Procedure to Participate in CCG (Centralized Contracts Group) Tender

Tender Enquiry No	Work Description	EMD (Rs.) *	Tender Participation Fee (Rs.) **	Last Date and Time for payment of Tender Participation Fee
TPCODL / CCG / 23-24 / 001	1 Year Rate Contract for Supply of 10.5 Lakhs Single-Phase Smart Meters along with Meter Boxes for Tata Power Odisha Discoms	50,00,000	5,000	29.05.2023, 15:00 Hrs.

* EMD is exempted for MSMEs registered in the State of Odisha.
** MSMEs registered in the State of Odisha shall pay the tender fee of Rs. 1,000/- including GST.
For details of MSME norms, please refer "Annexure-VII(a)"

Please note that the corresponding details mentioned in this document will supersede any other details mentioned anywhere else in the Tender Document.

Procedure to Participate in Tender.
Following steps to be done before the “Last date and time for Payment of Tender Participation Fee” as mentioned above

1. Eligible and Interested Bidders are to submit duly signed and stamped letters on Bidder's letterhead indicating
    a. Tender Enquiry number
    b. Name of authorized person
    c. Contact number
    d. e-mail id
    e. Name of Firm
    f. Address of Firm
    g. GST Registration Number
    h. Details of submission of Tender Participation Fee
    i. MSME Certificate, wherever applicable
    j. Details of Bank Account for a refund of EMD
    k. Postal Address for a refund of EMD

2. Non-Refundable Tender Participation Fee, as indicated in the table above, to be submitted in the form of Direct deposit in the following bank account and submit the receipt along with a covering letter clearly indicating the Tender Reference/ Enquiry Number –

    Beneficiary Name – TP Central Odisha Distribution Ltd.
    Bank Name – STATE BANK OF INDIA
    Branch Name – IDCO Towers, Bhubaneshwar
    Address – PO- Sahidnagar, Janapath, Bhubaneswar.
    Branch Code – 7891
    Account No – 10835304915
    IFSC Code – SBIN0007891

3. **Estimated Quantity:**

Sl No.	1 Ph Smart Meters with Meter Boxes - Discom details	Quantity in Lakhs
1	TPCODL	4.5
2	TPWODL	3.0
3	TPNODL	1.5
4	TPSODL	1.5
Total Meters		**10.5**

Note:

Above Quantities are tentative. Tata Power reserves the right to curtail / enhance the quantities before the placement of the Purchase Order.

The tender is being floated by CCG for catering to the consolidated requirement of TP Odisha Discoms i.e TPCODL, TPNODL, TPSODL & TPWODL.

Delivery Terms:

Release Orders shall be issued by respective TP Odisha Discom as per the requirement. The successful bidder shall deliver the material as per the location mentioned in the RO.

Delivery period shall be 90 days from the date of receipt of Release Order / CAT-A issuance, whichever is later.

Within 2 weeks of rate contract issuance by CCG, it is the responsibility of BA to get manufacturing clearance and CAT-A issued from CEQG. In case BA does not get the necessary approvals for issuance of CAT-A within mentioned / mutually agreed timelines, then CCG reserves the right to cancel the issued Contract and also reserves the right to forfeit EMD / PBG as applicable

Payment Terms

On delivery of the materials in good condition and certification of acceptance by a certified official, the Associate shall submit the Bills/ Invoices in original in the name as mentioned in the release order and submit to the respective Invoice Desk. The payment shall be released within 90 Days (Non- MSME) / 45 days (MSME) from the date of submission of certified bills/ invoices

An E-mail with the necessary attachment of 1 and 2 above is to be sent to umesh.sahoo@tpnodl.com with a copy to Vipin.chauhan@tpnodl.com before the last date and time for payment the of Tender Participation Fee.

Interested bidders to submit Tender Participation Fee and Authorization Letter before the Last date and time as indicated above after which a link from the TPCODL E-Tender system (Ariba) will be shared for further communication and bid submission.

Please note all future correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query, etc. will happen only through the TPCODL E-Tender system (Ariba). A user manual to guide the bidders to submit the bid through the E-Tender system (Ariba) is also enclosed.

All communication will be done strictly with the bidders who have done the above step to participate in the Tender.

Also, it may be strictly noted that once the date of “Last date and time for Payment of Tender Participation Fee” is lapsed no Bidder will be sent a link from TPCODL E-Tender System (Ariba). Without this link, the vendor will not be able to participate in the tender. Any last moment request to participate in the tender will not be entertained.

Also, all future corrigendum to the said tender will be informed on the Tender section on the website https://www.tpcentralodisha.com

OPEN TENDER NOTIFICATION
FOR
RATE CONTRACT FOR SUPPLY OF SINGLE-PHASE SMART METERS WITH METER BOXES
FOR
TATA POWER ODISHA DISCOMS

Tender Enquiry No.: TPCODL / CCG / 23-24 / 001

Due Date for Bid Submission: 05.06.2023 [up to 15:00 Hrs.]

The TP Central Odisha Distribution Limited
2nd Floor, IDCO Towers, Janpath, Bhubaneswar-751022

CONTENTS OF THE ENQUIRY

1.0 Event Information

1.1 Scope of work

An Open Tender is invited through e-tender bidding process from interested Bidders for entering into a Rate Contract for a period of **ONE (01)** Year as defined below:

Item Sl. No.	Description	Quantity (in Lakhs.)	EMD Amount (Rs.) *	Tender Fee inclusive of GST (Rs.) **
1	Supply of Single-Phase Smart Meters (with NIC) & Meter Box	10.5	50,00,000	5,000

* EMD is exempted for MSMEs registered in the State of Odisha.

** MSMEs registered in the State of Odisha shall pay the tender fee of Rs. 1,000/- including GST.

1.2 Availability of Tender Documents

Please Refer to "Procedure to participate in the E-Tender".

1.3 Calendar of Events

(a)	Date of sale/ availability of tender documents from TPCODL Website	From 20.05.2023 onwards
(b)	Date by which Interested and Eligible Bidder to pay Tender Fee and confirm participation as mentioned in "Procedure to Participate in Tender"	29.05.2023, 15:00 Hrs.
(c)	Date & Time of Pre-Bid Meeting (If any)	NA
(d)	Last Date and time of receipt of pre-bid queries, if any	30.05.2023 up to 15:00 Hours
(e)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	01.06.2023
(f)	Last date and time of receipt of Bids	05.06.2023 up to 15:00 Hours
(g)	Date & Time of opening technical bids & EMD (Envelope-1 & 2)	Participating Bidders will get mail intimation from TPCODL E-Tender system (Ariba) when their Technical Bids are opened. Refer Section 4.2 for details
(h)	Date & Time of opening of Price of qualified bids	Bidders will get mail intimation from TPCODL E-Tender system (Ariba) when their Price Bids are opened (Refer Section 4.5)

Note :- In the event of last date specified for submission of bids and date of opening of bids is declared as a closed holiday for TPCODL, Bhubaneswar office the last date of submission of bids and date of opening of bids will be the following working day at appointed times.

1.4 Mandatory documents required along with the Bid

1.4.1 EMD of requisite value and validity.
1.4.2 Tender Fee in case the tender is downloaded from website.
1.4.3 Requisite Documents for compliance to Qualification Criteria mentioned in Clause 1.7.
1.4.4 Drawing, Type Test details along with a sample of each item as specified at Annexure I (as applicable).

1.4.5 Duly signed and stamped 'Schedule of Deviations' as per Annexure III on bidder's letter head.

1.4.6 Duly signed and stamped 'Schedule of Commercial Specifications' as per Annexure IV on bidder's letter head.

1.4.7 Proper authorization letter/ Power of Attorney to sign the tender on the behalf of bidder.

1.4.8 Copy of PAN, GST, PF and ESI Registration (In case any of these documents is not available with the bidder, same to be explicitly mentioned in the 'Schedule of Deviations')

Please note that in absence of any of the above documents, the bid submitted by a bidder shall be liable for rejection.

1.5 Deviation from Tender

Normally, the deviations to tender terms are not admissible and the bids with deviation are liable for rejection. Hence, the bidders are advised to refrain from taking any deviations on this Tender. Still in case of any deviations, all such deviations shall be set out by the Bidders, clause by clause in the **'Annexure III - Schedule of Deviations'** and same shall be submitted as a part of the Technical Bid.

1.6 Right of Acceptance/ Rejection

Bids are liable for rejection in absence of following documents: -

1.6.1 EMD of requisite value and validity
1.6.2 Tender fee of requisite value
1.6.3 Price Bid as per the Price Schedule mentioned in Annexure-I
1.6.4 Necessary documents against compliance to Qualification Requirements mentioned at Clause 1.7 of this Tender Document.
1.6.5 Filled in Schedule of Deviations as per Annexure III
1.6.6 Filled in Schedule of Commercial Specifications as per Annexure IV
1.6.7 Receipt of Bid within the due date and time

TPCODL reserves the right to accept/reject any or all the bids without assigning any reason thereof.

1.7 Qualification Criteria

Sr No	Parameter	Owner Requirement	Documents to be submitted by Bidder
A	Technical Pre-Qualification Requirements		
1	Technical Experience - Meter Manufacturer	Bidder(s) should be in the business of manufacturing Static Energy Meters and should have state of the art facility in India. Should be in this Business for at least 10 years in India as of the date of Bid Submission.	Factory License Certificate/ MoA mentioning nature of Business.

		Bidder should have implemented project/(s) which include the Supply, Installation, Commissioning of Meters with inbuilt / Modular/external communication module, and associated DCU / Gateway/ Router/GPRS (As applicable) and MDAS / HES application for 1 Lakh Meters - in last 7 years. Bidder(s) should have experience of manufacturing and supply of 5 Lakhs / Year static electricity meters/smart electricity Meters. In case the bidder has a previous association with any of Tata Power Groups for similar products and services, the performance feedback for that bidder by Tata Power User Group shall only be considered irrespective of performance certificates issued by any third organization.	Individual Client's PO/ WO/ LOI/ LOA/ Contract/ Certification on client letterhead. The performance certificate and contact details of the client need to be submitted
2	BIS Certification.	Smart Meters offered shall have Certification as per IS: 16444 with the latest amendment. The certification should be valid on the date of the Tender opening.	A valid BIS certificate is required for the smart meter as per the der.
3	In-house Testing Facility	The bidder should have had an in-house Testing Facility for the last 3 years.	A valid registration certificate mentioning the issue/renewal/expiry date
B	Financial Pre-Qualification Requirements		
1	Commercial Capability	Minimum Average annual turnover **Rs. 500 Crores** for each of the last three financial years ending 31st March 2023.	Profit and Loss Statements, Balance Sheet, Cash Flow Statements for the Three (3) preceding financial years duly audited and approved by Authorized Audit Firm / CA

1.8 Marketing Integrity

We have a fair and competitive marketplace. The rules for bidders are outlined in the General Condition of Contracts. Bidders must agree to these rules prior to participating. In addition to other remedies available, TPCODL reserves the right to exclude a bidder from participating in future markets due to the bidder's violation of any of the rules or obligations contained in the General Condition of Contracts. A bidder who violates the market place rules or engages in behavior that disrupts the fair execution of the marketplace, may result in restriction of a bidder from further

participation in the marketplace for a length of time, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:

- Failure to honor prices submitted to the marketplace
- Breach of terms as published in TENDER / NIT

1.9 Supplier Confidentiality

All information contained in this tender is confidential and shall not be disclosed, published or advertised in any manner without written authorization from TPCODL. This includes all bidding information submitted to TPCODL. All tender documents remain the property of TPCODL and all suppliers are required to return these documents to TPCODL upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

2.0 Evaluation Criteria

- The bids will be evaluated technically on compliance with tender terms and conditions.
- The bids will be evaluated commercially on ***the overall lowest cost basis*** as calculated in the Schedule of Items *[Annexure I].*TPCODL reserves the right to split the order litem-wise and/or quantity-wise, among more than one Bidder. Hence all bidders are advised to quote their most competitive rates.
- Bidder has to mandatorily quote as per schedule of item [Annexure-I]. Failing to do so TPCODL may reject the bid.

NOTE: In case of a new bidder not registered, factory inspection and evaluation shall be carried out to ascertain bidder's manufacturing capability and quality procedures. However, TPCODL reserves the right to carry out factory inspection and evaluation for any bidder prior to technical qualification. In case a bidder is found as Disqualified in the factory evaluation, their bid shall not be evaluated any further and shall be summarily rejected. The decision of TPCODL shall be final and binding on the bidder in this regard.

2.1 Price Variation Clause: The prices shall remain **FIRM** during the entire contract period.

3.0 Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document through e-tendering process.

Please note all future correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc will happen only through TPCODL E-Tender system (Ariba).

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidder who have done the above step to participate in the Tender.

Bids shall be submitted in 3 (Three) parts:

FIRST PART: "**EMD**" as applicable for the line item(s) shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of Bank Guarantee / Bank Draft / Bankers Pay Order (issued from a Scheduled Bank) favoring 'TP Central Odisha Distribution Limited" payable at Bhubaneswar. The EMD (BG) has to be strictly in the format as mentioned in General Condition of Contract, failing which it shall not be accepted and the bid as submitted shall be liable for rejection. A separate non-refundable tender fee of stipulated amount also needs to be transferred online through NEFT/ RTGS in case the tender document is downloaded from our website.

TPCODL Bank Details for transferring Tender Fee and EMD is as below:

Beneficiary Name – TP Central Odisha Distribution Ltd.
Bank Name – STATE BANK OF INDIA
Branch Name – SBI, IDCO Towers, Bhubaneshwar
Address – PO- Sahidnagar, Janapath, Bhubaneswar.
Branch Code – 7891
Account No – 10835304915
IFSC Code – SBIN0007891

EMD is strictly preferred in the form of Bank Guarantee and to be delivered at the following address. However in view of present situation if Bidder is finding it difficult to make and submit BG for EMD amount, they can do online transfer of EMD amount in the above mentioned Account and submit proof of the same as part of Bid Submission.

Please note that in such case, Tender Fee and EMD should be strictly 2 separate transactions.

Please note as return of EMD from Bank Account is non standard practice the same may take more time than return of EMD BG.

EMD Original Hard Copy shall be delivered at the following address in Envelope clearly indicating Tender Reference/ Enquiry Number, Name of Tender and Bidder Name

Chief (Procurement & Stores)
TP CENTRAL ODISHA DISTRIBUTION LIMITED
2ND FLOOR, IDCO TOWERS, JANAPATH, BHUBANESWAR- 751022

SECOND PART: "TECHNICAL BID" shall contain the following documents:

a) Documentary evidence in support of qualifying criteria
b) Technical literature/GTP/Type test report etc. *(if applicable)*
c) Qualified manpower (if available)
d) Testing facilities *(if applicable)*
e) No Deviation Certificate as per the Annexure III – Schedule of Deviations
f) Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, payment terms etc. as per the Annexure IV – Schedule of Commercial Specifications.
g) Quality Assurance Plan/Inspection Test Plan for supply items *(if applicable)*

The technical bid shall be properly indexed and is to be submitted through TPCODL E-tender System (Ariba) only. Hard Copy of Technical Bids need not be submitted.

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the TPCODL, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in another Language, provided that this literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern

THIRD PART: "PRICE BID" shall contain only the price details and strictly in format as mentioned in Annexure I with explicit break up of basic prices, Taxes & duties, Freight etc. In case any discrepancy is observed between the item description stated in Schedule of Items mentioned in the tender and the price bid submitted by the bidder, the item description as mentioned in the tender document (to the extent modified through Corrigendum issued if any) shall prevail. Price Bid is to be submitted in soft copy through TPCODL E-Tendering system (Ariba) only. **Hard copy of Price Bid not required**.

SIGNING OF BID DOCUMENTS:

The bid must contain the name, residence and place of business of the person or persons making the bid and must be signed and sealed by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature.

The Bid being submitted must be signed by a person holding a Power of Attorney authorizing him to do so, certified copies of which shall be enclosed.

The Bid submitted on behalf of companies registered with the Indian Companies Act, for the time being in force, shall be signed by persons duly authorized to submit the Bid on behalf of the Company and shall be accompanied by certified true copies of the resolutions, extracts of Articles of Association, special or general Power of Attorney etc. to show clearly the title, authority and designation of persons signing the Bid on behalf of the Company. Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the bid.

A bid by a person who affixes to his signature the word 'President', 'Managing Director', 'Secretary', 'Agent' or other designation without disclosing his principal will be rejected.

The Bidder's name stated on the Proposal shall be the exact legal name of the firm.

3.2 Contact Information

Please note all correspondence regarding the tender, bid submission, bid submission date extension, Pre-bid query etc will happen only through TPCODL E-Tender system (Ariba).

No e-mail or verbal correspondence will be responded. All communication will be done strictly with the bidder who have done the above step to participate in the Tender.

Communication Details:

Package Owner

Name: Mr. Umesh Prasad Sahoo
Designation: Team Lead- CCG
Contact No: 8260447677
E-Mail ID: umesh.sahoo@tpnodl.com

Escalation Matrix

Name: Mr. Vipin Chauhan
Designation: Head- Contracts, CCG
Contact No: 9717393121
E-Mail ID: Vipin.Chauhan@tpnodl.com

Name: Mr. Pradip Sil
Designation: Chief- Centralised Contracts Group
E-Mail ID: pradip.sil@tpnodl.com

Bidders are strictly advised to communicate with Package Owner through TPCODL E-tender System (Ariba) only. They need to pay Tender Participation Fee and receive the Ariba log-in. Above escalation details are for reference purpose only.

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply / work with a break up of prices for individual items and Taxes & duties. The bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total price with taxes, duties & freight up to destination at various sites of TPCODL. The all-inclusive prices offered shall be inclusive of all costs as well as

Duties, Taxes and Levies paid or payable during the execution of the supply work, breakup of price constituents.

The quantity break up shown else-where other than Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical Specifications / Scope of Work mentioned in the tender, shall be deemed to be included in prices quoted.

3.4 Bid Currencies

Prices shall be quoted in Indian Rupees Only.

3.5 Period of Validity of Bids

Bids shall remain valid for 180 days from the due date of submission of the bid.

Notwithstanding clause above, the TPCODL may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and responses thereto shall be made in writing.

3.6 Alternative Bids

Bidders shall submit Bids, which comply with the Bidding documents. Alternative bids will not be considered. The attention of Bidders is drawn to the provisions regarding the rejection of Bids in the terms and conditions, which are not substantially responsive to the requirements of the bidding documents.

3.7 Modifications and Withdrawal of Bids

The bidder is not allowed to modify or withdraw its bid after the Bid's submission. The EMD as submitted along with the bid shall be liable for forfeiture in such event.

3.8 Earnest Money Deposit (EMD)

The bidder shall furnish, as part of its bid, an EMD amounting as specified in the tender. The EMD is required to protect the TPCODL against the risk of bidder's conduct which would warrant forfeiture. The EMD shall be denominate in any of the following form:

- Banker's Cheque/ Demand Draft/ Pay order drawn in favor of "TP Central Odisha Distribution Limited", payable at Bhubaneswar.
- Online transfer of requisite amount through NEFT/ RTGS.
- Bank Guarantee valid for 210 days after due date of submission.

The EMD shall be forfeited in case of:

a) The bidder withdraws its bid during the period of specified bid validity.

Or

b) The case of a successful bidder, if the Bidder does not
i) accept the purchase order, or
ii) furnish the required performance security BG

3.9 Type Tests (if applicable)

The type tests specified in TPCODL specifications should have been carried out within five years prior to the date of opening of technical bids and test reports are to be submitted along with the bids. If type tests carried out are not within the five years prior to the date of bidding, the bidder will arrange to carry out type tests specified, at his cost. The decision to accept/ reject such bids rests with TPCODL.

4.0 Bid Opening & Evaluation process

4.1 Process to be confidential

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other persons not officially concerned with such process. Any effort by a Bidder to influence the TPCODL's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

4.2 Technical Bid Opening

The bids shall be opened internally by TPCODL. Participating Bidders will get mail intimation from TPCODL E-Tender system (Ariba) when their Technical Bids are opened.

First the envelope marked “EMD” will be opened. Bids without EMD/ cost of tender (if applicable) of required amount/ validity in prescribed format, shall be rejected.

4.3 Preliminary Examination of Bids/ Responsiveness

TPCODL will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order. TPCODL may ask for submission of original documents in order to verify the documents submitted in support of qualification criteria.

Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.

Prior to the detailed evaluation, TPCODL will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.

Bid determined as not substantially responsive will be rejected by the TPCODL and/or the TPCODL and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

4.4 Techno Commercial Clarifications

Bidders need to ensure that the bids submitted by them are complete in all respects. To assist in the examination, evaluation and comparison of Bids, TPCODL may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the TPCODL specifications and attempt will be made to bring all bids on a common footing. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted owing to any clarifications sought by TPCODL.

4.5 Price Bid Opening

Price Bid of only Technically, Commercially and /or safety qualified Bidders shall be considered and opened internally by TPCODL. Bidders will get mail intimation from the TPCODL E-Tender system (Ariba) when their Price Bids are opened.

The EMD of the bidder withdrawing or substantially altering his offer at any stage after the technical bid opening will be forfeited at the sole discretion of TPCODL without any further correspondence in this regard.

4.7 Reverse Auctions

TPCODL reserves the right to conduct the reverse auction (instead of public opening of price bids) for the products/ services being asked for in the tender. The terms and conditions for such reverse auction events shall be as per the Acceptance Form attached as Annexure VI of this document. The bidders along with the tender document shall mandatorily submit a duly signed copy of the Acceptance Form attached as Annexure VI as a token of acceptance for the same.

5.0 Award Decision

TPCODL will award the contract to the successful bidder whose bid has been determined to be the lowest-evaluated responsive bid as per the Evaluation Criterion mentioned at Clause 2.0. The Cost for the said calculation shall be taken as the all-inclusive cost quoted by the bidder in Annexure I (Schedule of Items) subject to any corrections required in line with Clause 4.3 above. The decision to place a rate contract/purchase Order / LOI solely depends on TPCODL on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that TPCODL may deem relevant.

TPCODL reserves all the rights to award the contract to one or more bidders so as to meet the delivery requirement or nullify the award decision without assigning any reason thereof.

In case any supplier is found unsatisfactory during the delivery process, the award will be canceled and TPCODL reserves the right to award other suppliers who are found fit.

6.0 Order of Preference/Contradiction:

In case of contradiction in any part of various documents in the tender, following shall prevail in order of preference:

1. Schedule of Items (Annexure I)
2. Post Award Contract Administration (Clause 7.0)
3. Submission of Bid Documents (Clause 3.0)
4. Scope of Work and SLA (if any)
5. Technical Specifications (Annexure-II)
6. Inspection Test Plan (if any)
7. Acceptance Form for Participation in Reverse Auction (Annexure VI)
8. General Conditions of Contract (Annexure VII)

7.0 Post-Award Contract Administration

7.1 Special Conditions of Contract

- After finalization of the tender, Rate Contract shall be issued to the successful bidder with a validity period of One Year. Prices shall remain FIRM till the validity of the issued Rate Contract. Within the validity of the rate contract and as per requirement of material, release order shall be issued from time to time.
- Business Associate (BA) shall submit applicable Performance Bank Guarantee as per GCC within 15 days of issuance of rate contract. PBG applicable shall be 5% the of rate contract Value. PBG submitted, shall be released after completion of the applicable guarantee period plus one month.
- Guarantee applicable shall be as per Clause 7.4 of this document.
- **Within 2 weeks of rate contract issuance by CCG, it is the responsibility of BA to get manufacturing clearance and CAT-A issued from CEQG (Central Engineering & Quality Group).** In case BA does not get the necessary approvals for issuance of CAT-A within mentioned /

mutually agreed timelines, then TPCODL reserves the right to cancel the issued Contract and also reservese the right to forfeit EMD / PBG.

- Delivery period shall be 90 days from the date of receipt of Release Order / CAT-A issuance, whichever is later.
- The material shall be delivered as per the location captured in the release order.
- TPCODL / Discom shall short-close the issued contract, in case of any quality issues.
- Any change in statutory taxes, duties and levies shall be borne by TPCODL.
- All other terms and conditions of TPCODL GCC shall be applicable.

7.2 Drawing Submission & Approval

The relevant drawings and GTPs need to be submitted as per the special condition of the contract mentioned in point no. 7.1.

7.3 Delivery Terms

The delivery of material shall be made as per the special condition of the contract mentioned in point 7.1.

7.4 Guarantee Period

Guarantee Period of the supplied material shall be as per technical specifications attached separately with this tender.

7.5 Payment Terms

On delivery of the materials in good condition and certification of acceptance by a certified official, the Associate shall submit the Bills/ Invoices in original in the name as mentioned in the release order and submit to the respective Invoice Desk. The payment shall be released **within 90 Days (Non- MSME) / 45 days (MSME)** from the date of submission of certified bills/ invoices

7.6 Climate Change

Significant quantities of waste are generated during the execution of project and an integrated approach for effective handling, storage, transportation and disposal of the same shall be adopted. This would ensure the minimization of environmental and social impact in order to combat the climate change

7.7 Ethics

TPCODL is an ethical organization and as a policy TPCODL lays emphasis on ethical practices across its entire domain. Bidder should ensure that they should abide by all the ethical norms and in no form either directly or indirectly be involved in unethical practice.

TPCODL work practices are governed by the Tata Code of Conduct which emphasizes on the following:

- We shall select our suppliers and service providers fairly and transparently.
- We seek to work with suppliers and service providers who can demonstrate that they share similar values. We expect them to adopt ethical standards comparable to our own.
- Our suppliers and service providers shall represent our company only with duly authorized written permission from our company. They are expected to abide by the Code in their interactions with, and on behalf of us, including respecting the confidentiality of information shared with them.
- We shall ensure that any gifts or hospitality received from, or given to, our suppliers or service providers comply with our company's gifts and hospitality policy.
- We respect our obligations on the use of third party intellectual property and data.

Bidder is advised to refer GCC attached for more information.

Any ethical concerns with respect to this tender can be reported to the following e-mail ID: ethics@tpcentralodisha.com.

8.0 Specification and standards:

Attached separately with tender.

9.0 General Condition of Contract

Any condition not mentioned above shall be applicable as per GCC for Supply attached along with this tender.

10.0 Safety

Safety-related requirements as mentioned in our safety Manual are put on the Company's website and the same shall be strictly followed.

http://www.tpcentralodisha.com

All Associates shall strictly abide by the guidelines provided in the safety manual at all relevant stages during the contract period.

ANNEXURE I
Schedule for Items

Sr No	Item Description	Unit	Quantity	Unit Price	GST	All-inclusive Unit Price	Total All-inclusive BoQ Price
			Nos	INR	INR	INR	INR
	Supply of Smart Meters with NIC						
1	Single Phase Two Wire, 230V, 5-30 A static smart energy meter with NIC	EA	10,50,000				
2	Single Phase Meter Boxes	EA	10,50,000				
	Total Package Cost in Rs. Lakhs						-

NOTE:

- Prices shall be firm till the validity of the contract.
- The bids will be evaluated commercially on the overall lowest cost basis.
- The unit price to be entered in in column 5 of above table is exclusive of GST
- The prices mentioned above shall be on FOR basis for all the TP Odisha discoms
- The total requirement mentioned above is for TP Odisha discoms i.e TPCODL, TPNODL, TPSODL & TPWODL
- Issuance of Release Orders (RO) shall be done by respective discoms as per their requirement
- The material shall be delivered as per the location captured in the release order
- The bidders are advised to quote prices strictly in the above format. Failing to do so, bids are liable for rejection.
- The bidder must fill each and every column of the above format. ***Mentioning "extra/inclusive" in any of the column may lead for rejection of the price bid.***
- No cutting/ overwriting in the prices is permissible.
- The quantity mentioned above are for evaluation purpose only and may vary as per actual site requirement.

Signature & Seal of the Bidder

ANNEXURE II

Technical Specifications (attached separately)

ANNEXURE III

Schedule of Deviations

Bidders are advised to refrain from taking any deviations on this TENDER. Still in case of any deviations, all such deviations from this tender document shall be set out by the Bidders, Clause by Clause in this schedule and submit the same as a part of the ***Technical Bid.***

Unless specifically mentioned in this schedule, the tender shall be deemed to confirm the TPCODL's specifications:

S. No.	Clause No.	Tender Clause Details	Details of deviation with justifications

By signing this document we hereby withdraw all the deviations whatsoever taken anywhere in this bid document and comply to all the terms and conditions, technical specifications, scope of work etc. as mentioned in the standard document except those as mentioned above.

Seal of the Bidder:

Signature:

Name:

ANNEXURE IV

Schedule of Commercial Specifications

(The bidders shall mandatorily fill in this schedule and enclose it with the offer Part I: Technical Bid. In the absence of all these details, the offer may not be acceptable.)

S. No.	Particulars	Remarks
1.	Prices firm or subject to variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
1a.	If variable price variation on clause given	Yes / No
1b.	Ceiling	--------- %
1c.	Inclusive of Excise Duty	Yes / No (If Yes, indicate % rate)
1d.	Sales tax applicable at concessional rate	Yes / No (If Yes, indicate % rate)
1e.	Octroi payable extra	Yes / No (If Yes, indicate % rate)
1f.	Inclusive of transit insurance	Yes / No
2.	Delivery	Weeks / months
3.	Guarantee clause acceptable	Yes / No
4.	Terms of payment acceptable	Yes / No
5.	Performance Bank Guarantee acceptable	Yes / No
6.	Liquidated damages clause acceptable	Yes / No
7.	Validity (180 days) (From the date of opening of technical bid)	Yes / No
8.	Inspection during stage of manufacture	Yes / No
9.	Rebate for increased quantity	Yes / No (If Yes, indicate value)
10.	Change in price for reduced quantity	Yes / No (If Yes, indicate value)
11.	Covered under Small Scale and Ancillary Industrial Undertaking Act 1992	Yes / No (If Yes, indicate, SSI Reg'n No.)

Signature & Seal of the Bidder

ANNEXURE V

Checklist of all the documents to be submitted with the Bid

Bidder has to mandatorily fill in the checklist mentioned below:-

S. No.	Documents attached	Yes / No / Not Applicable
1	EMD of required value	
2	Tender Fee as mentioned in this RFQ	
3	Company profile/ organogram	
4	Signed copy of this RFQ as an unconditional acceptance	
5	Duly filled schedule of commercial specifications (Annexure IV)	
6	Sheet of commercial/ technical deviation if any (Annexure III)	
7	Balance sheet for the last completed three financial years; mandatorily enclosing Profit & loss account statement	
8	Acknowledgement for Testing facilities if available (duly mentioned on bidder letter head)	
9	List of Machine/ tools with updated calibration certificates if applicable	
10	Details of order copy (duly mentioned on bidder letter head)	
11	Order copies as a proof of quantity executed	
12	Details of Type Tests if applicable (duly mentioned on bidder letter head)	
13	All the relevant Type test certificates as per relevant IS/ IEC (CPRI/ ERDA/ other certified agency) if applicable	
14	Project/ Supply Completion certificates	
15	Performance certificates	
16	Client Testimonial/ Performance Certificates	
17	Credit rating/ Solvency certificate	
18	Undertaking regarding non blacklisting (On company letter head)	
19	List of trained/ Untrained Manpower	

Signature & Seal of the Bidder

Annexure VI

Acceptance Form for Participation In Reverse Auction Event

(To be signed and stamped by the bidder)

In a bid to make our entire procurement process more fair and transparent, TPCODL intends to use the reverse auctions as an integral part of the entire tendering process. All the bidders who are found as technically qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

The following terms and conditions are deemed as accepted by the bidder on participation in the bid event:

1. TPCODL shall provide the user id and password to the authorized representative of the bidder. *(Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).*
2. TPCODL will make every effort to make the bid process transparent. However, the award decision by TPCODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPCODL, bid process, bid technology, bid documentation and bid details.
4. The bidder is advised to understand the auto bid process to safeguard themselves against any possibility of non-participation in the auction event.
5. In case of bidding through Internet medium, bidders are further advised to ensure the availability of the entire infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitches, internet response issues, software or hardware hangs, power failure or any other reason shall not be the responsibility of TPCODL.
6. In the case of intranet medium, TPCODL shall provide the infrastructure to bidders. Further, TPCODL has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case of an auction event is restarted, the best bid as already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due to any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer, and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out-rightly rejected by TPCODL.
8. The bidder shall be prepared with competitive price quotes on the day of the bidding event.
9. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties, and levies and shall be FOR at the TPCODL site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for a time extension of the auction event shall be considered by TPCODL.
12. The original price bids of the bidders shall be reduced on a pro-rata basis against each line item based on the final all-inclusive prices offered during conclusion of the auction event for arriving at Contract amount.

Signature & Seal of the Bidder

Annexure VII

General Conditions of Contract (attached separately)

Annexure VII (a)

Preferential Norms for Procurement from MSMEs Registered in the State of Odisha

1) Tender Fees

To participate in the tender, MSMEs registered in the State of Odisha shall pay Rs. 1,000/- including GST towards cost of tender paper.

2) Earnest Money Deposit (EMD)

EMD shall be exempted for MSME registered in the State of Odisha. However, Bidder shall be barred to participate in the tendering process for a period of 2 years in case it backs out post award of the contract.

3) Qualification Requirement for Open Tenders

Qualification Requirement of Financial Turnover for MSME registered in the State of Odisha shall be reduced to 20% of the existing criteria.

For past experience, instead of relying on the volumes / value of earlier Supplies / Projects, assessment of the Bidder shall be done on the basis of feedback from Customers. Past performance experience at Tata Power and its Group Companies shall supersede feedback from other Customers.

4) Reservation for MSME

It shall be mandatory to procure at least 20% of the total volume of the procurement from MSME registered in the State of Odisha (however, it shall not apply where goods/services are not available with the MSME), subject to matching L1 discovered prices and meeting technical specifications including quality requirements.

5) Performance Bank Guarantees

Performance Bank Guarantee for MSME registered in the State of Odisha shall be 25% of the value normally prescribed.

Annexure VIII

Safety Policy and Safety Terms and Conditions (attached separately)

Annexure IX

Tata Code of Conduct (TCoC)
(attached separately)

Annexure X

Environment & Sustainability (attached separately)

1 Phase 5-30A meter GTP for TP Odisha Discoms

<table>
<tr><th>Clause No.</th><th>Description</th></tr>
<tr><td>1</td><td>SCOPE:
This specification covers the technical requirements of design, manufacturing, testing & integration with Network Integration Card (NIC) for communication over 4G for communication network provider, at meter manufacturer's works, packing, forwarding, supply and unloading at store, of Single Phase Two Wire, 230V, 5-30 A static smart energy meters of accuracy class 1.0 (here after referred as meters) complete with all accessories and meter box for efficient and trouble free operation.
It is not the intent to specify completely herein all the details of technical design and construction of material. However, the material shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing in continuous commercial operation in manner acceptable to the TP(C/N/S/W)ODL, who will interpret the meanings of drawings and specification and shall have the power to reject any work or material which, in his judgment is not in accordance therewith. The offered material shall be complete with all components necessary for their effective and trouble free operation. Such components shall be deemed to be within the scope of Bidder's supply irrespective of whether those are specifically brought out in this specification and / or the commercial order or not.

There exists separate and distinct HES in 4 Utilities of Odisha. Bidder has to integrate in all 4 pre-existing HES at individual Utilities.</td></tr>
<tr><td>2</td><td>APPLICABLE STANDARDS:
The equipment covered by this specification shall conform to the requirements stated in latest editions & amendments of relevant Indian / International Standards and shall conform to the regulations of local statutory authorities.
<table>
<tr><td>a</td><td>IS 16444 Part-1 : 2015 (with all amemdments)</td><td>A.C. Static Direct connected Watt hour Smart meter class 1.0 and 2.0</td></tr>
<tr><td>b</td><td>IS 13779 : 1999</td><td>A.C. Static Watt hour meter class 1.0 and 2.0</td></tr>
<tr><td>c</td><td>c) IS 15884 : 2010</td><td>A.C. direct connected static prepayment meters for active energy (class 1 & 2)</td></tr>
<tr><td>d</td><td>IS 15959 Part-1 : 2011</td><td>Data exchange for electricity meter reading, tariff and load control</td></tr>
<tr><td>e</td><td>IS 15959 Part 2 : 2016</td><td>Data exchange for electricity meter reading, tariff and load control</td></tr>
<tr><td>f</td><td>IEEE 802.15.4 : 2016</td><td>Standard for local and metropolitan area networks</td></tr>
<tr><td>g</td><td>IS 9000</td><td>Basic Environmental testing procedure for electrical and electronic items.</td></tr>
<tr><td>h</td><td>IEC 62052-11: 2003</td><td>Electricity Requirements (AC) General Requirements Tests and Test conditions for A.C. Static Watt hour meter for active energy Class 1.0 and 2.0.</td></tr>
<tr><td>i</td><td>IEC 62053-</td><td>A.C Static Watt hour meter for active energy Class</td></tr>
</table></td></tr>
</table>

	21 : 2003	1.0 and 2.0
j	IS 15707 : 2006	Testing Evaluation installation and maintenance of AC Electricity Meters- Code of practice.
k	IEC 60068	Environmental testing.
l	CBIP – TR No.325	Specification for A.C Static Electrical Energy Meters (latest amendment).
m	CEA Regulation : 2006	Installation and operation of meters Dtd: 17/03/2006 amendment
n	IS 12346:1999	Testing Equipment For Ac Electrical Energy Meters
o	IS11000	Fire Hazard Testing
p	IS 60529	Degree of protection provided by enclosure
q	ASTM D648	Standard Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
r	IS 11731-1	Methods of test for determination of the flammability of solid electrical insulating materials when exposed to an igniting source, Part 1: Horizontal specimen method
s	IS 11731-2	Methods of Test for Determination of Flammability of Solid Electrical Insulating Materials When Exposed to An Igniting Source, Part 2: Vertical Specimen Method
t	ISO 75 Part 1 & 2	Determination of temperature of deflection under load

3 **CLIMATE CONDITIONS OF THE INSTALLATION:**

Max. Ambient Temperature : 50 °C

Average Ambient Temperature in peak summer months May to July : 40 °C

Min. Ambient Temperature in winter months : 0 °C

Relative humidity : 20 to 90%

Average Annual Rainfall : 760 mm

Average rainy days per annum : 60 days

Max. Altitude above MSL : Not exceeding 300 meters

Max. wind pressure : 126 kg/sq. m.

Seismic level (horizontal ground acceleration) : 0.3 g

Note- Atmosphere is generally laden with mild acid and dust suspended during dry months and subjected to fog in cold months. The design of equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.3 g.

4 **GENERAL TECHNICAL REQUIREMENTS:**

SNo	Description	Requirement
4.01	Type of the meter	Single phase two wire, static watt-hour, VAR-hour direct connected type smart meter without application of any Multiplication Constant. It consisting of measuring element(s), time of use of register(s), display, load switch and plug in type bi-directional communication module (NIC) all integral with the meter housing.
4.02	Accuracy Class of the meter	1.0
4.03	Basic Current (Ib) & rated Maximum current (Imax)	Ib=5A; Imax=30A (Meter shall be able to continuously carry 120% of Imax, meeting the accuracy requirements)
4.04	Reference Conditions for testing the performance of the meter	Vref = 230 V Frequency = 50Hz Temperature = 27 ^{0}C
4.05	Operating Voltage	Meter shall be operational with required accuracy from 0.6Vref to 1.2 Vref. However meter shall withstand the maximum system Voltage of 440 V (for minimum 5 min).
4.06	Operating Frequency	50 Hz $\pm$ 5%.
4.07	Power Consumption	Voltage circuit: Maximum 5.0 W and 15 VA Current Circuit: Max 4VA (The additional power requirement during data transmission shall not exceed 7W per communication module)
4.08	Starting Current	20 mA (0.2% of Ib) (phase or neutral current)
4.09	Short time over Current	1800A for 0.01 sec (30 Imax for one half cycle at Rated frequency)
4.10	Influence of heating	Temperature rise at any point of the external surface of the meter shall not exceed by more than 20K with an ambient temperature at 50° C as per clause 9.4 of IS 13779.
4.11	Rated Impulse withstand voltage	6 kV (shall be applied ten times with one polarity and then repeated with the other polarity.)

