



RFQ No.: 4100063887

OPEN TENDER NOTIFICATION

FOR

**PROCUREMENT OF 22KV/1250KVA PSS FOR BEST E-BUS
UNDER O&M**

Tender Enquiry No.: 4100063887
Due Date for Bid Submission: 14.05.2026 [05.00 PM Hrs.]

The Tata Power Company Limited
Mumbai, Maharashtra

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1. Event Information

1.1 Scope of work

Open Tenders are invited in e-tender bidding process from interested Bidders for the following work as defined below:

S. No.	Description	EMD Amount (Rs.)	Tender Fee (Rs.)
1	Procurement of 22KV/1250KVA PSS for BEST E-Bus under O&M.	INR 50 Thousand	2000

1.2 Availability of Tender Documents

Non-Transferable Tender documents may be downloaded by interested eligible bidders from TPC website www.tatapower.com with effect from 24.04.2026. The Tender Fee shall be submitted online through NEFT/ RTGS in favor of "The Tata Power Company Limited". Any such bid submitted without this Fee shall be rejected.

Bidders are requested to visit TPC website www.tatapower.com regularly for any modification/clarification to the bid documents.

1.3 Calendar of Events

(a)	Date of availability of tender documents from TPC Website	From 24.04.2026 to 14.05.2026, 17:00 PM Hrs
(b)	Date & Time of Pre-Bid Meeting (If any)	29.04.2026, 11:00 Hrs
(c)	Last Date of receipt of pre-bid queries, if any	29.04.2026, 05:00 PM Hrs
(d)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	04.05.2026, 05:00 PM Hrs
(e)	Last date and time of receipt of Bids	14.05.2026, 05:00 PM Hrs
(f)	Date & Time of opening of Price of qualified bids	Will be notified to the successful bidders through our website / e-mail.

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 TPC Mumbai 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.

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- 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')
- 1.4.9 Compliance to the technical requirement (Attached in Scope of Work)

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.

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

1.7 Qualification Criteria

Sr no	Parameter	Tata Power Requirement	Documents To be submitted by Bidder to ascertain meeting of Pre-qualification requirement
1	Infrastructure	Bidder must be an OEM of Equipment with manufacturing facility / assembly in India. The bidder must have in-house routine and acceptance testing facilities for acceptance as per relevant IS/IEC	Self-undertaking to be submitted in this regard. TATA Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter.

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2	Supply and Experience	<p>The bidder must have supplied for same or higher size and voltage</p> <p>a) A minimum of 15 nos during last 3 years or</p> <p>b) A single order of 8 nos or</p> <p>c) Two orders of 5 nos during last 3 yrs</p> <p>Indian Subsidiaries of global companies having plant in India are also eligible to bid if the qualification requirements stated above are met independently or in combination with the parent company. Declaration from parent company needs to be submitted.</p>	<p>Purchase Order Copies, Completion Certificates and performance certificates are to be submitted. Self-undertaking to be submitted in this regard. Declaration from parent company needs to be submitted. TATA Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter and qualification.</p>
3	Performance	<p>The bidder should have performance certificates for 2 years satisfactory performance from at least 2 reputed Distribution Utilities/ Government Entities/ EV Bus Charging system integrator for equipment's of similar or higher rating. The work against these issued certificates should be completed in last seven years from the date of bid submission. 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.</p>	<p>Supply List & Performance Certificates from the utilities</p>
4	Commercial Capability	<p>Average of Annual turnover of the bidder for last three years shall not be less than Rs. 10 Crs.</p>	<p>Copy of audited Balance Sheet and P&L Account along with UDIN number to be submitted in this regard.</p>

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	<p>Type Test</p>	<p>The bidder shall submit Type test reports obtained from CPRI/ERDA/ NABL/International Accredited Lab for the equipment / material offered. The type tests should have been conducted on the equipment / material of the same design.</p> <p>The type tests should have been conducted within 5 years prior to the date of bid opening. Time period for type test can be extended by another 5 years as a special case, if there is no change in design / material of construction (MOC).</p> <p>In case the type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, then type test shall be carried out for the offered equipment / material from CPRI/ERDA/NABL/ International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before dispatch of the equipment / material.</p>	<p>Type Test Reports and clause wise compliance list to be submitted along with bid.</p> <p>Undertaking that there is no change in design / material of construction (MOC) if Type Test Report older than 5 years.</p> <p>Type test reports for the offered equipment / material from CPRI/ERDA/ International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted along with BID as per specification requirements.</p>
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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, TPC 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 marketplace 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 TPC. This includes all bidding information submitted to TPC. All tender documents remain the property of TPC and all suppliers are required to return these documents to TPC upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

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1.0 Evaluation Criteria

- The bids will be evaluated technically on the compliance to tender terms and conditions.
- The bids will be evaluated commercially on the overall all-inclusive lowest cost for the complete tender BOQ as calculated in Schedule of Items [Annexure I]. TPC however, reserves right to split the order line item wise and/or quantity wise among more than one Bidder. Hence all bidders are advised to quote their most competitive rates against each line item.
- Bidder must mandatorily quote against each item of Schedule of Items [Annexure I]. Failing to do so, TPC may reject the bids.

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, TPC 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 TPC shall be final and binding on the bidder in this regard.

1.1 Price Variation Clause:

The prices shall remain firm during the entire contract period.

2.0 Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document. TPC shall respond to the clarification raised by various bidders and the replies will be sent to all participating bidders through e-mail.

Bids shall be submitted in 3 (Three) parts:

FIRST PART: "EMD" of Rs. 50,000/- (Rupees Fifty Thousand only) shall be submitted. The EMD shall be valid for 210 days from the due date of bid submission in the form of BG / Bankers Pay Order favoring "The Tata Power Company Limited". The EMD 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.

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

Account Name: The Tata Power Co. Ltd.

Bank Name: HDFC Bank, Fort Branch, Mumbai

Bank Account No. : 00600110000763

IFSC Code: HDFC0000060

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 available
- d) Testing facilities (if applicable)



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- e) Signed Post Award Contract Administration (Clause 7.0)
- f) No Deviation Certificate as per the Annexure III – Schedule of Deviations
- g) Acceptance to Commercial Terms and Conditions viz Delivery schedule/period, payment terms etc. as per the Annexure IV – Schedule of Commercial Specifications.
- h) Quality Assurance Plan/Inspection Test Plan for supply items (*if applicable*)

The technical bid shall be properly indexed and is to be submitted in Soft Copy through Ariba Portal only. Hard Copy of Technical Bids need not be submitted.

THIRD PART: “PRICE BID” shall contain only the price details and strictly in format as mentioned in Annexure I along 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.

FOR BIDS INVITED THROUGH E-PROCUREMENT PORTAL:

The interested bidders are requested to obtain username and password for purpose of bid submission through Ariba portal of TPC, Mumbai

Bids have to be mandatorily submitted only through Ariba portal of TPC. Bids submitted through any other form/ route shall not be admissible.

The EMD in the form of BG shall be submitted in original hard copy and then placed in sealed envelope which shall be clearly marked as below:

EMD

“Customer Relation Centre and bill collection Centre services with e-care services for tata power distribution in Mumbai for 03 years”

Please mention our Enquiry Number:- 4100045653 on the Tender and drop the same at The Tata Power Company Limited, Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station, Sahar Airport Road, Andheri East, Mumbai-400059.

The envelope shall be addressed to:

Chief (Corporate Contracts)
The Tata Power Company Limited
Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station
Sahar Airport Road, Andheri East, Mumbai-400059

The envelope shall also bear the Name and Address of the Bidder along with our Tender No. and subject.

3.0 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.



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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

All the bidders are requested to send their pre-bid queries (if any) against this tender through e-mail within the stipulated timelines. The consolidated reply to all the queries received shall be shared on respective registered mail ID by the stipulated timelines as detailed in calendar of events.

Communication Details:

Corporate Contracts

Name: Mr. Mandar Pise
Contact No: 7620581071
E-Mail ID: mandar.pise@tatapower.com

Group Head Contracts

Name: Deepan Prasad N A
Contact No.: 9971395344
E-Mail ID: deepan.prasad@tatapower.com

3.3 Bid Prices

Bidders shall quote for the entire Scope of Supply/ work with a breakup 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 TPC. 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 breakup shown elsewhere 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/ SLA 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.



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Notwithstanding clause above, the TPC 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 TPC against the risk of bidder's conduct which would warrant forfeiture.

The EMD shall be denominated in any of the following form:

- Banker's Cheque/ Demand Draft/ Pay order drawn in favor of The Tata Power Company Limited, payable at Mumbai.
- 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)

As per attached Annexures

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 TPC's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

4.2 Technical Bid Opening

Bids will be opened at TPC Office Mumbai as per the schedule mentioned in Calendar of Events. In case of limited tenders, the bids shall be opened internally by TPC. In case of Open Tenders, the bids shall be opened in the presence of accredited representatives of bidders who may choose to be present at the time of tender opening. Technical bid must not contain any cost information whatsoever.



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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.

Next, the technical bid of the bidders who have furnished the requisite EMD will be opened, one by one. The salient particulars of the techno commercial bid will be read out at the sole discretion of TPC.

4.3 Preliminary Examination of Bids/Responsiveness

TPC 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. TPC 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, TPC 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 TPC and/or the TPC 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, TPC may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the TPC 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 TPC.

4.5 Price Bid Opening

Price bids will be opened at the stipulated date and time. 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 TPC without any further correspondence in this regard.

4.7 Reverse Auctions

TPC 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.

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5.0 Award Decision

TPC 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 bidder in Annexure I (Schedule of Items) subject to any corrections required in line with Clause 4.3 above. The decision to place purchase order/LOI solely depends on TPC on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that TPC may deem relevant.

TPC 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 cancelled and TPC 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 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 (Annexure VII)
5. Technical Specifications (Annexure II)
6. Inspection Test Plan (Annexure VIII)
7. Acceptance Form for Participation in Reverse Auction (Annexure VI)
8. General Conditions of Contract (Annexure IX)

7.0 Post Award Contract Administration

7.1 Special Conditions of Contract

- Rate shall remain FIRM till the validity of Rate Contract.
- TPC appreciates and welcomes the engagement/employment of persons from SC/ ST community or any other deprived section of society by their BAs.
- Any change in statutory taxes, duties and levies during the contract period shall be borne by TPC. However, in case of delay in work execution owing to reasons not attributable to TPC, any increase in total liability shall be passed on the Bidder, whereas any benefits arising owing to such statutory variation in taxes and duties shall be passed on TPC.
- All the terms and conditions of TPC GTC shall be applicable.

7.2 Drawing Submission & Approval

As per Technical Specifications.

7.3 Delivery Terms

Delivery shall be completed till 30th September 2026.



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7.4 Warranty Period

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 found by the purchaser up to a period of at least 36 months from the date of commissioning or 48 months from the date of last supplied made under the contract whichever is later, 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 purchaser, failing which the purchaser will be at liberty to get it replace / rectifier at bidder's risk and costs and recover all such expenses plus the purchaser's own charges from the bidder or from the security cum performance deposit as the case may be. Bidder 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 purchaser.

7.5 Payment Terms

100% payment shall be made within 60 days (45 days for MSME) from the receipt and acceptance of the material at the Consignee Stores/Site/Location as per the Contractual Terms and Conditions.

7.6 Liquidated Damages

LD deduction shall be applicable for delay in delivery of services at the rate of 1% of contract value per week to a maximum of 10% of contract value.

7.7 Contract Performance Bank Guarantee (CPBG)

Vendor shall submit irrevocable and unconditional Contract Performance Bank Guarantee (CPBG) for a value equal to 10% of the contract value, within 15 days from the receipt of contract valid till the Warranty Period with a further claim period of 6 months.

7.8 LD / SLA / Performance Requirement and penalties

NA

7.9 Other Terms & Conditions

Upon work award the successful bidder shall provide support services as listed in the scope of work and SLA.

7.10 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.

7.11 Ethics

TPC is an ethical organization and as a policy TPC 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.



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TPC 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 GTC attached at Annexure VIII for more information.

Any ethical concerns with respect to this tender can be reported to the following e-mail ID: cecounsellor@tatapower.com or via third party facility tatapower@ethics-line.com

8 Specification and standards

As per Annexure II.

9 General Condition of Contract

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

10 Safety

Safety related requirements as mentioned in our safety Manual put in the Company's website which can be accessed by:

<http://www.tatapower.com>

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



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ANNEXURE I
Schedule for Items

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Tender Name - Procurement of 22KV/1250KVA PSS for BEST E-Bus under O&M.					
Sr No	Item Description (A)	UoM (B)	Quantity (C)	Basic Unit Rate (D) Rs.	BoQ Price (E = C*D) Rs.
1	Procurement of 22 KV 1250 KVA Package substation	EA	1		-
	Total Package cost (Rs.)				-
	GST @ 18%				-
	Total cost incl. GST				-

NOTE:

- Bidder must include total cost in the above price bid. NO separate payment shall be applicable for OPE, Travel, Stay, F&B, Stationary, Training, etc.
- The bidders are advised to quote prices strictly in the above format and for all the line items as mentioned above. 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 unit price to be indicated in col. No. D should be exclusive of taxes & duties which are to be indicated in separate columns meant for the purpose.



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ANNEXURE II
Technical Specifications/Scope of Work

Scope of Work & Service Level Agreement

CONFIDENTIAL

The Tata Power Company Ltd	 TATA 	SPECIFICATION FOR 22/0.433KV 1250KVA PSS
SPEC-NET-22/0.433KV 1250KVA PSS_EV_R0		Date of Issue: 09/09/2022

TECHNICAL SPECIFICATION

FOR

22/0.433KV 1250KVA HERMETICALLY SEALED MINERAL OIL FILLED TRANSFORMER PACKAGE SUBSTATION

Rev No.	Description	Prepared By & Date	Checked By & Date	Approved for Issue By & Date
R0	SPECIFICATION FOR 22/0.433KV 1250KVA PSS	Tejaswita	A V Potdar	S B Modak
		09/09/2022	09/09/2022	09/09/2022

The Tata Power Company Ltd	 TATA	SPECIFICATION FOR 22/0.433KV 1250KVA PSS
SPEC-NET-22/0.433KV 1250KVA PSS_EV_R0	 TATA POWER	Date of Issue: 09/09/2022

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5. General Technical Requirements
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9. Type Test Certificates
10. Pre-Dispatch Inspection
11. Inspection After Receipt at Stores
12. Guarantee
13. Packing and Transport
14. Tender Sample
15. Quality Control
16. Testing Facilities
17. Manufacturing Activities
18. Spares, Accessories & Tools
19. Drawing, Documents
20. Guaranteed Technical Particulars
21. Schedule of Deviations
22. Type Test Verification Sheet
23. Standard Quality Plan

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Annexure-1

1.0 Special Instructions for Bidders :

Please read the following instructions carefully before submission of bid :

- 1) Commercial & Technical bids have to be submitted separately
- 2) The bidder shall submit the Manufacturing Quality Plan (MQP) with the technical bid in accordance to Standard Quality Plan along with this RFQ.
- 3) The bidder shall submit all the required valid Type Test Reports & filled in Type Test verification sheet supplied along with RFQ.

Technical bid will not be accepted in the absence of verified & signed type test verification sheet.

- 4) The bidder shall submit the hard and soft (excel) format of the GTP's during the technical bid submission. Instead of mentioning "refer or as per IS/IEC" exact values must be filled in.
- 5) Evaluation will be carried out on the content of technical bid only & no further correspondence will be made.
- 6) Any technical deviation shall be clearly mentioned in deviation sheet only.

2.0 Scope:

This specification covers technical requirement of design, engineering, manufacture, testing at manufacturing work, painting, packing, forwarding, supply and performance of Package type substation comprising an enclosure containing high voltage switchgear, transformer, low voltage switch gear. The transformer shall be of 22/0.433KV 1250kVA hermetically sealed Mineral oil filled transformer. The HV compartment shall comprise of RMU and the LV compartment shall include ACB along with MCCBs, 150KVAR APFC Panel and auxiliary equipment's with interconnection inside the enclosure for efficient and trouble-free operation. Supervision of OEM during commissioning of PSS at site is also in scope of vendor.

3.0 Applicable Standards

The equipment covered by this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with latest editions of the following standards / IEC and shall confirm to the regulations of local statutory authorities.

- IEC 62271-202 : HV switchgear and control gear- HV/LV Pre-fabricated substation.
 IEC 62271-200 : HV switchgear and control gear-AC metal enclosed switchgear and control gear for voltages above 1kV and up to and including 52kV
 IEC 60694 : Common specifications for high voltage switchgear and control gear standards
 IEC 62271-102 : HV switchgear and control gear-Alternating current disconnectors and earthing switches

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IEC 60265-1	: High voltage switches – Part 1: Switches for rated voltages above 1kV and less than 52kV
IEC 60529	: Degrees of protection provided by enclosures (IP code)
IEC 62262	: Degree of protection provided by enclosures for electrical equipment against mechanical impacts (IP Code)
IEC 60060	: High-voltage test techniques
IEC 60947 / IS 13947	: Low voltage switchgear and control gear
IEC 60439-1	: Low voltage switchgear and control gear assemblies-Type tested and Partially type tested assemblies
IEC 60076 / IS 2026	: Power Transformer
IEC 60255-3	: Electrical Relays – Part 3: Single input energizing quantity measuring relays with dependent or independent time
IEC 60044-1 / IS 2705	: Current transformers
IEC 60044-2 / IS 3156	: Voltage transformers
IEC 60376	: Specification of technical grade sulphur hexafluoride (SF6) for use in electrical equipment
IEC 61958	: High voltage prefabricated switchgear and control gear assemblies – Voltage presence indicating systems
IS 11171 -1985	: Specification for Dry Type Transformer.
IS 2099: 1986	: Specification for Bushings for Alternating Voltages above 1000 Volts
IS 7421: 1988	: Specification for porcelain bushings for alternating voltages up to and including 1000kV.
IS 8603 (Part-1)	: 1977 Dimensions for Porcelain Transformer Bushings for Use in Heavily Polluted Atmospheres - Part I: 12 kV and 17.5 kV Bushings.
IS 2629:1985	: Recommended practice for Hot dips Galvanizing of iron & steel.
IS 2633:1986	: Test for Uniformity of Zinc Coating CEA guidelines dt August 2008 for energy efficient distribution transformer.

However in case of conflict between standard and this specification, the specification shall govern.

4.0 Climatic Conditions of The Installation

a) Max. ambient temperature	: 50 deg. C
b) Max. Daily average ambient temp.	: 40 deg. C
c) Min ambient temp.	: 0 deg. C
d) Maximum humidity	: 100%
e) Minimum humidity	: 10%
f) Average no. Of thunderstorm days per annum	: 50
g) Average annual rainfall	: 2386 mm
h) Average no. of rainy days per annum	: 60
i) Rainy months	: June to October.
j) Altitude above MSL not exceeding	: 300 meters.
k) Wind pressure	: 126kg/sq m up to an elevation of 10 meters.

The atmosphere is generally laden with mild acid and dust suspended during dry months and subjected to fog in cold months. The design of the equipment and accessories shall be withstand seismic forces corresponding to an acceleration of 0.1 g.

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5.0 GENERAL TECHNICAL REQUIREMENTS:

Description	Requirement
Application	Outdoor
Rated voltage	24Kv
Service Voltage	22Kv
System Frequency	50 Hz
Rated maximum power of substation	1250kVA
Degree of Protection for Enclosure	IP 54
Degree of protection for other compartments	Trf compartment – IP 23, RMU – IP 67 for Tank, IP2X for the front cover / mimic board, IP 54 (Main door closed) for Outdoor RMUs. IP 54 for cable compartment
Internal arc test	IAC-AB as per IEC 62271-202 (20KA for 1sec)
Rated Class of enclosure	Class K10
Temperature rise for any accessible part of the enclosure	Maximum permissible temperature shall not exceed 70 deg C at an ambient temperature not exceeding 40 deg C
HV Insulation Level	
Rated Impulse withstand voltage	75Kvp
Power Frequency Withstand voltage	28kV rms
HV Network and Bus Bar	
RMU	3 way, Non-extensible (2nos isolator + 1no. Breaker)
Rated current of incomer Load break Switch	630 A
Rated Current Of Circuit –Breaker	630 A
Rated Short Time Current Withstand (3 Sec)	21kA for 3 Sec
Rated Short Circuit Making Current	52.5kA
LV Network	
Rated LT voltage	433V
LV Incomer ACB	4 pole 2000A (microprocessor-based protection) & 230V AC shunt Tripping coil & Compensating CT on Neutral busbar
LV Outgoing MCCBs	10 nos 400A FP 36KA fixed type MCCB Microprocessor Based release for O/L S/C & E/F protection
APFC Panel	415V LT Capacitor Bank 150KVAR APFC relay 6 stage (L&T/Equivalent make), capacitor banks (25KVAR x 6) with suitable rated capacitor duty contactors, MCB for protection (25KVAR – 63A), Auto manual selector switch, On/Off Push buttons & Indicating lamps.

6.0 GENERAL CONSTRUCTION:

Package type substation is designed to comprise the following main component.

