 15408 standards, for Information Security Management System against ISO 27000 series Standards,
- q) The supplier will allow the Purchaser and/or its designated agencies to inspect the meter/hardware, software, design, development, manufacturing, facility and supply chain and subject all software to a security /threat check any time during the supplies of equipment. A record of all supply chains of the products (hardware/software) will be given to the Purchaser. In case of any deliberate attempt for a security breach at the time of procurement or at a later stage after deployment/installation of the equipment or during maintenance, liability and criminal proceedings can be initiated against the Supplier as per guidelines of DoT and any other Government department.
- r) The Supplier will ensure that all the documents, including hardware and software details are supplied to the Purchaser in English language. A record of all the software updation and changes will be given to the Purchaser and any major updation and changes will be done with the prior approval of the Purchaser. During maintenance period the Supplier will keep a record of all operation and maintenance procedure in the form of manual and will also maintain a record of all command logs (actual command given, who gave the command, time & date and from where) for a period of 12 months. The same information will be stored/retained in a non-online mode. A list of all User ID linked with name and other details of the user duly certified by the Purchaser will also be maintained.
- s) The involvement of the bidder will not cease with the commissioning of the system or will not be limited to Comprehensive AMC of the commissioned system only, but bidder will have to remain committed and evolve the functions/ functionalities of the system during pre or post commissioning in partnership with SLDC, OPTCL.
- t) **The bidder will ensure 100 % (Hundred) availability of energy meter data to SLDC.**



# **PART-I**

## **SECTION – V**

### **TECHNICAL SPECIFICATIONS**

#### **SCHEDULE OF TECHNICAL REQUIREMENTS**

**AND DETAILED TECHNICAL SPECIFICATIONS FOR SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF 0.2 S ACCURACY CLASS AC TRI-VECTOR ABT COMPLIANT ENERGY METERS,**

**DESIGN & IMPLEMENTATION OF AMR SOLUTION ALONG WITH HARDWARE AT DIFFERENT GRID SUBSTATIONS & SOFTWARES AT DC & DR OF OPTCL, FOR STATE LOAD DESPATCH CENTER, OPTCL, ODISHA.**

<b>Contents</b>		
<b>Sl. No</b>	<b>Particulars</b>	
1	System Architecture and Functions.	
2	ABT Meters	
3	Metering Panel	
4	Data Concentrator Units (DCU)	
5	Network switch for LAN	
6	AMR (CDCS with MDAS) Software	
7	Scope of work for AMR project	
8	Planning and Procedure for Testing (FAT/SAT/STLC Software Testing Life Cycle)	
9	Commissioning of Energy Meter & Hardware	
10	Training	
11	Guaranteed Technical Particulars	

## ABBREVATIONS

<b>Acronyms</b>	<b>Definitions</b>
ABT	Availability Based Tariff
ALDC	Area Load Dispatch Centre
AMC	Annual Maintenance Contract
AMI	Advanced Metering Infrastructure
AMR	Automated Meter Reading
API	Application Program Interface
ARR	Annual Revenue Requirement
ATC	Available Transfer Capability
BCS	Basic Computer Software
BIOS	Basic Input / Output System
CDCS	Central Data Collection System
CEA	Central Electricity Authority
CEO	Chief Executive Officer
CERC	Central Electricity Regulatory Commission
CIM	Common Information Model
CMRI	Common Meter Reading Instruments
COD	Commercial Operation Date
CPP	Captive Power Plant
CPU	Central Processing Unit
CT	Current Transformer
CVT	Capacitor Voltage Transformer
DBMS	Database Management System
DC	Declared Capacity
DCU	Data Concentrator Unit
DISCOM	Distribution Company
DLMS	Device Language Message Specification

<b>Acronyms</b>	<b>Definitions</b>
DPR	Detailed Project Report
DSM	Deviation Settlement Mechanism
DVD-ROM	Digital Versatile Disc Read-only memory
DVD-RW	Digital Versatile Disc Re-Writable
EA	Electricity Authority
EHT	Extra High Tension
EMASS	Energy Metering Accounting and Settlement System
EMS	Energy Management System
ERLDC	Eastern Region Load Dispatch Centre
ERP	Enterprise Resource Planning
ERPC	Eastern Regional Power Committee
FC-AL	Fiber Channel Arbitrated Loop
FOR	Forum of Regulators
Gbps	Gigabytes per second
G-DAM	Green Day-ahead market
G-TAM	Green Term-ahead market
GPRS	General Packet Radio Service
GPS	Global Positioning System
GSM	Global System for Mobile
HES	Head End System.
HT	High Tension
HTTP	Hypertext Transfer Protocol
HV	High Voltage
HVDC	High Voltage Direct Current
I/O	Input-Output
ICCP	Inter Control Centre Protocol
ICU	Interface Converter Unit

<b>Acronyms</b>	<b>Definitions</b>
IDS	Intrusion Detection System
IEM	Interface Energy Meter
IMS	Information Management System
ISTS	Intra-state Transmission System
IPP	Independent Power Producer
IPS	Intrusion Prevention System
ISMS	Information Security Management System
ISP	Internet Service Provider
IT	Information Technology
JITPL	Jindal India Thermal Power Ltd.
Kv	Kilovolt
KVM	keyboard, video, and mouse
KYC	Know Your Consumer
LDC	Load Dispatch Centre
LT	Low Tension
LTOA	Long Term Open Access
LUN	Logical Unit Number
MIS	Management information system
Mgmt.	Management
MPLS	Multiprotocol Label Switching
MTOA	Medium Term Open Access
MTPS	Mejia Thermal Power Station
MU	Million Unit
NEFT	National Electronic Funds Transfer
NLDC	National Load Dispatch Centre
NL-SATA	Near Line Serial AT Attachment
NPC	National Power Committee
OA	Open Access

<b>Acronyms</b>	<b>Definitions</b>
OEM	Original Equipment Manufacturer
OHPC	Odisha Hydro Power Corporation Ltd
OPGC	Odisha Power Generation Corporation
OPGW	Optical Ground Wire
OS	Operating System
PCI	Peripheral Component Interconnect
PDU	Protocol Data Unit
POSOCO	Power System Operation Corporation
PPA	Power Purchase Agreement
PSDF	Power System Development Fund
PT	Potential Transformer
QCA	Quality Control and Assurance
QCA	Qualified coordinating agency
RAID	Redundant Array of Independent Disks
RE	Renewable Energy
REC	Renewable Energy Certificate
REMC	Renewable Energy Management centre
RES	Renewable Energy Sources
REST	Representational State Transfer
RLDC	Regional Load Dispatch Centre
RPC	Regional Power Committee
RPM	Revolutions per minute
RRF	Renewable Regulatory Fund
RTGS	Real Time Gross Settlement
S/S	Substation
SAMAST	Scheduling, Accounting, Metering and Settlement of Transactions in Electricity
SAN	Storage Area Network

<b>Acronyms</b>	<b>Definitions</b>
SAS	Statistical Analysis System
SCADA	Supervisory Control and Data Acquisition
SGS	State Generating stations
SHP	Small Hydro Project
SLDC	State Load Dispatch Centre
SRS	Software Requirements Specification
SSD	Solid State Drive
SSGS	State Sector Generating Stations
STOA	Short Term Open Access
STPS	Super Thermal Power Station
STU	State Transmission Utility
TDS	Tax Deducted at Source
TFT	Thin-film Transistor
TOD	Time of Day
TOU	Time of Use
TRAS	Tertiary Reserve Ancillary service
TSTPP	Talcher Super Thermal Power Plant
UI	Unscheduled Interchange
UPS	Uninterrupted Power Supply
URS	User Requirement Specifications
UTM	Unified Threat Management
VAP	Vulnerability Assessment and Penetration Testing
WBES	Web based Energy Scheduling
WEG	Wind Energy Generator

## TECHNICAL SPECIFICATIONS

### 1.0 SYSTEM ARCHITECTURE:

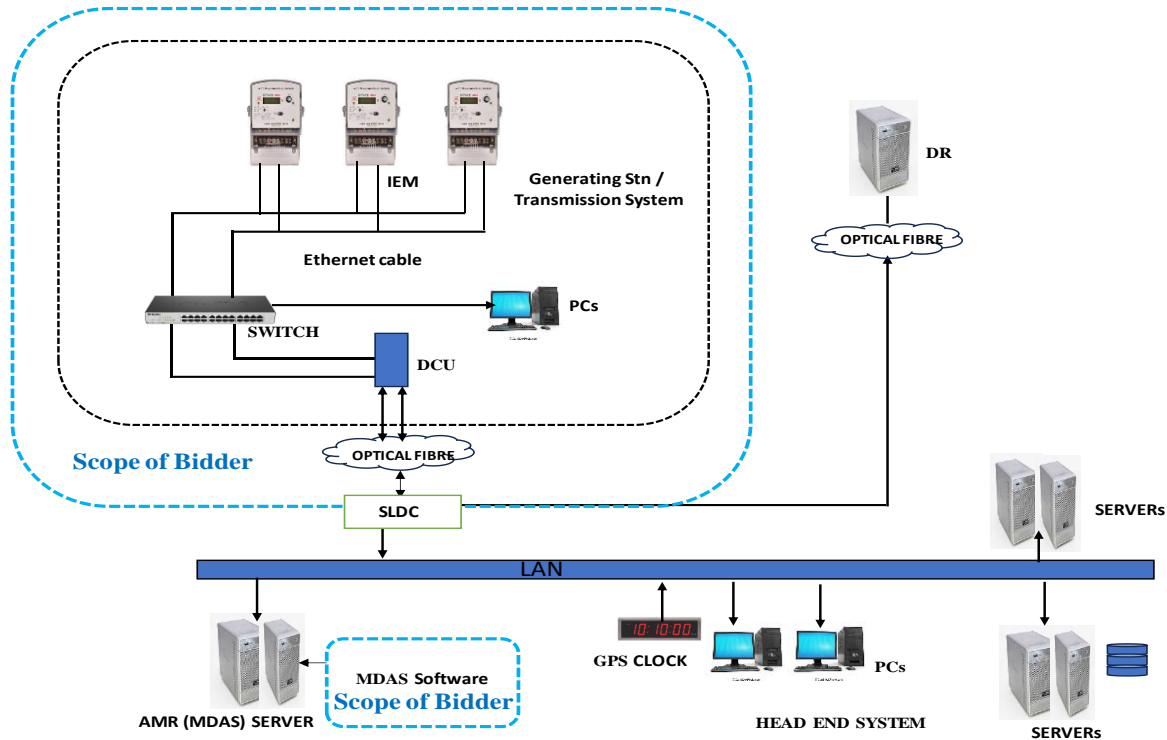


Figure 1 Typical System Architecture

- The proposed system architecture is shown above is an indicative one for reference of bidders which shall be customized at the time of detailed engineering:
- All ABT compliance meters with TCP/ IP port shall be connected to DCU through a LAN, network switch at the interfacing point/substation and thereafter meter data shall be communicated to SLDC/OPTCL via OFC/ GPRS media. Further from SLDC the meter data shall be communicated to DC. The same data from DC shall be communicated to DR through SLDC network.
- An application software i.e AMR (CDCS & MDAS) shall be installed in existing AMR(MDAS) servers at SLDC/OPTCL DC /DR to get meter data in an automated manner from each substation/ interfacing point.
- At Station end, Ethernet port of all meters shall be connected to DCU by using a managed LAN switch via shielded Cat6/RJ45 cable.



## 1.1 Functionality

- i.** A DCU installed at each location shall act as an interface between Central Data Collection System (CDCS) at SLDC/OPTCL DC & DR and interface energy meters (IEMs) installed at that location. DCU shall form a VPN between energy meters in that station and CDCS at DC as well as DR, for secure transfer of meter data.
- ii.** DCU shall have connectivity to Data Center through the existing OPGW network of OPTCL available for all most all the Sub stations/ Generating stations/ Inter-state ICTs/OA customers. There should be two or more multiple communication channels available to each node for providing communication redundancy. GPRS mode communications shall be used in stations where OPGW link is not available.
- iii.** DCU shall have enough surge protection for operation in the substation environment. The Contractor shall provide free replacement of networking at station throughout the project period.
- iv.** All wiring between switch and DCU and also between switch and energy meters shall be in the scope of contractor. Installation and supply of LAN Switch, DCU and other accessories required for setting up AMR at substation shall be in the scope of contractor. If the length of Ethernet connection between components exceeds 50-meter, optical fiber cable shall be used along with media converters and in the scope of contractor. Contractor shall arrange racks and wiring between the gateway to broadband modem/OFC SDH /modem. Power supply wiring to the networking components shall be in the scope of Contractor.
- v.** The Contractor shall meet the SLA for the networking elements, including replacement of the defective/ or end-of-life parts, throughout the entire Warranty and AMC period.
- vi.** Availability of meter data shall be calculated based on the downtime of all meters aggregated over the assessment period, excluding the downtime due to defect of meters, feeders or machine outages, outage of communication channel, but including failure of networking components supplied by the contractor.
- vii.** Penalty will be 1% for every 1% or part there of decrease in availability under 99%.
- viii.** An application software (CDCS-MDAS) for Meter Data Acquisition and online monitoring of ABT meter shall be installed at DC & DR server and shall get meter data in an automated manner from each substation/ interfacing point.
- ix.** Meter data available at AMR(MDAS) server shall be in the formats, which can be used in other application servers.

## **2.0 TECHNICAL SPECIFICATIONS OF 0.2S ACCURACY CLASS ABT TRI VECTOR ENERGY METERS**

Technical specifications of 0.2 S accuracy Class AC static ABT (DLMS) complaint Tri vector energy meters suitable for Energy Accounting & Auditing.

### **2.1 SCOPE**

The specification covers the design, manufacturing, inspection & testing, supply & delivery at destination of class 0.2S accuracy CT/ PT operated fully static AMR compatible Tri vector energy meters with DLMS protocol along with metering panel. The meters shall be used for interface metering for inter utility power flows/ bulkconsumers as well for Availability Based Tariff (ABT) at different grid sub stations of OPTCL.

### **2.2 GENERAL FEATURES**

The energy metering system specified herein shall be used for tariff metering for bulk, inter-utility/intra-utility G to T, T to D power flows. Static composite meter shall be installed at interface points to record and display Active Imp (kW & kWh), Active Exp (kW & kWh), Reactive Imp while Active Imp, Reactive Exp while Active Imp, Reactive Imp while Active Exp, Reactive Exp while Active Exp (in kVar & kVarh), Bidirectional Active (I-E) (in kW & kWh), Apparent P-Active (I), Apparent Power-Active (E), V1, V2, V3, I1, I2 and I3 etc. for 3 phase4 wire AC balanced/unbalanced loads for a power factor range of zero (lagging) through unity up to zero (leading).

One composite meter shall be installed for each circuit, as a self-contained device for measurement of power transmitted, as described herein, in each successive 15-minute block/ 5 min block/regulation specified block, and certain other functions, detailed in the following paragraphs.

In each successive 5 min time block as per requirement given in this specification, the meter shall confirm to the following standards along with latest amendments, if any.

Each meter shall have a unique identification code, which shall be marked permanently on its front, as well as in its memory. All meters supplied to as per this specification shall have their identification code starting with "OPTCL", which shall not be used for any other supplies. "OPTCL" shall be followed by an eight-digit running serial number. CT ratio of 1A or 5A shall be user configurable or shall be of single rating. This shall be mutually agreed between the buyer and the vendor.

The microprocessor/ micro controller-based meter shall be complied with Indian Companion Standard (ICS) of Category B for DLMS specification. The Category B specifies the parameters to be used for Boundary/ Bank/ Ring Fencing/ ABT metering along with other additional features.

The meter shall have wide secondary current range support i.e. same meter shall be put up for 1A or 5A rating as per field availability of CT's. The meter shall support 200% I basic. The meter shall be suitable for connection to 3 phase 4 wire & 3 phase 3 wire metering type with corresponding secondary CT value. Metering equipment shall be site selectable at physical connection point/ software based programmable/ configurable for receiving 1A or 5A secondary current input in each phase.

The material used for manufacturing the meters shall, however, conform in all respects to the best industry standards of engineering, design and workmanship and shall be capable of performing for continuous commercial operation in a manner acceptable to the purchaser. The offered equipment shall be complete in all respects including all components/ accessories for effective and trouble-free operation according to the specifications. Such components shall be deemed to be within the scope of this specification irrespective of whether those are specifically brought out or not.

The Metering equipment shall have enhanced communication facilities such as Ethernet, RS 485, RS 232, optical etc. The metering equipment shall have Binary/ Digital programmable at least four numbers Binary/ Digital inputs & 4 numbers Binary/ Digital outputs. Binary/ Digital inputs/ outputs may be configurable to Meters time- synchronizing purpose or other parameters such as pre-defined ranges of average frequencies/ over drawal in last IP in VA/ under frequency for development of Smart metering. The Metering equipment shall have firmware up- gradation facilities/ BCS software up-gradation facilities with added hardware facilities for Smart Metering.

Meter shall have a facility of recording required pre-defined meter data like instantaneous parameters by initiating binary input of meter and store it as disturbance in tamper (Optional).

The Metering equipment shall have Watch-dog LED for healthiness of its Power Supply units.

### 2.3 METER STANDARDS

The equipment shall conform (for testing, performance and accuracy) in all respects the relevant Indian/ International metering standards with latest amendments thereof unless otherwise specified.

Table 17:–Meter Standards

Sl.	Standard No.	Title
1.	IS 14697-1999 With latest	AC static transformer operated Watt-hour and VAR-
2.	CBIP technical report no. 304/325 (Magnetic immunity)	Specification for AC static electricity energy meters
3.	IS 15959 – 2011 DLMS companion	AC static transformer operated Watt hour and VAR
4.	IEC 60687-2000	AC static Watt-hour meters for active energy, class

5.	IEC 60297	Dimensions of mechanical structures of 482.6 mm
6.	IS-9000	Basic environmental testing procedures for electronic
7	IEC 62053-33, IEC 62053-22-2003 & IEC 62052-11-	2003 AC Static Watt-hour Meters for Active Energy, class 0.2S & 0.5S
8	Any other Standards related with this Technical Specifications	

## 2.4 CLIMATIC CONDITIONS

The meters to be supplied against this specification shall be required to operate satisfactorily and continuously under the following tropical conditions of hot, hazardous, humid, rust and fungus prone environment and shall be dust and vermin proof. Parts and surface, which are subject to corrosion, shall be provided with protective coating.

- |    |  |       |
|----|--|-------|
| a. | Max. ambient air temperature (°C)      | 55    |
| b. | Min. ambient air temperature (°C)      | : -5  |
| c. | Average daily ambient air temp. (°C)   | 32    |
| d. | Max. Relative Humidity (%)             | : >95 |
| e. | Min. Relative Humidity (%)             | 10    |
| f. | Max. Altitude above mean sea level (m) | 1000  |
| g. | Average Annual Rainfall (mm)           | 1200  |
| h. | Max. wind pressure (Kg/Sq. m)          | 195   |
| i. | Iso ceraunic level (days per year)     | 50    |
| j. | Seismic level (Horizontal Accn. in g)  | : 0.3 |

## 2.5 PRINCIPAL PARAMETERS

The energy meter shall be indoor type connected with the secondary side of outdoor current and voltage transformers and mounted in existing meterpanel/ C & R panel.