4.12	AC withstand voltage for 1 min	4 kV
4.13	Minimum Insulation resistance at test voltage 500 +/- 50 V DC Between frame & current, voltage circuits as well as auxiliary circuits connected together	5 Mega ohms
4.14	Mechanical requirements	Meter shall be in compliance with clause 12.3 of IS 13779
4.15	Resistance to heat and fire	The terminal block and Meter case shall ensure safety against the spread of fire. They shall not get ignited by thermal overload of live parts in contact with them as per clause 6.8 of IS 13779.
4.16	Protection against penetration of dust and water	Degree of protection: IP 51 as per IS 12063 or 60529, but without suction in the meter, Meter shall comply with clause 6.9 and 12.5 of IS 13779
4.17	Resistance against Climatic influence	Meter shall be in compliance with clause 12.6 of IS 13779
4.18	Electromagnetic Compatibility (EMC)	Meter shall be in compliance with clause 4.5 and 5.5 of IS 15884
4.19	Accuracy requirements	Meter shall be in compliance with clause 11 of IS 13779
4.20	Power factor range	Zero lag to Zero lead. (For Kva / kVAh, meter shall be programed at default lag only configuration i.e. Lead to be treated as unity for kVA & kVAh calculations)
4.21	Energy measurement	Fundamental energy + Energy due to Harmonics
4.22	Connection Diagram	The connection diagram for the system shall be provided on terminal cover.
4.23	Self-Diagnostic feature	The meter shall have indications on meter display, for anomaly/ unsatisfactory / non-functioning of (i) Real Time Clock (ii) RTC battery (iii) Non Volatile Memory (iv) NIC (v) Status of NIC (installed / discovered / normal) / Signal Strength
4.24	Initial start-up of meter	Meter shall be fully functional within 5 sec after reference voltage is applied to the

			meter terminals.
4.25	Alternate mode of supply to the meters	In case of power failure, reading / data should be retrieved with the help of battery or other power source.
4.26	Sleep Mode	Meter shall not go in sleep mode. Display should not be OFF at any point of time when power up.
4.27	Minimum Internal diameter of the terminal holes Depth of the terminal holes	8.5 mm (minimum) 22 +1 mm
4.28	Clearance between adjacent terminals	10 mm (minimum)
4.29	Display	Backlit LCD, Scrolling, min. 10 seconds for each parameter. 6+1 digits LCD display (not for reading)
4.30	Security feature	Programmable facility to restrict the access to the information recorded at different security level such as read communication, write communication, firmware selection from remote. Facility for Upgradation / Modification of Firmware shall be provided Following parameters shall be updated multiple times during life cycle of meters over the air : Post Paid to Prepaid mode and vice versa Import mode to export Mode and vice versa. Accordingly Display parameters shall be updated TOU shall be updated in meter. Meters should push mid night data on daily basis which should include CKWh, CKVAh, MD KW(Current-Rising), MD KVA (Current-Rising), TOD KWH(both off peak and peak) and TOD KVAh (both off peak and peak)

	4.31	Software and communication compatibility	The bidder shall supply software required for local HHU & Remote (AMI) connectivity including required training to use the software free of cost as required by utility or HES / Communication service provider. If this software can be used in a device readily available in market and can connect to meter through optical port or other communication port without any security checks / or with MR securities which OEM will provide; then, OEM can provide only software, else the device on which this software will run is also to be provided along with technical specification of this device.	
	4.32	Calibration	Meters shall be software calibrated at factory and modifications in calibration shall not be possible at site by any means. There shall be provision for firmware update to change payment mode from Prepaid to Postpaid and vice versa; similarly for metering mode from Import only to Export-Import (NET mode) and vice versa, through proper authentication process remotely over the air (OTA). The change should be recorded as Transaction event. Billing should be done at that time of firmware upgrade so that readings at which this upgrade has happened are logged in meter and system. Display update shall be done accordingly remotely.	
	4.33	Communication module of meter for AMI	As per clause no. 1.2 (b) of IS 16444 PART-1. Meter should have provision of communication module compatible with both the variant mentioned in IS 16444 PART-1. This module should be able to get connected to the NAN / WAN network of service provider [4G of TP(C/N/S/W)ODL]. Meter should be able to provide required power supply to NIC provided by communication provider, if separately required, recommended / finalized by TP(C/N/S/W)ODL.	
	4.34	Communication Layer Protocol	Should be as per clause 9.3 of IS 16444 PART-1	
	4.35	Key Management and Security Feature	Should be as per IS 15959 Part-1 & Part-2	
	4.36	Usage Application	Indoor usage	

4.37	Ultrasonic welding / Chemical Bonding	Meter cover and body should be continuous & seamless ultrasonically welded only or should be chemically bonded.

4.1 **DISCONNECTOR SWITCH**

The meter shall have the facility of disconnecting and re-connecting the load of the meter from the remote and by authenticated command through Laptop / HHU at site by means of a built-in switch / relay. This operation shall be conducted with the help of a third party software which is owned by TP(C/N/S/W)ODL, in over the air mode, on 4G provision Cellular, and in addition, by the manufacturer's own software which can be given through optical port using external modem / HHD by Utility.

Each operation of the switches shall be logged by the meter as an event with date, time stamp and snapshot parameters. This operation should be in line with clause 11 of IS 16444 PART-1, TP(C/N/S/W)ODL will decide the enabling of disconnection based on statuary guidelines and changes in future.

The cumulative number of ON / OFF operations shall also be made available in meter data and HES. Switch shall be in compliance to IS 15884. Data-sheet of the dis-connector switch shall be submitted by the bidder(s), with the technical bid.

The brief technical particulars of this Disconnector / load switch are furnished below, bidders to comply for the same:-

S.NO	DESCRIPTION	REQUIREMENT
1	Operating Voltage range	130 V to 470 V
2	Operating Current range	20 mA to 36 A
3	Maximum switching power	22 kVA per phase / per IS 15884 Annex G
4	No. of poles	2 nos. (one in phase and one in neutral)
5	Operation of switches	Simultaneous
6	Utilization Categories	UC1
7	Min. number of operation	1000 (close, open each)

4.2 **4.2.1 NIC MODULE DETAILS & INTEGRATION FOR 4G BASED COMMUNICATION**

4.2.2.1 In case of 4Gbased meter, the NIC shall accommodate SIM card of any service provider and the same should be inter-operable, so that in case there is a change in service provider, NIC needs not to be changed.

4.2.2.2 The successful bidder of meter shall do the integration of NIC with TP(C/N/S/W)ODL smart meter communication network and ensure end-to-end communication of complete meter data as desired in this specifications. The bidder shall mandatorily submit prototype meters for testing at TP(C/N/S/W)ODL, before mass manufacturing.

4.2.2.3 The NIC, both deeply integrated, non-removable type and plug-in type shall be allowed in this tender, however,

a) in case of plug-in type it shall be replaceable at site in hot swappable condition, in event of any failure. It should be integrated in meter body in such way that it should have separate cover & sealing arrangement with screw.

b) in case of deeply integrated, non-removable type, the provision of SIM replacement shall need to be provided and the failure of NIC shall be treated as failure of the meter itself.

4.2.2.4 In case of 4G based communication system, the bidder shall inform TP(C/N/S/W)ODL during the technical bidding itself. The associated NIC dimensions and pin configurations should also be defined and got approved from TP(C/N/S/W)ODL for plug-in type.

4.2.2.5 In case of 4G based communication system, bidder to mention details of power consumption of

	associated NIC and same should be in lines with clause 6.10 of IS 16444. 4.2.2.6 Further, the technical details and pin configuration of NIC shall be shared by the bidders, during detailed engineering. 4.2.2.7 Energy meter and NIC card Integration (both hardware and software) in a way to get desired data at HES and HHU, shall be the responsibility of bidder jointly with HES service provider and communication network provider. 4.2.2.8 Necessary support for Meter & NIC (as a unit) integration with TP(C/N/S/W)ODL communication network upto HES, shall be extended by the bidder. 4.2.2.9 The integration document with associated test plans to be submitted by successful bidder during pre-manufacturing approvals (GTP, drawings & sample) and the same shall also be approved by TP(C/N/S/W)ODL prior to mass manufacturing. Bidder shall arrange for integration testing. 4.2.2.10 TP(C/N/S/W)ODL consider NIC as a part of meter. The bidder should have back to back Service Level Agreements (SLA) with NIC ~~(RF)~~ (As per Pre-Bid Meeting held on 25.05.2021 Cellular Communication required) provider, communication network provider and component suppliers, meeting this specification 4.2.2.11 The NIC module placement in meter housing should be such that it is ensured that the NIC can be removed from meter without removing the meter from meter box. This NIC should be online field replaceable. 4.2.2.12 Meter should be able to identify if NIC has been removed or power failure has occurred. These 2 instances should be separately recorded in meter memory and should be reported back on time to time basis. *(applicable for plug in type)*
4.3	**a) Communication capabilities and software feasibilities** 4.3.1 The meter shall have facilities for data transfer locally through Meter Reading Instrument (MRI) (Using optical port) and remotely by 4G with proper security via Plug in type NIC. Data transfer locally through optical port via MRI is desired along with data transfer through NIC card. The data downloaded in MRI / Hand Held Device shall be integrated to HES data base. 4.3.2 It should be the responsibility of the bidder to ensure integration of meter into HES. For cellular fallback, the Module should have backward compatibility. The fall back provision shall be taken through optical port ~~with external modem~~ by TP(C/N/S/W)ODL. Meter should be capable for sending all data from 4G NIC and optical port. 4.3.3 It shall be possible to reconfigure the meters for RTC, TOD slots reprogramming, DIP (Demand Integration period), billing date, display parameters etc. through proper authentication process locally through MRI and remotely over the air (OTA). Meter data should remain intact with timings. And billing should be done whenever any above mentioned attribute is changed. The change should be recorded as upgrade event. 4.3.4 Necessary keys if required for performing this reconfiguration operation should also be provided along with supply of meter lot & training to TP(C/N/S/W)ODL staff on how to use it free of cost. Bidder to provide this support on a later stage also on the request of TP(C/N/S/W)ODL without any cost implication. 4.3.5 Optical Communication port shall be available for communication. Communication ports shall not be affected by any type of injection / unauthenticated signals and having proper sealing arrangement.

4.3.6 Bidder to ensure integration of meter data with head end for data transfer as mentioned in specification.

4.3.7 Meter should be supplied to TP(C/N/S/W)ODL along with integrated NIC card. NIC card to be provided with proper sealing arrangement, for plug in type.

4.3.8 The bidder shall supply software required for local (MRI) & remote (AMI) connectivity including required training to use the software free of cost. Bidder shall provide the communication protocol / APIs for communication with meter through local (MRI) / remote (AMI) as and when required by TP(C/N/S/W)ODL free of cost during life time of meter. The bidder should provide DLMS compliance for Communication with the meter at Optical port and at HES.

4.3.9 Bidder should also provide software for changing / upgrading meter firmware in mass and should support integration of this software with HES. Bidder should also provide base computer software (BCS) for viewing the data downloaded through HES / MRI / laptop / HHU in separate PC/laptop. Android based or windows based HHU shall be preferred.

4.3.10 For purpose of exercising control, like outage management, the meter should send abnormalities at the consumers' end like Power failure (Last Gasp) instantly, Power Restoration (First Breath) as event. Additional exceptional events should also be communicated to HES by meter immediately after the occurrence. It should also indicate the restoration of the same event.

4.3.11 List of events to be reported should be configurable over the air (OTA). The meter should have "Last Gasp" and “First Breath” feature to facilitate sending alerts to the HES during fully powered off / On condition.

4.3.12 If there are 2 requests given for communication one from HES and other from local device, request from local device should supersede.

4.3.13 Meter Serial no will be used for tagging of all data of the meters in all database (at HES / MDM/ DCU level etc). However, it will be the responsibility of the Bidder to establish the complete communication solution involving all the meters in the system. Also, the Bidder must ensure that, the mode of communication used for 4G shall be consistent with the Government of India stipulations. Bidder should come out with it requirements for integration of meter with HES and MDMS clearly during tender submission.

4.3.14 The Bidder's supplied meter with third party communication module should have suitable hand-shaking features to allow a third-party MDMS (procured by TP(C/N/S/W)ODL) to configure, command, read and control smart meters installed at site. The Bidder shall extend all necessary assistance in developing the adaptor software through a third-party for facilitating the above.

4.3.15 Integration of meter software’s with HES / MDMS for seamless transfer of data will also be in scope of bidder till the expiry of warranty of the meters. It is desired meter firmware up gradation/ selection should be available over the air. Meter should be able to change to prepaid mode if required with firmware upgrade. The required firmware and any required support for integration with HES shall be provided free of cost till the useful life of the meter.

4.3.16 Communication of the meter at optical port / OTA (NAN / WAN) should be as per IS 15959 (Part-2):2016. The optical port should be with proper locking arrangement.

	4.3.17 Communication NIC / network should be immune with any external Magnetic field / ESD/ Jammer/ HV voltage influence such that it shall not affect the normal overall functionality. 4.3.18 Meter once powered up with NIC card should be self-detected and its basic name plate details & current readings are transferred to HES. 4.3.19 The required OBIS codes will be finalized with successful bidder. The bidder can offer desired codes from Blue Book ensuing the codes reserved or standardized by Bureau of Indian standards. The reserved codes in BIS are to be used / utilized as per guidelines of BIS and remaining codes from blue book can be used for communication of additional features mentioned in this specifications. This is to be done strictly with written approval from TP(C/N/S/W)ODL after verification of proposed codes by manufacturer. In future, if BIS adds any OBIS codes then the bidders to provide upgraded firmware with desired changes in consultation and approval of TP(C/N/S/W)ODL competent authority. 4.3.20 Meter display should have provision for showing if NIC card if: 1. Installed, 2. Getting Network, 3. Latched with HES, 4. Communicating with HES. 4.3.21 If any tamper occurs in power off situation, it should be pushed as soon as the meter is powered on. 4.3.22 Bidder to provide facility for Up-gradation / Modification of Firmware. 4.3.23 TP(C/N/S/W)ODL reserves the right that if required, TP(C/N/S/W)ODL will hand over the SIM cards to OEM and supply will be accepted with SIM cards already installed and with communication already tested in 100 % meters. For this purpose, TP(C/N/S/W)ODL HES will be used for confirming data availability 4.3.24 Following parameters may be updated multiple times during life cycle of meters over the air: Post Paid to Prepaid mode and vice versa Import mode to export Mode and vice versa. Accordingly Display parameters shall be updated remotely. **4.3.25 It must be noted that HES of 4 Discoms in Odisha are separate and distinct: therefore, the meters have to be seamlessly integrated with the existing HES available at each utility and there shall be no provision of a new HES being opted for by any bidder. All the integration efforts of meters at the 4 utilities and purposes stated here and elsewhere in the specification must take into account this requirement as a part of exercise.**
4.4	**b) IMMUNITY AGAINST EXTERNAL INFLUENCING SIGNALS (to be attained with meter box):** **4.4.1 Magnetic Field:** Meter shall record accurate energy in case of any external influencing signals in line with IS 13779:1999 Cl.11.2 and variation in limits of error (up to 100% Imax) shall be as per the table 17 of IS 13779. Meter shall be immune to magnetic field such that it shall not affect the normal overall functionality However, in case of abnormal magnetic field as defined below meter shall perform as per the following actions: a) Meter shall log the event in its memory as “Magnet” with date and time stamp, the event logging threshold values as per table no. 1 in 4.6. b) The energy recording to shift on I max. Vref. With UPF. **Abnormal Magnetic field is defined as below;** a) Continuous DC magnetic induction: >0.27 Tesla ±

	5%(Value of the magneto motive force to be applied shall be generally >10000 AT. b) AC magnetic induction: > 10 milli Tesla (if produced with circular metal core with square cross section as specified in CBIP latest report with 2800 AT) c) Permanent Magnet: Immune up to 0.5T and Event logging >0.5T. **4.4.2 Electrostatic Discharge (ESD)** Meter**, inside meter box,** shall be immune up to 50 kV and shall record accurate energy as per IS-13779:1999 / CBIP-325. Meter shall log the event into memory as 'ESD' with date & time stamp for any ESD greater than 35 kV with snap shot the event logging threshold values as per table no. 1 in 4.6. 4.4.3 The shielding around the meter inside meter box, shall be such that it does not get affected by high Voltage and high energy or low energy impulse when comes in contact with meter from any side. 4.4.4 Meter inside meter box should be immune to high / low frequency Jammer devices. Meter shall log the event in its memory as 'JAMMER' with date and time stamp, the threshold values as per table no. 1 in 4.6. 4.4.5 The meter inside meter box should be immune or log the tamper on application of any other higher magnetic field of any frequency waves, micro waves like magnetron etc. the threshold values as per table no. 1 in 4.6.
4.5	**c) NEUTRAL DISTURBANCE & OTHER TAMPERS** 4.5.1 The meter shall log the event in memory on thresholds defined in table 1 in 4.6 4.5.2 The meter shall not saturate on passage of direct current, which can cause the meter either to stop recording / record inaccurately. DC injection shall be tested both in phase and neutral. Measurement by meter shall not get influenced by injection of chopped signal / DC signal/ DC pulse upto 330V (both + & - DC) and for any value beyond this of any low frequency and harmonics. Meter shall log the event in to memory as 'Neutral Disturbance' with date & time stamp the thresholds are as per table no. 1 in 4.6 4.5.3 The meter shall record energy proportional to the current and V Ref (230V) when any of the tamper circuits enclosed as per annexure1 are used to tamper energy using any type of diode or a variable resistance or a variable capacitance, energy saving device. Or any DC injection as per 4.5.2. 4.5.4 In any tamper when then voltage falls below 190V then only the meter will start defraud recording at Vref, UPF and actual RMS current. When voltage is above 190V only, event shall be recorded as per prevailing tamper condition. **Other tampers:** **4.5.5 Current mismatch** – Meter should logged current mismatch event as per thresholds in table no. 1. Priority of logging this event in memory of meter is higher than EL. Further, earth LED shall glow & log event as per its own logic irrespective of this logic.
4.6	**ABNORMAL AND TAMPER CONDITIONS:** 4.6.1 Meter **inside meter box** shall be immune to the influence of Magnet, ESD, Jammer, microwaves as per clause 4.53 during all the tamper conditions of Annexure-I. The meter shall record forward energy under any abnormal conditions as given in the Annexure- I, for all 38 tamper conditions, with above abnormal influencing signals. 4.6.2 All the tamper events mentioned in table no. 1, shall be logged in the memory of the meter with date and time stamp of occurrence (of abnormal event) and restoration (of normal supply) along with instantaneous electrical parameter (Voltage, Current (phase and neutral), energy (kWh &KVAh), PF ,.

The event register compartment size shall be as per table no.1

4.6.3 Multiple occurrences of same event, with different time stamps should not be logged without restoration of first occurrence, except for the case of Top Cover Open.

4.6.4 Meter shall latch & store cumulative count of events logged / occurred / stored in memory of meter from the date of energization till life of meter.

4.6.5 For all tamper events the time stamp and snapshot parameters shall be recorded at the start time of event for occurrence (T1) and for restoration the time stamp and snapshot parameters shall be recorded at the end time of the event (T3). During abnormal & tamper conditions, the current shall be recorded as active current and line current. Each such event shall be provided with minimum count as per table no.1, to avoid loss of data amidst usual events (like power failure) due to the limitation of FIFO.

4.6.6 Tamper event logging along with snapshot of occurrences & restorations shall be as per table no.1. Persistence time for occurrence and restoration for the events along with their threshold values shall be as per table no. 1 given below

4.6.7 All tamper/event logging thresholds values shall be configurable remotely over the air (OTA).

4.6.8 The Cover Open tamper detection should be through heavy duty, sturdy micro switches such that it should not log false event on vibration or impact during handling or testing.

TABLE NO.1

Persistence Time of Occurrences	Persistence Time for Restoration	Threshold Value for Occurrence of Events	Threshold Value	Compartment Size
ESD / JAMMER = immediate (record only 1 event on first application & only one event for next 1min)	ESD / JAMMER = 0 Hr 01 Min 0 sec (ESD) (should restore after 1 min. of last application)	Immunity up to 50 KV with NIC and logging of event > 50 KV	Removal of ESD / Jammer signal	25
Magnet = 0 Hr 2 Min 0 sec (MAG)	Magnet = 0 Hr 2 Min 0 sec (MAG)	>0.5 Tesla for permanent magnet OR DC magnetic Induction > 0.2 T OR AC magnetic induction > 10 mT	<0.5 Tesla for permanent magnet OR DC magnetic induction < 0.2T or AC magnetic induction <10 mT	25

Meter Top Cover Open (TC Open) Immediate	Meter Top Cover Open (TC Open) immediate	If meter top cover is opened	NA	05 (Stay put Type)	
Neutral Disturbance = 0 Hr 01 Min 0 sec (ND)	Neutral Disturbance = 0 Hr 02 Min 0 sec (ND)	Voltage > 145% of Vref, Current >10% Ib OR Frequency < 47 Hz OR Frequency > 53 Hz OR DC voltage / signal/ pulse/ chopped signal injection / as per the conditions of clause 4.5.4	Voltage <115% of Vref Current > 10% Ib AND Frequency > 47 Hz OR Frequency < 52 Hz	25	
Current Mismatch = 0 Hr 10 Min 0 sec (CM)	Current Mismatch = 0 Hr 02 Min 0 sec (CM)	(In –Ip) ≥ 20 % of Ib AND (In>Ip)	In –Ip< 20 % of Ib	25	
Low Voltage Check = 0 Hr 30 Min 0 sec (LVC)	Low Voltage Check = 0 Hr02 Min 0 sec (LVC)	Voltage < 70% of Vref AND current > 2% Ib	Voltage > 80% of Vref AND current > 2% Ib	25	
Power OFF = 0 Hr 05 Min 0 sec	Power On = immediate	Actual Voltage OFF	Actual Voltage ON	25	
Over Load 0 Hr 30 Min 0 sec (OL) (If enabled)	Over Load = 0 Hr 2 Min 0 sec (OL) (If enabled)	> 120% Imax	< 100% Imax	25	
Microwave immediate (record only 1 event on first application & only one event for next 1min)	Microwave 0 Hr 01 Min 0 sec (should restore after 1 min. of last application)	Any higher frequency magnetic waves, micro waves > 10 mT	Removal of device	25	
Temperature Rise (TR) = 0 Hr 30 Min 0 sec	Temperature Rise (TR) = 0 Hr 02 Min 0 sec	Temperature > 70 ˚C	Temperature < 60 ˚C	25 (Stay put type)	
NIC card	NIC Card	On removal of	On	20	

Removed (Immediate)	inserted (Immediate)	card	insertion of card		
Earth Leakage (EL) = 0 Hr 30 Min 0 sec	Earth Leakage (EL) = 0 Hr 02 Min 0 sec	Difference between phase and neutral current > 6.25 % of Ib	Difference between phase and neutral current <6.25%of Ib	10	

4.7 **EVENT COMPARTMENTS**

4.7.1 The size of the event compartments should be such that, all above events (in table no.1 and other required events defined in various clauses of this documents) are accommodated in the assigned event category compartment i.e. if in case of voltage compartment assigned to 4 number of events, then the minimum size of this compartment should be such that, it should accommodate sum of all maximum number of events as marked above table no. 1.

4.7.2 Transaction events compartment size shall be minimum 100 events.

4.8 **GENERAL TECHNICAL REQUIREMENTS**

The Meter shall be designed and constructed in such a way as to avoid introducing any danger in normal use and under normal conditions, so as to ensure especially personal safety against electric shock, safety against effect of excessive temperature, protection against spread of fire, protection against penetration of solid objects, dust and water. All parts, which are subject to corrosion under normal working conditions, shall be protected effectively. Any protective coating shall not be liable to damage by ordinary handling or damage due to exposure to air, under normal working conditions. The meters shall be designed and manufactured using SMT (Surface Mount Technology) components

Preferably shunt should be fitted for measuring current in phase element & neutral element may have either CT or shunt or hall-effect sensor with proper isolation. The shunt used in the current circuit must be of high-quality having high thermal stability and temperature co-eff. It should be E-beam / spot welded. In case of hall effect sensor, meter should record energy as per the requirement of this specification in normal and tamper conditions. There should not be any connector or joint in the CT secondary connections from PCB. CT shall be soldered on PCB. The battery cell shall be button/coin type leak-proof.

All the material and electronic power components used in the manufacture of the meter shall be of highest quality and reputed make to ensure higher reliability, longer life and sustained accuracy as given below or any other equivalent make with the strict approval of TP(C/N/S/W)ODL.

The list below is indicative, and bidder is allowed to replace them at their discretion with other branded parts, with necessary approval from Utilities during detailed engineering, ensuring that defect free operations is ensured.

S. No.	Component Function	Requirement	Makes and Origin
1.	Measurement / computing chips	The Measurement / computing chips used in the meter should be with the Surface mount type along with the ASICs	USA: Anolog Devices, Cyrus Logic, Atmel, Phillips, Freescale semiconductor, Texas Instruments, ST Microelectronics

				South Africa: SAMES Japan: NEC
	2.	Memory chips / NVM	The memory chips should not be affected by the external parameters like sparking, high voltage spikes or electrostatic discharges. The life of NVM shall be 15 years.	USA: Atmel, National Semiconductors, Texas Instruments, Phillips, Microchip Japan: Hitachi or Oki Swiss: STMicro
	3.	Display modules	The display modules should be well protected from the external UV radiations. The display visibility should be sufficient to read the meter mounted between height of 0.5m and 2m. The construction of the modules should be such that the displayed quantity should not disturbed with the life of display. Should be with Green LED background. It should betrans-reflective STN type industrial grad with extended temperature range.	Taiwan: Holtek Singapore: Bonafied Technologies Korea: Advantek China: Xiamen, Trulysemiconductor
	4.	Optical port	Optical port should be used to transfer the meter data to meter reading instrument. The mechanical construction of the port should be such to facilitate the data transfer easily. It should be magnetic locking type	USA: National Semiconductors Holland / Korea: Phillips Taiwan: MAXIM, Everlight Japan: Hitachi
	5.	P.C.B	Glass Epoxy, fire resistance grade FR4, with minimum thickness 1.6 mm	A class vendor
	6.	Electronic components	The active & passive components should be of the surface mount type & are to be handled & soldered by the state of art assembly processes.	USA: National Semiconductors, Atmel, Phillips, Texas Instruments, Vishay Japan: Hitachi, Oki, AVX or Ricoh Korea: Samsung
	7.	Battery	Lithium with guaranteed life of 15 years	Varta / Tedirun / Vitzrocell / Sanyo or equivalent.
	8.	Micro controller and RTC having separate battery	The accuracy of RTC shall be as per relevant IEC / IS standards and RTC shall be provided with separate battery in its ckt., The micro controller shall be of superior quality from reputed make with long life.	USA: Philips, Dallas, Atmel, Motorola, Texas Instruments, ST Microelectronics Japan: NEC or Oki, Renesas
	9.	Temperature sensor (not required	Temperature sensor shall be internal to the meter and its accuracy shall be as per relevant IEC / IS standards. The OEM test	USA: Philips , Dallas, Atmel, Motorola

	for terminal block)	report to be furnished. With good performance till life of meter.	Japan: NEC or Oki

Note: The makes of the components are in the preferential order.

5.1 **METER BODY**

5.1.1 Meter body shall be made of unbreakable, high grade, fire retardant reinforced Insulating material (protective Class II) with FVo Fire Retardant, self-extinguishing, UV stabilize, recyclable (first use) and Anti oxidation properties.

5.1.2 The minimum thickness of the meter enclosure shall be 2mm.

5.1.3 Meter base shall be opaque with polycarbonate LEXAN 500R or equivalent (i.e chart of Lexan 500R compared with the alternative material) on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit material data sheet in technical bid)

5.1.4 Meter cover shall be transparent with polycarbonate LEXAN 143R / 943A or equivalent on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit material data sheet in technical bid)

5.1.5 Meter cover & base shall be provided with continuous and seamless Ultrasonic or chemical bonding such that it cannot be opened without breaking the enclosure. Front cover & base shall be such that it is not possible to cut & open the meter without certainly damaging the meter body and by no means shall an attempt to reassemble would not leave physical evidence. The damage evidences should be visible externally & should be traceable in such a way that attempts can be proved in court of law.

5.1.6 The meter body shall be sealed in such a way that opening of meter base and cover is possible only after breaking the seal(s).

5.1.7 Unidirectional screws to be used on meter covers where ever required.

5.1.8. The Meter body shall be such that the liquid or chemical shall not reach the electronic parts if liquid is injected from any side of meter body such as meter terminals, push button, display, NIC card casing Necessary protection and water tight sealing to be provided at terminals and Push buttons etc.

5.2 **TERMINALS, TERMINAL BLOCK**

5.2.1 Even after any attempts to disengage the terminal block, it should not get disengaged, opened or loosen from any side. Any attempt to disengage the terminal block should certainly damage the meter body with physical evidences. The damage evidences should be visible externally & should be traceable in such a way that attempts can be proved in court of law

5.2.2 Terminals may be grouped in terminal block having adequate insulating properties and mechanical strength. In order to satisfy such requirements when choosing insulating materials for the terminal block adequate testing of materials shall be taken into account.

5.2.3 Terminal block and terminal cover shall be of a material which complies with the requirements of IS11731 (part 1) method FH1. The material of which the terminal block is made shall be capable of passing the test given in ISO 75 for temperature of 180°C and pressure of 1.8 M Pa. (Clarifications issued dated 25.12.2019 (Sl. No. 12) Accepted as per CBIP 325).Tested as per ISO 75-2/A or ASTM D648.

5.2.4 The terminal block shall be of opaque with polycarbonate LEXAN 500R or equivalent on prior approval from the TP(C/N/S/W)ODL. (the bidders should submit the relevant material data sheet in technical bid).

	5.2.5 The terminals and connections shall be suitable to carry up to 120 % of Imax continuously. The size, design & material of Bus-bar / Shunt / Terminal shall be with suitable cross sectional area, so that temperature rise at the terminal block will not be more than 35°C above ambient temperature of 45°C at 120% of I max loading for every 25000 meters or whenever required, without any cost implications towards TP(C/N/S/W)ODL. It shall also be done on tender sample & on pre-manufacturing sample. The process for the same shall be: The energy meter shall be supplied at reference voltage with actual heating load of 120% of Imax on both phase & neutral circuits. 5.2.6 The Size of the screw shall be 6mm dia. The material and plating details of terminals screw shall be provided. MS screws shall not be accepted. 5.2.7 The terminal block, the terminal cover and the meter case shall ensure reasonable safety against the spread of fire. They shall not be ignited by thermal overload of live parts in contact with them. 5.2.8 Minimum two number of terminal screws to be provided per terminal wire. 5.2.9 The preferred arrangement of terminals shall be linear and if any change is offered then suitable arrangement for testing at our testing lab to be provided by bidder free of cost as per requirement. 5.2.10 The Aluminum cable of 2x4 sq.mm shall be used as service line. Hence the terminals shall be provided with Zinc plating or tinning or suitable compatible coating to avoid the bimetallic affect at the joints with AL core of cable. 5.2.11 Internal diameter of the terminal holes shall be minimum 9.5 mm; minimum clearance between adjacent terminals shall be 10 mm. Depth of the terminal holes shall be of 22 mm. 5.2.12 Terminal block shall be such that the risk of corrosion resulting from contact with any other metal part is minimized. Electrical connections shall be so designed that contact pressure is not transmitted through insulating material.
5.3	**TERMINAL COVER** 5.31 Terminal cover should not have any cuts for incoming and outgoing wires. Terminal cover should work as barrier for direct approach to terminal from gland entry. There should be sufficient space for cable to enter from behind the terminal cover by bending cable. 5.3.2 Terminal cover shall be of short type and shall be transparent with polycarbonate LEXAN 143R / 943A or equivalent on prior approval from the TP(C/N/S/W)ODL (the bidders should submit the relevant material data sheet in technical bid). 5.3.3 The terminal cover shall be short: 25 mm length from bottom of terminal block in line with meter base. 5.3.4 Appropriate space shall be available for incoming /outgoing cables without damaging / stressing terminal cover (terminal cover design shall be as per the TP(C/N/S/W)ODL approval). After sealing the cover, terminals shall not be accessible without breaking the seals. 5.3.5 The terminal cover design should be such that the sealing screw locking provision on cover should have min dimension of 3mmx3mm. (Excluding seal lock hole)

5.3.6 The terminal cover should open on the top side, during connection of the cables. The side opening of terminal cover is not acceptable due to additional opening space requirement.

5.3.7 The system connection diagram shall be provided on the terminal cover.

5.2 **SEALING OF METER**

5.4.1 Reliable sealing arrangement shall be provided to make the meter tamper evident and to avoid fiddling or tampering by unauthorized persons.

5.4.2 For this, one no. Polycarbonate seal and three no. Hologram seal (on Left right side shall be provided by the bidder.

5.4.2 For this, one no. Polycarbonate seal and three no. Hologram seal (on Left, Right & Top side) shall be provided by the bidder.

5.4.3. One no polycarbonate seal shall be provided by the TP(C/N/S/W)ODL. This seal shall be fix on right hand side of meter.

5.4.4. All the seals with unique serial numbers shall be fixed on meter body by the bidder at his works before calling for inspection.

5.4.5 One sealing provision shall be provided at meter terminal cover, such that terminal shall not be accessible without breaking the seals. All the seals shall be provided on front side only and as per the TP(C/N/S/W)ODL specification. Rear side sealing arrangement shall not be accepted. Bidder shall provide seals be as per CEA regulation (2006). Only patented seals to be used as per CEA requirements.

5.4.6 For Plug in type NIC card, cover should have proper sealing arrangement and should be sealed with TP(C/N/S/W)ODL polycarbonate seal.

5.4.7 The bidder shall provide TP(C/N/S/W)ODL (MMG store and MTL) the soft record of polycarbonate seal and hologram seal serial number and NIC card serial number used against each meter serial number along with its position (RHS / LHS / Top / NIC Cover) in tabular form for every lot of meter

5.3 **TOD FEATURE:**

The meter shall be capable of measuring Cumulative Energy (KWh) and MD (KW / KVA) with time of day (TOD) registers having 8 zones & 02 seasons (no. of zones & time slot shall be programmable by MRI / OTA with adequate security level and in one to one / broadcast mode over the air). Time duration of these slots should be available in the meter data, at HES. Current TOD (during tender) to be given is as below,

Slots	Time Slot	Jan-Dec
T1 Off-Peak	0000-0600	Register 1
T2 Normal	0600-2400	Register 2

The bidder to ask TP(C/N/S/W)ODL for latest TOD timing slots before manufacturing of every lot.

5.4 **MD INTEGRATION:**

The MD integration period shall be 15 minutes (integration period-programmable by MRI at site and also through AMR with adequate security level). The MD resetting shall be automatic at the 1st of the month i.e. 0000 hours of 1st day of the month. Manual MD reset button shall not be available. Last twelve MD values shall be stored in the memory and one to be displayed in the Auto scroll mode. MD shall be recorded and displayed with minimum three digits before decimal and minimum three digits before decimal and

	minimum two digits after decimal points. MD integration shall be Block Type Demand.
5.5	**PARAMETERS IN BCS** All these parameters shall be downloaded locally or remotely and interpreted in PC / Laptop. All the parameters shall be recorded and memorized in its Nonvolatile Memory (NVM). The corresponding nonvolatile memory shall have a minimum retention time of 15 years. It is to be ensure that any data which is pushed / pulled from meter must have Meter Sr. No. as one of the Parameters. Time-sync with RTC and over-writes on drift threshold. Clarity on event logged in memory and server time-stamps matching Fail to be log in memory in the following conditions only in BCS not in display a) RTC fail b) NVM memory fail c) Battery fail NIC fail should be depicted on Meter display and suitable indication should be available at HES
5.6	**LOAD SURVEY (FOR PRE-PAID, POST-PAID & NET METER MODE):** **Meter shall be delivered in thin prepaid non-ToD configuration, thereby, enabling both prepaid and post paid functionality.** **The other display and associated parameters shall be required when there is an need for upgradation to ToD or net mode on the meter. The utility may ask for such upgraded meters separately when required to be supplied directly from factory. The facility for doing so on installed meter shall be over the air.** Meter serial number and NIC serial number shall be recorded and communicated for all profiles of data. The meter shall be capable of recording load profile of 35 days with 15 min integration period for kWh, kVAh, KW, kVA, Voltage, Phase and Neutral current, Metering Current, Power Factor, Temperature (˚C) for ON days/time. Meter shall be capable of recording daily Energy and Demand 00:00 to 24:00 Hrs kWh and kW, kVAh and kVA in BCS for 35 days. Midnight energy value of cumulative KWh, KVAh along with Current (Rising Demand) KW and Current (Rising Demand) KVA along with daily consumption kWh should be available in meter memory for last 35 days. Load survey data should be at least with 3 decimal place
5.7	**INSTANTANEOUS PARAMETERS:** Meter serial number and NIC serial number shall be recorded and communicated for all profiles of data. Meter shall be capable for following Instantaneous Parameters in Memory and should be available in BCS.

Meter Sr. No.	
NIC Sr. No.	
Meter Type	1P 2W 5-30A
Meter data & Time	DD MM YYYY HH MM SS
Voltage	000.000V
Phase Current	00.000A
Neutral Current	00.00A
Power factor	0.000
Instantaneous Frequency	00.000Hz
Instantaneous Load	Active
Present Cumulative Energy	Active-kWh
Present Cumulative Energy	Apparent-kVAh

Cumulative Power Off Duration	00000	
Cumulative Power ON Duration	00000	
Cumulative Tamper count	00000	
Billing date	dd:mm:yy	
Terminal Block Temperature (˚ C)		
No. of disconnector operation (Open)	00000	
No. of disconnector operation (Close)	00000	

5.7.1 **GENERAL INFORMATION:**

Meter serial number and NIC serial number shall be recorded and communicated for all profiles of data. Meter shall be capable for providing below mentioned general parameters in BCS and HES

Meter Serial number
Firmware Version
Manufacturer's Name
Manufacturing Date (MM/YY)
Meter Type
Meter Class
Meter Constant
Meter Voltage Rating
Meter Current Rating
TOD profile

5.7.2 **BILLING PARAMETERS:**

Meter serial number and NIC serial number shall be recorded and communicated for all profiles of data. Both Export-Import mode, below mentioned parameters should be for both
Export and Import.

1) Maximum Demand (Reset date, Current Month &12 History, time zone register wise)

a) MD - Abs Active Load/kW
b) MD - Abs Apparent

2) Billing Dates (12 History)

3) Cumulative Energy (Reading date Current Month&12 History, time zone register wise)
kWh and kVAh

4) Consumption (Reading date, Current Month &12 History, time zone register wise)
kWh and kVAh

5) Average Power factor (12 History)

6) Mode of operation of dis-connector switch

7) Monthly power ON/OFF hours

Last five modes with date & time of switching with cumulative energy parameters of kWh,TOD1 kWh, TOD2 kWh, kVAh, TOD1 kVAh, TOD2 KVAh

5.7.3 **TRANSACTIONS:**

All the changes in software of meter to be logged along with date & time stamp and readings. Meter should do billing if any billing related transaction is done.

5.7.4 **DISPLAY UNITS**

The display unit shall be Pin type built-in liquid crystal display (Permanently backlit type LCD). The LCD shall be of STN (Super Twisted Pneumatic) construction suitable for maximum temperature withstands 65 C

degree and minimum temperature withstands 0degree C during normal operating condition. The LCD display shall have a wide viewing angle of 120 degree.
When **the meter is not energized the electronic display need not be visible**. The display shall not be affected by electrical, magnetic disturbances and ESD.

The display should be readable in direct sunlight. The back lit must be green in color for good visibility of digits in sunlight.

The kWh register shall have minimum 6 digits(without decimal) LCD display and size of the digits shall be minimum 10mmx5mm. Cumulative energy (kWh) shall be displayed
without decimal in auto scroll mode. (However decimal shall be available in push button mode for high resolution display for testing).

5.7.5 **AUTO SCROLL / PUSH BUTTON MODE WITH POST-PAID PAYMENT MODE:**

Persistence time for each parameter shall be 10 second. Values followed by header shall be avoided. (i.e. if MD1 is displayed in Auto scroll mode, Header (MD1) and value (say 5.23 KW) shall be shown simultaneously; it shall not be shown in successive displays. Off time shall not be available in auto scroll mode between each cycle. Auto scroll mode is restored after 10 sec, if push button is not operated. Display should not be struck for any tamper events. There should not be any decimal point in the energy values.

Following shall be continuously displayed in auto scroll and push button mode in the given order:

A. Post Paid without TOD

Display	**Display 1**	**Display 2**
Scroll Process	**Auto**	**Push**
LCD Check	1	1
Meter Sr. No. (The nine digit Serial no. to be displayed with sequence 3 + 6 digits at a time, completer no. in single shot is preferred)	2	2
TAMPER*/OK	3	3
Date	4	4
Time	5	5
Cum. kWh	6	6
Cum. kVAh	7	7
Current Month MD kW	8	8
Current Month MD kVA	9	9
Last Month (history 1) kWh	10	10
Last Month (history 1) kVAh	11	11
Last Month (history 1) MD kW	12	12
Last Month (history 1) MD kVA	13	13
Phase Current	14	14
Neutral current	15	15
Inst. Voltage	16	16
Inst. Phase Power	17	17
Inst. Neutral Power	18	18
Status of Load Switch (connect or disconnect)	19	19
High Resolution kWh	-	20
High Resolution kVAh	-	21
Magnetic Tamper count	-	22
Latest Magnetic tamper occurrence date	-	23
Latest Magnetic tamper occurrence Time	-	24

ESD Tamper count	-	25
Latest ESD tamper occurrence date	-	26
Latest ESD tamper occurrence time	-	27
TC Open tamper count	-	28
TC Open occurrence date of very first event	-	29
TC open occurrence time of very first event	-	30
Count of Connect	-	31
Date & Time of Last Occurrence	-	32, 33
Count of disconnect	-	34
Date & Time of Last Occurrence	-	35, 36

B. Post-Paid with TOD

Display	**Display 1**	**Display 2**
Scroll Process	**Auto**	**Push**
LCD Check	1	1
Meter Sr. No.	2	2
TAMPER*/OK	3	3
Date	4	4
Time	5	5
Cum. kWh	6	6
Cum. kVAh	7	7
TOD Cum. kWh (T1,T2,)	8, 9	8, 9
TOD Cum. kVAh (T1,T2,)	10, 11	10, 11
Current Month MD kW	12	12
Current Month MD kVA	13	13
Last Month (history 1) kWh	14	14
Last Month (history 1) kVAh	15	15
Last Month (history 1) TOD Cum. kWh (T1,T2,)	16, 17	16, 17
Last Month (history 1) TOD Cum. kVAh (T1,T2,)	18, 19	18, 19
Last Month (history 1) MD kW	20	20
Last Month (history 1) MD kVA	21	21
Phase Current	22	22
Neutral current	23	23
Inst. Voltage	24	24
Inst. Phase Power	25	25
Inst. Neutral Power	26	26
Status of Load Switch (connect or disconnect)	27	27
High Resolution kWh	-	28
High Resolution kVAh	-	29
Magnetic Tamper count	-	30
Latest Magnetic tamper occurrence date	-	31
Latest Magnetic tamper occurrence Time	-	32
ESD Tamper count	-	33
Latest ESD tamper occurrence date	-	34
Latest ESD tamper occurrence time	-	35
TC Open tamper count	-	36
TC Open occurrence date of very first event	-	37
TC open occurrence time of very first event	-	38

Count of Connect	-	39
Date & Time of Last Occurrence	-	40, 41
Count of disconnect	-	42
Date & Time of Last Occurrence	-	43, 44

All these parameters shall be downloaded locally or remotely and interpreted in PC / Laptop. All the parameters shall be recorded and memorized in its Non Volatile Memory (NVM). The corresponding non-volatile memory shall have a minimum retention time of 10 years. Last twelve months history data (kWh reading and MD and event as above with date and time) shall be available in the Non Volatile Memory.