- The enclosure with IP 54.
- The HV compartment consisting of 22kV ring Main unit. (Siemens/ Schneider/ABB/Eaton)
- The Hermetically sealed Mineral oil filled 22/0.433KV 1250 KVA transformer.
- The LV compartment consisting of LT ACB and MCCBs with interconnections compartmentalised.
- LT ACB with self -powered relay, 230V AC shunt Tripping coil for remote Tripping.
- Suitable charger and battery to be provided for protection, indication and annunciation circuit supply of ACB & RMU.

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- g) Outgoings: 10 No's 400A FP 36KA fixed type MCCB Microprocessor Based release for O/L S/C & E/F protection.
- h) APFC Panel with 150KVAR 415V Capacitor Bank with Relay & other auxiliary.
- i) There must be three separate sources of supply for protection, Auxiliary & external lighting circuit.
- j) Outgoing 440V circuit 630A MCCB's must be mounted horizontally on LV switchgear panel.
- k) Phase to phase clearance between MCCB RYB phases should not be less than 30mm and not less than 25mm between lugs after connecting cable termination.
- l) There must be a caution plate on both side of Transformer compartment door mentioning "DO NOT OPEN Transformer will Trip".
- m) Name plate "Energy Meter" should be given on PSS LT Panel side door for indicating energy meter inside.

6.1.1 **ENCLOSURE:**

The Enclosure shall be made of minimum 2-3 mm thick GI sheet with a base of 3 mm (min), tropicalised to meet Indian weather condition. The base of the enclosure shall ensure rigidity for easy transport and installation. The Structure of the substation should be provided with additional supporting beams capable of supporting the gross weight of all the equipment s. The roof of the substation compartments shall be designed to support adequate loads with a minimum clearance of 300 mm provided up to the top of any component installed inside the substation. There shall be provision of proper ventilation through louver apertures to allow circulation of hot air inside enclosure naturally. The complete design shall be compartmentalized.

The HV compartment shall comprise of one no. 3 way, non-extensible, 22kV RMU with 2 nos. incomer and one no. circuit breaker as outgoing. HV Termination bolts and cable boots suitable for 3C 300sqmm XLPE cable for RMU shall be supplied by bidder.

The transformer shall be 3 phase 50 Hz 1250KVA , 22KV /433V, DYn11, core type double wound with copper conductor oil immersed ONAN cooled Distribution Transformer hermetically sealed corrugated tank arrangement having a no load voltage ratio of 22KV/ 433V with top HT & LT Bushings. Losses shall be as per IS1180 (Level 2).

The LV compartment shall comprise of one no. 2000A ACB with 10 No's 400A FP 36KA fixed type MCCB Microprocessor Based release for O/L S/C & E/F protection and other auxiliary components. LT Switchgear with 2000A Aluminium busbars. Interconnection between Transformer and LT Switchgear shall be using Aluminium Busbar.

Degree of protection for over all the enclosure shall be IP 54 with transformer compartment as IP 23 and RMU shall be IP 67 for Tank, IP2X for the front cover / mimic board, IP 54 (Main door closed) for Outdoor RMUs, IP 54 for cable compartment in accordance with IEC recommendation. There shall be no bolting arrangement on the doors and sides (periphery) to avoid access of dust and water inside. This would also ensure that the unit is well protected from outside nuisance owing to its being in crowded and outdoor areas.

HV and LV compartment shall be accessible on the side of substation through double doors equipment with key lock and nitrile rubber seal. The doors shall be pad locked and/or lock protected to ensure theft prone locking arrangement. Heavy duty hinges shall be provided for each door such that they are not visible from outside and hence not removable. The outgoing of the distribution transformer shall be connected directly to incomer of LV distribution through busbar s. Transformer shall be accessible from both sides of enclosure. HV, LV and transformer compartment should be isolated from each other internally.

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There shall be an arrangement for internal lighting activated by associated switch on door for HV, Transformer and LV compartment separately. Space heater with thermostat shall be provided in both cable compartment. Suitable for lifting package type substation should be provided.

Ventilation aperture shall be as per class K10 & substation shall be type tested for internal Arc withstand test as per IEC. The bidder shall provide provision for remote monitoring of status of RMU, fault passage indicator, LT ACB & MCCBs.

6.1.2 EARTHING:

All metallic components of substation shall be earthed to a common earth conductor of size 50X6 tinned Cu or 65x10 mm GI strip running all long the periphery of package substation. Four nos. earthing/studs shall be provided on the enclosure at each corner position which shall be internally connected to the common earth conductor /strips provided for entire substation. The diameter of stud shall be at least 12mm and shall be able to connect and terminate the external earth conductor. The connecting point shall be marked with protective earth symbol as per IEC, separate earthing conductor /strips shall be provided for transformer neutral and the same shall be insulated from the body earth and suitably brought out from the enclosure for connecting to external system earth.

6.1.3 PAINT:

All paint shall be applied on clean, dry surfaces under suitable atmosphere condition by seven tank process and powder coating. The paint shall not be scale off or crinkle or be removed by abrasion during normal handling. The enclosure for the substation shall be painted with shade RAL 7032. Enough touch-up paint shall be furnished for application at site.

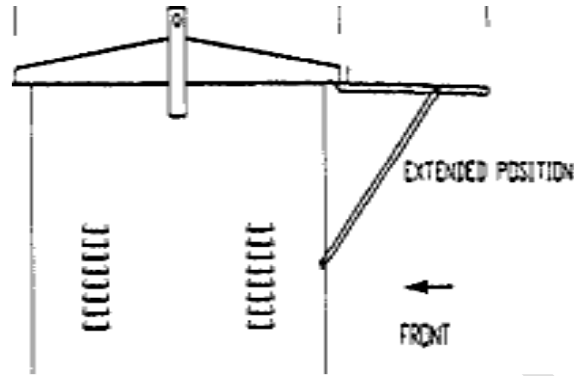
6.1.4 GALVANIZING:

- a) The galvanizing shall be carried out by the hot dip process, in accordance with IS 2629/ISO 1460 amended to date. However, high tensile steel nuts, bolts and spring washers shall be electro-galvanized to service condition four. The zinc coating shall be smooth, continuous, and uniform. It shall be free from acid spots and shall not scale, blister or be removable by handling or packing. There shall be no impurities in the zinc or additives to have galvanic bath, which could have a determine effect on the durability of the zinc coating.
- b) After galvanizing no drilling or welding shall be performed on the galvanized parts of equipment except that nuts may be threaded after galvanizing.
- c) To avoid the formation of white rust, galvanized material shall be stacked during transport and stored in such a manner as to permit adequate ventilation. Sodium dichromate treatment shall be provided to avoid formation of white rust after dip galvanization. The galvanized steel shall be subjected to test as per IS-2633/BS 729 amended to date.

6.1.5 Extensible canopy to be provided on both sides of the PSS. As per safety norms the arc suit of the person operating the system should not get wet during rainy season. Sample drawing is as shown below.

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6.1.6 HV COMPARTMENT:

22KV RING MAIN UNIT

The switch gears and busbar shall be contained in a stainless-steel tank filled with SF6 Gas and the outer body shall be made of GI sheet steel, minimum 2-3mm thick with 2-3mm thick AL gland plates. The tank should meet the sealed pressure system criterion in accordance with the IEC 62271-200. This is the system for which no handling /refilling of gas shall be required throughout the expected operating life, i.e. 30 years. Sealed pressure system is completely assembled, filled and tested in the factory. The maximum leakage rate of SF6 gas shall be lower 0.1% of total initial mass of SF6 gas per annum. The filling pressure for the switchgear should be just above the atmospheric pressure to reduce the tendency to leak. SF6 gas used for the filling of RMU shall be in accordance with IEC 376.

The RMU shall have IP 67 for Tank, IP2X for the front cover / mimic board, IP 54 (Main door closed) for Outdoor RMUs, IP 54 for cable compartment degree of protection. The RMU shall be suitable for mounting inside the HV compartment of package substation with provision for cabling through gland plate in the base and trench below. The RMU shall be designed so that the position of the different devices is visible to the operator on the front of RMU and operations are visible as well. The RMU shall be identified by an appropriately sized label which clearly indicates the functional units and their electrical characteristics. The RMU shall be designed to be temper proof to prevent access to all live parts during operation without the use of tools.

The RMU shall be complete with all connection and copper bus bar with continuous current carrying capacity of 630A. The bus bar shall be fully encapsulated by SF6 gas inside the steel tank. There shall be continuity between the metallic parts of RMU and cables so that there is no electric field pattern in the surrounding air, thereby ensuring the safety of people. The earth bus bar should be preferably enclosed in an enclosure to prevent theft/ tampering and further connected to the common earth conductor provided for the entire substation. The RMU body shall be earthed with 50 x 6 sq mm tinned copper strips.

All parts of main circuit to which access is required or provided shall be capable of being earthed prior to becoming accessible. This does not apply to removable parts which become accessible after being separated from the switchgear and control gear. The cables shall be earthed by an earth switch with short circuit making capacity in compliance with IEC 62271-102. The earth switch can only be operated when the main load breaker switch/circuit breaker is open. The earth switch shall be fitted with its own operating mechanism and manual closing shall be visible in the closed position through transparent covers. Mechanical interlocking system shall prevent access to the operating shaft to avoid all operator errors such as closing the earth switch when the load break switch is closed or when cable is charged.

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Cable compartment doors shall have interlock such that doors can be opened only with earth switch in closed position.

6.1.7 **INCOMER LOAD BREAK SWITCHES (LBS):**

Load break switched shall be maintenance free. The position of the power contacts and earthing contacts shall be clearly visible on the front of RMU. The position indicator shall provide positive contact indication in accordance with IEC 60265-1. In addition, manufacturer shall prove reliability of indication in accordance with standard. The switches shall be of the increased operating frequency in accordance with IEC 60265-1. They shall be at least 3 positions, open- disconnected, closed, and earthed, and will be constructed in such a way that natural interlocking prevents unauthorized operations. Earth of the cable shall be either through a three-position switch of a separate snap action type or earth switch having fault making capacity. The mechanism shall be constructed in such a way that natural interlocking prevents unauthorized operation. Locking arrangement must be provided at all operating points.

The switches shall be fully mounted and inspected in the factory. Manual opening and closing will be driven by a fast-acting mechanism, independent of operator action. Earth switch can be fitted with electrical operating mechanisms and without de-energizing the RMU. The switch and earthing operating mechanisms and without de-energizing the RMU. The switch and earthing switch operating mechanism shall have mechanical endurance of at least of at least 5000 operations.

6.1.8 **CIRCUIT BREAKER FOR TRANSFORMER CONTROL:**

The circuit breakers shall be of maintenance free. The position of power and earthing contacts shall be clearly visible on the front of the RMU. The circuit breakers shall have at least 2 position Open-disconnected and closed and shall be constructed in such way that natural interlocks prevent all unauthorized operation. They shall be fully mounted and inspected in factory. The Circuit breaker will be operated manually.

The circuit breaker shall be associated with an integrated protection until that will operate without any auxiliary power supply an shall include three toroid transformers incorporated in the transformer tee-off bushing ,an electronics self-powered relay ,flow energy releases , and a “ fast –on” test receptacles for protection testing (with or without CB tripping).

The protection system (Micro- processor based) shall ensure circuit breaker tripping as of minimum operating current which is in rated current of the underground network to be protected.

Self-powered O/C & E/F relay type CSPR with Single core cast resin type CT, CT ratio of 100/1A (Protection Core – 2.5VA & CL-5P10). Suitable charger and battery to be considered for protection, metering, and annunciation.

In case of front door opened, it should not be possible to operate the load switches / isolators or breaker. All panel covers shall be provided with anti-vandal screw bolts so that opening of panel covers is only possible with special tools, to be lockable and should be Tamper and arc proof. There should be provision of hinged doors in the RMU. The circuit breaker and earth switch shall be lockable in the open or closed position by 1 to 3 padlocks.

6.1.9 **BUSHING AND CABLE TERMINATION:**

RMU: For HT side termination, tinned Copper busbar shall be provided with Al Lugs suitable for

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connecting to 22 kV 3C x 240 sq.mm to Isolator and 1Cx95 sq mm AL XLPE cable to Breaker compartment. Cable termination cover boots must be Push on type.
 HV Cable termination boots should have a proper opening to facilitate the testing. The opening should be covered by means of removable protection cap. All cable terminations must be accessible from front side.

6.1.10 VOLTAGE INDICATOR LAMP AND PHASE COMPARATORS:

Each function shall be equipped with a fixed type voltage indicator box on the device to indicate whether there is voltage in the cables. The capacitive dividers will supply low voltage power to the lamps. Three inlets can be used to check the synchronization of phases. These devices shall follow IEC 61958 standard.

6.1.11 SAFETY OF PEOPLE:

Any accidental over pressure inside the sealed chamber shall be limited by the opening of a pressure limiting device in the rear part of the tank. Gas will be released to the rear of the RMU away from the operator. Manufacturer shall provide type test report compliance to the " Internal fault IAC – AB as per IEC 62271-202.

6.1.12 OPERATING LEVER:

An anti – reflex mechanism on the operating lever shall prevent any attempts to reopen immediately after closing the switch or earth switch. All manual operations shall be carried out on the front of the RMU.

6.1.13 FRONT PLATE:

The front plate includes a clear mimic diagram that indicates the different functions. The position indicators shall give true reflection of the position of the main contacts. They shall be clearly visible to the operator. The lever operating direction shall be indicated in the mimic diagram. The manufacture's plate shall include the RMUs main electrical characteristics.

6.1.14 PAINT:

All paint shall be applied on clean, dry surfaces under suitable atmospheric conditions by seven tank process and powder coating. The paint shall not be scale off or crinkle or be removed by abrasion during normal handling. The RMU body shall be painted with shade RAL 7032. Sufficient quantity of touch –up paint shall be furnished for application at site.

6.1.15 FAULT PASSAGE INDICATORS:

Fault passage indicators shall be installed on the ring main unit. These devices shall be electronics devices with their own energy source and connected to single 3 phase split core CTs (CBCT). they shall be provided with bright LEDs /flags indicators, which shall be clearly visible in the daytime. They shall have the following resetting facilities:

Manual reset and Resetting after a set time duration and Resetting on restoring of LV

The Unit shall have short circuit and earth fault adjustable to different setting with separate current transformer. They shall be fully field –programmable and shall have at least 16 settings for phase – phase. It shall be possible to Test these indicators at site thru "Test" push button. The fault passage

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indicators should also be provided with SCADA output contact. They should confirm to the following standard:

- IEC 68-2-6, IEC 68-2-9: Environmental testing - for vibration, Solar radiations.
- IEC 950: Information technology equipment – safety
- IEC 1000-2: Electromagnetic compatibility for low frequency conducted disturbances and signalling in public low power supply system.
- IEC 1000-4: EMC – testing & management
- IEC 1000-6: EMC immunity for residential, commercial and light industrial environment.

7.0 DISTRIBUTION TRANSFORMER:

GENERAL CONSTRUCTION:

The transformer shall be 3 phase 50 Hz 1250KVA , 22KV /433V, DYn11, core type double wound with copper conductor oil immersed ONAN cooled Distribution Transformer hermetically sealed corrugated tank arrangement having a no load voltage ratio of 22KV/ 433V with top HT & LT Bushings. Losses shall be as per IS1180 (Level 2).

The transformer shall be suitable for service with fluctuations in supply voltage up to plus 12.5% to minus 12.5%.

The transformer and accessories shall be designed to facilitate operation, inspection, maintenance, and repairs. The design shall incorporate every precaution and provision for the safety of equipment as well as staff engaged in operation and maintenance of equipment.

All outdoor apparatus, including bushing insulators with their mountings, shall be designed to avoid any accumulation of water.

7.1.1 CORE:

1. Transformer core shall be stack type, constructed from high grade cold rolled, non-ageing, grain oriented, silicon steel lamination which shall be properly annealed (under inert atmosphere, if required) to relieve stresses.
2. The core shall have low loss and good grain properties. It should be coated with hot oil proof insulation, bolted together with frames to prevent vibration and noise.
3. The core thickness should be 0.23mm or less and grade should be M3 or better.
4. All core clamping bolts (if any) shall be effectively insulated.
5. Only one grade and one thickness of core shall be accepted and mixing of different grades shall not be allowed.
6. The complete design of the core must ensure maximum permanency of the core losses without continuous working of the transformers.
7. The value of the maximum flux density allowed in the design and grade of lamination used shall be clearly stated. The vendor shall submit the calculations in support of the same.
8. The transformer shall be suitable for continuous service without damage under 'over fluxing' where the ratio of voltage over frequency exceeds the corresponding ratio at rated voltage and rated frequency up to 12.5% and the core shall not get saturated.
9. The No Load current shall not exceed 2% of the Full Load current and will be measured by energizing the transformer at rated voltage and frequency. Increase of 12.5% of rated voltage shall not increase the no-load current by 5% maximum of full load current.
10. The bidder shall be required to submit the following documents in regard to procurement of core material:
 - Invoice of supplier

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- Mill's test certificate
 - Packing list
 - Bill of landing and Bill of entry certificate by custom
 - Description of material, electrical analysis, physical inspection certificate for surface defects, thickness, and width of material.
11. The bidder shall offer the core for inspection and approval during the manufacturing stage. Heavy penalty or blacklisting shall be imposed on the bidders using defective CRGO sheets.

7.1.2 **LOSSES:**

1. Losses shall be as per IS1180 (Level 2).
2. The bidder shall guarantee No load losses, the total loss at 50% and 100% load condition (at rated voltage and frequency and at 75°C) and these should be within the limits of maximum total losses declared.
3. No positive tolerance shall be allowed on the losses as mentioned above. However, bidder can offer losses less than specified but no consideration in cost will be given for the same.
4. The successful bidder shall guarantee the quoted losses for at least five years.

7.1.3 **PENALTY FOR NON-PERFORMANCE:**

- a) During testing at bidder's works, if it is found that the actual measured losses are more than the values quoted by the Bidder, the purchaser shall reject the transformer and shall have the right to reject the complete lot.
- b) The Purchaser shall reject the entire lot during test at bidder's works, if the temperature rise exceeds the specified values.
- c) The Purchaser shall reject any transformer during the test at bidder's works, if the impedance values differ from the guaranteed values including tolerance.

7.1.4 **WINDINGS:**

Primary and secondary windings shall be constructed from high- conductivity (copper conductors), Double Paper Covered (DPC) copper conductor. **The bidder shall submit characteristics of insulation paper with the offer.**

The current density for HV and LV winding should not be more than **2.5 Ampere per sq.mm.**

The insulation between core and bolts and core and clamps shall withstand **2.5 kV for one minute.**

Inter layer insulation both for HV and LV windings shall be Epoxy dotted Kraft paper and pressboard of standard make or any other superior material subject to approval.

All spacers, axial wedges / runners used in windings shall be made of pre-compressed solid pressboard. In case of cross-over coil winding of HV all spacers shall be properly sheared and dovetail punched to ensure proper locking. All axial wedges/runners shall be properly milled to dovetail shape so that they pass through the designed spacers freely. Insulation shearing, milling and punching operations shall be carried out in such a way, that there should not be any burr and dimensional variations. Proper bonding of inter layer insulation with the conductor shall be ensured. Test for bonding strength shall be conducted as per standards.

LV winding shall be such that neutral formation is at the top.

All turns of windings shall be adequately supported to prevent movement. The core/coil assembly shall be securely held in position to avoid any movement under short circuit conditions.

The joints in the winding shall be avoided but if it is necessary then, these shall be properly brazed, and the resistance of the joints shall be less than that of parent conductor.

7.1.5 **TRANSFORMER TANK:**

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The transformer tank must be hermetically sealed design. The transformer tank shall be of robust construction, **rectangular in shape** and shall be built up of electrically tested welded mild steel plates. The tank shall be fabricated by welding at corners. No horizontal or vertical joints in tank side walls and its bottom or top cover shall be allowed. All welding operations should be carried by **qualified welders** (performance qualification certificates to the customer) as per the relevant ASME standards and a copy of the **welding procedure** must be submitted. The **thickness of tank** should be as below:

Top and Bottom	6 mm (minimum)
For Sides	5 mm (minimum)

The tolerances as per IS 1852 shall be applicable. The top cover shall have no cut at point of lifting lug. The transformer tank cover shall be bolted/clamped alternatively welded with tank rim so as to make a leak proof joint. The curb design shall be such that it is possible to remove the weld and re weld the tank at least two times. The tank plate and lifting lugs shall be of such strength that the complete transformer filled with oil may be lifted by means of lifting shackle. There must be sufficient space from the core to the top cover to take care of oil expansion. The oil volume inside the tank shall be such that even under the extreme operating conditions, the **pressure generated inside the tank does not exceed 0.4 kg/sq. cm positive or negative** and the tank shall be of adequate mechanical strength to withstand it.

The transformer should be capable of **withstanding 0.8kg/sq.cm and a vacuum of 0.7kg/sq.cm.**

Length of Plate	Deflection
Up to 750 mm	5.0 mm
751 mm to 1250 mm	6.5 mm
1251 mm to 1750 mm	8.0 mm
Above 1750 mm	9.0 mm

The permanent deflection of the flat plate, when the tank without oil is subjected to a vacuum of 525 mm of mercury shall not be more than the values specified: The tank design shall be such that the core and the windings can be lifted freely without dismantling the bushings.