Table 18: List of Principal Parameters

Sl. No		
1.	Type of Installation	Indoor metering panel/ cubicle mounted
2.	Mode of connection	3-ph 4-wire
3.	PT secondary	3x110V/ $\sqrt{3}$ Phase to Neutral (3P4W). Variation -30% to +20%

4.	CT secondary	3 x -/1 Amps or 3 x -/5 Amps (configurable as per requirement)
5.	Dual Auxiliary Supply	110/240V AC & 110/220 V DC (-20% to +15%)
6.	System frequency	50HZ +/- 5%
7.	Earthing System	Solidly Grounded

The meter should be suitable for working with above supply variations without damage and without degradation of its metrological characteristics.

## 2.6 FUNCTIONAL REQUIREMENTS:

The indented metering equipment shall be Microprocessor/Micro-controller based **universal intelligent Electronic device (UIED)** that shall have at least the following functional features:

- 
- a. Metering equipment shall be programmed to be operated as the ABT meters as per CEA metering regulation 2006 and its latest amendments, if any.
- b. Metering equipment may also be programmed to be operated as the Import/export with or without TOD features as per CEA metering regulation 2006 and its latest amendment, if any.
- c. Metering equipment may also be programmed to be operated as the normal consumer Tariff metering with or without TOD features as per CEA metering regulation 2006 and its latest amendment, if any.
- d. Firmware of the proposed Metering equipment shall be upgradable in future use in case to serve the requirement of Standards/Regulation.

## 2.7 CONSTRUCTIONAL REQUIREMENTS:

- a. The Meter shall be housed in a single unit/enclosure which shall be flush- mounted/ project mounted at indoor panels.
- b. Meters shall be designed and constructed in such a way so as to avoid causing any danger during use and under normal conditions. However, the following should be ensured:
  - i) Personnel safety against electric shock
  - ii) Personnel safety against effects of excessive temperature
  - iii) Protection against spread of fire
  - iv) Protection against penetration of solid objects, dust and water in normal working condition
- c. All the materials and electronic power components used in the manufacture of the meters shall be of highest quality and reputed make to ensure higher reliability, longer life and sustained accuracy. Insulating materials used shall be of non-hygroscopic and non-ageing type. All parts that are likely to develop corrosion shall be effectively protected against corrosion by providing suitable protective coating.
- d. The meters shall be designed with application specific integrated circuits. Meter should be manufactured using preferably SMT (Surface Mount Technology, preferably Type-I) for the

components on the PCB. Power supply unit shall be designed with latest well proven technology.

- e. The meter shall be provided with in-built accurate and highly stable quartz crystal based real time clock and calendar.
- f. The metering system when mounted in panel shall conform to the degree of protection IP- 53 in the normal working condition of IS 12063/ IEC 529 for protection against ingress of dust and moisture.
- g. The meter shall be Rack/Panel mounted type.
- h. Availability of automatic CT shorting facility shall be a preferred feature
- i. The manufacturer shall ensure the quality in the following stages:
  - i. At PCB manufacturing stage, each board shall be subjected to computerized bare board testing.
  - ii. At insertion stage all components should undergo computerized testing for conforming to design parameters and orientation.
  - iii. Complete assembled and soldered PCB should undergo functional testing using Automatic Test Equipment.
  - iv. Prior to final testing and calibration, all meters shall be subjected to accelerate ageing test to eliminate infant mortality.
  - v. The calibration of meters shall be done in-house.

## **2.8 TERMINAL & TERMINAL BLOCKS**

Separate terminal block should be used for termination of service cable. The terminal block of the meters should be of high-grade engineering plastic, which should form an extension of the meter case and should have terminal holes of sufficient size. The manner of fixing the conductors to the terminals should ensure adequate and durable contact such that there is no risk of loosening or undue heating. Screw connections transmitting contact force and screw fixings that may be loosened and tightened several times during the life of the meter.

All parts of each terminal should be such that the risk of corrosion resulting from contact with any other metal part is minimized. The clearances and creep age distances should conform to relevant standard.

## **2.9 METER COVER & SEALING**

The Meter Case & Cover shall conform to relevant IS.

Proper sealing arrangement shall be provided in metering system as follows:

- i) Two numbers sealing screws shall be provided on the front cover of each meter.

- ii) Provision shall be available to seal the terminal block of the meter.
- iii) Provision shall be available to seal the back connections on the metering rack using the back plate, in case of supply of the meter rack with meter.
- iv) Provision shall be available to seal optical port of the meter.

The sealing arrangement should be suitable for application of Polycarbonate seals.

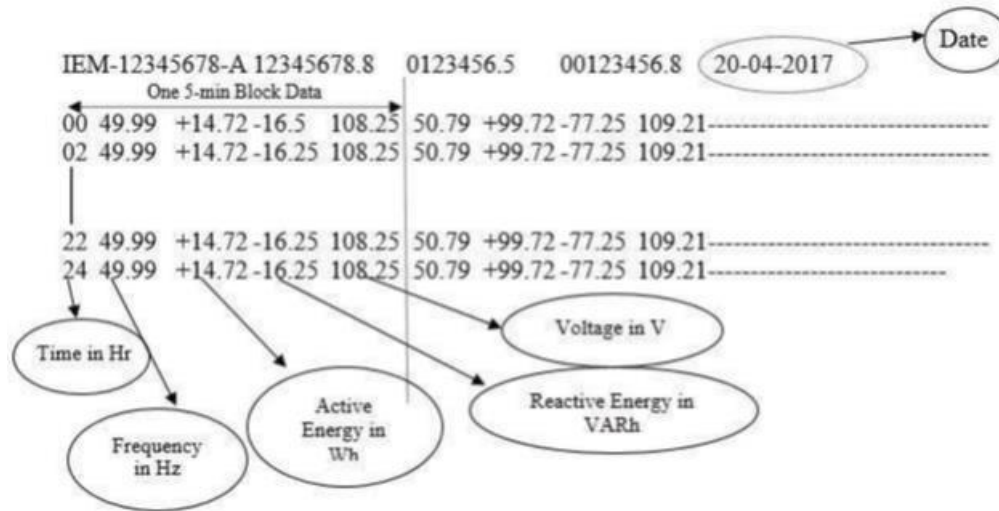
## **2.10 TECHNICAL REQUIREMENTS**

### **a) DISPLAY**

- i. The meter shall have Graphical LCD type display with backlight and soft push button for proper depicting of values in user friendly manner. Individual display shall be provided for all the meters housed in a metering rack.
- ii. The display shall indicate direct values (i.e. without having to apply any multiplying factor) of measured/ computed parameters as per the meter commissioning. It should be possible to easily identify the single or multiple displayed parameters through legends on the metering system display like graphs, values with unit, OBIS codes etc.
- iii. The Meter shall have at least 8-digit LCD display. The different parameters shall be cycled by a Push Button. Push Button operation shall have the higher priority over the Auto Display. The Display shall revert back to Auto Mode after a certain time after the last push button operation.
- iv. The whole system shall be such as to provide a print out (both from the local PC, and from remote central computer) of the following format:



Figure 2: Standard raw data format for IEM



- v. 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. The register shall not roll over in between this duration.

## b) MARKING OF METER

The marking on every meter shall be in accordance with IS 14697. The basic marking on the metering module name plate shall be as follows:

- i. Manufacturer's name and trade mark
- ii. Type Designation
- iii. Serial Number
- iv. Year of manufacture
- v. Number of phases and wires
- vi. Reference voltage
- vii. Rated secondary current of CT
- viii. Reference frequency
- ix. Meter Constant
- x. Accuracy Class
- xi. Auxiliary Supply Voltage

Additionally, following information shall also be available on name plate.

- i) Property Of "Purchaser name"
- ii) P.O. No. "Number"



**c) CONNECTION DIAGRAM**

The connection diagram of the meter for both 3P4W & 3P3W mode shall be available permanently on meter terminal cover. The meter terminals shall be properly marked to identify voltage, Current, Auxiliary power supply, communication ports and output terminals etc.

**d) ACCURACY**

Class of accuracy of the metering system shall be 0.2S for energy measurement. The accuracy should not drift with time.

**e) STARTING CURRENT**

The metering module should start registering the energy at 0.1%  $I_b$  and unity power factor.

**f) MAXIMUM CURRENT**

The rated maximum current of the meter shall be 200% of basic current ( $I_b$ ).

**g) PHASE SEQUENCE**

The meter shall work accurately irrespective of phase sequence of the mains supply

**h) POWER FACTOR RANGE**

The metering system shall be suitable for full power factor range from zero (lagging) through unity to zero (leading). The metering module shall work as an active energy import and export meter along with reactive (lag and lead) meter. The energy measurement should be true four-quadrant type.

**i) POWER CONSUMPTION OF METER**

- i) The meter must be capable to operate with the power drawn station PT supply in normal condition and shall auto switch over to the Auxiliary Power supply (AC/DC) in case of Station PT supply failure.
- ii) Voltage Circuit: The active and apparent power consumption in each voltage circuit including the power supply of metering module at reference voltage, reference temperature and reference frequency shall be as per IS 14697
- iii) Current Circuit: The apparent power taken by each current circuit at basic current, reference frequency and reference temperature shall be as per IS 14697

**j) PROTECTION OF METER**

The meters shall be suitable for being connected directly through its terminals to PT's having a rated secondary line-to-line voltage of 110 V, and to CTs having a rated secondary current of 1A or 5A. 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 PT and CT circuits of extra high voltage switchyards.

The meters shall safely withstand the usual fluctuations arising during faults etc. In particular, 115% of rated PT secondary voltage applied continuously and 190% of rated voltage applied for 3.0 seconds, and 20 times of rated CT secondary current applied for 0.5 seconds shall not cause any damage to or malfunctioning of the meters. Further the immunity of metering system to external magnetic field shall be as per latest CBIP recommendations.

#### k) MEASUREMENT QUANTITIES

- i. The active energy measurement shall be carried out on 3 phase, 4 wire principle with an accuracy as per class 0.2S of IS14697. The meters shall compute the Active Imp (kW & kWh), Active Exp (kW & kWh), Reactive Imp while Active Imp, Reactive Exp while Active Imp, Reactive Imp while Active Exp, Reactive Exp while Active Exp (in kVar & kVarh), Bidirectional Active (I-E) (in kW & kWh), Apparent P-Active (I), Apparent Power-Active (E), V1, V2, V3, I1, I2 AND I3 during each successive 15/5 minutes integration period block [programmable] and store it in its non-volatile memory.
- ii. The meter shall compute the average frequency during each successive 15/ 5 minutes block and store in its memory.
- iii. The meter shall compute the reactive power on 3-phase, 4-wire principle, with an accuracy as per relevant IS/ IEC standards, and integrate the reactive energy algebraically into two separate reactive energy registers, one namely **Net Reactive High** for the period for which the average RMS voltage is greater than 103% / regulation specified, and the other namely **Net Reactive Low** for the period for which the average RMS voltage is below 97% / regulation specified. When reactive power is being sent out from substations bus bars, reactive registers shall move forward (Import). When reactive power flow is in the reverse direction, reactive registers shall move backwards (Export). The meter shall also store **Reactive High Import, Reactive High Export, Reactive Low Import & Reactive Low Export** in four separate registers.
- iv. Further, the reactive energy shall also be available in four different registers as-
  1. Reactive import while active import (Quadrant 1)
  2. Reactive import while active export (Quadrant 2)
  3. Reactive export while active export (Quadrant 3)
  4. Reactive export while active import (Quadrant 4)
- v. Active and Apparent energies shall also be made available by meter in separate energy registers as –

1. Active energy Import
  2. Active energy Export
  3. Apparent energy (while active import)
- vi. Apparent energy (while active export)

#### **l) MEASUREMENT OF APPARENT ENERGY**

Meter shall have provision to compute apparent energy based on lag only or lag+ lead. The same shall be configured at site through authenticated password protected Software.

TOD (optional)

The meter shall have TOD registers for active energy import and export, apparent energy when active import and export and apparent MD when active import and export. Maximum eight nos. time of day registers including universal (0-24hrs) register can be defined. It shall be possible to program number of TOD registers and TOD timings through suitable high-level software as an authenticated transaction.

#### **m) MD REGISTRATION**

The meter shall continuously monitor and calculate the average demand of configured parameter during the integration period set and the maximum, out of these shall be stored along with date and time when it occurred in the meter memory. The maximum demand shall be computed on fixed block principle. The maximum registered value shall be made available in meter readings. The integration period shall be set as 15 minutes that shall be capable to change to other integration period (5/ regulation specified minutes), if required, as an authenticated transaction.

#### **n) MD RESET**

Following provisions shall be available for MD reset in meter –

- i) Auto billing at predefined date and time
- ii) Manual via common MD reset button (optional)
- iii) Authenticated transaction through suitable high level software

#### **o) DISPLAY PARAMETERS**

Each meter shall display the following parameters on demand & in Auto scroll mode:

- i. LCD segment check
- ii. Date
- iii. Time
- iv. Cumulative active energy import
- v. Cumulative active energy export
- vi. Cumulative net active (Import – Export) energy

- vii. Cumulative reactive energy lag while active import
- viii. Cumulative reactive energy lead while active export
- ix. Cumulative reactive energy lag while active export
- x. Cumulative reactive energy lead while active import
- xi. Cumulative apparent energy (while active import)
- xii. Cumulative apparent energy (while active export)
- xiii. Cumulative Reactive High energy import
- xiv. Cumulative Reactive High energy export
- xv. Cumulative Net Reactive High energy
- xvi. Cumulative Reactive Low energy import
- xvii. Cumulative Reactive Low energy export
- xviii. Cumulative Net Reactive Low energy
- xix. Last 15/ regulation specified minutes block average of active import energy
- xx. Last 15/regulation specified minutes block average of active export energy
- xxi. Last 15/regulation specified minutes block average of the net active (Import – Export) energy
- xxii. Last 15/regulation specified minutes block average frequency
- xxiii. MD reset count
- xxiv. Maximum demand apparent (while active import) for current month (0-24 hrs)
- xxv. Maximum demand apparent (while active export) for current month (0-24 hrs)
- xxvi. Cumulative active import energy reading of predefined date and time for monthly billing purpose
- xxvii. Cumulative active export energy reading of predefined date and time for monthly billing purpose
- xxviii. Cumulative net active (Import – Export) energy reading of pre-defined date and time for billing purpose
- xxix. Cumulative apparent energy (while active import) reading of predefined date and time for monthly billing purpose
- xxx. Cumulative apparent energy (while active export) reading of predefined date and time for monthly billing purpose
- xxxi. Maximum demand for apparent (while active import) of predefined date and time for monthly billing purpose
- xxxii. Maximum demand for apparent (while active export) of predefined date and time for monthly billing purpose
- xxxiii. Present anomaly status
- xxxiv. Date of first occurrence of anomaly
- xxxv. Time of first occurrence of anomaly
- xxxvi. Time of last restoration of anomaly

- xxxvii. Date of last restoration of anomaly
- xxxviii. Total anomaly count
- xxxix. The display shall indicate direct values (i.e without having to apply any multiplying factor) of measured/computed parameters as per the meter commissioning. It shall be possible to easily identify the single or multiple displayed parameters through legends on the metering system display. The graphical display shall be capable to show vector diagram, harmonics & other display parameters. The register shall be able to record & display starting from zero, for a minimum of 1500 hours, the energy corresponding to the rated maximum current at reference voltage & unity power factor. The register shall not rollover in between this duration.

There should be a facility to configure the display parameters in a selectable manner.

#### p) **LOAD SURVEY**

Each metering module shall have a non-volatile memory in which the following shall be automatically stored for each successive block:

- i. Active import energy
- ii. Net Active energy
- iii. Active export energy
- iv. Average frequency
- v. Apparent energy while active import
- vi. Apparent energy while active export
- vii. Reactive energy lag while active import
- viii. Reactive energy lead while active export
- ix. Reactive energy lag while active export
- x. Reactive energy lead while active import
- xi. Reactive energy High import
- xii. Reactive energy High export
- xiii. Net Reactive energy High
- xiv. Reactive energy Low import
- xv. Reactive energy Low export
- xvi. Net Reactive energy Low
- xvii. Average Line Voltage
- xviii. Average Line Current
- xix. Average Power Factor

For Conversion of these meter data in editable format, the above load survey parameters and also all the event information shall be available in the same editable file, i.e. (.txt, .csv, xml etc.) as per

requirement of SLDC.15/ regulation specified minutes block average of the above parameters shall be available for minimum last thirty five (35) days. It shall be possible to select either energy or demand view at Base Computer Software (BCS) end. The load survey data should be available in the form of bar charts as well as in spreadsheets. The BCS shall have the facility to give complete time synchronized load survey data both in numeric and graphic form.

**q) BILLING PARAMETERS**

The predefined date and time for registering the billing parameters of shall be hours of the first day of each calendar (billing) month. Each meter shall store the following parameters corresponding to defined bill dates and cumulative of all parameters for up to minimum last six (6) months:

- i. Active energy import
- ii. Active energy export
- iii. Apparent energy (while active import)
- iv. Apparent energy (while active export)
- v. Reactive energy import (while active import)
- vi. Reactive energy export (while active import)
- vii. Reactive energy import (while active export)
- viii. Reactive energy export (while active export)
- ix. Maximum demand Apparent (while active import)
- x. Maximum demand Apparent (while active export)

**r) MID-NIGHT PARAMETERS**

The metering modules shall store following end day parameters for minimum last thirty-five (35) days:

- i) Cumulative Active energy import
- ii) Cumulative Active energy export
- iii) Cumulative Apparent energy (while active import)
- iv) Cumulative Apparent energy (while active export)
- v) Reactive High energy import
- vi) Reactive High energy export
- vii) Net Reactive High energy
- viii) Reactive Low energy import
- ix) Reactive Low energy export

- x) Net Reactive Low energy
- xi) Cumulative reactive energy lag while active import
- xii) Cumulative reactive energy lead while active export
- xiii) Cumulative reactive energy lag while active export
- xiv) Cumulative reactive energy lead while active import

**s) TESTING & CALIBRATION**

For active power & active energy measurement in both import & export mode, limits of errors shall be in accordance with the 0.2S class of IS14697 / IEC 62053- 23.

For reactive power and reactive energy measurement, limits of errors all the four quadrants shall be in accordance to IEC 62053-23/ IS14697.

Each meter shall have calibration LEDs (visual) for checking the accuracy of active & reactive energy measurement. One LED may be used with switch over facility to test both active & reactive energy as per requirement. The LED shall be visible from the front side.

The testing or calibration of the meters should have provision for both in service and phantom load testing and correction. In case of billing meters, the testing/calibration should be either Main meter or Check meter in one billing cycle.