All meters to be supplied in postpaid, import mode only, until unless specifically intimated. Bidder to provide software to convert meter to any mode over the air by sending command through HES.

5.8 **AUTO SCROLL / PUSH BUTTON MODE WITH PRE PAID PAYMENT MODE**

Persistence time for each parameter shall be 10 second. Values followed by header shall be avoided. (i.e. if MD1 is displayed in Auto scroll mode, Header (MD1) and value (say 5.23 KW) shall be shown simultaneously; it shall not be shown in successive displays. Off time shall not be available in auto scroll mode between each cycle. Auto scroll mode is restored after 10 sec, if push button is not operated. Display should not be stuck for any

tamper events. There should not be any decimal point in the energy values.

Following shall be continuously displayed in auto scroll and push button mode in the given order:

A. Pre-Paid without TOD

Display	**Display 1**	**Display 2**
Scroll Process	**Auto**	**Push**
LCD Check	1	1
Meter Sr. No.	2	2
TAMPER*/OK	3	3
Date	4	4
Time	5	5
Cum. kWh	6	6
Cum. kVAh	7	7
Current Month MD kW	8	8
Current Month MD kVA	9	9
Last Month (history 1) kWh	10	10
Last Month (history 1) kVAh	11	11
Last Month (history 1) MD kW	12	12
Last Month (history 1) MD kVA	13	13
Phase Current	14	14
Neutral current	15	15
Inst. Voltage	16	16
Inst. Phase Power	17	17
Inst. Neutral Power	18	18
Status of Load Switch (connect or disconnect)	19	19
Current Balance Amount (Current Balance)	20, 21	20, 21
Current Balance Date & Time	22, 23	22, 23
Total Balance at Last Recharge(Previous Balance)	24, 25	24, 25
Last Recharge Amount	26, 27	26, 27
Last Recharge Date & Time	28, 29	28, 29
High Resolution kWh	-	30
High Resolution kVAh	-	31
Magnetic Tamper count	-	32
Latest Magnetic tamper occurrence date	-	33

Latest Magnetic tamper occurrence Time	-	34
ESD Tamper count	-	35
Latest ESD tamper occurrence date	-	36
Latest ESD tamper occurrence time	-	37
TC Open tamper count	-	38
TC Open occurrence date of very first event	-	39
TC open occurrence time of very first event	-	40
Count of Connect	-	41
Date & Time of Last Occurrence	-	42, 43
Count of disconnect	-	44
Date & Time of Last Occurrence	-	45, 46

B. Pre-Paid with TOD

Display	**Display 1**	**Display 2**
Scroll Process	**Auto**	**Push**
LCD Check	1	1
Meter Sr. No.	2	2
TAMPER*/OK	3	3
Date	4	4
Time	5	5
Cum. kWh	6	6
Cum. kVAh	7	7
TOD Cum. kWh (T1,T2,)	8, 9	8, 9
TOD Cum. kVAh (T1,T2,)	10, 11	10, 11
Current Month MD kW	12	12
Current Month MD kVA	13	13
Last Month (history 1) kWh	14	14
Last Month (history 1) kVAh	15	15
Last Month (history 1) TOD Cum. kWh (T1,T2,)	16, 17	16, 17
Last Month (history 1) TOD Cum. kVAh (T1,T2,)	18, 19	18, 19
Last Month (history 1) MD kW	20	20
Last Month (history 1) MD kVA	21	21
Phase Current	22	22
Neutral current	23	23
Inst. Voltage	24	24
Inst. Phase Power	25	25
Inst. Neutral Power	26	26
Status of Load Switch (connect or disconnect)	27	27
Current Balance Amount (Current Balance)	28	28
Current Balance Date & Time	29, 30	29, 30
Total Balance at Last Recharge(Previous Balance)	31	31
Last Recharge Amount	32	32
Last Recharge Date & Time	33, 34	33, 34
High Resolution kWh	-	34
High Resolution kVAh	-	35
Magnetic Tamper count	-	36
Latest Magnetic tamper occurrence date	-	37

Latest Magnetic tamper occurrence Time	-	38
ESD Tamper count	-	39
Latest ESD tamper occurrence date	-	40
Latest ESD tamper occurrence time	-	41
TC Open tamper count	-	42
TC Open occurrence date of very first event	-	43
TC open occurrence time of very first event	-	45
Count of Connect	-	46
Date & Time of Last Occurrence	-	47, 48
Count of disconnect	-	49
Date & Time of Last Occurrence	-	50, 51

All these parameters shall be downloaded locally or remotely and interpreted in PC / Laptop. All the parameters shall be recorded and memorized in its Non Volatile Memory (NVM). The corresponding non-volatile memory shall have a minimum retention time of 10 years. Last twelve months history data (kWh reading and MD and event as above with date and time) shall be available in the Non Volatile Memory.

All meters to be supplied in postpaid, import mode only, until unless specifically intimated. Bidder to provide software to convert meter to any mode over the air by sending command through HES.

5.8.1 **AUTO SCROLL / PUSH BUTTON MODE WITH EXPORT-IMPORT (NET) MODE**

Persistence time for each parameter shall be 10 second. Values followed by header shall be avoided. (i.e. if MD1 is displayed in Auto scroll mode, Header (MD1) and value (say 5.23 KW) shall be shown simultaneously; it shall not be shown in successive displays. Off time shall not be available in auto scroll mode between each cycle. Auto scroll mode is restored after 10 sec, if push button is not operated. Display should not be stuck for any tamper events. There should not be any decimal point in the energy values.
Following shall be continuously displayed in auto scroll and push button mode in the given order:

A. NET mode without TOD

Display	**Display 1**	**Display 2**
Scroll Process	**Auto**	**Push**
LCD Check	1	1
Meter Sr. No.	2	2
TAMPER*/OK	3	3
Date	4	4
Time	5	5
Cum. kWh Import	6	6
Cum. kVAh Import	7	7
Cum. kWh Import	8	8
Cum. kVAh Export	9	9
Current Month MD kW	10	10
Current Month MD kVA	11	11
Last Month (history 1) kWh Import	12	12
Last Month (history 1) kVAh Import	13	13
Last Month (history 1) kWh Export	14	14
Last Month (history 1) kVAh Export	15	15
Last Month (history 1) MD kW	16	16
Last Month (history 1) MD kVA	17	17
Phase Current	18	18
Neutral current	19	19
Inst. Voltage	20	20
Inst. Phase Power	21	21
Inst. Neutral Power	22	22

Status of Load Switch (connect or disconnect)	23	23
High Resolution kWh Import	-	24
High Resolution kWh Export		25
High Resolution kVAh Import	-	26
High Resolution kVAh Export		27
Magnetic Tamper count	-	28
Latest Magnetic tamper occurrence date	-	29
Latest Magnetic tamper occurrence Time	-	30
ESD Tamper count	-	31
Latest ESD tamper occurrence date	-	32
Latest ESD tamper occurrence time	-	33
TC Open tamper count	-	34
TC Open occurrence date of very first event	-	35
TC open occurrence time of very first event	-	36
Count of Connect	-	37
Date & Time of Last Occurrence	-	38, 39
Count of disconnect	-	40
Date & Time of Last Occurrence	-	41, 42
Total Count of all Events	-	43

B. NET mode with TOD

Display	**Display 1**	**Display 2**
Scroll Process	**Auto**	**Push**
LCD Check	1	1
Meter Sr. No.	2	2
TAMPER*/OK	3	3
Date	4	4
Time	5	5
Cum. kWh Import	6	6
Cum. kVAh Import	7	7
TOD Cum. kWh Import (T1,T2,)	8, 9	8, 9
TOD Cum. kVAh Import (T1,T2,)	10, 11	10, 11
Cum. kWh Export	12	12
Cum. kVAh Export	13	13
TOD Cum. kWh Export (T1,T2,)	14, 15	14, 15
TOD Cum. kVAh Export (T1,T2,)	16, 17	16, 17
Current Month MD kW	18	18
Current Month MD kVA	19	19
Last Month (history 1) kWh Import	20	20
Last Month (history 1) kWh Export	21	21
Last Month (history 1) kVAh Import	22	22
Last Month (history 1) kVAh Export	23	23
Last Month (history 1) MD kW	24	24
Last Month (history 1) MD kVA	25	25
Phase Current	26	26
Neutral current	27	27
Inst. Voltage	28	28
Inst. Phase Power	29	29
Inst. Neutral Power	30	30
Status of Load Switch (connect or	31	31

disconnect)			
High Resolution kWh Import	-	32	
High Resolution kWh Export	-	33	
High Resolution kVAh Import		34	
High Resolution kVAh Export	-	35	
Magnetic Tamper count	-	36	
Latest Magnetic tamper occurrence date	-	37	
Latest Magnetic tamper occurrence Time	-	38	
ESD Tamper count	-	39	
Latest ESD tamper occurrence date	-	40	
Latest ESD tamper occurrence time	-	41	
TC Open tamper count	-	42	
TC Open occurrence date of very first event	-	43	
TC open occurrence time of very first event	-	44	
Count of Connect	-	45	
Date & Time of Last Occurrence	-	46, 47	
Count of disconnect	-	48	
Date & Time of Last Occurrence	-	49, 50	
Total Count of all Events	-	51	

All these parameters shall be downloaded locally or remotely and interpreted in PC/Laptop. All the parameters shall be recorded and memorized in its Non Volatile Memory (NVM). The corresponding non-volatile memory shall have a minimum retention time of 10 years. Last twelve months history data (kWh reading and MD and event as above with date and time) shall be available in the Non Volatile Memory.

All meters to be supplied in postpaid, import mode only without TOD Display, until unless specifically intimated. Bidder to provide software to convert meter to any mode over the air by sending command through HES.

5.8.2 **Output Device:**

1. **Pulse rate:** The meters shall have a suitable test output device. Red color blinking LED (marked as imp/kWh) shall be provided in the front. This device shall be suitable for using with sensing probe used with test benches or reference standard meters. Meter constant shall be indelibly printed on the name plate as imp / kWh.

2. **EL LCD Indicator-** The meter shall be provided with suitable earth mark indicator for Earth Leakage. The EL Indicator shall glow when there is a difference of 6.25 %Ib between phase and neutral current. This should be recorded as an event in memory and communicated to HES.

3. **Communication LCD indicator-**Meter display shall have indication in context to NIC. The blinking should be slow when NIC is detected; blinking should be fast when NIC had searched the network and it should be stable when it is successfully latched to the HES.

4. Load Switch LCD indicator-The meter shall be provided with suitable LCD indication for condition of load switch (Close / open). LCD should show when load switch is open.

5.8.3 **NAME PLATE AND MARKING**

Meters shall have a name plate clearly visible and effectively secured against removal.
The name plate data should be laser printed. The base color of Name plate shall be blue(as of TP(C/N/S/W)ODL logo)Indelibly and distinctly marked with all essential particulars as per relevant standards along with the following.

i. Manufacturer's name
ii. Type designation
iii. Number of phases and wires

<table>
<tr><td></td><td>iv. Serial number (Meter serial number shall be laser printed on name plate instead of sticker).
v. Month and Year of manufacture
vi. Unit of measurement
vii. Reference voltage ,frequency
viii. Ref. temperature if different from 27 deg. C
ix. Rated basic and maximum Current
x. Meter constant (imp/kWh)
xi. ‘BIS’ Mark
xii. Class index of meter
xiii. "Property of TP(C/N/S/W)ODL”
xiv. Purchase Order No. & date
xv. Guarantee period.
xvi. Rated frequency
xvii. Sign of double square
xviii. Country of manufacture.
xix. Symbol of load switch.
xx. Communication Tech for WAN and NAN(with carrier frequency)
xxi. Category
However the following shall be printed in bar code on the meter nameplate.(shall be laser printed on name plate instead of sticker) All data shall be laser printed on meter along with
Sr. NO and date of manufacturing. No sticker to be used to avoid loss of data in event of fire.

Content Format for bar code: TP(C/N/S/W)ODL MMYY XXXXXXXXX
(9-digit Serial no.) Bidder should ensure that each NIC provided in meter is having laser printed Sr. No., MFG date, ‘Property of TP(C/N/S/W)ODL’ marking, PO / RO no.& date (same as that of meter PO / RO)</td></tr>
<tr><td>5.9</td><td>TESTS:
All routine, acceptance & type tests shall be carried out on the meter and meter body separately in accordance with the relevant IS / IEC. All routine / acceptance tests shall be witnessed by the purchaser / his authorized representative. All the components shall also be type tested as per the relevant standards. Following tests shall be necessarily conducted in addition to the tests specified in IS / IEC.</td></tr>
<tr><td>6.0</td><td>TYPE TEST
1) All tests as defined in the latest updated versions of IS 16444 Part-1: 2015, IS 13779:1999, IS15959 Part-1&2: 2016 and IS 15884: 2010.
2) Test against abnormal magnetic influence as per clause 5.6.2 of CBIP TR 325.
3) Meter shall have BIS certification as per IS16444 part-1& IS15959 part-2</td></tr>
<tr><td>7.0</td><td>ROUTINE TEST
1) AC High Voltage test (Clause no. 12.7.6.3 of IS 13779)
2) Insulation test (Clause no. 12.7.6of IS 13779)
3) Test on limits of error due to variation in current (Clause no. 11.1 of IS 13779)
4) Test of starting current (Clause no. 11.5 of IS 13779)
5) Test of no load condition (Clause no. 12.13 of IS 13779)</td></tr>
<tr><td>7.1</td><td>ACCEPTANCE TEST:
1) AC High Voltage test (Clause no. 12.7.6.3 of IS 13779)
2) Insulation test (Clause no. 9.5 of IS 13779)
3) Test on limits of error (Clause no. 11.1 of IS 13779) with following loads:
<table>
<tr><td>120% I max(36A)</td><td>I max (30A)</td><td>Ib (5A)</td><td>0.5 Ib (2.5A)</td><td>0.1Ib (0.5A)</td><td>0.05Ib (0.25A)</td></tr>
<tr><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 lead and 0.5 lag</td><td>UPF, 0.8 Lead and 0.5 lag</td><td>UPF</td></tr>
</table>
4) Test of meter constant (Clause no. 11.6 of IS 13779)
5) Test of starting current (Clause no. 11.5 of IS 13779)</td></tr>
</table>

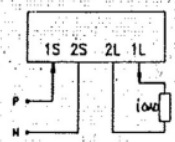
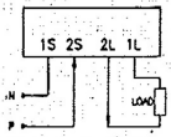
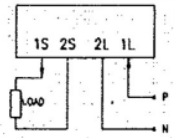
	6) Test of no load condition (Clause no. 12.13 of IS 13779) 7) Test of repeatability of error (Clause no. 11.7 of IS 13779) 8) Test of power consumption (Clause no. 9.1 of IS 13779) 9) Test for Immunity against external influencing signal as per the TP(C/N/S/W)ODL specification 10) Test for Immunity against DC Immunity as per the TP(C/N/S/W)ODL specification 11) Test for Immunity against Tamper conditions as per the TP(C/N/S/W)ODL specification 12) Error measurements with 38 abnormal condition as per annexure I along with magnet, ESD and microwave (if not possible during inspection the meter from lot shall be tested at MTL) 13) Test to Influence of Harmonics (Table no. 17 & 20 of IS 13779) 14) Supply voltage and frequency variation test (as per clause 11.2 of IS 13779) 15) Testing of self-diagnostic features, as per TP(C/N/S/W)ODL specification 16) Tamper count increment and logging with date and time in meter database, as per TP(C/N/S/W)ODL specification 17) All tests as defined in IS15959(Part-2): 2016 18) Functionality of communication module as defined in IS 16444 part1 19) Smart meter communicability as per table no.A28 of IS 15959 (part-2) 20) Meter reading on HES demand, Scheduled meter reading from HES, remote firmware upgrade from HES and all programming request from HES to be simulated and checked during inspections. 21) Physical check of NIC and replaceable ease of the NIC module in meter & logging
7.2	**METER BOX** Acceptance Tests Physical verification of dimensions of the box. Compatibility of the box for housing the Meter and ensuring ease of connecting and reading the meter. Test for mechanical strength. Routine Tests : The routine test certificates for the following shall be furnished for approval of the purchaser. Physical verification of dimension of the box. Compatibility of the box for housing the meter ensuring ease of connecting and the reading the meter. Meter box shall be of polycarbonate transparent type (Degree of protection-IP55) Cable entry to meter box should be from side and gland should be such aligned that cable should enter meter box in upward direction to ensure that in case of rain water does not enter meter box by flowing along the cable. Meter Box should have push button compatible with meters push button. Box should have optical port grove in line with meter optical port slot. There should be locking provision available for meter optical cord. The arrangement should be such that meter can be read through optical cord without opening the meters box. Meter Box should be hinge type. Meter Should be pre-fitted in meter box when supplied. Terminal of the meters should not be accessible through Glands of the meters once the cable in installed. There should be minimum 20 mm spacing between meter and meter box from bottom sides and 10 mm from all other sides. From front it should be minimum 10 mm and behind it should be minimum 5 MM.
7.3	**SPECIAL TEST:** 1) The bidder shall demonstrate the communication capability of the meter through communication modes as defined in the specification before conducting acceptance tests. 2) Temperature rise test on terminal block will be valid as per clause 5.2.5 of this specification

7.4	**TYPE TESTS CERTIFICATES:** The bidder shall furnish the type test certificates of the meter for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI / ERDA /UL laboratory or international acclaimed lab or equivalent will also suffice at the discretion of TP(C/N/S/W)ODL. For technical evaluation of the tender, we may consider Type test report as per IS 13779. In such case the Bidder should provide IS16444 compliant test report before starting of supply of meters. Type test should have been conducted in certified Test Laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TP(C/N/S/W)ODL.
7.4	**PRE-DISPATCH INSPECTION:** Inspection can be conducted at any stage of manufacture at the discretion of the TP(C/N/S/W)ODL and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Equipment shall be subject to inspection by a duly authorized representative of the TP(C/N/S/W)ODL. Bidder shall grant free access to the places of manufacture to TP(C/N/S/W)ODL's representatives at all times when the work is in progress. Inspection by the TP(C/N/S/W)ODL or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by TP(C/N/S/W)ODL. Following documents shall be sent along with material a) Pre dispatch Inspection Test reports b) MDCC issued by TP(C/N/S/W)ODL c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Guarantee / Warrantee card g) Delivery Challan h) Other Documents (as applicable) Note-Photographs of packed lot clearly showing s.no of meters whose inspection call has been requested should be sent along with letter for inspection call. Two meters from the offered lot, if deemed necessary, shall be tested for all tampers at TP(C/N/S/W)ODL laboratory for compliance to anti tamper feature before MDCC. The inspectors shall free to take any two meters from offered lot for testing at our Lab. Bidder should check and ensure each meter and reset each meter for any event logged for any tamper.
8.0	**INSPECTION AFTER RECEIPT AT STORE:** The material received at TP(C/N/S/W)ODL's store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Plant Engineering department.
9.0	**GUARANTEE:** Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by the TP(C/N/S/W)ODL up to a period of at least 60 months from the date of commissioning or 66 months from the date of last supplies made under the contract whichever is earlier, Bidder shall be liable to undertake to replace/rectify such defects at its own costs, within mutually agreed time frame, and to the entire satisfaction of the Company, failing which the TP(C/N/S/W)ODL will be at liberty to get it replaced/rectified at bidder's risks and costs and recover all such expenses plus the Company's own charges (@ 20% of expenses incurred), from the bidder or from the " Security cum Performance Deposit" as the case may be. Bidder shall own responsibility for all internal

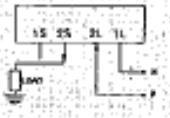
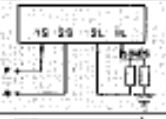
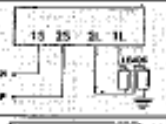
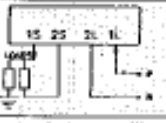
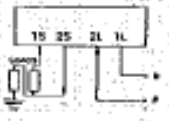
	component with an end to end agreement with individual component manufacturer.
10.0	**PACKING** 1. Bidder shall ensure that all material covered under this specification shall be prepared for rail/road transport (local equipment) and be packed in such a manner as to protect it from damage in transit. The material used for packing shall be environmentally friendly. Packing and transportation shall be as per IS 15707:206 clauses 9.1 and 9.2. 2. Individual meter should be packed in separate box. Routine test report (with min. tests as defined in 7.2) of the individual meter shall be kept inside each card board carton of the meter. 3. On back side of RTC the bidder shall print a picture of the meter with its small details for consumer to know about meter. 4. The softcopy of the routine test certificate of each meter to be provided with each lot to TP(C/N/S/W)ODL, MMG stores at Bhubaneswar 5. The routine test certificate shall contain results & all tests of clause no. 7.2. 6. Bar code containing information of meter Sr. No should be pasted on the outer most box in which single / group of meters are transported
11.0	**SAMPLE:** **Tendering Stage:** Bidders are required to manufacture 04 numbers of sample meters as per the TP(C/N/S/W)ODL specification (sealed, unsealed and openable base and cover to view/test the inner circuits)and submit the samples (non-returnable) along with bid for approval. The tender sample as per IS 13779 & IS 15959 shall be acceptable for verification and other checks. Bidder to demonstrate all communication features during sample testing. **Pre-manufacturing approvals:** The successful bidder shall submit four prototype samples of meters at Meter Testing Lab, Power House, Bhubaneswar, for further testing and compliance as per specifications and get approval before mass manufacturing. Following accessories to be submitted along with sample at both stages: 1) Detailed manual 2) Communication cords 3) Tamper logic sheet 4) Display parameter annunciator 5) BCS 6) Internal connection diagram.
12.0	**TRAINING** Suitable training to be arranged for TP(C/N/S/W)ODL representatives, for operation and handling of every software and hardware regarding communication between meter & HHU, meter & HES, without any cost implications towards TP(C/N/S/W)ODL.
13.0	**QUALITY CONTROL** The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. Quality should be ensured at the following stages: • At PCB manufacturing stage, each board shall be subjected to computerized bare board testing. • At insertion stage, all components should undergo computerized testing for conforming to design parameter and orientation.

	• Complete assembled and soldered PCB should undergo functional testing using Automatic Test Equipment (ATEs). • Prior to final testing and calibration, sample meters shall be subjected to aging test (i.e. meters will be kept in ovens for 24 hours at 55 Deg. C temperature and atmospheric humidity under real-life condition at its full load current. After 24 hours meter should work satisfactorily) The TP(C/N/S/W)ODL's engineer or its nominated representative shall have free access to the bidder's / manufacturer's works to carry out inspections any point of time.
14.0	**MINIMUM TESTING FACILITIES** Bidder shall have adequate in house testing facilities for carrying out all routine tests & acceptance tests as per relevant International / Indian standards. The bidder shall have duly calibrated Reference Standard meter of Class 0.05 accuracy or better.
15.0	**MANUFACTURING ACTIVITIES** The successful bidder will have to submit the bar chart for various manufacturing activities clearly elaborating each stage, with quantity. This bar chart shall be in line with the Quality assurance plan submitted with the offer. This bar chart will have to be submitted within 15 days from the release of the order. **GTP Approval shall be mandatory to start manufacturing.**
16.0	**SPARES, ACCESSORIES & TOOLS:** 1. Bidder to be provide free of cost 02 nos. of jig for retrieving data from memory of meter with every new design of meter in which previous jig supplied cannot be used. Jig should be such that NVM can be push fit on this jig and data can be retrieve from this NVM. 2. 3..
17.0	**DRAWINGS AND DOCUMENTS** Following drawings & Documents shall be prepared based on TP(C/N/S/W)ODL specifications and statutory requirements and shall be submitted with the bid: a) Completely filled-in Technical Parameters. b) General arrangement drawing of the meter c) Terminal Block dimensional drawing d) Mounting arrangement drawings. e) General description of the equipment and all components with makes and technical requirement f) Type Test Certificates g) Experience List After the award of the contract, soft copies of following drawings, documents, describing the equipment in detail shall be forwarded for approval: **Bidder shall subsequently provide soft copy of all the drawings, GTP, data-sheet of dis-connector switch, data-sheet/ comparative analysis (of material of terminal block, terminal cover, terminal screw, meter body, meter base), Test certificates and integration documents with HES for the final approval of TP(C/N/S/W)ODL, before mass manufacturing. All the documents & drawings shall be in English language.**
18.0	**GUARANTEED TECHNICAL PARTICULARS** Clause-wise compliance to this specification.

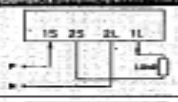
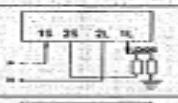
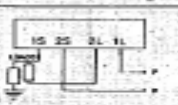
Annexure 1

Condition No.	LCD Display	Description	Graphical View
1		NORMAL WIRING	
2		NORMAL WIRING, VOLTAGE REVERSED	
3		PHASE & NEUTRAL INTERCHANGED, CURRENT REVERSED	

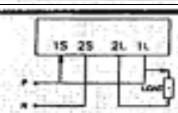
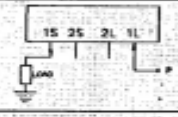
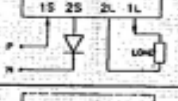
Annexure 1

Condition No.	LCD Display	Description	Graphical View
4		PHASE & NEUTRAL INTERCHANGED, CURRENT REVERSED, VOLTAGE REVERSED	
5		FULL LOAD EARTH RETURNED	
6		FULL LOAD EARTH RETURNED, VOLTAGE REVERSED	
7		FULL LOAD EARTH RETURNED ,VOLTAGE INTERCHANGED & CURRENT REVERSED	
8		FULL LOAD EARTH RETURNED, VOLTAGE INTERCHANGED & CURRENT REVERSED, VOLTAGE REVERSED	
9		PARTIAL LOAD EARTH RETURNED	
10		PARTIAL LOAD EARTH RETURNED, VOLTAGE REVERSED	
11		PARTIAL LOAD EARTH RETURNED, VOLTAGE INTERCHANGED & CURRENT REVERSED	
12		PARTIAL LOAD EARTH RETURNED, VOLTAGE INTERCHANGED & CURRENT REVERSED, VOLTAGE REVERESED	

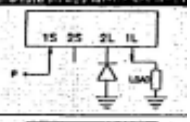
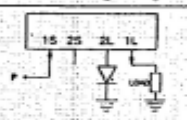
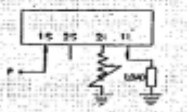
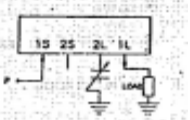
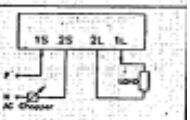
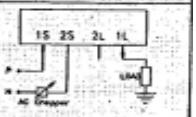
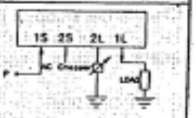
Annexure 1

Fault No.	LCD Display	Fault Description	Graphical View
13		NEUTRAL CURRENT REVERSED	
14		PHASE CURRENT REVERSED, VOLTAGE REVERSED	
15		PHASE CURRENT REVERSED, VOLTAGE INTERCHANGED	
16		NEUTRAL CURRENT REVERSED, VOLTAGE INTERCHANGED & REVERSED	
17		PARTIAL LOAD EARTH RETURNED & NEUTRAL CURRENT REVERSED	
18		PARTIAL LOAD EARTH RETURNED & NEUTRAL CURRENT REVERSED, VOLTAGE REVERSED	
19		PARTIAL LOAD EARTH RETURNED & NEUTRAL CURRENT REVERSED, VOLTAGE INTERCHANGED	
20		PARTIAL LOAD EARTH RETURNED & NEUTRAL CURRENT REVERSED, VOLTAGE REVERSED, VOLTAGED INTERCHANGED	

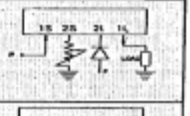
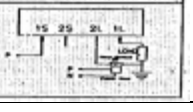
Annexure 1

21		CURRENT BYPASSED	
22		NEUTRAL REMOVAL (MISSING)	
23		NEUTRAL REMOVAL (MISSING), VOLTAGE REVERSED	
24		NEUTRAL REMOVAL (MISSING) & CURRENT REVERSED, VOLTAGE INTERCHANGED	
25		NEUTRAL REMOVAL (MISSING) & CURRENT REVERSED, VOLTAGE REVERSED, VOLTAGE INTERCHANGED	
26		DIODE REVERSED IN NEUTRAL	
27		DIODE IN NEUTRAL	
28		DIODE REVERSED IN NEUTRAL, LOAD EARTHED	
29		DIODE IN NEUTRAL, LOAD EARTHED	

Annexure 1

Control No.	LCD Display	Description	Graphical View
30		REVERSED DIODE EARTHED IN OUPUT NEUTRAL, LOAD EARTHED	
31		DIODE EARTHED IN OUTPUT NEUTRAL; LOAD EARTHED	
32		VARIABLE RESISTOR EARTHED IN OUTPUT NEUTRAL, NEUTRAL MISSING, LOAD EARTHED	
33		VARIABLE CAPACITANCE EARTHED IN OUTPUT NEUTRAL,NEUTRAL MISSING, LOAD EARTHED	
34		CHOPPER IN NEUTRAL	
35		CHOPPER IN NEUTRAL, LOAD EARTHED	
36		CHOPPER EARTHED IN OUTPUT NEUTRAL, NEUTRAL MISSING, LOAD EARTHED	

Annexure 1

Control No.	LCD Display	Description	Graphical View
37		VARIABLE RESISTOR EARTHED IN NEUTRAL, DIODE IN OUTPUT NEUTRAL, LOAD EARTHED	
38		TIMER IN OUPUT NEUTRAL, LOAD EARTHED	

Downloadable Parameters: -

1. TP(C/N/S/W)ODL specific OBIS code for self-diagnostic- 1.0.96.5.1.255 IC-1

2. Default TOD timing for single phase meter is as per below
   TOD-1 22:00 to 06:00
   TOD-2 06:00 to 22:00
   Note:- TOU (Time ZON) timing can programmed by using activity calendar for times zone (0.0.13.0.0.255) The same OBIS code shall be used for reading the configured TOU timings

3. Single phase default display parameter shall be configured as Pre-paid without TOD & shall be programmable through HES (OTA) for following combinations.
   a. Pre-paid without TOD
   b. Pre-paid with TOD
   c. Post-paid without TOD
   d. Post-paid with TOD

4. Meter serial number shall be alpha numeric and with 9 digits. Alphabetic part detail shall be shared by TP(C/N/S/W)ODL

5. Communication LCD indicator-Meter display shall have  indication in context to NIC. The blinking should be slow when NIC is detected; blinking should be fast when NIC had searched the network and it should be stable when it is successfully latched to the HES.

6. Billing shall be done at following programming events
   a. Metering mode change
   b. Prepayment mode change
   c. Communication driven MD reset
   d. Time zone activation
   e. Demand integration period change
   f. Display parameter configuration
   g. Firmware upgrade

7. Following annexures are added in this document
   a. Push data list – Annexure-A
   b. Downloadable parameter list- Annexure-B
   c. Display parameter list - Annexure-C
   d. Tamper threshold table- Annexure-D

Annexure-A

Push data list:

S No.	Event Push Data (This data shall be pushed when any event (Any tamper, First breath, Last gasp etc) is occurred)	OBIS Code	OBIS Source
1	**Device ID**	0.0.96.1.2.255	IS 15959 part-2
2	Event Push SM(Smart Meter) to HES	0.4.25.9.0.255	IS 15959 part-2
3	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
4	Event Status Word 1	0.0.94.91.18.255	IS 15959 part-2
5	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note- This data shall be pushed to HES only			

S No.	Periodic Schedule Push Instantaneous Profile (Meter shall push default at every 6 hours & push time is configurable by HES	OBIS Code	OBIS Source
1	Device ID	0.0.96.1.2.255	IS 15959 part-2
2	Periodic Push SM (Smart Meter)to HES	0.0.25.9.0.255	IS 15959 part-2
3	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
4	Instantaneous Profile (All instantaneous profile parameters which are mentioned in Instantaneous profile – 1.0.94.91.0.255)	1.0.94.91.0.255	IS 15959 part-2
Note- This data shall be pushed to HES only			

S No.	Mid-Night Push Data (This data shall be pushed at every midnight)	OBIS Code	OBIS Source
1	Device ID	0.0.96.1.2.255	IS 15959 part-2
2	Mid Night (daily) push SM to HES	0.6.25.9.0.255	TP(C/N/S/W)ODL Specific
3	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
4	Daily survey profile (All daily survey profile parameters which are mentioned in daily profile – 1.0.99.2.0.255)	1.0.99.2.0.255	IS 15959 part-2
Note- This data shall be pushed to HES only			

S No.	Billing Push Data (This data shall be pushed at every month end)	OBIS Code	OBIS Source
1	Device ID	0.0.96.1.2.255	IS 15959 part-2
2	Billing Push SM(Smart Meter) to HES	0.99.25.9.0.255	TP(C/N/S/W)ODL Specific
3	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
4	Billing profile (All billing profile parameters which are mentioned in billing profile – 1.0.98.1.0.255)	1.0.98.1.0.255	IS 15959 part-2
Note- This data shall be pushed to HES only			

Annexure-B

Downloadable Parameters List:-

S.No.	Instantaneous Profile	OBIS code	OBIS source
	Instantaneous Profile	1.0.94.91.0.255	IS 15959 part-2
1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Voltage	1.0.12.7.0.255	IS 15959 part-2
3	Phase Current	1.0.11.7.0.255	IS 15959 part-2
4	Neutral Current	1.0.91.7.0.255	IS 15959 part-2

5	Signed power factor	1.0.13.7.0.255	IS 15959 part-2
6	Frequency	1.0.14.7.0.255	IS 15959 part-2
7	Apparent Power – KVA	1.0.9.7.0.255	IS 15959 part-2
8	Signed Active Power - kW (+ Forward; -Reverse)	1.0.1.7.0.255	IS 15959 part-2
9	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS 15959 part-2
10	Cumulative Energy – kVAh Import/forwarded	1.0.9.8.0.255	IS 15959 part-2
11	Maximum Demand KW Import/forwarded with date & time	1.0.1.6.0.255	IS 15959 part-2
12	Maximum Demand KVA Import/forwarded with date & time	1.0.9.6.0.255	IS 15959 part-2
13	Cumulative Power ON duration in min	0.0.94.91.14.255	IS 15959 part-2
14	Cumulative Tamper count	0.0.94.91.0.255	IS 15959 part-2
15	Cumulative Billing count	0.0.0.1.0.255	IS 15959 part-2
16	Cumulative programming count	0.0.96.2.0.255	IS 15959 part-2
17	Cumulative Energy KWh Export	1.0.2.8.0.255	IS 15959 part-2
18	Cumulative Energy KVAh Export	1.0.10.8.0.255	IS 15959 part-2
19	Load Limit function status (Connect/disconnect - attribute2 value)	0.0.96.3.10.255	IS 15959 part-2
20	Load Limit in KW	0.0.17.0.0.255	IS 15959 part-2
21	Number of power failures	0.0.96.7.0.255	IS 15959 part-2
22	Billing Date	0.0.0.1.2.255	IS 15959 part-2
23	Temperature	0.0.96.9.128.255	TP(C/N/S/W)ODL
24	Number of load switch (connect/disconnect) operations	0.0.96.50.1.255	TP(C/N/S/W)ODL
25	Cumulative Over voltage Tamper counts	1.0.12.36.0.255	TP(C/N/S/W)ODL
26	Cumulative Low voltage Tamper counts	1.0.12.32.128.255	TP(C/N/S/W)ODL
27	Cumulative Current reverse Tamper counts	1.0.11.128.128.255	TP(C/N/S/W)ODL
28	Cumulative Over current Tamper counts	1.0.11.36.0.255	TP(C/N/S/W)ODL
29	Cumulative Earth Tamper counts	1.0.11.128.131.255	TP(C/N/S/W)ODL
30	Cumulative Magnet Tamper counts	0.0.96.50.0.255	TP(C/N/S/W)ODL
31	Cumulative ND Tamper counts	1.0.96.50.0.255	TP(C/N/S/W)ODL
32	Cumulative Single wire Tamper counts	1.0.96.50.1.255	TP(C/N/S/W)ODL
33	Cumulative Over load Tamper counts	1.0.1.36.0.255	TP(C/N/S/W)ODL
34	Cumulative Comms(NIC) removal Tamper counts	0.0.96.50.3.255	TP(C/N/S/W)ODL
35	Cumulative Case open Tamper counts	0.0.96.20.0.255	TP(C/N/S/W)ODL
36	Cumulative Temperature Rise counts	0.0.96.50.2.255	TP(C/N/S/W)ODL
37	Cumulative Power fail duration	0.0.94.91.8.255	IS 15959 part-2
38	Relay Operation disconnect count	0.0.96.50.6.255	TP(C/N/S/W)ODL
39	Relay Operation Connect count	0.0.96.50.7.255	TP(C/N/S/W)ODL
40	Signal strength (CSQ value)	0.1.96.12.5.255	TP(C/N/S/W)ODL Specific
41	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note- This data shall be read through BCS & HES			

S.no.	**Billing Profile**	**OBIS Code**	**OBIS Source**
	Billing Profile	1.0.98.1.0.255	IS 15959 part-2
1	Billing Date	0.0.0.1.2.255	IS 15959 part-2
2	Average power factor for billing period	1.0.13.0.0.255	IS 15959 part-2
3	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS 15959 part-2

4	Cumulative Energy kWh TZ1 Import/forwarded	1.0.1.8.1.255	IS 15959 part-2
5	Cumulative Energy kWh TZ2 Import/forwarded	1.0.1.8.2.255	IS 15959 part-2
6	Cumulative Energy kWh TZ3 Import/forwarded	1.0.1.8.3.255	IS 15959 part-2
7	Cumulative Energy kWh TZ4 Import/forwarded	1.0.1.8.4.255	IS 15959 part-2
8	Cumulative Energy kWh TZ5 Import/forwarded	1.0.1.8.5.255	IS 15959 part-2
9	Cumulative Energy kWh TZ6 Import/forwarded	1.0.1.8.6.255	IS 15959 part-2
10	Cumulative Energy kWh TZ7 Import/forwarded	1.0.1.8.7.255	IS 15959 part-2
11	Cumulative Energy kWh TZ8 Import/forwarded	1.0.1.8.8.255	IS 15959 part-2
12	Cumulative Energy – kVAh Import/forwarded	1.0.9.8.0.255	IS 15959 part-2
13	Cumulative Energy kVAh TZ1 Import/forwarded	1.0.9.8.1.255	IS 15959 part-2
14	Cumulative Energy kVAh TZ2 Import/forwarded	1.0.9.8.2.255	IS 15959 part-2
15	Cumulative Energy kVAh TZ3 Import/forwarded	1.0.9.8.3.255	IS 15959 part-2
16	Cumulative Energy kVAh TZ4 Import/forwarded	1.0.9.8.4.255	IS 15959 part-2
17	Cumulative Energy kVAh TZ5 Import/forwarded	1.0.9.8.5.255	IS 15959 part-2
18	Cumulative Energy kVAh TZ5 Import/forwarded	1.0.9.8.6.255	IS 15959 part-2
19	Cumulative Energy kVAh TZ7 Import/forwarded	1.0.9.8.7.255	IS 15959 part-2
20	Cumulative Energy kVAh TZ8 Import/forwarded	1.0.9.8.8.255	IS 15959 part-2
21	Maximum Demand KW Import/forwarded with date & time	1.0.1.6.0.255	IS 15959 part-2
22	Maximum Demand KVA Import/forwarded with date & time	1.0.9.6.0.255	IS 15959 part-2
23	Billing Power On duration in Minutes	0.0.94.91.13.255	IS 15959 part-2
24	Cumulative Energy KWh Export	1.0.2.8.0.255	IS 15959 part-2
25	Cumulative Energy KVAh Export	1.0.10.8.0.255	IS 15959 part-2
26	Maximum Demand KW TZ1 Import/forwarded with date & time	1.0.1.6.1.255	IS 15959 part-2
27	Maximum Demand KW TZ2 Import/forwarded with date & time	1.0.1.6.2.255	IS 15959 part-2
28	Maximum Demand KW TZ3 Import/forwarded with date & time	1.0.1.6.3.255	IS 15959 part-2
29	Maximum Demand KW TZ4 Import/forwarded with date & time	1.0.1.6.4.255	IS 15959 part-2
29	Maximum Demand KW TZ5 Import/forwarded with date & time	1.0.1.6.5.255	IS 15959 part-2
31	Maximum Demand KW TZ6 Import/forwarded with date & time	1.0.1.6.6.255	IS 15959 part-2
32	Maximum Demand KW TZ7 Import/forwarded with date & time	1.0.1.6.7.255	IS 15959 part-2
33	Maximum Demand KW TZ8 Import/forwarded with date & time	1.0.1.6.8.255	IS 15959 part-2
34	Maximum Demand KVA TZ1 Import/forwarded with date & time	1.0.9.6.1.255	IS 15959 part-2
35	Maximum Demand KVA TZ2 Import/forwarded with date & time	1.0.9.6.2.255	IS 15959 part-2
36	Maximum Demand KVA TZ3 Import/forwarded with date & time	1.0.9.6.3.255	IS 15959 part-2
37	Maximum Demand KVA TZ4 Import/forwarded with date & time	1.0.9.6.4.255	IS 15959 part-2
38	Maximum Demand KVA TZ5 Import/forwarded with date & time	1.0.9.6.5.255	IS 15959 part-2
39	Maximum Demand KVA TZ6 Import/forwarded with date & time	1.0.9.6.6.255	IS 15959 part-2
40	Maximum Demand KVA TZ7 Import/forwarded with date & time	1.0.9.6.7.255	IS 15959 part-2
41	Maximum Demand KVA TZ8 Import/forwarded with date & time	1.0.9.6.8.255	IS 15959 part-2
42	Cumulative MD KW Import/forwarded with date & time	1.0.1.2.0.255	TP(C/N/S/W)ODL
43	Cumulative MD KVA Import/forwarded with date & time	1.0.9.2.0.255	TP(C/N/S/W)ODL
44	Cumulative Tamper count	0.0.94.91.0.255	IS 15959 part-2
45	Cumulative Billing count	0.0.0.1.0.255	IS 15959 part-2
46	Type of billing	1.0.96.50.2.255	TP(C/N/S/W)ODL
47	Meter serial no	0.0.96.1.0.255	IS 15959 part-2
Note:- 1. Energy consumptions are derived parameters & same shall be available at HES & BCS end Note:- 2. Note- This data shall be read through BCS & HES			

