

The Tata Power Company Ltd		OPEN TENDER NOTIFICATION
Tender Reference: CC25VJS044		Document Date: 09th Jan 2025

The Tata Power Company Limited Invites Tender through E-Tender Two-Part Bidding Process from interested bidders for the following package: -

A. Summary of the tendered package:

Sr. No.	Description	Tender Reference no.	Bid Guarantee Fee / EMD (Rs.)	Tender Fee (Rs.)	Last Date and Time for payment of Tender Participation fee
For the following package please send mail to Mr. Vinayak Shinde (vinayak.shinde@tatapower.com) with copy to Mr. Rameshkumar P N (pnramesh@tatapower.com)					
1.	Corrigendum to Tender issued vide advertisement. published dtd. 18th Dec 2024 – 1 year OLA for Supply of HT Cables for Mumbai Distribution	CC25VJS044	20,00,000/-	2,000 /-	15th Jan 2025

B. Procedure to Participate in Tender.

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

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

Beneficiary Name – The Tata Power Co. Ltd.

Bank Name – HDFC Bank Ltd.

Branch Name – Fort Branch, Mumbai

Address – Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023.

Branch Code – 60

Bank & Branch Code – 400240015

Account No – 00600110000763

Account type – CC

IFSC Code – HDFC0000060

2. Eligible and Interested Bidders to submit duly signed and stamped letter on Bidder's letterhead indicating

Tender Enquiry number

Name of authorized person

Contact number

e-mail id

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Details of submission of Tender Participation Fee

E-mail with necessary attachment of 1 and 2 above to be send to vinayak.shinde@tatapower.com with copy to pnramesh@tatapower.com before “Last date and time for Payment of Tender Participation Fee”

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

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

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

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

Any payment of Tender Participation Fee by Bidder who have not done the pre-requisite will not be refunded.

Also all future corrigendum's to the said tender will be informed on Tender section on website <https://www.tatapower.com> only.

Summary of Changes

- 1 Date extension of submission of Expression of Interest till **15th Jan 2025**

The original tender document is reproduced below.

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OPEN TENDER NOTIFICATION

FOR

**1 year OLA for Supply of HT Cable of Various Ratings 11kV,
22kV, 33 kV for Mumbai Distribution**

**The Tata Power Company Limited (Tata Power)
Smart Center of Procurement Excellence, 2nd Floor,
Sahar Receiving Station, Near Hotel Leela,
Sahar Airport Road, Andheri East, Mumbai-400059**

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Section A : Tender Notice including Instruction to Bidders

1. Tender Details

1.1 Key Tender Specific Details

Reference Number	CC25VJS044
Description	1 year OLA for Supply of HT Cable of Various Ratings 11kV, 22kV, 33 kV for Mumbai Distribution.
Type of Tender	Out Line Agreement
Estimated Period	One Year
Tender Fee	Rs 2000/-
Earnest Money Deposit (EMD)	Rs 20,00,000/- Rs. Twenty Lakhs Only PLEASE NOT THAT IT IS MANDATORY TO SUBMIT EMD IN BANK GUARANTEE FORMAT ONLY
Price Basis	On Price Variation Basis
Executive Handling this Tender*	Name: Mr. Vinayak Shinde E-Mail ID: vinayak.shinde@tatapower.com
Technical Query *	Name: Mr. Ajay Potdar E-Mail ID: avpotdar@tatapower.com

*You may contact the above personnel from Monday to Friday during office hours only.

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1.2 Calendar of Events

(a)	Payment of Tender Fee and Submission of letter nominating authorized person by Interested Bidder indicating their intent to Buy Tender	Till 30 th December 2024
(b)	Access to Tender Documents through E-Tender system to authorized person of Interested Bidder	30 th December 2024
(c)	Last Date of receipt of pre-bid queries, if any.	By 6 th January 2025
(d)	Last Date of Posting Consolidated replies to all the pre-bid queries as received	13 th January 2025
(e)	Last date and time of receipt of Bids	20 th January 2025 by 15:00 Hrs.*

Note:- * These date and time are as planned and tentative. In case of change the same shall be intimated to Authorized Person of Interested Bidder through E-Tender System.

Please note post submission of Bids relevant communication will be done with Authorized Person of Interested Bidder through E-Tender System

1.3 Mandatory documents required along with the Bid

- 1.3.1 Bid Guarantee Fee (EMD) of requisite value and validity. PLEASE NOTE THAT BID GUARANTEE ONLY IN FORM OF BANK GUARANTEE WILL BE ACCEPTED.
- 1.3.2 Requisite Documents to ascertain fulfilling of Technical and Commercial Pre-Qualification Requirement as detailed in Tender Enquiry.
- 1.3.3 Technical Submission including Drawings, Type Test details etc as detailed in Technical Specification.
- 1.3.4 Required Commercial Submission as detailed in Tender Document
- 1.3.5 Technical and Commercial Clarification and Deviations as per the format attached in the Tender Enquiry
- 1.3.6 Proper authorization letter to sign the tender and participate in Tata Power E-Tender system on the behalf of bidder.
- 1.3.7 **For vendor not registered with Tata Power, Duly filled Vendor Registration form with all supporting documents is mandatory to participate in the Tender.**

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

Also please note that whenever editable format are shared it is requested that data be filled in relevant cells. No formatting or addition / deletion of rows / columns to be done. Wherever editable Excel submission are requested the file should be free from references, macros etc.

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Checklist of Document Submission

Stage of Tendering	Document	Type of Format	Mode of submission
Before last date of Pre-Bid Query	Query / Clarification / Deviation (QCD) Format. (F1) Technical and Commercial	Editable Excel Format	Through message in E-tender system
Bid Submission Envelope 1 (First Part)	Earnest Money Deposit	Original Bank Guarantee	In Sealed Envelope
Bid Submission Envelope 2 (Second Part)	Documents to be uploaded in Ariba only. In case of multiple files, a zipped folder can be attached for the same (size limit of 100MB per zipped file)		
To be submitted Under Tab 2.1 in Ariba	Duly filled PQR and supporting documents		
	Duly filled PQR format	Editable Excel Format	E-Tender System
	Backup documents for Technical and Commercial PQR	Signed and Scanned documents	E-Tender System
To be submitted under Tab 2.2 in Ariba	Technical Submission and Supporting Documents		
	Duly filled Unpriced Bid Format. Signed copy of Technical Specifications indicating your acceptance of the same	Signed and scanned copy of document	E-Tender System
To be submitted under Tab 2.3 in Ariba	Commercial Submission and supporting document		

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	Letter of Undertaking (FOR VENDORS NOT REGISTERED WITH TATA POWER)	Scanned Copy of letter of undertaking duly filled, stamped and signed	E-Tender System
	E-auction Undertaking form	Scanned Copy of letter of undertaking duly filled, stamped and signed	E-Tender System
Bid Submission Envelope 3 (Third Part)	Duly filled Priced Bid Format	Hard copy in original duly signed and stamped	Sealed Envelope
	Duly filled Priced Bid Format	To be entered in E-Tender System	E-Tender System

1.4 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 Query / Clarification / Deviation (QCD) Format. Deviations have to be mandatorily submitted in editable Excel sheet.

Technical or Commercial Deviation should be mentioned in Deviation Format only. Deviation in any other document or Format will not be considered.

1.5 Right of Acceptance/Rejection

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

1.5.2 Mandatory Documents as listed in 1.3 above

1.5.3 Price Bid as per the Price Schedule mentioned in Tender Document

1.5.4 Receipt of Bid and Response to queries within the due date and time

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

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1.6 Qualification Criteria

S.No.	Description	Qualifying Criteria	Evaluation Documents Required
1	Infrastructure	The bidder should have own manufacturing facility to manufacture the cable of same or higher voltage through CCV Line or VCV Line along with the following: Tata Power reserves the right to inspect the said manufacturing facility as a proof of compliance to this parameter 1. Cable manufacturer shall have True triple extrusion machine along with CCV or VCV line with dry curing and water cooling. 2. Cable eccentricity monitoring system during triple extrusion in CCV line or VCV line.	Bidder must submit undertaking in this regard
2		The bidder should have In-house raw material, routine, and acceptance testing facilities as per specification and relevant IS/IEC.	Bidder must submit undertaking in this regard.
3	Supply and Experience	The bidder should have supplied at least 100 Km of cable during last 3 years (for 33 KV or higher voltage rating).	Copy of work order / completion certificate to be submitted in this regard.