**t) AUXILIARY SUPPLY**

The metering system shall normally operate with the power drawn through the auxiliary AC or DC supply. The metering system design should enable the auxiliary supply to be switched automatically between the AC and DC voltage, depending upon their availability. Typical auxiliary voltages available are 110 / 240V AC and 110/ 220V DC. The system shall continue to work even if any one of the above auxiliary supply (AC/ DC) is present. There may be any indication (LED) for confirmation of availability of the said two separate sources [optional].

**u) CALENDAR & CLOCK**

Each meter shall have a built-in calendar and clock, having maximum drift of 2 minutes per annum. The calendar and clock shall be correctly set at the manufacturer's works. Synchronization of time shall be possible from an external source like GPS receiver, AMR application & Central computer.

An automatic backup for continued operation of the meter's calendar-clock shall be provided through a long-life battery, which shall be capable of supplying the required power for at least two years under meter un-powered conditions. The meters shall be supplied duly fitted with the batteries, which shall not require to be changed for at least ten years, as long as total supply interruption does not exceed two years.



**v) DATA COMMUNICATION**

- i. The metering system shall have suitable communication port for local reading, remote and on-line communication facilities.
- ii. Each meter shall have an optical galvanic isolated serial communication (in the form of 1107 port) on its front for tapping all the data stored in its memory locally. The data cable for reading / downloading of meter data directly from Optical port shall have to supply along with the meter. Quantity of the said cord shall be 10% of the total quantity of ordered meters. The manual downloading time should be few minutes.
- iii. The metering system shall have Ethernet port (RJ45 port) and RS 485 port for remote data transfer to a central location through Sub-Station gateway (DCU). This port shall be capable of data transfer to a remote computer over suitable communication media (GSM/GPRS/LEASED LINE/OFC etc.) using suitable communication hardware (modem/multiplexer/communication cable etc.). These port shall be configured for both DLMS and MODBUS protocol.
- iv. The meter shall have inbuilt Ethernet port (RJ45 port) for LAN to capture data by the computer installed in the control room directly for on line monitoring as well as processing for other purpose like Time synchronization with GPS clock. These ports shall be on DLMS protocol through suitable communication.
- v. The meter shall have one RS 232 port for direct communication to local computer with BCS.
- vi. All the above-mentioned ports shall be able to work simultaneously.
- vii. The meter shall have at least one USB port on one of the sides, from where all the data stored in the meter can be downloaded through external storage device.

**w) OTHER ESSENTIAL FEATURES**

- i. Each meter shall have a unique identification code i.e. serial number, which shall be marked on nameplate as well as in its memory. Further all meters of the same model shall be totally identical in all respects except for their unique identification codes.
- ii. Each meter shall have a non-volatile memory in which the parameters as mentioned in this specification shall be stored. The non-volatile memory shall retain the data for a period not less than 10 years under un-powered condition; battery backup memory shall not be treated as NVM.
- iii. In case of draw out type metering modules, automatic CT shorting feature shall have to be provided so as to ease the testing/ replacement of meters without disturbing the system.
- iv. The meter shall have Binary Input & Output terminals. This shall help in transferring the same



Energy parameters being recorded inside the meters on pulse output for SCADA application at remote distance etc.

#### x) ANOMALY DETECTION FEATURES

The meter shall have features to detect and log the occurrence and restoration of following anomalies, along with date and time of event:

- i. Phase wise Missing Potential: The meter shall detect missing potential (1 or 2 phases) provided the line current is above a specified threshold. The voltage at that stage would be below a specified threshold.
- ii. Under voltage and Over voltage: The meters shall detect when the voltage goes beyond the permissible limit.
- iii. Invalid Voltage: The meter shall be able to detect and log invalid phase configuration of the voltage when the voltage angles are not within the specified range.

Logic for detection: If voltage is more than  $V^{th}$  and if voltage angles are not valid and such condition persists for more than predefined persistence time, then the event to be recorded as tamper and tamper count to be incremented.

- iv. Current Circuit open: Check if none of the current is negative (from vector position);  
 Check whether line current is less than  $L_{th}$  open;  
 Check whether this condition persists for persistence time, then record “current open” occurrence event;  
 Increment the tamper count for “current open”.

- v. Current circuit Bypass:

Logic for detection:

- a. The meter first checks if normal three phase voltages are present;
  - b. The current vectors are summed and the meter checks if the difference is more than  $L_{th}$ ;
  - c. The meter first checks all logics for current reversal and current open tampers.
  - d. If the condition persists for persistence time, the event is logged as a “current bypass” tamper and the tamper count is incremented;
- vi. Meter “POWER OFF”: If all three phases are below  $V^{th}$ , then only, it will be called as “Power Off”. If only one or two phase(s) is/are below  $V^{th}$ , then it will not be defined as “Power Off”, but will be termed as “Phase Missing” or Current without Volts”.

- vii. Phase wise Current Circuit Reversal: The meter shall detect reversal of polarity provided the current terminals are reversed. This shall be recorded for 1 or 2 phase CT reversal.
- viii. Voltage Unbalance: The meter shall detect voltage unbalance if there is unbalance in voltages.
- ix. Current Unbalance: The meter shall detect current unbalance if there is unbalance in load conditions. Meter should ensure true system conditions before going for current unbalance checks.
- X. CT Miss: The meter shall detect current miss if the current is below a defined threshold, provided the phase voltage is above a specified threshold.
- xi. Disturbance (optional): The meter shall record disturbance when its specified binary input become high due to some external logic.
- xii. Snapshots of phase wise voltage, phase wise active current and phase wise power factor shall be provided with above specified anomaly events.
- xiii. Further, each meter shall record the following events along with total duration:
  - A. Power On/Off – The meter shall detect power off if both the auxiliary supplies fail. The event shall be recorded on the next power up. At the same time power on event shall be recorded. No snapshot shall be logged with this event.
  - B. Feeder Supply Fail -This event shall be logged when feeder supply, i.e. all the voltages goes below certain threshold. No snapshot shall be logged with this event.
  - C. Last four hundred (400) & optional fifty (50) events (occurrence +restoration),in total, shall be stored in the meter memory on first in first out basis.
  - D. There shall be five / six separate compartments for logging of different type of anomalies:

Table 19: List of Compartments

Compartment No.1	100 events of Missing Potential
Compartment No.2	100 events of CT Reversal
Compartment No.3	100 events for Power Failure / Power On-Off
Compartment No.4	50 events of Transaction related changes as per ICS
Compartment No.5	50 events of Magnetic Interference
Compartment No.6	50 events of Disturbance due to external logic (optional)

- E. Once one or more compartments have become full, the last anomaly event pertaining to the same compartment shall be entered and the earliest (first one) anomaly event should disappear. Thus, in this manner each succeeding anomaly event shall replace the earliest recorded event, compartment wise.
- F. Events of one compartment/ category should overwrite the events of their own compartment/ category only.
- G. In case of events logged in compartment No. 1 to 4, persistence time of 5 min. for occurrence and restoration respectively need to be supported in meter. In case of events logged in compartment No. 5 & 6, the events shall be logged instantaneously.
- H. Anomaly count should increase as per occurrence (not restoration) of anomaly events. Total no. of counts shall be provided on BCS.

#### y) TRANSACTIONS

The meter shall record critical events (as performed in authenticated manner) of Timeset, MD reset operation, change of mode of connection from 3P4W to 3P3W or vice versa, any CT or PT ratio configuration and tariff change. These events shall be logged in roll over mode for up to twenty numbers.

#### z) BASE COMPUTER SOFTWARE (BCS)

SOFTWARE based on Windows-7 & its higher version operating system for Local communication shall be supplied without extra cost and shall be considered as integral part of the metering equipment. Two separate type software shall be supplied as detailed below:

- A. Type - I (READING SOFTWARE):
- i. The necessary base computer software (BCS) for this purpose shall be provided to retrieve the complete data like billing data, load survey data, anomaly information and instantaneous parameters data in details from meter and transfer (download) to a PC for view and print.

- ii. Clock adjustment of meters shall be possible at site using this BCS.
- iii. BCS shall be able to convert the meter dump/ raw data to readable format which can be processed in the existing as well as upcoming energy accounting software module used for Energy Accounting and its report generation.
- iv. BCS shall have a facility to read all the meters in a particular Power Station / Sub-Station simultaneously at a pre-defined time automatically or as and when required.
- v. BCS shall have also a facility of down loading required pre-defined meter data like instantaneous parameters by initiating binary input of meter to record disturbance (Optional).
- vi. BCS shall have a facility to show any particular parameter of all the meters in a particular Power Station / Sub-Station simultaneously for generation of Log- sheet / incident report automatically (Optional).
- vii. BCS shall have a facility to sum up active energy, apparent energy, MD etc. for each block (optional).

**B. Type– II (CONFIGURATION SOFTWARE):**

- i. BCS shall be able to change the Meter from 3-phase 4-wire to 3-phase 3-wire and vice versa.
- ii. BCS shall be able to change the CT secondary Current rating from 1amp. to 5Amp. and vice versa.
- iii. BCS shall be able to change the % of voltage rating for Reactive High & Low registration.
- iv. BCS shall be able to change the number of TOD Time Zone and its timings.
- v. BCS shall be able to change the Integration Period.
- vi. BCS shall be able to incorporate and change the C.T./P.T. ratio inside the meter.
- vii. BCS shall be able to change the Billing Period.
- viii. BCS shall be able to adjust the time of Internal Clock in case of drifting.
- ix. BCS shall be able to change the IP address of meter.
- x. BCS shall be able to perform any other special task, if any, available in the offered meter.

Type - I (READING SOFTWARE) may not be authenticated, it shall be handled by anyone. So, there will be no restriction of installation of this software at different site. But Type– II (CONFIGURATION SOFTWARE) must be authenticated and its use shall be restricted. Hence, installation of Type –II software shall be restricted at some identified PC / Laptop.

**aa) SELF DIAGNOSTIC FEATURE**

The meter shall be capable of performing complete self-diagnostic check to monitor the circuits for any malfunctioning to ensure integrity of data in memory location all the time. The meter shall have indications for unsatisfactory/ nonfunctioning/ malfunctioning of the following:

- i) Nonvolatile memory
- ii) RTC battery
- iii) Internal component of meter

The said malfunctioning should be flagged in the meter memory and should be made available in meter reading data. The said malfunctioning shall also be available at Binary output as well as LED indication on the front of the meter.

## **bb) TYPE & ROUTINE TESTING**

### **i. TYPE TEST & TYPE TEST CERTIFICATES**

The offered meter should be successfully passed all type tests described in the IS- 14697 and the meter Data Transfer and Communication capability as per IS- 15959 for DLMS companion Standard (ICS). Type test certificate along with test reports carried out within 5 (five) years from the date of offer shall have to be submitted alongwith the offer unless which the bid may be considered as non- responsive. Make & typeof major components used in the type-tested meter shall be indicated in the QAP.

Further Purchaser shall reserve the right to pick up energy meters at random from the lots offered and get the meter tested at third party lab i.e. CPRI / agencies listed at Appendix-C of CBIP 88 / NPL / CQAL/ ERTL / ERDA at the sole discretion of the Purchaser. The supplier has no right to contest the test results of the third-party lab orfor additional test and has to replace/take corrective action at the cost of the supplier.

It shall be the responsibility of the supplier to arrange such tests and Purchaser shall be informed the date and time of conduction of tests well in advance to enable him to witness such tests.

### **ii. ACCEPTANCE & ROUTINE TESTS**

Criteria for selection for such tests and performance requirements shall be as perIS 14697-1999 (reaffirmed 2004)

Additional acceptance shall include Surge withstand (SWC), Lightning impulse and HF disturbance as per IEC62052-11. For these specific tests, one sample meter from one of the offered lot shall be subjected to SWC/other semi- destructive tests.

Meters after tests shall not be used. Lightning Impulse test, listed under 'SWC' shall be done for 6 kVp and 300 Joules.

Accuracy tests shall be performed at the beginning and at the end of the acceptancetests specified.

The purchaser shall do calibration check and other necessary tests of all meters at theirtesting

Laboratory after which the meters will be considered for final acceptance.

### **iii.QUALITY ASSURANCE PLAN**

The manufacturer shall have a comprehensive quality assurance program at all stages of manufacture for ensuring products giving reliable, trouble- free performance. Details of the bidder's quality assurance and test set up shall be furnished with the bid.A detailed quality assurance program shall be finalized with the successful bidder during the award stage. Bidder shall furnish following information along with his bid:

- i) Organization structure of the manufacturer and his main sub-suppliers (PCBs,SMT cards, CT/PT) with details of 'QA' setup, overall workflow;
- ii) Copy of system manual showing 'QAP' (Quality Assurance Plan) as actually practiced during manufacturing and final testing.
- iii) List of raw materials and critical components (ASIC chip, crystal clock,memory register Chip, transformers, optical ports etc.) with their suppliers;
- iv) Stage inspection of product before final testing;
- v) Procedure adopted for 'In-situ' testing of PCBs, after placement of surfacemounted component, for quantitative parametric variation of tolerance by self or sub-contractor.
- vi) Testing and calibration facility, date of calibration of test bench, manpower data of bench operators.
- vii) Sample copies of test certificate of bought out components.

### **2.11 GUARANTEE**

Equipment (Meter) and its accessories like meter reading data cable etc. supplied shall be guaranteed for a period of 60 (sixty) months from date of last despatch of any integral part of the Equipment/ Materials. Bidders shall guarantee to repair or replace the meters and its accessories like meter reading cord and meter racks (if supplied), which are found to be defective/ inoperative at the time of installation as well as during guarantee period. Replacements shall be affected within 1 (one) month from the date of intimation.

### **2.12 SUBMISSION OF SAMPLE METER & ACCESSORIES**

One (01) No. sample meter having all the mentioned features, BCS and a sample of Ethernet switch for testing purpose is to be submitted to SLDC, OPTCL Any other accessories required for observing the performance & capabilities of the Meter, BCS, etc is also to be submitted.

Offer will not be accepted without submission of sample and the Tender will not be opened.

### **2.13 TESTING OF SAMPLE METER**

Date for Testing of Sample meter will be communicated to the Bidders from CTD minimum one week before. Testing of Sample meter will be carried out at Meter Testing Laboratory, CTD as per

relevant IS. The representatives of the bidder during testing should be able to reply the queries developed at that time. Any modification

/ Incorporation on received Sample meter will not be allowed normally. However, SLDC, OPTCL may allow the same on his own discretion, if felt necessary. It may be required to demonstrate the operation of AMR function at our laboratory. For this purpose, bidder may be asked to bring with them the required switch, DCU and demoverion of MDAS software during sample meter test.

After completion of successful testing of the Sample meter **only**, it is to be considered for further techno- commercial evaluation.

### 3.0 TECHNICAL SPECIFICATION OF METERING PANELS SUITABLE FOR ACCOMMODATING 08 NOS OF 0.2S ACCURACY CLASS TRIVECTOR ENERGY METERS IN EACH PANEL

#### 3.1 Scope

The specification covers the design, engineering, manufacturing, assembly, inspection and testing before supply and delivery at sites/ stores/ FOR destination to accommodate maximum eight (8) nos. 0.2S accuracy class. A.C Static ABT & DLMS Compliant Trivector Energy Meters modules fitted in the space of 19” standard rack in each panel for use in metering system of OPTCL.

#### 3.2 Applicable Standard

The meter panel shall confirm to the following Indian / international standards and all related Indian / international standards to be read with up to date and latest amendments/revisions thereof:

Sl.No	Standard No.	Title
1	IEC60297	Dimension of mechanical structure of 482.6mm(19”) Series – Panels and Racks
2	IS-9000 with latest amendment	Basic environment testing procedures for electronics and electrical items.

#### 3.3 Construction

- i. Metering panel shall be suitable for indoor installation of vertical construction, free standing type and will have access to the inside from the rear. Panel should have provision to mount 19" Rack mounted 8 nos of energy meters. Metering cubical should be of dimension 1800 + 100mm (H) x 750mm (W) x 750mm (D).
- ii. The panel shall be fabricated from steel sheet not less than 1.6mm (16 SWG) thick. Gland plate and Base frame will be made of  $3.0 \pm 0.2$  mm CRCA sheet. Main frame structure, all load bearing members and frame shall have built up thickness more than 2.0mm with standard profile. All clamps & sealing studs shall be of BS-304. All hardware & plated items should pass the 96 hours salt spray test as per test procedure IS 9644-1961 without any corrosion.
- iii. One Hinged door shall be provided at the rear for access to inside of the panel. Two nos hinged door shall be provided on front side of panel, upper one would have glass window to view the meters without opening the door of panel and lower door shall be opaque to access the test terminal block. Each door shall be provided with a handle lock, flexible copper earth bond and sealing arrangement.



- iv. All doors shall have PU foam gasket all round, Gland plate of XLPE 10 x 3 mm gasket, material selection and workmanship shall be such as to result in neat appearance both inside and outside, with no weld, rivets or bolt heads apparent from outside and with all exterior surfaces true and smooth.
- v. No equipment will be mounted less than 300mm above the floor.
- vi. All metal surfaces would be painted with powder coating of 60-80 micron with structure finish, the colour of panel will be grey as per IS5-631, Base frame- Black.
- vii. Lifting hook (Eye Bolts) should be provided.

### 3.4 Panel Lighting

Proper arrangement should be made for panel lighting (230V AC) with LED lamp of 12W or more. A door-operated switch shall be provided with the rear door. A three pin, single phase, 230V AC service receptacle shall be provided in each panel. Panel should have provision for suitable space heater with thermostat of reputed make.

### 3.5 Grounding:

A ground bus of galvanized iron bar not less than 50 x 6 mm should be provided along the back of panels, maximum length of the bar will be 200mm. The ground buses shall be bolted to the frame of the panel in such a way so as to make good electrical contact with the panel. Hinged doors and all equipment on the metering cubicle shall be connected to the frame with minimum 2.5 Sq.mm copper strip / copper wire. All metallic parts will be earthed from panel body, suitable tag shall be provided with terminals & equipment. Panel body should have provision for earthing at two different places.

### 3.6 Test terminal blocks:

Each metering panel shall have 8 Nos. screw type test terminal blocks one for each Meter's CT & PT connection. The test block shall be back connected type with removable cover, sealing provision will be available at front side for sealing suitable for 3 phase, 4 wire type connections.

### 3.7 Terminal blocks and terminals:

Terminal blocks shall be of adequate current rating requirements, all terminals should be suitable to mount 4.0 Sq. mm control wire (FRLS copper flexible PVC). Terminal blocks of (Disconnected type) of Make: Elemex/Connect well/ Reputed shall be arranged with sufficient space for connection of each incoming wire. Each feeder CT/PT terminals are to be arranged together for easy identification. Blocks will be mounted in vertical columns along the sides of cubicles or on vertical panel specially provided for terminal block.