An enclosure of MS with terminal block should be provided on tank body so as to facilitate the connection of energy meter to DT .Also, suitable holes with glands to be provided on bottom side of this box as incoming and outgoing for 10 core 2.5 sq.mm cable.

Lifting Lugs:

The transformer shall be provided with a minimum of two welded heavy duty closed lifting lugs of MS plate of 8mm thickness suitably reinforced by vertical supporting flat welded edgewise below the lug on the side walls up to reinforcing angle. They shall be so extended that cutting bend plate is not required. The lifting lugs shall be capable of withstanding the total weight of the transformer, fully filled with oil.

All joints of tank and fittings shall be oil tight and no bulging shall occur during service.

Inside of tank shall be painted with hot oil restraint paint and minimum oil level mark shall be embossed inside the tank (at 25° C). The transformer shall be provided with four pulling lugs of MS plate of 8mm thick to pull the transformer horizontally.

7.1.6 RADIATORS:

Corrugated radiators to be welded to tank. Radiators of pressed steel type conforming to the design requirement shall be provided. The Pressed Steel type should be used in vertical formation without any bending and should be individually tested for leakage and pressure test etc. before welding with the main tank. **Thickness** of sheet for radiators shall be **1.20 mm (min)**. The **mounting** of the radiators shall be

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non-detachable (i.e., they should be welded permanently with the tank). The number / cross section / length / fixing arrangement of radiators shall be indicated in the general assembly drawing

7.1.7 GASKET:

Nitrile / Neoprene / cork rubber gaskets conforming to Type III as per IS 11149/Type C as per IS 4253 (Part-2) shall be provided.

7.1.8 PAINT:

All paints, when applied in a normal full coat, shall be free from runs, sags, wrinkles, patchiness, brush marks or other defects. All primers shall be well marked into the surface, particularly in areas where painting is evident, and the first priming coat shall be applied as soon as possible after cleaning. The paint shall be applied by spray or seven tank powder coating process, as applicable to the various parts of the transformer and enclosure. The transformer shall be painted with shade of RAL 7032 as applicable. The paint shall not scale off or crinkle or be removed by abrasion during normal handling. Enough touch-up paint shall be furnished for application at site. Vendor to ensure proper finishing of the paint.

7.1.9 TERMINAL ARRANGEMENT FOR INCOMING & OUTGOING :

RMU: Interconnection between HT switchgear and transformer shall be using Al unarmored XLPE cable with suitable rating.

LT ACB: For LT side termination, AL bus bar of minimum 2000A capacity. Corresponding color sleeves to be provided on busbars for easy identification. All control cables shall be provided with identification tags.

7.1.10 TERMINAL CONNECTOR:

HV bushing stems shall be provided with suitable adequate Al unarmored XLPE cable between RMU and transformer. Similarly, adequate rating of LT Al busbar provision shall be made between transformer and LT chambers. Provision of disconnecting facility with suitable flexible jumper in between Transformer LV Bushing & LT ACB bus bar to be considered. Suitable color coding sleeves shall be considered for HV as well as LV connections. Terminal connectors shall be type tested as per IS 5561. LT /HT busbar Nut Bolts for cable connection to be provided by OEM. The terminal connector Drawings shall be provided by the bidder and shall be submitted for Purchaser's approval.

7.1.11 TAP:

Tap changing shall be carried out by means of an externally operated self-position switch and when the transformer is in de-energised condition.

The taps shall be provided in HV winding and each tap change shall result in voltage variation of 2.5%. Switch position no.1 shall correspond to the maximum plus tapping +10% and position no.7/9 shall correspond to minimum tapping -10%.

Provision shall be made for locking the tapping switch handle in position.

Suitable plate shall be fixed for tap changing switch to know the position number of tap.

7.1.12 EARTHING CONNECTION:

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NEUTRAL EARTHING:

1. Separate LV neutral bushing to be provided at LV side for neutral earthing.
2. The for connecting LV neutral bushing shall be provided with 2 No's of 50x6 mm GI strip (The thickness of GI coating of neutral earthing strip shall be 60 microns (minimum)).
3. At the bottom of the GI strips two concentric holes of 12 mm diameter shall be made and suitable nuts & bolts shall be provided for them.
4. For neutral earthing & CT refer clause 5.31

BODY EARTHING:

Two body earthing terminals, located on the lower side of the transformer, diagonally opposite to each other of M12 size (taken 50mm out of tank) shall be provided on Transformer tank with Bolt.

7.1.13 RADIO INTERFERENCE:

When operated at voltages up to 12.5% in excess of the normal system rating, transformers shall be substantially free from partial discharges (i.e. corona discharges in either internal or external insulation) which are likely to cause interference with radio or telephone communication.

7.1.14 TERMINAL MARKING:

All transformers shall have the primary and secondary terminal markings plainly and indelibly marked on the transformer adjacent to the relevant terminal. (Vendor to specify the type of marking in the GTP. It should be such that if it comes out should not cause reduction in clearances). High voltage phase windings shall be marked both in the terminal boards inside the tank and on the outside with capital letter 1U, 1V, 1W and low voltage winding for the same phase marked by corresponding small letter 2u, 2v, 2w. The neutral point terminal shall be indicated by the letter 2n. Sequence of marking should be 1U, 1V, 1W and 2n, 2u, 2v, 2w). Colour codes to be marked in addition to 1U,1V, 1W & 2u, 2v, 2w and 2n.

R, Y, B identification marking shall be provided on RMU Cable compartment & similarly R, Y, B, N marking to be done on Outgoing MCCB cable compartment.

7.1.15 TEMPERATURE INDICATORS:

1. WTI shall be provided in one winding of each phase.
2. WTI shall be **indicating type**, responsive to the combination of top oil temperature and winding current, calibrated to follow the hottest spot temperature of the transformer winding.
3. WTI shall operate a remote alarm and trip in the event of attaining the predefined temperature.

7.1.16 MARSHALLING BOX:

1. Being complete package substation, separate Marshalling Box is not compulsorily required, all its components can be places in HV or LV compartment as per design.
2. Provision for wiring the **WTI, OTI, PRV relay terminals**. The terminals shall be provided as per table below,

Element	Alarm	Trip
Oil Temperature Indicator	NO,NC,COM	NO,NC,COM
Winding Temperature Indicator HT Side	NO,NC,COM	NO,NC,COM

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Winding Temperature Indicator LT Side	NO,NC,COM	NO,NC,COM
PRV	NO,NC,COM	
Spare TB	4 No.	

3. 10 core PVC wire (4 sq.mm Cu FRLS PVC stranded panel wires) shall be used to terminate connections from CTs at LV side to the Marshalling box.
4. **Plastic ferrules** engraved with black letters shall be used to mark the wires in the marshalling box.
5. Wiring in shall be done by 2.5 sq.mm Cu FRLS PVC stranded panel wires.
6. All the cables and conduits between the transformer and control cabinet shall be included in the scope of supply by the bidder.
7. The Links in these should be of disconnecting type and should have facility to hold ring type of lugs. All links shall be droppable type ASEA links.
8. Sufficient extra links to be provided for control wiring.

7.1.17 **CURRENT TRANSFORMER:**

The APFC CTs window type, resin cast of protection class for ultimate E/F shall be provided. All the Metering LT CTs shall be cast resin type. The Current transformer shall be mounted with suitable clamping arrangement and should be C-shaped of sliding, soft material, non -screw type. The current transformer shall comply with IS 2705. The terminals shall have shorting facility. The CT should not get saturated up to 200% of rated current. The CTs shall have following parameters. CT terminal box for secondary of CT shall be provided of suitable size on the side of transformer. Box shall have droppable terminal blocks with shorting link. Secondary of CTs shall be stud type with lock nut. Color coded wires shall be used for control and CT wiring.

Parameter	APFC Relay CT
Type	Cast Resin
Accuracy class	5P20
Burden	15 VA
Application	Protection Ultimate E/F
ISF	<=5
CT ratio for 1250KVA Transformer	2000/5

Parameter	LT Metering CT
Type	Cast Resin
Accuracy class	0.5
Burden	15 VA
Application	Metering purpose
ISF	<=5
CT ratio for 1250KVA Transformer	2000/5

7.1.18 **OIL:**

All transformers shall be filled with new, unused, clean, standard mineral oil in compliance with IS 335/ IEC 296 and shall be free from all traces of polychlorinated biphenyl (PCB) compounds. The use of recycled oil is not acceptable.

Oil shall be filled under vacuum before filling it shall be filtered and tested (as per IS 6103). The test parameters should be as per the table below:

Test parameters	Values
Break Down Voltage (min)	60 kV

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Water content ppm, (max)	20 ppm
Specific resistance (min.) (at 27°C)	2.5 × 10 ¹² ohm-cm

7.1.19 **OVERLOAD CAPACITY:**

The transformer shall be suitable for loading as per IS 6600.

7.1.20 **FASTENERS:**

All bolts, studs, screw threads, pipe threads, bolt heads and nut bolts shall comply within the appropriate Indian standards for metric threads. Bolts or studs shall not be less than 6mm in diameter except when used for small wiring terminals. All nuts and pins shall be adequately locked. Wherever possible bolts shall be fitted in such a manner that in the event of failure of locking resulting in the nuts working loose and falling off, the bolt will remain in position. All ferrous bolts, nuts and washers placed in outdoor positions shall be treated to prevent corrosion, by hot dip galvanizing, except high tensile steel bolts and spring washers which shall have electrolytic action between dissimilar metals. Each bolt shall project at least one thread but more than three threads through the nut. If bolts and nuts are placed so that they are inaccessible by means of ordinary spanners, special spanners shall be provided.

The length of the screwed portion of the bolts shall be such that no screw thread may form part of a shear plane between members. Taper washers shall be provided where necessary. Protective washers of suitable material shall be provided on front and back of the securing screws.

7.1.21 **FITTINGS:**

The following standard fittings shall be provided

- Winding temperature indicator complete with thermostat and annunciator (Alarm and trip)
- Diagram, rating plate, terminal marking plate should be non-detachable. Separate plate for guarantee period & date of dispatch.
- Two earthing terminals with lugs at the centre of the bottom channels supporting the transformer.
- Lifting lugs for main tank & top cover.
- HV bushings – 3 Nos.
- LV bushings – 4 Nos.
- Stiffener angle
- Marshalling box with WTI on HT side.
- Inspection Cover & sufficient ventilation from bottom side also.

8.0 **LV COMPARTMENT:**

The complete arrangement of ACB & MCCBs shall be provided on framework of channel with adequate strength to support the weight of ACB & MCCBs. Each outgoing shall be compartmentalised with MS sheet with adequate space/clearance. The framework shall be covered from the front with GI sheet of thickness not less than 2mm such that no live part is accessible at any time during the operation or testing period. All mechanism shall be made of such material as to prevent corrosion due to sticking of dust. Cast iron shall be used for any part of equipment which may be subjected to mechanical stresses. All connections and contacts shall be of ample section and surfaces for carrying continuously the specified current without undue heating and shall be secured rigidly & locked in position.

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All apparatus shall be so designed and constructed as to obviate the risks or short circuit of the live parts by lizards/rodents. Corresponding parts of similar apparatus shall be mutually interchangeable. All apparatus to minimize risks of fire and any damage which might cause in the event of fire.

8.1.1 **ACB & MCCBS WITH BUSBAR:**

The bus bar shall be of electrolytic grade aluminium, duly sleeved with shrinkable coloured sleeves and maximum current density of 1.0A/sq mm. The bus bar from transformer secondary shall enter the LV compartment and suitably terminated at incoming of the 4 pole LT ACB. The ACB shall be mounted at a height to accommodate mounting of 10 nos. MCCBs (4 pole, 400A each) directly below the ACB with sufficient space for cable termination. Phase barriers shall be provided suitably at the terminals.

The outgoing from the ACB should be connected to bus bar which in turn are connected to the incoming bus bar of MCCBs. All LV bus bar shall be supported on the LV compartment frame with suitable bus support insulators of 1.1KV class. The minimum clearance between phase to phase shall be 30mm and between phase to earth 30mm. The neutral bus bar shall be same size as phase bus bar. Separate neutral bus bar must be located suitably to terminate the neutral core of LT cable in 3 phase 4 wire system. The neutral bus bar shall be suitable to carry 2000 A. The neutral bus bar shall be insulated from the frame using 1.1kv class support insulators. The transformer neutral shall be terminated on the neutral bus bar in the LV compartment. The entire mechanism of breakers along with framework shall be suitably earthed 25 x 6 sq mm tinned copper or equivalent Aluminium earth conductor at two distinct points and further connected to the common earth conductor provided for the entire sub-station.

Each MCCB should have ON & OFF indication lamp. LOTO lock arrangement to be done for LT ACB ON & OFF push button switch & Spring charging Handle. Each MCCB shall have provision of connecting 2 nos 4c 185 or 300 sq mm 4C AL Armoured XLPE cables.

Note: The LT ACB should have self- powered release for O/C & E/F protection. LT ACB should have additional 230V AC Shunt Tripping coil for tripping of LT ACB through Remote. Additional compensating CT be installed on Neutral bus Bar to avoid tripping of LT ACB during unbalanced load. Pls refer the SLD.

8.1.2 **PAINT:**

All paint shall be applied on clean, dry surfaces under suitable atmospheric conditions by seven tank process and powder coating. The paint shall not be scale off or crinkle or be removed by abrasion during normal handling. The RMU body shall be painted with shade RAL 7032. Enough touch –up paint shall be furnished for application at site.

9.0 **APFC Panel:**

415V LT Capacitor Bank 150KVAR - 1No.
APFC relay must be 6 stage (L&T/Equivalent make).
Capacitor banks (25KVAR x 6) with suitable rated capacitor duty contactors,
MCB for protection (25KVAR – 63A), Auto manual selector switch, On/Off Push buttons & Indicating lamps.

10.0 **NAME PLATE & MARKING**

All the components and operating devices of the RMU shall be provided durable and legible nameplates containing all technical parameters. Name plates shall be suitably embossed with “PO no. with date”

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“PROPERTY OF -----” & “CODE NUMBER” along with the following information. A Danger plate of appropriate size shall also be provided on the enclosure.

ENCLOSURE:

- i. Manufacture’s Name
- ii. Rated Voltage
- iii. System Frequency
- iv. Rated Short time withstand current for 1 Sec
- v. Rated Impulse withstand Voltage
- vi. Degree of Protection
- vii. Rated class of enclosure.
- viii. **“Don’t open the Door Transformer will Trip”** Name plate to be pasted on the PSS Transformer compartment Door.

RMU: (ABB/Siemens/Schneider/Eaton)

1. Manufacture’s Name
2. Type Designation or serial no.
3. Year of manufacture
4. Application Rated values
5. Mass of unit
6. SF6 gas filling pressure

TRANSFORMER: (Danish, Telawne, Marsons, Toshiba, Sudhir Power)

A stainless-steel rating plate, of at least 1 mm thickness, shall be fitted to each transformer in a visible position and shall carry all the information as specified in the standards. The letters on the rating plate shall be engraved black on the white/silver background. Fixing screws for outdoor use shall be of stainless steel or any other corrosion resistant metals. Danger notice shall have red lettering on a white background, or they may be pictorial as approved by the Purchaser. The name plate shall contain following information:

1. Type of transformer
2. Relevant standard.
3. Manufacturer’s Name
4. Manufacturer’s Serial No.
5. Year of Manufacture
6. No. of phases
7. Rated kVA
8. Rated frequency
9. Rated Voltage
10. Rated current
11. Connection symbol
12. Percentage impedance voltage at rated current
13. Type of cooling
14. Total mass
15. BIL

In addition to the above information the rating plate shall also contain the following:

1. Guaranteed values of no-load losses and full load losses at 50% & 100 % load
2. Temperature rise
3. Table giving the tapping voltage, tapping current and tapping power of each tap.
4. Indication of winding which is fitted with tapping’s

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5. Value of short circuit impedance on extreme tapping and on principal tapping and Indication of winding to which impedance is related.
6. Actual losses of transformer
7. Overall dimensions

LV ACB AND MCCBs:(ABB, L&T, C&S, Schneider, Siemens, Havels)

1. Manufacturer name
2. Type Designation or serial no.
3. No of the relevant standard
4. Utilization category
5. Rated voltage
6. Rated Current
7. Rated Frequency
8. Rated service Short breaking capacity (Ics)
9. Rated Ultimate short circuit breaking capacity (Icu)
10. Line and load terminals
11. Neutral pole terminal
12. Protective earth terminal
13. Indication of open and closed position
14. Terminal marking on O/G MCCB
15. LOTO lock arrangement to be done for ACB ON & OFF Push button
16. LOTO lock arrangement for LT ACB Spring charging handle.
17. Indication lamp for MCCB ON / OFF

11.0 TESTS

Routine & acceptance Tests shall be conducted on the Ring Main Units in accordance with the latest versions of IS/IEC. All the tests shall be witnessed by the purchaser/his authorized representative. All the components within the RMU enclosure shall have been tested for routine/acceptance and type tests as per the relevant standards. All type tests are as per latest IS/IEC shall have been carried out on the RMU as per relevant IS/IEC. Following tests shall be necessarily conducted on the equipment and its components in addition to others specified in the IS/IEC.

1. Dimensional and visual check
2. Mechanical operation test and checking of interlocks
3. Dielectric test on main and control circuits
4. Temperature rise test
5. Internal Arc withstand test
6. Degree of protection test
7. Test to check the capability of main and earthing circuits subjected to rated peak and short time withstand current.

Transformer Type test report

- i. Lightning Impulse Test with chopped wave [As per IS 2026 (Part 3)]. BIL for 22 kV shall be 125 kV peak on all the three phases.
- ii. Temperature Rise Test [As per IS 2026 (Part 2)]. The ambient temperature and time of test should be stated in the test certificate.
- iii. Note-This may also be done during acceptance test with No-load cycle+ Load cycle as per IEC60076-11
- iv. Short Circuit Withstand test [As per IS 2026 (Part 5)]. -Thermal and dynamic ability.
- v. NOTE: Routine tests before and after short circuit test shall be conducted as per IS 2026(Part-1)

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Note: -Out of the above mention type test, the tests under sl. No. i, ii, iii & iv shall be conducted at CPRI/ERDA labs for each rating and the balance shall be acceptable as in-house tests.

12.0 TYPE TEST CERTIFICATE

Bidder shall furnish the type test certificates of the 22kV RMU & Transformer for the tests as mentioned above as per the corresponding standards. All the tests shall be conducted at CPRI/ERDA as per relevant standards. The test shall 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.

13.0 PRE-DISPATCH INSPECTION

Equipment shall be subject to inspection by our duly authorized representative. Inspection may be made at any stage of manufacture at the option of the purchaser and the equipment if found unsatisfactory as to workmanship or material is liable to rejection. Supplier shall always grant free access to the paces of manufacture to our representatives when the work is in progress. Inspection by our authorized representatives shall not relieve the supplier of this obligation of furnishing equipment's in accordance with the specifications. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by us. Following documents shall be sent along with material:

1. Test reports
2. MDCC issued by _____
3. Invoice in duplicate
4. Packing list
5. Drawings & catalogue
6. Guarantee / Warrantee card
7. Delivery Challan
8. Other Documents (as applicable)

14.0 INSPECTION AFTER RECEIPT AT STORE

Material received at our store will 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 project engineering department.

15.0 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 found by the purchaser up to a period of at least 36 months from the date of commissioning or 48 months from the date of last supplied made under the contract whichever is later, 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 purchaser, failing which the purchaser will be at liberty to get it replace / rectifier at bidder's risk and costs and recover all such expenses plus the purchaser's own charges from the bidder or from the security cum performance deposit as the case may be. Bidder 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 purchaser.

16.0 PACKING

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Bidder shall ensure that all equipment covered by this specification shall be prepared for rail/road transport and be packed in such a manner as to protect it from damage in transit.

17.0 TENDER SAMPLE

Not applicable.

18.0 QUALITY CONTROL

The bidder shall submit with the offer, assurance plan indicating the various stages of inspection, the tests and checks which will be carried out in the material of construction, components during manufacture and after finishing, bought out items and fully assembled component and equipment including drives. As a part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. The purchasers of its nominated representative engineer shall have free access to the manufacture / sub supplier's works to carry out inspections.

19.0 TESTING FACILITIES

Bidder shall have adequate in-house testing facilities for carrying out all routine tests & acceptance tests as per relevant IS/IEC.

20.0 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 be submitted within 15 days from the release of the order.

21.0 SPARES, ACCESSORIES & SPECIAL TOOLS/GAUGES

Bidder shall provide a list of recommended spares with quantity and unit price for 5 year of operation after commissioning. The purchaser may order all of any of the spare parts listed at the time of contract award and the spare parts so ordered shall be supplied as part of the definite works. The purchaser may order additional spares at any time during the contract period at the rate stated in the contract document.

The bidder shall provide one SF6 gas leak indicator & one no. phase comparator. A list of complete set special tools and gauges required for erection & maintenance and installation procedure shall be submitted.