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S.No.	Description	Qualifying Criteria	Evaluation Documents Required
	Type Test	The bidder shall submit Type test reports obtained from CPRI/ERDA/ International Accredited Lab for the equipment / material offered. The type tests should have been conducted on the equipment / material of the same design. 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). 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/ International Accredited Lab without any cost implication to the owner and the Type Test reports shall be submitted before dispatch of the equipment / material within 120 days of the outline agreement.	Type Test Report. Undertaking that there is no change in design / material of construction (MOC) if Type Test Report older than 5 years. Undertaking that type test shall be carried out 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 before dispatch of the equipment / material, in case type test reports furnished are not for the quoted equipment / material but for the equipment / material with higher voltage class and/or different capacity, (if applicable)
5	Commercial Capability	The bidder should have an average annual turnover of Rs.100 crores in last 3 financial years.	Copy of audited P&L Account to be submitted in this regard (with UDIN No)

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S.No.	Description	Qualifying Criteria	Evaluation Documents Required
6	Performance	Bidder should have Performance Certificates for at least Two years satisfactory performance from minimum 2 reputed companies of 33 KV or higher voltage cable. Out of these, one Certificate should be of more than 10 Kms of cable. 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 Tata Power or similar products and services, the performance feedback for that bidder by Tata Power's User Group shall only be considered irrespective of performance certificates issued by any third organization.	Supply List & Performance Certificates from the utilities

1.7 Pre-Bid Queries

Technical or Commercial Pre-Bid Queries if any has to be sent through message in E-Tender System. Pre-Bid Query has to be sent only in the Query / Clarification / Deviation (QCD) Format. Pre-Bid Queries sent in any other format or send through any other communication channel will not be accepted and answered. Pre-Bid Query have to be sent in the stipulated timeline as defined in the Tender Document. No Pre-Bid Query will be accepted after the due time and date as specified as "Last Date of receipt of pre-bid queries, if any"

1.8 Marketing Integrity

We have a fair and competitive marketplace. The rules for bidders are outlined in the General Condition of Contracts and other parts of Tender Documents. Bidders must agree to these rules prior to participating. In addition to other remedies available, Tata Power 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 or other part of the Tender Documents. A bidder who violates the market place rules or engages in behavior that disrupts the fair execution of the marketplace, may result in restriction of a bidder from further participation in the marketplace for a length of time, depending upon the seriousness of the violation. Examples of violations include, but are not limited to:

- Failure to honor prices submitted to the marketplace
- Breach of terms as published in TENDER
- Submit irrelevant documents or frequently cases of missing documents as part of compliance to Qualifying, Technical or Commercial Requirements causing unnecessary delay in Tender Evaluation

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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 Tata Power. This includes all bidding information submitted to Tata Power. All tender documents remain the property of Tata Power and all suppliers are required to return these documents to Tata Power upon request. Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

1.10 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.

2. 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/ each line item as calculated in Schedule of Items. Tata Power 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 has to mandatorily quote against each item of Schedule of Items. Failing to do so, Tata Power may reject the bids.

NOTE: In case of a new bidder not registered with Tata Power, factory inspection and evaluation shall be carried out to ascertain bidder's manufacturing capability and quality procedures. However Tata Power 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 Tata Power shall be final and binding on the bidder in this regard.

2.1 Price Variation Clause and Cap:

The prices shall be subject to IEEMA Price Variation Clause with following conditions:

2.1 IEEMA formulae and factors governing the price variation shall be as follows:

$$P = P_o + AIF (Al - Al_o) + XLFAL (Cc - Cc_o) + SMIF (SMIF1 - SMIF0) + CCFAI (PVCc - PVCc_o) + FeF (Fe - Fe_o)$$

Term	Description
P _o	Price finalized (in Rs/KM)
AIF	Variation factor for Aluminum
Al	Price of Aluminum - applicable in the month of ordering
Al _o	Price of Aluminum - as per base month of tender
XLFAL	Variation Factor for XLPE compound for aluminium conductor cable
Cc	Price of XLPE compound- applicable in the month of ordering
Cc _o	Price of XLPE compound-as per base month of tender
SMIF	Variation factor for Copper tape

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SMIF1	Price of CC copper rods - applicable in the month of ordering
SMIF0	Price of CC copper rods - as per base month of tender
CCFAI	Variation for PVC Compound/polymer for aluminium conductor cable
PVCc	Price of PVC compound- applicable in the month of ordering
PVCc _o	Price of PVC compound- as per base month of tender
FeF	Variation factor for steel
Fe	Price of Steel Strips/steel wire - applicable in the month of ordering
Fe _o	Price of Steel Strips/steel wire as per base month of tender

2.2 Base circular shall be December 2024 circular issued in January 2025. Base month for Bid Price shall remain same throughout the negotiation process till Outline Agreement / Rate Contract is finalized. Base month circular has to be attached in the price bid.

2.3 Whenever Firm Order has to be placed against Outline Agreement / Rate Contract Tata Power shall seek PVC corrected price based on index published and available during the said month from the bidder. Purchase Order against Outline Agreement / Rate Contract will be placed at PV corrected price. The said price shall then remain firm till completion of delivery and bill payment.

2.4 There will be no cap on Positive side and negative side.

Note : If due date of bid submission is extended due to any reason, the base date will remain unchanged for the calculation of PV clause

3. Submission of Bid Documents

3.1 Bid Submission

Bidders are requested to submit their offer in line with this Tender document. Bids shall be submitted in 3 (three) parts:

FIRST PART: “EMD – BANK GUARANTEE” of Value detailed in 1.1 valid for 180 days from the due date of bid submission in the form of Bank Guarantee favoring ‘The Tata Power Company Limited’. The EMD has to be strictly in the format as mentioned in Tender Document, failing which it shall not be accepted by Tata Power and the bid as submitted shall be liable for rejection.

Note : BG of 180 days and further claim period of 180 days is needed. In case the same cannot be issued by your bank then BG valid for 365 days can be provided.

Tata Power Bank details for EMD BG / NEFT:

Beneficiary Name – The Tata Power Co. Ltd.

Bank Name – HDFC Bank Ltd.

Branch Name – Fort Branch, Mumbai

Address – Maneckji Wadia Building, Nanik Motwani Marg, Fort, Mumbai 400023.

Branch Code – 60

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Bank & Branch Code – 400240015

Account No – 00600110000763

Account type – CC

IFSC Code – HDFC0000060

The hard copy of EMD in a sealed envelope should be sent on address mentioned in Tender document. Pls mail the UTR details in case of NEFT for verification.

First Part has to be submitted in Sealed Envelope.

SECOND PART: “TECHNICAL / UN-PRICED COMMERCIAL BID” shall contain the following documents:

- Documentary evidence in support of Technical, Commercial qualifying criteria
- Technical literature/GTP/Type test report/Details of Qualified Manpower Available/ Testing Facility available etc. *(complete in all respect as desired and detailed in Technical Specification and Technical Requirement Section)*
- Duly filled Technical and Commercial Deviation Sheets
- Duly filled formats like Authorization affidavit form
- Unpriced Commercial Bid*

The technical / un-priced commercial bid shall be properly indexed and is to be submitted in Soft Copy through E-Tender system of Tata Power. Hard Copy of Technical Bids need not be submitted.

Second Part has to be submitted through E-Tender System Only

THIRD PART: “PRICE BID” shall contain only the price details and strictly in Price Bid format along with explicit break up of basic prices and applicable GST. Basic price should include packaging forwarding, freight, transit insurance and any other cost envisaged by the bidder.

Third part has to be submitted through E-Tender System (ARIBA) only.

FOR BIDS INVITED THROUGH E-TENDER SYSTEM (TECHNICAL AND UN-PRICED COMMERCIAL BID) :

In response to advertisement Bidder has to provide details of person authorized to Bid on behalf of the Bidder. An e-mail will be generated by E-Tender System and the authorized person can download the Tender Documents from the system.

SECOND and THIRD PART of the Bid have to be submitted in E-Tender System.

Bidders have to mandatorily submit SECOND PART (Technical and Un-priced commercial Bid) only through E-Tender system of Tata Power. Bids submitted through any other form/ route shall not be admissible.

EMD BG to be sent in a sealed envelope which shall be clearly marked as below to the below address.

EMD

“Please mention Tender Reference No”

The Tata Power Company Limited, Smart Center of Procurement Excellence, 2nd Floor, Sahar Receiving Station, Near Hotel Leela, Sahar Airport Road, Andheri East, Mumbai-400059

Bids submitted by Email/Telex/Telegram /Fax will be rejected. No request from any Bidder to Tata Power to collect the proposals from Courier/Airlines/Cargo Agents etc. shall be entertained.