S No.	**Block Load Profile**	**OBIS Code**	**OBIS Source**
	Block Load Profile	1.0.99.1.0.255	IS 15959 part-2

1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Average Voltage	1.0.12.27.0.255	IS 15959 part-2
3	Block Energy KWh Import/forwarded	1.0.1.29.0.255	IS 15959 part-2
4	Block Energy KVAh Import/forwarded	1.0.9.29.0.255	IS 15959 part-2
5	Block Energy KWh Export	1.0.2.29.0.255	IS 15959 part-2
6	Block Energy KVAh Export	1.0.10.29.0.255	IS 15959 part-2
7	Average Current	1.0.11.27.0.255	IS 15959 part-2
8	Phase current	1.0.128.27.0.255	TP(C/N/S/W)ODL
9	Neutral Current	1.0.91.129.0.255	TP(C/N/S/W)ODL
10	Temperature	0.0.96.9.129.255	TP(C/N/S/W)ODL
11	Signal strength (CSQ value)	0.1.96.12.5.255	TP(C/N/S/W)ODL Specific
12	Meter Serial number	0.0.96.1.0.255	IS 15959 part-2

Note-1: Block energies data shall be with 3 decimal place
Note-2: Demand KW, KVA & Power factor shall be derived at HES & BCS end
Note-3: Block load profile parameters shall be field programmable by TP(C/N/S/W)ODL specific OBIS code. On changing capture object LS data will be reset
Note-4: This data shall be read through BCS & HES

S No.	Daily Load Profile	OBIS Code	OBIS Source
	Daily Survey Profile	1.0.99.2.0.255	IS 15959 part-2
1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Cumulative Energy KWh Export	1.0.2.8.0.255	IS 15959 part-2
3	Cumulative Energy KVAh Export	1.0.10.8.0.255	IS 15959 part-2
4	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS 15959 part-2
5	Cumulative Energy kWh TZ1 Import/forwarded	1.0.1.8.1.255	IS 15959 part-2
6	Cumulative Energy kWh TZ2 Import/forwarded	1.0.1.8.2.255	IS 15959 part-2
7	Cumulative Energy kWh TZ3 Import/forwarded	1.0.1.8.3.255	IS 15959 part-2
8	Cumulative Energy kWh TZ4 Import/forwarded	1.0.1.8.4.255	IS 15959 part-2
9	Cumulative Energy kWh TZ5 Import/forwarded	1.0.1.8.5.255	IS 15959 part-2
10	Cumulative Energy kWh TZ6 Import/forwarded	1.0.1.8.6.255	IS 15959 part-2
11	Cumulative Energy kWh TZ7 Import/forwarded	1.0.1.8.7.255	IS 15959 part-2
12	Cumulative Energy kWh TZ8 Import/forwarded	1.0.1.8.8.255	IS 15959 part-2
13	Cumulative Energy – kVAh Import/forwarded	1.0.9.8.0.255	IS 15959 part-2
14	Cumulative Energy kVAh TZ1 Import/forwarded	1.0.9.8.1.255	IS 15959 part-2
15	Cumulative Energy kVAh TZ2 Import/forwarded	1.0.9.8.2.255	IS 15959 part-2
16	Cumulative Energy kVAh TZ3 Import/forwarded	1.0.9.8.3.255	IS 15959 part-2
17	Cumulative Energy kVAh TZ4 Import/forwarded	1.0.9.8.4.255	IS 15959 part-2
18	Cumulative Energy kVAh TZ5 Import/forwarded	1.0.9.8.5.255	IS 15959 part-2
19	Cumulative Energy kVAh TZ5 Import/forwarded	1.0.9.8.6.255	IS 15959 part-2
20	Cumulative Energy kVAh TZ7 Import/forwarded	1.0.9.8.7.255	IS 15959 part-2
21	Cumulative Energy kVAh TZ8 Import/forwarded	1.0.9.8.8.255	IS 15959 part-2
22	Maximum Demand KW Import/forwarded (With Date & Time)	1.0.1.6.0.255	IS 15959 part-2
23	Maximum Demand KW TZ1 Import/forwarded (With Date & Time)	1.0.1.6.1.255	IS 15959 part-2
24	Maximum Demand KW TZ2 Import/forwarded (With Date & Time)	1.0.1.6.2.255	IS 15959 part-2
25	Maximum Demand KW TZ3 Import/forwarded (With Date & Time)	1.0.1.6.3.255	IS 15959 part-2
26	Maximum Demand KW TZ4 Import/forwarded (With Date & Time)	1.0.1.6.4.255	IS 15959 part-2
27	Maximum Demand KW TZ5 Import/forwarded (With Date & Time)	1.0.1.6.5.255	IS 15959 part-2
28	Maximum Demand KW TZ6 Import/forwarded (With Date & Time)	1.0.1.6.6.255	IS 15959 part-2
29	Maximum Demand KW TZ7 Import/forwarded (With Date & Time)	1.0.1.6.7.255	IS 15959 part-2

30	Maximum Demand KW TZ8 Import/forwarded (With Date & Time)	1.0.1.6.8.255	IS 15959 part-2
31	Maximum Demand KVA Import/forwarded (With Date & Time)	1.0.9.6.0.255	IS 15959 part-2
32	Maximum Demand KVA TZ1 Import/forwarded (With Date & Time)	1.0.9.6.1.255	IS 15959 part-2
33	Maximum Demand KVA TZ2 Import/forwarded (With Date & Time)	1.0.9.6.2.255	IS 15959 part-2
34	Maximum Demand KVA TZ3 Import/forwarded (With Date & Time)	1.0.9.6.3.255	IS 15959 part-2
35	Maximum Demand KVA TZ4 Import/forwarded (With Date & Time)	1.0.9.6.4.255	IS 15959 part-2
36	Maximum Demand KVA TZ5 Import/forwarded (With Date & Time)	1.0.9.6.5.255	IS 15959 part-2
37	Maximum Demand KVA TZ6 Import/forwarded (With Date & Time)	1.0.9.6.6.255	IS 15959 part-2
38	Maximum Demand KVA TZ7 Import/forwarded (With Date & Time)	1.0.9.6.7.255	IS 15959 part-2
39	Maximum Demand KVA TZ8 Import/forwarded (With Date & Time)	1.0.9.6.8.255	IS 15959 part-2
40	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note: 1-Daily consumption of energies shall be derived at HES & BCS end Note:-2-This data shall be read b through BCS & HES			

S No.	Name Plate Profile	OBIS Code	OBIS Source
	Name Plate Profile	0.0.94.91.10.255	IS 15959 part-2
1	Meter Serial Number	0.0.96.1.0.255	IS 15959 part-2
2	Device ID	0.0.96.1.2.255	IS 15959 part-2
3	Manufacturer Name	0.0.96.1.1.255	IS 15959 part-2
4	Firmware Version for meter	1.0.0.2.0.255	IS 15959 part-2
5	Meter Type	0.0.94.91.9.255	IS 15959 part-2
6	Category	0.0.94.91.11.255	IS 15959 part-2
7	Current rating	0.0.94.91.12.255	IS 15959 part-2
8	Meter Year of Manufacture	0.0.96.1.4.255	IS 15959 part-2
9	Meter constant	1.0.0.3.0.255	TP(C/N/S/W)ODL
10	Meter voltage rating	0.0.94.91.15.255	TP(C/N/S/W)ODL
11	NIC firmware version number	0.128.96.0.9.255	TP(C/N/S/W)ODL
12	NIC IMEI number (serial number)	0.0.96.1.5.255	TP(C/N/S/W)ODL
Note- This data shall be read through BCS & HES			

S No.	Profile for Voltage (e=0),Current(e=1) & other (e=4) events	OBIS Code	OBIS Source
	Tamper event Profile	0.0.99.98.e.255	IS 15959 part-2
1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Event Code (voltage events)	0.0.96.11.e.255	IS 15959 part-2
3	Event Snap Current	1.0.94.91.14.255	IS 15959 part-2
4	Voltage	1.0.12.7.0.255	IS 15959 part-2
5	Signed power factor	1.0.13.7.0.255	IS 15959 part-2
6	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS 15959 part-2
7	Cumulative Tamper count	0.0.94.91.0.255	IS 15959 part-2
8	Cumulative Energy – kVAh Import/forwarded	1.0.9.8.0.255	IS 15959 part-2
9	Phase Current	1.0.11.7.0.255	IS 15959 part-2
10	Neutral Current	1.0.91.7.0.255	IS 15959 part-2
11	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note- This data shall be read through BCS & HES			

S No.	Profile for Power Fail(e=2), Transaction(e=3), Non Rollover (e=5) & Control (e=6) events	OBIS Code	OBIS Source
	Power Fail event profile	0.0.99.98.e.255	IS 15959 part-2
1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Event Code (power fail events)	0.0.96.11.2.255	IS 15959 part-2
3	Meter serial number	0.0.96.1.0.255	IS 15959 part-2

Note- - This data shall be read through BCS & HES

S No.	**Profile for** TP(C/N/S/W)ODL **events compartments (Temperature event profile)**	**OBIS Code**	**OBIS Source**
	TP(C/N/S/W)ODL**L events compartments profile**	0.0.99.98.128.255	TP(C/N/S/W)ODL
1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Event Code (TP(C/N/S/W)ODL events compartment	0.0.96.11.128.255	TP(C/N/S/W)ODL
3	Event Snap Current	1.0.94.91.14.255	IS 15959 part-2
4	Voltage	1.0.12.7.0.255	IS 15959 part-2
5	Signed power factor	1.0.13.7.0.255	IS 15959 part-2
6	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS 15959 part-2
7	Cumulative Tamper count	0.0.94.91.0.255	IS 15959 part-2
8	Cumulative Energy – kVAh Import/forwarded	1.0.9.8.0.255	IS 15959 part-2
9	Phase Current	1.0.11.7.0.255	IS 15959 part-2
10	Neutral Current	1.0.91.7.0.255	IS 15959 part-2
11	Temperature	0.0.96.9.128.255	TP(C/N/S/W)ODL
12	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note- This data shall be read through BCS & HES			

S No.	**Mode of operation of load switch profile**	**OBIS Code**	**OBIS Source**
	Mode of operation of load switch profile	0.0.99.98.129.255	TP(C/N/S/W)ODL
1	Real Time Clock – Date and Time	0.0.1.0.0.255	IS 15959 part-2
2	Event Code (Control events)	0.0.96.11.6.255	IS 15959 part-2
3	Reason for Switch operation	0.0.96.50.4.255	TP(C/N/S/W)ODL
4	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS 15959 part-2
5	Cumulative Energy kWh TZ1 Import/forwarded	1.0.1.8.1.255	IS 15959 part-2
6	Cumulative Energy kWh TZ2 Import/forwarded	1.0.1.8.2.255	IS 15959 part-2
7	Cumulative Energy kWh TZ3 Import/forwarded	1.0.1.8.3.255	IS 15959 part-2
8	Cumulative Energy kWh TZ4 Import/forwarded	1.0.1.8.4.255	IS 15959 part-2
9	Cumulative Energy kWh TZ5 Import/forwarded	1.0.1.8.5.255	IS 15959 part-2
10	Cumulative Energy kWh TZ6 Import/forwarded	1.0.1.8.6.255	IS 15959 part-2
11	Cumulative Energy kWh TZ7 Import/forwarded	1.0.1.8.7.255	IS 15959 part-2
12	Cumulative Energy kWh TZ8 Import/forwarded	1.0.1.8.8.255	IS 15959 part-2
13	Cumulative Energy – KVAH Import/forwarded	1.0.1.9.0.255	IS 15959 part-2
14	Cumulative Energy KVAH TZ1 Import/forwarded	1.0.1.9.1.255	IS 15959 part-2
15	Cumulative Energy KVAH TZ2 Import/forwarded	1.0.1.9.2.255	IS 15959 part-2
16	Cumulative Energy KVAH TZ3 Import/forwarded	1.0.1.9.3.255	IS 15959 part-2
17	Cumulative Energy KVAH TZ4 Import/forwarded	1.0.1.9.4.255	IS 15959 part-2
18	Cumulative Energy KVAH TZ5 Import/forwarded	1.0.1.9.5.255	IS 15959 part-2
19	Cumulative Energy KVAH TZ6 Import/forwarded	1.0.1.9.6.255	IS 15959 part-2
20	Cumulative Energy KVAH TZ7 Import/forwarded	1.0.1.9.7.255	IS 15959 part-2
21	Cumulative Energy KVAH TZ8 Import/forwarded	1.0.1.9.8.255	IS 15959 part-2
22	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note- This data shall be read through BCS & HES			

S No.	**Accuracy Check Data Profile (High Resolution Energy)**	**OBIS Code**	**OBIS Source**
	Accuracy Check data Profile	1.0.99.128.129.255	TP(C/N/S/W)ODL
1	Cumulative Energy – kWh Import/forwarded	1.0.1.8.0.255	IS15959-Part2
2	Cumulative Energy KWh Export	1.0.2.8.0.255	IS15959-Part2
3	Cumulative Energy – kVAh Import/forwarded	1.0.9.8.0.255	IS15959-Part2
4	Cumulative Energy KVAh Export	1.0.10.8.0.255	IS15959-Part2

5	Meter serial number	0.0.96.1.0.255	IS 15959 part-2
Note- This data shall be read through BCS only			

S. No.	Programmable Parameters	OBIS Code	Event IDs	OBIS Source
1	Real Time clock change	0.0.1.0.0.255	151	IS15959-Part2
2	Demand Integration Period change	1.0.0.8.0.255	152	IS15959-Part2
3	Profile captured period	1.0.0.8.4.255	153	IS15959-Part2
4	single-action schedule for billing dates	0.0.15.0.0.255	154	IS15959-Part2
5	Activity calendar for times zones	0.0.13.0.0.255	155	IS15959-Part2
6	new firmware (image) activated	0.0.44.0.0.255	157	IS15959-Part2
7	Load Limit KW Set	0.0.17.0.0.255	158	IS15959-Part2
8	Connect/Disconnect	0.0.96.3.10.255	159/160	IS15959-Part2
9	Metering Mode	0.0.94.96.19.255	167,(177=Forwa rd,178= Import/Export)	IS15959-Part2
10	Payment mode	0.0.94.96.20.255	211=poastpaid, 212 Pre-paid	IS15959-Part2
11	Last token recharge amount	0.0.94.96.21.255	N/A	IS15959-Part2
12	Last token recharge time	0.0.94.96.22.255	N/A	IS15959-Part2
13	Total Amount at last recharge	0.0.94.96.23.255	N/A	IS15959-Part2
14	Current balance amount	0.0.94.96.24.255	N/A	IS15959-Part2
15	Current balance time	0.0.94.96.25.255	N/A	IS15959-Part2
16	Current Association MR (LLS secret change)	0.0.40.0.2.255	161	IS15959-Part2
17	Current Association US (HLS Key change)	0.0.40.0.3.255	162	IS15959-Part2
18	Current Association FW (HLS Key change)	0.0.40.0.5.255	163	IS15959-Part2
19	Global key change (encryption and authentication)	0.0.43.0.e.255 (e=2,3,4,5)	164	IS15959-Part2
20	Image activation single action schedule	0.0.15.0.2.255	169	IS15959-Part2
21	Event Status Word Filter	0.0.94.91.26.255	165	IS15959-Part2
22	MD Reset	0.0.10.0.1.255	166	IS15959-Part2
23	Over Voltage Event Threshold Configuration	1.0.12.129.129.255	758	TP(C/N/S/W)ODL
24	Low Voltage Event Threshold Configuration	1.0.12.129.130.255	758	TP(C/N/S/W)ODL
25	Over Current Event Threshold Configuration	1.0.11.129.132.255	758	TP(C/N/S/W)ODL
26	Over Voltage Event Persistence time Configuration	1.0.12.130.129.255	758	TP(C/N/S/W)ODL
27.	Low Voltage Event Persistence time Configuration	1.0.12.130.130.255	758	TP(C/N/S/W)ODL

28.	Over Current Event Persistence time Configuration	1.0.11.130.132.255	758	TP(C/N/S/W)ODL
29.	Over Load Event Persistence time Configuration	1.0.1.130.128.255	758	TP(C/N/S/W)ODL
30	Display Parameters Auto Scroll	0.0.96.128.0.255	760	TP(C/N/S/W)ODL
31	Display Parameters Push Button	0.0.96.128.1.255	760	TP(C/N/S/W)ODL
32	Display Parameters HR Mode	0.0.96.128.2.255		TP(C/N/S/W)ODL
33	Load Profile capture Objects	1.0.96.128.2.255	761	TP(C/N/S/W)ODL
34	Temperature rise threshold Configuration	0.0.96.128.6.255	759	TP(C/N/S/W)ODL
35	Temperature rise Persistence time Configuration	0.0.96.128.6.255	759	TP(C/N/S/W)ODL
36	Current Mis-match Threshold Configuration Configuration	1.0.11.129.133.255	758	TP(C/N/S/W)ODL
37	Current Mis-match Event Persistence time Configuration	1.0.11.130.133.255	759	TP(C/N/S/W)ODL
38	Event Enable/Disable Configuration	0.0.96.128.7.255		TP(C/N/S/W)ODL
39	Load control parameters	0.0.96.3.128.255		TP(C/N/S/W)ODL
40	Single Action Schedule for schedule push	0.0.15.0.4.255		TP(C/N/S/W)ODL
41	Single Action Schedule for Daily (midnight) data push	0.6.15.0.4.255	798	TP(C/N/S/W)ODL
42	Single Action Schedule for Billing data push	0.6.15.0.4.255	799	TP(C/N/S/W)ODL
Note: This data can set through BCS & HES				

Annexure-C

Single phase Common Display list for all combinations

Single phase common display list with following combinations			Push Button

1. Post-paid with TOD 2. Post-paid without TOD 3. Pre-paid with TOD **4. Pre-paid without TOD (default setting)**	Auto Scroll	Push Button	
LCD Check	**YES**	**YES**	
Meter Serial number	**YES**	**YES**	
Tamper Status/OK	**YES**	**YES**	
Date (DD:MM:YY)	**YES**	**YES**	
Time(HH:MM:SS)	**YES**	**YES**	
Cumulative kWh(Import/Forwarded)	**YES**	**YES**	
Cumulative kVAh(Import/Forwarded)	**YES**	**YES**	
Cumulative kWh-Export	**YES**	**YES**	Applicable for "net meter" mode
Cumulative kVAh-Export	**YES**	**YES**	
TOD Cum. kWh (T1,T2)	**YES**	**YES**	Applicable only when meter is configured as 'with TOD'
TOD Cum. kVAh (T1,T2)	**YES**	**YES**	Applicable only when meters is configured as 'with TOD'
Current Month MD kW with date & time	**YES**	**YES**	
Current Month MD kVA with date & time	**YES**	**YES**	
Current Month MD – kW(Export) with Date & Time	**YES**	**YES**	Applicable for "net meter" mode
Current Month MD – kVA(Export) with Date & Time	**YES**	**YES**	
Last Month (history 1) kWh	**YES**	**YES**	
Last Month (history 1) kVAh	**YES**	**YES**	
Last Month (history 1) kWh (Export)	**YES**	**YES**	Applicable for "net meter" mode
Last Month (history 1) kVAh (Export)	**YES**	**YES**	
Last Month (history 1) TOD Cumulative kWh (T1,T2)	**YES**	**YES**	Applicable only when meter is configured as 'with TOD'
Last Month (history 1) TOD Cumulative kVAh (T1,T2)	**YES**	**YES**	Applicable only when meter is configured as 'with TOD'
Last Month (history 1) MD kW with date & time	**YES**	**YES**	
Last Month (history 1) MD kVA with date & time	**YES**	**YES**	
Last Month (history 1) MD kW (Export) with Date & Time	**YES**	**YES**	Applicable for "net meter" mode
Last Month (history 1) MD kVA(Export) with Date & Time	**YES**	**YES**	
Phase Current	**YES**	**YES**	
Neutral current	**YES**	**YES**	
Inst. Voltage	**YES**	**YES**	
Inst. Phase Power	**YES**	**YES**	
Inst. Neutral Power	**YES**	**YES**	
Status of Load Switch (connect or disconnect)	**YES**	**YES**	
Current Balance Amount (Current Balance)	**YES**	**YES**	Applicable only when meter is configured as 'Pre-paid'
Current Balance Date & Time	**YES**	**YES**	
Total Balance at Last Recharge(Previous Balance)	**YES**	**YES**	
Last Recharge Amount	**YES**	**YES**	
Last Recharge Date & Time	**YES**	**YES**	

High Resolution kWh	--	**YES**	
High Resolution kVAh	--	**YES**	
Magnetic Tamper count	--	**YES**	
Latest Magnetic tamper occurrence date	--	**YES**	
Latest Magnetic tamper occurrence Time	--	**YES**	
ESD Tamper count	--	**YES**	
Latest ESD tamper occurrence date	--	**YES**	
Latest ESD tamper occurrence time	--	**YES**	
TC Open tamper count	--	**YES**	
TC Open occurrence date of very first event	--	**YES**	
TC open occurrence time of very first event	--	**YES**	
Relay Count of Connect	--	**YES**	
Date & Time of Last Occurrence	--	**YES**	
Relay Count of disconnect	--	**YES**	
Date & Time of Last Occurrence	--	**YES**	
Meter firmware version number	--	**YES**	
RTC status	--	**YES**	
RTC Battery status	--	**YES**	
NVM memory status	--	**YES**	
Signal strength (CSQ value)	--	**YES**	
NIC card status(0-NIC removed, 1-Installed,2-Getting N/w,3-Latched,4 Communicating with HES	--	**YES**	

Annexure-D

Tamper Table

S.No.	Tamper Type	Event ID Code (Occurrence / Restoration)	Occurrence Threshold	Restore Threshold	Persistence time		Compartment Capacity
					Occurrence (Minutes)	Restoration (Minutes)	
Table B1: Voltage Related							25
1	Low Voltage	9, 10	Voltage <70% of Vref, Current > 2% of Ib	Voltage >80% of Vref, Current > 2% of Ib	30	2	
Table A5: Current Related							35
2	Current Mismatch	703, 704	(In-Ip) ≥ 20% of Ib, In >Ip	(In-Ip) < 20% of Ib	10	2	
	Earth Leakage	69, 70	The difference between phase and neutral	The difference between phase	30	2	

3			current > 6.25% of Ib	and neutral current < 6.25% of Ib			
Table A6: Power Related							25
4	Power Failure	101, 102	Absence of Voltage	Presence of Voltage	5	Immediate	
Table A8: Others							
5	Magnetic Tamper	201, 202	Meter shall be either immune or shall run at Vref, Imax & UPF (in case not immune) and shall log the occurrence & restoration of magnet event as per stipulation of CBIP 325.	After Removal of Abnormal Magnet	2	2	170
6	Neutral Disturbance	203, 204	Voltage >145% of Vref & Current >l0% of Ib **OR** Frequency <47Hz **OR** Frequency >53Hz **OR** DC Voltage/signal/pulse/chopped signal injection	Voltage <115% of Vref **&** current >10% Ib and Frequency >47Hz **&** Frequency <52 Hz	1	2	
7	Single Wire (not required)	207, 208	At a current of >500mA under tamper condition of neutral missing	Voltage > 190V	30	2	
8	Over Load	215, 216	Current >120% of Imax	< 100% of Imax	30	2	
9	ESD / JAMMER	801, 802 TP(C/N/S/W)ODL	Meter shall either immune or log the event in case not immune		1	1	
10	Temperature Rise (from microprocessor)	951, 952 TP(C/N/S/W)ODL	> 70^{o}C	< 60^{o}C	30	2	
11	NIC Removal	209, 210	On removal of card	On insertion of card	Immediate	Immediate	
12	Microwave (not	Meter shall not be able to identify this condition, Jig shall be provided for downloading the data.					

	required)						
Table A9: Non Rollover							
13	Meter Cover Open	251	If meter top cover is open	NA	Immediate	NA	5 (Stay put type)

Reference Voltage: 230V (P-N)

Basic Current (Ib): 5A

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CLAUSE NO.	**DESCRIPTION**

1.0 ORGANIZATIONAL VALUES

The Tata Group has always been a value driven organization. These values continue to direct the Group's growth and businesses. The six core Tata Values underpinning the way we do business are:

Integrity - We must conduct our business fairly, with honesty and transparency. Everything we do must stand the test of public scrutiny.

Understanding - We must be caring, respectful, compassionate and humanitarian towards our colleagues and customers around the world and always work for the benefit of India.

Excellence - We must constantly strive to achieve the highest possible standards in our day to day work and in the quality of goods and services we provide.

Unity - We must work cohesively with our colleagues across the group and with our customers and partners around the world to build strong relationships based on tolerance, understanding and mutual co-operation.

Responsibility - We must continue to be responsible and sensitive to the countries, communities and environments in which we work, always ensuring that what comes from the people goes back to the people many times over.

Agility - We must work in a speedy and responsive manner and be proactive and innovative in our approach.

2.0 ETHICS

In our effort towards Excellence and in Management of Business Ethics at TPCODL, an Ethics Management Team is constituted.

The main objective of the Ethics Management Team is to:

1. Record, address and allay the issues and concerns on ethics raised by different stakeholders like employees, consumers, vendors, Associates etc. by initiating immediate corrective actions.
2. Ensure proper communication of the ethics policies and guidelines through prominent displays at all offices of TPCODL and through printed declarations in all concerned documents where external stakeholders are involved.
3. Ensure proper framework of policies as preventive measures against any ethics violation recorded by them.
4. Prepare and submit MIS of all issues and concerns, corrective and preventive actions on monthly basis to the top management for their information.

All Associates and Stakeholders are requested to register any grievance on ethics violation on our website www.tpcentralodisha.com.

3.0 CONTRACT PARAMETERS

3.1 Issue/Award of Contract

TPCODL awards the contract to the Associate in writing in the form of Purchase Order (PO) or Rate Contract (RC), hereafter referred as Contract, through in any or all of following modes physical handover / post / e-mail / web document / fax with all the attachments/enclosures which shall be part of the contract document.

On receipt of the contract, the associate shall return to TPCODL copy of the contract document duly signed by legally authorized representative of associate, within two days of Effective Date of Contract for contracts having contract execution time less than 30 days and within five days for all other contracts.

3.2 Contract Commencement Date

The date of issue/award of contract shall be the Effective Date of Contract or Contract Commencement date.

3.3 Contract Completion Date

The date of expiry of Guarantee Period shall be deemed as the Contract Completion Date.

3.4 Contract Period/Time

The period from Contract Commencement Date to Contract Completion Date shall be deemed as the Contract Period/Time.

3.5 Contract Execution Completion Date

The stipulated date for completing the supply as per schedule of quantities shall be deemed as the Contract Execution Completion Date.

3.6 Contract Price /Value

The total all inclusive price/value mentioned in the PO/RC is the Contract Price/Value and is based on the quantity, unit rates and prices quoted and awarded and shall be subject to adjustment based on actual quantities supplied and accepted and certified by the authorized representative of the company unless otherwise specified in schedule of quantities or in contract documents.

3.7 Contract Document

The Contract Document shall mean and include but not limited to the following:

- NIT/Tender Enquiry, QR, Instruction to Bidders, Special Condition of Contract (SCC) of tender, GCC, Technical & Commercial Specifications including relevant annexure and attachments).
- Bids & Proposals Received from Associate including relevant annexure/attachments.
- RC/PO with agreed deviations from the tender/bid documents.
- All the Inspection and Test reports, Detailed Engineering Drawings.
- Material Dispatch Clearance Certificate (MDCC).
- Minutes of Meeting (MoM)

3.8 Contract Language

All documents, instructions, catalogues, brochures, pamphlets, design data, norms and calculations, drawings, operation, maintenance and safety manuals, reports, labels, on deliveries and any other data shall be in English Language.

The Contract documents and all correspondence between the TPCODL, Third Parties associated with the contract, and the Associate shall be in English language.
However, all signboards required indicating "Danger" and/or security at site and otherwise statutory required shall be in English, Hindi, and local languages.

3.9 Reverse Auction

TPCODL reserves the right to conduct the reverse auction (instead of public opening of price bids) for the products / services being asked for in the tender. The terms and conditions for such reverse auction events shall be as per the Acceptance Form attached in Annexure F.

4.0 SCOPE OF WORK

All the activities that are to be undertaken by the Associate to realize the contractual deliverables in completeness form Scope of Work. Following clauses list, but not limited to, major requirements of the scope of work.

The associate shall satisfy himself and undertake fully the technical/commercial requirements of items to be supplied as listed in the Schedule of Quantities together with the tests to be performed /test reports to be furnished before dispatch, arrangement of stage and final inspections during manufacturing as per terms and conditions of contract, technical parameters & delivery terms and conditions including transit insurance to be met in order to fully meet TPCODL's requirements.

Completeness: Any supplies and services which might have not been specifically mentioned in the Contract but are necessary for the scope mentioned in Special Terms & Conditions and/or completeness of the works at the highest possible level, including any royalties, license fees & compensation to be paid, whether incurred by the associates or by a third party for the work covered in the scope, regardless of when incurred, shall be supplied/provided by the associate without any extra cost and within the time schedule for efficient , smooth and satisfactory operation and maintenance of the works at the highest possible level under Indian conditions (but according to international standards for facility of this type), unless expressly excluded from the scope of supplies and services in this Contract.

TPCODL have the right, during the performance of the Contract, to change the scope and/or technical character of the Project and/or of the supplies and services stipulated in the Contract by submitting a request in writing to the Associate. The Associate shall, within fifteen days of receipt of such request from the TPCODL, provide Purchaser with a reasonably detailed estimate of the cost of the change outlined in the request.

In the event, TPCODL requests a change, the Contract price and time shall be adjusted upwards or downwards, as the case may be and shall be mutually agreed to. The associate shall not be entitled to any extension of time unless such changes adversely affect the time schedule.

The Associate shall not proceed with the changes as requested till adjustment of contract price and time schedule where so applicable in terms of or otherwise directed by the TPCODL.

5.0 PRICES/RATES/TAXES

Unless specified elsewhere in the contract document, the prices/rates are inclusive of cost of finished product for which MDCC will be issued by TPCODL, packaging and forwarding charges, freight and transit insurance charges covering loading at Associate's works, transportation to TPCODL store/site & unloading & delivery at TPCODL stores/TPCODL site, cost of documentation including all the relevant test certificates and other supportive documents to be furnished.

The Prices/Rates are inclusive of all taxes, levies, cess and duties, particularly Goods and Services Tax as applicable. All government levy / taxes shall be paid only when the invoice is submitted according to the relevant act.

The prices/rates shall remain firm till actual completion of entire supply of goods/material/equipment as per contract is achieved and shall remain valid till the completion of the contract.

The prices shall remain unchanged irrespective of TPCODL making changes in quantum in all or any of the schedules of items of contract.

5.1 Changes in Statutory Tax Structure

If rate of any or all of the statutory taxes and duties applicable to the contract changes, such changes shall be incorporated by default if the changes occur within the contract execution time and shall be applicable if the contract is executed by the Associate within the Contract Execution Time.

For execution of contracts beyond contract execution time, where the delay is not attributable to TPCODL no upward revision in tax /duties shall be considered irrespective of changes in the statutory tax structure either within the contract execution time or beyond. However, in such cases, benefits due to any downward revisions in statutory tax rates shall be passed on to TPCODL.

6.0 TERMS OF PAYMENT

On delivery of the materials in good condition and certification of acceptance by TPCODL official, Associate shall submit the Bills/Invoices in original in the name of “TP Central Odisha Distribution Limited” to invoice desk, complete with all required documents as under:

- Test Reports (4 sets).
- MDCC issued by TPCODL.
- Packing List.
- Drawing and Catalogue.
- Guarantee/Warrantee Card.
- Delivery Challan.
- O&M Manual.
- Copy of Order.
- Minutes of Meeting.

Bills/ invoices shall mention Supplier’s GST Number. TPCODL will make 100% payment within 30 days of submission of the Bill/Invoice complete in all respects and along with all the requisite documents mentioned above, subject to condition that Associate has furnished the requisite Security-cum-Performance Guarantee as stipulated in the contract.

6.1 Quantity Variation

Payment will be made on the basis of actual quantity of supplies/actual measurement of works accepted by TPCODL and not on the basis of contract quantity.

6.2 Full and Final Payment

Full & Final Payment in all contracts shall be made subject to the associate submitting "No Demand Certificate" in the format as per Annexure-C.

7.0 MODE OF PAYMENT

Payment shall be made through crossed Cheque or RTGS whichever of the two modes chosen by the Associate, in favour of Associate's Bank Account on TPCODL records, on whose name Contract has been issued. Those Associates opting for the RTGS mode shall submit the details of Bank Account and other details as per annexure G. Further, for any payments made, TPCODL is not responsible for any consequences/disputes Associate have among the owners channel partners, sub-Associates and all such dispute/concerns shall be settled solely by the Associate.

8.0 SECURITY CUM PERFORMANCE DEPOSIT

Associates shall submit within 15 days from the effective date of issue of PO/RC, Security Performance Bank Guarantee (SPBG) in the format as per Annexure B of this document from banks acceptable to TPCODL for:

(a) 5% of the PO value if purchase order value is more than Rs 5 Crores.

(b) 10% of the PO value if purchase order value is less than Rs 5 Crores.

This shall remain valid till the end of the Guarantee Period of contract, plus one month.

(c) 5% of the RC value in case of Rate Contract. This shall remain valid till the Guarantee period plus one month.

- For PO/RC values less than Rs. 5 lacs, Associate may request for deduction of amount equivalent to SPBG value from their first invoice. Such amount shall be withheld by TPCODL while processing the invoice and shall be released after completion of Guarantee Period plus one month.
- For PO/RC values less than Rs. 3 lacs, the clause (8.0) for Security cum Performance Bank Guarantee (SPBG) shall not be applicable.
- In case of RC (Rate Contract) after the expiry of RC validity, Associate shall have to submit SPBG. However, the Associate has the option to re-submit the SPBG as per actual RO (Release Order) value issued against the RC, valid for Guarantee Period plus one month. The Guarantee Period shall be considered as per the last RO issued against the said RC. The original SPBG as submitted against the RC shall be released on submission of the new SPBG to TPCODL. Alternatively, Associate may extend the validity of original SPBG only till the requisite period, i.e. Guarantee Period plus one month.

9.0 STATUTORY COMPLIANCE

9.1 Compliance to Various Acts

Associate should ensure adherence to all applicable laws, rules and regulation applicable under this contract from time to time. In case of violation any risk, costs etc shall be in associates account and keep TDPPL indemnified always till completion of contracts.

9.2 SA 8000

TPCODL expects its Associates to follow guidelines of SA 8000:2014 on the following aspects

1. Child Labour
2. Forced or Compulsory Labour
3. Health & Safety
4. Freedom of Association & Right to Collective Bargaining
5. Discrimination
6. Disciplinary Practices
7. Working Hours
8. Remuneration
9. Management System

9.3 Affirmative Action

TPCODL appreciate and welcome the engagement/employment of persons from SC/ST community or any other deprived section of society by their business associates.

Relaxation in Contract Clauses under Affirmative Action for SC/ ST Business Associates**

TPCODL believes that inclusive growth is the key to sustainable development, and to promote the same Policy on Affirmative Action for Scheduled Caste & Scheduled Tribe Communities has been adopted across the company.

Under the same pre-text, and to promote entrepreneurship among SC/ST community TPCODL has taken initiative by proposing relaxations in contract clauses as per below:

S. No	Initiative	for SC/ ST BA's	Guideline Document
1	Tender Fees	100% waiver for SC/ST community	All Open Tenders
2	Earnest Money Deposit	50 % relaxation of estimated EMD value	All limited and Open Tenders
3	Performance Bank Guarantee	50% relaxation in PBG for order value above 50 lacs else 25% relaxation	All limited and Open tenders
4	Turnover	25% relaxation in company turnover under qualifying requirement criteria	All Open Tenders

****Classification of BAs under SC/ST shall be governed under following guidelines:**

- Proprietorship/ Single Ownership Firm: Proprietor of the firm should be from SC/ST community. Governing document shall be duly audited balance Sheet for the last FY bearing the name of proprietor.
- Partnership Firm: Only such firms shall qualify which have SC/ST partners holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Partnership Deed and audited balance sheet/ ITR for last FY.
- Private limited company: Only such firms shall qualify which have SC/ST directors holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Memorandum of Understanding (MoU) and/or Article of Association (AoA).

Governing document shall be Memorandum of Understanding (MoU) and/or Article of Association (AoA).

Note: Certification from SC/ST commission shall be required for deciding upon SC/ST status of a person.

10.0 QUALITY

10.1 Knowledge of Requirements

The Associate shall be deemed to have carefully examined and to have knowledge of the equipment, the general and other conditions, specifications, schedules, drawings, etc. forming part of the Contract and also to have satisfied himself as to the nature and character of the work to be executed and the type of the equipment and duties required including wherever necessary of the site conditions and relevant matters and details. Any information thus procured or otherwise obtained from TPCODL/Consultants shall not in any way relieve the Associate from his responsibility and executing the works in accordance with the terms of contract.

10.2 Material/Equipment/Works Quality

The items / works under the scope of the Associate shall be of the best quality and workmanship according to the latest engineering practice and shall be manufactured from materials of best quality considering strength and durability for their best performance and, in any case, in accordance with the specifications set forth in this Contract. All material shall be new. Substitution of specified material or variation from the process of fabrication/ construction/ manufacture may be permitted but only with the prior written approval of the TPCODL.

10.3 Adherence to Rules & Regulations

The Associate shall procure and/or fabricate/erect all materials and equipment in accordance with all requirements of Central and State enactment, rules and regulations governing such work in India and at site. This shall not be construed as relieving the Associate from complying with any requirement of TPCODL as enumerated in the Contract which may be more rigid than and not contrary to the above mentioned rules, nor providing such construction as may be required by the above mentioned rules and regulations. In case of variance of the Technical Specification from the laws, ordinance, rules and regulations governing the work, the Associate shall immediately notify the same to the TPCODL. It is the sole responsibility of the Associate, however, to determine that such variance exists. Wherever required by rules and regulations, the Associate shall also obtain the statutory authorities' approval for the plant, machinery and equipment to be supplied by the Associate.

10.4 Specifications and Standards

The Associate shall follow all codes and standards referred in the Contract Document. Codes and standards of other may be followed by the Associate with the prior written approval of TPCODL, provided materials, supplies and equipment according to the standard are equal to or better than the corresponding standards specified in the Contract.

Brand names mentioned in the Contract documents are for the purpose of establishing the type and quality of products to be used. The Associate shall not change the brand name and qualities of the bought out items without the prior written approval of the TPCODL. All such products and equipment shall be used or installed in strict accordance with original manufacturer's recommendations, unless otherwise directed by the TPCODL. In any circumstances the codes, specimen and standards prescribed by any government agency should not be violated.

11.0 INSPECTION/PARTICIPATION

11.1 Right to Carry Out Inspection

TPCODL reserves the right to send its representatives for inspection or participation at various stages of contract execution listed below, applicable as per contract construction.