### 3.8 Component Wiring:

All internal wiring shall be made with annealed copper wire. Wires for current transformer and voltage transformer circuits shall not be smaller than 4.0 Sq mm with proper phase identification and all other size shall be of 2.5 Sq mm multi strand copper flexible FRLS PVC wire. Wiring between terminals of various devices shall be point to point & rout through suitable size cable tray. All internal wiring will be neatly truncated in wiring troughs, bound and anchored. Sufficient slack shall be left at component terminals to permit rearrangement of connection between the terminals of any particular component. Wiring will terminate not lower than 200mm above the floor of the panel. All wires will be identified at both ends using ferrules. Colour of wires shall have phase identification as red/ yellow/ blue and black for Neutral of CT & PT wiring and red/ black for auxiliary DC/ AC wirings. CT & PT wires should be provided with round lugs and all lugs shall be insulated/ sleeved to prevent short between the lugs at meter and terminal block end.

### 3.9 Indication Lamps:

(R / Y/ B) indication of LED type for phase healthiness for PT circuit of all feeders and panel indication for AC & DC supply with suitable fuse control will be provided at front side of panel.

- 3.10 Suitable gland plate of dimension 600 x 600 mm with CG plate fixing bolt along with knockout type holes of Ø 25 mm (8nos) & Ø 20mm (16nos) should be provided at bottom for CT/PT/AC DC aux circuit.
- 3.11 Panel shall be installed within the control room adjoining the existing panels as per suitable available place.
- 3.12 Drawing of metering panels shall also be attached having proper wiring diagram for evaluation and approval purpose. However, manufacturers standard may be accepted, if it fulfils the requirement of the purchaser for which approval of drawings shall have to be obtained before commencement of the manufacturing.'
- 3.13 IP Protection Class of Panel: IP 54
- 3.14 The cut outs in the panel for installation of energy meters shall be suitably provided covered with blank plate with proper fixing arrangement for aesthetic look

**NOTE:** Bidder's must prepare drawing and design of the meter panel and get it approved before manufacturing clearance.

Quantity of meter panel may change based on the survey before manufacturing clearance.

## 4.0 TECHNICAL SPECIFICATION OF DATA CONCENTRATER UNITS (DCU)

### 4.1 FUNCTION OF DATA CONCENTRATOR UNIT (DCU)

DCU is to function as a gateway between Central Data Collection System (CDCS) and energy meters installed at DCU location. DCU shall have following functions: -

- a. Acquiring energy data and status from energy meters.
- b. Providing energy data and status to CDCS.
- c. Time synchronization of IEMs, either through GPS installed at site or through CDCS.
- d. DCU shall also report diagnostic information of the energy meters to AMR system.
- e. The DCU shall be multi-vendor interoperable to support communication of different make IEMs with centralized AMR system.

### 4.2 Application Requirement:

Data Concentrator Unit (DCU) along with the suitable Rack mounted panel enclosure shall be placed in the control room in the Substation/ Generating Plant. DCU is functionally required to acquire the IEM data and transferring the same to Data Control Center (SLDC) using communication system and AMR software.

- a. DCU firmware shall be developed on reputed platform of updated version.
- b. DCU should be capable to acquire meter data from IEM as per this technical specification of all makes (secure, L&T, Genus etc.) over different protocols i.e. MODBUS, DLMS over different communication ports i.e. RS485 and Ethernet.
- c. DCU should be capable to acquire all type of meter data like Instantaneous parameter at the time of collection, energy data, Load survey profiles, event data, midnight energy data and Date & time of collection of data
- d. DCU should be capable to transfer the complete meter data to central data center using MPLS/OFC and latest GPRS communication media (with fall back option).
- e. DCU should support multithreading acquisition on Ethernet port as well as simultaneous acquisition on each serial port.
- f. DCU should be capable to have dual SIM option for redundancy and auto switching from one SIM to another SIM shall be available.
- g. DCU should have non-volatile memory for storing meter data for at least 30 (thirty) days for FIFO buffer mode.
- h. DCU shall collect data from a single or group of meters having unique identification

number/ code at a meter location also having a unique identification number/ code and transfer the same to the DAS server at CDC. DCU shall have the capability to transfer the meter data from local substation to CDC as predefined schedule and automatic retries for unsuccessful file transfer cases.

- i. DCU shall be able to communicate to the local PC for substation local monitoring, if required.
- j. DCU data transfer: The DCU should be able to communicate through the latest GPRS communication, specifications defined below:
  - a. Supported GSM/GPRS/EDGE: Quad Band 850/900/1800/1900 MHz depending on the availability of the network it should support 4G or 5G
  - b. SIM Lock Function – Yes
- k. Remote configuration:

DCU should have the facility to upgrade the firmware version over WAN communication network using proper authentication through DOTA (download over the air) process. It should also be possible to configure DCU in single or batch mode.

### 4.3 General Construction

- i. DCU shall be a self-contained, standalone box with minimum 1 serial (RS485), 1 RJ45 ethernet port for meter connection and with one RJ45 Ethernet 10/100 mbps port for communication to CDCS through substation communication equipment. One RJ45 ethernet port for local PC shall be provided. DCU shall have in built modem or external modem facility. DCU shall have MODBUS protocol in addition to DLMS.
- ii. DCU should be flush mounted or surface mounted and to be installed in Rack mounted RAS panel supplied by the bidders in different substations control room.
- iii. DCU should be of reputed make. Type test certificate of DCU shall be submitted during drawing approval stage. The DCU shall be normally powered from the station battery supply / station AC supply rated at 110/220 VDC/ 230VAC.
- iv. DCU should have protection against entry of dust.
- v. Substantial EMI (Electro Magnetic Interference) and ESD (Electro Static Discharge) will be present at DCU site, effect of which shall be duly considered while designing the system. Performance of the overall system shall not be hampered by such interference. EMI/ESD tolerance shall comply with latest standard guidelines.
- vi. DCU should be able to operate in environment with temp up to 50°C and humidity up to 90% without any significant effect on its performance.

- vii. The mechanical design and construction of each unit sub-assembly shall be inherently robust and rigid under various conditions of operation, adjustment, replacement, storage and transport.
- viii. DCUs shall also withstand without any damage or mal-operation reasonable mechanical shocks, earthquake forces, ambient temperature variations, relative humidity etc. They shall have an IP-54 or better category dust-tight construction, and shall be capable of satisfactory operation in an indoor, non-air-conditioned installation.
- ix. Local Display / LEDs for status like power on, communication activity etc should be provided on the face of DCU.

#### **4.4 Acquiring energy and status data from energy meters**

DCUs shall be connected with local energy meters through Ethernet/optical fiber with suitable switches. All communication between meters and CDCS via Switch & DCU/Gateway should be firm and secure from any unintended disconnection. DCU should implement IEM protocols (IS 15959-Data Exchange for Electricity Meter Reading Tariff & Load Control – Companion Specification). It shall be possible to change/update the energy meter protocol driver from CDCS. DCU shall store the energy data from the meters for at least 30 (thirty) days in its memory. DCUs shall not send any command other than the command to read the energy data, status data and GPS clock synchronization of IEM clock. Connection of meters to DCU, DCU to local PC and DCU to SDH panel of substation is in Vendor's scope including supply of required cable, conduit, and network switch.

DCU shall be capable of synchronizing with GPS locally/Remote and transfer the synchronizing signal to all the IEMs connected to it. The necessary ports for time synchronization shall be made available. Status means data healthiness check of DCU & Communication channel and any status given by meter.

#### **4.5 Providing Energy Data and Status to CDCS**

DCUs shall be provided with suitable SIM/modem etc. in order to have connectivity over Optic Fibre /4G/5G/latest mode of communication with SLDC Data center. All communication between DCU and CDCS shall be on secure VPN with two IP address. DCU shall accept following commands from CDCS/GPS Clock and shall function as per the command:

- i. Energy data collection from energy meters
- ii. Acquiring status and alarm from energy meters.
- iii. Modification of DCU Configuration through remote access from CDCS along with changes required for addition/replace/removal of energy meters.
- iv. IEM clock synchronization with GPS clock from CDCS.

The DCU should be compatible with two SIM's and should have provision for Ethernet connectivity with fall back option between them.

Transfer of data from DCU to MDAS should be on physical Ethernet and secured VPN form. The DCU should be able to run the meter protocol drivers to read each type of meter and transfer them to the Control Centre. The DCU must support DLMS/COSEM (HDLC & TCP) as well as MODBUS to communicate with meters.

#### **4.6 Energy Data Collection**

DCUs shall query energy data and transfer the same to CDCS based on the command received from CDCS. Command may be for one time demand of data or it may be on cyclic basis. DCU shall be able to query data from all or selected energy meters for the selected period based on the command from CDCS. DCUs shall be able to read energy data from all make of ABT compliant energy meters available in the market like L&T, Secure and Genus etc.

Each meter has a unique identification number and location identification code. DCU shall collect data from a single or group of meters based on meter number or meter location code.

DCU shall receive complete data from energy meters and send the same to CDCS within specified time guaranteed by the vendor. This performance requirement shall be met under the maximum number of IEMs as specified for the delivered as-build or expanded system.

#### **4.7 Providing energy data to local computer**

DCUs shall provide RS-485/Ethernet port for communication with local personal computer or terminal. DCU shall provide meter status, alarm etc. and energy data to local personal computer, if required. Local PC shall be able to query energy data from selected or all energy meter by using web browser and intuitive user interface. The web browser shall be same as CDCS web browser to access the IEMs installed at local station. All communication with local computer shall be password protected. PC for data downloading at each DCU location shall be arranged by respective site.

#### **4.8 Status Data Collection**

DCUs shall query periodically all energy meters connected to it for status or any alarm etc. Any change in status or alarm shall be reported to CDCS immediately, depending on network latency.

DCUs shall acquire connected energy meter details like meter identification number, make, Low Voltage flag etc. periodically as well as whenever it's powered on. Any meter change activity like meter number, Low Voltage flag etc. shall be reported to CDCS immediately. DCUs shall beself-monitoring for alarm like power failure, communication disconnection, and disconnection from energy meters and report the same to CDCS immediately. DCUs shall have non-volatile memory for storing status data of energy meters duly time stamped, details of connected meters like make, meter number, status change. Non-volatile memory should be able to store such data for at least for 30 (thirty) days in round FIFO buffer.

#### **4.9 Time Synchronization of Meters**

DCU shall have the intelligence to synchronize the IEM clock time with updated RTC clock time. DCU will get GPS clock reference from its respective CDCS (at SLDC) / local GPS clock and synchronize RTC clock time in DCU. The RTC of DCU should retain its synchronized clock signal without any drift for at least 12 hrs.

The AMR (CDCS - MDAS) Software should generate a report of the drift between the Meter time and DCUtime for the purpose of reconciliation.

#### **4.10 DCU Configurations change**

Each DCU shall have a unique identification number normally not required to alter at site. DCUs shall accept and respond command for making configuration changes in DCU like periodicity of energy data/status data collection/GPS clock signal for IEM clock synchronization. For each configuration change, DCU shall respond with task successful or failure message to CDCS. Configuration commands from CDCS may be in the form of single command or multiple commands in a command file.

DCU shall accept and make changes in configuration through data command on Optical fiber /GPRS/ MPLS. DCU shall receive the configuration command from CDCS on same channel used for transfer of data to CDCS. DCUs shall store all configuration data locally in a separate non-volatile memory. All changes to configuration shall take place first to this memory. Only after receiving a specific command from CDCS, the saved configurations should come into effect. However, any other functionality should not get affected during accepting and responding to configuration commands from CDCS. DCUs are not required to store history of configuration changes as all history shall be maintained in CDCS.

Similarly, it shall be possible to upgrade the DCU firmware remotely from CDCS based single or multiple commands from CDCS. The firmware upgrade shall come into effect only after receiving the specific command from CDCS. The DCU shall immediately send the status of firmware upgrade to the CDCS and shall provide the old as well as new firmware versions.

It shall also be possible to roll back the firmware upgrade if required.





**TECHNICAL SPECIFICATION OF DCU**

Table 20: Technical specification of DCU

Sl.No	FEATURE	SUPPLY SPECIFICATION
1	Communication Ports- Serial Port 1 to 12	COM 1 to COM 4 – RS232/RS 485 programmable ports (RJ-45) COM 5 to COM 8 – RS232 ports (RJ 45) COM 9 to COM 12 – RS 485 ports (Terminal Block- Tx, Rx) COM 1- Console port COM 5- RS232 Full modem support
2	Ethernet Port 6 Nos	RJ 45 Connector (10/100/1000) Mbps
3	RAM	8 GB DDR-3 SO- DIM
4	Storage	128 GB SATA Flash
5	Processor	Q or IQ Server Grade quad core processor
6	Power Supply	AC Supply: 90-260V AC (47-63Hz) DC Supply: 100-360V DC
7	Power Consumption	26W
8	Mounting	Standard 19 Inch Rack Mount
9	LED Indications	Fixed indication LEDs for Power, LAN Link/status, serial port RX/ TX, processor status
10	Automatic startup on power restores	Yes
11	Protocol Support	IEC- 61850, FTP, SFTP, SPA, Courier,103,104,101, DLMS (Master/Slave or Client/ Server)
12	Time Synchronization	IRIG-B, SNTP
13	Remote Management	Secure web access, Easy Connect software
14	Configuration management tool	Easy connect over LAN port
15	warranty	5 years





**5.0 TECHNICAL SPECIFICATIONS OF SWITCH FOR METER LAN**

LAN switch shall be installed at each grid substation for connecting all Energy meters with DCU and communicating data to DC & DR.

Table 21: 16 Port Industrial Ethernet Switch

S.N.	Particular	Specification
1.	<b>Technology</b>	
a.	Standards	IEEE 802.3 10BaseT Ethernet IEEE 802.3u 100BaseTX Fast Ethernet IEEE 802.3ab 1000BaseT
b.	Processing Type	Store and Forward
c.	Protocol	CSMA/CD
d.	Flow Control	IEEE 802.3x flow control, back pressure flow control
2.	<b>Switch Properties</b>	
a.	Switch Architecture	Back-Plane: Non-Blocking Switching Fabric
b.	Transfer Rate	14,880pps for Ethernet Port 148,800pps for Fast Ethernet Port
c.	Memory Buffer	512Kbytes
d.	Jumbo Frame	9,216bytes
e.	MAC Table size	8K
3	<b>Interface</b>	
a.	RJ45 Ports	16/8 *10/100/1000BaseT(X), auto negotiation speed, Full/Half duplex mode, and auto MDI/MDI-X connection
b.	LED Indicators	Power 1, Power 2, Fault Ethernet Ports: On-Link/Flash-data transmitting
4.	<b>Power Requirements</b>	
a.	Input Voltage	230VAC/ 110-220V DC, Redundant Input, complied with the requirements of SELV



b.	Overload Current Protection	Present (Slow-Blown Fuse)
c.	Reverse Polarity Protection	Present
<b>5.</b>	<b>Mechanical Characteristics</b>	
a.	Mounting	DIN-Rail Mounting, Wall Mounting,
<b>6.</b>	<b>Environmental Limits</b>	
a.	Operating Temperature	STD: -10°C ~ 65°C
b.	storage Temperature	-40°C ~ 85°C
c.	Ambient Relative Humidity	5 to 95%, (non-condensing)
<b>7.</b>	<b>Regulatory Approvals</b>	
a.	EMI	FCC Part 15 Subpart B Class A, CE EN 55032 Class A, EN 61000-6-4 Class A
b.	EMS	CE EN 55024 Class A, EN 61000-6-2 Class A IEC61000-4-2 (ESD), IEC61000-4-3 (RS), IEC61000-4-4(EFT), IEC61000-4-5 (Surge), IEC61000-4-6 (CS), IEC61000-4-8 (Magnetic Field)
c.	Free Fall	IEC60068-2-32
d.	Shock	IEC60068-2-27
e.	Vibration	IEC60068-2-6
f.	Warranty	5 Years

## 6.0 SPECIFICATION OF AMR (CDCS-MDAS) Software

### 6.1 General Requirements

A central data collection system (CDCS with MDAS) software shall be provided at SLDC Data Center and DR Server for collection and processing of data from DCUs installed at remote locations and shall perform following functions: -

- a) Communication with DCUs
- b) Collection of energy data from DCUs
- c) Collection of status data form DCUs
- d) Remote Configuration of DCUs
- e) GPS clock signal to DCU
- f) Processing of energy data.
- g) Storing of data.
- h) Providing data to energy accounting software.
- i) Reporting functions.
- j) Monitoring and Alarming.
- k) Audit trail and logging.
- l) Meter management.
- m) Shall have user Interface for Data/Report uploading on website.
- n) Data/Report access for predefine list of meters to SLDCs with secure user name and password for intrastate energy accounting.

In case of DCU-DC communication system failure due to any reasons, manual provision should be made for uploading IEM data to the MDM software for energy accounting.

CDCS shall include a web-based application for utilities/stations to manually upload the data in case of AMR communication system failure due to any reasons, the following shall be taken care of in this regard:

- a. The web application link shall be made accessible to all stations through SLDC website.
- b. The downloaded data shall be in encrypted format.
- c. Each utility shall be given User name and Password for login the web application
- d. Browser shall have the list of all Utilities and its station names.
- e. Each station shall upload the encrypted data by selecting their Utility name and Station name.
- f. Web Application shall generate the confirmation message to the station on successful uploading of data.
- g. Web application shall generate the popup message at CDCS with Utility name and Station name on receipt of data.
- h. All the encrypted data received at CDCS via web application shall be stored in predefined path.
- i. CDCS shall have the provision to decrypt the data and store in the database for the further

processing

## 6.2 Communication with DCUs

The dedicated Servers AMR(MDAS) have already installed at SLDC/OPTCL DC & DR in redundant mode (main and stand by configuration) with necessary separate LAN. This shall manage the VPN Connections, DCU Communication, Alarm management, Logging, DCU Configurations as well as GPS clock signal to DCU. The Interface of the Communication Server shall be standards based such that, up gradation of either Communication System or Application Server will not need a commensurate replacement of the other. The Central Data Collection System shall have a Network Management Interface that provides a Dash Board of the DCU's and their status / Alarms and Meter's that are not communicating.

## 6.3 Collection of energy data from DCUs

The CDCS software shall collect all data (energy, load survey etc.) from energy meters through DCU for configured meter location periodically or on demand at any time. CDCS shall have a scheduler software, which and also shall issue command to the concerned DCU and collect the required energy meter data. It shall be possible to schedule data downloading on hourly basis/user specified time.

## 6.4 Collection of status data form DCUs

The CDCS software shall have a DCU monitoring module. This module shall monitor each DCU for its working status, parameters and any alarm etc. The monitoring data shall be collected periodically or on demand at any time from all or selected DCUs.