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SIGNING OF BID DOCUMENTS:

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

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

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

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

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

3.2 Contact Information

Communication Details: Detailed in 1.1

3.3 Bid Prices

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

The quantity break up shown else-where other than Price Schedule is tentative. The bidder shall ascertain himself regarding material required for completeness of the entire work. Any items not indicated in the price schedule but which are required to complete the job as per the Technical Specifications/ Scope of Work/ 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. It also may be noted that the denomination of Purchase Order / Outline Agreement / Rate Contract and associated Payment to Successful Bidder shall also be in Indian Rupees Only. In case Bidder intends to import any equipment, part etc and supply to Tata Power then all liability and costs related to import will rest with the Bidder. All statutory compliances, payments, expenditure etc related to importing of equipment will be responsibility of the bidder.

3.5 Period of Validity of Bids

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

Notwithstanding clause above, Tata Power 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.

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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 Tata Power against the risk of bidder's conduct which would warrant forfeiture.

The EMD shall be in following form:

- Bank Guarantee valid for 180 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) In case of a successful bidder, if the Bidder, within 15 days, does not
 - i) accept the purchase order, or
 - ii) furnish the required Contract Performance Bank Guarantee (CPBG)

Original Bank Guarantee submitted as EMD shall be returned only after completion of award process for unsuccessful bidders and issue of Contract Performance Bank Guarantee (CPBG) for successful bidder.

4. 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 Tata Powers 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 Corporate Office of Tata Power as per our standard Process. The bids shall be opened internally by Tata Power. Technical bid must not contain any cost information whatsoever.

First the envelope marked "EMD" will be opened. Bids without EMD 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 in E-Tender system.

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4.3 Preliminary Examination of Bids/Responsiveness

Tata Power 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. Tata Power may ask for submission of original documents in order to verify the documents submitted in support of qualification criteria.

Prior to the detailed evaluation, Tata Power 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 Tata Power and/or the Tata Power 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, Tata Power may, at its discretion, ask the Bidder for a clarification on its Bid for any deviations with respect to the Tata Power 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 Tata Power.

4.5 Price Bid Opening

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 Tata Power without any further correspondence in this regard.

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.

4.6 Reverse Auction and Price Matching Option

Tata Power reserves the right to go for Reverse Auction (RA) for price negotiation and discover the most competitive price on ARIBA portal, Tata Power's official e-tendering platform. This will be decided after techno-commercial evaluation of the bids. Bidders need to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case Tata Power decides to go for RA.

Only those bidders who are techno-commercially qualified shall be eligible to participate further in RA process. However, the original H1 bidder (whose price bid is the highest post techno-commercial evaluation) shall not be allowed to participate in further RA process provided minimum three techno-commercially qualified bids are available.

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For case where more than one bidders have to be awarded (including Rate Contract / Outline Agreement) Price Matching Option will be exercised. Volume of job allocated to original competitive bidder will be more than bidder who is chosen through Price Matching Option. Tata Power decision regarding work sharing shall be final and no explanation OR clarification shall be given regarding the same.

5.0 Award Decision

Tata Power 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 Priced Bid Format subject to any corrections required in line with Clause 4.3 above. The decision to place purchase order/Outline Agreement/ Rate Contract solely depends on Tata Power on the cost competitiveness across multiple lots, quality, delivery and bidder's capacity, in addition to other factors that Tata Power may deem relevant.

Tata Power 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 Tata Power reserves the right to award other suppliers who are found fit.

5.1 Rate Contract / Outline Agreement

Rate Contract / Outline Agreement does not guarantee any assured business volume in Rupees or Quantity. Quantities are only indicative and specified for the purpose of readiness as per the request from Purchaser. Supplies shall be only against Firm Purchase Orders placed as per the agreed terms and conditions of Rate Contract / Outline Agreement. Purchaser shall be entitled at its discretion to place firm order for such supplies on "As and When Required Basis" without minimum take-off guarantee.

Rate Contract / Outline Agreement will have list of Items with Unit Rate and applicable Taxes and Duties. There will be a cap on value for which order which can be placed against the Rate Contract / Outline Agreement. Actual quantity ordered for each line item may differ significantly from the tentative quantity indicated in the Tender Document. One / few / all items of Rate Contract / Outline Agreement can be ordered till the Cap Value is reached.

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. Outline Agreement/Purchase Order (with Commercial conditions)
2. Special Terms and conditions (if applicable)
3. General Terms and conditions
4. Technical Specifications

In case there is a discrepancy in the BOQ mentioned in tender (to the extent modified through subsequent Corrigendum, if any) and the bid submitted by any bidder, the description as mentioned in the tender (to the extent modified through subsequent Corrigendum, if any) shall prevail.

The Tata Power Company Ltd		<i>OPEN TENDER NOTIFICATION</i>
<i>Tender Reference: CC25VJS044</i>		<i>Document Date: 17th Dec 2024</i>

7.0 Ethics

Tata Power is an ethical organization and as a policy Tata Power 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.

Tata Power work practices are governed by the Tata Code of Conduct. Bidder is request to refer Tata Code of Conduct Clause in General Terms and Conditions.

8.0 General Condition of Contract and Special Condition of Contracts

Any condition not mentioned above shall be applicable as per General Terms and Conditions and Special Condition of Contracts attached along with this tender.

---XXX---

CONFIDENTIAL

The Tata Power Company Ltd		OPEN TENDER NOTIFICATION
Tender Reference: CC25VJS044		Document Date: 17th Dec 2024

Annexure 1
Schedule Of Items

Sr. no.	Material / Service Short Text (as per SAP)	Quantity	UoM	Unit Rate (Basic)	Total
1	CABLE 33KV AL ARM 3C,400 SQMM XLPE	45000	Mtrs.		-
2	CABLE 22KV AL ARM 3C 240 SQMM XLPE	30000	Mtrs.		-
3	CABLE 11KV AL ARM 3C 300 SQMM XLPE	70000	Mtrs.		-
4	CABLE 33KV AL. XLPE 1C, 630 SQMM	1000	Mtrs.		-
5	CABLE 22KV 1CX185 SQMM ALU AR XLPE	3000	Mtrs.		-
6	CABLE 11KV AL ARM 1C,185 SQMM XLPE	3000	Mtrs.		-
7	CABLE 11KV AL AR 1C X 1000 SQMM XLPE	3000	Mtrs.		-
	Sub Total				-
	GST @18%				-
	Total with taxes				-

The Tata Power Company Ltd		TECHNICAL SPECIFICATION OF HT CABLES
ENSE-DS-2006-R00		Date of Issue: 1/12/2023

TECHNICAL SPECIFICATION

HT CABLES 11kV, 22kV, 33 kV

The Tata Power Company Ltd.
Engineering Services (ENSE),
Distribution Division,
Senapati Bapat Marg,
Lower Parel,
Mumbai – 400013
Maharashtra

The Tata Power Company Ltd		TECHNICAL SPECIFICATION OF HT CABLES
ENSE-DS-2006-R00		Date of Issue: 1/12/2023

TECHNICAL SPECIFICATION COVER SHEET

Document No: ENSE-DS-2006-R00

Document Title: Technical Specification of HT Cables

00	ENSE-DS-2006-R00	1/12/2023	YMM		AVP		RMB	
01	D-NPCE-SPEC-04	18/09/2022	NVD	-sd-	VK	-sd-	SBM	-sd-
00	D-NPCE-SPEC-04	08/02/2019	BN	-sd-	SBK	-sd-	NCP	-sd-
Rev No.	Remarks	Date	Initials	Sign	Initials	Sign	Initials	Sign
			Prepared By		Reviewed By		Approved & Issued By	

Rev No.	Prepared By & Date	Checked By & Date	Approved for Issue By & Date
R00	Yash M. Mane 	Ajay V. Potdar 	Ravindra M. Bhanage 
	1/12/2023	1/12/2023	1/12/2023

The Tata Power Company Ltd		TECHNICAL SPECIFICATION OF HT CABLES
ENSE-DS-2006-R00		Date of Issue: 1/12/2023