Bidder shall give an assurance that spare parts and consumable items will continue to be available through the life of the equipment which shall be 25 year minimum. However the purchaser shall give a minimum of 12 month notice in the event that the bidder or any sub vendor plans to discontinue manufacture of any component use in this equipment.

Any spare apparatuses, parts or tools shall be subjected to the same specification, tests, and conditions as similar material supplied under the contract. They shall be strictly interchangeable and suitable for use in place of the corresponding parts supplied with the plant and must be suitably marked and numbered for identifications.

22.0 Drawing / documents to be submitted after the award of the contract are as under:

Following drawings and documents shall be prepared based on our specification and statutory requirements and shall be submitted with the bid:

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1. Filled in technical Particulars
2. General description of the equipment and all components including brochures
3. General arrangement for RMU
4. Power flow diagram
5. Foundation plan
6. Bill of material
7. Experience List
8. Type test certificates

Drawings/ Documents to be submitted after the award of contract are as under :

Sr. No	Descriptions	For Approval	For Review/ Information	Final submission
1	Technical particulars	√		√
2	General Arrangement drawings	√		√
3	Power Flow Diagram	√		√
4	HV and LV compartment layout	√		√
5	Schematic Diagram	√		√
6	Earthing Plan	√		√
7	Bill of Materials	√		√
8	Foundation Plan & loading Details		√	√
9	Installation instructions		√	√
10	Instruction for Use & maintenance		√	√
11	Transport/Shipping Dimension Drawing		√	√
12	QA & QC Plan	√	√	√
13	Test Certificates	√	√	√

All the documents & drawings shall be in English language.

After the receipt of the order, the successful bidder will be required to furnish five copies of all relevant drawings for our approval.

Instruction Manuals: Bidder shall furnish two softcopies (CD) and (4) hard copies of nicely bound manuals (In English language) covering erection and maintenance instructions and all relevant information and drawings pertaining to the main equipment as well as auxiliary devices.

23.0 GENERAL TECHNICAL REQUIREMENTS:

A. ENCLOSURE FOR PSS				
Sr. No	Descriptions	Unit	As Specified by Purchaser	As Furnished By Bidder
1	Application		Outdoor	
2	Rated voltage	KV	24	
3	Service Voltage	KV	22	
4	System Frequency	Hz	50	
5	Rated impulse withstand voltage	KVP	125	
6	Rated power frequency withstand voltage	KV rms	50	
7	Rated LT voltage	V	433	
8	Degree Protection for Enclosure		IP 54	
9	Internal Arc Test		IAC-AB as per IEC 62271-202	

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10	Max. Permissible Temperature for accessible part of the enclosure.	°C	Maximum permissible temperature shall not be exceeded 70 deg C at an ambient temperature not exceeding 40 deg C	
11	Dimension of Enclosure (LxWxH)	mm x mm x mm	To be provided by bidder	
12	Thickness of sheet for enclosure – For base		2-3mm (min) GI sheet steel 3mm (min) GI sheet steel	
13	Control wiring	Colour code	To be provided by bidder	
	a) Type of insulation		PVC	
	b) Voltage grade	KV (Max)	1.1	
	c) Conductor Material with PVC colour coded sleeves.		Copper	
	d) Conductor Size & insulation wiring	Sq. mm	1.5 & 2.5	
	e) CT wiring & PT wiring	Sq. mm	4	
	f) Wiring identification mark & Accessories as per specification		To be provided by bidder	
14	Ventilation aperture		Class k10	
15	Locking arrangement		The doors shall be padlocked As well as protected.	
16	Earthing to be provided -PSS -RMU -Trf body and neutral -LV ACB & MCCB		To be provided by bidder	
17	Accessories like Heater, Lamps, hooter, door switch, etc.		To be provided by bidder	
18	Paint		RAL 7032	
19	No of Accessories furnished			
	a) Earthing equipment		To be provided bidder	
	b) Test Plug		To be provided by bidder	
20	Guarantee-from date of taking over by us		36 Months from the date of commissioning or 48 months from the date of last supplies made under the contract whichever is later	
21	Availability of spares		Assurance by bidder for 25 years	
22	Dimension	mm x mm x mm	To be provided by bidder	
23	Total weight	Kg	To be provided by bidder	
24	HT and LT connection between Trf, RMU & LT ACB	CU with colour coded sleeves	To be provided by bidder	

B. RING MAIN UNIT (RMU):

S.N.	Description	As specified by _____ (Options defined in specs)
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1	RMU Category	3Way - 1CB & LBS
2	RMU application	Indoor
3	Offered Model nos. and OEM type	3Way
4	Dielectric medium	SF6
5	Interrupting medium	Vacuum- for CB
		SF6 for LBS and earth switch
6	System Frequency	50 Hz
7	Rated Voltage	24 KV
8	Service Voltage	22 KV
9	Rated current -Line Switches	630 A
10	Rated Current-CB and LBS	630 A for all type
11	Rated Short time current withstand (3 sec)	25 KA for 3 Sec
12	Rated Short time Making capacity	50 KA
13	Rated cable charging interrupting current of incomer load break switch	10A
14	Rated load interrupting line current	630 A
15	Rated cable charging breaking current of breaker	25 A
16	No. of operations at rated short circuit current on line switches, earthing switches should be E2	LBS- 5 close
		ES- 5 close
		The ES in line with CB
17	Opening time of breaker (max.) Without relay time	2.5 cycle
18	Closing time of breaker (max.)	3 cycle
19	Breaker Duty Cycle	O – 3min - CO - 3min - CO
20	i. Mechanical endurance for Isolator & Earth Switch	Min 1000 Operations
	ii. Mechanical endurance for Circuit Breaker	Min 2000 Operations
21	Electrical operations of at rated current	To be provided by bidder
	a. LBS/Disconnecter b. Earth Switch	
22	Temp rise above ambient of 50 deg.	50 Deg C. (Type Tested as per IEC and complying to requirements)
23	Min Gas pressure in bar	To be provided by bidder based on type tested design
24	SF6 Gas pressure manometer with indicating bars/scale to measure the actual gas pressure (indirect method RFS etc. not accepted)	1. Dial type Manometer to be provided for gas pressure indication
		2. Contacts to be provided and wires up on the TB for SCADA communication of gas status.

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25	Enclosure	The RMU metal parts shall be greater than 2mm thickness high tensile steel/CRCA. The overall paint thickness shall be not less than 70 microns.
26	Guaranteed SF6 leakage per annum	Less than 0.1% from main tank
27	Degree of protection	a. IP 67 for the tank and b. IP2X for the front cover / mimic board and c. IP 54 (Main door closed) for Outdoor RMUs. d. IP 54 for cable compartment
28	Internal Arc rating	IAC AFL or better
29	Internal Arc test	20kA for 1 Sec.
30	Lightning Impulse withstand Voltage	125 kVp
31	Power Frequency withstand voltage	50 kVrms.
32	SF6 Tank design	Hermetically/robotically sealed unpainted stainless-steel enclosure with SF6 Gas. Sealed pressure system by Laser welding so that no refilling of gas is required for 30 years. No gas work at site. Complete body shall be tamperproof to prevent access to live parts. No gaskets shall be used. No bolts shall be provided.
32.1	Tank material and grade of SS and welding	Should be of SS and non-corrosive, offered grade of SS to be mentioned. The welding shall be such that there shall be corrosion of welding for useful life of equipment.
33	Earth bus bars	In enclosure to prevent tampering.
34	Material & size of earth bus bar	To be provided by the bidder
35	Earthing of main CCT Cables shall be earthed with earth switch with S/C making capacity as per IEC 129. Moving contacts of earthing switch shall be visible in closed position thru transparent covers AND closing shall be possible only when Isolator is open	To be provided by bidder
36	Incomer Load Break switch: Shall be SF6 insulated with least maintenance. Shall have at least 3 positions, Open, Close & earth with natural interlocks. Fitting of motor at site shall be possible & shall have mechanical interlock.	To be provided by bidder

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	The electrical interlock of cable charge with earth switch is preferred.	
37	<p>Circuit Breakers:</p> <p>a. With VCB interrupter and SF6 insulated bus with minimum maintenance and shall have at least 2 positions i.e. Open & Close, Manual operation & fitting of motor at site shall be possible if required.</p> <p>b. In view of safety each VCB shall be assisted with feeder side disconnecter having 3 positions, open-disconnected, closed, and earth (having fault making capacity) and shall be constructed in such a way that natural interlocking prevents unauthorized operations.</p>	To be provided by bidder as per specs.
38	Protection Relay-Without auxiliary power & shall include, electronic relay, low energy release & fast on test receptacle for protection testing	Self-powered O/C & E/F relay type CSPR with Single core cast resin type CT, CT ratio of 100/1A (Protection Core – 2.5VA & CL-5P10). Necessary battery and battery charger to be provided for protection, indication and annunciation.
39	Make of self-powered Relay & offered model	Ashida, Schneider, Siemens
40	Flag indication for CB Trip on fault in relay/mechanical	To be provided by bidder
41	Testing of Cable- If doors are opened then earth switch shall be in closed position with necessary interlocks and cable test rod fixing provision in bolt head which can be fixed on terminations through boot cap/opening for testing purpose AND if doors are opened it shall not be possible to operate, Isolator, E/Switch or CB through interlocks	To be confirmed. If separate test bushing are provided, it shall be covered with suitable antitheft covers with anti-vandal screws
42	Protection against theft	Design of RMU shall be tamper & arc proof. Anti-vandal screws shall be provided. Cable covers shall be pad lockable. All live parts and internal parts etc. shall be covered with antitheft covers.
43	Doors	As provided by manufacturer
44	Voltage indicator box shall be fixed type-This device shall follow IEC 62271-206:2011 standard only	Capacitive dividers type which will supply low voltage to power the lamps AND 3 inlets can be used to check phase sequence or presence of voltage in cable
45	Cable cleats (full circle)	HDPE/Nylon (Fire Retardant)
46	Cable termination and bushing suitability	Heat/ Cold shrink terminations

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47	Cable compartment suitability shall be	In the isolators compartment 22kV, 3C X 240 sq. mm and in breaker compartment 22kV, 1CX95sq. mm / 3C X 120 Sq. mm
47	The cable compartment	All cable compartment shall be bottom entry and front opening type only
48	Size of bimetallic washer in all compartments	Must be suitable for M12 bolt and bushing sizes with min. 2mm thick.
49	Height of bushing terminal from base plate	Minimum 800mm for proper termination space.
50	Fault passage indicator	One per RMU in Incomer left LBS as a part of each RMU with specified default setting.
51	Operating handle	To be provided by bidder as a part of RMU with each RMU and to be placed on front or on door
52	Non removable MIMIC Diagram on Front of panel	To be provided by bidder with detailed descriptions as mentioned in specs. And earth switch marking background shall be Green background. As per annexure-2
53	Main Bus bar Material	Copper
53.1	Bus bar Cross Section	To be specified by bidder as per current density
54	Opening & Closing times with relay	125 ms maximum
55	Current Transformer for CB compartment	Shall be epoxy resin casted and mounted on cables. The CTs around the cables shall be supported on the sheet steel bracket and should be fixed with bolts. The mounting frame should be moveable up and down or to and fro but shall be fixed at co-axial position with base plat holes and bushing terminal bolts. 100/1 , 5P20
56	Future motorization and SCADA Compatibility	To be provided
57	Guarantee	As per specification
58	Dimension (LxWxH) (mm x mm x mm)	To be provided by bidder

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59	Total weight	To be provided by bidder
60	Paint	Light Gray shade RAL 7032
61	Type test of product	To be provided by bidder as per specification
62	Availability of spares	Assurance by bidder for 25 years, list of spares to be provided by manufacture and as mentioned in specification to be provide along with RMU lot.
63	VPIS auxiliary contact	The VPIS shall have auxiliary contact such that it can be configured with SCADA for remote status indication of cable charged. The auxiliary contact to be wired up in TB.
63.1	VPIS	In all compartments
64	Breaker operation counter	To be provided by bidder
65	LBS operation counter	To be provided by bidder
66	Moisture absorption material in SF6 tank	Bidder should provide the detail of the moisture absorption material.
67	Direction of operation (As offered) (Close - clock wise Open- counter clock wise)	a. LBS – ON/off b. ES- Open/ close c. CB disconnecter- ON/off d. CB earth switch-Open/ close
	Making of earthing operations	All earth operation to be marked with green background and permanent in nature.
69	Auxiliary contacts (total numbers and spare numbers)	LBS Earth Switch CB CB Disconnecter - CB earth switch-
70	Control cable entry provision	To be provided
71	Shunt trip coil 230V AC	230V AC shunt trip coil to be provided. Trip coils to be wired up on TB.
72	MCB for LT AC incomer and TB connection of all CT, Aux switches and relay wiring	To be provided
74	RMU Cable Boot/ terminal protector	
a	Terminal protector	Insulating Boots
b	System voltage	24 kV
c	AC High voltage	50kV For 1 min
d	Impulse withstand voltage	125kV

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e	Bushing Diameter	To be provided by bidder
f	Bushing Types	To be mentioned by bidder
g	Cable cross section suitability	Bidder to provide complying to specs.
h	Dimensions of cable protector	Suitable for cables & bushing in specs. (offered size to be provided by bidder)
i	Material of the component	To be specified by bidder
75	Type test reports	Bidders to provide detailed list of tests conducted at lab name, conducted dates, report number along with full reports.

C. DISTRIBUTION TRANSFORMER:

S.No.	Description	Unit	As Specified by bidder	As Furnished by Bidder.
1	Continuous Rating	kVA		
2	Type of Transformer		Hermetically sealed Mineral oil filled	
3	Name of Manufacturer		To be furnished by Bidder	
4	Place of Manufacture		To be furnished by Bidder	
5	Voltage ratio	kV	22/0.433KV	
6	Vector group		Dyn-11	
7	Type of cooling		ONAN	
8	Class of Insulation		Class A	
9	Winding Material		Copper	
10	Core material used and Grade			
10.1	Thickness		To be furnished by Bidder	
10.2	Grade		M3 or better	
10.3	Flux Density at normal voltage	Tesla	1.6	
10.4	Overfluxing without saturation	Tesla	To be furnished by Bidder	
11	Maximum temperature rise of:			
11.1	Windings by resistance method	Deg. C	50° C	
11.2	Oil by thermometer	Deg. C	45° C	
12	Magnetizing (no-load) current at:			
12.1	90% Voltage	%	To be furnished by Bidder	
12.2	100% Voltage	%	2	
12.3	112.5% Voltage	%	5	
13	Resistance of windings at 20 deg. C			
13.1	HV windings	Ohms/phase	To be furnished by Bidder	

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13.2	LV windings	Ohms/phase	To be furnished by Bidder	
14	No Load losses	Watts	To be furnished by Bidder	
15	Load losses at 50%loading at 75° C	Watts	To be furnished by Bidder	
16	Load losses at 100% loading at 75° C	Watts	To be furnished by Bidder	
17	Total losses at 100%load at 75° C	Watts	To be furnished by Bidder	
18	Total losses at 50% load at 75° C	Watts	To be furnished by Bidder	
19	Current density used for:			
19.1	HV winding	Amp./mm ²	< or = 2.5	
19.2	LV winding	Amp./mm ²	< or = 2.5	
20	Clearances			
20.1	Core and LV	Mm	To be furnished by Bidder	
20.2	LV and HV	Mm	To be furnished by Bidder	
20.3	HV Phase to phase	Mm	To be furnished by Bidder	
20.4	Between HV winding and Yoke	Mm	To be furnished by Bidder	
20.5	Between LV winding and Yoke	Mm	To be furnished by Bidder	
20.6	Between yoke and inside of tank to cover	Mm	To be furnished by Bidder	
20.7	Between yoke and bottom	Mm	To be furnished by Bidder	
20.8	Any point of winding to tank	Mm	To be furnished by Bidder	
21	Efficiency at 75 deg. C			
21.1	Unity P.F.			
	125% load	%	To be furnished by Bidder	
	100% load	%	To be furnished by Bidder	
	75% load	%	To be furnished by Bidder	
	50% load	%	To be furnished by Bidder	
	25% load	%	To be furnished by Bidder	
21.2	0.8 P.F.			
	125% load	%	To be furnished by Bidder	
	100% load	%	To be furnished by Bidder	
	75% load	%	To be furnished by Bidder	
	50% load	%	To be furnished by Bidder	
	25% load	%	To be furnished by Bidder	
22	Regulation at :			
22.1	Unity P.F. at 75 deg. C	%	To be furnished by Bidder	
22.2	0.8 P.F. at 75 deg. C	%	To be furnished by Bidder	
23	% Impedance at 75 deg. C	%	To be furnished by Bidder	
24	Power frequency voltage withstand test			
24.1	HV for 1 minute	kV	50	
24.2	LV for 1 minute	kV	3	
25	Over potential Test (Double voltage and double frequency for 1 minute)	v	866	
26	Impulse voltage withstand test (HV)	kVp	125	

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27	Mass of :			
27.1	Core lamination (minimum)	Kg		To be furnished by Bidder
27.2	Windings (minimum)	Kg		To be furnished by Bidder
27.3	Tank and fittings	Kg		To be furnished by Bidder
27.4	Oil	Kg		To be furnished by Bidder
27.5	Oil quantity (minimum)	Ltr		To be furnished by Bidder
27.6	Total weight	Kg		To be furnished by Bidder
28	Oil Data:			
28.1	Quantity for first filling (minimum)	Ltr		To be furnished by Bidder
28.2	Grade of oil used			To be furnished by Bidder
28.3	Marker's name			To be furnished by Bidder
28.4	BDV at the time of filling	Kv		To be furnished by Bidder
29	Transformer:			
29.1	Overall length x Breadth x Height	mm X mm X mm		To be furnished by Bidder
29.2	Tank length x breadth x height	mm X mm X mm		To be furnished by Bidder
29.3	Thickness of plates for			
29.3.1	Side plate (min.)	Mm	5	
29.3.2	Top and bottom Plate (min.)	Mm	6	
30	Conservator:			
30.1	Tank diameter*height	mm*mm		To be furnished by Bidder
30.2	Volume of oil in conservator	Liters		To be furnished by Bidder
31	Radiators:			
31.1	Heat dissipation by tank walls excluding top and bottom			To be furnished by Bidder
31.2	Heat dissipation by cooling Radiator			To be furnished by Bidder
31.3	Size and thickness of sheet			To be furnished by Bidder
31.4	No of bank/fins			To be furnished by Bidder
32	Inter layer insulation provided in design for In between all layer			To be furnished by Bidder
33	Insulation materials provided			
33.1	For conductors			
33.1.1	HV			To be furnished by Bidder
33.1.2	LV			To be furnished by Bidder
33.1.3	Core			To be furnished by Bidder
34	Material and size of the wire used			
34.1	HV Conductor			
34.1.1	Size	Mm		To be furnished by Bidder
34.1.2	Area of cross section	Sq.mm		To be furnished by Bidder
34.2	LV Conductor			
34.2.1	Strip size	Mm		To be furnished by Bidder
34.2.2	No. of conductors in parallel	Nos.		To be furnished by Bidder
34.2.3	Total area of cross section	Sq.mm		To be furnished by Bidder

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35	Whether the name plate gives all particulars as required in specifications	YES/NO	To be furnished by Bidder	
36	Particulars of bushings HV			
36.1	Manufacturer's name		To be furnished by Bidder	
36.2	Compliance to standard IS 8603		To be furnished by Bidder	
36.3	Rating as per IS		To be furnished by Bidder	
36.4	Dry power frequency voltage withstand test		To be furnished by Bidder	
36.5	Wet power frequency voltage withstand test		To be furnished by Bidder	
37	Particulars of bushings LV			
37.1	Manufacturer's name		To be furnished by Bidder	
37.2	Compliance to standard IS-3347		To be furnished by Bidder	
37.3	Rating as per IS		To be furnished by Bidder	
37.4	Dry power frequency voltage withstand test		To be furnished by Bidder	
37.5	Wet power frequency voltage withstand test		To be furnished by Bidder	
38	Whether the offer conforms to the limits of impedance mentioned in specification		To be furnished by Bidder	
39	Whether the offer conforms the limits of temperature rise mentioned in specification		To be furnished by Bidder	
40	Whether the losses of transformers offered are within the limits specified		To be furnished by Bidder	
41	Whether the transformer offered is already type tested for design and test reports enclosed		To be furnished by Bidder	

ADDITIONAL DETAILS:

Sl. No.	Description	Unit	As furnished by bidder
1.	Core grade		
	Thickness of core	mm	
2.	Core diameter	mm	
3.	Gross core area	Sq.cm	
4.	Net core area	Sq.cm	
5.	Flux density (calculated)	Tesla	
6.	Mass of core	Kg	
7.	Loss per Kg of core at the above specified flux density	Watt	
8.	Core window height	mm	
9.	Center to center distance of the core	mm	
10.	No. of LV Turns		
11.	No. of HV Turns		
12.	Size of LV conductor bare/covered	mm	
13.	No. of parallels		
14.	Size of HV conductor bare/covered	mm	
15.	Current density of LV winding(calculated)	A/sq.mm	

Rev No.	Description	Prepared By & Date	Checked By & Date	Approved for Issue By & Date
R0	SPECIFICATION FOR 22/0.433KV 1250KVA PSS	Tejaswita	A V Potdar	S B Modak
		09/09/2022	09/09/2022	09/09/2022