## 6.5 Remote Configuration of DCUs

The CDCS software module shall have provision for remote configuration of selected or batch of DCUs. Remote DCU configuration module should be able to configure each parameter of DCU individually or in batch mode. It shall be possible to download the following changes to the remote device in addition to other required changes:

- i. Poll cycle for collection of energy data.
- ii. Fixed public IP of CDCS (AMR/MDAS) server of the Data Centre
- iii. Changes in meter protocol driver

## 6.6 GPS clock signal to DCU

CDCS software shall send time sync signal to DCU to time synchronize the IEMs connected to that DCU & shall check the time in each meter on a pre-configured interval (say once a day) and if the drift in meter clock is more than maximum allowed drift (say 60 seconds) with reference to GPS time, the DCU shall initiate clock synchronization in incremental manner with pre-configured offset interval (say 10 seconds). Bidders can propose alternate mechanisms with the objective keep all the meter clocks within 60 seconds drift with reference. Any meter time change

command initiated by the AMR system should be logged as part of audit trail.

### **6.7 Processing of energy data**

Collected energy meter data (5-min/ 15 min) shall be provided to the data processing module. The time block period of the raw output from CDCS shall be user defined (5 min/ 15 min). This module shall check the data for completeness, error etc. and if any error is found, the same shall be displayed as an alarm.

### **6.8 Storing of data**

If collected data is error free, it shall be provided to a data storage module. Data storage module shall load the collected energy data in to the database as per its structure. Archival of data shall be through RDBMS data base. CDCS shall provide online storage for storing a minimum of 10 years of collected, processed and output data.

### **6.9 Providing data to energy accounting software**

CDCS software module shall provide energy meter data from the database to the energy accounting software. The data output shall be in the form of txt file (as per IEMs standard text file format) or as query-based output.

### **6.10 Reporting**

CDCS Software shall have data reporting capability to give report output on screen, in pdf and in .xls/.csv form. Reports may be based on pre-configured criteria or based on ad-hoc query.

### **6.11 Monitoring and Alarm**

CDCS shall provide DCU monitoring and self-monitoring functions to monitor the operating conditions and the performance of the system.

A suitable network management system (NMS) shall be provided at CDCS to monitor the performance of the communication network round the clock. The NMS shall provide viewing of all the networking elements deployed at site and enable configuration & parameterization of the networking devices and the nodes.

Any detected problems shall be reported through local display, built-in event logging and to remote console or printer. Severe problems, such as loss of communication, shall generate alarms locally and e-mail notifications to configured e-mail address. User shall be able to enable and disable alarms individually.

CDCS shall generate an alarm whenever “data not received” occurs for one or more times for one or more DCU/IEM data. The alarm shall indicate which DCU/IEM has the problem. All Alarms (such as loss of supply to IEM, DCU failure, Communication failure, AMR failure etc.) to be generated in CDCS within 5 min/ 15 min. of the event.

### 6.12 Performance levels for AMR-(CDCS- MDAS)

Data from all the installed IEMs shall be received at CDCS within 4 hours after the scheduled hour (as per user defined). And on demand data for a particular IEM should be received within few minutes. Report for missing data if any shall be generated instantly on demand.

Issues observed in data collection, processing, report generation etc. shall be flagged by SLDC to the vendor for speedy redressal.

### 6.13 Audit trail and logging

CDCS should have provision for audit and logging function for each and every activity either completed successfully or failed should be logged. The system shall provide audit trail of user and system activities that enables data changes to be tracked and reported, including changes made by the system administrator. For editing of energy meter data, the system shall record the following information in a log and store it for a minimum of 12 months:

### 6.14 User ID

Date and Time of Change

User shall be prompted to input a reason for editing using either a standard reason code or a freeform text field. In addition to data stored in the edit log, each interval containing edited data shall be marked with a status to indicate that the data has been edited. The pre-edited value shall be stored in the database as a previous version, which can be retrieved using “as-off” date functionality.

Changes to configuration data by users shall be logged by Date, time, and user ID and such logs shall be stored for a minimum of 12 months. Critical changes relating to measuring parameters (Pulse multipliers, transformer ratios, etc.) and formulae change shall be stored indefinitely as a previous version. The database for these is to be maintained in CDCS. For regular system tasks, such as meter communication, task processing, validation, etc. the information will be kept for minimum one month. Full data and system audit ability such as version controls and data retrieval according to the date and time. Additionally, all versions of meter data shall be stored such that they may be retrieved by “as-off” date for user to inspect.

For AMR, for all locations, the total data of all meters complete in all respect should reach SLDC within four hours. The response time should not increase with increased number of 500 locations added in future.

## 7.0 Scope of Work for AMR Project

Automatic Meter Data Acquisition from all the specified interface and audit meters installed in the OPTCL Network and also to build a platform for Meter Data Repository for analysing the meter data, thus making the solution compatible with that of an integrated Automated Meter Reading (AMR) platform and Energy Accounting software currently in use at SLDC and the Accounting module which shall come into force after SAMAST implementation. Further the software has to be flexible to accommodate the CERC/SERC regulatory amendments for fetching the parameters of 15 minutes / 5 minutes/ regulation specified block wise data. The following provisions should be adopted in AMR (CDCS – MDAS ) software:

- i. The said AMR software should prepare a database during configuration taking into account the details of location (Area/District/DISCOM etc.) and details of each meter (Start time, Stop time, Types of meter, Feeder point, MF, DISCOM etc.) to generate various reports.
- ii. Providing and storing of all energy meter data in raw format (encrypted) and also in readable formats like .txt/.csv/xml etc. for further use and processing by energy accounting software (current and future software)
- iii. System should be capable to read data of all kinds of meters automatically and generate readable format file on demand as per user requirement. The meter data fetched by the software must be authentic with 100% accuracy.
- iv. The software should have provision to generate graphical and tabular reports based on meter output data as per user requirement along with provision to view online trend of all parameters graphically as well as in tabular form.
- v. The software should have a dashboard feature displaying various information and shortcuts as defined by SLDC.
- vi. Solution should also be able to generate voltage report (high voltage, low voltage, Average voltage with date and time), Loading report (maximum loading, minimum loading, Average loading, Total loading reports etc.) for each meter, along with date and time of occurrence as per logic given by SLDC for weekly/monthly/yearly/ user defined period. The minimum value considered should be zero and other than zero as per requirement of SLDC.
- vii. On change in CT and PT ratio, the solution should update the status automatically and a report must be generated for such change for user information.
- viii. Software should generate time deviation report for meters with time drift, mentioning the GPS time, Meter time and the time deviation. Provision may be provided to update the meter time as per GPS time from remote end.
- ix. Software will have provision to generate Tabular/Graphical comparison of two or more meters for different parameters in weekly/monthly/ user defined period in a single window for analysis purpose.

- x. A report of missing data must be generated along with the reason of such failure. Provision for collection of such meter data must be provided as billing is a time bound process.
- xi. Software must be able to accommodate Energy Meter replace scenario i.e record both old and new meter data for accounting purpose with provision to save history of such meter change. Addition and removal of meters should also be accommodated in the software along with integration with the DCU.
- xii. Reactive Energy report must be generated as per format prescribed by SLDC weekly/monthly/ date specified.
- xiii. Event report must be generated as per format prescribed by SLDC weekly/monthly/ date specified.
- xiv. Report regarding low voltage (<70%) must be generated meter wise, DISCOM wise etc for the period specified by SLDC
- xv. Net Energy Report of meters with block wise Active (Imp), Active (Exp), KW(Imp-Exp) for weekly/monthly/range specified period.
- xvi. The software should be able to store history and reflect all 15 billing cycles history of Consumption, Main Energy, MD, CMD etc of all parameters as is available in the meter. Provision must be available to download/save the said data in xls, csv, word, pdf formats.
- xvii. All generated reports should have the header of SLDC Official letter with report generation date and time.
- xviii. The Software should have the following provisions for each meter:

**A. Instantaneous Parameters like:**

- i. Meter Serial No.
- ii. Meter Date Time
- iii. CT/PT Ratio mentioning Primary and secondary I/V
- iv. Phase wise parameters- Voltage, Line Current, Active Current, Reactive Current, Line Current, Power factor
- v. System Parameters- Phase Sequence, Frequency, Angle 1,2 & 3, last billed date.
- vi. Power- Signed Active Power, Signed Reactive Power, Apparent Power & Average Power factor.
- vii. Energy – Cumulative Active (I), Cumulative Active (E), Cumulative Apparent-Active (I), Cumulative Apparent-Active (E)
- viii. External Multiplication Factor- Voltage, Current & Energy/Demand.
- ix. Phasor Diagram



**B. Providing the Readings of ABT Compliance meters as follows:**

- i. Main Energy- Monthly All available parameters of the meter.
- ii. Consumption- history wise details and cumulative details of Energy.
- iii. Power factor- Imp and Exp
- iv. MD and CMD - Active Imp, Active Exp, Apparent P-Active (I), Apparent Power-Active (E) with date and time of occurrence.
- v. TOD Energy - Active Imp, Active Exp, Apparent P-Active (I), Apparent Power-Active (E)
- vi. Midnight (Daily Energy) Snapshot- Active Imp, Active Exp, Reactive Imp while Active Imp, Reactive Exp while Active Imp, Reactive Imp while Active Exp, Reactive Exp while Active Exp, Apparent P-Active (I), Apparent Power-Active (E), Net Reactive High ( $V > 103\%$ ), Net Reactive Low ( $V < 97\%$ )

**C. Providing the Load Survey data of ABT Compliance meters as follows:**

- i. Block wise data of all the parameters like Active Imp (kW & kWh), Active Exp (kW & kWh), Reactive Imp while Active Imp, Reactive Exp while Active Imp, Reactive Imp while Active Exp, Reactive Exp while Active Exp (in kVar & kVarh), Bidirectional Active (I-E) (in kW & kWh), Apparent P-Active (I), Apparent Power-Active (E), V1, V2, V3, I1, I2 AND I3.
- ii. Provision should be available for view of all parameters in tabular as well as graphical format for daily/weekly/monthly or user defined period along with provision to print and save at each step.

**D. Providing all the Events recorded in all the ABT Compliance meters along with the following provisions. Sorting the events as per the type of event for monthly/weekly/ user defined period in format prescribed by SLDC.**

All above functions & reports should have the print option at every step/window and save options in formats like PDF, Excel, word etc. However, the solution should be able to accommodate any other future requirements of SLDC necessary for accounting.

**E. DEVELOPMENT AND TESTING:**

The Development and Testing environment will be established by creating virtual machines that can be used to host corresponding Database applications curved from the available AMR servers in Data Lan. These VMs will be installed on the existing deployment servers which are running in the Active and Backup server configuration in one of the servers. The position of the development and testing environment can be decided at the time of detailed engineering based on the load and size constraints.

## 8.0 Planning and Procedure for Testing (FAT/SAT/STLC-Software Testing Life Cycle)

All equipment, materials, and software for AMR System will be subject to Factory Acceptance Testing (FAT) /Site Acceptance Testing (SAT) / STLC as applicable. The purpose of Acceptance Testing is to determine compliance to this specification in every respect with regard to the delivered and installed system. Bidder needs to follow Software testing life cycle for the testing of the application.

### i. Performance Bench Marks for Site Acceptance Test (Guaranteed Technical Parameters)

- a. All the interface /Audit meter data will be generated within **One hour**. This time shall remain valid for additional number of meters added during project execution period.
- b. In future (approximately 5 years), with data of 4000 meters, will be generated within same time as mentioned above.
- c. The collected energy meter data shall be processed and made error free and stored in the data storage system.
- d. The AMR software module shall provide energy meter data from the database to the energy accounting software. The data output shall be in compatible format with the energy accounting module of SAMAST or as query-based or GUI based output.
- e. The Software shall have data reporting capability to give report output on screen and can be downloaded in pdf /.xls/.csv etc. by the end user. Reports may be based on pre-configured criteria or based on ad-hoc query.

### ii. Acceptance Test Plans and Procedures

The Supplier will develop and document proposed Test Procedures and Test Plans for Factory Acceptance Testing (FAT), Site Acceptance Testing (SAT), Unit testing, System Integration testing, SAT/UAT of the delivered and commissioned system and its components. Supplier will finalize the proposed FAT and SAT acceptance test plans and procedures. The final Test Procedures and Test Plans will be subject to review and approval by SLDC, OPTCL prior to testing.

The Acceptance Test Plans (ATP) will enable SLDC, OPTCL to verify the ability of the delivered and commissioned system and its components to individually and simultaneously fulfill all functional and performance requirements of the system set forth in the contract through a series of mutually agreed to structured tests.

All system documentations will be completed, reviewed and approved by SLDC, OPTCL before any testing.

The ATP will include, but not be limited to, functional tests that demonstrate compliance of the functional, performance, software, hardware, communication, interface, and operational aspects of

the delivered and installed system.

iii. **Factory Acceptance Test (FAT) for ABT compliant energy meter/DCU and other equipment.**

The FAT will be conducted according to the FAT Test Plan and Test Procedure documents approved by SLDC, OPTCL will cover, as a minimum:

iv. **Visual Inspection**

To verify that the system to be delivered has all required components and is properly configured. Visual inspection will verify acceptable workmanship and that all equipment, including cables and connectors, are appropriately labelled.

v. **Hardware Diagnostic Test**

Individual tests of all system hardware. These tests will consist of running standard hardware diagnostic programs, plus all special diagnostic programs used by the Supplier.

vi. **Communications and Interfacing Test**

Verify that all interconnected system components, such as data acquisition, control, monitoring, and data management functions are operating properly when correctly connected.

vii. **Software Development Tools**

Verify that all required software development tools, utilities, software diagnostics, and debugging tools for the system, including the UI and database, are included in the system and are functioning correctly.

viii. **Functionality verification**

Verify that all system functions are working normally as set forth in the contract.

ix. **Performance Testing**

Verify that the system throughput time and response time requirements are satisfied. Tests will include verification of:

- a. Data exchange time
- b. Local and remote request response time
- c. Communication latency
- d. User Interface function response time

x. **Security Testing**

Verify that the system meets the software at delivery security requirements and other aspects of secure operation and system access including:

- a. Communication error detection capabilities
- b. Correct operation of system configuration, control, maintenance, and management procedures Safe system recovery with no erroneous data or control operation generation after

system restarts.

- c. Protection against unauthorized access to the system and control functions

**xi. Environmental Testing**

Verify that:

- a. All system functions will operate correctly over the specified temperature range.
- b. The accuracy of the inputs and outputs remain valid over the specified temperature range.

The test schedule will allow sufficient time for verification and/or additional unstructured testing by the SLDC, OPTCL's representative, who will be able to schedule unstructured testing at any time, including during structured tests.

**xii. Application Testing**

- a. The supplier should ensure a systematic approach for testing the software application to meet the requirements and is free of defects before go live. The Software Testing Life Cycle (STLC) shall be used to ensure that the software is of high quality, reliable, and meets the needs of the end-users.
- b. The supplier shall follow all the steps of STLC such as Requirement analysis, Test Planning, Test case development, Test Environment Setup, Test Execution, Test Closure etc. The core testing team of SLDC shall review the test case development before test execution.
- c. Unit testing, integration and other setting shall be conducted by the supplier with proper documentation and ensure that the product is free from all kind defects (functional, User Interface)/bugs after which, end user (SLDC) will perform UAT at their end.

**xiii. Site Acceptance Test (SAT)**

The SAT will be conducted by the OWNER (End Users) with support, as required from the supplier, after the system has been installed and commissioned. The system will be subjected to a subset of the functional and performance tests. The SAT will also include any type of testing that could not be performed in the factory. SLDC's representative, as necessary, will employ unstructured tests to verify overall system operation under field conditions. Any defects or design errors discovered during the SAT will be corrected by the Supplier. The SAT includes the commissioning test, the functional and performance test, and the cyber security audit after the installation of the delivered system.

**xiv. Commissioning Test:**

- a. The commissioning tests will be conducted by the supplier and include:
- b. The same visual inspection and verification as in FAT
- c. Loading of the software and starting the system. At the option of the SLDC, OPTCL all software will be recompiled from the source or distribution media.
- d. Interface of the AMR and MDM System to communications facilities for all data sources and other systems that interface with the AMR System.
- e. Initialization and preliminary tuning of application software as needed.

xv. **Site Functional and Performance Test:**

The site functional and performance test (“site test”) will be comprised of a subset of the functional and performance tests conducted in FAT. The tests to be performed will be proposed by the Supplier and approved by SLDC, OPTCL. These tests will be extended as necessary to test functions simulated during the FAT, such as communications with all field devices and all other systems that interface with the DC & DR.

xvi. **Cyber Security Audit:**

The cyber security audit shall be conducted by certified empaneled CERT-IN third party auditor before go-live and once in each year during AMC period.

xvii. **Testing Process Flow:**

- a. The SLDC will nominate a team to carry out Acceptance testing of the AMR solution developed by the supplier (For timely completion of the project, Testing Team nominated by SLDC will complete the testing of the software within stipulated time (not exceeding 30 days).
- b. The supplier will setup testing environment at the DC and use dedicated test servers for the same.
- c. The supplier will provide training to the Acceptance Testing team prior to the commencement of the acceptance testing of the system.
- d. The supplier should provide detailed test scripts for carrying out the acceptance test of various systems supplied.
- e. Supplier will resolve all the defects/issues identified by the SLDC’s acceptance testing team during acceptance procedure.
- f. The software would be re-tested to ensure closure of identified defects/issues.
- g. Subsequently, the authorized representative nominated by the SLDC will issue an acceptance certificate which should be produced by the SP to go ahead with the final rollout of the software.

xviii. **Test Approval:**

The Supplier will maintain a complete computer record of all test results with variance reporting and processing procedures for approval by SLDC, OPTCL. In the event that the AMR/Complete Software System does not successfully pass any portion of the Acceptance Testing, the Supplier will notify the SLDC, OPTCL of the specific deficiency. The Supplier will promptly correct the specified deficiency, which will then be re-tested until successful.

## 9.0 COMMISSIONING OF ENERGY METER & HARDWARE

### 9.1 ENERGY METER:

ABT meters shall be installed and commissioned following relevant Indian standards and organization requirement. New meters shall be wired neatly with 2.5 sq mm stranded colour coded copper wire up to the TBs at metering panels. Required wires, lugs, ferrules, binding tapes etc.

shall be arranged by the bidder. After installation, the meter should be checked for its performance.

## **9.2 DCU:**

DCU shall be mounted in RAS panel (supplied by bidder) in control room. Fuse/ MCB for power supply to DCU shall be arranged by the bidder.

## **9.3 METER LAN SWITCH**

Network switch shall be mounted RAS panel in control room. Fuse/ MCB for power supply to Network switch shall be arranged by the bidder

## **9.4 LAN SYSTEM:**

ABT meters shall be connected in LAN up to DCU through LAN switch. DCU will be connected to the communication terminal (SDH) of substation. ABT meter, LAN switch, DCU and SDH shall be connected by laying and terminating CAT-6/RJ-45 network cable through 25mm dia PVC pipe complete in all respect. Laying of cable and pipe through cable trench should be done neatly following relevant Indian standard by the bidder.

## **9.5 UNIQUE IDENTIFICATION NO:**

All meters and DCU shall be provided with unique IP address.

## **9.6 SIM for GPRS 4G/5G:**

All DCU shall be equipped with SIM for data transmission to Data Center as secondary medium in case OFC fails. Although the cost of SIM will be borne by the respective site in-charge on behalf of owner, the arrangement for the SIM of the most effective service provider at respective location shall be done by the bidder.