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3.0	CLIMATIC CONDITIONS OF THE INSTALLATION
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9.0	PRE-DISPATCH INSPECTION
10.0	INSPECTION AFTER RECEIPT AT STORE
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16.0	MANUFACTURING ACTIVITIES
17.0	SPARES, ACCESSORIES AND TOOLS
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The Tata Power Company Ltd		TECHNICAL SPECIFICATION OF HT CABLES
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1.0	SCOPE	This specification covers technical requirements of design, manufacture, testing at manufacturer's works, packing, forwarding, supply and delivery at stores/site, performance of 11/22/33kV cable complete with all accessories for trouble free and efficient operations and conform to practices consistent with sound environmental management and local statutes.																								
2.0	APPLICABLE STANDARDS	The equipment covered under this specification shall unless otherwise stated, be designed, manufactured and tested in accordance with the latest editions of the following Indian, International standards / IEC & shall conform to the regulations of the local authorities. The applicable standards are: <table><tr><th>INDIAN STANDARDS (IS)</th><th>Title</th></tr><tr><td>IS 7098 (Part-2)</td><td>Specification for Cross-linked polyethylene insulated PVC sheathed Cables Part: 2 - For working voltages from 3.3 kV up to and including 33 kV</td></tr><tr><td>IS 8130</td><td>Specification for Conductor for insulated electric cables & flexible cords</td></tr><tr><td>IS 10418</td><td>Specification for Drums for Electric cables</td></tr><tr><td>IS 5831</td><td>Specification for PVC insulation and sheath of electric cables</td></tr><tr><td>IS 3975</td><td>Mild steel wires, formed wires and tapes for armouring of cables.</td></tr><tr><td>IS 4826</td><td>Specification for hot dipped galvanized coatings on round steel wires</td></tr><tr><td>IS 2530</td><td>Methods of tests for polyethylene moulding materials and polyethylene compounds</td></tr><tr><td>IS 4984</td><td>High density polyethylene pipes for water supply</td></tr><tr><td>IS 4905</td><td>Method for random sampling</td></tr><tr><td>IS 10810</td><td>Methods of tests for cables</td></tr><tr><td>IS 5</td><td>Colours for ready mixed paints and enamels</td></tr></table>	INDIAN STANDARDS (IS)	Title	IS 7098 (Part-2)	Specification for Cross-linked polyethylene insulated PVC sheathed Cables Part: 2 - For working voltages from 3.3 kV up to and including 33 kV	IS 8130	Specification for Conductor for insulated electric cables & flexible cords	IS 10418	Specification for Drums for Electric cables	IS 5831	Specification for PVC insulation and sheath of electric cables	IS 3975	Mild steel wires, formed wires and tapes for armouring of cables.	IS 4826	Specification for hot dipped galvanized coatings on round steel wires	IS 2530	Methods of tests for polyethylene moulding materials and polyethylene compounds	IS 4984	High density polyethylene pipes for water supply	IS 4905	Method for random sampling	IS 10810	Methods of tests for cables	IS 5	Colours for ready mixed paints and enamels
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		International Standards	Title	
		IEC-60228	Conductor for insulated cables.	
		IEC-60502 (Part-2)	Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1.2 kV) up to 30 kV (Um = 36 kV) - Part 2: 22 kV Cables for rated voltages from 6 kV (Um = 7.2 kV) up to 30 kV (Um= 36 kV).	
		IEC-60811	Test methods for insulations and sheaths of electric cables and cords.	
		IEC 332	Test on electric cables on the fire conditions.	
		IEC 60754	Apparatus & procedure for the measurement of amount of halogens evolved during the combustion of materials taken from electric or optical fibre cable constructions.	
		ICEA T 31-610	Test method for conducting longitudinal water penetration resistance tests on blocked conductors	
		ASTM D 6097	Standard test method for relative resistance to vented tree growth in Solid dielectric insulating materials.	
		ASTM D 2863	Standard test method for measuring the minimum oxygen concentration to support candle-like combustion of plastics (Oxygen index)	
		ASTM D 2843	Standard test method for Density of smoke from burning or decomposition of plastic.	
		In case of any conflict on any technical particular in the specification, the stricter requirement mentioned in the relevant standard shall be valid		
3.0	CLIMATIC CONDITIONS OF THE INSTALLATION	<u>Cable site installation ambient conditions:</u>		
		1	Maximum ambient temperature	43 deg.C
		2	Max. Daily average ambient temp	35 deg.C
		3	Min Ambient Temperature	07 deg.C
		4	Maximum Relative Humidity	100%
		5	Minimum Relative Humidity	40%

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		6	Average No. of thunderstorm per annum	50
		7	Average Annual Rainfall	2380mm
		8	Average No. of rainy days per annum	115
		9	Rainy months	June to Oct.
		10	Altitude above MSL not exceeding	300 meters
		11	Average Air Pressure	29.6-inch Hg
		Atmosphere is generally laden with mild acid and dust suspended during summer months and subjected to fog in winter months. The design of the equipment and accessories shall be suitable to withstand seismic forces corresponding to an acceleration of 0.1g.		

4.0	GENERAL TECHNICAL REQUIREMENTS	<table><tr><th rowspan="2">Sr. No.</th><th rowspan="2">Description</th><th colspan="2">Requirement</th></tr><tr><th>3 Core Cable</th><th>1 Core Cable</th></tr><tr><td>1</td><td>Rated Voltage</td><td colspan="2">12 kV(E) /24 kV (E)/36 kV (E) Effectively grounded system</td></tr><tr><td>1.1</td><td>Operating Voltage</td><td colspan="2">11 kV(E) /22 kV (E)/33 kV(E)</td></tr><tr><td>2</td><td>Variation in supply voltage</td><td colspan="2">+/- 10%</td></tr><tr><td>3</td><td>Frequency</td><td colspan="2">50 Hz</td></tr><tr><td>3.1</td><td>Variation in Supply Frequency</td><td colspan="2">+/- 5%</td></tr><tr><td>4</td><td>Type of Cable</td><td>Watertight Aluminium conductor, XLPE Insulated, Extruded PVC Inner sheath, round GI wire armoured and PVC outer sheathed cable</td><td>Watertight Aluminium conductor, XLPE Insulated, Extruded PVC Inner sheath, round Aluminium wire armoured and PVC outer sheathed cable</td></tr><tr><td>5</td><td>Material of conductor</td><td colspan="2">Watertight Stranded compacted circular Aluminium conductor</td></tr><tr><td>6</td><td>Conductor Screen</td><td colspan="2">Semi-conducting tape & compound</td></tr><tr><td>7</td><td>Core Identification</td><td>Core identification strips shall be applied longitudinally beneath copper screen.</td><td>NA</td></tr></table>	Sr. No.	Description	Requirement		3 Core Cable	1 Core Cable	1	Rated Voltage	12 kV(E) /24 kV (E)/36 kV (E) Effectively grounded system		1.1	Operating Voltage	11 kV(E) /22 kV (E)/33 kV(E)		2	Variation in supply voltage	+/- 10%		3	Frequency	50 Hz		3.1	Variation in Supply Frequency	+/- 5%		4	Type of Cable	Watertight Aluminium conductor, XLPE Insulated, Extruded PVC Inner sheath, round GI wire armoured and PVC outer sheathed cable	Watertight Aluminium conductor, XLPE Insulated, Extruded PVC Inner sheath, round Aluminium wire armoured and PVC outer sheathed cable	5	Material of conductor	Watertight Stranded compacted circular Aluminium conductor		6	Conductor Screen	Semi-conducting tape & compound		7	Core Identification	Core identification strips shall be applied longitudinally beneath copper screen.	NA
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The Tata Power Company Ltd			TECHNICAL SPECIFICATION OF HT CABLES		
ENSE-DS-2006-R00			Date of Issue: 1/12/2023		
		8	Insulation	XLPE insulation as per IS:7098 (Part-II)-1985	
		9	Insulation Screen	Shall have three layers: a) Non-metallic: Extruded semiconducting compound b) Semiconducting compound water swellable tape c) Metallic: Copper tape	Shall have four layers: a) Non-metallic: Extruded semiconducting compound b) Semiconducting compound water swellable tape c) Metallic: Copper tape d) Polyester transparent tape over copper screen
		10	Inner Sheath	Pressure Extruded PVC Compound Type ST2 with PP fillers	Extruded PVC Compound Type ST2
		11	Armour	Galvanized steel wire as per IS: 3975 – 1999 for multi core cable	Round Al wire for single core cables
				Rubberized Cotton tape as a binder over the armour	
		12	Outer Sheath	Extruded PVC Compound Type ST2 FRLSH as per IS: 5831-1984 (As per Clause 5.10)	
		13	Fault level	Cables shall be suitable for withstanding without damage, the thermal and mechanical stresses due to a 3-phase symmetrical short circuit of:	
				33 kV Cable	
				3CX400 sq.mm.	37.7 kA/sec
				1CX630 sq.mm.	59.4 kA/sec
				22 kV Cable	
				3CX240 sq.mm.	22.6 kA/sec
		1CX185 sq.mm.	17.5kA/sec		