- During basic design and detail engineering of material/ Equipment carried out by Associate /Outsourced Agencies.
- During manufacturing stages of the product at Associate's/Associate's Outsourced Agency's Plant/Facility.
- During Pre-dispatch Inspection and Testing of finished/manufactured product at Associate's/Associate's outsourced Agency's Plant/Facility.
- During Installation & Commissioning Activities/Stages.
- Prior to Clearing of the completed installation for commissioning.
- Any other stage as find appropriate by TPCODL during contract execution time.

All inspections and participations shall be carried out by TPCODL giving written intimation to the Associate or receiving appropriate advance written inspection call from the Associate, unless otherwise specified elsewhere in the contract document.

11.2 Facilitating Inspection

The Associate shall provide all opportunities and information to TPCODL's engineers to get acquainted with the technical know-how and the methods and practices adopted by the Associate in basic and detail engineering. The Associate shall provide documents, drawings, calculations etc. as may be required by TPCODL's Engineers.

The Associate shall provide free of charge office accommodation, office facilities, secretarial services, communication facilities, general and drawing office stationary, etc. as may be reasonably required by the TPCODL's engineers. Similarly, facilities shall also be provided by Associate's outsource agencies/partners/authorized dealers (collectively termed as sub associates) if such basic and detail engineering activities are carried out in the design offices of sub-Associates.

The Associate shall be responsible for the safety of employees of TPCODL/Third Party Agency when they are at the Associate's /Associate's outsource agency's plant or facility for carrying out/witnessing inspection/testing. All statutory safety precautions as applicable shall be followed by the Associate during Inspection Testing. If TPCODL inspectors are not satisfied with the safety arrangements at the plant, TPCODL have the right to call off inspection till such time corrective action is taken by the Associate.
Before raising the call for pre-dispatch final inspection and testing, the Associate shall conduct all the tests—type tests, routine tests etc-as specified in the contract document and submit copies of the test certificates to TPCODL along with the inspection call, for scrutiny of TPCODL.

The Associate and TPCODL shall jointly document all the observations, comments and action points after completion of inspection and it shall be binding on the Associate to provide compliance on all the points requiring compliance and furnish the compliance report to the designated authority of TPCODL for receiving clearance for dispatch of materials

11.3 Third Party Nomination

TPCODL also may nominate a third party for the purpose of carrying out the inspection and such an agency shall be entitled to all the rights and privileges of TPCODL as far as conducting the inspection.

11.4 Waiver of Inspections

TPCODL on its own discretion shall chose to waive off any inspection and ask the Associate to submit all the test reports as applicable as per contract specifications, related to inspection and testing of the goods ordered for scrutiny and clearance for dispatch.

11.5 Incorrect Inspection Call

In case it is observed that the material offered for inspection is not ready at the time of TPCODL inspection visit rendering it as futile, all costs towards such inspection shall be recovered from the BA. Taxes as applicable on such recoveries shall be borne by the BA.

12.0 MDCC & DELIVERY OF MATERIALS

12.1 Material Dispatch Clearance Certificate

Associate shall deliver material/goods/equipment against Supply Contracts or Supply Part of Composite/Service Contracts only after receiving Material Dispatch Clearance Certificate (hereafter termed as MDCC) issued by designated authority of TPCODL. Material delivered at TPCODL stores or at project site without a valid MDCC issued by the designated official of TPCODL shall be rejected. MDCC shall be issued to associate furnishing compliance report on the action points documented during pre-dispatch inspection and testing at Associate's/ Sub Associate's plant/ facility. In case Pre-dispatch inspection is waived at the discretion of TPCODL, then, MDCC shall be issued on receiving all the test reports-routine& type-from the Associate and finding them in order.

The associate shall include and provide for securely protecting and packing the materials so as to avoid loss or damage during handling and transport by air, sea, rail and road or any other means.

All such packing shall allow to the extent possible for easy removal and checking at Site. The associate shall take special precautions to prevent rusting of steel and iron parts during transit by sea. Gas seals or other materials shall be utilized by the associate for protection against moisture during transit of all Plant and Equipment.

Each Equipment or parts of Equipment shall be tagged with reference to the assembly drawings and corresponding part numbers. Each bale or package shall contain a packing note quoting specifically the name of the associate, item description, quantity, item / package identification.

All packing cases, containers, packing and other similar materials shall be new and supplied free by the associate and it shall not be required to be returned to the associate.
Notwithstanding anything stated in this clause, the associate shall be entirely responsible for loss, damage or depreciation or deterioration to the materials and supplies due to faulty and/or insecure packing or otherwise during transportation to the Site until otherwise provided herein.

In case of the consignments dispatched by road, the associate shall ensure that it or its subcontractors:

i) Identify and obtain the correct type of trucks/trailers, keeping in view the nature of consignments to be dispatched.

ii) Take such actions as may be necessary to avoid all possible chances of damages during transit and to ensure that all packages are firmly secured.

Timelines for inspection and MDCC is as below:

S. No.	Inspection	MDCC issuance time including Inspection time (max.)
1	Outside Bhubaneswar	12 days
2	Within Bhubaneswar	5 days
3	Waiver*	3 working days

* Associate is expected to raise the inspection call assuming that Inspection shall be carried out by TPCODL. The decision for waiver of inspection shall be on sole discretion of TPCODL.

12.2 Right to Rejection on Receipt

Goods/Material/Equipment delivered in condition physically damaged & incomplete as a product ordered, or not packed and transported as per the terms and conditions of the contract is liable to be rejected. Such item shall be lifted back by Associates within 15 days from receipt of rejection note from TPCODL and have to supply back the material within next 30 days or within the timeframe mutually decided by Associate and TPCODL.

If delivery of the material is beyond the agreed time, Liquidated damage clause, mentioned in this GCC separately shall be applicable; but the period for levy of LD shall be considered as per the original delivery schedule and not from the agreed timelines for material rectification.

12.3 Consignee

Unless otherwise specified in the Contract Document, Materials/Goods/Equipment shall be consigned to “Stores-In-Charge”, TPCODL, Bhubaneswar.

12.4 Submission of mandatory documents on Delivery

Following documents shall be mandatorily submitted by BA along with supply of material to TPCODL stores/site:

S. No.	Documents	Requisite
1	Invoice copy in original	With all consignments
2	LR copy	Wherever required
3	Packing list	With all consignments
4	MDCC	With all consignments
5	Purchase order / Release order	Signed copy
6	Test certificates	With all consignments
7	Inspection/JVR report	In case pre-dispatch inspection is conducted
8	Device data in CD as per template for metering items	Wherever applicable

12.5 Dispatch and Delivery Instructions

S. No.	Instructions
1	Purchase order/ Release order no. shall be mentioned on invoice and on material

2	TPCODL material code and material description shall be mentioned in invoice and on material.
3	“Property of TPCODL” shall be embossed on material.
4	The material shall be properly sealed and packed in standard packing as per purchase order terms & conditions.
5	The weight and quantity of material shall be mentioned wherever applicable
6	The material supplied shall be co-related with the packing list.
7	The name plate detail on equipment shall include Material code, Material description, specification detail of material [as applicable], Serial No. Year of manufacturing, PO/RO no. and date, “PROPERTY OF TPCODL, Bhubaneswar”, Guarantee period and Associate’s name.
8	In case of manual unloading, supplier / transporter shall deploy sufficient Labour for unloading the material at TPCODL central store. For heavy item(s), crane will be provided by TPCODL [unloading cost will be recovered from the associate].
9	The driver should have valid License and one helper in truck. All the documents of truck like registration papers, PUC etc. should be available in Truck.
10	BA representative should accompany the material and get it unloaded / stacked in his presence wherever possible.

13.0 GUARANTEE

13.1 Guarantee of Performance

Associates shall stand guarantee that the equipment and material supplied under the contract is free from design, manufacturing, material, construction, erection & installation and workmanship & quality defects and is capable of its due, rated and intended quality performance, as an integrated product delivered under the contract, for a specific period termed as Guarantee Period(as elaborated elsewhere in this clause). The Associate should also guarantee that the equipment/material is new and unused except for the usage required for the tests and checks required as part of quality assurance.

13.2 Guarantee Period

The Guarantee Period will be equipment/service/work specific and shall be as specified in the Standard Specifications of TPCODL for the equipment/material/service/work and where standard specifications are not part of contract documents or guarantee period is not specified in the standard specifications,, the guarantee period shall be as per the Special Terms and Conditions of the Contract. In case of no mention of the guarantee period in standard specifications or SCC Guarantee Period will be 12 Months from the Date of Commissioning or 24 months from the date of delivery of final lot of supplies made, whichever is earlier.

13.3 Failure in Guarantee Period (GP)

If the equipment and material supplied under the contract fails to perform its due, rated & intended quality performance, during the Guarantee period, the associate is liable to undertake repair/rectify/replace the equipment and material supplied within time frame specified in the SCC or elsewhere in the contract documents at associate’s cost to make the equipment and material supplied/service or work rendered under the contract of performing its due, rated and intended quality performance. If Associate fails to repair/rectify/replace the equipment or material supplied rendered under the contract, failed in Guarantee Period, TPCODL will be at liberty to get the same done at Associate’s risks and costs and recover all such expenses plus the TPCODL’s own

charges (@ 20% of expenses incurred), from the Associate or from the "Security cum Performance Deposit" as the case may be.

If during the Warranty/ Guarantee period some parts of the supplies are replaced owing to the defects/ damages under the Warranty, the Warranty period for such replaced parts shall be until the expiry of twelve months from the date of such replacement or renewal or until the end of original Guarantee period, whichever is later.

Any repairs during the Guarantee Period shall be carried out by the Associate within 30 days of reporting the issue to Associate by TPCODL. However, if replacement of the Equipment is required, Associate shall notify the same to TPCODL within 7 days of reporting the issue by TPCODL. Thereafter, the total time for supply of new equipment/ material shall be equal to the original delivery period of that equipment/ material as specified in the Contract. In case the Associate is not able to rectify/ replace the faulty equipment/ material within the stipulated timelines as mentioned above, penalty shall be levied as per the Liquidated Damages clause mentioned in this document. The penalty amount shall be recovered from the payment due to the vendor or by encashment of the SPBG as the case may be.

13.4 Cost of repairs on failure in GP

The cost of repairs/rectification/replacement, required transportation, site inspection /mobilization/dismantling and re-installation costs as applicable, to be borne by Associate. The Associate has to ensure that the interruption in the usage of intended purpose of the equipment is minimized to the maximum extent In lieu of the time taken for repairs/rectification/replacement.

13.5 Guarantee period for Goods Outsourced

If the Associate outsources partly equipment/materials/services from third party as mutually agreed upon at the pre award stage of contract, TPCODL shall have the benefit of any additional guarantee period if provided by the third party for the part supplied/executed by them.

13.6 Latent Defect

Hidden defects in manufacturing or design of the product supplied and which could not be identified by the tests conducted but later manifested during operation of the equipment are termed as latent defects. Associates shall further be responsible for 'free replacement' for another period of THREE years from the end of the guarantee period for any 'Latent Defects' if noticed and reported by the Company.

13.7 Support beyond the Guarantee Period

The Associate shall ensure availability of spares and necessary support for a period of atleast 10 years post completion of guarantee period of equipment supplied against the contract.

14.0 LIQUIDATED DAMAGES

a) For supplies which are of standalone use, multiple in quantities and having a single final delivery schedule, Liquidated damages shall be levied without prejudice to any of the other contractual rights of TPCODL, as described below:

   For delay of each week and part thereof from the delivery schedule specified in the contract, 1% of contract value corresponding to undelivered quantity, provided full quantity is supplied within 130% of the original contract time. If full contractual quantity is not delivered within 130% of contract time for delivery, TPCODL has the right to levy LD on the entire contract value, subject to a maximum of 10% of the total contract value.

b) For Supplies having phased delivery schedule as per contract terms, standalone use and multiple in quantities, Liquidated damages shall be levied without prejudice to any of the other contractual rights of TPCODL, as described below:

For the purpose of calculating and applying LD, each delivery lot shall be considered separately. For delay of each week and part thereof, from the delivery schedule specified for the lot, 1% of the contract value corresponding to the undelivered quantity of the lot subject to a maximum of 10% of the total contract value of the subject lot. However, if full contractual quantity is not delivered within 130% of contract time for delivery, TPCODL has the right to levy LD on the entire contract value, subject to a maximum of 10% of the total contract value. Deduction of LD shall be on landed cost i.e contract value inclusive of taxes and in pursuant statutory compliance GST would be applicable at the stipulated rate and the same shall be borne by Business Associate. In case of LD deduction, a GST invoice shall be issued by TPCODL as a proof of deduction/ recovery.

14.1 LD Waiver Request

Any request of LD waiver shall be submitted within thirty (30) days of deducting LD. Request submitted beyond the timeline shall not be entertained.

15.0 UNLAWFUL ACTIVITIES

The Associate shall have to ensure that none of its employees are engaged in any unlawful activities (whether covered under the scope of the present GCC or not) subversive of the TPCODL's interest failing which appropriate action (legal or otherwise) may be taken against the Associate by the TPCODL, in accordance with the terms of the present GCC.

16.0 CONFIDENTIALITY

Associate and its employees or representatives thereof shall strictly maintain the confidentiality of various information they come across while executing the contract as detailed below.

16.1 Documents

All maps, plans, drawings, specifications, schemes and other documents or information related to the Contract/Project and the subject matter contained therein and all other information given to the Associate by the TPCODL in connection with the performance of the contract shall be held confidential by the Associate and shall remain the property of the TPCODL and shall not be used or disclosed to third parties by the Associate for any purpose other than for which they have been supplied or prepared. The Associate may disclose to third parties, upon execution of confidentiality agreements, such part of the drawings, specifications or information if such disclosure is necessary for the performance of the Work provided such third parties agree in writing to keep such information confidential to the same extent and degree as provided herein, for the benefit of the TPCODL.

16.2 Geographical Data

Maps, layouts and photographs of the unit/plant including its surrounding regions showing vital installation for national security of country or those of TPCODL shall not be published or disclosed to the third parties or taken out of the country without prior written approval of the TPCODL and upon execution of confidentiality agreements satisfactory to the TPCODL with such third parties prior to disclosure.

16.3 Associate's Processes

Title to secret processes if any developed by the Associate on an exclusive basis and employed in the design of the equipment shall remain with the Associate. TPCODL shall hold in confidence such processes and shall not disclose such processes to the third parties without prior approval of the Associate and execution by such third parties of secrecy agreements satisfactory to the Associate prior to disclosure. Upon completion of contract, such processes shall become the property of the TPCODL. Title to technical specifications, drawings, flow sheets, norms, calculations, diagrams, interpretations of test results, schematics, layouts and such other information, which the Associate has supplied to the TPCODL under the Contract shall be passed on to the TPCODL. The TPCODL shall have the right to use these for construction, erection, start-up, Trial Run, operation, maintenance, modifications and/or expansion of the works including for the manufacture of spare parts.

16.4 Exclusions

The provision of Clauses 16.1 to 16.3 shall not apply to information:

- Which at the time of disclosure are in the public domain which later on become part of public domain through no fault of the party concerned, or
- Which were in the possession of the party concerned prior to disclosure to him by the other party, or
- Which were received by the party concerned after the time of disclosure without restriction on disclosure or use, from a third party who did not acquire such information directly or indirectly from the other party or has no obligation of confidentiality for such information.

16.5 Violation

In case of violation of this clause, the Associate is liable to pay compensation and damages as may be determined by the competent authority of TPCODL.

17.0 INTELLECTUAL PROPERTY RIGHTS

If, in the course of performance of its functions and duties as envisaged by the scope of the present GCC, the Associate acquires or develops, any unique knowledge or information which would be covered, or, is likely to be covered within the definition of a trademark, copyright, patent, business secret, geographical indication or any other form of intellectual property right, it shall be obliged, under the terms of this present GCC, to share such knowledge or information with the TPCODL. All rights, with respect to, or arising from such intellectual property, as afore mentioned, shall solely vest in TPCODL.

Moreover, the Associate undertakes not to breach any intellectual property right vesting in a third party/parties, whether by breach of statutory provision, passing off, or otherwise. In the event of any such breach, the Associate shall be wholly liable to compensate, indemnify or make good any loss suffered by such third party/parties, or any compensation/damages arising from any legal proceeding/s, or otherwise. No liability of TPCODL shall arise in this respect, and any costs, damages, expenses, compensation payable by TPCODL in this regard to a third party/parties, arising from a legal proceeding/s or otherwise, shall be recoverable from the Associate.

18.0 INDEMNITY

The Associate shall at all times indemnify, keep indemnified and hold harmless the TPCODL and its officers, directors, employees, affiliates, agents, successors and assigns against all actions, claims, demands, costs, charges and expenses arising from or incurred by reason of any

infringement of patent, trade mark, registered design, copy rights and/or industrial property rights by manufacture, sale or use of the equipment supplied by the Associate whether or not the TPCODL is held liable for by any court judgement. In this connection, the TPCODL shall pass on all claims made against him to the Associate for settlement.

The Associate assumes responsibility for and shall indemnify and save harmless the TPCODL from all liability, claims, costs, expenses, taxes and assessments including penalties, punitive damages, attorney's fees and court costs which are or may be required to be paid by the TPCODL and its officers, directors, employees, affiliates, agents, successors and assigns arising from any breach of the Associate's obligations under the Contract or for which the Associate has assumed responsibilities under the Contract including those imposed under any local or national law or laws, or in respect to all salaries, wages or other compensation for all persons employed by the Associate or his Sub-Associates or suppliers in connection with the performance of any work covered by the Contract. The Associate shall execute, deliver and shall cause his Sub-Associate and suppliers to execute and deliver, such other further instruments and to comply with all the requirements of such laws and regulation as may be necessary there under to conform and effectuate the Contract and to protect the TPCODL.

The TPCODL shall not be held responsible for any accident or damages incurred or claims arising, due to the Associate's error there from prior to completion of work. The Associate shall be liable for such accidents and after completion of work for such accidents as the case may be due to negligence on his part to carry out Work in accordance with Indian laws and regulations and the specifications set forth herein.

19.0 LIABILITY & LIMITATIONS

19.1 Liability

Except for any specific liability which may be identified in the Contract and which may be payable hereunder, Associate shall not be liable for any special, incidental, indirect, or consequential Damages or any loss of business Contracts, revenues or other financial loss (or equivalents thereof no matter how claimed, computed or characterized) arising out of or in connection with the Performance of the Work or supply of Goods ***unless caused by Associate's negligence, willful misconduct or breach of contract.***

If the Associate is a joint venture or consortium, all concerned parties shall be jointly and severally bound to the TPCODL for the fulfillment of the provisions of the Contract. The consortium or the joint venture shall designate one party as their leader, who will be the coordinator between the parties and TPCODL. The constituents & leader of the consortium or joint venture shall not be changed without the prior consent of TPCODL.

TPCODL shall have no liability or any special, incidental, indirect or consequential Damages for any loss of Business Contracts, revenues or other financial loss arising out of this Contract.

19.2 Limitation of Liability

The total liability of Associate against any contract shall be limited to the Total All Inclusive Contract Value.

20.0 FORCE MAJEURE

Force Majeure applies if the performance by either Party ("the Affected Party") of its obligations under Contract is materially and adversely affected.

"Force Majeure" shall mean any event or circumstance or combination of events or circumstances referred below and their consequences that wholly or partly prevents or unavoidably delays any

Party in the performance of its obligations under this Agreement, but only and to the extent that such events and circumstances are not within the reasonable control, directly or indirectly, of the Affected Party and could not have been avoided even if the Affected Party had taken reasonable care:

- Act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, embargo, blockade, revolution, riot, bombs, religious strife or civil commotion, etc. ▪ Politically motivated sabotage, or terrorism, etc.
- Action or Act of Government or Governmental agency for which remedy is beyond the control of the affected parties. ▪ Any act of God.

Note: Causes like power breakdown/ shortages/fire/strikes, accidents etc do not fall under Force Majeure.

Time being the essence of the Contract, if either party is prevented from the performance of its obligations in whole or in part due to an event of Force Majeure, then provided Notice of happening of any event by the Affected Party is given to the other party within seven (7) days from the date of occurrence of such event, which DIRECTLY has impact on works and submitted details and quantum of resulting effect, but at the same time had made all possible efforts to mitigate and overcome effects thereof, the Affected Party's performance under this Contract shall be suspended until such event ceases and the Scheduled Completion shall be delayed accordingly.

If Force Majeure event(s) continue for a period of more than three months, the parties shall hold consultation to discuss the further course of action.

Neither party shall be considered to be in default or in breach of its obligation under the Contract to the extent that performance of such obligation by either party is prevented by any circumstances of Force Majeure which arise after effective date of Contract.

Neither party can claim any compensation from the other party on account of Force Majeure.

21.0 SUSPENSION OF CONTRACT

21.1 Suspension for Convenience

TPCODL may, at any time and at its sole option, suspend execution of all or any portions of the schedule of items of contract to be supplied/work to executed by Associate under the contract by providing to the Associate atleast two business days written notice for contracts having contract completion period less than sixty days and atleast seven business days' notice for all other contracts.

Upon receipt of any such notice, the Associate shall respond as follows as applicable as per contract construction.

- Immediately discontinue further supply of material/goods specified in the suspension notice for supply contracts
- Immediately discontinue further service/work and supply of materials of those services/materials/work specified in the suspension notice for service /composite contract
- Promptly make every reasonable effort to obtain suspension, upon terms satisfactory to TPCODL, of all orders, outsourcing arrangements, and rental Contracts to the extent that they relate to performance of the portion of Work suspended by the notice.

- Protect and maintain the portion of the service/Work already completed, including the portion of the Work suspended hereunder, unless otherwise specifically stated in the notice.
- Continue delivering/carrying out the supply/service/work items as per contract conditions, which do not fall under purview of the suspension notice.

On receipt of resumption notice from TPCODL, the Associate shall resume execution of contract as specified in the resumption notice, within the time frame specified in the resumption notice.

21.2 Suspension for Breach of Contract conditions.

TPCODL shall suspend execution of whole/or part thereof the contract till such time Associate complies with the conditions stipulated under section clause 22.1 for breach/default of contract conditions.

21.3 Compensation in lieu of Suspension

If the suspension of the contract in whole or in part is for convenience of TPCODL and not due to any breach of contract conditions by the associate, TPCODL at its discretion shall consider compensating all reasonable additional costs incurred by Associate in lieu of suspension of whole or part of contract, on representation of the Associate providing justified estimates of such additional costs and such estimates are found acceptable and approved by competent authority of TPCODL.

If the suspension of contract in whole or part thereof is due to breach of contract conditions (refer clause 22.1) by the Associate, Associate shall not be entitled for any compensation for any cost incurred in lieu of suspension of whole or part of contract and also shall be liable for compensating all the losses arising to TPCODL in lieu of suspension of contract. Resumption notice shall be subject to the Associate taking corrective action for the breach of contract conditions within the time frame and as per the terms specified in the suspension notice.

22 TERMINATION OF CONTRACT

22.1 Termination for Default/Breach of Contract

The contract / PO /RC shall be subject to termination by TPCODL in case of breach of the contract by the Associate which shall include but not be limited to the following:

a. Withdrawal or intimation by the Associate of its intent to withdraw or surrender the execution / completion of the contracted work /PO or failure in ensuring adherence to any delivery schedules, in deviation of the contract/PO.

b. Refusal or neglect on the part of the Associate to supply material/equipment of quantity or quality as specified by TPCODL and within the timeframe as specified in the contract document or refusal or neglect to execute the services/work in terms of the agreed standards of quantity or quality and/or within the timeframe specified in the contract/PO.

c. Failure in any respect to perform any portion of the Work contracted with promptness, diligence, or in accordance with the terms of the contract.

d. Failure to furnish guarantees as specified and /or failure to comply with the terms thereof.

e. Failure to furnish such relevant documents or information within the time specified which may be necessary for due execution / completion of the works and documentation.

f. Liquidation, bankruptcy either voluntary or involuntary OR entering into any composition or compromise with its creditors, or Insolvency.

g. In case any reasonable information has been received by TPCODL that Associate has adopted/ or attempted to adopt any unethical conduct, action in award of the contract /PO or at any time thereafter.

h. Failure to comply with applicable statutory provisions as contained in the contract or failure to comply with the applicable laws.

i. Failure to comply with safety regulations/clauses stipulated in the contract or as may be generally instructed by TPCODL.

If the default or breach as specified under clause 22 (except sub clause g thereof) be committed by the associate for the first time, TPCODL shall issue, along the with notice of default or breach, a warning notice instructing the associate to take remedial/corrective action within the time frame stipulated in the warning notice and not to repeat the same in future. The timeframe for corrective action by the associate shall be specific to the nature of breach of contract and the same shall not be objected to by the Associate. If the Associate fails to comply with the instructions in the warning notice or in taking corrective action to the satisfaction of TPCODL then TPCODL may terminate the entire or part of contract at its discretion by issuing termination notice without incurring any liability on this ground.

In case the contract is terminated for any breach of the nature specified in clause 22 g stated above, TPCODL shall have the right to terminate all the contracts TPCODL is having with the Associate by issuing termination notice which shall be without prejudice to the other rights of TPCODL available to it under law.
Without prejudice to its right to terminate for breach of contract, TPCODL may, without assigning any reason, terminate the Contract in whole or in part at any time at its discretion while the contract is in force by serving a written notice of two weeks to the Associate.

In the event of TPCODL having proceeded with termination of the contract the associate shall comply and proceed further in the following manner:

a) Associate shall discontinue the supply, on the expiry of the said period of two weeks.

b) Associate shall ensure that no further steps are being taken towards discharge of the obligations, terms and conditions as contained in the contract/PO. This shall include initiation of actions not limited to discontinuation of other allied and associated arrangements which the associate might have entered into with third parties for due discharge of its obligations under the contract with TPCODL.

c) The Associate shall perform thereafter such tasks as may be necessary to preserve and protect the terminated portion of the material/service/work in progress and the materials and equipment at TPCODL sites or in transit thereto. However the associate shall continue to fulfill its contractual obligations with regard to the part of contract not terminated.

d) It shall be open for TPCODL to conduct a joint assessment with the associate of the material, supplies, equipment ,works or in general as to the subject matter of the contract in regard to which the associate claims having completed its obligations before or during such termination.

e) It shall be open to TPCODL to seek invocation of the performance bank guarantee or any other guarantee or other security deposit by whatever name called submitted by the associate, which shall not be objected to or protested against by the associate.

In case of termination of the contract the parties agree to be governed inter alia by the following:

a) In case TPCODL exercises its right of termination as stated above the associate shall not dispute or object to the same.

b) The Associate shall be entitled to receive and claim only such payments OR sums of money from TPCODL as may be found payable to it in regard to works executed by it under the terms of the contract and no other claim of any nature whatsoever shall be made by the Associate.

c) All such provisions which the parties have agreed to survive and prevail even after termination of the contract shall remain effective despite the termination.

In the event of such termination, TPCODL may finish the Work by whatever method it may deem expedient, including the hiring of services and /or purchase of material equipment from such third parties as TPCODL may deem fit or may itself provide any labor or materials and perform any part of the Work. The associate undertakes to bear the incremental costs if any paid by TPCODL in such a case attributable to failure on the part of the associate. The Associate in such a case shall not be entitled to receive any further payments and any sums found payable to it may be adjusted by TPCODL against the amount recoverable from him on this ground. The same shall be without prejudice to other rights available to TPCODL under law against the associate.
Upon the termination of any of the contract due to occurrence of any circumstances provided in clauses stated above and constituting repeated breach or misconduct , TPCODL shall be entitled to bar the associates its agents , affiliates from undertaking any negotiation / tendering, bidding , participation activities concerning TPCODL for a period of two years from date of such termination. The same shall be without prejudice to other rights available to TPCODL.

22.2 Termination for Convenience of Associate

Associate at its convenience may request for termination of contract, clearly assigning the reason for such request. TPCODL has full right to accept, reject or partially accept such request. However, associate shall continue its supply as per contract till final approval is given to associates for such termination.

22.3 Termination for Convenience of TPCODL

TPCODL at its sole discretion may terminate the contract by giving 30 days prior notice in writing or through email to the Associate. TPCODL shall pay the Associate for all the supplies/ services rendered till the actual date of contract termination against submission of invoice by the Associate to that effect.

23.0 DISPUTE RESOLUTION & ARBITRATION

In case of any dispute or difference the parties shall endeavour to resolve the same through conciliatory and amicable measures within 15 Days failing which the matter may be referred by either party for resolution by the sole arbitrator to be appointed mutually by both the parties. The arbitral proceedings shall be conducted in accordance with Arbitration and Conciliation Act 1996 and the place of arbitration shall be Bhubaneswar. The language to be used at proceedings shall be English and the award of the arbitrator shall be final and binding on the parties. The parties shall bear their respective costs of arbitration. The associate shall continue to discharge its obligations towards due performance of the works as per the terms of the contract during the

arbitration proceedings unless otherwise directed in writing by TPCODL or suspended by the arbitrator. Further, TPCODL shall continue making such payments as may be found due and payable to the associate for such works.

23.1 Governing Laws and Jurisdiction

The parties shall be subject to the jurisdiction of the courts of law in Bhubaneswar and any matter arising here from shall be subject to applicable law in force in India.

24.0 ATTRIBUTES OF GCC

24.1 Cancellation

The Company reserves the right to cancel, add, delete at its sole discretion, all or any terms of this GCC or any contract, order or terms agreed between the parties in pursuance without assigning any reasons and without any compensation to the Associates.

24.2 Severability

If any portion of this GCC is held to be void, invalid, or otherwise unenforceable, in whole or part, the remaining portions of this GCC shall remain in effect.

24.3 Order of Priority

In case of any discrepancies between the stipulations in General Conditions of the Contract (GCC) and Special Conditions of Contract (SCC), the GCC shall stand superseded by the SCC to the extent stipulated hereinabove while balance portion of respective clauses of GCC shall continue to be applicable.

25.0 ERRORS AND OMISSIONS

The Associate shall be responsible for all discrepancies, errors and omissions in the drawings, documents or other information submitted by him, irrespective of whether these have been approved, reviewed or otherwise accepted by the TPCODL or not. However any error in design/drawing arising out of any incorrect data/written information from TPCODL will not be considered as error and omissions on part of the Associate.

26.0 TRANSFER OF TITLES

The title of ownership and property to all equipment, materials, drawings & documents shall pass to the TPCODL on acceptance of material by store/site after Inspection.

However, such passing of title of ownership and property to the TPCODL shall not in any way absolve, dilute or diminish the responsibility and obligations of the Associate under this Contract including loss or damages and all risks, which shall vest with the Associate.

27.0 INSURANCE

The Contractor shall take out the Insurance Policies which shall cover all risks including the following, as applicable:-

a) The value of the policy shall cover the total value of all the items till they are handed over to TPCODL.

b) TPCODL shall be the principal holder of the policy. The Associate shall be the loss payee under the policy. Associate / Sub-contractor of the Associate shall not be holders or beneficiaries in the policy nor shall they be named in the policy. TPCODL reserves the exclusive right to assign the policy.

c) While the payment of premium may be phased in agreement with the insurance company, at no time shall goods and services required to be provided by the associate shall remain uninsured in accordance with (a) above.

d) A copy of the Insurance policy shall be made available to TPCODL prior to first dispatch lot of any Equipment and policy shall be kept alive and valid at all times up to the stage of final acceptance.

e) TPCODL reserves the right to take out whatever policy that is deemed necessary by him if the associate fails to keep the said policy alive and valid at all times and/or causes lapses in payment of premium thereby jeopardizing the said policy. The cost of such policy(s) shall be recovered / deducted from the amount payable to the associate.

f) The policy shall ensure that the TPCODL's decision regarding replacement of goods damaged, lost or rendered unusable shall be final.

In all cases, the associate shall lodge the claims with the underwriters and also settle the claims and shall also notify TPCODL of any filed claims. However, the associate shall proceed with the repairs and/or replacement of the equipment/components without waiting for the settlement of the claims. In case of seizure of materials by concerned authorities, the associate shall arrange prompt release against bond, security or cash as required. TPCODL, upon request by the associate, will extend all reasonable assistance to the associate in such a case.

All the insurance claims shall be processed and settled by the associate and the missing/damaged items shall be replaced/repaired by them without any extra cost to TPCODL and without affecting the completion time.

28.0 SUGGESTIONS & FEEDBACK

We welcome all our Business Associates to write to us about their experience with TPCODL; be it our Company, our services or our people. Each and every concern, issue, query and suggestion from you will help us to become a better company to work with and shall help us develop a strong bonding of trust and a long term relationship with you.

You may send your feedback by filling up our Business Associate Feedback Form enclosed herewith as *Annexure-E.* You can also log on to our website www.tpcentralodisha.com to provide your feedback.

- Suggestions for us
- Feedback form
- Knowledge Sharing/ Experience with TPCODL
- Any issues with TPCODL.

Submission of feedback form is mandatory before the release of final payment to the BA.

29.0 CONTACT POINTS

In case Business Associate needs information with respect to payments or has any grievances, same may be lodged by log on to our website www.tpcentralodisha.com

30.0 LIST OF ANNEXURES

S. No.	Subject	Annexure

ANNEXURE-A

PROFORMA FOR BID SECURITY BANK GUARANTEE

The TP Central Odisha Distribution Limited
Bhubaneswar

WHEREAS, (Name of the Bidder) _____

(hereinafter called “the BIDDER”) has submitted his bid dated_____ for the (Name of Contract) _____ (hereinafter called “the BID”).

KNOW ALL men by these presents we (Name of the Bank) _____ of (Name of the Country) _____ having our registered office at_____(hereinafter called "the BANK) are bound unto The TP Central Odisha Distribution Limited (TPCODL) in the sum of _____ for which payment well and truly to be made to the TPCODL the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this _____ day of _____ 20_____.

The CONDITIONS of this obligation are**:**

i) If the Bidder withdraws his Bid during the period of bid validity specified in the Proforma of Bid or

ii) If the Bidder having been notified of the acceptance of his Bid by the TPCODL during the period of bid validity fails or refuses to furnish the Contract Performance Bank Guarantee, in accordance with the Instructions to Bidders.

We undertake to pay the TPCODL upto the above amount upon receipt of its first written demand, provided that in its demand the TPCODL will note that amount claimed by it is due to it owing to the occurrence of one or both conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force upto and including the date (No of days as mentioned in tender enquiry) days after the closing date of submission of bids as stated in the Invitation to Bid or as extended by you at any time prior to this date, notice of which extension to the Bank being hereby waived, and any demand in respect thereof should reach the Bank not later than the above date.

DATE …… SIGNATURE OF THE BANK ……..

WITNESS …… SEAL ……..

(Signature, Name & Address) (At least 2 witnesses)

ANNEXURE- B

PROFORMA FOR PERFORMANCE BANK GUARANTEE (CP cum EP)

(On Rs.100/- Stamp Paper) Note:

a) Format shall be followed in toto
b) Claim period of one month must be kept up
c) The guarantee to be accompanied by the covering letter from the bank confirming the signature to the guarantee

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The TP Central Odisha Distribution Limited

Bhubaneswar

CP cum EP BG No……

Order/Contract No……dated……

1. You have entered into a Contract No _____ with M/s._____ (hereinafter referred to as "the Vendor") for the supply cum erection / civil work of _____ (hereinafter referred to as" the said Equipment") for the price and on the terms and conditions contained in the said contract.
2. In accordance with the terms of the said contract, "the Vendor" agreed to furnish you with an irrevocable, unconditional and acceptable bank guarantee for 10% of the value of contract and to be valid till the end of Guarantee period plus one month towards "Contract cum Equipment performance". For this purpose you have agreed to accept the guarantee.
3. In consideration thereof, we, _____ hereby irrevocably and unconditionally guarantee to pay to you on demand but in any case before the end of five working days from the date of the claim and without demur and without reference to "the Vendor" such amount or amounts not exceeding the sum of Rs._____ (Rupees _____ only) being _____% (_____ percent) of the total value of the contract on receipt of your intimating that "the Vendor" has not fulfilled his contractual obligations. You shall be the sole judge for such non-fulfillment and "the Vendor" shall have no right to question such judgment.
4. You shall have the right to file / make your claim on us under the guarantee for a **further period of one month** from the date of expiry.
5. This guarantee shall not be revoked without express consent and shall not be affected by your granting time or any other indulgence to "the Vendor", which shall include but not be limited to, postponement from time to time of the exercise the same in you or any right which you may have against "the Vendor" and to exercise the same in any covenant contained or implied in the said contract or any other course or remedy or security available to you, and our Bank shall not be released from its obligations under this guarantee by

your exercising any of your rights with reference to matters aforesaid or any of them or by reasons of any other act or forbearance or other acts of omission or commission on your part or any other indulgence shown by you or by any other matter or thing whatsoever which under the law would, but for this provision have the effect of relieving our bank from its obligation under this guarantee.

6. We also agree that you shall be entitled at your option to enforce this guarantee against our bank as a principal debtor, in the first instance, notwithstanding any other security or guarantee that you may have in relation to “the Vendor’s” liabilities in respect of the premises

7. This guarantee shall not be affected by any change in the constitution of our Bank or “the Vendor” or for any other reason whatsoever.

8. Any claim / extension under the guarantee can be lodge-able at outstation banks or at Bhubaneswar branch and claim will also be payable at Bhubaneswar Branch (to be confirmed by Bhubaneswar Branch by a letter to that effect in case BG is from the branch outside Bhubaneswar).

9. Notwithstanding anything herein contained, our liability under this guarantee is limited to Rs._____ (Rupees_____ only and the guarantee will remain in force upto and including _____(Date) and shall be extended from time to time for such period or period as may be desired by “the Vendor”.

10. Unless a demand or claim under this guarantee is received by us in writing within one months from_____ (expiry date) i.e. on or before _____ (claim period end date), we shall be discharged from all liabilities under this guarantee thereafter.

Dated at_____ this_____ day of _____ 20__

Bank’s rubber stamp

1. Banks full address

Designation of Signatory

2. Bank official number

ANNEXURE-C

PROFORMA FOR "NO DEMAND CERTIFICATE" BY ASSOCIATE

(On Company's Letter head or with Company Seal)
(To be submitted by the Associate to TPCODL Accounts Department at the time of receipt of full and final payment)

(Certificate No. CCP/002)

Name of the Project Order/

Contract No.

Dated

Name of the Associate Scheme

No. / Job No.

We, M/s._____ (Associate) do hereby acknowledge and confirm that we have received the full and final payment due and payable to us from TPCODL, in respect of our aforesaid Order No _____ dated_____ including amendments, if any, issued by TPCODL to our entire satisfaction and we further confirm that we have no claim whatsoever pending with TPCODL under the said contract / W.O.

Notwithstanding any protest recorded by us in any correspondence, documents, measurement books and / or final bills etc., we waive all our rights to lodge any claim or protest in future under this contract.

We are issuing this "NO DEMAND CERTIFICATE" in favour of TPCODL, with full knowledge and with our free consent without any undue influence, misrepresentation, coercion etc.

Place **Name**

(Company Seal)

ANNEXURE-D

PROFORMA FOR APPLICATION FOR ISSUANCE OF CONSOLIDATED TDS CERTIFICATE

To be printed on the letterhead

To,

The TP Central Odisha Distribution Limited,

Bhubaneswar

Sub: Application for issuance of Consolidated TDS Certificate for the FY _____

Dear Sir,

I / we hereby request / authorize you to issue me / us a consolidate TDS Certificate for the financial year _____ against tax deducted at source by you from my / our payments / bills during the said year from time to time under Chapter XVII – B of the Income Tax Act, 1961.
For and on behalf of

Signature

Name

Address

Contact No. (Land Line)

(Mobile)

PAN #

Assessing authority

ATTACH THE COPY OF PAN CARD

ANNEXURE-E

BUSINESS ASSOCIATE FEEDBACK FORM

With an objective to improve our internal processes and systems, and serve you better, we solicit your valuable feedback & suggestions. It is estimated that it will take about 10 minutes to complete this survey. We assure you that your feedback shall be kept confidential. Please send the duly filled feedback form in the "TPCODL addressed - attached envelop"

You are associated with us as

☐ OEMs ☐ Service Contractor ☐ Material Suppliers ☐ Material & Manpower Supplier

You are associated with us for

☐ Less than 1 year ☐ More than 1 year but less than 3 years ☐ More than 3 years

Your office is located at

☐ Bhubaneswar ☐ Within 200 kms from Bhubaneswar ☐ More than 200 kms from Bhubaneswar

Your nearly turnover with TPCODL

☐ Less than 25 Lacs ☐ 25 Lacs to 1 Crore ☐ More than 1 Cr.

Additional Information

Your Name	
Your Designation	
Your Organization	
Contact Nos.	
Email	

We once again thank you for your participation in this survey. Please spare 10 minutes to give your feedback on following pages (Section A to E)

SECTION – A

(Please √ mark in the relevant box and give your remarks / suggestions / information for our improvement).