The Tata Power Company Ltd	 TATA	SPECIFICATION FOR 22/0.433KV 1250KVA PSS
SPEC-NET-22/0.433KV 1250KVA PSS_EV_R0	TATA POWER	Date of Issue: 09/09/2022

16.	Current density of HV winding(calculated)	A/sq.mm	
17.	Wt. of the LV winding	Kg	
18.	Wt. of the HV winding	Kg	
19.	No. of LV coils/phase		
20.	No. of HV coils/phase		
21.	Height of LV winding	mm	
22.	Height of HV winding	mm	
23.	ID/OD of HV winding	mm	
24.	ID/OD of LV winding	mm	
25.	Thickness of the duct in LV winding	mm	
26.	Thickness of the duct in HV winding	mm	
27.	Thickness of the duct between HV and LV	mm	
28.	Calculated Impedance	%	
29.	HV to earth creep age distance in oil	mm	
30.	LV to earth creep age distance in oil	mm	

D. LV Compartment				
Sr. No	Descriptions	Unit	As Specified By _____	As Furnished By Bidder
1	Thickness of sheet for the frame	Mm	2-3mm (min) GI	
2	Max. Current Density of bus bar	A/sq mm	1.0	
3	Max, permissible temperature		80 deg C at terminal with an amb. Temp not exceeding 40 deg C	
4	Min. clearance between phases	Mm	30	
5	Min. clearance between phase to earth	Mm	30	
6	ACB			
7	Application		Indoor	
8	Rated voltage	V	433	
9	Rated current	A	2000A	
10	Type of release		CT operated thermal overload & magnetic short ckt with shunt trip. Release (Microprocessor based protection)	
11	CT ratio of Neutral Compensating CT		2000/5A	
11	Rated insulation with colour coded sleeves.	V	690	
12	Rated impulse-Withstand voltage	kV	8	
13	No of poles		4	
14	Rated Ultimate short ckt breaking capacity ICU	kA (rms)	50	
15	Rated service short ckt	kA (rms)	100% of ICU	

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The Tata Power Company Ltd		SPECIFICATION FOR 22/0.433KV 1250KVA PSS
SPEC-NET-22/0.433KV 1250KVA PSS_EV_R0		Date of Issue: 09/09/2022

	breaking capacity Ics			
16	Rated short time withstand capacity Icw	KA p	50kA	
17	Rated Making capacity	KA p	105 KAp for 1 sec	
18	CT operated thermal overload relay with setting range	%	50-100%	
19	Typical operating time	m sec	< 40	
20	Typical closing time	m sec	To be provided by bidder	

MCCBs				
1	Application		Indoor	
2	Rated voltage	V	433	
3	Rated current	A	400	
4	No of MCCBs		10 nos. 400A, 4P with Microprocessor Based release for O/L S/C & E/F protection	
5	No of poles		4	
6	Rated insulation voltage	V	1100	
7	Impulse-Withstand voltage	kV	8	
8	Rated operation voltage	V	1100	
9	Rated ultimate short circuit breaking capacity Icu	kA (rms)	Min 36 kA	
10	Rated service short circuit breaking capacity Ics % of Icu	kA (rms)	100%	
11	Overload release setting		50-100%	
12	Typical opening time	m sec	As per IEC 60947/ IS 13947	
13	Typical closing time	m sec	As per IEC 60947/ IS 13947	
14	Electrical and mechanical life (No of operating cycles)		As per IEC 60947-2	
15	Thermal shrouds		To be provided	
16	Phase barriers		To be provided	

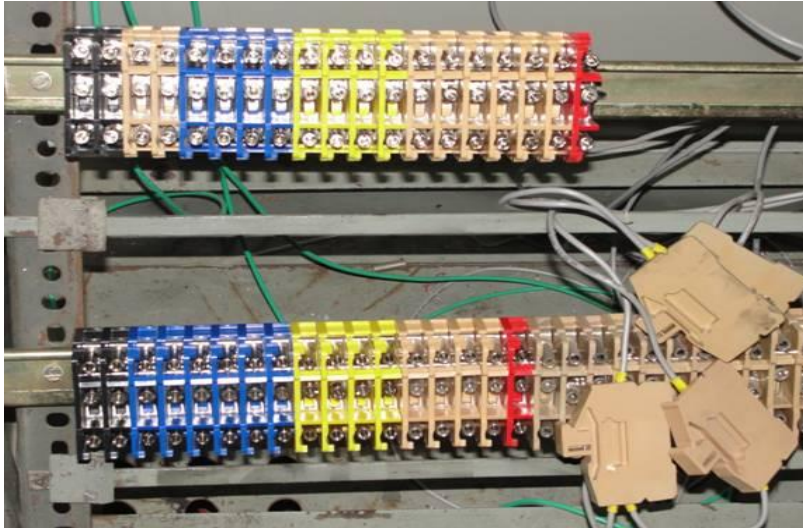
Specific requirements of control & Protection circuits:

- HT Breaker of RMU shall be wired to trip on followings:
 - WTI
 - Door limit switch of transformer compartment
- The wiring of Trip circuits for above shall be independent of any other control / illumination circuits. (240V AC supply to Space Heaters, & PSS internal illumination & auxiliary supply through R phase, 240V AC supply for External illumination through Y phase and Tripping circuit dedicatedly through B Phase). All three supply should be taken directly through ACDB outgoing Bus and through individual fuse links.
- There must be separate supply from any one ACDB outgoing phase busbar tapping for auxiliary supply to one 5/15A socket and this is to be marked with name plate.
- Fuses shall be employed on all the control circuits.
- Provision for spare relay to be made.
- The separate cut out to be made in the PSS in addition to the meter provided.

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7. ON /OFF Indicating Lamp to be provided on each outgoing MCCB.
8. ON /OFF Indicating Lamp to be provided for LT ACB
9. TTB Should be DAV Make, 50Amp and Front-end connection.
10. **“Don’t open the Door Transformer will Trip”** Name plate to be pasted on the PSS Transformer compartment Door.
11. **“Transformer Check Meter”** Name plate to be pasted on the PSS LV Compartment Door.
12. Colour coded links to be provided.



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RFQ No.: 4100063887

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 TPC'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:

RFQ No.: 4100063887

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	Bidder's Response
1	Prices Firm or Subject to Variation (If variable indicate the price variation clause with the ceiling if applicable)	Firm / Variable
2	If Variable Price Variation on Clause given (if Yes indicate the Price Variation Ceiling in %)	Yes / No
3	Delivery Terms Acceptable	Yes / No
4	Guarantee Clause Acceptable	Yes / No
5	Terms of Payment Acceptable	Yes / No
6	Performance Bank Guarantee Acceptable	Yes / No
7	Liquidated Damages Clause Acceptable	Yes / No
8	Bid Validity Acceptable	Yes / No
9	Inspection during Stage of Manufacturing	Yes / No
10	Rebate for Increased Quantity	Yes / No
11	Change in Price for Reduced Quantity	Yes / No

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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/organ gram	
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	



RFQ No.: 4100063887

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 fairer and more transparent, TPC 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. TPC 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. TPC will make every effort to make the bid process transparent. However, the award decision by TPC would be final and binding on the supplier.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of TPC, 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 TPC.
6. In case of intranet medium, TPC shall provide the infrastructure to bidders. Further, TPC 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 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 outrightly rejected by TPC.
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 TPC 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 TPC.
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



RFQ No.: 4100063887

ANNEXURE VII
Inspection Test Plan

NA

CONFIDENTIAL



RFQ No.: 4100063887

Annexure VIII
General Conditions of Contract

Attached as Annexure to this document.

CONFIDENTIAL

The Tata Power Company Limited is hereunder referred to as the "Purchaser" or "Company". The person, firm or company selling the goods, the subject of this purchase order is referred to as "Vendor" or "Contractor". The subject of this purchase order is hereinafter referred to as the "Material(s)" or "Goods".

The Contract shall mean the contract as derived from the following:

1. Purchase Order (with 'Commercial Notes' and Annexures to the Purchase Order referred thereon)
2. Technical Specifications.
3. General Terms & Conditions

The documents including all reference document (s) and Annexures forming the Contract are to be read together as a whole and are to be taken as mutually explanatory.

1. Price:

Unless otherwise specifically stipulated, the price shall be firm and shall not be subject to escalation for any reason till the validity of this Contract.

Unless otherwise specifically stipulated, the price shall be inclusive of road/ rail worthy water-proof packing & forwarding charges up to effecting delivery at FOT/ FOR despatch point, GST and shall also be inclusive of inland freight, terminal taxes and entry taxes as leviable on the transportation or entry of goods into any local area limits pursuant to the Contract.

2. Taxes and Duties:

- 2.1 The Contract Price shall be inclusive of all taxes, duties, including but not limited to GST or any local taxes, levies imposed by State/Central/Local governments
- 2.2 Taxes as mentioned in the Contract Price or Price Schedule shall be paid to the contractor subject to the Contractor complying with all the statutory requirements and furnishing the relevant documents including error free invoices containing detailed break-up of the taxes
- 2.3 However the payment of GST or local levies shall be restricted to the total amount as indicated in the price schedule.
- 2.4 Any duties, levies or taxes not mentioned in Contract Price or Price Schedule but applicable as per any statute (s) shall be deemed to be

Rev. date: 25 July 2017

included in the Contract price and shall be to the account of the Contractor.

- 2.5 Any statutory variation in duties, levies or taxes if applicable and specified in this Contract till the scheduled date for supply of Goods and limited to direct invoices of the Contractor shall be to the account of Purchaser. The Contractor shall have the obligation to provide the necessary documentary evidence / supporting by way of gazetted notifications etc. to prove the change in such levies or taxes between the due date of submission of the Bid and the scheduled date of supply of goods to claim the difference.
- 2.6 The Contractor shall pass on to the Purchaser all the benefits of either reduction in tax rates, exemptions, concessions, rebate, set off, credits etc. or introduction of new tax rates exemptions, concessions, rebate, set off, credits etc. pertaining to all taxes, duties, imposts, fees and levies in respect of the supplies of Goods or performance of obligations under the contract. This would specifically include reduction of tax rates as a result of statutory changes or judicial rulings.
- 2.7 Any other taxes, levies and duties not mentioned in Contract Price or Price Schedule but applicable as per any statute (s) or introduction (omission) of new taxes, levies and duties shall be deemed to be included in the Contract Price and shall be to the account of the Contractor.
- 2.8 For facilitating availment of a credit, set-off, rebate, drawback or like benefit available to the Purchaser, the Contractor will facilitate the Purchaser by providing the necessary documentary and/or procedural support. In any process of assessment or re-assessment, of taxes payable by the Purchaser. Wherever expressly agreed the purchaser would provide the statutory form 'C' to the seller for availing the concessional rate of Central sales tax.
- 2.9 The Contractor shall bear and pay all the costs, liabilities, levies, interest, penalties in respect of non-compliances of any legal requirements as per various statutory provisions. The contractor shall keep the owner indemnified at all times from any tax liability, interest, penalties or assessments that may be imposed by the statutory authorities for non-compliances or non-observation of any statutory requirements by the Contractor.
- 2.10 Purchaser shall pay the invoices to the Vendor after necessary deductions as prescribed under the applicable law, income - tax or other

deductions under the State Tax laws as may be applicable to the Contract.

3 Packing details:

Packing details: The material must be packed in suitable packing to suit the mode of transport and to ensure its safe receipt at point of delivery. Any damage to material noticed at the time of delivery at site, due to improper packing or any other reason whatsoever shall be the responsibility of the Vendor. Such damaged goods shall be replaced within 14 days from intimation from the Purchaser.

4 Transportation and Unloading at Site:

The Vendor shall deliver the Material(s) at site/ Stores as per the delivery address specified in the Purchase order. The unloading at delivery shall be organised by the Purchaser unless otherwise specified. The receipt of the material/ equipment is subject to inspection and rejection if Material(s) is found unsatisfactory or any of the clauses under this purchase order are violated.

5 Insurance:

Unless otherwise specified, Purchaser will be responsible to obtain transit insurance for the Material(s). The Vendor shall intimate the Order Manager (as mentioned in the Purchase Order) along with Invoice, packing list, the Railway Receipt/Truck or Lorry Receipt etc. immediately after the consignment is booked, at the e-mail id mentioned in the Purchase order.

6 Payment Terms:

100% payment shall be made within 60 days from the receipt and acceptance of the material at the Consignee Stores/ Site/ Location as per the Contractual terms and conditions herein.

7 Bills and invoice:

The tax invoices should contain the details to comply with the GST Law. The supplier shall:

- i) Furnish (electronically) and communicate to the Owner, the details of Goods or Services supplied by the 10th of the month succeeding the said tax period,
- ii) Upon discovery of any discrepancy, rectify it and shall pay the tax and interest thereof,
- iii) Furnish the returns (electronically), for the inward and outward supplies of

Goods and/or Services, before the specified dates as per the GST Law,
iv) Communicate the tax paid, credits etc. as and when credited.

v) The Invoice should clearly state the description of the goods, quantity, sale price, tax %, and tax amount;

vi) The Invoice should be signed by an Authorized Signatory.

Bills/Invoices in the name of The Tata Power Company Ltd. with packing lists in triplicate shall be forwarded along with the equipment.

Contractor to furnish GST Registration no. in all invoices as well as Purchaser's (Tata Power's) GST no.

8 Transfer of Title and risk:

The transfer of property and risk of Material(s) shall be deemed to take place as follows:

a. For delivery F.O.R. or F.O.T. despatch point: Transfer of property on handing over the Material(s) to the carrier against receipt of clean Railway Receipt/Truck or Lorry Receipt and such receipt having been handed over to Purchaser. However, the risk of loss shall pass to the Purchaser on delivery of goods at the specified destination.

b. In case the Material(s) are procured by the Vendor from sub-vendors on receipt of duly endorsed documents of title to the goods.

9 Contract Performance Bank Guarantee (In case applicable):

9.1 The Vendor shall within 15 days of issue of this Purchase Order furnish an unconditional irrevocable bank guarantee duly stamped and strictly as per the prescribed format of the Purchaser from any nationalized bank or any scheduled bank having a branch in Mumbai and approved by the Purchaser for a sum equivalent to 10% of the Total value of Order valid for a period not less than 6 months from the expiry of the Warranty period.

9.2 Irrespective of the performance demonstrated as part of the Factory Acceptance Tests Take-over tests / Performance Tests etc, the Purchaser may call for re-validation of performance of the system during the performance guarantee period by conducting fresh performance tests if in its opinion, the

system is not able to deliver the designed performances based on its operational performance results. If the equipment fails to prove the performance during such performance tests, the Purchaser may allow the Vendor to either rectify the system by addition / modification of equipment etc at the Vendor's costs & risk to restore the performance levels. Failure to rectify the system to achieve the designed performance levels may result in imposition of penalties including revocation of the Performance Bank Guarantee and forfeiture of the entire amount under the Performance Guarantee.

- 9.3 In case the Vendor fails to furnish the requisite Bank Guarantee as stipulated above, then the Company shall have the option to terminate the contract besides other contractual remedies.

10 Price reduction:

- 10.1 The Vendor agrees that time of supply of Material(s) is of prime importance. If the Vendor fails to supply Material(s) before the respective scheduled / fixed date for supply. Company may without prejudice to any other right or remedy available to the Company: -

10.1.1 Recover from the Vendor ascertained and agreed, genuine pre-estimate liquidated damages, and not by way of penalty, a sum equivalent to 1% (of total value of order) per week or part thereof for each week's delay, beyond the scheduled supply date each subject to maximum of 10% of the total order value, even though the Company may accept delay in supply after the expiry of the scheduled supply date. The Company may, at its discretion, set off the aforesaid amounts from any other amounts owed by the Company to the Vendor or recover such amounts in other manner as may be permissible under applicable laws.

10.1.2 Arrange to get supply from elsewhere on account and at the sole risk of the Vendor, such decision of the Company being final and binding on the Vendor; or

10.1.3 Terminate the contract or a portion of supply of the supply work thereof, and if so desired, arrange for the supply in default by the Vendor to be attained from elsewhere at the sole risks and costs of the Vendor.

10.2 Liquidated damages for performance shortfall (if applicable) shall be specified in the Technical Specifications.

10.3 The Liquidated Damages referred in this clause 10 may be recovered by the Company from the Vendor as set off against any monies owed by the Company to the Vendor or in any other manner permissible under applicable laws.

11 Warranties:

11.1 Materials and Workmanship: Vendor shall fully warrant that all the stores, equipment and component supplied under the order shall be new and of first class quality according to the specifications and shall be free from defects (even concealed fault, deficiency in design, materials and workmanship).

11.2 Should any defects be noticed in design, material and/or workmanship within 12 months after the Material(s) or any portion thereof as the case may be have been commissioned or for 24 months from the date of delivery, whichever period concludes earlier. Purchaser shall inform Vendor and Vendor shall immediately on receipt of such intimation, depute their personnel within 7 days to investigate the causes of defects and arrange rectification/ replacement/modification of the defective equipment at site, without any cost to Purchaser within a reasonable period. If the Vendor fails to take proper corrective action to repair/replace defects satisfactorily within a reasonable period, Purchaser shall be free to take such corrective action as may be deemed necessary at Vendor's risk and cost after giving notice to the Vendor, including arranging supply of the Goods from elsewhere at the sole risk and cost of the Vendor.

11.3 In case defects are of such nature that equipment shall have to be taken to Vendor's work for rectification etc., Vendor shall take the equipment at his costs after giving necessary undertaking or security as may be required by Purchaser. After repair Vendor shall deliver the equipment at site on freight paid basis. Any taxes applicable in relation to this repair shall be to the Vendor's account. All risks in transit to and fro shall be borne by the Vendor.

11.4 Equipment or spare parts thereof replaced shall have further warranty for a period of 12 months from the date of acceptance.

12 Quality, Testing, inspection, installation:

12.1 All Material(s) supplied under this Contract shall be new and unused.

- 12.2 Wherever a specific Quality Assurance Plan is provided with the Request for Quotation (RFQ) or agreed as part of the commercial/ technical discussions, the same shall be binding on the Vendor.
- 12.3 The material shall be inspected
- a. At consignee end by Purchaser.
 - b. At factory premise of the Vendor/ sub-vendor by Purchaser or third party duly nominated by Purchaser. The Vendor shall extend all necessary co-operation to Purchaser/ third party inspector carrying out the inspection. The Inspector(s) shall have the right to carry out the inspection or testing, which will include inspection and testing of the raw materials at manufacturers shop, at fabricators shop and at the time of actual despatch before and/or after completion of packing.
- 12.4 The Vendor will inform Purchaser at least eight (8) days in advance of the exact place, date and time of tendering the Material(s) for required inspection and provide free access to the Inspector(s) during normal working hours at Vendor's or his/ its sub-Suppliers works, and place at the disposal of the Inspector(s) all useful means for undertaking the Inspection, checking the results of tests performed, marking the Material(s), getting additional tests conducted and final stamping of the Material(s).
- 12.5 Even if the inspection and tests are fully carried out, the Vendor shall not be absolved from its responsibilities to ensure that the Material(s), raw materials, components and other inputs are supplied strictly to conform and comply with all the requirements of the Contract at all stages, whether during manufacture and fabrication, or at the time of Delivery as on arrival at site and after its erection or start up or consumption, and during the defect liability period. The inspections and tests are merely intended to prima facie satisfy Purchaser that the Material(s) and the parts and components comply with the requirements of the Contract.
- 12.6 *All costs associated with the inspection shall be included in cost of Material(s).*
- 12.7 Original material test certificate/ performance test certificate/ fitment certificate/ test reports etc. relevant/ applicable as per the specifications/ standards shall be dispatched along with the material supply failing which the material may be rejected.
- 13 Rejection:**
- 13.1 Rejected goods shall be removed and replaced within 14 days of the date of communication of rejection.
- 13.2 Claim in respect of breakage/shortages in any cases shall be referred on the Vendor within ninety (90) days from the date of receipt of Goods by the Purchaser which shall be replaced/made good by the Vendor at his own cost. All risk of loss or damage to the material shall be upon the Vendor till it is delivered to the purchaser/consignee.
- 14 General Indemnity:**
- The Vendor shall indemnify and keep the Purchaser indemnified from and against any and all claims, costs, liabilities (financial), litigations, compensations, judgments, expenses or damages (including attorney's fees and other related expenses) arising out of any breach or alleged breach of any of the conditions of this Contract, performance of the obligations hereunder, or any representation or misrepresentation made by the Vendor or any third party with regard to the subject of this Contract.
- 15 Indemnity against IPR:**
- The equipment, system, drawings, and other materials that shall be supplied against the order will become the Purchaser's property. Without limitation of any liability of whatsoever nature, the Purchaser shall be indemnified and kept indemnified against any claim for infringement or breach of any of the statues, rules & regulations by the use of or sale of any article or material supplied by the Vendor. The indemnity shall include any infringement of patent, trade mark, design, copyright or other property rights whether in Country of Origin, or elsewhere resulting from the Vendor's design, manufacture, use, supply or re-supply & would also cover use or sale of any article or material supplied by the Vendor to the Purchaser under the Purchase Order. The Indemnity shall cover any claim/action taken by a third party either directly against the Purchaser or any claim/action made against the Vendor & where under the Purchaser is made liable. The

Indemnity shall be for losses, damages, and costs including litigation costs, attorney fees etc incurred by the Purchaser in relation to the Purchase Order.