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5.0	GENERAL CONSTRUCTION	The cross-linked polyethylene insulated (XLPE) cable (Dry cured & water cooled) shall be manufactured and tested strictly as per IS 7098: Part-II with its latest amendments. All material used in the manufacturing of cables shall be new and shall be selected as the best available for the intended use. The rating factors for variation in ground and air temperature, depth of laying, Thermal resistivity of soil and different laying configuration of cables shall be provided by the Bidder.																																																
5.1	CONDUCTORS	<table><tr><th>Sr. No.</th><th>Parameter</th><th>Requirement</th></tr><tr><td>1</td><td>Conductor</td><td>As per IS 8130</td></tr><tr><td>2</td><td>Class</td><td>Class II</td></tr><tr><td>3</td><td>Material</td><td>Plain Aluminum, grade H2/H4</td></tr><tr><td>4</td><td>Shape</td><td>Stranded Compacted Circular</td></tr><tr><td>5</td><td>No. of strands & electrical parameters</td><td><table><tr><th>Voltage Level</th><th>Nominal size of conductor Sq.mm.</th><th>Minimum number of strands</th><th>Max DC resistance of Conductor @ 20 deg C (Ohm/km)</th><th>Conductor Short circuit current rating for 1 second</th></tr><tr><td>11 kV</td><td>3C x 300 Sq. mm</td><td>30</td><td>0.100</td><td>28.3 kA/sec</td></tr><tr><td>11 kV</td><td>1C x 1000 Sq. mm *</td><td>53</td><td>0.0291</td><td>94.3 kA/sec</td></tr><tr><td>11 kV</td><td>1C x 185 Sq. mm</td><td>30</td><td>0.164</td><td>17.5 kA/sec</td></tr><tr><td>22 kV</td><td>3C x 240 Sq. mm</td><td>30</td><td>0.125</td><td>22.6 kA/sec</td></tr></table></td></tr></table>						Sr. No.	Parameter	Requirement	1	Conductor	As per IS 8130	2	Class	Class II	3	Material	Plain Aluminum, grade H2/H4	4	Shape	Stranded Compacted Circular	5	No. of strands & electrical parameters	<table><tr><th>Voltage Level</th><th>Nominal size of conductor Sq.mm.</th><th>Minimum number of strands</th><th>Max DC resistance of Conductor @ 20 deg C (Ohm/km)</th><th>Conductor Short circuit current rating for 1 second</th></tr><tr><td>11 kV</td><td>3C x 300 Sq. mm</td><td>30</td><td>0.100</td><td>28.3 kA/sec</td></tr><tr><td>11 kV</td><td>1C x 1000 Sq. mm *</td><td>53</td><td>0.0291</td><td>94.3 kA/sec</td></tr><tr><td>11 kV</td><td>1C x 185 Sq. mm</td><td>30</td><td>0.164</td><td>17.5 kA/sec</td></tr><tr><td>22 kV</td><td>3C x 240 Sq. mm</td><td>30</td><td>0.125</td><td>22.6 kA/sec</td></tr></table>	Voltage Level	Nominal size of conductor Sq.mm.	Minimum number of strands	Max DC resistance of Conductor @ 20 deg C (Ohm/km)	Conductor Short circuit current rating for 1 second	11 kV	3C x 300 Sq. mm	30	0.100	28.3 kA/sec	11 kV	1C x 1000 Sq. mm *	53	0.0291	94.3 kA/sec	11 kV	1C x 185 Sq. mm	30	0.164	17.5 kA/sec	22 kV	3C x 240 Sq. mm	30	0.125	22.6 kA/sec
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				33 kV	3C x 400 Sq. mm	53	0.0778	37.7 kA/sec															
				33 kV	1C x 630 Sq. mm	53	0.0469	59.4 kA/sec															
				*These are segmental conductors																			
		6	Longitudinal water sealing of conductor	a) Non-conductive water swellable yarn/ tape/ combination of both shall be provided in between interstices of the conductor. b) Also, this water swellable tape and yarn shall be compatible to withstand conductor continuous temperature of 90 deg C and short circuit temperature of 250 deg C without any decay. c) It shall not affect the electrical conductivity of the conductor.																			
		7	Cleanliness and uniformity	a) Before stranding, the cross-section of the Aluminum conductor shall be circular, and shall have uniform smooth surface, free from sharp edges and free from any defects. b) Stranded Conductor shall be free from oil traces & aluminum dust. c) Traces of aluminum dust on conductor or conductor screen shall not be acceptable.																			
		8	Conductor jointing	Not acceptable in any strand or in any conductor after it is stranded.																			
		9	Raw material supplier	Conductor raw material shall be procured from reputed suppliers viz., BALCO/ HINDALCO/ NALCO/ Vedanta only.																			
		10	Diameter of conductor	To be specified by bidder																			
		11	Weight of conductor (kg/km/core)	<table><tr><th>Voltage Grade</th><th>Nominal size of conductor Sq. mm.</th><th>Weight of conductor (kg/km/core)</th></tr><tr><td>11 kV</td><td>3C x 300 Sq. mm</td><td>780</td></tr><tr><td>11 kV</td><td>1C x 1000 Sq. mm</td><td>2600</td></tr><tr><td>11 kV</td><td>1C x 185 Sq. mm</td><td>481</td></tr><tr><td>22 kV</td><td>3C x 240 Sq. mm</td><td>624</td></tr></table>							Voltage Grade	Nominal size of conductor Sq. mm.	Weight of conductor (kg/km/core)	11 kV	3C x 300 Sq. mm	780	11 kV	1C x 1000 Sq. mm	2600	11 kV	1C x 185 Sq. mm	481	22 kV
Voltage Grade	Nominal size of conductor Sq. mm.	Weight of conductor (kg/km/core)																					
11 kV	3C x 300 Sq. mm	780																					
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				22 kV	1C x 185 Sq. mm	481																					
				33 kV	3C x 400 Sq. mm	1080																					
				33 kV	1C x 630 Sq. mm	1650																					
5.2	CONDUCTOR SCREENING	<table><tr><th>Sr. No.</th><th>Parameter</th><th>Requirement</th></tr><tr><td>1</td><td>Material</td><td>1st layer: Semi-conducting tape 2nd layer: Semi-conducting compound</td></tr><tr><td>2</td><td>Configuration</td><td>1st layer: Semi-conducting tape shall be applied over conductor with nominal thickness of 0.2 mm. 2nd layer: Semi-conducting compound screen shall be applied through triple extrusion process.</td></tr><tr><td>3</td><td>Min. thickness</td><td>Minimum thickness of semi-conducting compound screen shall be 0.5 mm at any point of measurement.</td></tr><tr><td>4</td><td>Resistivity</td><td>Resistivity of semiconducting conductor screen shall not exceed 1000 Ω-m</td></tr><tr><td>5</td><td>Uniformity on interfacial region</td><td>Interfacial region between conductor screen and insulation shall be uniform. Protrusion/ convolution/ other defects are not acceptable in the region.</td></tr><tr><td>6</td><td>Raw material supplier</td><td>Semiconducting compound shall be procured from reputed raw material suppliers viz.,Dow/Borealis/Hanwa only.</td></tr></table> The semi conducting compound shall be suitable for operating temperature of the cable and compatible with the insulating material. The semi-conducting screens should be effectively cross linked to achieve 90 °C cable rating.					Sr. No.	Parameter	Requirement	1	Material	1st layer: Semi-conducting tape 2nd layer: Semi-conducting compound	2	Configuration	1st layer: Semi-conducting tape shall be applied over conductor with nominal thickness of 0.2 mm. 2nd layer: Semi-conducting compound screen shall be applied through triple extrusion process.	3	Min. thickness	Minimum thickness of semi-conducting compound screen shall be 0.5 mm at any point of measurement.	4	Resistivity	Resistivity of semiconducting conductor screen shall not exceed 1000 Ω-m	5	Uniformity on interfacial region	Interfacial region between conductor screen and insulation shall be uniform. Protrusion/ convolution/ other defects are not acceptable in the region.	6	Raw material supplier	Semiconducting compound shall be procured from reputed raw material suppliers viz.,Dow/Borealis/Hanwa only.
		Sr. No.	Parameter	Requirement																							
		1	Material	1st layer: Semi-conducting tape 2nd layer: Semi-conducting compound																							
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		4	Resistivity	Resistivity of semiconducting conductor screen shall not exceed 1000 Ω-m																							
		5	Uniformity on interfacial region	Interfacial region between conductor screen and insulation shall be uniform. Protrusion/ convolution/ other defects are not acceptable in the region.																							
		6	Raw material supplier	Semiconducting compound shall be procured from reputed raw material suppliers viz.,Dow/Borealis/Hanwa only.																							
5.3	INSULATION	<table><tr><th>Sr. No.</th><th>Parameter</th><th>Requirement</th></tr><tr><td>1</td><td>Material and extrusion process</td><td>XLPE insulation shall be applied through CCV/VCV line by triple extrusion process with 'Dry Curing' and 'Water Cooling'.</td></tr><tr><td>2</td><td>Raw material supplier</td><td>a) XLPE compound shall be super cleaned and procured from reputed raw material suppliers viz., Dow/Borealis/Hanwa only.</td></tr></table>					Sr. No.	Parameter	Requirement	1	Material and extrusion process	XLPE insulation shall be applied through CCV/VCV line by triple extrusion process with 'Dry Curing' and 'Water Cooling'.	2	Raw material supplier	a) XLPE compound shall be super cleaned and procured from reputed raw material suppliers viz., Dow/Borealis/Hanwa only.												
		Sr. No.	Parameter	Requirement																							
		1	Material and extrusion process	XLPE insulation shall be applied through CCV/VCV line by triple extrusion process with 'Dry Curing' and 'Water Cooling'.																							
2	Raw material supplier	a) XLPE compound shall be super cleaned and procured from reputed raw material suppliers viz., Dow/Borealis/Hanwa only.																									
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		3	Thickness and Eccentricity	a) Eccentricity of insulation shall not exceed 10%.			
				Voltage Grade	Cable Type	Nominal Thickness mm	Minimum Thickness at any point of measurement
				11 kV	3C x 300 Sq. mm	3.6 mm	3.14 mm
				11 kV	1C x 185 Sq. mm	3.6 mm	3.14 mm
				11 kV	1C x 1000 Sq. mm	3.6 mm	3.14 mm
				22 kV	3C x 240 Sq. mm	6.0 mm	5.3 mm
				22 kV	1C x 185 Sq. mm	6.0 mm	5.3 mm
				33 kV	3C x 400 Sq. mm	8.8 mm	7.82 mm
		33 kV	1C x 630 Sq. mm	8.8 mm	7.82 mm		
		4	Thermal stability	The insulation properties shall be stable under thermal conditions arising out of continuous operation at conductor temperature of 90 deg. C rising momentarily to 250 deg. C under short circuit conditions.			
5	Cleanliness and uniformity	Interfacial region between insulation and insulation screen shall be uniform. Protrusion/convolution/ other defects are not acceptable. Core shall be free from void and contamination.					
5.4	INSULATION SCREENING	Sr. No.	Parameter	Requirement			
		1	Material	1st layer : Semi-conducting compound 2nd layer: Semi-conducting water swellable tape 3rd layer: Annealed copper tape			
		2	Configuration	1st layer: Non-Metallic Part: This shall be applied directly over the insulation of each core and shall consist of an extruded semi-conducting compound of bonded type. Resistivity shall not exceed 500 Ω-meter. Surface of insulation screen shall be smooth, free from cavity/ nicks/scratches/ other visible defects.			
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				Insulation screen shall be strippable type with Min. thickness of 0.7 mm at any point of measurement. The semi-conducting compound shall be suitable for the operating temperature of the cable and compatible with the insulating material. 2nd layer: Water Swellable tape: Semi-conducting water swellable tapes shall be applied over non- metallic screen of individual core. Minimum thickness of water swellable shall be 0.3 mm and minimum overlapping shall be 25% before the copper screening. This tape shall be of semiconducting compound acting as a moisture barrier for the core. 3rd layer: Metallic Part: Annealed copper tape, helically wound over the water swellable tape with minimum 20% overlap. Minimum thickness shall be 0.045 mm at any point of measurement.		
				3	Raw material supplier	Semiconducting compound shall be procured from reputed raw material suppliers viz., Dow/Borealis/Hanwa only
				4	Diameter of cores	To be specified by bidder
				5	Weight of water swellable tape(approx.)	To be specified by bidder
				6	Weight of copper tape/km (approx.)	To be specified by bidder