## **9.7 PLACE OF INSTALLATION**

The meter and AMR system specified above shall be installed at various EHV substations of OPTCL, Generating stations and ICTs in the state. The exact location and time table for installation shall be finalized and intimated to the supplier along with LoA. The supplier shall be responsible for total Delivery at site, installation and commissioning of the meters and AMR system hardware including unpacking and inspection on receipt at site., mounting.

## **10.0 TRAINING**

The training to be imparted at substations/ generating stations/ SLDC shall cover the following points:

1. Objective and importance of the project
2. Features of IEM, DCU, Data Collection System and communication interface
3. Time synchronization of meter



- 4. System diagnostic and reporting
- 5. End User Training.

Admin level training should be imparted to nominated executives of SLDC.

A comprehensive document should be provided to all participants.

**11.0 GUARANTEED TECHNICAL PARTICULARS**

**11.1 Data Concentrator Unit (DCU)**

Table 22: Data concentrator unit

Sl.No	Description	To be filled up by the bidder
1	Communication Ports- Serial Port 1 to 12	
2	Ethernet Port 6 Nos	
3	RAM	
4	Storage	
5	Processor	
6	Power Supply	
7	Power Consumption	
8	Mounting	
9	LED Indications	
10	Automatic startup on power restores	
11	Protocol Support	
12	Time Synchronization	
13	Remote Management	
14	Configuration management tool	
15	Warranty period	



**11.2 Meter LAN Switch**

Table 23: Network Switch

S.N.	Description	To be filled up by the bidder
1.	<b>Technology</b>	
a.	Standards	
b.	Processing Type	
c.	Protocol	
d.	Flow Control	
2.	<b>Switch Properties</b>	
a.	Switch Architecture	
b.	Transfer Rate	
c.	Memory Buffer	
d.	Jumbo Frame	
e.	MAC Table size	
3	<b>Interface</b>	
a.	RJ45 Ports	
b.	LED Indicators	
4.	<b>Power Requirements</b>	
a.	Input Voltage	
b.	Overload Current Protection	
c.	Reverse Polarity Protection	
5.	<b>Mechanical Characteristics</b>	
a.	Mounting	





6.	<b>Environmental Limits</b>	
a.	Operating Temperature	
b.	storage Temperature	
c.	Ambient Relative Humidity	
7.	<b>Regulatory Approvals</b>	
a.	EMI	
b.	EMS	
c.	Free Fall	
d.	Shock	
e.	Vibration	
f.	Warranty	

### 11.3 ABT Energy Meter

Table 24: ABT Energy Meter

Sl. No.	Description	To be filled by the bidder
1.	Make	
2.	Type of meter	
3.	Model no. of meter	
4.	Standard to which meter complies	
5.	Accuracy class	
	a. Active energy	
	b. Reactive energy	
6.	Meterology indicaror provided on meter and switching facility for reactive and apperant energy	
7.	Whether same meter programmable for 3 ph 3W and 3 ph 4 W	
8.	Whether same meter programmable for 1A and 5A	
9.	Whether Linear/non-linear CT/VT error compensation feature support	
10.	Availability of graphical display of vector diagram, harmonics and other display parameters	
11.	Provision of USB port	
12.	Variation of voltage at which system functions normally	
13.	Minimum starting current	



14.	Maximum current	
15.	P.F. range	
16.	Power consumption per phase	
	1. Voltage circuit	
	2. Current circuit	
17.	AC and DC auxiliary supply (if provided)	
18.	Sealing arrangement	
19.	Energy parameters recorded in meter	
20.	MD reset provision	
21.	MD integration period	
22.	Load survey parameters recorded in meter	
23.	Billing parameters recorded in meter	
24.	Daily mid night parameters recorded in meter	
25.	Facility of time adjustment/ synchronization	
26.	Whether optical, Ethernet and RS485 port provided	
27.	Product BIS and DLMS certification No.	
28.	Warranty period	



## **PART-I**

### **SECTION –VI-A**

### **COMPREHENSIVE AMC**

SCHEDULE OF COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR  
AMR SOLUTION AND DATA ACQUISITION SYSTEM FOR STATE LOAD DESPATCH  
CENTER, OPTCL, ODISHA.

**TENDER SPECIFICATION  
NO. SLDC-02/2023-24**



**SECTION –VI-A: COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR AMR  
AND HARDWARE**

**(Without ABT Meters, Meter Panel, DCU, IT hardware)**

**SCHEDULE OF COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR AMR  
SOLUTION AND DATA ACQUISITION SYSTEM FOR STATE LOAD DESPATCH  
CENTER, OPTCL, ODISHA.**

**Service Level Agreement clauses for Warranty and Annual Maintenance Period**

**ANNUAL MAINTENANCE AND SUPPORT SERVICE**

**1. Scope AMC**

The scope of work under maintenance & support services shall include a comprehensive maintenance of the AMR solution along with related software and support services for meeting the future expansion requirement envisaged under this project. The maintenance practices to be followed shall be as per ISO latest Standard. The essence of the maintenance and support services is to provide maintenance support for the designated hardware and software, with the goal of meeting the availability as set forth herein.

**2. On-Site Support and Maintenance**

Supplier will maintain a team of skilled personals having sufficient knowledge of the system in order to diagnose and set right any problem in software and hardware system in minimum time. The supplier will locate its supporting personals so as any problem may be rectified within stipulated time frame as per AMC requirements.

Supplier will maintain an online web-based help desk system on website for logging complaints and checking the resolution status round the clock on all days of the year. Web based help desk will be accessible to the user through browser via Internet. Separate username and password will be provided with separate privileges for users of central site as well as other distributed users/ entities. However, SLDC, OPTCL will be able to view logged complaints and their status irrespective the initiator of complaint. Any complaint will remain open until and unless approved its closure by SLDC, OPTCL.

All logs will be suitably time stamped. The severity level of the complaint will be assigned by SLDC, OPTCL.

Supplier will provide support service throughout the warranty and AMC period in order to diagnose and set right any problem in system in minimum time. These engineers will coordinate with the substation personnel, Maintenance Technician and the back-end team of the supplier for complaint resolution.

Necessary space and Facilities of reasonable nature of sitting will be provided by SLDC, OPTCL for deployed Engineer-of successful bidder at SLDC, OPTCL office. The bidder in its quote will also take into account any infrastructure/software up-gradation, if required during contract period. During maintenance period the Supplier will keep a record of all operation and maintenance procedure in the form of manual and will also maintain a record of all command logs (actual command given, who gave the command, time & date and from where) for a period of 12 months. For next period, the same information will be stored/retained in a non-online mode in archival mode, A list of all User ID linked with name and other details of the user duly certified by the Purchaser will also be maintained.

### **3. Remote Support and Maintenance**

In case, it is required for timely restoration, all privilege would be extended under the supervision of system administrator and by considering all cyber security measures.

### **4. Updation and Patch Management**

A record of the software updation and changes will be given to the Purchaser and any major updation and changes will be done with the prior approval of the Purchaser. Supplier will keep updated all supplied software kernel/OS and application software with all latest patches and upgrade. There will be no separate liability for License renewable on the system user.

### **5. Maintenance and Support of Brought Out Items**

Supplier will take back-to-back support from manufactures of all bought out items. However, supplier will be responsible for all coordination work with OEM for all types of support and maintenance.

### **6. Charges for support services**

All expenditure towards spare parts for maintenance and support services during AMC period will be borne by the supplier.

### **7. Problem/Defect Escalation Order**

The successful bidder will submit their organization's escalation order for this project in the following format:



Table 25 Escalation Matrix

Details of Supplier Executive	Description	Escalation Order
Name, Designation, Email ID, Mobile number	Overall accountability	4 <sup>th</sup> level
Name, Designation, Email ID, Mobile number	SLDC Department head to interact if there is any change in business requirement or some change request need to be implemented within the existing contract or any other issue that need to have a mutual consent to move forward and if the problem/defect in the existing software is not resolved within the specified resolution time.	3 <sup>rd</sup> level
Name, Designation, Email ID, Mobile number	SLDC Team Lead to report if any concerns and some items within the scope need to be fixed in priority	2 <sup>nd</sup> level
Name, Designation, Email ID, Mobile number	Interactions with SLDC Team, to provide support, resolve the defects and work together for seamless operation.	1 <sup>st</sup> level



**8. System availability**

The nature and maintenance support required for systems and components are described below:

Table 26: System availability

Sl.no.	System	System Availability requirements
1	ABT Meters data	99%
2	AMR Solution Software	99%

**Note:** Availability shall be calculated on the basis of cumulative running hours of individual items fortnightly (15 days).

Bidder will be responsible for coordination with the OEM for all matter related to that equipment (Hardware & Software). The bidder will also be responsible for meeting the overall response times and availability requirements as specified in the specification. The maintenance of the System will be comprehensive and will comprise of the following category of works which is further elaborated for each of the different subsystems:

- i. Preventive Maintenance Activity (performance monitoring, system backup, patch management, updates, emergency response and troubleshooting)
- ii. Maintaining adequate no. of spares
- iii. Integration of new module/equipment etc.

**9. Preventive Maintenance Activity**

The preventive maintenance activity to be performed by the Supplier to keep the system running at optimum level by diagnosis and rectification of all hardware and software failures would broadly include:

- a. Configuration of the hardware and software, periodic routine checking as part of a preventive maintenance program (as described in further detail in this document) which would include checking of functionality of software.
- b. Monitoring of the performance of the system and doing necessary tuning for optimum performance to accommodate any changes such as addition of new IEMs.
- c. Restoration of the systems upon its failure and to restore the functioning of the various systems.



### 9.1 Hours of Cover

The supplier will provide engineers who have an experience and skill to maintain the system to the desired level of availability. The service of above manpower resource will be standard hours of service i.e. 10:00 am to 5:30 pm local time (IST), including Public and Owner Company Holidays, throughout the year. The timings for Emergency Support will be 24 hours a day, 7 days a week throughout the year.

The support personnel so deployed will be qualified personnel having at least 5 years of experience in the delivered system. The supplier will submit the CV's to owner/Employee for approval before deployment at site. The owner can ask the supplier to replace the personnel deployed for maintenance support if his performance is not found to be satisfactory.

The bidder will submit authentication against disbursement of the monthly salary of the deployed manpower by 5<sup>th</sup> day of subsequent Month during AMC period.

### 9.2 Service Response requirements

The severity levels are defined in coming sections and the requirement of response time for various severity levels is defined below:

Emergency support for severity 1 issues is to be provided 24 hours a day, seven days a week. The on-call support team will include all key technical competencies so that any aspect of a system failure can be attended. The team will comprise of experienced Engineers who are skilled in troubleshooting of the various systems covered under warranty/AMC. Severity 1 problems will be reported by telephone for rapid response; target response times are defined in clause-15 of this section (Response and Resolution Time). The bidder will submit the process details to meet the above requirements along with the offer. For severity 1 problems, the key objective is to restore the system to an operational state as quickly as possible, including by a temporary workaround. Resolution of problems will also be provided by an individual fix that will be installed by the supplier at no extra cost to Owner. Severity 2, 3 and 4 problems will be reported by Owner through a call tracking system to be provided by the supplier.

### 9.3 Monitoring

The operation and performance of the AMR system under warranty/AMC period will be monitored on a fortnightly basis, the bidder will review the following, analyse the results, and submit report to SLDC. The Reporting shall be done to the Engineer in charge of SLDC, OPTCL. The bidder will conduct at least the following monitoring:

#### a) Monitoring healthiness of each metering point:

This should be done by analysing the meter report from AMR for any discrepancy of reading, tamper information etc. and adopting any other suitable method. Time synchronization of every meter is to be monitored.

#### b) Identification of defective/ deficient/ non-performing part of the AMR system:

From monitoring report and further investigation, including site visit, the defect is to be pinpointed.

**c) Rectification/ replacement of defective hardware:**

In case defect of any hardware is identified, the same should be immediately replaced. Hardware like wiring, TB etc. not covered by warranty shall be replaced by the bidder from their stock. Meter, DCU, Network switch etc. which are covered under warranty shall be replaced immediately

**d) Repair of removed hardware:**

Removed hardware like meters, DCUs and network switches shall be repaired as per warranty terms and handed over to OPTCL for replenishment of their spare stock.

**e) Coordinate and follow up with communication team:**

In case any problem in communication is identified/ suspected, the matter should be immediately taken up with Communication department of OPTCL (for OF) or the service provider (for GPRS)

**f) Collection of meter data:**

In case of unavailability of any meter data in AMR due to any reason, the same should be collected through portal /Email through manual download, for timely preparation of report at SLDC.

**g) Incorporating change of CT/ PT ratio, if any, in AMR**

In case of any change in CT or PT ratio in any feeder due to replacement/ augmentation, the same should be incorporated in AMR for proper registration.

**h) Monitoring software performance and correction if required:**

Regular monitoring of software for its smooth function, data availability for other application should be done with generation of monitoring report.

i) All DCUs, Switches, on-line data acquisition functions, and maintenance functions in system will be monitored for fatal and recoverable errors. All errors will be recorded by the system for review by maintenance personnel. Each type of error (e.g., Server failure, memory access violation, device reply time-out, or message checksum error) will be recorded separately with a date and time tag.

**j) Log Monitoring**

- i. System logs for a selected day
- ii. System history log
- iii. Aggregate data collection
- iv. Events Collection

During monitoring if any defect/ abnormality is found, the bidder will undertake corrective maintenance for the same.

Failure monitoring logic will be distributed within the computing network and will detect all failures that affect the availability of network resources or services. Failure monitoring functions will be independent of application function and user modes. The failure monitoring and error detection function will preferably provide event notification for 3rd party products e.g. SNMP messages. Resources Monitoring

#### **9.4 Physical maintenance**

The bidder will undertake physical maintenance of all Equipment such as DCU, Switch etc. and software under the scope of this contract, in accordance with this section. The physical maintenance will include cleaning, dusting, inspection of equipment for loose connections, damage to insulation, pest infections etc. as follows: -

- (a) Connection test of LAN cables for identifying potential loose contacts in DCUs, Switches etc. once every 3 months.
- (b) Cleaning and blowing for removal of dust from panels every 3 months.

Note: - Equipment shutdown during preventive maintenance will be deemed as available.

#### **10. Spares Inventory:**

The Bidder will be responsible for providing all the spares (cards/modules/accessories etc.) for supplied & installed equipment and Non availability of spares will not have any impact on Outage time. The spares will be provided / arranged by the supplier at no extra cost to Purchaser. In addition to the Mandatory Spares the bidder will provide a list of “Recommended Spare Parts”, which may be required over and above the spares listed in Mandatory Spare parts list, to support system availabilities specified in specifications. These will be periodically verified by the owner and unavailability of spares will be treated as non-availability as per Level-4. If spares has been used in the system then the replenishment of the spare should be done within 45 calendar day, otherwise it will be considered as non-availability as per Level-4.

#### **11. Integration of New Equipment: /**

Addition/Deletion/Integration of new IEMs including substation equipment in the AMR database and application software will also be the responsibility of the Bidder without any extra cost to SLDC, OPTCL.

#### **12. Reliability Indices:**

The following reliability indices will also be automatically generated on weekly basis from DC and archived for download on demand.

#### **13. Problem/Defect Reporting:**

The bidder will submit an appropriate problem/defect reporting procedure to meet the requirement of all severity level cases to get the approval of the same from SLDC, OPTCL.



The problems will be categorized as follows

**14. Severity level:**

The details of the system under different severity levels is as below;

Table 27: Severity Levels

Severity Level	Description	Resolution time allowed		Penalty for per excess day required in INR	Remarks
		When site visit not required	When site visit required		
Emergency (L4)	When AMR software fails at DC and DR	8 hours	2 days	5000	sitevisit means- visit at SLDC by experts from outside.
Critical (L3)	When AMR software is not working in either DC or DR.	18 hours	4 days	3000	
Minor (L2)	When one set of meter data (main/ check/ standby) is not available	2 days	7 days	500 per meter	
General (L1)	Problem with meter display, non-functioning of any part of software which is not essential for AMR system operation.	3 days	10 days	100 per meter	

Apart from L4, all days are working days. Delay due to any reason not attributable to the bidder shall not be charged and consequent waiver of penalty is subject to discretion of the owner.

**15. Response and Resolution Time:**

This section describes the target times within which the bidder will respond to support requests for each category of severity. The Initial Response Time is defined as the period from the initial receipt of the support request (email/telephone/fax or any other communication channels) and the acknowledgment of the supplier subject to the Maximum time defined Table-27

The Action Resolution Time will be computed after the expiry of the ideal initial response time

subject to the Maximum time defined in below Table-27

This period includes investigation time and consideration of alternative courses of action to remedy the situation. The Action is defined as a direct solution or a workaround.

Except for Severity Level 1 all response and resolution times (hours and days) specified below are working hours only:

**Table 28 Emergency Support Response/Resolution Time**

<b>Severity</b>	<b>Ideal Initial Response Time</b>	<b>Action Resolution Time (to be commenced after end of ideal initial response time)</b>	<b>Action</b>
1	30 Minutes	1 Hour	An urgent or emergency situation requiring continuous attention from necessary support staff until system operation is workaround.
2	2 Hours	12 Hours	Attempt to find a solution acceptable to Owner (dependent on reproducibility) as quickly as practical.
3	1 day	2 days	Evaluation and action plan. Resolution time is dependent on reproducibility, ability to gather data, and Owner’s prioritization. Resolution may be by workaround.
4	2 days	4 days	Report on the problem/query is to be furnished

The bidder will submit the detailed format and procedure for all the activities such as Reporting time, Resolution time, Downtime etc. along with the bid proposal.

**16. Availability and Payment Charges Calculation**

It is the endeavor of both the bidder and owner to maximize system availability to the extent possible. The bidder will provide guaranteed availability for various types of Systems as specified in clause 8 above. The non-availability hours for availability calculation will be counted from the end of the allowed Action Resolution time. The web-based help desk software application will have features for complaint reporting, severity level assignment, initial response time stamping, remarks of the resident engineer regarding actions taken, complaint resolution time stamp and statistics for computing duration of system outage under different severity level categories. There will be separate login for SLDC and SLDC, OPTCL for certification of the complaint resolution

time and will be finalized during DSRS phase. The complaint resolution time stamp will be generated only after endorsement/acknowledgement by SLDC engineer in-charge.

Duration of outages over and above the Action Resolution time, as defined in clause-15 in each of the Severity levels will be counted for the non- availability computation and will be clearly brought out in the web based help desk. The resolution may be accomplished by a work around, and such solution will mark the end of non-availability.

In the event of frequent failures at a site, due to a common cause, the first FPR (Field Problem Report) logged will be used for the purpose of availability calculation. However, simultaneous multiple outages due to unrelated cause would be counted separately.