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
1	You receive all relevant queries / tenders from us in timely manner.						
2	We provide you enough lead time to respond to our queries / tenders.						
3	We provide you adequate support (drawings, documents, clarifications, briefing etc.) to enable you meet our requirements.						
4	All following elements of our contract / purchase order are rational :						
4.1	Scope of Work						
4.2	Delivery / Execution Schedule						
4.3	Payment Terms						
4.4	Liquidated Damages						
4.5	Performance Guarantee						
5	Our purchase orders / contracts are simple, specific & easy to understand						
6	TPCODL demonstrate willingness to be flexible in administration of Contract / Purchase Order						
7	We provide timely responses / clarifications to your queries						
8	TPCODL representative you interact / coordinate with is adequately empowered to support you in meeting contractual obligations						
9	TPCODL provide you all necessary infrastructure support for timely and quality completion of work (including AMC)						
10	TPCODL Engineer-in-Charge timely certifies the jobs executed/ material supplied						
11	TPCODL Engineer-in-Charge efficiently supervises the job execution for timely completion of job						
12	BIRD (Bill Inward Receipt Desk) initiative has improved payment disbursement process						

S. No.	Parameters	1 Do Not Agree	2 Slightly in Agreement	3 In Fair Agreement	4 Mostly in Agreement	5 Fully Agree	Remarks/ Suggestion
13	Our approach for Inspection and Quality Assurance effective to expedite project completion?						
14	TPCODL never defaults on contractual terms						
15	In TPCODL Contracts closure is done within set time limit						
16	Our material receiving procedures are well defined and efficiently deployed to reduce mutual inconvenience						
17	Bank Guarantees are released in time bound manner						
18	Our processes related to payment / account settlement are effective.						
19	You get payments on time						
20	TPCODL Employees follow Ethical behaviour						

SECTION – B

SECTION – B (Please rate the following parameters on a scale of 1 to 5, where 1 - Minimum; 5 - Maximum)

S. No.	Parameters	1	2	3	4	5	Remarks/ Suggestion
1	How do you rate courtesy/ empathy/ attitude level and warmth of TPCODL employees you interact with from following team?						
1.1	Project Engineering						
1.2	District / Zones						
1.3	Projects/HOG (TS &P)						
1.4	Inspection & Quality Assurance						
1.5	Stores						
1.6	Metering & Billing						
1.7	Accounts / Finance						
1.8	Administration						
1.9	IT & Automation						
2	How would you rate TPCODL in comparison to your other clients in terms of **fairness of treatment and transparency** with its Business Associates?						
3	How would you rate TPCODL in comparison to your other clients in terms of **processes and systems to manage partnership** with its Business Associates						
4	How would you rate TPCODL in comparison to your other clients in terms of **building long term & mutually relations**hip with its Business Associates						

SECTION – C

Please √ mark in the relevant box and give your remarks / suggestions / information for our improvement.

S. No.	Parameters	Certainly No	Probably No	Certainly Yes	Probably Yes	Remarks/ Suggestion
1	Based on your experience with TPCODL, would you like to continue your relationship with TPCODL?					
2	If someone asks you about TPCODL, would you talk “positively” about					

	TPCODL?					
3	Would you refer TPCODL name to others in your community, fraternity and society as a professional & dynamic organization?					

SECTION - D

If we ask you to rate us on a scale of 1 to 10, how will you rate TPCODL, that truly represents your overall satisfaction with us (please tick appropriate box) -

1	2	3	4	5	6	7	8	9	10

SECTION – E

Please √ mark in the relevant box and give your remarks / suggestions / information for our improvement.

Please spare your thoughts for TPCODL's improvement in particular areas of weaknesses, particularly relating to some great practices, attitudes that you have seen elsewhere in Indian and International Organizations, which you recommend TPCODL to adopt. Please give your valuable salient recommendations.

Please spare your thoughts for TPCODL's improvement in particular areas of major concerns for you. We also welcome your suggestions to adopt any best practices, altitudes that you

Recommendation	*Please tick (√) your top 5 expectations out of the following 10 points listed below -*	
(Please list down improvement you expect from TPCODL)	*Timely payment*	
1	*Flexibility in Contracts/PO*	
	Clarity in PO,s & Contracts	
2	*Timely response to quarries*	
	Timely certification of works executed	
3	*Clarity in Specs, drawings, other docs etc.*	
	Adequate information provided on website for tender notification, parties qualified etc.	
4	*Timely receipt of material at site for execution*	
	Performance Guarantee/EMD released in time	

5	*Inspection & quality assurance support for timely job completion*	

We thank you for your time and courtesy!!

ANNEXURE-F

ACCEPTANCE FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT

(To be signed and stamped by the bidder prior to participation in the auction event)

In a bid to make our entire procurement process more fair and transparent, TPCODL intends to use the reverse auctions through SAP-SRM tool as an integral part of the entire tendering process. All the bidders who are found as technically qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

The following terms and conditions are deemed as accepted by the bidder on participation in the bid event:

1. TPCODL shall provide the user id and password to the authorized representative of the bidder. (Authorization Letter in lieu of the same shall be submitted along with the signed and stamped Acceptance Form).
2. TPCODL will make every effort to make the bid process transparent. However, the award decision by TPCODL would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPCODL, bid process, bid technology, bid documentation and bid details.
4. The bidder is advised to understand the auto bid process to safeguard themselves against any possibility of non-participation in the auction event.
5. In case of bidding through Internet medium, bidders are further advised to ensure availability of the entire infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitch, internet response issues, software or hardware hangs, power failure or any other reason shall not be the responsibility of TPCODL.
6. In case of intranet medium, TPCODL shall provide the infrastructure to bidders. Further, TPCODL has sole discretion to extend or restart the auction event in case of any glitches in infrastructure observed which has restricted the bidders to submit the bids to ensure fair & transparent competitive bidding. In case an auction event is restarted, the best bid as already available in the system shall become the start price for the new auction.
7. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out rightly rejected by TPCODL.
8. The bidder shall be prepared with competitive price quotes on the day of the bidding event.
9. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties and levies and shall be FOR at TPCODL site.
10. The prices submitted by a bidder during the auction event shall be binding on the bidder.
11. No requests for time extension of the auction event shall be considered by TPCODL.
12. The original price bids of the bidders shall be reduced on pro-rata basis against each line item based on the final all inclusive prices offered during conclusion of the auction event for arriving at Contract amount.

Signature & Seal of the Bidder

ANNEXURE-G

To,

DGM (Finance)
The TP Central Odisha Distribution Limited
Bhubaneswar

Sub: **e-Payments through National Electronic Fund Transfer (NEFT) OR Real Time Gross Settlement System (RTGS)**

Dear Sir,

We request and authorize you to affect e-payment through NEFT/RTGS to our Bank Account as per the details given below:-

Vendor Code	:	
Title of Account in the Bank	:	
Account Type	:	(Please mention here whether account is Savings/Current/Cash Credit)
Bank Account Number	:	
Name & Address of Bank	:	
Bank Contact Person's Names	:	
Bank Tele Numbers with STD Code	:	
Bank Branch MICR Code	:	(Please enclose a Xerox a copy of a cheque. This cheque should not be a payable at par cheque)
Bank Branch IFSC Code	:	(You can obtain this from branch where you have your account)
Email Address of accounts person: (to send payment information)	:	

Name of the Authorized Signatory: :

Contact Person's Name:

Official Correspondence Address:

We confirm that we will bear the charges, if any, levied by our bank for the credit of NEFT/RTGS amounts in our account. Any change in above furnished information shall be informed to TPCODL well in time at our own. Further, we kept TPCODL indemnified for any loss incurred due to wrong furnishing of above information.

Thanking you,

For _____

(Authorised Signatory)

(Signature with Rubber Stamp)

Certification from Bank:

We confirm that we are enabled for receiving NEFT/RTGS credits and we further confirm that the account number (specify Bank a/c no.) of (Please mention here name of the account holder), the signature of the authorised signatory and the MICR and IFSC Code of our branch mentioned above are correct.

This also is certified that the above information is correct as per Bank record

(Manager's/ Officers Signature under Bank Stamp)

ANNEXURE-H

VENDOR APPRAISAL FORM

TO BE SUBMITTED BY VENDOR (To be filled as applicable)			
VENDOR:			
1.0	**DETAILS OF THE FIRM**		
	1.1	NAME (IN CAPITAL LETTERS)	:
	1.2	TYPE OF CONCERN (PROPRIETARY) Partnership, Pvt. Ltd., Public Ltd. etc.	:
	1.3	YEAR OF ESTABLISHMENT	:
	1.4	LOCATION OF OFFICE POSTAL ADDRESS TELEGRAPHIC ADDRESSES, TELEX NO. FAX NO.	:
	1.5	LOCATION OF MANUFACTURING UNITS	:
		i) UNITS 1	:
		ii) OTHER UNITS	:
2.0	**PRODUCTS MANUFACTURED**		:
3.0	**TURNOVER DURING THE LAST 3 YEARS (TO BE VERIFIED WITH THE LATEST PROFIT & LOSS STATEMENT).**		:
4.0	**VALUE OF FIXED ASSETS**		:
5.0	**NAME & ADDRESS OF THE BANKERS**		:
6.0	**BANK GUARANTEE LIMIT**		:
7.0	**CREDIT LIMIT**		:
8.0	**TECHNICAL**		
	8.1	NO. OF DESIGN ENGINEERS (INDICATE NO. OF YEARS EXPERIENCE IN RELATED FIELDS)	:
	8.2	NO. OF DRAUGHTS MEN	:
	8.3	COLLABORATION DETAILS (IF ANY)	:
		8.3.1 DATE OF COLLABORATION	:
		8.3.2 NAME OF COLLABORATOR	:
		8.3.3 RBI APPROVAL DETAILS	:
		8.3.4 EXPERIENCE LIST OF COLLABORATOR	:
		8.3.5 DURATION OF AGREEMENT	:
	8.4	AVAILABILITY OF STANDARDS / DESIGN PROCEDURES / COLLABORATOR'S /	:

		DOCUMENTS (CHECK WHETHER THESE ARE LATEST/CURRENT	
	8.5	TECHNICAL SUPPORT, BACK-UP GUARANTEE, SUPERVISION, QUALITY CONTROL BY COLLABORATOR (WHEREVER ESSENTIAL). (THIS CLAUSE IS RELEVANT WHEN VENDOR'S EXPERIENCE IS INADEQUATE)	:
	8.6	QUALITY OF DRAWINGS	:
9.0	**MANUFACTURE**		
	9.1	SHOP SPACE, LAYOUT LIGHTING, VENTILATION, ETC.	:
	9.2	POWER (KVA)	:
		MAINS INSTALLED	:
		UTILIZED	:
		STANDBY POWER SOURCE	:
	9.3	MANUFACTURING FACILITIES (ATTACH LIST OF EQUIPMENT AS APPLICABLE)	:
		9.3.1 MATERIAL HANDLING	:
		9.3.2 MACHINING	:
		9.3.3 FABRICATION	:
		9.3.4 HEAT TREATMENT	:
		9.3.5 BALANCING FACILITY	:
		9.3.6 SURFACE TREATMENT PRIOR TO PAINTING/ COATING, POLISHING, PICKLING, PASSIVATION, PAINTING, ETC.	:
	9.4	SUPERVISORY STAFF	:
	9.5	ADEQUACY OF SKILLED LABOURS (MACHINISTS, WELDERS, ETC.)	:
	9.6	NO. OF SHIFTS	:
	9.7	TYPE OF MATERIAL HANDLED (SUCH AS CS, SS, ETC.)	
	9.8	WORKMANSHIP	:
	9.9	MATERIAL IN STOCK AND VALUE	:
	9.10	TRANSPORT FACILITIES	:
	9.11	CARE IN HANDLING	:
10.0	**INSPECTION / QC / QA / TESTING**		
	10.1	NUMBER OF PERSONNEL (INDICATE NO. OF YEARS OF EXPERIENCE)	:
	10.2	INDEPENDENCE FROM PRODUCTION	:

	10.3	AVAILABILITY OF PROCEDURAL WRITE UP/QUALITY PLAN	:
	10.4	INCOMING MATERIAL CONTROL AND DOCUMENTATION	:
	10.5	RELIABILITY/REPUTATION OF SUPPLY SOURCES	:
	10.6	STAGE INSPECTION AND DOCUMENTATION	:
	10.7	SUB-ASSEMBLY & DOCUMENTATION	:
	10.8	FINAL INSPECTION AND DOCUMENTATION	:
	10.9	PREPARATION OF FINAL DOCUMENTATION PACKAGE	:
	10.10	TYPE TEST FACILITIES	:
	10.11	ACCEPTANCE TEST FACILITIES	:
	10.12	CALIBRATION OF INSTRUMENTS AND GAUGES (WITH TRACEABILITY TO NATIONAL STANDARDS) (ATTACH LIST)	:
	10.13	STATUTORY APPROVALS LIKE BIS, IBR, ETC.(AS APPLICABLE)	:
	10.14	SUB-VENDOR APPROVAL SYSTEM AND QUALITY CONTROL	:
	10.15	DETAILS OF TESTS CARRIED OUT AT INDEPENDENT RECOGNIZED LABORATORIES	:
		i) FURNISH LIST OF TESTS CARRIED OUT AND THE NAME OF THE LABORATORY WHERE THE TESTS WERE CONDUCTED	:
		ii) CHECK AVAILABILITY OF CERTIFICATES AND REVIEW THESE WHEREVER POSSIBLE	:
11.0	**EXPERIENCE (INCLUDING CONSTRUCTION / ERECTION / COMMISSIONING) TO BE FURNISHED IN THE FORMAT INDICATED IN APPENDIX)**		:
12.0	**SALES, SERVICE AND SITE ORGANIZATIONAL DETAILS**		:
13.0	**CERTIFICATE FROM CUSTOMERS (ATTACH COPIES OF DOCUMENTS)**		:
14.0	**POWER SITUATION**		:
15.0	**LABOUR SITUATION**		:
16.0 *	**APPLICABILITY OF SC/ST RELAXATION (Y/N)** **IF YES, SUPPORTING DOCUMENTS TO BE ATTACHED**		
17.0	**ORGANIZATIONAL DETAILS** 1. PF NO 2. ESI NO 3. INSURANCE FOR WORK MAN COMPENSATION ACT NO 4. ELECTRICAL CONTRACT LIC NO 5. ITCC / PAN NO 6. SALES TAX NO 7. WC TAX REG. NO		:
18.0	**DOCUMENTS TO BE ENCLOSED:**		

	1. FACTORY LICENSE 2. ANNUAL REPORT FOR LAST THREE YEARS 3. TYPE TEST REPORT FOR THE ITEM 4. PAST EXPERIENCE REPORTS 5. ISO CERTIFICATE –QMS, EMS, OHAS, SA 6. REGISTRATION OF SALES TAX 7. COPY OF TIN NO. 8. COPY OF SERVICE TAX NO. 9. REGISTRATION OF CENTRAL EXCISE 10. COPY OF INCOME TAX CLEARANCE. 11. COPY OF PF REGISTRATION 12. COPY OF ESI REGISTRATION 13. COPY OF INSURANCE FOR WORK MAN COMPENSATION ACT NO 14. COPY OF ELECTRICAL CONTRACT LIC NO 15. COPY OF PAN NO 16. COPY OF WC TAX REGISTRATION 17. DOCUMENTS IN SUPPORT OF SC/ST RELAXATION AT S.NO.16.0 18. GSTN CERTIFICATE	

*** Classification of BA s under SC/ST shall be governed under following guidelines:**

- **Proprietorship/ Single Ownership Firm:** Proprietor of the firm should be from SC/ST community. Governing document shall be Proprietorship Deed.
- **Partnership Firm:** Only such firms shall qualify which have SC/ST partners holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Partnership Deed.
- **Private Limited Company:** Only such firms shall qualify which have SC/ST directors holding equal to or more than 50% of the total ownership pattern of the firm. Governing document shall be Memorandum of Understanding (MoU) and/or Article of Association (AoA).

NOTE: Certification from SC/ST Commission shall be required for deciding upon SC/ST status of a person.

ANNEXURE-I

MANUFACTURER AUTHORIZATION FORM

(To be submitted on OEM's Letter Head)

Date: …….

Tender Enquiry No.: ……..

To,

Chief (Procurement & Stores)

The TP Central Odisha Distribution Limited,
Bhubaneswar

Sir,

WHEREAS M/s. *[name of OEM]*, who are official manufacturers of …… having factories at *[address of OEM]* do hereby authorize M/s *[name of bidder]* to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is to provide the following Goods, manufactured by us

……and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with the Special Conditions of Contract or as mentioned elsewhere in the Tender Document, with respect to the Goods offered by the above firm in reply to this Invitation for Bids.

We hereby confirm that in case, the channel partner fails to provide the necessary services as per the Tender Document referred above, M/s *[name of OEM]* shall provide standard warranty on the materials supplied against the contract. The warranty period and inclusion / exclusion of parts in the warranty shall remain same as defined in the contract issued to their channel partner against this tender enquiry.

Yours Sincerely,

For ……..

Authorized Signatory

Annexure VIII

Safety Policy and Safety Terms and Conditions

Contractor's Safety Code of Conduct

Reason for Change	Prepared By	Checked By	Approved by
Revision to accommodate Existing changes in org structure and to simplify the procedure	Rajesh Sharma *(Head-Safety Generation)*	Suresh Khetwani *(Chief - Safety & Environment)* Monish Kumar *(Chief -Corporate Contract)*	V. V. Namjoshi (Chief Generations)

INDEX

1. Objective

The Tata Power engages contractor workforce to execute, run and maintain various operating sites and facilities across locations for various business verticals including Generation, Transmission, Distribution and Renewable. The activities range from project execution, operation, maintenance to facilities management.

The management of contractor safety represents a significant challenge for management. Tata Power has a responsibility to ensure that contractors are provided with enough information and support to enable them to conduct their roles safely and without endangering health and safety of their own workforce or that of our staff.

To ensure reduction in reportable injuries and achieve goal of zero accidents, first edition of contractor safety code of conduct was launched successfully in the year 2014. Since last four years after the launch of CSCC, Tata Power could achieve the objective of reduction in reportable injuries and fatalities.

Over the period, as the system was being matured, a need was felt to make second revision of the CSCC process. Objective of second revision is improve existing CSCC system and make it user friendly.

2. Scope:

This procedure applies to all operating and project sites of The Tata Power Company Ltd and Group companies including new businesses like EV charging, Home Automation etc.

3. Definitions

3.1. **Order Manager:** Order Manager is the Tata Power representative, who has the ownership of the given job.

3.2. **Site Safety Management Plan**: It is the safety plan agreed between Contractor and Tata Power. It will contain the entire job specific safety requirement and will be signed by the contractor.

3.3. **Contractor**: An individual or a company that provides services to Tata Power under a signed contract.

3.4. **Emergency:** a serious, unexpected or dangerous situation requiring immediate action, which may result in loss of revenue/property, business discontinuity. In case of Emergency*, services may be procured by selecting the qualified vendor based on the vendor category without the safety bid evaluation. It must be approved by MB level and above.

3.5. **Expert Service jobs:** Jobs which needs expert services of contractor which does not involve direct exposure to the potential risk or work which involves only

supervisory work such as expert for turbine overhaul, expert for boiler overhaul, expert for pump and motor, expert for compressor overhaul.

3.6. **Head of the Division:** Business in charge of the division who is overall custodian of the generating station or transmission division or distribution division.

3.7. **Category A Vendor:** Vendor eligible to carry out Very High & High risk (as per Tata Power Hazard Identification and Risk Analysis Procedure) and /or Long-Term Contract related to operation and maintenance (O&M) of plant. Vendors must fulfil the requirement specified for Category A in Appendix 12-CSMF-5 of this document.

3.8. **Category B Vendor:** Vendors eligible to carry out technical jobs, that are classified under Medium /low risk. Vendors must fulfil the requirement specified for Category B in Appendix 12-CSMF-5 of this document.

3.9. **Category C Vendor:** Vendors eligible for to carry out low or very low risk administrative and office jobs. For this he must fulfil the requirement specified for Category C in Appendix 12-CSMF-5 of this document.

3.10. **Category D Vendor:** All Consultants, Medical Practitioners or vendors taking job from Tata Power and working from their own premises (e.g. motor rewinding at vendor's shop floor, equipment sent for repair to vendor's works etc.) are classified as Category D Vendor

3.11. **High Risk Jobs:** A Job or its activities are considered as Very High or High Risk when Order manager apply the "Tata Power Hazard Identification and Risk Analysis" procedure and found safety risk associated with are under Very High or High category. Indicative lists of jobs are given in appendix 15 of this document**.**

3.12. **Medium Risk Jobs:** Jobs or its activities are considered as medium risk when Order manager apply "Tata Power Hazard Identification and Risk Analysis" procedure and found the same as Medium Risk.

3.13. **Low Risk Jobs:** Any job or its activities are considered as Low or Very low risk while Order manager, calculate it by applying "Tata Power Hazard Identification and Risk Analysis" procedure and found it under Low or Very Low category.

3.14. **Long Duration Jobs:** When the duration of job is 12 months or more, it is considered as Long duration job

3.15. **High Value Jobs:** When the value of the job contract is Rs. One Crore or more it will be considered as High value job**.**

4. Responsibilities

4.1 Order Manager: Order Manager is the Tata Power representative, who is responsible for:

4.1.1 Finalizing the Site Safety Management Plan along with Contractor, Safety Concurrences Group, Divisional Safety Head and Expert (External or Internal) if required.

4.1.2 Supervise and ensure work is carried out as per the Site Safety Management Plan including agreed Risk Assessment (HIRA/JSA) and Method Statement.

4.1.3 Conduct audit and evaluate Safety Performance of contractor.

4.1.4 Ensure contractors adhere to all statutory provisions.

4.1.5 In case any deviation is needed in agreed safety management plan or in CSCC process for execution of job, Management of Change procedure will be applicable, and approval may be obtained from divisional head /Cluster head.

4.2 Contractor: The person, entity or organisation who is executing the job for Tata Power under a contractual agreement and will be responsible for the following

4.2.1 To follow all Tata Power Critical Safety Procedure, Rules and guidelines given in Safety Terms and Conditions

4.2.2 Undertake job as per Site Safety Management Plan CSM-F10 and method statements agreed with Tata Power.

4.2.3 Raise any concerns with regard to their work and its safety with the Tata Power Order Manager.

4.2.4 Report all injuries, near misses, unsafe acts/conditions, and occurrences to the Tata Power Order Manager immediately.

4.2.5 Ensure that all sub-contractors follow the Tata Power Safety Procedure and agreed Site Safety Management Plan CSM-F10.

4.2.6 To follow all statutory requirements as per the laws of the land.

4.2.7 All vendors applying for A category jobs or submitting quote for high risk jobs shall obtain certificates of ISO 9001, ISO14001 and ISO45001 before submitting quote for high risk Jobs.

4.3 Safety Concurrence Group: It is Cross Functional Team constituted by Corporate Safety Team, which will have representatives from Execution department, Divisional safety and Corporate / Divisional contracts. SCG will be responsible for the following

4.3.1 Assessment of Safety Potential of new vendor before registration as per CSM-F1-Safety Category Qualification Form.

4.3.2 Safety Evaluation of the bids as per evaluation format CSM-F-9 Safety Bid Evaluation Criteria

4.3.3 Finalization of the Site Safety Management Plan CSM-F-10 submitted by the contractor.

4.3.4 Corporate Safety Team / Cluster Safety Head will be part of SCG during Safety Bid Evaluation for following types of jobs

4.3.4.1 High-Risk jobs to be carried out in Annual Overhaul / Major Shutdowns and Outages.

4.3.4.2 Capex jobs of High-Risk Category

5.1 Vendor Registration

For Vendor Registration, Corporate Contract will issue following documents for evaluation of contractor's safety capability

1) CSM-F1 –Safety Category Qualification Form
2) Safety Terms and Conditions

The document Safety Terms and Conditions provides the information about Tata Power safety System to the contractor. Contractor will submit the CSM-F1- Safety Category Qualification Form with all relevant details and documents to Vendor Registration Initiator, which will in turn forward it to Safety Concurrence Group (SCG) for evaluation. The SCG will evaluate the details submitted by the contractor based on a predetermined criteria CSM-F-5 Safety Potential Evaluation Criteria for Vendor Registration and will determine the category (Category A/B/C/D) for which the contractor will be registered. As mentioned in the above criteria, a site visit may also be organized by SCG prior to registration under Category A and B. In case, the contractor does not qualify the safety criteria, the contractor will not be registered. However, he may apply afresh for registration after 6 months. Please refer Appendix 1: Process Flow Chart for Vendor Registration.

5.2 Bid evaluation

At the time of placing the Purchase Requisition (PR), Order Manager is required to declare the risk involved in the of the job (i.e. High Risk / Medium Risk / Low Risk jobs, based on the RPN in HIRA. If the Job is "High Risk" or "Long Duration", then RFQ will be attached with following documents:

1) CSM-F7- Blank Safety Competency Form
2) CSM-F8 PPE requirements
3) Safety Terms and Conditions
4) Job Specific Safety Requirement (Educational and Professional Qualification, Skill & Experience Manpower, Tools and Tackles (e.g. man lifter, use of drone, use & availability of rescue kit), Work Methodology etc.)

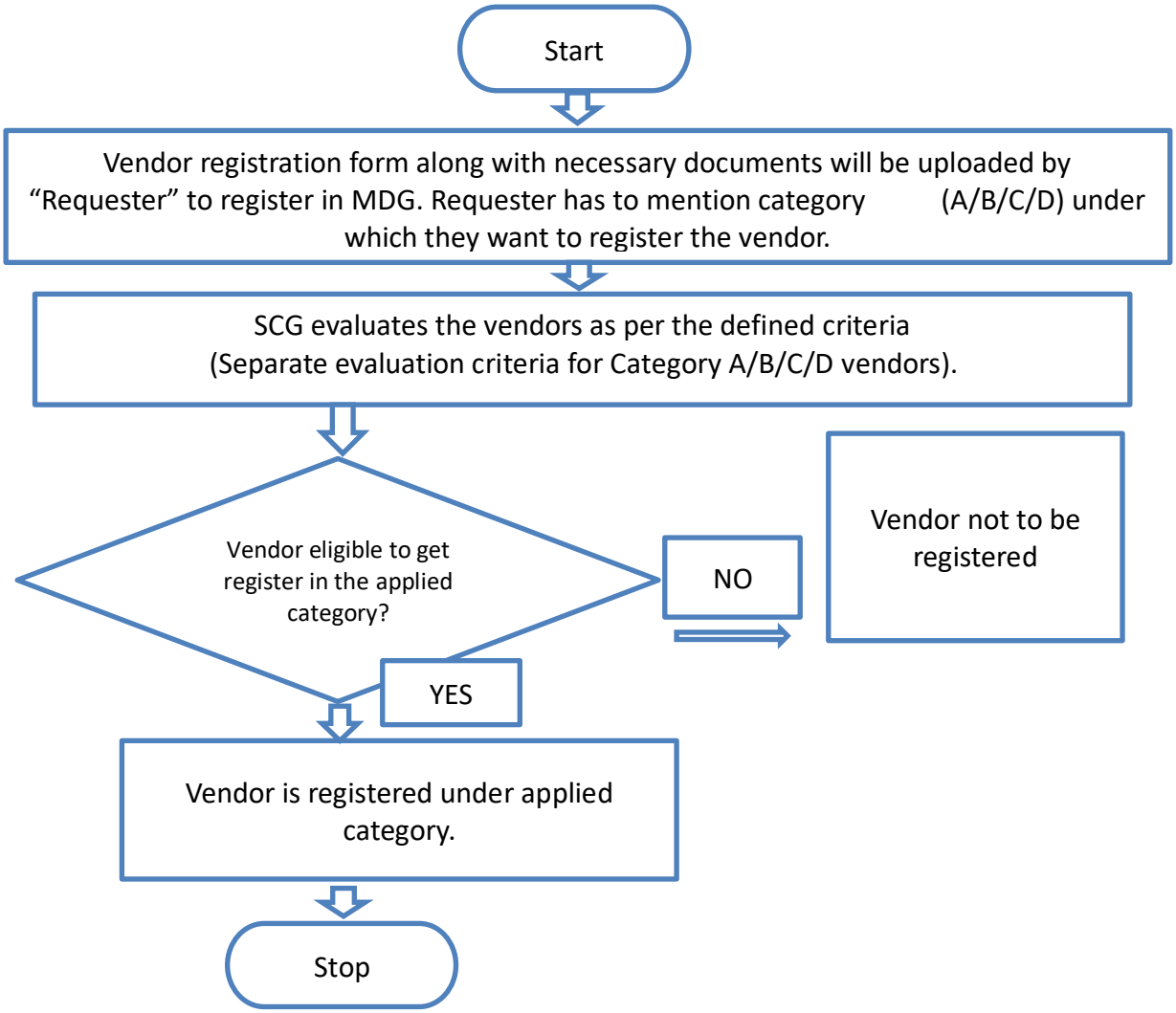
Otherwise the RFQ will be attached only with Safety Terms and Conditions. Long term and low value jobs (see definition) are exempted from the CSCC process.

Corporate Contracts will collect duly filledCSM-F7 Safety Competency Form along with the bid. All other stakeholders will also put their efforts to get all relevant safety data during meeting / discussions with the vendor. SCG will evaluate the document as per the CSM-F9 Safety bid evaluation criteria. If any specific condition related to Contract is required to convey to contractor, Site safety team will attach the same as Annexure for specific conditions of job and submit it to contract team along with safety bid evaluation form. Commercial bid of contractor will be considered for evaluation by contract team only if contractor is qualified in safety bid. Site Safety Management Plan, defining the complete procedure of executing the job at site will be signed by the contractor and SCG after mutual agreement. CC will attach a copy of site safety Management Plan and any specific condition of contract along with PO to the successful bidder. Please refer Appendix 6: Process Flow Chart for issuing RFQ and PO significant health and safety risk associated with it.

5.3 Safety Performance Evaluation

During the time of job execution, regular site inspection will be carried out by the Tata Power officials and violations will be dealt as per CSM–F4 Safety Violation Penalty Criteria. Apart from this, monthly safety performance of the contractor will be evaluated based on the predetermined criteria as per CSM-F11 safety Performance Score and monthly score will be maintained by the Order Manager. Certain percentage of each running bill will be retained as Safety Retention amount and will be released on the basis of Safety Performance Score at certain intervals as defined in CSM- F-3- Safety Performance Evaluation Criteria. Please refer Appendix 10: Process Flow Chart for Safety Performance Evaluation. Percentage of retention amount is mentioned in safety terms and conditions.

Appendix 1: Process Flow Chart for Vendor Registration



Appendix 2: CSM-F-1 Safety Category Qualification form

1. "**Safety Category Qualification Form**" is part of vendor registration form. It needs to be filled by the contractor at the time of Registration and should submitted to Requester / order manager with all relevant documents.
2. The same will be evaluated by Safety Concurrence Group of the Division (SCG) as per the criteria given in CSM-F-5.
3. Information provided by contractor will be verified during site visit.

Safety Category Qualification Form

Please Consider my application for

Category A Vendor: Vendor eligible to carry out Very High- and High-risk O&M jobs
Category B Vendor: Vendors eligible to carry out technical jobs, classified as Medium / low risk
Category C Vendor: Vendors eligible for to carry out low or very low risk administrative and office jobs
Category D vendor: All Consultants, Medical Practitioners or vendors taking job from Tata Power and working from their own premises.

<table>
<tr><td colspan="4">Name of the Vendor:</td></tr>
<tr><td>Sr. No</td><td>Safety Information</td><td>Remarks</td><td>Attachment</td></tr>
<tr><td>1</td><td>Certified for
i. OHSAS 18001/ ISO 45001,
ii. ISO: 14001
iii. ISO: 9001
(ISO certificates to be issued from reputed accreditation agencies specified by Tata Power)</td><td>i. Y/ N
ii. Y/ N
iii. Y/ N</td><td>Attach copy of the certification</td></tr>
<tr><td>2</td><td>Safety Statistics for Last Three (3) Years
- LTIFR
- LTISR</td><td>Yes/No</td><td><table><tr><td></td><td>Year 1 (Last FY)</td><td>Year 2</td><td>Year 3</td></tr><tr><td>LTIFR</td><td></td><td></td><td></td></tr><tr><td>LTISR</td><td></td><td></td><td></td></tr></table></td></tr>
<tr><td>3</td><td>Do you have Safety Policy?</td><td>Yes/No</td><td>Attach copy of the safety policy.</td></tr>
<tr><td>4</td><td>Do you have Safety training process?</td><td>Yes/No</td><td>Attach safety training process.</td></tr>
<tr><td>5</td><td>Do you have Safety organization structure e.g. Safety Officers and Safety Committees?</td><td>Yes/No</td><td>Attach copy of the safety organization structure.</td></tr>
<tr><td>6</td><td>Name and address of sites where work is in progress or worked earlier</td><td>Yes/No</td><td>Site details to be attached for inspection by Officials.</td></tr>
</table>

Signature :
Name and Designation :
Stamp of Organization :

Appendix 3: Safety Terms and Conditions

Please refer the attached document Safety Terms and Conditions.

Appendix 4: CSM- F-3- Safety Performance Evaluation Criteria

1. A certain percentage of the bill value will be retained against every running bill as safety performance retention. The amount will be released with the last invoice or every six-month based on Safety Performance Score of contractors. The retention amount will be calculated based on contract value as below.

Contract Value	Retention Amount (%)
Up to 10 Lakhs	2.5
10 – 50 lakhs	2
0.5 to 10 Cr	1.5
>10 Cr	1

2. The evaluation criteria include Lead Indicators such as CFSA (Contractor Field safety Audit) score, percentage of workers trained in TPSDI, inspection of critical equipment. Lag indicators such as Fatalities, LWDC and man days lost.
3. The retention amount saved will go to a separate Safety Improvement Fund.
4. For the contract value of more than Rs 1 Cr or contract duration more than 12 months, the retention amount shall be released half yearly based on safety performance. For all remaining contracts, the retention amount will be released with the final bill.
5. Long term jobs with low value (Less than Rs. 1 Cr.) are exempted from the safety retention. Invoice of these type of jobs can be cleared without safety retention.
6. In case of job stoppage due to safety violations / unsafe observations at the site, no time extension shall be given to the contractor, if such delays are attributable to contractor.
7. In case of fatality, limb loss or loss of property, vendor must pay for liability, legal, statutory and additional mutually agreed settlement charges imposed by the appointed committee. This charge is over and above the retention amount.
8. The committee will finalize an amount between 5 -50 lakhs based on factors such as advise by statutory authorities, contract value and impact of accident etc.
9. Safety performance bonus 1% (limiting to 50 lakhs) of the invoice value will be considered at the end of the job if the contractual safety performance score 100%.
10. During the progress of the work, concerned Supervisor/Engineer will visit and inspect the work site regularly and evaluate the safety performance of the contractor based on matrix attached herewith and apply the Consequence management policy as applicable.
11. Order Manager, divisional chief and SBU head have the authority to terminate the contract in case of three consecutive serious violations.

Safety Performance Evaluation report- CSM-F-3

	Lead Indicators	Unit Of measurement	Target	weight age
1	% of Employee certified in TPSDI/Authorized agency	%	50%	10
2	CFSA score (Annexure 6.1)	Average Severity of Violations	1.49	20
3	Monthly inspection completed by contractor for Critical Equipment, lifting Tools & Tackles and hand tools used at site as per Tata Power Checklist	%	80	5
4	Revalidation of Condition of tools, tackles and equipment by Order Manger.	%	100	15
	Lag Indicators			
1	Number of Fatalities	No.	0	30
2	Number of Lost workday case (LWDC)	No.	0	10
3	Man-days Lost	No.	0	10

Appendix 5: CSM- F-4 Safety Violation Penalty Criteria

Penalty shall be imposed on the contractors under the following circumstances for breaching the contractual agreements:

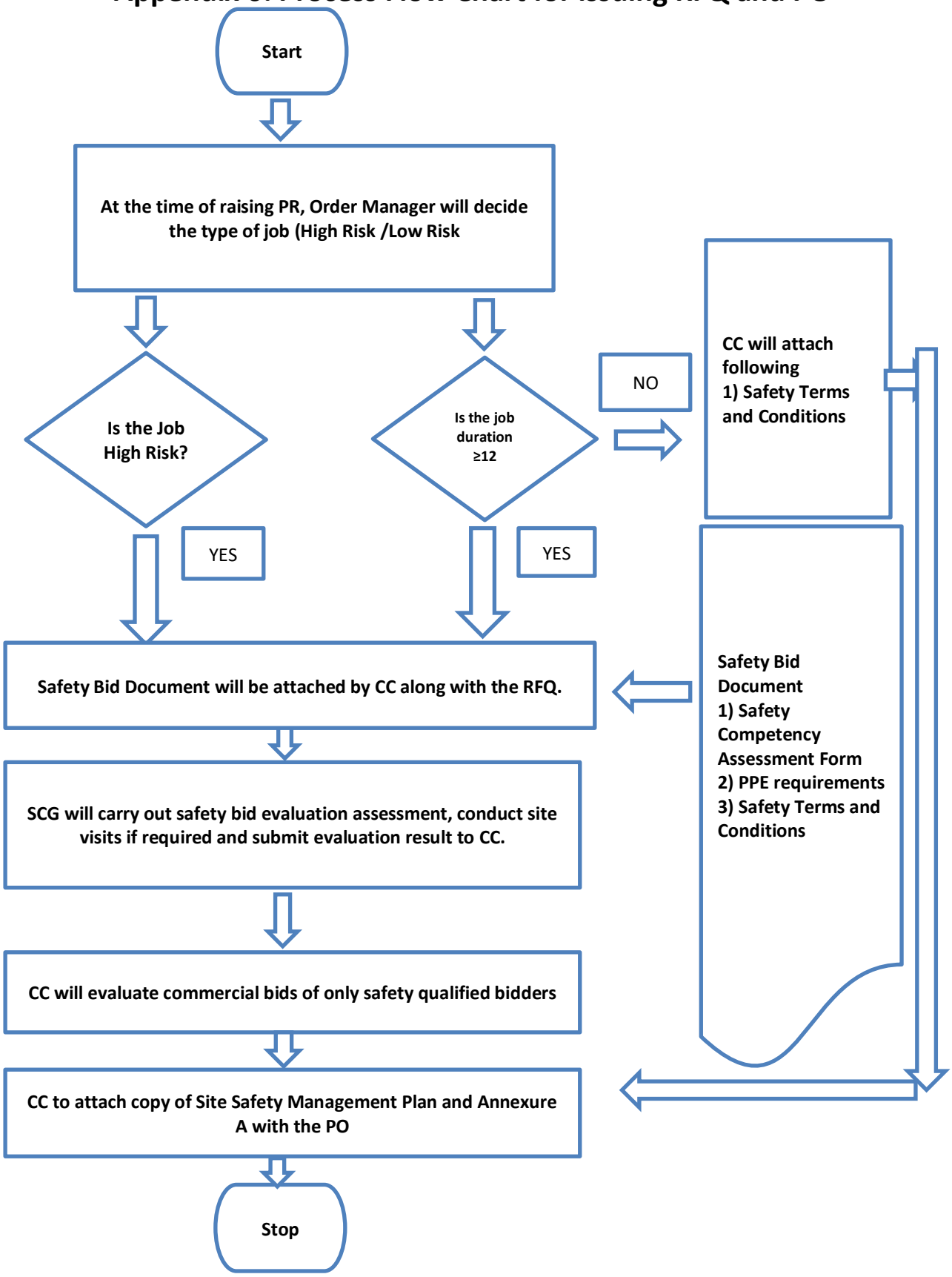
Sr No	Description of violation	Severity	Penalty
1.	Working without Permit	5	5000/-
2.	Untrained (TPSDI) worker on high-risk jobs.	5	5000/-
3.	Unhygienic/Bad condition of PPE	2	250/-
4.	Not following Tata Power Procedure & Standard	4	2000/-
5.	Unsafe Act/Condition of Severity 4	4	2000/-
6.	Unsafe Act/Condition of Severity 5	5	5000/-
7.	No Earthling of Electrical equipment	5	5000/-
8.	Damaged welding cable	5	5000/
9.	Violation of Positive Isolation Procedure (LOTO Not followed)	5	5000/
10.	ELCB of more than 30 mA/ELCB not working	5	5000/
11.	On/Off switch of welding m/c not working	5	5000/
12.	Electric cable tied with metal wire	5	5000/
13.	Leakage found DA hose / cylinder	5	5000/
14.	Use of LPG	5	5000/
15.	Use of IC engine based Three-wheeler at the work site.	5	5000/
16.	Starting the job without Toolbox Talk	5	5000/
17.	Spatter falling on DA hose / Gas-line/ pathways / Equipment	5	5000/
18.	No safety latch in crane hook	5	5000/
19.	Load raised or swung over people or occupied areas of buildings	5	5000/
20.	Persons standing in swing area of construction equipment.	5	5000/
21.	Using damaged slings.	5	5000/
22.	Unstable scaffolding/nonstandard Scaffolding in use	5	5000/
23.	Handrails and mid-rails are missing	5	5000/
24.	Safety Harness not anchored with lifeline/fixed structure	5	5000/
25.	Fall arrestor not provided/ Not being used.	5	5000/
26.	Double lifeline not used for working at height	5	5000/
27.	No rubber mat in Electrical Distribution (DB) room	4	2000/-
28.	Water found accumulated in Electrical Distribution room/near welding machine.	4	2000/
29.	Inserting electric cables into socket, without using plug.	4	2000/
30.	Use of damaged electrical cable/two core cables.	4	2000/
31.	Inflammable material found in Distribution Room / welding areas.	4	2000/
32.	Loose material falling into excavated pit	4	2000/
33.	Water logging into excavated pit /trenches	4	2000/

34.	No / inadequate Barricade	4	2000/
35.	Undercut / cave-in found on sides of excavated pits	4	2000/
36.	Grinding wheel/ Coupling/ Piling winch/other rotating parts without guard	4	2000/
37.	The HMV/Mobile Crane operator does not have a valid HMV driving license.	4	2000/
38.	The loading area is not leveled properly.	4	2000/
39.	Ladder not anchored at top	4	2000/
40.	Opening found in working platform of scaffolding/floor	4	2000/
41.	Inadequate illumination at the working area	4	2000/
42.	Loose material lying on Gantry, platform	4	2000/
43.	Cleaning with Compressed Air.	3	500/-
44.	Gas Cylinders using without cap.	3	500/
45.	Gas Cylinders stored without securing	3	500/
46.	Bringing inside any other chemicals, apart from approved by Safety dept.	3	500/
47.	Using drum for sitting or accessing height.	3	500/
48.	Misusing emergency facilities like fire hydrant line/ hose box/ spray system/ eye wash etc.	3	500/
49.	No provision of Safety net where falling materials or tools may occurs	3	500/
50.	Taking electrical supply from non-designated outlet (other than socket).	3	500/
51.	Restricted gangways due to unwanted materials.	3	500/
52.	Not reporting incident.	3	500/
53.	Entering into restricted area like switch yard/ hazardous storage	3	500/
54.	Work without supervision	3	500/
55.	Parking of vehicle without applying wheel choke at right front-front and left rear-rear wheels other than passenger cars.	3	500/
56.	Heavy Vehicle without helper or co-driver.	3	500/
57.	Not wearing florescent safety jacket at site.	3	500/
58.	People travelling in load body of vehicle.	3	500/
59.	Parking of vehicles at non designated area.	3	500/
60.	Shifting heavy materials without guide ropes.	3	500/
61.	Using other than 24V lamp inside the confined space/Use of other than 24V lamps.	3	500/
62.	Angular loading/ lifting with Crane or hoist.	3	500/
63.	By passing the limit switch/ Safety Interlock.	3	500/
64.	Housekeeping activities on road without proper barricade.	3	500/
65.	Trying to board or alit from running vehicle.	3	500/
66.	Cylinder Valves of Gas cylinders not closed when not in use.	3	500/
67.	Flash-back arrester not used.	3	500/

68.	Hand Trolley wheel found damaged.	3	500/
69.	Guy ropes of required length on both sides of object are not used during movement with load.	3	5/ 00/
70.	Scotch block/wedge not provided, when the vehicle is parked.	3	500/
71.	Suitable Trolley not provided to hold the cylinders.	3	500/
72.	Locked First Aid box	3	500/
73.	Caution boards, danger signs (luminescent /red) along with emergency contact number are not found displayed.	3	500/
74.	Person found jumping barricading tape	3	500/
75.	Stacking of pipes, pile casing, drums without chock blocks/wedges	3	500/
76.	The terrain on which Heavy Equipment/Machinery moves is not reasonably hard.	3	500/
77.	Without Safety Helmet at working sites	4	250/-
78.	Without Crash Helmet (on bikes)	4	500/-
79.	Without Full body double lanyard Safety Harness (for work at height)	5	5000/-
80.	Without Hand gloves - Material Handling, Welding, Cutting,	4	100/-
81.	Without Safety goggles/ face shield - Welding/Cutting /Grinding	5	5000/-
82.	Handling Chemical without PVC Apron	5	5000/-
83.	Smoking in prohibited area (Closed Go-downs, Storage of flammable material, Storage of Gas cylinders)	5	1000/-
84.	Sleeping at Workplace	3	100/-
85.	Driving beyond speed limit	3	1000/-
86.	Seat Belt While Driving (for front seat passengers and driver)	3	500/-
87.	Driving without license	4	1000/-
88.	Heavy Commercial vehicles without reverse horn	3	500/-
89.	Nonfunctional Head light/ taillight and side indicators	3	100/-
90.	Using Mobile Phone During Driving	5	5000/-
91.	Poor visibility of registration number/ without registration number	3	100/-
92.	Broken/ without Side view mirror	3	100/-
93.	Over speeding above specified limit	3	500/-
94.	Broken/ Without Pressure gauge on Oxygen/ LPG / Acetylene cylinder.	3	500/-
95.	Without Flash back arrestor on Industrial Acetylene & Oxygen cylinders.	5	5000/-
96.	Spillage of hazardous material/chemicals during transportation	4	2000/-
97.	Electrical equipment without Earthing/ ELCB/ Double Insulation Cable.	5	5000/-

98.	Lifting Tools & Tackles used without/ expired Test Certificates.	5	5000/-
99.	Housekeeping repeatedly not maintained		
100.	• First Time	3	Warning
101.	• Second Time	4	1000/-
102.	• Third Time	5	5000/-
103.	Serious Violation of House Keeping (after 1st or 2nd warning to be decided by Project Manager depending on the severity)	5	Rs.10000/- and above
104.	Repeat Violation of same nature	5	5 X Penalty for Violation
105.	Appointment of subcontractor without his Safety Bid Evaluation and/or without the permission of engineer in charge or Order manager.	5	5% of Contract Value

Appendix 6: Process Flow Chart for issuing RFQ and PO



Appendix 7: CSM-F-7 Safety Competency Form (Template)

Name of the Vendor/Bidder : -

Name of the Sub Vendor (If job is given to Sub Vendor) : -

Description of the Job : -

Request for Quotation (RFQ) No. :-

Vendor/Bidder to mandatorily provide the below safety competency related information.