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5.5	CORE IDENTIFICATION	3 CORE CABLE		1 CORE CABLE															
		Each of the three core identification strips shall be applied longitudinally beneath copper screen. Width of the coloured strip shall be 7-10 mm.		NA															
5.6	LAYING UP OF CORES	In three core cables, the cores shall be laid together with a suitable right hand lay. Where necessary, the interstices shall be filled with non-hygroscopic material.																	
5.7	FILLERS	<table><tr><th rowspan="2">Sr. No.</th><th rowspan="2">Parameter</th><th colspan="2">Requirement</th></tr><tr><th>3 Core Cable</th><th>1 Core Cable</th></tr><tr><td>1</td><td>Material</td><td>Virgin Polypropylene fibers of natural colour</td><td>NA</td></tr><tr><td>2</td><td>Configuration</td><td>Virgin Polypropylene fibers shall be tightly filled in empty space as fillers</td><td>NA</td></tr></table>				Sr. No.	Parameter	Requirement		3 Core Cable	1 Core Cable	1	Material	Virgin Polypropylene fibers of natural colour	NA	2	Configuration	Virgin Polypropylene fibers shall be tightly filled in empty space as fillers	NA
		Sr. No.	Parameter	Requirement															
3 Core Cable	1 Core Cable																		
1	Material	Virgin Polypropylene fibers of natural colour	NA																
2	Configuration	Virgin Polypropylene fibers shall be tightly filled in empty space as fillers	NA																
		Note: In three core cables, fillers used in multi-conductor cables shall be non-wicking and non-moisture absorbing thermoplastic material. Fillers shall be so chosen as to be compatible with the temperature ratings of the cables and shall have no deleterious effect on any other component of the cable.																	
5.8	INNER SHEATH	<table><tr><th>Sr. No.</th><th>Parameter</th><th>3 Core Cable</th><th>1 Core Cable</th></tr><tr><td>1</td><td>Material</td><td colspan="2">Black coloured Polyvinyl chloride (PVC) type ST-2 compound</td></tr><tr><td>2</td><td>Configuration</td><td>The laid-up cores shall be provided with pressure extruded polyvinyl chloride (PVC) Compound conforming to the requirements of type ST-2 of IS: 5831 with latest amendments. Pressurized extrusion is required to remove any gaps remaining in</td><td>The laid-up cores shall be provided with normal extruded inner sheath. It shall be ensured that the shape is as circular as possible. The inner sheath shall be of polyvinyl chloride (PVC) Compound conforming to the requirements of type ST-2 of IS: 5831-1984 with latest</td></tr></table>				Sr. No.	Parameter	3 Core Cable	1 Core Cable	1	Material	Black coloured Polyvinyl chloride (PVC) type ST-2 compound		2	Configuration	The laid-up cores shall be provided with pressure extruded polyvinyl chloride (PVC) Compound conforming to the requirements of type ST-2 of IS: 5831 with latest amendments. Pressurized extrusion is required to remove any gaps remaining in	The laid-up cores shall be provided with normal extruded inner sheath. It shall be ensured that the shape is as circular as possible. The inner sheath shall be of polyvinyl chloride (PVC) Compound conforming to the requirements of type ST-2 of IS: 5831-1984 with latest		
		Sr. No.	Parameter	3 Core Cable	1 Core Cable														
1	Material	Black coloured Polyvinyl chloride (PVC) type ST-2 compound																	
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				between the fillers and to make the cable as circular as possible. It shall be applied to fit closely on to the laid-up cores and shall be possible to remove easily without causing any damage to the underlying insulated cores and screens.		amendments. The inner sheath shall be black in colour. It shall be applied to fit closely on to the laid-up cores and shall be possible to remove easily without causing any damage to the underlying insulated cores and screens.																										
		3	Raw material supplier	PVC compound shall be procured from reputed raw material suppliers viz., Shakun, Kalpana, KLJ, DCM ShriRam. PVC compound from cable manufacturer shall be considered only after factory evaluation for the same.																												
		4	Min. thickness At any point of measurement	<table><tr><th>Voltage Grade</th><th>Type of Cable</th><th>Minimum Thickness</th></tr><tr><td>11 kV</td><td>3C x 300 Sq. mm.</td><td>0.7</td></tr><tr><td>22 kV</td><td>3C x 240 Sq. mm.</td><td>0.7</td></tr><tr><td>33 kV</td><td>3C x 400 Sq. mm.</td><td>0.7</td></tr></table>		Voltage Grade	Type of Cable	Minimum Thickness	11 kV	3C x 300 Sq. mm.	0.7	22 kV	3C x 240 Sq. mm.	0.7	33 kV	3C x 400 Sq. mm.	0.7	<table><tr><th>Voltage Grade</th><th>Type of Cable</th><th>Minimum Thickness</th></tr><tr><td>11 kV</td><td>1C x 185 Sq. mm.</td><td>0.4</td></tr><tr><td>11 kV</td><td>1C x 1000 Sq. mm.</td><td>0.6</td></tr><tr><td>22 kV</td><td>1C x 185 Sq. mm.</td><td>0.4</td></tr><tr><td>33 kV</td><td>1C x 630 Sq. mm.</td><td>0.6</td></tr></table>		Voltage Grade	Type of Cable	Minimum Thickness	11 kV	1C x 185 Sq. mm.	0.4	11 kV	1C x 1000 Sq. mm.	0.6	22 kV	1C x 185 Sq. mm.	0.4	33 kV
Voltage Grade	Type of Cable	Minimum Thickness																														
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5.9

ARMOURING

The armouring shall be applied over the inner sheath in cables. The direction of lay of the armour shall be left hand.