### **17. Availability computation for System**

Availability will be computed on per quarter. The formula to be used for availability computation would be as under:

$$\text{Availability per quarter yearly} = \frac{\{\text{THQ} - (\text{S1} \times 1 + \text{S2} \times 0.8 + \text{S3} \times 0.5)\}}{\text{THQ}} \times 100\%$$

Where THQ is Total hours in the quarter

S1 is the total non-availability hours in severity level-1 in the quarter

S2 is the total non-availability hours in severity level-2 in the quarter S3 is the total non-availability hours in severity level-3 in the quarter

S4 is the total non-availability hours in severity level-4 in the quarter

The target availability would be 99% or better for Software & Hardware. The monthly availability will be calculated as average of weekly availability of the month. Availability will be calculated quarterly as AMC and communications will be paid quarterly. For availability calculations, non-availability of data due to equipment (Hardware and software) failure will be considered. Non-availability of data to SLDC due to non-availability due to communication only will not be considered for availability calculations. However, to ensure the data availability at DC with the help of communication Service Provider as per Communication Service levels is in Supplier's Scope.

### **18. Payment of maintenance charges and Price Reduction (based on the total System availability)**

- i. AMC charges will be payable quarterly during the AMC period (on successful completion of 3 months against invoice after due verification by the owner's nodal officer)
- ii. In the event of availability below a certain level, the maintenance charges would be proportionately reduced as follows:

Table 29 Deduction against less availability

Availability of the system per quarter	Deduction as % of the apportioned price of total AMC
More than or equal to 99%	NIL
Less than 99%	Deduction of 2% of the apportioned prices of the apportioned quarterly AMC for every 0.5 % or part there of decrease in availability under 99%. This deduction will be subject to maximum 50% of the total payable amount of the quarter.

### 19. Deduction against non-compliance of Preventive Maintenance:

Routine preventive maintenance shall be carried out on quarterly basis in addition to the normal maintenance and submit the relevant records to the Engineering in charge. In the event of missing of the preventive maintenance in any quarter by the bidder, 30% of amount payable for that quarter shall be deducted for non-compliance.

### 20. CAMC B.G. towards security deposit, 100% payment and performance guarantee:

A Composite Bank Guarantee as per the Proforma enclosed at Annexure-VII of the specification for 10% [ten percent] of the (Taxable Value plus GST thereon) of the AMC Cost for 5 years, will be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of **Chief Load Despatcher, SLDC**, Bhubaneswar within 30 days from the date of issue of the purchase order, The BG will be executed on non-judicial stamp paper worth of Rs.29.00 [Rupees twenty-nine] only or as per the prevalent rules, valid for a period of 62 months ( 60 months AMC period+ 2 months) from the date of go-live, for scrutiny and acceptance, failing which the purchase order will be liable for cancellation without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at Bhubaneswar, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.

Note:

- i. BG for comprehensive AMC shall be submitted by the bidder for a period of 62 months. AMC will be effective after one year completion of warranty period.
- ii. BG for AMC shall be submitted by the bidder within 30 (Thirty) days from the date of issue of the LoA.
- iii. In case the bidder fails to submit the BG for AMC prior to the specified date mentioned at clause-20 above or decline to provide comprehensive AMC support, the BG



submitted for Hardware and Software component shall be encased by SLDC, OPTCL.

- iv. No interest is payable on any kind of Bank Guarantee.

## **21. Computation of Availability /Non-availability**

The computation of Availability /Non-availability would be rounded up to 2 decimal places at each Control Centre on quarterly basis and any deduction in maintenance charges thereof would be calculated as stated above in clause 18 on pro-rata basis.

### **a) Supplier's Obligations**

The supplier will guarantee continuous availability of the system as indicated Section II:-clause 15 of the section for the defect liability period of one year from the date of operational acceptance in the warranty period and subsequent AMC period. The system availability will be calculated as indicated above on monthly basis. During this period, the supplier will take continuous actions to ensure the guaranteed availability. In case the actual availability falls short of the guaranteed availability, it would be considered as suppliers default and under the provision of Section II :- clause 15, defect liability period will be extended by a period equal to the period / months during which the availability is less than the guaranteed availability.

In order to optimize and improve the response of the system, the supplier may re-install the program modules after making the Owner engineer aware of the consequence (like data loss, database rebuild etc.).

Any modification of software/Operating System required to restore functionality due to hardware upgrades, patches, or arising out of a necessity to fix FPRs (Field problem reports), would be done by the supplier at no extra cost to owner.

The supplier will submit FSR (Field Service Report) and the steps taken to solve the problem, along with details of code changes.

### **b) Responsibilities of Owner**

The responsibilities of the owner during the maintenance period are as follows:

- i. Owner will ensure that proper Environmental conditions are maintained for the system.
- ii. Owner will ensure that the System is kept and operated in a proper and prudent manner as described in the system documentation provided by the Supplier and only trained Owner representatives (or persons under their supervision) are allowed to operate the system.
- iii. Owner will provide access to the sites of installation for purposes of providing Support Services.
- iv. Owner will provide the supplier with Space for Office and storage space for their maintenance staff and spares.

### **c) Responsibility Matrix**



The table in this section provides a summary definition of the roles and responsibilities of the supplier and Owner.

<b>Legend:</b>	<input type="checkbox"/>	This indicates who has primary responsibility to perform this function.
	A	This indicates who will provide assistance.

Table 30 Responsibility Matrix

Item	Task	Owner	Supplier
1.0	<b>PROBLEM IDENTIFICATION</b>		
1.1	Root cause analysis to determine whether the fault is attributable to Hardware or Software.	----	<input type="checkbox"/>
1.2	Resolution of problems involving third party maintainer where there is uncertainty whether the root cause is hardware or software.	----	<input type="checkbox"/>
2.0	<b>SOFTWARE PROBLEM RESOLUTION</b>		
2.1	Report problem and assist with problem identification	----	<input type="checkbox"/>
2.2	Provide or recommend corrections, temporary patches, workarounds or other fixes to system problems	----	<input type="checkbox"/>
2.3	Install and test corrections, temporary patches, workarounds or other fixes to system problems	----	<input type="checkbox"/>
3.0	<b>ROUTINE SOFTWARE SUPPORT</b>		
3.1	Build and maintain database and reports	<input type="checkbox"/>	A
3.2	Perform system back-ups	----	<input type="checkbox"/>
3.3	Restore or reinstall software from back-ups	----	<input type="checkbox"/>
3.4	Monitor system logs (part of remote monitoring service)	----	<input type="checkbox"/>
3.5	Maintain system logs	----	<input type="checkbox"/>
3.6	Maintain user accounts	<input type="checkbox"/>	A
4.0	<b>HARDWARE PROBLEM RESOLUTION</b>		
4.1	Report problem and assist with defining problem	<input type="checkbox"/>	A
4.2	Troubleshoot problem to diagnose if it is software-related or hardware-related	----	<input type="checkbox"/>

4.3	Identify failed component, Replace failed components in online system using parts from spares inventory	----	<input type="checkbox"/>
4.4	Restore operation of repaired/ replaced equipment.	----	<input type="checkbox"/>
5.0	<b>HARDWARE SPARE PARTS</b>		
5.1	Manage local spares inventory	----	<input type="checkbox"/>
5.2	Replenish local spares inventory	----	<input type="checkbox"/>
5.3	Maintenance of Spares	----	<input type="checkbox"/>

d) Transfer of Software

The bidder must ensure that after Warranty/AMC Period following are duly transferred to SLDC, OPTCL:

- i. Fully Configurable Software and Configuration settings
- ii. Data base
- iii. All Licenses and Passwords
- iv. Relevant any essential requirement for smooth functioning of the solution.
- v. Ensure knowledge transfer to the owner’s user team.

**22. Reporting of breakdown:**

There shall be arrangement for reporting of breakdown to the bidder by operating personnel of SLDC and substation over phone, by email or through computer application. Such report shall be recorded with complaint number and time. Any defect found by the bidder itself while monitoring shall also be recorded and communicated to the in-charge of SLDC and respective substation control room.

**23. Deployment of Maintenance personnel:**

- i. **At SLDC:** The Engineer with adequate qualification, expertise and experience for such type of system shall be deployed, so that trouble shooting at SLDC is possible in minimum time for all seven days of week.
- ii. **At other places:** In order to cover all substations of OPTCL, it is required to set up four/ five more establishments at suitable locations.

**24. Commissioning of AMR in up-coming substation/ line etc:**

Apart from maintenance work described above, the bidder shall be responsible for commissioning of meters, DCU etc. already purchased under this NIT for present bays/ substations and integrate those to the AMR system. Any training program at substation and SLDC level, if required, shall also be imparted by the bidder. Payment for all this work shall be done at the prevailing rate for such work under this NIT.



**25. Certificates:**

The bill for AMC after every quarter of service shall be accompanied by the following certificates;

1. System availability certificate by SLDC
2. Work report containing routine and break down maintenance
3. Spare material transaction report
4. Commissioning work report (if applicable)
5. Any other document as may be required in future.

**SECTION-VI-B: COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT FOR ABT ENERGY METER**

**1. SCOPE OF AMC (Comprehensive) (07 YEARS):**

**Annual Maintenance Contract (Comprehensive)** for the meters to be provided in different Grid sub-stations for a period of **07(seven) years** beyond the Guarantee period (60 months from the date of commissioning) and shall have following scope:-

- a. Preventive Maintenance** [Half yearly (every six months)]: Contractor to Check Properly to ascertain the performance to the satisfaction of OPTCL in every six months of ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters. These inspections are to be carried out in presence of SLDC/OPTCL Engineer(s) and contractor's representative(s). A report on inspection & testing along with the status of the ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters to be jointly signed for reference and record. In case any defect(s) is/are noticed during Preventive Maintenance, such defects are to be rectified within 15 days. The materials/equipments required to rectify the defects are to be supplied by the Bidder free of cost to SLDC/OPTCL. In case contractor fails to perform the Preventive maintenance within the scheduled stipulated time, the purchaser shall recover from the supplier/contractor a Price Reduction Schedule for the delay as per the Price Reduction Schedule clause indicated below **(9-B)**.
- b. Break down maintenance:** In case any defect is noticed, the Contractor shall be intimated by the owner, and Contractor shall attend the spot within 07 days from the date of intimation (Date of issue of Letter) positively and shall ascertain the defects and shall rectify the same within 15 days from the date of intimation (Date of issue of Letter) to the Contractor. In case Contractor fails to rectify the defects within the scheduled time, the purchaser shall recover from the supplier/ Contractor a Price Reduction Schedule for the delay as per the Price Reduction Schedule clause indicated below **(9-A)**. The date of intimation to the Contractor regarding the troubles/defects of the ABT Compliant 0.2S Acc Energy Accounting and also Interface meters shall be reckoned as the base date for computing the Penalty amount.
- c. Time Synchronization of meters once in a year.**  
Relevant Stipulations on 'Site Meter Testing' shall be followed as per this specification and is mentioned as follows:

**Testing with Phantom Load:**

For such testing, use of Reference Standard with "Total Uncertainty" level as specified in IS 15707 will be used, however accuracy class 0.05 or better for reference standard is recommended:

- i. Remove MUT connection from the Terminal block (TTB) for testing.
- ii. Connect Reference Standard with MUT & Phantom Load.
- iii. Note down the instantaneous values of Voltage, Current & Power Factor, as displayed by the reference standard.

- iv. It is recommended to start testing 2 minutes after load is ON. Check the stability of the error of the MUT by checking the initial errors at 20 pulses.
- v. Meter to be tested on various testing points: preferably 3 test points.
- vi. The typical test duration should be 2 minutes but should not be more than 5 minutes.
- vii. Start the test and note down the test parameters & results in percentage errors.
- viii. Re-install the meter after completion of testing and restore supply.

### **Precautions**

- i. Ensure the test equipment are duly calibrated and have uncertainty level within acceptance range.
- ii. Only certified / trained personnel should conduct testing.
- iii. Observe all safety precautions and take all precautions while re-installing the MUT or switching ON to the load.

**Accuracy tests wherever applicable shall be conducted for both the import and export modes.**

## **2. Price for Comprehensive AMC for Energy Meters for 07 Years.**

Nature of Price: The Basic price (Taxable value) is firm and the total landing price indicated in the bidder's offer is inclusive of GST.

## **3. Good & Service Taxes and Duties ( For AMC)**

Goods and service taxes, if any will be paid in line with price schedule of this purchase order as per the following details.

- i. GST is included in the above price as per the prevailing rate i.e.18%
- ii. PAN No: You have to furnish the PAN of your firm as required under IT Act before execution of the order.
- iii. GSTIN NO: The GSTIN of OPTCL is-21AAACO7873L1Z6, which should be mentioned in all your invoice, Receipt Voucher, Credit Note and Debit Note, Delivery challan in terms of the CGST and OGST Rules, 2017 as applicable, under GST Law.
- iv. TDS on income Tax: Income Tax shall be deducted from your bills as applicable from time to time (presently @ 2%).
- v. Statutory Deduction : Statutory Deduction of the tax shall be made as applicable.

## **4. TERMS OF PAYMENT: (For AMC Contract of ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters)**

The terms of payments under this contract shall be governed as per the following:

- a. Your unconditional acceptance of the order.
- b. A performance Bank Guarantee as per the proforma enclosed for 10% of the total Maintenance Contract price (**for 07 years**), which will remain valid for more than two months from the expiry of the contract period i.e. 86 months from the last date of the guarantee period.

Initially, the BG shall remain valid for 18 months and the same to be revalidated from time to time to cover the entire AMC period plus two months.

- c. Payment will be made equally at the end of every six months, period starting from the date of contract agreement as per the details below:
- i. Release of payment for the 1<sup>st</sup> installment: - The payment of 1st installments of each year are to be paid to you at the end of 6 (six) months. All the ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters need to be Checked Properly under Preventive Maintenance (PM) to ascertain the performance to the satisfaction of OPTCL in every six months. This inspection is to be carried out in presence of SLDC/OPTCL Engineer & contractor's representative. A report on inspection & testing along with the status of ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters should be jointly signed and furnished to the verifying authority (Concerned officials of SLDC/OPTCL) for verification and onward transmission to the designated Nodal Officer. You have to furnish the draft format for the inspection /testing & Status report of the Bus-Bar scheme, which shall be approved by the concerned authority of SLDC/OPTCL.
  - ii. Similarly, the payment of 2nd installments of each year are to be paid to you at the end of 12(Twelve) months, during which the inspection of ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters to keep the schemes in a healthy and functional condition, shall be carried out by the Bidder, on production of documents as indicated above.
- \* The payment for other years of AMC shall be made as indicated above.

**5. PAYING OFFICER:**

The paying officer will be intimated at the time of issue of work order.

**6. Nodal Officer:**

Bidder will be intimated in PO, the name and designation of Nodal officer of SLDC/OPTCL, who will monitor the execution of entire maintenance activities within the scope of this contract. You will furnish all the records, reports, receipts etc. to the Nodal Officer, who will forward the documents, after due verification. For initiation of Half yearly payment activities.

**7. GUARANTEE:**

It will be contractor's responsibility to maintain the entire ABT Complaint 0.2s Acc Energy Accounting and also Interface Meters, as described in the scope of the contract in healthy and functional manner. The repair and replacement work will be completed within 15 days from the registration of the complaints by SLDC/OPTCL Engineer(s) of the concerned Grid substation or AGM/DGM/GM of the concerned Division or Circles respectively, failing which the price reduction schedule clause as at clause-9 shall be applied. The replacement of equipment's will be done by using materials from the stock to be kept under contractor's scope. Any equipment removed from the ABT Complaint 0.2s Acc Energy Accounting and also interface Meters

location and taken for rectification will be rectified and returned back to OPTCL at contractor's own risk and expense, within 15 days from the date of such removal. The date of removal will be reckoned as the date of handing over & taking over report jointly signed by OPTCL Engineer of the concerned Grid substations and contractor's representative.

- (a) An indemnity boned shall be furnished before receiving materials from OPTCL.
- (b) In case the materials are not returned back to OPTCL within 15 days, a price reduction schedule shall be levied on the contractor as per clause 9-B. In case the Bidder would not return the materials taken from the ABT Complaint 0.2s Acc Energy Accounting and also interface Meters, the BG furnished towards the AMC shall be encased without any intimation to you.

**8. COMPOSITE BANK GUARANTEE:**

**B.G towards security deposite,100% payment and performance guarantee:**

- a) You are requested to furnish a Composite Performance Bank Guarantee of 10% of the contract value in our standard bank guarantee format (as enclosed) towards security payment and performance from any National/ Scheduled Bank having a place of business at Bhubaneswar on non-judicial stamp paper worth of RS.29.00 (Rupees twenty-nine) only or as applicable as per the prevailing laws. The said B.G. shall be accompanied with the confirmation letter from the issuing bank & should be capable of being encased at Bhubaneswar, in order that the B.G. is accepted. The B.G. shall be furnished in favour of Chief Load Despatcher. SLDC, OPTCL within 30 days from the date of issue of AMC order and shall remain valid for two months more than the expiry of the contract period. Initially the BG shall remain valid for 18 months and the same to be revalidated from time to time to cover the entire AMC period plus two months.

Where the contract is extended, the B.G should also be suitably extended, to cover the entire contract period.

- b) No interest is payable on the Composite Performance Bank Guarantee.
- c) In case of non-fulfillment of contractual obligation in any manner, performance bank guarantee shall be invoked without intimation to you.

**9. PRICE REDUCTION SCHEDULE:**

- A. In the event of failure on your part to comply with the provisions of the contract regarding attending to the **Breakdown** of the ABT Compliant 0.2S Acc Energy Accounting and also Interface Meters at various grid substations as indicated elsewhere, a price reduction schedule @0.5% of the Unit AMC price for each day of delay, or part thereof, for such delay, subject to no upper ceiling, will be levied, without prejudice to any other remedies to which OPTCL may also be entitled, under the provisions of the contract/bid specifications.
- B. In the event of failure on your part to comply with the provisions of the contract regarding attending to the **Preventive maintenance** (PM) of the ABT Compliant 0.2s Acc Energy Accounting and also Interface Meters at various grid substations as indicated elsewhere, a

price reduction schedule @30% of the total AMC value for the period shall be imposed for that six monthly period.

**10. DELIVERY:**

Delivery schedule for COMPREHENSIVE ANNUAL MAINTENANCE CONTRACT for 2000 nos of Energy meters (0.2s Accuracy Class) shall be defined in the PO.

**11. CONTRACT AGREEMENT:**

Contractor shall prepare and finalise the Contract Document for signing of the formal Contract Agreement with us, as per the proforma to be provided to you, on non-judicial stamp paper of appropriate value within fifteen days from the date of this order. The contract papers shall be prepared in 2(two) originals and copies shall be 1(one) no for each sub-station, where the Bus- Bar protection is proposed.

**12. PAYMENT DUE FROM SUPPLIERS:**

All costs and damages, for which the supplier is liable to the purchaser, will be deducted by the purchaser from any money due to the supplier under any of the contracts entered in to with SLDC OPTCL.