16 Latent Defects Liability period (if applicable):

Notwithstanding the inspections, acceptance tests, quality checks etc carried out by the Vendor and witnessed/accepted by the Purchaser, the Vendor shall further warrant the equipment for any latent defects in its design, material or workmanship against the specifications set forth and shall make good any such defects by way of repair or replacement of the part or whole of the defective product at its own cost & risks as and when such latent defects are observed and intimated by the Purchaser and intimated to the Vendor within 36 months of completion of warranty period.

17 Force Majeure:

- 17.1 In the event of either party being rendered unable by force majeure to perform any obligation required to be performed by it under this Contract the relative obligation of the party affected by such force majeure shall, after notice under this articles be suspended for the period during which such cause lasts. The term 'Force Majeure' as employed herein shall mean acts of God, wars (declared or undeclared), riots or civil commotion, fire, floods, and acts and regulations of the Government of India or State Government or any of the statutory agencies. Both the party shall pay to the other party, the amount payable upon the date of the occurrence of such force majeure.
- 17.2 Upon the occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid, thereby shall notify the other party in writing immediately but not later than twenty four (24) hours of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of the claims.
- 17.3 During the period, the obligations of the parties are suspended by force majeure, the contractor shall not be entitled to payment of any rate.
- 17.4 In the event of the force majeure conditions continuing or reasonably expected to continue for a period more than thirty (30) days, Purchaser shall have the option of terminating the contract by giving seven (7) days notice thereof to the contractor.

18 Variation:

Except for any provisions in this Purchase Order, any change /modification to the terms and conditions of this Order can be issued only by Purchaser or with the prior written approval from Purchaser.

19 Termination

- 19.1 The Contract shall be deemed to be terminated on completion of delivery of Material(s)
- 19.2 Termination of Default by Vendor:
Purchaser may terminate the contract at any time if the Vendor fails to carry out any of his obligations including timely delivery under this Contract. Prior to termination, the Vendor shall be advised in writing of the causes of unsatisfactory performance to be improved upon 15 days of the receipt of notice. In case, if the Vendor fails to bring about the improvement to the satisfaction of the Purchaser, then the order shall be terminated.
- 19.3 Without prejudice to the rights and remedies available to Purchaser, Purchaser may terminate the Contract or part thereof with immediate effect with written notice to the Vendor if,:
- 19.3.1 The Vendor becomes bankrupt or goes into liquidation.
- 19.3.2 The Vendor makes a general assignment for the benefit of creditors.
- 19.3.3 A receiver is appointed for any substantial property owned by the Vendor.
- 19.3.4 The Vendor has misrepresented to Purchaser, acting on which misrepresentation Purchaser has placed the Purchase Order on the Vendor.

The Vendor/ Contractor shall not be entitled to any further payment under the Contract if the Contract is terminated. If the order is terminated under clause 19.2 and 19.3, the Vendor shall not be entitled to any further payment, except that, if Purchaser completes the supply of Material(s) and the costs of completion are less than the Total Order value, the Purchaser shall pay Vendor an amount properly allocable to supply of Material(s) fully performed by Vendor prior to termination for which payment was not made to Vendor. In case, the cost of completion of Material(s) exceed the total Order value, the additional cost incurred by Purchaser for such completion shall be paid by the Vendor.

19.4 Purchaser shall be entitled to terminate the Contract at its convenience, at any time by giving thirty (30) Days prior notice to the Contractor. Such notice of termination shall specify that termination is for Companies convenience and the date upon which such termination becomes effective. Upon receipt of such notice, the Contractor shall proceed as follows:

- 19.4.1 cease all further work, except for such work as may be necessary and instructed by the Company/ Company's representative for the purpose of protecting those parts of the supplies already manufactured;
- 19.4.2 stop all further sub-contracting or purchasing activity, and terminate Sub-contracts;
- 19.4.3 handover all Documents, equipment, materials and spares relating to the supply of goods prepared by the Contractor or procured from other sources up to the date of termination for which the Contractor has received payment equivalent to the value thereof; and
- 19.4.4 handover those parts of the supplies manufactured by the Contractor up to the date of termination.

Upon termination pursuant to clause 19.4, the Vendor shall be entitled to be paid the full value on the Material(s) delivered in accordance with the Contract.

19.5 The Contractor shall not be released from any of his obligations or liabilities accrued under the Contract on termination. For the avoidance of doubt, the termination of the Contract in accordance with this clause shall neither relieve the Contractor of his accrued obligations for Warranty or his accrued liability to pay (liquidated) damages for Delay nor shall entitle him to reduce the value of Performance Security.

20 Sub letting and assignment:

The contractor shall not without prior consent in writing of the Purchaser, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever, provided nevertheless that any such consent shall not relieve the contractor from any obligation, duty or responsibility under the contract.

21 Dispute Resolution:

Dispute or differences arising out or relating to this Order shall be resolved amicably by the parties. Failing such amicable resolution of dispute / differences either party may refer the matter to arbitration of a Sole Arbitrator to be appointed jointly by both the parties. The award of the Arbitrator shall be final, binding and conclusive on the parties. The venue for arbitration shall be Mumbai. The Arbitration proceedings will be governed and regulated by the provisions of Indian Arbitration and Conciliation Act, 1996 as amended from time to time and the rules framed there under.

22 Governing laws

This Contract shall be construed in accordance with and governed by the Laws of India without giving effect to any principle of conflict of law.

23 Jurisdiction

This Contract and the transaction contemplated herein shall be subject to the exclusive jurisdiction of the competent Courts in Mumbai only.

24 Limitation of Liability

Notwithstanding anything contained in the Contract, the Contractor's aggregate liability under this Contract shall be limited 100% of the Total order value. This shall however, exclude liability arising pursuant to clause 2.8- tax indemnity, clause 14- General Indemnity, clause 15- Indemnity against IPR, clause 25 – Confidentiality and liabilities arising due to wilful misconduct, gross negligence, third party claims and corrupt acts attributable to the Vendor.

25 Confidentiality:

The Vendor shall use the Confidential Information of the Purchaser only in furtherance of this Contract and shall not transfer or otherwise disclose the Confidential Information to any third party. The Vendor shall (i) give access to such Confidential Information solely to those employees with a need to have access thereto; and (ii) take the same security precautions to protect against disclosure or unauthorized use of such Confidential Information that the party takes with its own confidential information but, in no

event, shall a party apply less than a reasonable standard of care to prevent such disclosure or unauthorized use.

26 Consequential Damages:

Unless otherwise specified, neither Party shall be responsible for and nor shall be liable to the other Party for indirect/consequential losses and damages suffered by such Party including for loss of use, loss of profit whether such liability or claims are based upon any negligence on the part of the other Party or its employees in connection with the performance of the Purchase Order.

27 New Legislation (The Micro, Small and Medium Enterprise Development Act 2006)

- a. This Act has been enacted and made effective from 2nd October 2006. The Interest on Delayed Payments to Small Scale and Ancillary Industrial Undertaking Act, 1993 is repealed.
- b. Vendor is requested to inform the purchaser if vendor fall under The Micro, Small and Medium Enterprises Development Act, 2006 legislation and provide the purchaser, registration number and date to enable purchaser to take necessary care. The vendors are also requested to mention the same on their invoice / bill.

28 Relation between parties:

The Purchase Order shall be entered into on a principal-to-principal basis only. The Purchase order shall not be construed as a partnership or an association of persons. There is no agent and principal relationship between the parties. Each party shall be responsible for its own conduct. The Vendor shall ensure at all times that all the work carried out under this contract either by its own person or through any of its sub-Vendors shall be always done under its own direct supervision.

29 Environment / ISO 14001 Certification:

The Vendor to confirm whether their organization is ISO 14001 certified. If not, the Vendor must certify that the handling, use and disposal of their product / by-products conform to practices consistent with sound environmental management and local statutes. The Vendor shall ensure that all the wastes are disposed in environmental friendly way with strict compliance to applicable laws including

adherence to MoEF guidelines with respect to disposal of batteries, lead waste, copper cables, ash, waste oil, e-waste etc which shall be disposed through MoEF approved parties only. The Vendor shall also be responsible to collect and recycle all the e-waste generated at the end of the product life cycle at its own costs and risks as per the MoEF guidelines/ orders.

30 Tata Code of Conduct

The Purchaser abides by the Tata Code of Conduct in all its dealing with stake holders and the same shall be binding on the Purchaser and the Vendor for dealings under this Purchase Order. A copy of the Tata Code of Conduct is available at our website: <http://www.tatapower.com/aboutus/code-of-conduct.aspx>. The Vendor is requested to bring any concerns regarding this to the notice of our Chief Ethics Officer on the e-mail ID: cecounsellor@tatapower.com.

31 Responsible Supply Chain Management:

The Purchaser is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy. The Vendor is required to comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations. The Purchaser encourages its Vendors/ Contractors/ Business partners to pay more attention to green design, green supply, green production, green logistics and green packaging in performing their business obligations.

The Vendor is required to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy.

A copy of the Responsible Supply Chain Management Policy along with Environment policy, Energy Conservation policy, Sustainability policy, Health & Safety policy and Human Rights policy is available at website: <http://www.tatapower.com/sustainability/policies.aspx>.

Vendor/Bidder is required to completely fill the attached "Supplier Sustainability Questionnaire" in support of their Green Supply Chain Management initiatives and submit the same with their offer.

The Owner recognizes that diversity in the workplace positively impacts business. The Owner is committed to help people from SC/ST background either by helping them to become entrepreneurs or by engaging workforce from SC/ST community under the contracts agreed herein. To encourage engaging SC/ST community, the owner may consider on the merit to incentivize the Contractor by paying additional 1% of the service contract portion if the number of SC/ST workforce engaged in the contract exceeds 30% of the total deployed strength and 2%, if the strength goes beyond 50%. While the Contractor will assist the workforce so engaged to become self-reliant in meeting the work expectation, the Owner may also volunteer its training resources to the extent possible to improve their employability. The Contractor shall maintain the proper documentation of such category of the workforce engaged and the owner may consider to pay the incentive after its verification.

The Owner may also consider extending price preference of 5% in the bid evaluation for an order value up to Rs.50 Lacs, provided the company is owned by a person from SC/ST community having minimum 50% holding in the company.

32 Vendor rating

You are requested to ensure compliance to the terms of the individual orders with regards to timely delivery, provision of all applicable documents / challans / test certificate, quality of the material etc. Your performance with respect to the said factors will be taken into consideration for future business.

33 Vendor Feedback:

- 33.1 In this dealing Vendors feedback is important for the purchaser to improve its processes. If vendor have to report any grievance, problem or require any clarification, information, vendor is requested to contact purchaser at email ID: CC_CUSTOMERFEEDBACK@tatapower.com
- 33.2 Vendor is requested to ensure compliance to the terms of the individual orders with regards to timely delivery, provision of all applicable documents / challans / test certificate, quality of the material etc. Vendor performance with

respect to the said factors will be taken into consideration for future business.

34 Non-Waiver:

Failure of Purchaser or its representatives to insist upon adherence to any of the terms or conditions incorporated in the Contract or failure or delay to exercise any right or remedies herein or by law accruing, or failure to promptly notify the Vendor in the event of breach or the acceptance of or the payment of any Material(s) hereunder or approval of any design or Material(s) shall not release the Vendor and shall not be deemed a waiver of any right of Purchaser to insist upon the strict performance thereof or of any of its rights or remedies as to any such Material(s) regardless of when the Material(s) are shipped, received or accepted not shall any purported oral modification or revisions of the Contract by Purchaser or its representative(s) act as waiver of the terms hereof.

35 Repeat Order:

Purchaser may place the repeat order for 100% of ordered quantities within a span of 6 months from the date of issue of this Purchase Order & Vendor shall execute it at same rates, terms and conditions.

36 Severability

If any provision of this Contract is invalid, unenforceable or prohibited by law, this Contract shall be considered divisible as to such provision and such provision shall be inoperative and shall not be part of the consideration moving from any Party hereto to the others, and the remainder of this Contract shall be valid, binding and of like effect as though such provision was not included herein.

ESG FRAMEWORK FOR BUSINESS ASSOCIATES

Tata Power's Sustainability philosophy sits at the core of its Business Strategy. Tata Power Sustainability Model has an overarching objective of 'Leadership with care' with key elements of 'Care for the Environment'; 'Care for the Community'; 'Care for our Customers / Partners' and 'Care for our People'. These sustainability objectives encompass the Environmental, Social and Governance objectives driven as integrated elements.

Tata Power, together with its stakeholders is determined to achieve sustainable growth while creating shared value for all.

As a part of future ready roadmap, Tata Power has targeted following as our Environment, Social and Governance priorities:

- Being Carbon Net Zero before 2045
- Growing Clean capacity (80% by 2030)
- Customer centricity
- Becoming water neutral before 2030
- Achieving zero waste to landfill before 2030
- No net loss of biodiversity before 2030
- Positively impacting 80 million lives by 2027

In order to create a sustainable business ecosystem, Tata Power expects that all its Business Associates (BA) which includes its suppliers, vendors, consultants and service providers to align to its ESG and sustainability commitments.

Tata Power encourages improved efficiencies and scaling up of green initiatives through technology and innovation taking us farther on the journey of reducing carbon emissions and preparing the entire eco-system towards products and services that would have net positive impact on the environment and communities that we operate in.

The Vendors/ bidders wishing to associate with Tata Power are expected to share their own sustainability and ESG journey. We at Tata Power promote all Business Associates to have a sustainable procurement policy for their supplier and service providers to contribute to our integrated approach in achieving a sustainable supply chain. The BA is encouraged to carry out the assessment of their sub-contractors and sub-vendors on sustainability readiness so that they are aware of the expectation/ business requirement.

The Vendor/ Bidder shall fill-in the 'Environment, Social and Governance Compliance Screening Questionnaire for Business Associates' attached at Annexure-I and submit the same along with the Bid in Ariba online platform.

Responsible Supply Chain Management:

Tata Power is committed for a cleaner environment and respect of Human rights through its Responsible Supply Chain Management policy.

Tata Power Business Associate (BA) shall comply with all the environment & Human rights related laws, including emission norms, Labour and environmental regulations.

Tata Power encourages its BA to focus on green design, green supply, green production, green logistics and green packaging in performing their business obligations. The BA is expected to abide by the Tata Power Corporate Environment policy, Energy Conservation and Corporate Sustainability Policy (enclosed with this document as Annexure-II).

The BA is expected to:

- Strive towards Conservation of Energy, Water, Resources and optimize transportation of Men & Materials to minimize environmental impact and reduce carbon footprint.
- Carry out the assessment of materials used for construction, operation & maintenance, consumables and accordingly phase out those materials which are environmentally hazardous.
- Be cognizant that diversity in the workplace positively impacts business.
- Promote affirmative action by supporting people from SC/ ST background by engaging workforce from SC/ ST community under the contracts agreed herein.
- Share the commitment of 'No child labour', 'No forced labour', Non-discrimination on the basis of caste, colour, religion, gender, disability, maternity or pregnancy or any other factor unrelated to the requirements of the job
- Pay the wages or remuneration to the workforce, personnel deployed in compliance to all applicable laws and regulations.
- Provide its employees/ deployed labor with an employment environment that is free of physical or psychological harassment.
- Carry out the assessment of their Sub-contractors on their Sustainability Readiness so that they are aware of the above expectation/ standards
- To ensure usage of suitable package material which is more environmentally sustainable. Further the packing material shall be recycled to the extent possible. The material used for packing is expected to suit the mode of transport and to ensure its safe receipt at point of delivery.

Waste Disposal:

The BA is expected to follow best practices for disposal of waste, few of which are listed below:

- Have a detailed project plan that includes the waste management, segregation of all designated waste material (Recyclable/ Non-Recyclable), collecting, storing, disposing and transferring the same to pre-arranged facility/ destination in timely and safe manner as per environmental legislations. The project plan shall also include the innovative construction practice to eliminate or minimize waste, protect surface/ground water, control dust and other emissions to air and control noise.
- Have purchase policy to encourage the procurement of material with recycled and minimum packaging of goods during delivery and appropriate means for site-to-site transportation of materials to avoid damage and litter generation.
- Ensure that the residents living near the site are kept informed about proposed working schedule and timings/ duration of any abnormal noise full activity that is likely to happen.
- Ensure the regular maintenance and monitoring of vehicles and equipment for efficient fuel use so that emissions and noise are within acceptable limits to avoid air pollution.

Water Management:

The BA is expected to follow best practices for water management, few of which include a management and monitoring system for water withdrawals and consumption, procedures to reduce water usage or reuse/recycle water, and pretreatment of wastewater before disposal.

Compliance to Law:

The BA shall adhere to responsible business practices and comply with the provision of all the Statutory Acts Applicable. Special attention of the BA is drawn towards the compliance of provision of the following statues: (along with the latest amendments/additions, as applicable):

- The Child Labour (Prohibition and Regulation) ACT, 1986.
- The Contract Labour (Regulation and Abolition) ACT, 1970.
- The Employee's Pension Scheme, 1995.
- The Employee's Provident Funds and miscellaneous provisions Act, 1952.
- The Employees State Insurance Act, 1948.
- The Equal Remuneration Act, 1976.
- The Industrial Disputes Act, 1947.
- The Maternity Benefit Act, 1961.
- The Minimum Wages Act, 1948.
- The Payment of Bonus Act, 1965
- The Payment of Gratuity Act, 1972.
- The Payment of Wages Act, 1936.
- The Shops & Establishment Act, 1954.
- The Workmen's Compensation Act, 1923.
- The Employer's Liability Act, 1938.
- and any other applicable statutory act

Social Accountability (SA 8000):

Tata Power expects its BAs to follow guidelines of SA 8000:2014 on the following aspects

- Child Labour
- Forced or Compulsory Labour
- Health & Safety
- Freedom of Association & Right to Collective Bargaining
- Discrimination
- Disciplinary Practices
- Working Hours
- Remuneration
- Management System

Health and Safety

The BA is expected to ensure the health and safety of his and his Sub-contractor's staff and labour. The BA shall, in collaboration with and according to the requirements of the local health authorities, ensure that medical staff, first aid facilities, sick bay and ambulance service are available at the accommodation and on the Site at all times, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics. The BA shall maintain records and make reports concerning health, safety and welfare of persons deployed, and damage to property, as the Owner's Representative may reasonably require. The BA shall be responsible for the medical treatment / hospitalization of his and his Sub-contractor's staff/ labour.

The BA shall appoint a qualified Safety officer at the Site to be responsible for maintaining the safety, and protection against accidents, of all personnel on the Site. Such Safety officer shall have the authority to issue instructions and take protective measures to prevent accidents.

The BA shall comply in toto with the Tata Power's Contractor Safety Terms & Conditions, Health Safety & Environment Manual while working on Tata Power Site/ Services/ Contracts.

Grievance Mechanism

The BA is expected to have grievance procedures that allow stakeholders to anonymously bring environmental and/or work-related violations and/or concerns to the attention of management. In addition, the BA is expected to have procedures for examining reports of environmental and/or work-related violations or concerns and/or privacy complaints.

Data Protection

The BA is expected to have a formal process to address data security or privacy issues.

ANNEXURE-I



Sr. No.	Question Description	Response (Y/N)	Remarks
Organization			
1	Does your Company have Sustainability Policy at Organization Level? If Yes, Please attach		
2	Do you have sustainable procurement policy in place for your own suppliers? If Yes, Please attach		
3	Does your company do regular assessment of its suppliers on ESG parameters?		
4	Are there ESG risks, or negative impacts identified in your supply chain		
Governance			
1	Is diversity taken into consideration when appointing board members/ senior management? Do you have an independent director/s?		
2	Has your company taken initiatives to ensure ethical practices at workplace? Please share the details, Policies etc.		
3	Does your company have a formal process to address data security or privacy issues? Please share the details, Policies etc.		
4	Does your company have grievance mechanism for stakeholder issues and track resolution?		
Environment/ Planet			
1	Does your company have Environmental Policy? If Yes, Please attach		
2	Do you have a formal process for waste management including solid wastes, liquid wastes and hazardous waste?		
3	Does your company track greenhouse gas emission? Also, what percentage of own consumption comes from the renewable energy?		
4	Does your company have a formal process for water management including monitoring of water consumption and withdrawals, and if applicable, pretreatment of wastewater?		
Green Technology/ Innovation			
1	Are your facility/ Product/ Services provided by you is based on green design, green production, green packaging or green logistics considerations? Please elaborate.		
2	Do your products or services have any environmental or social features or benefits (e.g. environmental/energy certification, ecolabels, fair trade certification, etc.)?		
Social/ People			
1	Does you facility/ Company have written personnel policies in place Are you an equal opportunity employer?		
2	Please describe any formal programme / campaign in place to promote company involvement with the community (volunteering, etc.). What is the percentage of profit spend on community activities?		
3	Does your company have a written Health & Safety Policy or Program? If Yes, Please attach		
Certifications: Does your company have following certifications (valid till date-please mention validity)			
1	ISO9001 accreditation		
2	SA8000 or equivalent		
3	ISO 14001 certification		
4	ISO 18001/45001 or equivalent		
5	ISO/IEC 27001 or equivalent		
6	Any Other (Please specify)		

Signature

Business Associate Name

ANNEXURE-II

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

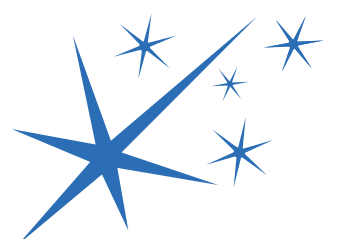
- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the 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



Supplier Code of Conduct

Tata Power follows the Tata Code of Conduct (TCoC) and the Whistle blower Policy and expect all its Suppliers to adhere to the same principles. “Supplier” here means any business, company, corporation, person or other entity that provides, sells or seeks to sell, any kind of goods or services to Tata Power, including the Supplier’s employees, agents and other representatives.