Sr. No.	Parameter	Requirement																												
		3 Core Cable	1 Core Cable																											
1	Material	Low carbon annealed hot dipped galvanized round steel wires	H4 Grade Aluminium wires																											
2	Compliance to Standard	It shall comply with the requirements of IS 4826 Table 1 along with latest amendments. Hot dipped galvanizing layer shall be uniform on low carbon annealed steel wires. Zinc coating shall be suitable for Heavily-Coated Wire, specified in Table No.1 of IS 4826:1979	It shall comply with the requirements of IS 8130 along with latest amendments.																											
3	Nominal Dimensions	<table><tr><th>Voltage Grade</th><th>Type of Cable</th><th>Nominal Thickness</th></tr><tr><td>11 kV</td><td>3C x 300 Sq. mm.</td><td>3.15 mm</td></tr><tr><td>22 kV</td><td>3C x 240 Sq. mm.</td><td>4.0 mm</td></tr><tr><td>33 kV</td><td>3C x 400 Sq. mm.</td><td>4.0 mm</td></tr></table>	Voltage Grade	Type of Cable	Nominal Thickness	11 kV	3C x 300 Sq. mm.	3.15 mm	22 kV	3C x 240 Sq. mm.	4.0 mm	33 kV	3C x 400 Sq. mm.	4.0 mm	<table><tr><th>Voltage Grade</th><th>Type of Cable</th><th>Nominal Thickness</th></tr><tr><td>11 kV</td><td>1C x 185 Sq. mm.</td><td>2.0 mm</td></tr><tr><td>11 kV</td><td>1C x 1000 Sq. mm.</td><td>2.5 mm</td></tr><tr><td>22 kV</td><td>1C x 185 Sq. mm.</td><td>2.0 mm</td></tr><tr><td>33 kV</td><td>1C x 630 Sq. mm.</td><td>2.5 mm</td></tr></table>	Voltage Grade	Type of Cable	Nominal Thickness	11 kV	1C x 185 Sq. mm.	2.0 mm	11 kV	1C x 1000 Sq. mm.	2.5 mm	22 kV	1C x 185 Sq. mm.	2.0 mm	33 kV	1C x 630 Sq. mm.	2.5 mm
		Voltage Grade	Type of Cable	Nominal Thickness																										
		11 kV	3C x 300 Sq. mm.	3.15 mm																										
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		4	Joining in the armour wires	Not acceptable in any armour wire.	
		5	Laying of armour	The armour wires shall be applied as closely as practicable. Shall not be less than 90% of total circumference. The gap between any two armour strip/wire shall not be more than the diameter of armour wire. Bidder to submit Short Circuit Calculation for armour as per the armour coverage percentage.	
		6	Binding	The rubberized cotton binding tape shall be applied to bind the armour wires such that it shall not affect the electrical properties of the armour wires and the overall cable.	
		7	Weight of armour	To be furnished by Bidder	
		8	Raw material supplier	Steel armour shall be procured from reputed raw material suppliers viz., TATA Steel, Jindal Steel, SAIL only.	Aluminium armour shall be procured from reputed raw material suppliers viz., BALCO/ HINDALCO/ NALCO/ Vedanta only.

5.10	OUTER SHEATH			

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		4	Colour	<table border="1"> <tr> <th>Cable Rating:</th> <th>TATA POWER, Mumbai</th> </tr> <tr> <td>11kV</td> <td>Crimson Red (IS-5 : 540)</td> </tr> <tr> <td>22kV</td> <td>Blue</td> </tr> <tr> <td>33kV</td> <td>Black</td> </tr> </table>	Cable Rating:	TATA POWER, Mumbai	11kV	Crimson Red (IS-5 : 540)	22kV	Blue	33kV	Black													
		Cable Rating:	TATA POWER, Mumbai																						
		11kV	Crimson Red (IS-5 : 540)																						
		22kV	Blue																						
		33kV	Black																						
5	Surface uniformity	Surface of outer sheath shall be free from cavity/ nicks/ other visible defects.																							
6	Raw material supplier	PVC compound shall be procured from reputed raw material suppliers viz., Shakun, Kalpana, KLJ, DCM ShriRam. PVC compound from cable manufacturer shall be considered only after factory evaluation for the same.																							
7	Weight of outer sheath/km	To be provided by bidder																							
5.11	SEALING END CAP	<table border="1"> <tr> <th>Sr. No.</th> <th>Parameter</th> <th>Requirement</th> </tr> <tr> <td>1</td> <td>Material</td> <td>Adhesive coated polyolefin heat shrinkable</td> </tr> <tr> <td>2</td> <td>Configuration</td> <td>Adhesive coated polyolefin heat shrinkable end cap shall be provided at both ends of the cable.</td> </tr> <tr> <td>3</td> <td>Additional requirements</td> <td>2 nos. additional cable end caps shall be provided with each drum and placed in the drum.</td> </tr> </table>				Sr. No.	Parameter	Requirement	1	Material	Adhesive coated polyolefin heat shrinkable	2	Configuration	Adhesive coated polyolefin heat shrinkable end cap shall be provided at both ends of the cable.	3	Additional requirements	2 nos. additional cable end caps shall be provided with each drum and placed in the drum.								
Sr. No.	Parameter	Requirement																							
1	Material	Adhesive coated polyolefin heat shrinkable																							
2	Configuration	Adhesive coated polyolefin heat shrinkable end cap shall be provided at both ends of the cable.																							
3	Additional requirements	2 nos. additional cable end caps shall be provided with each drum and placed in the drum.																							
5.12	OTHER REQUIREMENTS	Following to be specified by the bidder. <table border="1"> <tr> <th></th> <th>Continuous current rating of cable when laid</th> <th>Units</th> <th>Requirement</th> </tr> <tr> <td>a)</td> <td>Direct in ground at 35 Deg.C.</td> <td>Amps.</td> <td>To be provided by bidder</td> </tr> <tr> <td>b)</td> <td>In Air at 45 Deg.C.</td> <td>Amps.</td> <td>To be provided by bidder</td> </tr> <tr> <td>c)</td> <td>In Ducts</td> <td>Amps.</td> <td>To be provided by bidder</td> </tr> <tr> <td>d)</td> <td>Max. DC Resistance of Conductor at 20 Deg.C.</td> <td>ohm/km</td> <td>To be provided by bidder</td> </tr> </table>					Continuous current rating of cable when laid	Units	Requirement	a)	Direct in ground at 35 Deg.C.	Amps.	To be provided by bidder	b)	In Air at 45 Deg.C.	Amps.	To be provided by bidder	c)	In Ducts	Amps.	To be provided by bidder	d)	Max. DC Resistance of Conductor at 20 Deg.C.	ohm/km	To be provided by bidder
	Continuous current rating of cable when laid	Units	Requirement																						
a)	Direct in ground at 35 Deg.C.	Amps.	To be provided by bidder																						
b)	In Air at 45 Deg.C.	Amps.	To be provided by bidder																						
c)	In Ducts	Amps.	To be provided by bidder																						
d)	Max. DC Resistance of Conductor at 20 Deg.C.	ohm/km	To be provided by bidder																						