**13. FORCE MAJEURE CONDITION**

The supplier shall not be liable for any price reduction schedule for delay or for failure to perform the contract for reasons of force majeure such as acts of God, acts of the public enemy, acts of the Govt, Fires, Floods, epidemics, Quarantine restrictions, strikes, Freight Embargo and provided that the supplier shall within Ten (10) days from the beginning of delay on such account notify the purchaser in writing of the cause of delay.

The purchaser shall verify the facts and grant such extension, if facts justify.

**14. SUPPLIER'S DEFAULT LIABILITY:**

- i.** The purchaser may, upon written notice of default to the supplier, terminate the contract in circumstances detailed here under.
  - (a) If in the judgment of the purchaser, the supplier fails to make delivery of equipment/material within the time specified in the contract or within the period for which if extension has been granted by the purchaser in writing in response to written request of the supplier.
  - (b) If the judgment of the purchaser, the supplier fails to comply with any of the provisions of this contract.
- ii.** In the event, purchaser terminates the contract in whole or in part as provided in clause-14(i) of this section, the purchaser reserves the right to purchase upon such terms and in such a manner as he may deem appropriate in relation to the equipment / material similar to that terminated and the supplier will be liable to the purchaser for any additional costs for such similar equipment/ material and/ or for penalty for delay as defined in clause-9 of this section until such reasonable time as may be required for the final supply of equipment.



- iii. In the event of purchaser does not terminate the contract as provided in clause-14(i) of this section, supplier shall be liable to the purchaser for penalty for delay as set out in clause-9 of this section until the equipment is accepted. This shall be based only on written request of the supplier and written willingness of the purchaser.

**15. TRAINING FACILITIES:**

The supplier shall provide all possible facilities for training of purchaser's Technical personnel, when deputed by the purchaser for acquiring first-aid knowledge in assembly of the equipment, its erection, commissioning and for its proper operation and maintenance in service, wherein it is thought necessary by the purchaser.

**16. GENERAL CONDITIONS OF CONTRACT:**

The general conditions of contract as per Tender Specification no: SLDC-02/2023-24 shall hold good except in so far as they are modified herein.

**17. NON-ASSIGNMENT**

The contractor shall not assign or transfer the purchase order issued as per this contract or any part thereof without the prior approval of SLDC OPTCL

**18. JURISDICTION OF HIGH COURT:**

It is hers by expressly agreed that suits, if, any arising out of this contract shall be filled by either party in a Court of Law to which the jurisdiction of High Court of Odisha extends.

**19. Suppliers responsibility:**

You are requested to

1. Acknowledge acceptance of this purchase order within 7 (seven) days from the date of issue and return copy of this order along with its condition of contract duly signed by the authorized signatory with seal at every pages as a token of your acceptance.
2. Submit the required Composite Bank Guarantee 30(Thirty) days from the date of issue of this purchase order.
3. The AMC is issued considering the scheduled delivery date of individual Energy Meter.
4. The period of AMC will be 07 years from the expiry of the guarantee period will be amended as per actual installation, testing & commissioning of each Energy Meter



**PART – II**

**SECTION-VII**

**BID PRICE SCHEDULE (BPS)**



**PART – II**  
**SECTION-VII: BID PRICE SCHEDULE (BPS)**

**BID PROPOSAL SHEET**

Bidder's Proposal Reference No. and Date:

Bidder's Name & Address :

Contact Person :

Designation :

Telephone No. :

Fax No. :

Mobile No. :

E-mail :

To

The Chief Load Despatcher, SLDC  
ODISHA Power Transmission Corporation Ltd.  
Mancheswar, Bhubaneswar.

**Sub:** Design, Development, Supply, Installation, Testing & Commissioning Of 0.2S Accuracy Class AC Tri Vector ABT compliant Energy Meters, AMR (CDCS-MDAS) Software (at DC & DR) along with DCU and associated hardware and comprehensive AMC for AMR Solution and Energy Meters.

**Ref. :** 1. NOTICE INVITING TENDER(NIT) NO .....

2. TENDER DOCUMENT REFERENCE NO.....

3. PACKAGE/Works: No.....

Dear Sir,

1. We, the undersigned Bidder having visited the Official e-Tender Portal of OPTCL and having read and examined in detail the Tender Documents [e-NIT, Free View Documents (.pdf) and Bid Forms(in XLS formats)] including specifications of the package referred above, do here by propose to engineer and supply including all types of test at manufacturer's works, ocean shipment, marine insurance, custom clearance, port clearance and handling, inland transportation, inland transit insurance, delivery to site, loading & unloading, storage, insurance during storage and inside site transportation and erect and commission of the materials/Equipment supplied under this contract including installation, performance testing and handing over to SLDC, OPTCL of the complete Construction of works on EPC/Turnkey contract basis.

We, agree to the following major terms and conditions of the tender;

**2. PRICES AND VALIDITY:**

2.1 We declare that the prices quoted in our proposal are in accordance with your “Instructions to Tenderers” and as per the bid form (in .XLS formats) available in the Official tender Portal of OPTCL.

2.2 The Input Tax Credit (ITC) available on inward supply of goods or services, or both, as the case may be for the contract has been fairly estimated and the benefit of the same has been fully adjusted while quoting the bid price.

All the basic prices (taxable value) of the price schedule are FIRM during the period of the contract (except for statutory variations in GST rates) in line with your bid documents.

2.3 All the prices and other terms and conditions of this proposal are valid for a period of 240 Days from the date of opening of the Technical (Part-I) bids.

2.4 The prices and the price components in line with the requirements of the bid documents Section-VII of the Part-II (Price Schedules) are keyed-In and uploaded in the Official e-Tender Portal of OPTCL.

2.5 We hereby declare that our bid prices cover entire scope of the work to complete the work in accordance with Bid Documents.

2.6 We hereby declare that prices left blank or indicating “nil/zero/0/dash/-/Not Applicable/NA/any other notation other than price” in the Schedules will be deemed to have been included in the prices of other items/total quoted Bid Price.

2.7 If there is a discrepancy between unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and total price shall be corrected. If there is a discrepancy in the quantity mentioned by the bidder from the quantity mentioned in the tender the tendered quantity (BOQ) will prevail.

2.8 We do not anticipate any change in Ownership of company/firm. If at all and there would be a change in Ownership, we undertake that our obligation under the contract in case we become successful bidder, shall stand.

**3. TAXES & DUTIES:**

3.1 We declare that towards the supply of goods & services by us, we will quote basic prices (taxable value) inclusive of Packing, Forwarding and Freight & Insurance excluding GST for each of the items quoted. Alongside the basic price (taxable value) quoted by us for each item, CGST plus OGST, or IGST, as the case may be, will also be quoted, which will be

added to quoted basic price (taxable value) to indicate quoted final value. Tax Invoice shall constitute basic price, CGST plus OGST, or IGST, as the case may be, and such other details which are stipulated in CGST and OGST Rules, 2017. No transaction between OPTCL and our vendors shall be recognized and the input credit on the supply of goods & services by our vendors shall be considered in the basic price (taxable value) quoted to OPTCL.

- 3.2 However, any statutory variation in GST on package supply (and not on individual goods and services components) supplied by us during the contract period is to SLDC/OPTCL's account.
- 3.3 As regards the Income Tax, surcharge on Income Tax, statutory payments and other corporate taxes, we will be responsible for such payments to the concerned authorities.
- 3.4 The statutory deduction of taxes and duties at source as applicable, related to these works, shall be made by SLDC/OPTCL from our bills for which we cannot claim any reimbursement. TDS so deducted by SLDC/OPTCL shall be deposited by them with the relevant tax Authorities & TDS certificates shall be issued by SLDC/OPTCL wherever so required under the respective law.

#### **4. DEVIATIONS**

4.1 We hereby declare that work shall be performed strictly in accordance with the Technical Specifications & Commercial Terms and conditions specified in the Bidding Documents except for the deviation detailed out exhaustively in the following sheet.

- |     |                       |               |
|-----|-----------------------|---------------|
| (a) | Technical Deviations  | Attach 12.pdf |
| (b) | Commercial Deviations | Attach 13.pdf |

Further, we confirm that any deviations found elsewhere in our proposal, other than those stated in above deviation sheet, shall not be given effect to. Deviation on account of better specification may be acceptable to SLDC/OPTCL, without any cost implication to SLDC/OPTCL.

However, we understand that any deviations with respect to the Technical Specifications & Commercial Terms and conditions specified in the Bidding Documents not acceptable to SLDC/OPTCL may render my bid non-responsive.

- 4.2 We have read the following major provisions of the ITB & GTCC and confirm that the specified stipulations of these provisions are acceptable to us irrespective of whatever has been stated to the contrary anywhere-else in our proposal.
- a. Terms of Payment
  - b. Bid Security Declaration In lieu of Bid Security (EMD)
  - c. Contract Performance Bank Guarantee (CPBG)
  - d. Price Reduction
  - e. Price Basis & Payments



- f. Guarantee Period
- g. Contract Completion Period
- h. We further confirm that any deviations to the above clauses at Sl.No. (a) through found anywhere in our bid proposal implicit or explicit shall stand unconditionally withdrawn, without any cost implications whatsoever to OPTCL.

**5. TENDER COST, TENDER PROCESSING FEES AND BID SECURITY:**

5.1 We have scanned and uploaded the Demand Draft(s)/Bank Guarantee as applicable towards Tender Cost, Proof of Deposit of Tender Processing Fees. We have also submitted the above in original in a separate sealed envelope superscribing the Package/works No...., Bid ref. No. and Name.

5.2 The details of the above Demand Draft(s)/Bank Guarantee/ Proof of Deposit of Tender Processing Fees are as follows;

Particulars	DD/BG No. & Date	Amount (In Rs.)	Issuing Bank
Tender Cost			
Tender Processing fees			

**6. QUALIFICATION DATA:**

6.1 We confirm having uploaded(attachment.pdf)/keyed-in (Schedules) against the Technical and Financial qualification requirement on your official tender portal as per qualifying criteria specified in the Instruction to Bidders, Part-I.

6.2 In case, you require any further information in this regard, before evaluation of our bid, we agree to furnish the original in time to your satisfaction.

6.3 We declare that the documentary evidence in support of the above qualifying requirement and the information filled by us in this regard are correct to the best of our knowledge and belief. We undertake that if any of this documentary evidence/information are found incorrect, our bid shall be liable for rejection, and in the event, we emerge successful in the bidding process and are awarded the package/works, we will be liable for all consequential damages apart from termination of the contract.

**7. OTHER STATUTORY DOCUMENTS:**

We have also uploaded (as an attachment .pdf) all the statutory documents mentioned in the ITB in support of the qualifying criteria.

**8. BID CAPACITY:**

- 8.1 We confirm that we have uploaded (documents attachemnt.pdf)/Keyed-in the schedules to meet our bid capacity criteria. We undertake to abide by the bid capacity and award criteria assessed by SLDC, OPTCL as per the following bid capacity qualification, if found successful in the bidding process;
- 8.2 In case we participate through Joint Venture/Consortium, we and our partner together shall also agree to the above bid capacity criteria.

**9. INSTALLATION OF CONTRACT:**

- 9.1 We understand that in case of award, the contract to be entered into shall be treated as single contract. Supply portion of the contract consisting of development, Design, engineering, manufacturing, testing & inspection at manufacturer's works, packing, forwarding and transportation of equipment and materials, special tools & tackles and spares etc. from manufacturing works to project site including transit insurance as per Bidding documents. The Installation portion of the contract will relate to unloading, handing at site, storage, storage-cum-insurance and preservation at site, Manufacturing of ABT meters, erection, Installation, testing, commissioning including all associated Mechanical, Electrical, and Construction of all associated Structural & architectural works etc. as specified in bidding documents.
- 9.2 We further agree that if the contract is awarded to us it will be on single source responsibility basis and breach in any portion or part of one contract shall be construed as a breach of the other contract as well, which will confer on you the right to terminate the other contract, at our risk and cost.

**10. WORK COMPLETION SCHEDULE:**

- 10.1 If this proposal is accepted by you, we agree to submit engineering data, provide services and complete the entire works from time to time in accordance with schedules uploaded in the tender portal of OPTCL in line with the ITB and acceptable to SLDC, OPTCL.
- 10.2 We fully understand that the time schedule stipulated in the proposal is the essence of the contract, if awarded. To this effect work completion schedule indicating key mile stones have been uploaded in the tender portal.
- 10.3 We undertake to complete the works in a phased manner as per the work schedule agreed to SLDC, OPTCL.
- 10.4 SLDC, OPTCL however reserves the right to re-schedule the completion period, if required.

**11. CONTRACT PERFORMANCE BANK GUARANTEE:**

- 11.1 We agree that if our proposal is accepted, we shall provide an irrevocable Contract Performance Bank Guarantee (from list of Banks mentioned in the annexure to this documents) in non-judicial stamp paper of appropriate value (as per the prescribed format) within 30 (thirty) days from the date LOA issued, in favour of the Power System, OPTC Ltd. Bhubaneswar. The Bank Guarantee amount shall be specified in the tender. The bank guarantee shall be valid for 02 months over and above work completion period plus Guarantee Period. If the work completion period gets extended the Contract Performance Bank guarantee shall be extended accordingly.
- 11.2 In case we have participated through Joint Venture/Consortium, the Contract Performance Bank Guarantee shall be Submitted by the lead partner on behalf of the Joint Venture/Consortium.

**12. PERFORMANCE GUARANTEE:**

- 12.1 We Certify that all the material supplied under this contract are new and guaranteed to cover the guarantee period and shall conform to high standards of software developments, engineering and shall be capable of performing in continuous commercial operation in a manner acceptable to SLDC, OPTCL.
- 12.2 We declare that the ratings and the performance figures/parameters of the software/equipment/ plant furnished & installed by us are guaranteed in line with the GTP and Technical Specifications of Part-I to cover the entire guarantee period.
- 12.3 We also undertake to take up the rectification/repair/replacement of software/materials or works, if any, during the defect liability period.

**13. SELF DECLARATION FORM:**

- 13.1 I/We, the undersigned do hereby declare that, I/We have never been blacklisted and / or there were no debarring actions against us for any default in executing the Turnkey Contract or in the performance of the contract entrusted to us in any of the Electricity Transmission Utilities of India.
- 13.2 In the event of any such information pertaining to the aforesaid matter found at any given point of time either during the course of the contract or at the bidding stage, my bid / contract shall be liable for rejection/ cancellation / termination without any notice at the sole discretion of OPTCL.





**14. CHECK LIST:**

We confirm having enclosed a check list duly keyed-in Schedule of this proposal and confirm that all necessary data/information have been provided in our proposal as required in the bidding documents.

**15. ACKNOWLEDGEMENT OF DISCLAIMER:**

- 15.1 We **undertake** that we have conducted our own estimation and analysis and checked the accuracy, reliability and completeness of the information contained in the bid Document (Tender Notification, Free view Documents and Bid Forms) uploaded in the e-tendering portal and obtained independent advice from appropriate sources in our own interest for the purpose of bidding.
- 15.2 We understand that SLDC, OPTCL is not responsible for the e-Tender Portal of OPTCL being temporarily unavailable due to any technical issue at any point of time. In that event SLDC, OPTCL will not be liable or responsible for any damages or expenses arising from any difficulty, error, imperfection, or inaccuracy with this e-Tender Portal of OPTCL.
- 15.3 We agree to follow the time table of e-tendering process and get the activities of e-tendering processes done well in advance so as to avoid any inconvenience.
- 15.4 We undertake that in case of technical error/ failure of e-Tender Portal of OPTCL, we shall not challenge it by way of appeal, arbitration and in the Court of Law.

**16. DECLARATION:**

- 16.1 We, hereby declare that only the persons or firms interested in this proposal as principals are named herein and that no other person or firm other than those mentioned herein have any interest in this proposal or in the contract to be entered into if we are awarded the contract, and that this proposal is made without any connection with any other person, firm or party submitted a proposal and that this proposal is in all respect for and in good faith, without collusion or fraud.
- 16.2 Further, We hereby declare that we have gone through and understood the bid documents (including schedules in XLS available in the e-tender portal) in detail and tender portal instructions for the purpose of participating in the bidding process and enclose herewith attachments (in .pdf) uploaded and Schedules (in XLS) Keyed-in both in line with the original document.

Dated this .....day of .....**20.....** at.....



Thanking you, we remain,

Yours faithfully,

Date :  
Place :  
(Designation).....  
(Common Seal) .....  
Business Address:

**(Signature)**  
(Printed Name).....

Country of Incorporation :( States or Provinces to be indicated) (Name & Address of the Principal Office)

**Enclosure:**

**A. Soft Form of Documents (Scanned Copy):**

Sl No	Description	.Pdf file reference
1	DD towards Tender Cost, and Documentary proof of payment of Tender Processing Fees through e-payment mode.	BPS_Attach 1.pdf
2	(a) Power of Attorney /notarized copy for signing the bid document. (b) Joint Venture/Consortium Agreement & Power of Attorney of Joint Venture/Consortium (In case of Bid from Joint Venture/ Consortium).	BPS_Attach 2.pdf
3	Following documents/Credential in support of meeting Technical Qualifying requirement: i. Work Orders/LOA (including detailed bill of quantity for supply & erection works) ii. Commissioning Certificate/ Handing Over and Taking Over Certificate/Client Certified copies of completion certificate in respect of the work orders furnished as above. iii. Performance Certificate in respect of the work orders furnished as above.	BPS_Attach 3.pdf
4	Scanned copy of Documents/credential in support of meeting the Financial QR: i. Audited Annual Accounts for last 03(Three) years. FY:2020-21,2021-22,2022-23 MAAT Schedule (Fin-1) ii. Liquid Assets and Un-Utilised Credit Facility Schedule (Fin-2) iii. Net Worth Schedule (Fin-3) iv. Bidder's Bid Capacity Schedule (Highest Project related Annual Turn Over (Fin-4) v. Total Order Value of SLDC, OPTCL, GRIDCO work in Hand (if any) (Fin-5)	BPS_Attach 4.Pdf

5	Scanned copies of Statutory Documents; i. Certificate of Incorporation. ii. IT PAN. iii. IT Return of last three years. iv. GST Registration Certificate. v. EPF Registration Certificate etc.	BPS_Attach 5.pdf
6	Covering Letter of Bid Proposal Sheet (BPS) duly signed by the authorized signatory of the Bidder(s). Note: The enclosed Schedules specified in the BPS are in the .XLS format and Attachment (in.pdf), the same shall be keyed-in/ uploaded by the Bidder in the tender portal separately.	BPS_Attach 6.pdf
7	Any Other relevant documents (As per requirement of the tender)	BPS_Attach 7.pdf

**B. Schedules (XLS format) in the e-Tender Portal of OPTCL :**

<b>Sl. No.</b>	<b>Particulars</b>	<b>Schedules in XLS format</b>
1	Bidders' information	Schedule- I
2	Acceptance of Important Condition of the Contract	Schedule-II
3	Check List	Schedule-III
4	Documents to Qualifying requirement	Schedule-IV
5	Financial qualification	Schedule-V
6	Outright Rejection Criteria	Schedule-VI
7	Documents to Accompany Bids	Schedule- VII