Tata Code of Conduct- (TCoC): <https://www.tatapower.com/pdf/aboutus/Tata-Code-of-Conduct.pdf>

Whistle Blower Policy: <https://www.tatapower.com/pdf/aboutus/whistle-blower-policy-and-vigil-mechanism.pdf>

Anti-Bribery & Anti-Corruption Policy: <https://www.tatapower.com/pdf/aboutus/abac-policy.pdf>

The suppliers are expected to adhere to the following Do’s and Don’ts:

Do’s

1. The Suppliers shall be committed to supplying products and services of high quality that meet all applicable standards and laws, including product packaging, labelling and after-sales service obligations.
2. Comply with all applicable laws and regulations, both in letter and in spirit, in all the territories in which it operates.
3. Strive to provide a safe, healthy and clean working environment for its employees.
4. Strive for environmental sustainability, particularly with regard to the emission of greenhouse gases, consumption of water and energy and the management of waste and hazardous materials.
5. The Supplier shall represent our company (including Tata brand) only with duly authorised written permission from our company.
6. Safeguard the confidentiality on the use of intellectual property, information and data of the Company.
7. Gifts and hospitality given or received should be modest in value and appropriate as per Company Policy.
8. The assets of Tata Power shall be employed primarily and judiciously for the purpose of conducting the business for which they are duly authorised.
9. All actual or potential conflicts due to financial or any other relationship with a Tata Power employee shall be disclosed.

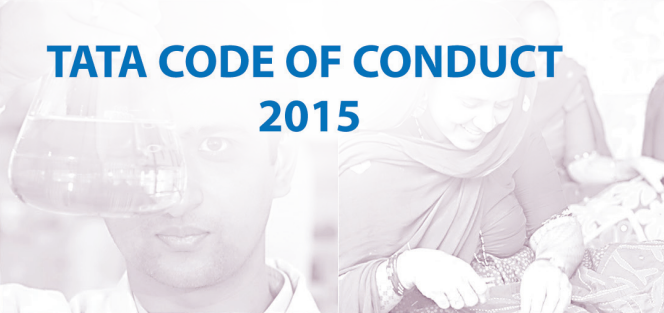
Don’ts

1. The Supplier shall not make unfair or misleading statements about the products and services of competitors.
2. Children shall not be employed at workplaces.
3. Forced labour shall not be used in any form.
4. The Suppliers shall neither receive nor offer or make, directly or indirectly, any illegal payments, remunerations, gifts, donations or comparable benefits that are intended, or perceived, to obtain uncompetitive favours for the conduct of its business with Tata Power.

Reporting Violations

The Supplier shall notify the Company regarding any known or suspected improper behaviour of other suppliers or employees relating to its dealings with Tata Power, by email to: cecounsellor@tatapower.com. The same can also be raised through our 3rd party ethics helpline facility:

Toll-free Number	1800 267 4065
Email	tatapower@tip-offs.in
Website & Chatbot	www.tatapower.tip-offs.in
Postal address	Attn to: Mr. Puneet Arora, Deloitte Touch Tohmtsu India LLP, 6 floor, AIPL Business, Sector 62, Gurugram, Haryana 122102



**TATA CODE OF CONDUCT
2015**



LEADERSHIP THAT INSPIRES

For over 100 years, the Tata group has been led by visionaries who have stayed true to the vision of the founder, Jamsetji Tata.

A vision that placed the greater good of society at par with business growth.

A vision that put into practice pioneering social initiatives that changed the way responsible business was run.

And a vision that brought into the group a strong social conscience.



We do not claim to be more unselfish, more generous or more philanthropic than other people. But we think we started on sound and straightforward business principles, considering the interests of the shareholders our own, and the health and welfare of the employees, the sure foundation of our success.

Jamsetji Tata
Founder of the Tata group
Chairman (1868 – 1904)

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FOREWORD

Tata companies have consistently adhered to the values and ideals articulated by the Founder for over 150 years. The Tata Code of Conduct was first formalized by Mr Ratan Tata. It articulates the Group's values and ideals that guide and govern the conduct of our companies as well as our colleagues in all matters relating to business. Today, the Code is a bedrock on which we base our individual, as well as leadership commitments to core Tata values.

The Tata Code of Conduct outlines our commitment to each of our stakeholders, including the communities in which we operate, and is our guiding light when we are sometimes faced with business dilemmas that leave us at ethical crossroads. The Code is also dynamic in that it has been periodically refreshed in order to remain contemporary and contextual to the changes in law and regulations. However it remains unaltered at its core.

Our stellar reputation and success as a business entity has been defined by the powerful commitment and adherence to the core values and principles expressed in this Code, by all our employees, directors and partners. I trust every Tata colleague and Tata company will continue to not only comply with the laws and regulations that govern our business interests around the world, but will continue to set new standards of ethical conduct that will generate deep respect and inspire emulation by others.

N. Chandrasekaran

21st February, 2017



A. OUR VALUES

TATA has always been values-driven. The five core values that underpin the way we conduct our business activities are:



INTEGRITY

We will be fair, honest, transparent and ethical in our conduct; everything we do must stand the test of public scrutiny.

UNITY

We will invest in our people and partners, enable continuous learning, and build caring and collaborative relationships based on trust and mutual respect.

RESPONSIBILITY

We will integrate environmental and social principles in our businesses, ensuring that what comes from the people goes back to the people many times over.

PIONEERING

We will be bold and agile, courageously taking on challenges, using deep customer insight to develop innovative solutions.

EXCELLENCE

We will be passionate about achieving the highest standards of quality, always promoting meritocracy.

These universal values serve as the foundation for the Tata Code of Conduct. They find expression within the value system of every Tata company.

B. SCOPE AND PURPOSE OF THIS CODE

1. This Code sets out how we behave with:
 - our employees, or those who work with us;
 - our customers;
 - the communities and the environment in which we operate;
 - our value-chain partners, including suppliers and service providers, distributors, sales representatives, contractors, channel partners, consultants, intermediaries and agents;
 - our joint-venture partners or other business associates;
 - our financial stakeholders;
 - the governments of the countries in which we operate; and
 - our group companies.
 2. In this Code, “we or us” means our company, our executive directors, officers, employees and those who work with us, as the context may require.
 3. The term “our group companies” in this Code typically means companies Tata Sons intends for this Code to apply to, and / or to whom Tata Sons has issued this Code.
 4. This Code sets out our expectations of all those who work with us. We also expect those who deal with us to be aware that this Code underpins everything we do, and in order to work with us they need to act in a manner consistent with it.
-

REMEMBER...

It is our commitment to protect our reputation and our brand equity by adhering to the values and principles set out in this Code. By doing so, we strengthen our unique culture and identity.

OUR CORE PRINCIPLES



The Tata philosophy of management has always been, and is today more than ever, that corporate enterprises must be managed not merely in the interests of their owners, but equally in those of their employees, of the consumers of their products, of the local community and finally of the country as a whole.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

C. OUR CORE PRINCIPLES

1. We are committed to operating our businesses conforming to the highest moral and ethical standards. We do not tolerate bribery or corruption in any form. This commitment underpins everything that we do.
2. We are committed to good corporate citizenship. We treat social development activities which benefit the communities in which we operate as an integral part of our business plan.
3. We seek to contribute to the economic development of the communities of the countries and regions we operate in, while respecting their culture, norms and heritage. We seek to avoid any project or activity that is detrimental to the wider interests of the communities in which we operate.
4. We shall not compromise safety in the pursuit of commercial advantage. We shall strive to provide a safe, healthy and clean working environment for our employees and all those who work with us.
5. When representing our company, we shall act with professionalism, honesty and integrity, and conform to the highest moral and ethical standards. In the countries we operate in, we shall exhibit culturally appropriate behaviour. Our conduct shall be fair and transparent and be perceived as fair and transparent by third parties.
6. We shall respect the human rights and dignity of all our stakeholders.
7. We shall strive to balance the interests of our stakeholders, treating each of them fairly and avoiding unfair discrimination of any kind.
8. The statements that we make to our stakeholders shall be truthful and made in good faith.
9. We shall not engage in any restrictive or unfair trade practices.
10. We shall provide avenues for our stakeholders to raise concerns or queries in good faith, or report instances of actual or perceived violations of our Code.
11. We shall strive to create an environment free from fear of retribution to deal with concerns that are raised or cases reported in good faith. No one shall be punished or made to suffer for raising concerns or making disclosures in good faith or in the public interest.
12. We expect the leaders of our businesses to demonstrate their commitment to the ethical standards set out in this Code through their own behaviour and by establishing appropriate processes within their companies.
13. We shall comply with the laws of the countries in which we operate and any other laws which apply to us. With regard to those provisions of the Code that are explicitly dealt with under an applicable law or employment terms, the law and those terms shall take precedence. In the event that the standards prescribed under any applicable law are lower than that of the Code, we shall conduct ourselves as per the provisions of the Code.

REMEMBER...

“Good faith” means having a reasonable belief that the information you have provided is truthful. It does not mean having ‘all the evidence’ about the potential violation or case reported.

OUR EMPLOYEES



Once you got the best people, the people who shared our values and ideals, we left them free to act on their own. We do not fetter them. We encourage them and give them opportunities for leadership.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

D. OUR EMPLOYEES

Equal opportunity employer

1. We provide equal opportunities to all our employees and to all eligible applicants for employment in our company. We do not unfairly discriminate on any ground, including race, caste, religion, colour, ancestry, marital status, gender, sexual orientation, age, nationality, ethnic origin, disability or any other category protected by applicable law.
2. When recruiting, developing and promoting our employees, our decisions will be based solely on performance, merit, competence and potential.
3. We shall have fair, transparent and clear employee policies which promote diversity and equality, in accordance with applicable law and other provisions of this Code. These policies shall provide for clear terms of employment, training, development and performance management.

Q&A

A job requirement entails extensive travel. One of the candidates has excellent relevant experience and qualifications. However, this candidate is a single parent. As a result, I feel such a situation would significantly hinder this candidate's ability to cope with the job requirement. What should I do?

In accordance with the Code, the decision to recruit an employee should be based upon merit. We cannot make a presumption that the candidate would not be able to meet the travel requirements of the job. All eligible candidates should be provided with equal opportunity to demonstrate or justify that they can cope with the travel requirements of the job. Being a single parent cannot be a ground to be discriminated against at any stage of recruitment or ongoing employment in our company.

REMEMBER...

We do not tolerate harassment in any form and therefore we expect every employee to discourage such misdemeanours in the workplace.

Dignity and respect

4. Our leaders shall be responsible for creating a conducive work environment built on tolerance, understanding, mutual cooperation and respect for individual privacy.
5. Everyone in our work environment must be treated with dignity and respect. We do not tolerate any form of harassment, whether sexual, physical, verbal or psychological.
6. We have clear and fair disciplinary procedures, which necessarily include an employee's right to be heard.
7. We respect our employees' right to privacy. We have no concern with their conduct outside our work environment, unless such conduct impairs their work performance, creates conflicts of interest or adversely affects our reputation or business interests.

Human rights

8. We do not employ children at our workplaces.
9. We do not use forced labour in any form. We do not confiscate personal documents of our employees, or force them to make any payment to us or to anyone else in order to secure employment with us, or to work with us.

Bribery and corruption

10. Our employees and those representing us, including agents and intermediaries, shall not, directly or indirectly, offer or receive any illegal or improper payments or comparable benefits that are intended or perceived to obtain undue favours for the conduct of our business.

REMEMBER...

Violation by even a single employee of any law relating to anti-bribery, anti-corruption, anti-competition, data privacy, etc. could result in severe financial penalties and cause irreparable reputational damage to the company.

Gifts and hospitality

11. Business gifts and hospitality are sometimes used in the normal course of business activity. However, if offers of gifts or hospitality (including entertainment or travel) are frequent or of substantial value, they may create the perception of, or an actual conflict of interest or an 'illicit payment'. Therefore, gifts and hospitality given or received should be modest in value and appropriate, and in compliance with our company's gifts and hospitality policy.

Freedom of association

12. We recognise that employees may be interested in joining associations or involving themselves in civic or public affairs in their personal capacities, provided such activities do not create an actual or potential conflict with the interests of our company. Our employees must notify and seek prior approval for any such activity as per the 'Conflicts of Interest' clause of this Code and in accordance with applicable company policies and law.

REMEMBER...

As a general rule, we may accept gifts or hospitality from a business associate, only if such a gift:

- has modest value and does not create a perception (or an implied obligation) that the giver is entitled to preferential treatment of any kind;
- would not influence, or appear to influence, our ability to act in the best interest of our company;
- would not embarrass our company or the giver if disclosed publicly.

The following gifts are never appropriate and should never be given or accepted:

- gifts of cash or gold or other precious metals, gems or stones;
- gifts that are prohibited under applicable law;
- gifts in the nature of a bribe, payoff, kickback or facilitation payment*;
- gifts that are prohibited by the gift giver's or recipient's organisation; and
- gifts in the form of services or other non-cash benefits (e.g. a promise of employment).

(*'Facilitation' payment is a payment made to secure or speed up routine legal government actions, such as issuing permits or releasing goods held in customs.)

Working outside employment with us

13. Taking employment, accepting a position of responsibility or running a business outside employment with our company, in your own time, with or without remuneration, could interfere with your ability to work effectively at our company or create conflicts of interest. Any such activity must not be with any customer, supplier, distributor or competitor of our company. Our employees must notify and seek prior approval for any such activity as per the 'Conflicts of Interest' clause of this Code and in accordance with applicable company policies and law.

Integrity of information and assets

14. Our employees shall not make any wilful omissions or material misrepresentation that would compromise the integrity of our records, internal or external communications and reports, including the financial statements.
15. Our employees and directors shall seek proper authorisation prior to disclosing company or business-related information, and such disclosures shall be made in

accordance with our company's media and communication policy. This includes disclosures through any forum or media, including through social media.

16. Our employees shall ensure the integrity of personal data or information provided by them to our company. We shall safeguard the privacy of all such data or information given to us in accordance with applicable company policies or law.
17. Our employees shall respect and protect all confidential information and intellectual property of our company.
18. Our employees shall safeguard the confidentiality of all third party intellectual property and data. Our employees shall not misuse such intellectual property and data that comes into their possession and shall not share it with anyone, except in accordance with applicable company policies or law.
19. Our employees shall promptly report the loss, theft or destruction of any confidential information or intellectual property and data of our company or that of any third party.

Q&A

I am an accountant in the finance department of my company. Due to my artistic skills, I received an offer to pen cartoons for a children's publication for which I would receive compensation. I plan to undertake this activity during week-ends. What should I do before accepting this offer?

Before accepting the offer, you should ascertain whether the company policies and rules require you to make a disclosure to your supervisor so that the company may determine whether your undertaking this activity adversely affects our company's interests. On confirmation from the company that it does not do so, you would be free to take up the activity. It is also your duty to bring to the attention of the company whenever there is any change in the situation you have disclosed.

20. Our employees shall use all company assets, tangible and intangible, including computer and communication equipment, for the purpose for which they are provided and in order to conduct our business. Such assets shall not be misused. We shall establish processes to minimise the risk of fraud, and misappropriation or misuse of our assets.
21. We shall comply with all applicable anti-money laundering, anti-fraud and anti-corruption laws and we shall establish processes to check for and prevent any breaches of such laws.

Insider trading

22. Our employees must not indulge in any form of insider trading nor assist others, including immediate family, friends or business associates, to derive any benefit from access to and possession of price sensitive information that is not in the public domain. Such information would include information about our company, our group companies, our clients and our suppliers.

Q&A

Our company has recently announced the launch of a new business initiative. In connection with this, your friend who is a journalist with a leading business newspaper has asked you to provide some information that he could cover in his forthcoming article. He has promised not to quote you, or reveal your identity. Should you be giving him this information?

No. You should not be sharing information of this nature with the media, even if it is assured that the source would remain anonymous. Only authorised personnel in the company are permitted to speak to the media and provide information of this nature.

Our company has a “Use of Social Media” policy that lays down the “dos and don’ts” for use of social media even if you may access such media on your own time. Why is there such a policy?

External communication is a serious matter. It must be carefully managed because information put out with reference to our company or its businesses needs to be clear, truthful and not violate any undertakings we have given to other parties. In each business there are managers nominated to authorise and make different types of statements to the outside world. These managers should be consulted about any request for information you may receive or information you think we should give out.

In using social media, in particular blogs or social networking sites, you should exercise great caution while talking about our company or the business we do. It may feel like you are chatting with friends or expressing a personal opinion but even while doing so you cannot share any confidential information of our company.

REMEMBER...

We must respect the property rights of others by never misusing their assets, intellectual property or trade secrets, including the copying or downloading of unauthorised software, trademarks, copyrighted material or logos. We should never make unauthorised copies of computer software programs or use unlicensed personal software on company computers.

Prohibited drugs and substances

23. Use of prohibited drugs and substances creates genuine safety and other risks at our workplaces. We do not tolerate prohibited drugs and substances from being possessed, consumed or distributed at our workplaces, or in the course of company duties.

Conflicts of interest

24. Our employees and executive directors shall always act in the interest of our company and ensure that any business or personal association *including close personal relationships* which they may have, does not create a conflict of interest with their roles and duties in our company or the operations of our company. Further, our employees and executive directors shall not engage in any business, relationship or activity, which might conflict with the interest of our company or our group companies.
25. Should any actual or potential conflicts of interest arise, the concerned person must immediately report such conflicts and seek approvals as required by applicable law and company policy. The competent authority shall revert to the employee within a reasonable time as defined in our company's policy, so as to enable the concerned employee to take necessary action as advised to resolve or avoid the conflict in an expeditious manner.
26. In the case of all employees other than executive directors, the Chief Executive Officer / Managing Director shall be the competent authority, who in turn shall report such cases to the Board of Directors on a quarterly basis. In case of the Chief Executive Officer / Managing Director and executive directors, the Board of Directors of our company shall be the competent authority.

Q&A

You are responsible for maintaining our company's customer database. One of your friends is starting a business venture and requests you to share a few particulars from this database for marketing purposes of his business. He assures you that he would keep the data as well as his source confidential. Should you do so?

No. You should respect the confidentiality of customer information and not share any part of the database with any person without due authorisation.

You have access to revenue numbers of different business units of our company. While having a conversation with you over evening drinks, your friend enquires about the financial performance of our company. You do not share detailed information with your friend, but share approximate revenue figures. Is this conduct of yours correct?

No, it is not. You are not permitted to share financial information of our company with others who do not need to know this information. Financial information should always be safeguarded and disclosed only on a need-to-know basis after obtaining requisite approvals. Sharing of any price sensitive information that is not generally available with the public could also lead to violation of applicable insider trading laws.

27. Notwithstanding such or any other instance of conflict of interest that exists due to historical reasons, adequate and full disclosure by interested employees shall be made to our company's management. At the time of appointment in our company, our employees and executive directors shall make full disclosure to the competent authority, of any interest leading to an actual or potential conflict that such persons or their immediate family (including parents, siblings, spouse, partner, children) or persons with whom they enjoy close personal relationships, may have in a family business or a company or firm that is a competitor, supplier, customer or distributor of, or has other business dealings with, our company.

REMEMBER...

A conflict of interest could be any known activity, transaction, relationship or service engaged in by an employee, his/her immediate family (including parents, siblings, spouse, partner, and children), relatives or a close personal relationship, which may cause concern (based upon an objective determination) that the employee could not or might not be able to fairly perform his/her duties to our company.

Examples of Potential Conflicts of Interest

A conflict of interest, actual or potential, arises where, directly or indirectly, an employee or executive director:

- (a) engages in a business, activity or relationship with anyone who is party to a transaction with our company;
- (b) is in a position to derive an improper benefit, personally or for any family member or for any person in a close personal relationship, by making or influencing decisions relating to any transaction;
- (c) conducts business on behalf of our company or is in a position to influence a decision with regard to our company's business with a supplier or customer where a relative of, or a person in close personal relationship with, an employee or executive director is a principal officer or representative, resulting in a personal benefit or a benefit to the relative;
- (d) is in a position to influence decisions with regard to award of benefits such as increase in salary or other remuneration, posting, promotion or recruitment of a relative or a person in close personal relationship employed in our company or any of our group companies;
- (e) undertakes an activity by which the interest of our company or our group companies can be compromised or defeated; or
- (f) does anything by which an independent judgement of our company's or our group companies' best interest cannot be exercised.