1. Proposed Manpower Deployment Schedule : -

Category of Manpower Deployed	Minimum Qualification & Experience	Proposed Numbers against each category month-wise			
		Month 1	Month 2	…	Month n
Project Manager					
Site-In-Charge (Site Manager)					
Shift-in-Charge					
Safety Officers					
Supervisors					
Technicians					
a……					
b……					
Highly Skilled Workmen					
a……					
b……					
Skilled Workmen					
Semi-Skilled Workmen					
Unskilled Workmen					
Total Manpower					

Instructions to Bidder to fill:

1. Bidder to provide the overall site manpower deployment schedule as above.
2. Bidder to indicate (through colour code mentioned below) their direct and sub-contracted employees

Direct bidder employee
Partly Direct / Partly sub-contracted
Sub-Contracted

3. Against each of the category, bidder to indicate the minimum qualification and experience of the proposed manpower.
4. Rows can be added to also identify other specialised manpower e.g. specific details to be included for high risk activities operators
5. Columns can be extended to the actual duration of Site activities.
6. Bidder to note that if operations is in shifts, then Shift-in-charge / safety officers are required for each shift of operation.

2. List of Tools, Tackles, Machines and Equipment: -

Bidder/ Vendor to provide the list of tools, tackles, equipment **to be used during the job / project execution**. Bidder/Vendor to ensure that all the lifting tools and tackles, pressure vessels are duly certified by the competent person authorised by the Chief Inspector of Factories of the respective state prior to start of the job

Sr. No.	Description of Tools / Tackles	Capacity / Rating	Quantity	Make	Remarks
1					
2					
3					
4					
5					
6					
7					
...					

3. Safety Records:

Bidder to provide the details of fatalities and lost workday cases (LWDC), occurred in last three years (data to be provided for the last completed FY and preceding 2 years).

Description	Safety Data for Last 3 Years		
	Year 1 (Last FY)	Year 2	Year 3
	20__ - __	20__ - __	20__ - __
Fatalities (Nos.)			
Lost Workday Cases (Nos.)			

In case of no fatalities, LWDC during any year, the form may be filled stating NIL against the respective year. Bidders are encouraged to also submit the RCA / incident investigation reports and the learning's implemented out of the above reported incidents

4. Job Safety Plan/ Method Statement:

Bidder to provide / enclose a detailed Site/Job Safety Plan along with a Method statement detailing the execution philosophy (how the bidder intends to execute the Job/Project), identifying all key activities which are required to be performed by the contractor at Site. Bidder to also list down all high-risk activities and provide the Hazard Identification and Risk Assessment (HIRA) for all such high-risk activities involved in the site work.

(Use Method Statement template attached as annexure A and sample as attachment B)

5. Management System Certification: -

Sr.	Certification	Yes / No	If Yes, Year of Certification	If No, Target date for Certification
	ISO 9001			
	ISO 14001			
	OSHAS 18001 / ISO 45001			
	Any other (please specify……			
Note: Please attach certificates to support above. In case not accredited for above but applied for, application letters may be attached.				

Appendix 8: CSM-F-8 PPE requirements

The Contractor shall ensure that the following PPE of Approved standards shall be available at all time and shall be used by his employees with no exception whatsoever.

1	All contractor's employees at site	Safety Florescent Jacket (orange color), Safety helmet & safety shoes with Composite or steel toe cap
2	Workers mixing asphalt, cement, lime / concrete	Safety goggle & protective Hand gloves and footwear, Nose mask.
3	Welders / Grinders	Welding screen/goggles, safety shoes, leather hand gloves, aprons, leg guard
4	Stone breaker	Protective goggle, hearing protection, anti-vibration hand gloves and Protective clothing.
5	Electricians	Rubber hand gloves & Electrical resistant shoes.
6	Workers engaged in insulation using glass wool etc.	Respiratory mask & leather Hand gloves, goggles.
	Workers engaged in coal handling plant, ash handling plant and working in high dust area.	Dust mask, Hand gloves, protective goggles.
7	Workers working at a height of 1.8 Meter or above.	Double lanyard full body harness, fall arrestor and safety net made of reinforced nylon fiber ropes firmly supported with steel structures

• **PPE shall be conforming to BIS/DGMS/DIN specifications, in good condition and shall be comfortable to his employees, when used.**

Appendix 9: CSM- F-10 Site Safety Management Plan / Method Statement

Site Safety Plan / Method Statement (Template)

This Method Statement describes the specific safe working methods which will be used to carry out the described work. It gives details of work procedure with control measures to counter health and safety issues related to this work. The listed content of this Method Statement can be changed/modified subjected to job scope / specifications, but task specific method statement once finalized & approved, that should not be modified during work execution without permission from the approving authority.

Project/Job Name			
Scope of work: -			
Drawing References: -			
Detail of Sub contractors involved: -			
Method Statement Prepared By: - Designation: - (e.g. Site Manager)		Signature	Date

1.0 Introduction (*Describe purpose of the work, give details of type and scope of work being carried out);*

2.0 Location of Work (*Give site address and precise location on site where work is to be carried out.)*

3.0 Safety Document /Specific Approval Required (Details of any safety documents or specific approval i.e. Client specific approval required to undertake the work)

5.0 Role & Responsibilities of Personnel/Parties Involved in activities: -Clearly define role and responsibilities of all personnel involved in activity i.e. Site management staff including subcontractors' parties- Main contractor Project/Site Manager, Sub Contractor Site Manager, Project Engineer, Safety officer, Competent Supervisory Staff)

6.0 Working/Activity Description: - It *is important that all operatives should have clear idea of those operational sequences and responsible supervisor must verify their competency prior to their engagement in operation.*

6.1 Pre-Working Checks

6.2 Resources (Equipment, tools including manpower) Details *i.e. Equipment and Tools, specific operational equipment, test kits, lifting resources, Details of materials to be used in operation, including any reference to COSHH assessments in case of use of any chemicals, Details of the manpower allocated to the task, e.g. titles, qualifications, competences, direct manpower, contractors. Details of plant, tools and equipment to be used for the work, including the availability of relevant statutory documents, checks or inspections etc. Details of fencing, barriers, cones, chains, dangers notices, warning signs etc.*

Tools required for work:

Sr.No	Tools /Equipment /Machine	UOM	Required Qty.	Remark
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

6.4 Operational Sequence of work: - *Full description of the work, setting out the methodology in a sequential manner, including any reference to any identified operational restraints. Also refer here sec. 5.0 responsibilities part for every step of work sequence).*

Sr.No	Activity	Details of job sequence	Risk Involved	Control Checks
1.		1.		
2.				
3				
4				
5.				

6.7 Final Checks & restoration of work area after completion of work :- *Those checks to be carried out by responsible supervisor in witness of his line hierarchy by use of specific checklist of certain operational checks and once those completed satisfactory, PTW (if applicable) to be closed and isolation arrangements to be restored by removing barricades/cautionary tags.*

7.0 Task Specific Hazards: - *Refer to Task Specific Risk Assessment and attach in appendix*
Attachment: - Specific Risk Assessment
In addition, please provide below control measures in risk assessment *(as applicable).*

Fall Protection Measures: (Where Work at height cannot be avoided)							
Control Measures for Electrical Hazards							
Others Hazard if any (please provide details)							
Hazardous Substances to be used in job : (Attach MSDS if required)	 Acute Toxic	 Health Hazard	 Corrosive	 Dangerous For the environment	 Oxidising	 Highly flammable	 Explosives
	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No	Yes /No

7.0 Emergency Provisions: -*Relevant operational possibility of a programme in the case of emergency situation i.e. electrical supply restoration. In addition emergency response provisions i.e. first aiders, fire fighting, and first aid arrangements, nearest onsite/offsite emergency response also to be considered during emergency planning.*

8.0 "5S issues" / Waste Disposal/ Housekeeping and Environmental issues: -*Details waste disposal processes and or housekeeping activities, Details of environmental impacts and control measures.*

9.0 Personal Protective Equipment (PPE):- (*Tick on PPE requirements for the task/Job*

Required Personnel Protective Equipment:	 Safety Boots	 Hard Hats	 Safety Gloves	 Hearing Protection	 Eye Protection	 Respiratory Protection	Other: 1. Hi-Viz 2. Coveralls 3.

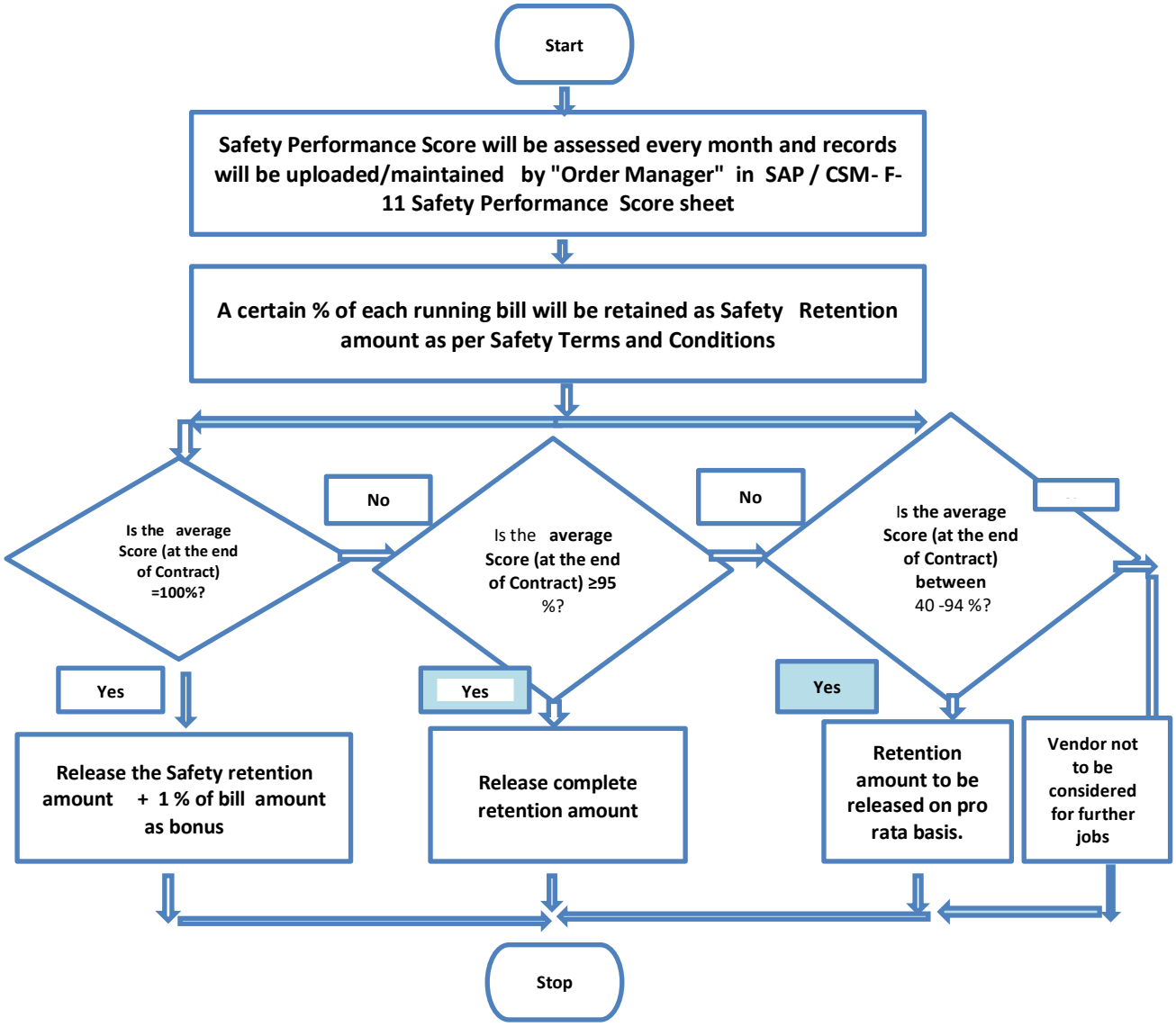
10.0 First Aid facilities and Nearby Hospitals Details

 First Aid Facilities:	Name of On-Site First Aider:	
	First Aid Box Location:	
	Location of Nearest Hospital:	

11.0 Occupational Health, Fitness and COVID-19 related Preparedness:

1. Please give a brief writeup / methodology of your organization planned to avoid impact of the COVID-19 pandemic at Tata Power working site. 2. Please give brief details of occupational health and hygiene related interventions planned by your organisation to ensure good health and fitness of workforce at Tata Power site.

Appendix 10: Process Flow Chart for Safety Performance Evaluation



Appendix 11: CSM- F-11 Safety Performance Score

Sr. No	Parameter	Unit of Measurement	Target	Weightage	Actual Performance	Actual Score
Lead Indicator						
1	% of Employee certified in TPSDI/Authorized agency	Number	50%	10		
2	CFSA score (Annexure 6.1)	Average Severity of Violations	1.49	20		
3	Monthly inspection completed for Critical Equipment, lifting Tools & Tackles and hand tools used at site	Number	80%	10		
4	Condition of critical tools, tackles and equipment	Number	100%	10		
Lag Indicator						
1	Number of Fatalities	No	0	30		
2	Number of Lost workday case (LWDC) (reportable)	No	0	10		
3	Man-days Lost	Man-days	0	10		
					Final Score	
					Invoice Value	
					Amount to be released	

Safety Performance Evaluation Criteria

Lead Indicators

	Target			
% of Employee certified in TPSDI/Authorized agency	50%	100%	Less than 100%	
Score		10	5	
	Target			
CFSA score	<=1.49	1.5 to 2.5	2.51 to 3.5	>=3.51
Score	20	15	10	0
	Target			
Monthly inspection completed for Critical Equipment, lifting Tools & Tackles and hand tools used at site	>=80%	79 to 50%	<50%	
Score	10	7	0	
	Target			
Condition of critical tools, tackles and equipment	100%	<100%		
Score	10	0		

Lag Indicators

Number of Fatalities	0	>0	
Score	30	0	
Number of LWDC (reportable)	0	>0	
Score	10	0	
Number of man days lost	0	1 to 5	>5
Score	10	5	0

Appendix 12: CSM-F-5 Safety Potential Evaluation Criteria for Vendor Registration

At the time of vendor registration, vendor will be registered under 3 categories

1) **Category A**- Vendors eligible to carry out High risk Jobs
2) **Category B**- Vendors eligible to carry out technical jobs that are low risk
3) **Category C**- Vendors eligible to carry out administrative and office jobs
4) **Category D**- Outsourced Jobs / Consultants /Medical Practitioners / Suppliers etc

For vendors to be registered under **Category A**, a safety potential evaluation will be carried out based on following parameters.

Sr. No	Description	Weightage (%)	Actual Score	Remarks
1	Does the contractor have a valid ISO 45001/ OHSAS 18001/ Certification?	30		
2	During site visit check for safety adequacy at site	30		Annexure - 12.1
3	Check the Safety statistics of Contractor	10		Annexure - 12.2
4	Check the Safety orientation & training process of Contractor	15		Annexure 12.3
5	Check the organizational structure for safety professionals & engineers / supervisors.	10		Annexure - 12.4
6	Certified/skilled workers as a percentage of overall workforce	5		
	Total	100		

Evaluation Criteria for Category B

Sr. No	Description	Weightage (%)	Actual Score	Remarks
1	Does the contractor have a valid ISO 9001 certification?	30		
2	During site visit check for safety adequacy at site	30		Annexure -12.1
3	Check the Safety statistics of Contractor	10		Annexure -12.2

4	Check the Safety orientation & training process of Contractor	15		Annexure -12.3
5	Check the organizational structure for safety professionals & engineers / supervisors.	10		Annexure -12.4
6	Certified/skilled workers as a percentage of overall workforce	5		
	Total	100		

Evaluation Criteria for Category C

Sr. No	Description	Weightage (%)	Actual Score	Remarks
1	Does the contractor have a valid ISO 9001 certification?	40		
2	Check the Safety statistics of Contractor	40		Annexure - 12.2
3	Check the Safety orientation & training process of Contractor	20		Annexure - 12.3
	Total	100		

Annexure 12.1: Evaluation Criteria for Category D:

Category D does not require any evaluation as it is for outsourced job outside the Tata Power company premise.

Annexure 12.2

Check List – Adequacy of Safety Statistics of Service Provider			Actual Marks obtained	Remarks
1	Check the safety statistics for last 3 years (LTIFR and LTISR)	Statistics available: Marks 5; Statistics not available: 0		
2	Check the trend LTIFR for last 3 years	LTIFR value: 0 to 0.2 – Marks 5; 0.21 to 0.3 – 2.5; >0.3 – 0		
3	Check the trend of LTISR last 3 years	LTISR value: 0 to 2 – Marks 5; 2 to 3 – 2.5; >3 – 0		
4	Has there been any Prosecution/Conviction for any contravention with regard to Safety & Health provisions under the Factories Act /Electricity Act/ BOCW Act and Rules framed there under?	Marks: No Prosecution 10; Prosecution 0. To be provided in written on letter head		
	Total	**25**		

Annexure 12.3

Check List – Adequacy of Safety orientation & training process of Service provider			Actual Marks obtained
1	Records of safety trainings provided to safety officer/supervisor/workmen during last 1 year as percentage(%) of total employed by service provider	**Safety Officer** / Marks ≥80% of employees / 5 50 to 79 % of employee / 2.5 < 50% / 0 **Safety Supervisor** / Marks ≥80% of employees / 10 50 to 79 % of employee / 6 < 50% / 0 **Workmen** / Marks ≥80% of employees / 10 50 to 79 % of employee / 6 < 50% / 0	
	Total	25	

Annexure 12.4

Check List – Adequacy of organizational structure for safety professionals & engineers / supervisors.			Actual Marks obtained
1	Check availability of number of safety officers from government recognized institute as per workforce strength.	Marks 1 in 50 employees / 10 1 in 100 employee / 6 Any other / 0	
3	Check availability of qualified workforce from government recognized institute/TPSDI.	Marks 100% of safety officers qualified / 5 50 – 99% of safety officers qualified / 3 <50 / 0	
	Total	15	

Appendix 13: CSM-F-9 Safety Bid Evaluation Criteria.

The User has to select whether the job is high risk/ long duration at time of raising the PR.

1) The decision whether job is "**high risk** "or not has to be made by order manager on the basis of Risk involved (Risk Priority Number in HIRA) of the Jobs. An indicative list of high-risk jobs is attached as annexure
2) If a technical job is of low risk with estimated duration of the contract is 1 year or more the job should be treated as "**long duration**".
3) All Safety bids will be evaluated by Safety Concurrence Group. Structure of SCG will be declared by Corporate safety. Corporate safety team will audit bid evaluation process of a few selected jobs and Quality of evaluated safety Bids.
4) Records of jobs sent by for Safety Bid evaluation shall be maintained by Corporate Contract team in existing tracing sheet along with other jobs.
5) For Safety Bid Evaluation will be based on following parameters.

		Minimum Requirement	**Weightage (%)**	**Score Obtained**
Manpower	**Safety Officer (1 per 500 workers)**	**Qualification-** Officer shall possess Advance Diploma In Industrial Safety by state technical board. **Experience**- Minimum 1-year experience in relevant field as mentioned in the job in PR.	5	
	Safety Supervisor (1 per work site up to max. 50 workers)	**Qualification-** Supervisor shall possess ITI/ Diploma in relevant field. **Experience**- Minimum 2-year experience in relevant field as mentioned in the job in PR. **Training** – Trained and certified by TPSDI or equivalent institute in relevant safety procedures. **Note:** On request of the contractor/Users -TPDSI should vet & certify the skilled & experienced	5	

		Technician if Technical Qualification is not adequate.		
	Technician (Skilled workers as electrician, rigger, fitter, welder, cable jointer, line men etc)	**Experience**- Minimum 2 year experience in relevant field as mentioned in the job in PR. **Training** – Trained and certified by TPSDI or equivalent institute in relevant safety procedures.	5	
Tools & Tackles	Equipment / Machines/ Tools & Tackles(lifting and shifting tools)	The list of Equipment /Machines / Tools and tackles to be used for job to be submitted by the contractor. Evaluation of the list will be carried out based on 1) Suitability as per the relevant job 2) Make and age of the tools from authorized agencies defined by the user. 3) Certification by the competent authority of respective state.	30	
Safety Records	Safety Records	Safety Records for last 3 years (as per vendor or as per our knowledge) – Recommendation?	15	
Safety Plan	HIRA/Contract Job Safety Plan	Adequacy of HIRA and Job Safety Plan with respect to relevant job. More weight age will be given to vendor for using mechanized work and advanced tools and equipment	20	
Accredited Bodies certificate	ISO-9001	ISO-9001	2	
	ISO-14001	ISO-14001	3	
	OHSAS 18001 ISO 45000	OHSAS 18001/ISO 45000	15	
		Total Score		

6) Vendor entitled to carry out the job only when qualified for the safety evaluation as follows:

Contractor is qualified in safety bid only if his total score is more than 70% in all category 1 jobs such as high risk/long duration.

7) The Corporate Contract has to ensure that the vendor provides the filled "Safety Competency Form" along with the quotation.
8) Corporate Contract will forward the Safety Competency Form received from the contractor to the Safety Concurrence Group for evaluation.
9) In case SCG wants to visit the site, the Safety Competency will be based on evaluation at the time of site visit Annexure 13.1

Annexure -13.1:

Checklist to be used: During site visit to check the adequacy Safety systems.			
		Observation	Score* (1-5)
1	Check the adequacy of safety policy and Safety Management system of the contractor.		
2	Does the contractor have written down safety procedures?		
3	Check the records of Near miss, unsafe act, unsafe conditions and incidents.		
4	Check the organization setup to implement the safety systems at site (safety officer, safety supervisor)		
5	Check whether safety meeting and toolbox talk carried out regularly and records maintained or not.		
6	Is the process of incident investigation adequate or not?		
7	Verify incident reporting and recording system		
8	Check the usage of equipment/tools and tackles.		
9	Check for housekeeping at site		
10	Check the use of PPEs and general behavior of workforce towards safety		
	Total Score		
	Site Visit Score		

Score*- rating on the scale of 1-5 to be given based on the observations on site. Score of 1 is the lowest and core of 5 is the highest.

Appendix 14: CSM-F-11.1 CFSA Format

CONTRACTOR FIELD SAFETY AUDIT

Project Name :

Date:

Description of Severity rating:		**Audit Team:**	
	1 = Untidy area, minor issues, sets poor example		
	2 = Restricted access, unacceptable trash, disorderly		
	3 = Rule or procedure violation, potential injury		
	4 = Unsafe condition, serious injury potential		
	5 = Immediate serious injury potential, stop activity immediately and correct	**Audit Time:**	10:00hrs -11:30 hrs
		Weather:	cloudy

		Responsible		**Number Personnel Observed**		**Violations**			**Remarks**	Leading Indicators			
	Description	**Engineer**	**Contractors**	**Good Citizens**	**Violators**	**Number of Violations**	**Severity**	**Violations x Severity**		4 & 5	PPE	Unsafe Act	Unsafe Condition
Area													
1													
	Sub Totals			**0**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**
	% of Observed People Working Safely												
	Number of Violations												
	Average Severity of Violations												
	Number of Severity 4 & 5 Violations												
	% of 4 & 5 Violations												
	Approximate Number of Workers Observed												
	Number of People on Site												
	% of Workers Observed												

Appendix 15: Indicative List of High-Risk Jobs

To access the exhaustive list of High-risk jobs, please refer the following documents

1) High Risk Jobs- Generation
2) High Risk Jobs- T&D
3) High Risk Jobs- Renewable

Indicative List of High-Risk Jobs -Generation Cluster					
Sl. No.	**Jobs**				
1	Demolition / Painting of Chimney				
2	Survey Sounding Jobs in Sea				
3	Dredging at Coal Birth Jetty				
4	Maintenance / Testing and Replacement of Extra High Voltage (132 KV etc.) Switchyard equipment				
5	Maintenance of EOT Cranes				
6	Deep excavation (5 feet or more) near existing buildings /Structure s				
7	Working inside confined spaces (entry through manhole)				
8	Operation Maintenance of elevators				
9	Working on Live control Circuits for identification of faults				
10	Cable laying and termination Jobs				

Indicative List of High-Risk Jobs - T&D Cluster					
Sl. No.	**Jobs**				
1	Transmission Line Tower Erection on columns, near live lines, In congested areas, In creeks, In the Sea				
2	Conductor Stringing on Tower Using Tensioner & Puller in the area such as Line Crossing, Near Live lines, Congested Areas, Road Crossing, Bridge Crossing, Railway line Crossing, In creeks ,In the Sea				
3	Cable Pulling by Using winch Machine in City and Rural Areas				
4	Hot Washing of HT and Extra HT lines, Towers and switchyards equipment				
5	Installation of Lifts				
6	Installation of EOT Cranes				
7	Tower Dismantling				
8	Working on H Frame /Pole mounted Transformers				
9	Excavation in operational Area heaving power cables in receiving station				
10	Identification and spiking of cable / disconnection of cables from poles				

Indicative List of High-Risk Jobs - Renewable Cluster					
Sl. No.	**Jobs**				
1	Working on Electrical Panels				
2	Hi Potting of Equipment				
3	Battery commissioning and maintenance				
4	Working on the nasal of Wind Turbine				
5	Working on live electrical switchyard, material Handling and Equipment installation				
6	Roof Top Solar Panels Installation and maintenance				
7	Working in live Electrical Switchyard, Material Handling, equipment installation				
8	All maintenance activities that requires climbing on Towers /Structures / Transformer/ GODs				
9	Loading and Unloading of Solar Panels on trucks				
10	Structural Repair /Dismantling work at height.				

Annexure IX

Tata Code of Conduct (TCoC)

TATA CODE OF CONDUCT

The Owner abides by the Tata Code of Conduct in all its dealing with stake holders and the same shall be binding on the Owner and the Contractor for dealings under this Order/ Contract. A copy of the Tata Code of Conduct is available a tour website:

https://www.tatapower.com/pdf/aboutus/Tata-Code-of-Conduct.pdf

The Contractor is requested to bring any concerns regarding this to the notice of our Chief Procurement & Stores e-mailID: pravin.jain@tpcentralodisha.com.

Annexure X

Environment & Sustainability Policy

ENVIRONMENT & SUSTAINABILITY POLICY

CORPORATE ENVIRONMENT POLICY

Tata Power is committed to a clean, safe and healthy environment, and we shall operate our facilities in an environmentally sensitive and responsible manner. Our commitment to environmental protection and stewardship will be achieved by:

- Complying with the requirements and spirit of applicable environmental laws and striving to exceed required levels of compliance wherever feasible
- Ensuring that our employees are trained to acquire the necessary skills to meet environmental standards
- Conserving natural resources by improving efficiency and reducing wastage
- Making business decisions that aim towards sustainable development
- Engaging with stakeholders to create awareness on sustainability

(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

TATA POWER
Lighting up Lives!

CORPORATE SUSTAINABILITY POLICY

At Tata Power, our Sustainability Policy integrates economic progress, social responsibility and environmental concerns with the objective of improving quality of life. We believe in integrating our business values and operations to meet the expectations of our customers, employees, partners, investors, communities and public at large

- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the customers and adhere to our promised standards of service delivery
- We will respect the universal declaration of human rights, International Labour Organization's fundamental conventions on core labour standards and operate as an equal opportunities employer
- We shall encourage and support our partners to adopt responsible business policies, Business Ethics and our Code of Conduct Standards
- We will continue to serve our communities:
  - By implementing sustainable Community Development Programmes including through public/private partnerships in and around our area of operations
  - By constantly protecting ecology, maintaining and renewing bio-diversity and wherever necessary conserving and protecting wild life, particularly endangered species
  - By encouraging our employees to serve communities by volunteering and by sharing their skills and expertise
  - By striving to deploy sustainable technologies and processes in all our operations and use scarce natural resources efficiently in our facilities
  - We will also help communities that are affected by natural calamities or untoward incidence, or that are physically challenged in line with the Tata Group's efforts

The management will commit all the necessary resources required to meet the goals of Corporate Sustainability.

(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

TATA POWER
Lighting up Lives!

SUPPLIER MANUAL ANSWERING

TO

E-BIDDING & E-AUCTION

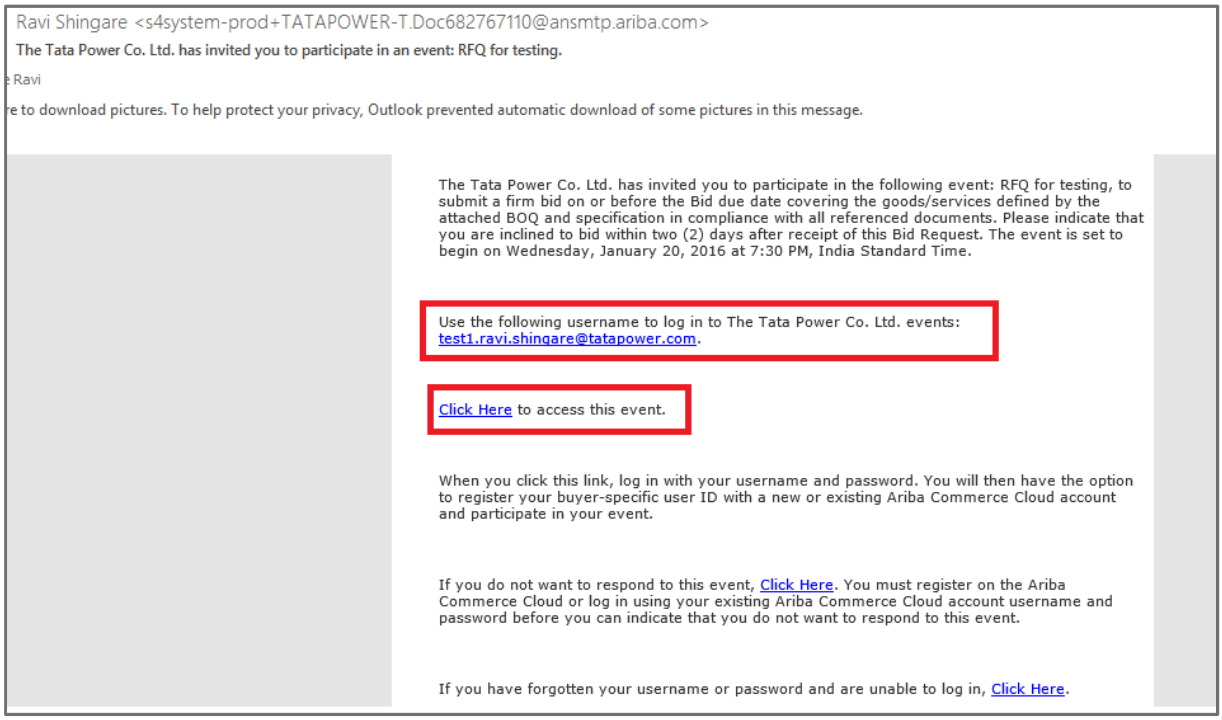
	Version 1.1
Company Confidential	DEC - 2016

INDEX

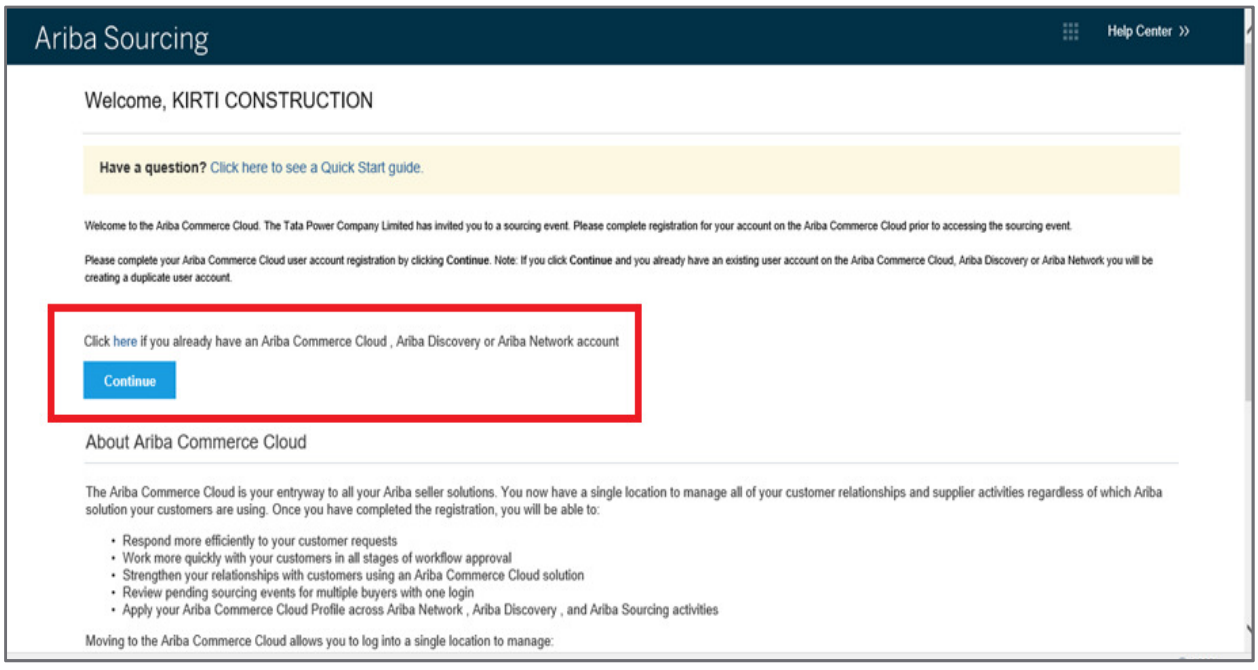
1- Accessing Ariba Sourcing

Step 1: You will get an invitation to your email from Ariba System. Keep this email, it contains your login Information and a direct link to Ariba.

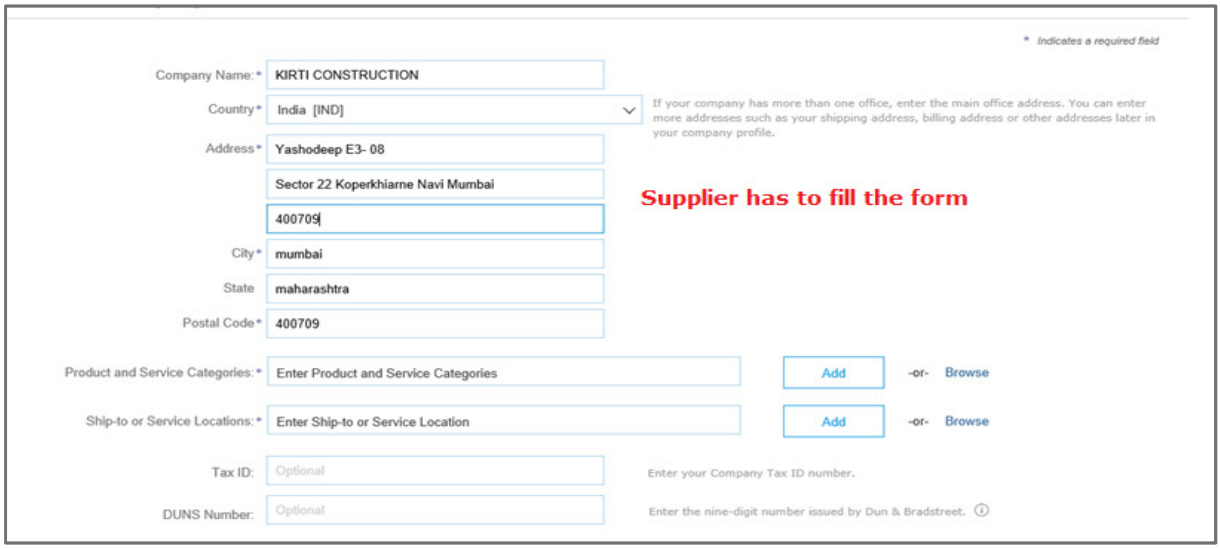
Step 2: Click “Click Here” to access the Ariba Web Site.



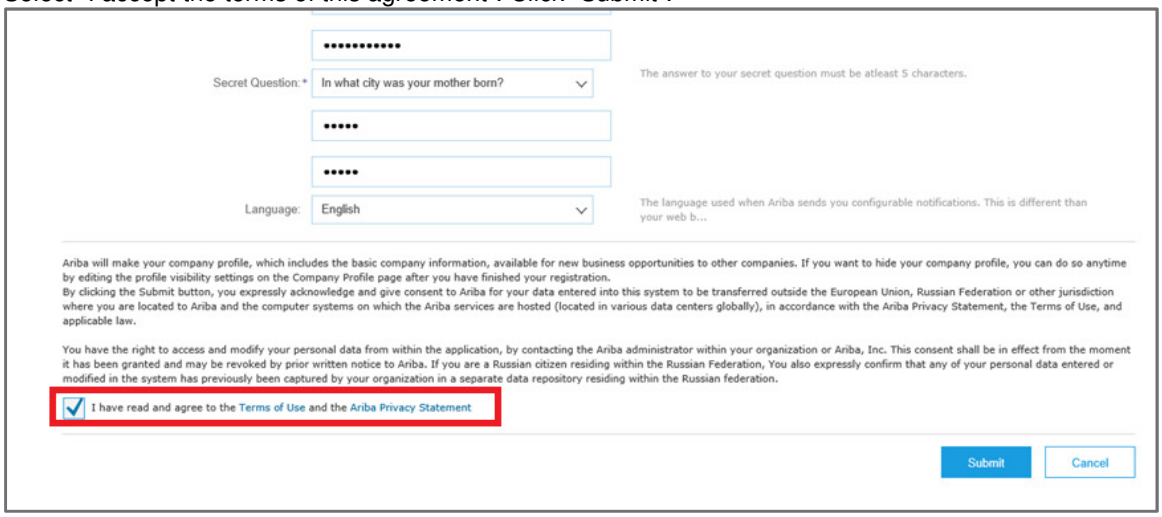
Step 3: Supplier has to click on "Continue"



Step 4: The registration process only takes a few moments, with a simple one-page registration Define your password and secret question. Click “OK”



Step 5: If it’s the first time you are invited to use UPM Ariba, you’ll need to accept the “Participant Terms”. Select “I accept the terms of this agreement”. Click “Submit”.

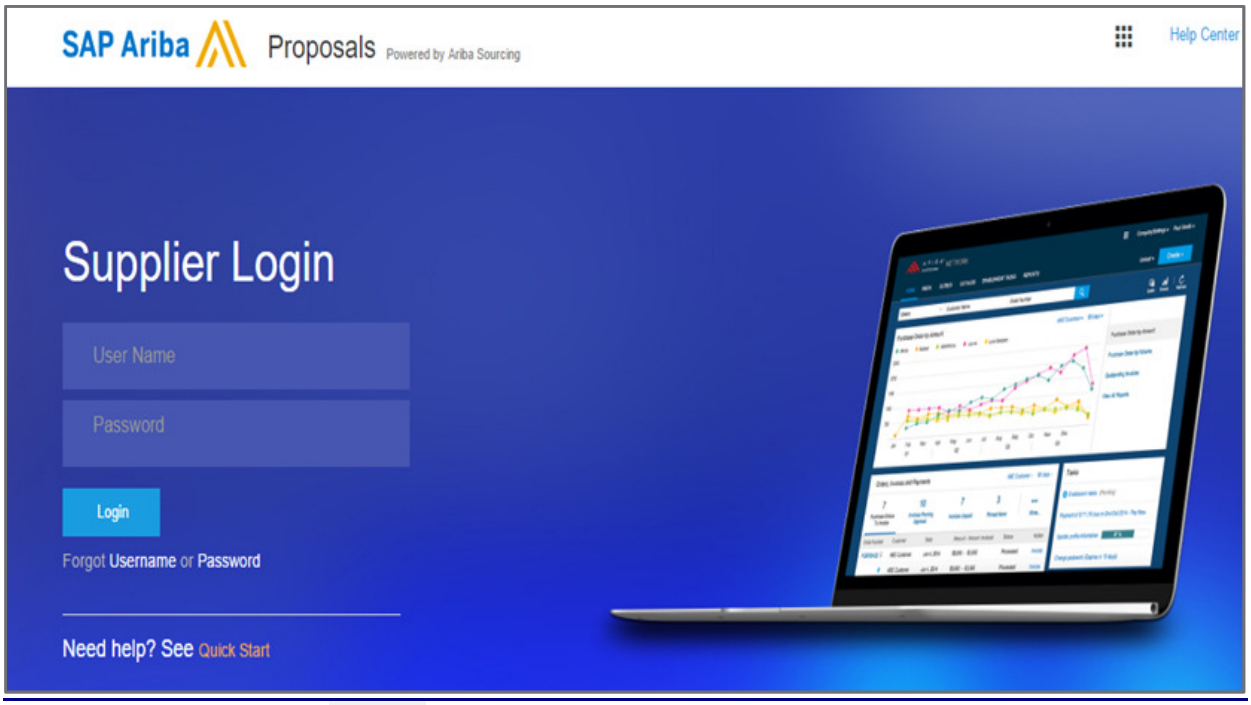


2 Vendor Screen

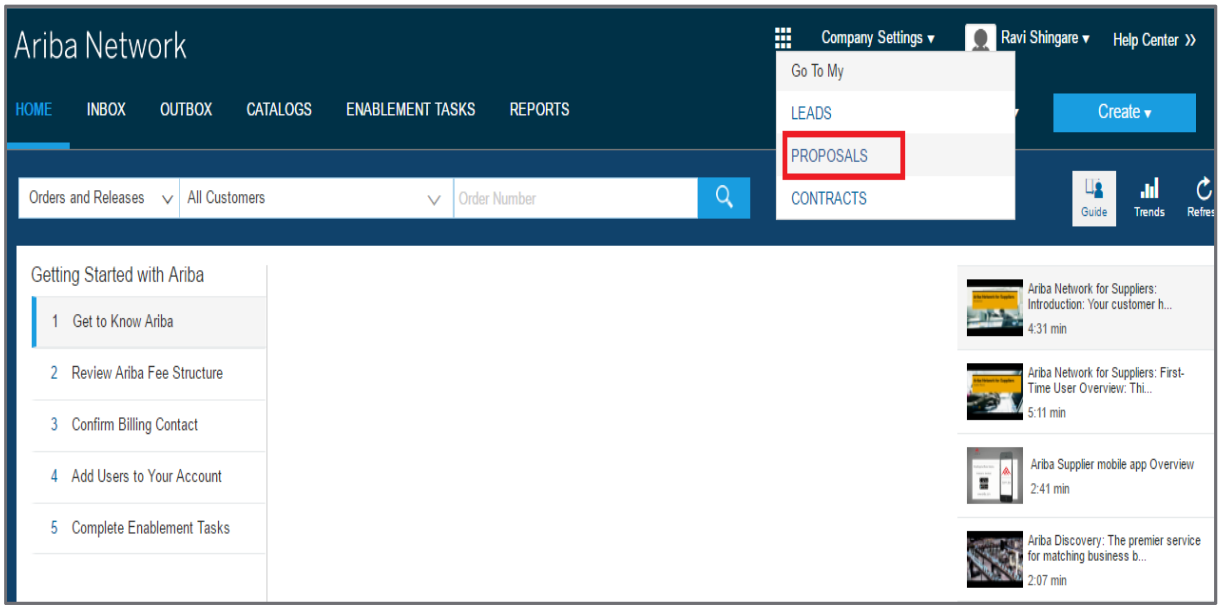
2.1.1 If vendor goes through mail invitation then directly Screen 3.1.1 will appear, but if If you have used Ariba before and have already accessed an event for the buyer-specific account with your current log in ID, click the **Login** button to continue. Log in with your Ariba username and password in order to participate in the event OR you have to follow the following steps.

Step 1 - Log on **supplier.ariba.com**

Step 2 - Put your USER ID and Password in following screen



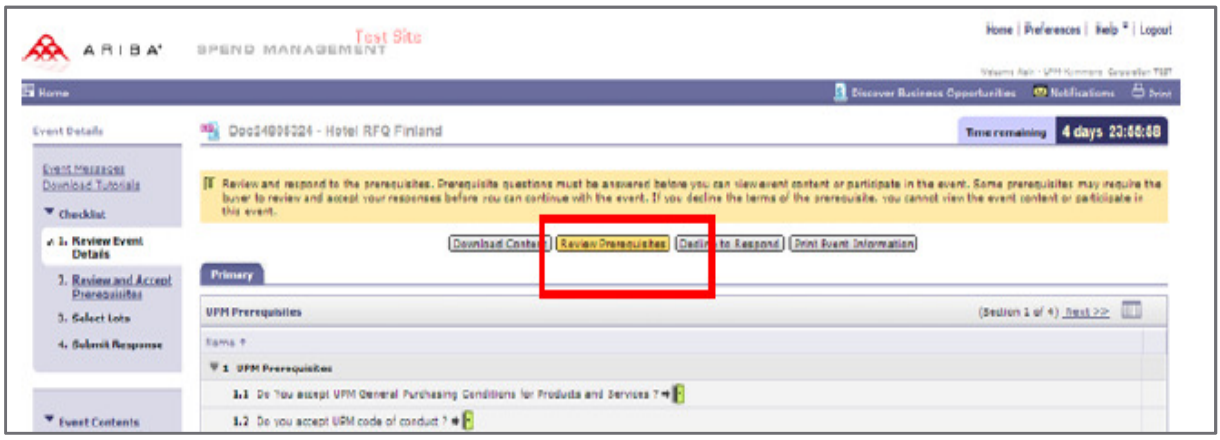
Step 3 - Go to ARIBA APPS  and click on Proposals.



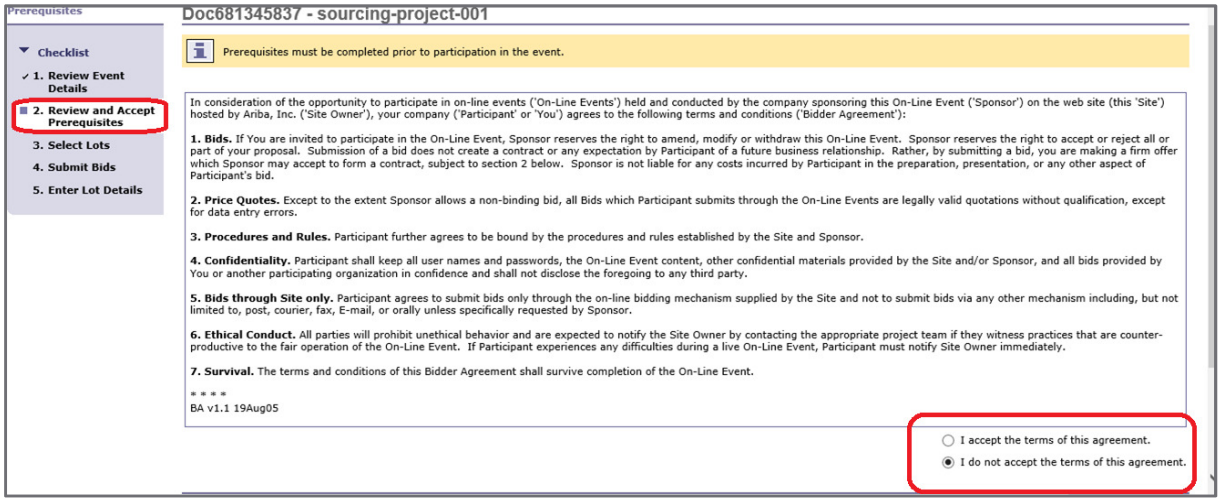
3 Submitting Your Answers / Proposal

3.1.1 Review and Approve “Prerequisites”

Step 1: Review and download all documents & then Click on “Review Prerequisites”



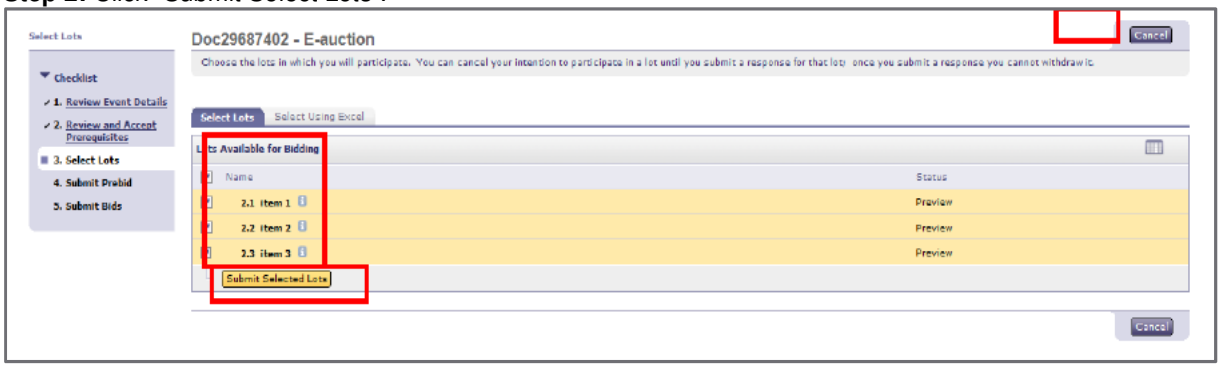
Step 2: Review and accept “Bidder Agreement”.



3.1.2 Select Items or Lots

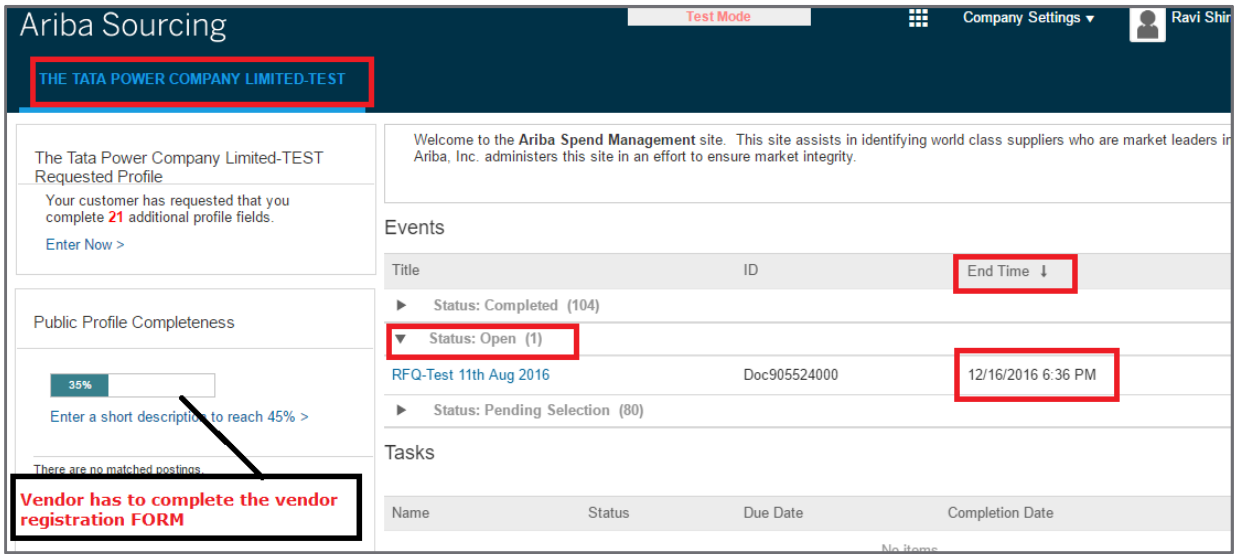
Step 1: Select Items. - If you do not want to quote for any items/lots then you do not select that lot / items and then go ahead for select and submit lot.

Step 2: Click “Submit Select Lots”.



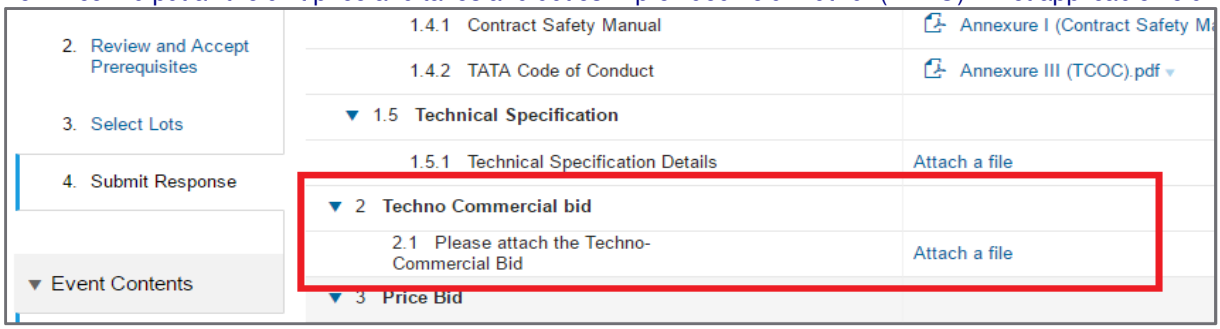
3.1.3 Entering your offer for RFQ

Step 1: as per following screen Vendor Dashboard will appear where RFQ from TATA Power will be visible.

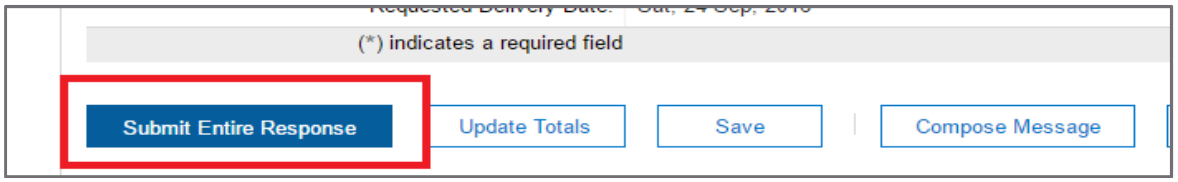


Step 2 - Follow all the steps of 3.1.1 to 3.1.3

Step 3 - Vendor has to submit their techno commercial offer in 2.1. In this field Do No attach any price content. For Price Bid put all the unit price and taxes and duties in provided field. Put "0" (ZERO) in not applicable field.



Step 4 - After successfully putting Techno commercial offer and price part then click on "Submit Entire Response"

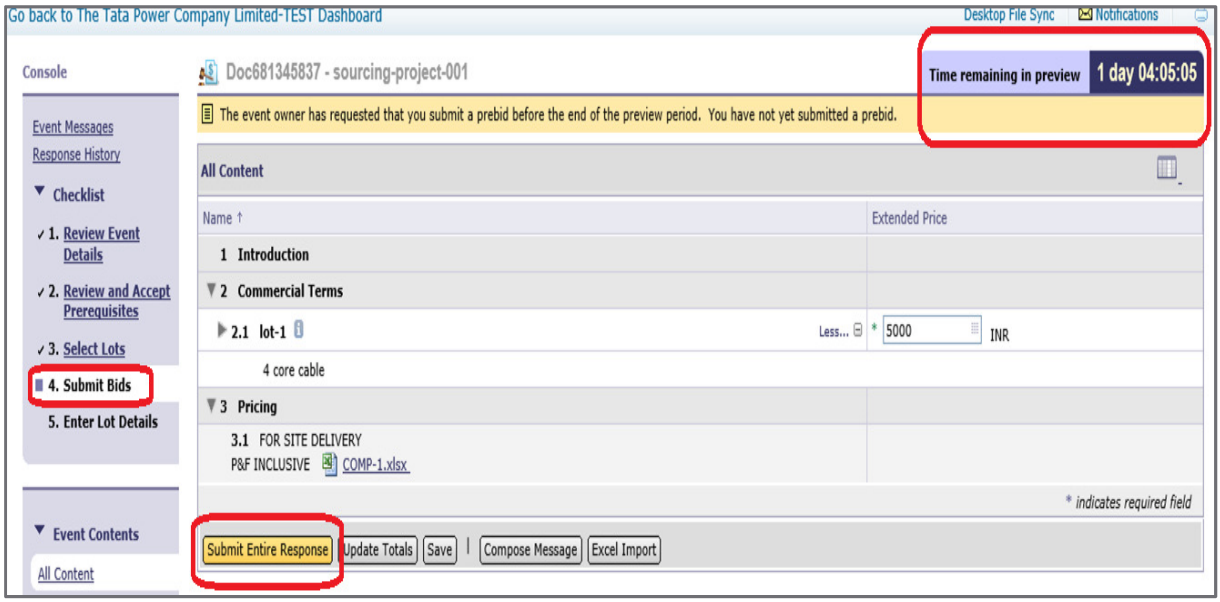


3.1.4 Entering Your Prebid for e-auction

Before participation to the e-auction you must place a pre-bid. If you haven't placed a Prebid in the Prebid time you won't be able to participate to the auction itself.

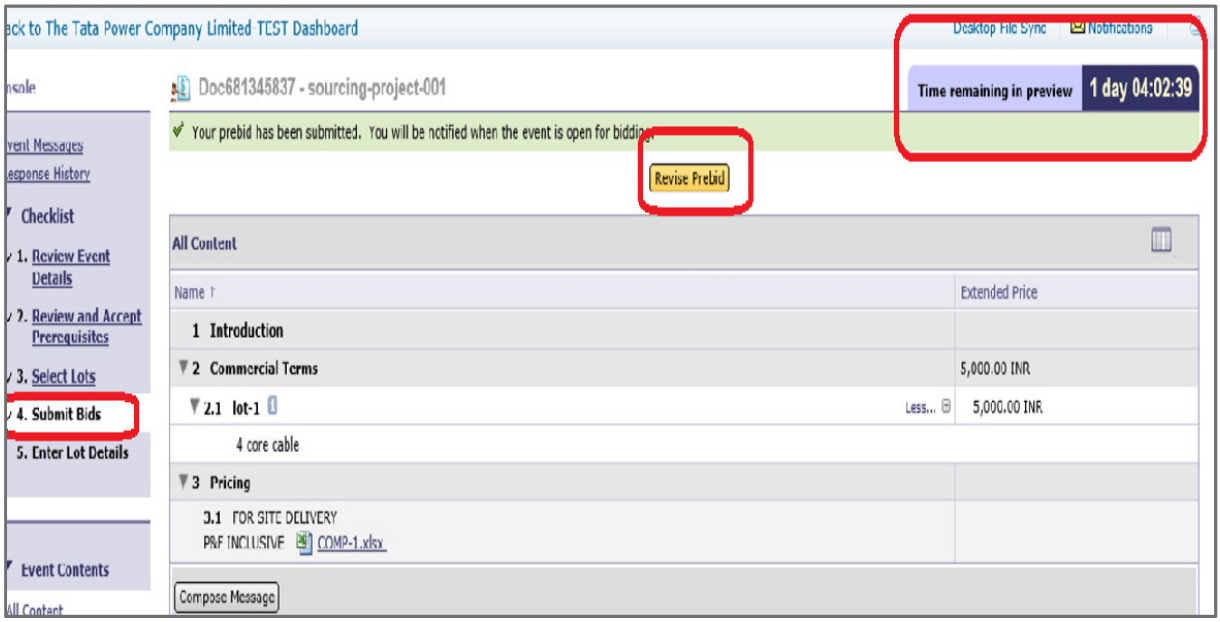
Step 1: Populate Your Answers.

Step 2: Click "Submit Entire Response".



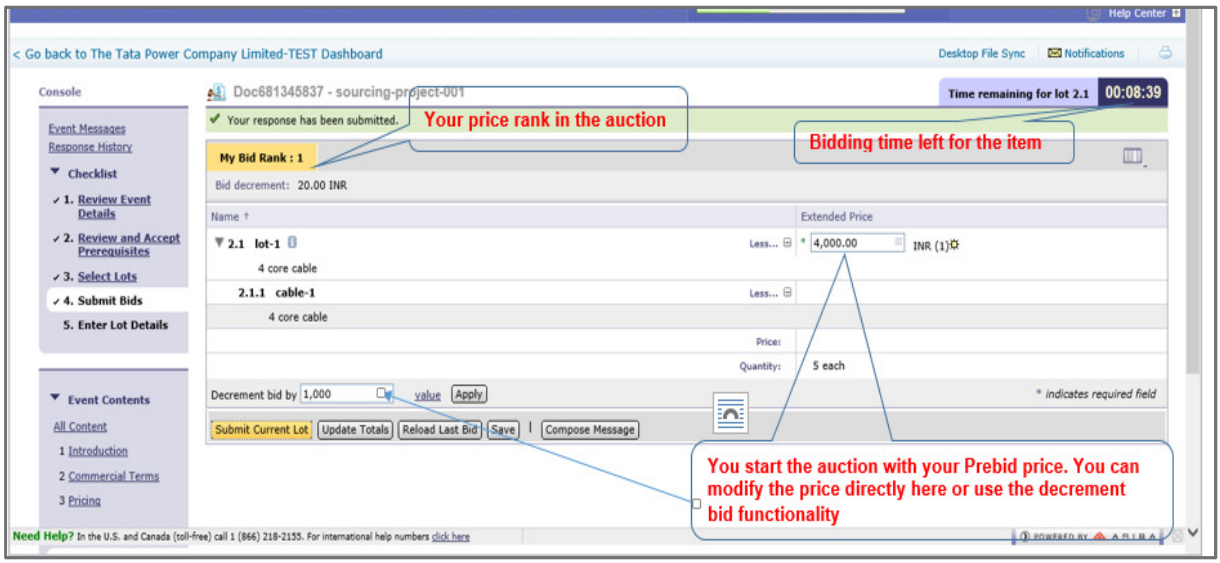
When the Prebid time is still open you can still modify your Prebid:

Click on "revise Prebid" and repeat in step 1 and step 2.



3.1.5 Participate to the e-auction

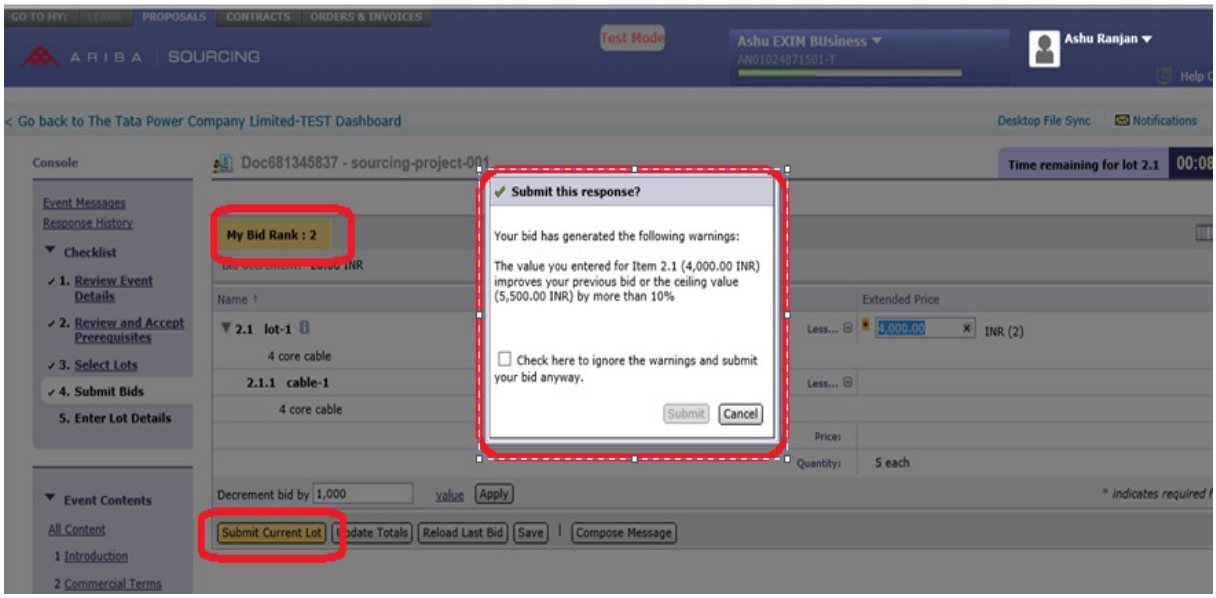
If you have placed a bid in the Prebid time you will be able to participate to the e-action. E-auctions are rather sort in time (usually less than 20 min per item). Once the time is closed you won't be able to bid anymore.



When you want to submit your price presses "submit current lot"

In case the new price you submit is lower by 10% of the starting price (Prebid Price) the following warning Message will be displayed.

To submit the new price, check the box and press submit. If you made a mistake press cancel so that you Mistake would not be submitted.



3.1.5.2 What to do if you have a problem during the e-auction?

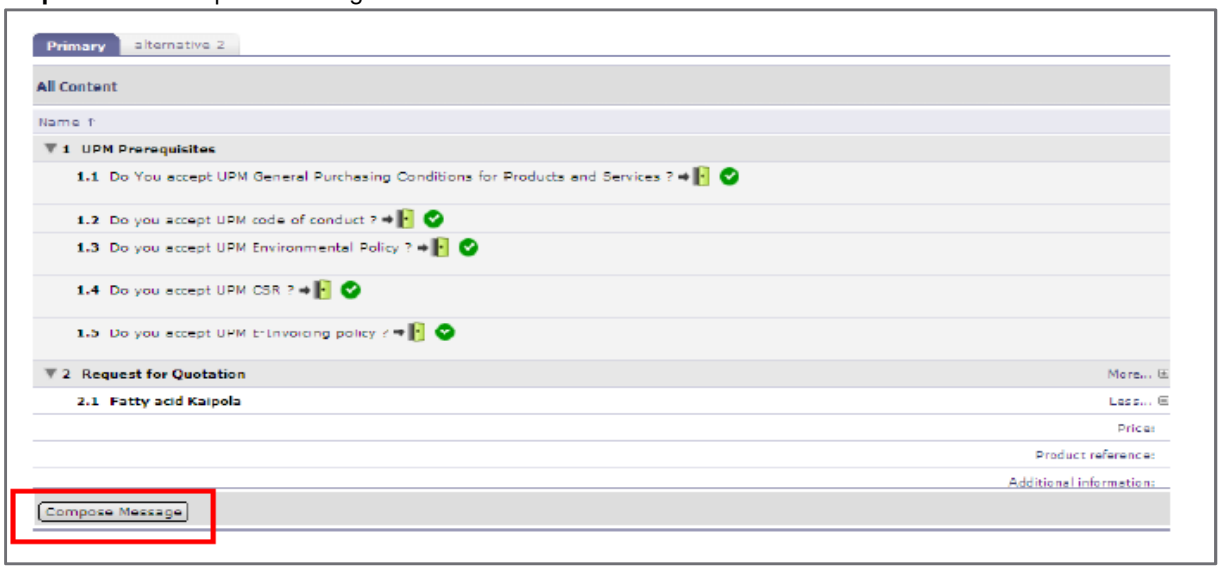
If you have any problem related the system: - **Call first Tata Power e- Bidding / Auction Cell**

- **e- Bidding /Auction Cell details:-**

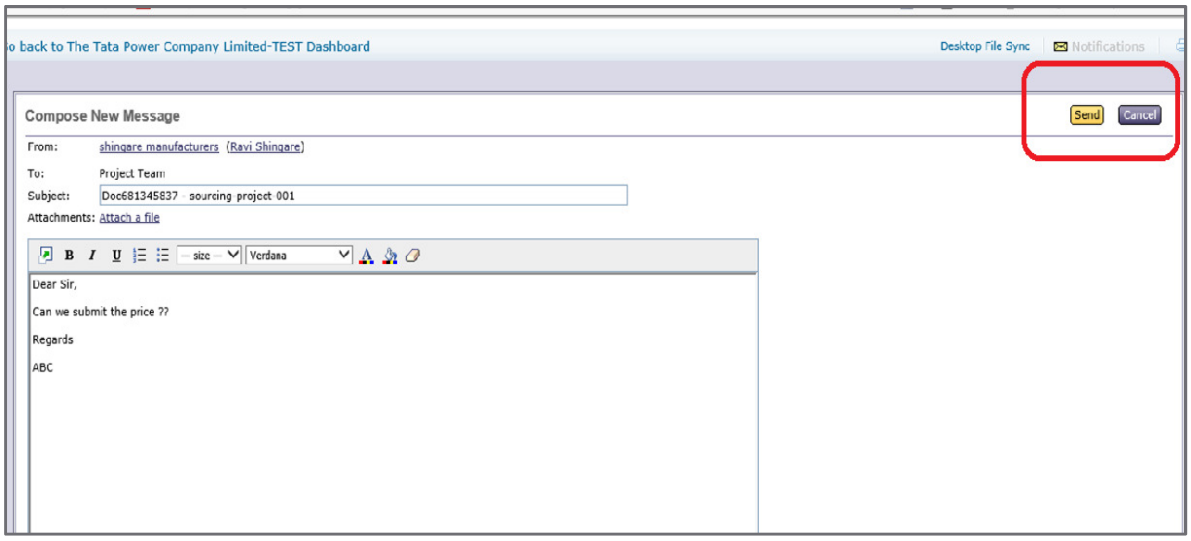
Core team		
Contact Person	**E-Mail Id**	**Contact Details**
Ravi Shingare	ravi.shingare@tatapower.com	9029004168
Himanshu Ranjan	himanshur@tatapower.com	9820339961
Escalation Matrix		
Paresh Bhatt	pareshbhatt@tatapower.com	
C T Prakash	ctprakash@tatapower.com	9223545185

4 Communicating with Tata Power Buyer & Auction team during auction / e- bidding

Step 1: Click "Compose Message".



Step 2: Compose Your Message and click "Send".



SUPPLIER-FREQUENTLY ASKED QUESTIONS

- **If I registered on my buyer's Ariba Sourcing site in the past, do I need to register again?**

Answer- Yes. Although you have registered on your buyer's Ariba Sourcing site in the past, registering on the Ariba Commerce Cloud is required. The registration process only takes a few moments, with a simple one-page registration. Registering on the Ariba Commerce Cloud gives you access to all your buyer relationships with one username and password.

- **What is the Ariba Commerce Cloud?**

Answer: - The Ariba Commerce Cloud is your entry point to all of your seller solutions.
Rather than managing log in information for multiple buyers' sites, you will have one log in and one account. This means fewer passwords to remember, easier user maintenance for your company, and a unified profile for your organization.

- **Do I need to add Product and Service Categories during registration?**

Answer:-Yes; this is a required field. Product and Service Categories classify what your company sells, and the system uses this information to match potential business opportunities with your products and services.

Click **Add Product and Service Categories** to select one or more categories from the list of options. During registration, you only need to choose one category, preferably related to the event you are joining. You can add, refine, or remove categories any time after the registration process.

- **Do I need to add ship-to or service locations during registration?**

Answer: - Yes; this is a required field. Ship-to or Service locations inform buyers where your company sells its products or provides its services, and the system uses this information to match potential business opportunities with your products and services.

Click **Add Ship-to or Service Locations** to select one or more sales territories from a list. You can add, refine, or remove ship-to or service locations any time after the registration process.

- **Do I need to enter a D-U-N-S number when I register?**

Answer: - No; this is an optional field. You are only required to complete the fields marked with an asterisk (*). If you enter a D-U-N-S number, and you get a message that the value is already in use, leave the field blank, as D-U-N-S numbers must be unique within the Ariba Commerce Cloud. Your company can have multiple Ariba accounts, but only one account can use the D-U-N-S number.

Additional Information: - D-U-N-S is a registered trademark of Dun & Bradstreet or its subsidiaries in the United States and other countries.

- **Do I need to enter a Tax ID when I register?**

Answer: - No, the Tax ID is an optional field. You are only required to fill in the fields marked with an asterisk (*).

- **What is the difference between the Email and Username fields in my profile?**

Answer: - The Email field represents the email address where you wish to receive email notifications. The Username field is the identifier that you use to access your account. The Username field must be in email format, but you do not have to use a valid email address.

Note: Leave the **This is my username** box checked if you want your email address to be the same as your username.

- **How do I participate in my buyer's event using an email invitation?**

Answer: - Use the **Click here** link in the email notification to access the sourcing event.

While buyers might customize the email content you receive, all email invitations contain a link to access the event.

Depending on your previous experience with Ariba solutions, do one of the following to access the event after you click the link:

- If you are new user, click **Continue** on the welcome page. You continue to register an Ariba account to link with your buyer and participate in the event.
- If you have used Ariba before and have already accessed an event for the buyer-specific account with your current log in ID, click the **Login** button to continue. Log in with your Ariba username and password in order to participate in the event.
- If you already have an existing Ariba Network, Ariba Discovery, or Ariba Sourcing supplier account, but you have not accessed any events for the inviting buyer's site, use the **Click here if you already have an Ariba Commerce Cloud, Ariba Discovery or Ariba Network account** link. After clicking the link, log in with your existing account to move your information to your buyer's site.

Additional Information :- Registering an Ariba account provides you with a consolidated view of all your customer relationships. With this one profile, you can view business opportunities, participate in sourcing events, participate in contract negotiations, and manage orders, catalogs, and invoices.

- **Why doesn't the link in the email invitation to participate in a sourcing event work?**

Answer:-If you cannot click the link, or the link does not open the log in page, highlight and copy the Uniform Resource Locator (URL), and then paste the URL into your web browser.

- **Can my company have multiple accounts?**

Answer:-Your Company can have multiple Ariba accounts, depending on your business needs. For example, if your company has several locations around the world, you might want a separate account for each region.

Most companies choose to have one account with multiple customer relationships, which provides a centralized location to maintain their company profile information and all of their customer relationships.

Additional Information

Consider the following items when deciding whether to have more than one account:

- **Administrators**: For each account, you can have only one account administrator, but the account administrator can provide access to multiple users. All users from your company have their own **Username** and **Password** to access the account.
- **DUNS** (data universal numbering system) **numbers**: You can add your company's DUNS number to only one account. If you plan to have multiple accounts, leave the DUNS number blank during registration.

- **How do I complete registration if my username already exists?**

Answer: - This message means that you already have an Ariba Network, Ariba Discovery, or Ariba Sourcing supplier account registered under username you entered. You can either register ua new account by creating a new username, or access one of the following sites to request a password reset for the registered username:

- Ariba Network (This login page is used for all Ariba Network, Ariba Sourcing, or Ariba Contracts suppliers).
- Ariba Discovery login page

To reset your password, click the **Having trouble logging in?** Link on the Login page.

- **Nothing happens when I click Forgot Username and enter my email address**

Issue: - Nothing happens when I click the **Forgot Username** link and enter my email address.

Cause: - After you submit your request to retrieve your username, the Ariba Network sends an email notification with usernames that match the email address you submitted.

Some possible reasons why you may not receive this username retrieval email notification:

- The email address on your account does not match the email address you entered when submitting the request.
- Your buyer-specific account was deactivated before you could move it to the Ariba Commerce Cloud. Generally, that means you probably have not participated in an event with that buyer for a while.

Solution: -

- To ensure you receive this email notification:
- Make sure you type the email address configured within your account.

If your buyer-specific account has been deactivated, contact your buyer to determine how to proceed.

- **Where is my password reset email?**

Answer: - After you submit your request for a password reset, Ariba sends instructions to the email address associated with your account. If you didn't receive a password reset email, check the following scenarios to troubleshoot.

The username you entered is in the wrong format, or it isn't associated with the email address you are checking.

- Keep in mind, your username is in the format of a full email address, but it can be associated with any email address you entered previously.
- Your username is also case-sensitive.
- To confirm that you are using the correct username and format, return to the Ariba login page, and click the **Having trouble logging in?** link (**Forgot Username** if you're working in Ariba Discovery).
    - Choose **I forgot my username**, and click **Continue**.
    - Enter the email address associated with your account, and click **Submit**.
    - You will receive an email that lists the exact format of the username associated with the email you entered.

You entered the correct username, but you still didn't receive the password reset email notification.

- This can occur if the configured email address is different from the account you are checking.
- You might have multiple accounts for your company, so make sure you are attempting to access the correct account.

Your email configuration or company's security settings might also prevent you from receiving the password reset email. To find out, check your junk mail folder or email filter settings to verify that automated emails from Ariba are not blocked from your email account.

- **Why do I get this message on the SAP Ariba Login page: "The username and password pair you entered was not found"?**

Answer: - You entered an incorrect **Username** or **Password**. You might receive this message if you entered a previous **Username** or **Password**. Remember that your **Username** has the format of an email address, and both the **Username** and **Password** are case sensitive.

Click the **Having trouble logging in?** Link on the Login page if you don't remember your log in information.

-: Steps for tender submission:-

Step 1: Vendor will get an **invitation email** from Ariba System. Keep this email, it contains your login Information and a direct link to Ariba.

URL for Supplier Users: http://tatapower.supplier.ariba.com

Step 2: Click **"Click Here" to access this event.**

Step 3: If you are first time vendor you will get the **"Sign UP" window**. Click on the same. If this screen is not appearing then close the window and follow the steps.

If the vendor has already created User id and password then after step 2 he will directly get the login screen. After credentials → click on ARIBA APPS and click on Proposals.

Step 4: After Continue simple one-page registration screen will open. Define your password and secret question. Click "OK"

Step 5: You will be able to see the RFQ

Step 6: After review and downloading of all documents click on **"Review Prerequisites"**

Step 7: Review and accept **"Bidder Agreement".**

Step 8: Select Items or Lots → **Click "Submit Select Lots"**

Step 9: Vendor has to submit their **techno commercial offer in 2.1." Pls Attach Techno commercial Bid "**In this field Do No attach any price content.

For Price Bid put all the unit price and taxes and duties in provided field. Put "0" (ZERO) in not applicable field.

Step 10: After successfully putting Techno commercial offer and price part then click on **"Submit Entire Response"**