28. If there is a failure to make the required disclosure and our management becomes aware of an instance of conflict of interest that ought to have been disclosed by an employee or executive director, our management shall take a serious view of the matter and consider suitable disciplinary action as per the terms of employment. In all such matters, we shall follow clear and fair disciplinary procedures, respecting the employee's right to be heard.

Examples of activities normally approved (post-disclosure) as per applicable company policy

Acceptance of a position of responsibility (whether for remuneration or otherwise) in the following cases would typically be permitted, provided the time commitments these demand do not disturb or distract from the employee's primary duties and responsibilities in our company, and are promptly disclosed to the relevant competent authority:

- (a) Directorships on the Boards of any of our group companies, joint ventures or associate companies.
- (b) Memberships/positions of responsibility in educational/professional bodies, where such association will promote the interests of our company.
- (c) Memberships or participation in government committees/bodies or organisations.

Q&A

You are in a relationship with a colleague who has been recently moved into your team and would now be reporting to you. What should you do?

Romantic or close personal relationships with another employee where a reporting relationship exists and one is responsible for evaluating the other's performance, is likely to create a conflict of interest. In such a situation, you would need to report the potential conflict to your supervisor.

Your company is submitting a proposal to a company in which you were previously employed. You have confidential information pertaining to your previous employer, which you believe will help your present employer in winning the contract. Should you share this information?

No. You should not share this information with your company since it relates to confidential information of a third party. Your company respects its employees' duty to protect confidential information that they may have relating to their previous employers.

You are the purchasing manager in the procurement department of your company. You receive an invitation from a supplier to attend a premier sporting event as her guest. This particular supplier is one of the vendors who has submitted a proposal for an open tender issued by your company. Should you accept the invitation?

No. You should not accept the invitation in this instance. Since you are in a key decision-making role for the tender, any unusual benefit that you receive could be perceived as an inducement that could compromise your objectivity.

OUR CUSTOMERS



We have continued to enjoy prosperity, even with adverse times to fight against. Our relations with all concerned are the most friendly. We have maintained the same character for straight-forward dealing with our constituents and customers. Our productions have continued to be of the same high quality, and therefore command the best reputation and realise the highest prices. ... I mention these facts only to point out that with honest and straight-forward business principles, close and careful attention to details, and the ability to take advantage of favourable opportunities and circumstances, there is a scope for success.

Jamsetji Tata

Founder of the Tata group
Chairman, Tata Sons (1868 – 1904)

E. OUR CUSTOMERS

Products and services

1. We are committed to supplying products and services of world-class quality that meet all applicable standards.
2. The products and services we offer shall comply with applicable laws, including product packaging, labelling and after-sales service obligations.
3. We shall market our products and services on their own merits and not make unfair or misleading statements about the products and services of our competitors.

Export controls and trade sanctions

4. We shall comply with all relevant export controls or trade sanctions in the course of our business.

Fair competition

5. We support the development and operation of competitive open markets and the liberalisation of trade and investment in each country and market in which we operate.
6. We shall not enter into any activity constituting anti-competitive behaviour such as abuse of market dominance, collusion, participation in cartels or inappropriate exchange of information with competitors.
7. We collect competitive information only in the normal course of business and obtain the same through legally permitted sources and means.

Dealings with customers

8. Our dealings with our customers shall be professional, fair and transparent.
 9. We respect our customers' right to privacy in relation to their personal data. We shall safeguard our customers' personal data, in accordance with applicable law.
-

Q&A

You are the Regional Sales Manager of our company. You have become a member of an “informal group”, on an instant messaging service, whose members are the regional sales heads of our company’s competitors. The administrator of the group has requested an in-person meeting to informally discuss market conditions and brainstorm on “pricing strategy” from an industry perspective. What should you do?

Any meeting with competitors, especially to discuss “pricing strategy”, could be an attempt to promote an anti-competitive practice or manipulate prices. You should respond by declining this invitation and exiting the “informal group”. You should also report this incident to your supervisor and your Legal department.

You are attending a customer meeting with a colleague, and your colleague makes an untruthful statement about the company’s services. What should you do?

You should assist your colleague in correcting the inaccuracy during the meeting if possible. If this is not possible, raise the issue with your colleague after the meeting to enable him/her or the company to correct any misrepresentation made to the customer.

While working on a customer project, you receive a call from your colleague. He used to manage that customer account before you took over his role. He recalls that he had worked with the customer on developing a new ordering system which he thinks would be beneficial for another customer and requests you to send him the project details. What should you do?

You must not share this information without specific approval of the customer; you are not permitted to use a customer’s assets, including software, for another customer or for any personal use.

REMEMBER...

Striving for excellence in the standards of our work and in the quality of our goods and services is a core Tata value. It is the unwavering practice of this value that builds and sustains customer trust in our brand.

OUR COMMUNITIES AND THE ENVIRONMENT



“In a free enterprise, the community is not just another shareholder in business but is in fact the very purpose of its existence.”

Jamsetji Tata

Founder of the Tata group
Chairman, Tata Sons (1868 – 1904)

F. OUR COMMUNITIES AND THE ENVIRONMENT

Communities

1. We are committed to good corporate citizenship, and shall actively assist in the improvement of the quality of life of the people in the communities in which we operate.
2. We engage with the community and other stakeholders to minimise any adverse impact that our business operations may have on the local community and the environment.
3. We encourage our workforce to volunteer on projects that benefit the communities in which we operate, provided the principles of this Code, where applicable, and in particular the 'Conflicts of Interest' clause are followed.

The environment

4. In the production and sale of our products and services, we strive for environmental sustainability and comply with all applicable laws and regulations.
5. We seek to prevent the wasteful use of natural resources and are committed to improving the environment, particularly with regard to the emission of greenhouse gases, consumption of water and energy, and the management of waste and hazardous materials. We shall endeavour to offset the effect of climate change in our activities.

OUR VALUE-CHAIN PARTNERS



“If we had done some of the things that some other groups have done, we would have been twice as big as we are today. But we didn’t, and I would not have it any other way.”

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

(on the pace of expansion of the Tata group in the 1960s and 70s)

G. OUR VALUE-CHAIN PARTNERS

1. We shall select our suppliers and service providers fairly and transparently.
2. 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.
3. Our suppliers and service providers shall represent our company only with duly authorised 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.
4. 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.
5. We respect our obligations on the use of third party intellectual property and data.

Q&A

You head the procurement function in our company. You have tight budgetary constraints for a project that you are working on. In order to complete the project within the targeted costs, you intend to request your supplier to provide you an exceptional discount on this project order on the understanding that you would “make it up to him” in future orders. Would you be violating the Code?

Yes, you would. Inducement in any form, including future benefits to the supplier, could compromise your ability to act objectively and in the best interests of the company and therefore must be avoided.

REMEMBER...

Our value-chain partners would include our suppliers and service providers, distributors, sales representatives, contractors, channel partners, consultants, intermediaries and agents; joint-venture partners and other business associates.

OUR FINANCIAL STAKEHOLDERS



Ethical behaviour in business – in every sphere and with all constituents – has been the bedrock on which the Tata group has built, and operates, its enterprises. This has been an article of faith for the group ever since its inception, a fundamental element of our cherished heritage and the essence of our way of life.

Ratan Tata

Chairman, Tata Sons (1991 – 2012)

H. OUR FINANCIAL STAKEHOLDERS

1. We are committed to enhancing shareholder value and complying with laws and regulations that govern shareholder rights.
 2. We shall inform our financial stakeholders about relevant aspects of our business in a fair, accurate and timely manner and shall disclose such information in accordance with applicable law and agreements.
 3. We shall keep accurate records of our activities and shall adhere to disclosure standards in accordance with applicable law and industry standards.
-

GOVERNMENTS



Business, as I have seen it, places one great demand on you; it needs you to impose a framework of ethics, values, fairness and objectivity on yourself at all times. It is not easy to do this; you cannot impose it on yourself forcibly because it has to become an integral part of you.

Ratan Tata

Chairman, Tata Sons (1991 – 2012)

I. GOVERNMENTS

Political non-alignment

1. We shall act in accordance with the constitution and governance systems of the countries in which we operate. We do not seek to influence the outcome of public elections, nor to undermine or alter any system of government. We do not support any specific political party or candidate for political office. Our conduct must preclude any activity that could be interpreted as mutual dependence/favour with any political body or person, and we do not offer or give any company funds or property or other resources as donations to any specific political party, candidate or campaign.

Any financial contributions considered by our Board of Directors in order to strengthen democratic forces through a clean electoral process shall be extended only through the Progressive Electoral Trust in India, or by a similar transparent, duly-authorised, non-discriminatory and non-discretionary vehicle outside India.

Government engagement

2. We engage with the government and regulators in a constructive manner in order to promote good governance. We conduct our interactions with them in a manner consistent with our Code.
3. We do not impede, obstruct or improperly influence the conclusions of, or affect the integrity or availability of data or documents for any government review or investigation.

OUR GROUP COMPANIES



I do not think anyone was on par with Jamsetji as an industrial visionary. But that is not the sole reason why I have been an admirer of Jamsetji. The major reason was his sense of values, sterling values, which he imparted to this group. If someone were to ask me, what holds the Tata companies together, more than anything else, I would say it is our shared ideals and values which we have inherited from Jamsetji Tata.

J.R.D. Tata

Chairman, Tata Sons (1938 – 1991)

J. OUR GROUP COMPANIES

1. We seek to cooperate with our group companies, including joint ventures, by sharing knowledge, physical resources, human and management resources and adopting leading governance policies and practices in accordance with applicable law including adherence to competition law, where relevant.
2. We shall strive to achieve amicable resolution of any dispute between us and any of our group companies, through an appropriate dispute resolution mechanism so that it does not adversely affect our business interests and stakeholder value.
3. We shall have processes in place to ensure that no third party or joint venture uses the TATA name/brand to further its interests without proper authorisation.
4. Our Board of Directors shall consider for adoption policies and guidelines periodically formulated by Tata Sons and circulated to group companies.

Q&A

You are in the process of selecting potential vendors for an IT project in our company. In the final shortlist of two companies, one is a new start-up with limited references and a lower price-quotation, while the other is a Tata company with thirty years of implementation experience and good references, but a marginally higher quote for the same job. With all other parameters of choice being nearly equal, which company should you select for the job?

While price is undoubtedly an important criterion for decision making, it is clearly not the only one to be evaluated. You may also need to consider good customer references, proven track record and shared value systems in order to decide on your IT partner.

You are in the process of selecting potential vendors for a project. One of the three finalists is a group company. In reviewing the final proposals, you rank the group company second out of the three proposals based on pricing and total cost of ownership, and select the first-ranked vendor. Is this the right decision?

Yes. You should select the vendor that, on its own merits, is the vendor that is most appropriate for your company's requirements. You should not select a group company only because of its affiliation.

RAISING CONCERNS

We encourage our employees, customers, suppliers and other stakeholders to raise concerns or make disclosures when they become aware of any actual or potential violation of our Code, policies or law. We also encourage reporting of any event (actual or potential) of misconduct that is not reflective of our values and principles.

Avenues available for raising concerns or queries or reporting cases could include:

- immediate line manager or the Human Resources department of our company
- designated ethics officials of our company
- the 'confidential reporting' third party ethics helpline (if available)
- any other reporting channel set out in our company's 'Whistleblower' policy.

We do not tolerate any form of retaliation against anyone reporting legitimate concerns. Anyone involved in targeting such a person will be subject to disciplinary action.

If you suspect that you or someone you know has been subjected to retaliation for raising a concern or for reporting a case, we encourage you to promptly contact your line manager, the company's Ethics Counsellor, the Human Resources department, the MD/CEO or the office of the group's Chief Ethics Officer.

Q&A

My supervisor has asked me to do something which I believe may be illegal. I am afraid if I do not do what I am told, I could lose my job. Should I do it?

No. Breaking the law is never an option. Discuss the situation with your supervisor to be certain that you both understand the facts. If your concerns are not resolved, contact a higher level supervisor, the Ethics Counsellor, the Legal department or report them via the company's confidential reporting system, if available.

I feel that my supervisor is treating me unfairly for reporting a concern to the Ethics Counsellor. What should I do?

Retaliation against anyone who raises a concern is a violation of the Code. You should therefore promptly report this action of your supervisor to the Ethics Counsellor or the MD/CEO of your company or via the company's confidential reporting system, if available.

ACCOUNTABILITY

This Code is more than a set of prescriptive guidelines issued solely for the purpose of formal compliance. It represents our collective commitment to our value system and to our core principles.

Every person employed by us, directly or indirectly, should expect to be held accountable for his/her behaviour. Should such behaviour violate this Code,

they may be subject to action according to their employment terms and relevant company policies.

When followed in letter and in spirit, this Code is 'lived' by our employees as well as those who work with us. It represents our shared responsibility to all our stakeholders, and our mutual commitment to each other.

SPEAK UP...

If you are unsure whether a particular action you are about to take is consistent with the principles set forth in the Code, ask yourself:

- Could it directly or indirectly endanger someone or cause them injury?
- Is it illegal/unlawful or out of line with our policies and procedures?
- Does my conscience reject it? Does it conflict with my personal values?
- Would I feel uncomfortable if the story appeared in the media? Would it shame my company, spouse, partner, parent or child?
- Does it 'feel' wrong?

If the answer to any of these questions is "Yes", please stop and consult your reporting manager, the Ethics Counsellor, the Human Resource department, the Legal department or any member of the senior management team, to assist you in making the decision.

When faced with a dilemma: Stop, Think, Act Responsibly

NOTE

The Code does not provide a comprehensive and complete explanation of all expectations from a company standpoint or obligations from a stakeholder standpoint.

Our employees have a continuing obligation to familiarise themselves with all applicable law, group-level advisories and policies, company-level policies, procedures and work rules as relevant. For any guidance on interpretation of the Code, we may seek support from our company's Ethics Counsellor or from the group's Chief Ethics Officer, as appropriate.

All joint ventures are encouraged to adopt the Tata Code of Conduct (TCOC) or a code of conduct that incorporates all elements of the TCOC.

This version of the Tata Code of Conduct supersedes all earlier versions and associated documents and stands effective from 29th July, 2015.

For any query or clarification on the Code, please contact the office of the group's Chief Ethics Officer via email at: ethicsoffice@tata.com.



TATA CODE OF CONDUCT – 2015

I acknowledge that I have received the Tata Code of Conduct.

I have read the Tata Code of Conduct and I acknowledge that as a Tata employee, I am required to comply with the guidelines described therein and failure to do so may subject me to action as per my employment terms and relevant company policies.

If I have a concern about a violation, or a potential violation of the Tata Code of Conduct, I understand that there are channels available to me in my company to report such concerns. By making use of these channels when necessary, I will play my part in maintaining the high ethical standards to which we hold ourselves.

Signature: _____

Date: _____

Name: _____

Department: _____

Address: _____

(Please submit this declaration to your Ethics Counsellor or the Human Resource department of your company.)



For further information on the Code please contact:
The Ethics Office,
Tata Sons Ltd.,
Bombay House,
24, Homi Mody Street,
Mumbai – 400001, India.
Email: ethicsoffice@tata.com

HEALTH AND SAFETY POLICY

We, at Tata Power, reaffirm our belief that the health and safety of our stakeholders is of the utmost importance and takes precedence in all our business decisions. In pursuit of this belief and commitment, we strive to:

- Maintain and proactively improve our management systems to minimize health and safety hazards to our stakeholders and all others influenced by our activities.
- Comply and endeavour to exceed all applicable occupational health & safety legal and other requirements by setting the highest standards.
- Integrate health & safety procedures and best practices into every operational activity with assigned line-functional responsibilities at all levels, for improving and sustaining health & safety performance.
- Involve our employees in maintaining a safe and healthy work environment through risk assessments, periodic reviews of operational procedures, safe work methods and adoption of new technology.
- Develop a culture of safety through active leadership and provide appropriate training at all levels to enable employees developing their skills to work safely.
- Incorporate appropriate health & safety criteria into business decisions for selection of plant and technology, performance appraisal of individuals and appointments in key positions.
- Ensure availability at all times of appropriate resources to fully implement the health & safety policy of the company.
- Promptly report incidents, investigate for root causes and ensure lessons learnt shared and deployed across the company.
- Ensure service providers and their workmen align with company's safety codes and practices for the health and safety of personnel working with us.
- Set safety & health metrics as indicators of excellence, monitor progress and continually improve performance.

We shall actively communicate this policy to all stakeholders by suitable means and periodically review its relevance in continuously changing business environment.

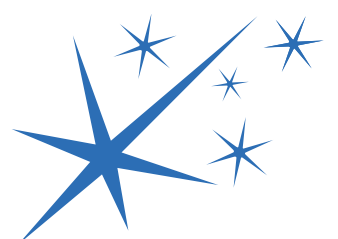


(Praveer Sinha)
CEO & Managing Director

Date: 15th June, 2018

TATA POWER

Lighting up Lives!



CORPORATE ENVIRONMENT POLICY

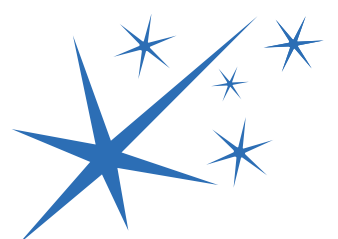
Tata Power is committed to a clean, safe and healthy environment, and we shall operate our facilities in an environmentally sensitive and responsible manner. Our commitment to environmental protection and stewardship will be achieved by:

- 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



FORMAT OF EMD – Bid Guarantee BG

FORMAT OF EMD – Bid Guarantee BG

Note: a) Format shall be followed in toto

b) Claim period of six months must be kept. In case of Bank is not ready to give BG for six months and claim period of six months EMD BG valid of one year to be given

c) The guarantee to be accompanied by the covering letter from the bank confirming the signatories to the guarantee on the Bank's letter head.

The Tata Power Co Ltd
34, Sant Tukaram Road
Carnac Bunder,
Mumbai 400 009

Whereas (Name of the Contractor), a Company incorporated under the Indian Companies Act 1956, having its Registered office at _____, (hereinafter called the "BIDDER") has in response to your Invitation to Bid against Enquiry No. _____ dated _____, for (name of work), offered to supply and/or execute the works as contained in Employers letter dated _____.

AND WHEREAS BIDDER is required to furnish to you a Bank Guarantee for the sum of Rs. _____/-(Rupees ____ only) as Earnest Money against Bidder's offer as aforesaid.

AND WHEREAS we, (name of the bank) having our Registered Office at _____ and Branch office at _____, have at the request of Bidder, agreed to give you this Guarantee as hereinafter contained.

NOW THEREFORE, in lieu of earnest money deposit, we, the undersigned, hereby covenant that the aforesaid Bid of the BIDDER shall remain open for acceptance by you during the period of validity as mentioned in the Bid Document or any extension thereof as requested by you and if Bidder shall for any reason back out, whether expressly or impliedly, from this said Bid during the period of its validity or any extension thereof as aforesaid, we hereby guarantee to you the payment of the sum of Rs. _____/-(Rupees ____ only) on demand and without demur and notwithstanding the existence of any dispute between you and the BIDDER in this regard and we hereby further agree as follows:

- (a) You shall have the right to file/make a claim on us under the Guarantee for a further period of six months from the said date of expiry.
- (b) That this guarantee shall not be revoked during its currency without your written express consent.
- (c) That you may without affecting this guarantee grant time or other indulgence to or negotiate further with BIDDER in regard to the conditions contained in the said Bid document and thereby modify these conditions or add thereto any further conditions as may be mutually agreed upon between you and BIDDER.
- (d) That the guarantee hereinbefore contained shall not be affected by any change in the constitution of our Bank or in the constitution of BIDDER.

- (e) That any account settled between you and BIDDER shall be conclusive evidence against us of the amount due hereunder and shall not be questioned by us.
- (f) That this guarantee commences from the date hereof and shall remain in force till BIDDER, if his Bid is accepted by you, furnishes the Contract Performance Guarantee as required under the said specifications and executes formal Contract Agreement as therein provided or till ____Days (__ days) from the date of submission of the Bid by the BIDDER i.e. (expiry date), whichever is earlier.
- (g) That the expression, BIDDER and Bank, and OWNER herein used shall, unless such an interpretation is repugnant to the subject or context, include their respective successors and assignees.
- (h) 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 and shall be extended from time to time for such period or periods as may be desired by you. Unless a demand or claim under this Guarantee is received by us in writing within six months from (expiry date), i.e. on or before (claim period date), we shall be discharged from all liabilities under this guarantee thereafter.
- (i) Any claim/extension under the guarantee can be lodgeable at issuing outstation bank or at Mumbai branch and claim will also be payable at Mumbai Branch. **(To be confirmed by Mumbai Branch by a letter to that effect)**

Notwithstanding anything contained hereinabove :

- a) Our liability under this Bank Guarantee shall not exceed Rs._____/-(Rupees _____ only).
- b) This Bank Guarantee shall be valid upto ----- 200.
- c) Our Liability to make payment shall arise and we are liable to pay the guaranteed amount or any part there of under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ----- 200.