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		e)	Weight of Aluminium Conductor	Kg/Km/C ore	To be provided by bidder
		f)	Weight of overall cable	Kg/Km/C ore	To be provided by bidder
		g)	Overall diameter of the cable.	mm	To be provided by bidder
6.0	MARKING	The drum shall carry the following information stencilled on both sides of the drum: a) Reference to the standards b) Manufacturer's name c) Type of Cable d) Voltage Grade e) Number of cores f) Nominal Cross sectional Area of the conductor/Cable size g) Cable Code h) Length of the cable on the drum i) Number of lengths on the drum (If more than one) j) Direction of the rotation of the drum k) Gross mass l) Country of manufacture m) Year and month of manufacture n) Purchase Order no. o) Drum No. The following details shall be embossed on the outer PVC Jacket of the cable: a) Running meter marking b) "Property of "Tata Power" at every meter.			
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		c) "Name of Supplier" at every meter d) "Year of Manufacture" at every meter e) "Voltage grade" at every meter f) "Size of the cable" shall be embossed on the cable in bold letters. g) Font size of 12 (Computer size) shall be used for all markings on single core cables and the embossing shall be done on one side throughout the length of cable for single core cables. h) Font size shall be as per below table for all markings on three core cables and the embossing shall be done on one side throughout the length of cable for three core cables. <table><tr><th>Cable size, rating and code</th><th>Font size</th></tr><tr><td>3C x 300 sq.mm 11 KV(E) A2XCEWY</td><td>10</td></tr><tr><td>3C x 240 sq.mm 22 KV(E) A2XCEWY</td><td>10</td></tr><tr><td>3C x 400 sq.mm 33 KV(E) A2XCEWY</td><td>12</td></tr></table> Voltage levels for all the cables shall be embossed legibly on the outer sheath of the cables.	Cable size, rating and code	Font size	3C x 300 sq.mm 11 KV(E) A2XCEWY	10	3C x 240 sq.mm 22 KV(E) A2XCEWY	10	3C x 400 sq.mm 33 KV(E) A2XCEWY	12	
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3C x 240 sq.mm 22 KV(E) A2XCEWY	10										
3C x 400 sq.mm 33 KV(E) A2XCEWY	12										
7.0	TESTS	All routine, acceptance & type tests shall be carried out in accordance with the relevant IS/IEC/International standard. All routine/acceptance tests shall be witnessed by TATA Power's authorized representative. All the components should also be type tested as per the relevant standards. Following tests shall be necessarily conducted on the 11/22/33kV cables in additions to others specified in IS/IEC/International standards. *In case of any conflict on any technical particular in the specification, the stricter requirement mentioned in the relevant standard shall be valid.									

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7.1	TYPE TEST	<table><tr><th rowspan="2">Sr. No.</th><th rowspan="2">Test</th><th colspan="2">Specific Value</th><th colspan="2">Test Method</th></tr><tr><th>Clause No.</th><th>Reference Standard</th><th>Clause No.</th><th>Reference Standard</th></tr><tr><td colspan="6">Tests on Conductor</td></tr><tr><td>1</td><td>Conductor resistance test</td><td>Table 2</td><td>IS 8130</td><td>10</td><td>IS 10810 part 5</td></tr><tr><td>2</td><td>Conductor water penetration test</td><td>IEC 60502/ ICEA T-31-610</td><td>IEC 60502/ ICEA T-31-610</td><td>Annexure F</td><td>IEC 60502/ ICEA T-31-610</td></tr><tr><td colspan="6">Tests on Insulation</td></tr><tr><td>3</td><td>Tensile Strength & Elongation at break (before ageing)</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 7</td></tr><tr><td>4</td><td>Ageing in air oven</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 11</td></tr><tr><td>5</td><td>Tensile strength & Elongation at break</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 7</td></tr><tr><td>6</td><td>Tests for thickness of insulation</td><td>Table 4</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 6</td></tr><tr><td>7</td><td>Eccentricity and Ovality of insulation</td><td>12.4</td><td>IS 7098 part 2</td><td>Annexure A</td><td>IS 7098 part 2</td></tr><tr><td>8</td><td>Hot set test</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 30</td></tr><tr><td>9</td><td>Shrinkage test</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 12</td></tr><tr><td>10</td><td>Gravimetric test (Water absorption)</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 33</td></tr><tr><td>11</td><td>Volume resistivity / Insulation Resistance</td><td>Table 1 of Clause No.5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 43</td></tr><tr><td colspan="6">Tests on inner Sheath</td></tr><tr><td>12</td><td>PVC thickness</td><td>Table 5</td><td>IS 7098 part 2</td><td>8</td><td>IS 10810 part 6</td></tr></table>	Sr. No.	Test	Specific Value		Test Method		Clause No.	Reference Standard	Clause No.	Reference Standard	Tests on Conductor						1	Conductor resistance test	Table 2	IS 8130	10	IS 10810 part 5	2	Conductor water penetration test	IEC 60502/ ICEA T-31-610	IEC 60502/ ICEA T-31-610	Annexure F	IEC 60502/ ICEA T-31-610	Tests on Insulation						3	Tensile Strength & Elongation at break (before ageing)	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 7	4	Ageing in air oven	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 11	5	Tensile strength & Elongation at break	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 7	6	Tests for thickness of insulation	Table 4	IS 7098 part 2	8	IS 10810 part 6	7	Eccentricity and Ovality of insulation	12.4	IS 7098 part 2	Annexure A	IS 7098 part 2	8	Hot set test	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 30	9	Shrinkage test	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 12	10	Gravimetric test (Water absorption)	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 33	11	Volume resistivity / Insulation Resistance	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 43	Tests on inner Sheath						12	PVC thickness	Table 5	IS 7098 part 2	8	IS 10810 part 6
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Tests on Extruded semi-conducting screen					
13	Volume resistivity test of conductor screen	Table 2	IS 7098 part 2	Annexure E	IS 7098 part 2
14	Volume resistivity test of core screen	Table 2	IS 7098 part 2	Annexure E	IS 7098 part 2
Tests on Outer Sheath (PVC)					
15	Flammability test for outer sheath	Clause no. 20.8	IS 7098 part 2	8	IS 10810 part 53
16	Thickness	Table 7	IS 7098 part 2		
17	Tensile strength and Elongation at break (before ageing)	Table 2	IS 5831	8	IS 10810 part 7
18	Variation due to ageing	Table 2	IS 5831	8	IS 10810 part 7
19	Loss of mass test	Table 2	IS 5831	8	IS 10810 part 10
20	Shrinkage test	Table 2	IS 5831	8	IS 10810 part 12
21	Hot deformation test	Table 2	IS 5831	8	IS 10810 part 15
22	Heat shock test	Table 2	IS 5831	8	IS 10810 part 14
23	Thermal stability test	Table 2	IS 5831	Appendix B	IS 5831:1984
24	Flammability test	As per IEC 332 part 1			
25	Oxygen index	As per ASTM 2863			
26	Temperature index	ASTM 2863			
27	Acid gas generation	IEC 60754			
29	Smoke density	ASTM 2843			
Tests on Armour for 3 Core Cable					
30	Tensile test	8	IS 3975	6	IS 1608
31	Torsion test	8	IS 3975	7	IS 1717
32	Wrapping test	8	IS 3975	5	IS 1755
33	Resistance test	8	IS 3975	8	IS 10810 Part 42
34	Mass of zinc coating	9	IS 3975	6	IS 6745
35	Uniformity of zinc coating	9	IS 3975	4	IS 2633
36	Adhesion test	9	IS 3975	9.3	IS 3975
Tests on Armour for 1 Core Cable					
37	Tensile test	8	IS 8130	6	IS 1608
38	Torsion test	8	IS 8130	7	IS 1717
39	Wrapping test	8	IS 8130	5	IS 1755
40	Resistance test	8	IS 8130	8	IS 10810 Part 42

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Tests on Complete Cable	41	Partial discharge test	20.2	IS 7098 part 2	8	IS 10810 Part 46
	42	Thermal ageing test	20.9	IS 7098 part 2	20.9	IS 7098 part 2
	43	Bending test	20.3	IS 7098 part 2	20.3	IS 7098 part 2
	44	Dielectric power factor test	20.4	IS 7098 part 2	20.4	IS 7098 part 2
	45	High voltage test	63 kV for 5 minutes As per Clause no. 20.7.2	IS 7098 part 2	20.7	IS 7098 part 2
	46	Heat cycle test	20.5	IS 7098 part 2	20.5	IS 7098 part 2
	47	Impulse withstand test	20.6	IS 7098 part 2	20.6	IS 7098 part 2

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7.2	ACCEPTANCE TEST	<table border="1"> <tr> <th rowspan="2">Sr. No.</th> <th rowspan="2">Test Name</th> <th colspan="2">Specific Value</th> <th colspan="2">Test Method</th> </tr> <tr> <th>Clause No.</th> <th>Reference Standard</th> <th>Clause No.</th> <th>Reference Standard</th> </tr> <tr> <td colspan="6">(I) Test on Conductor</td> </tr> <tr> <td>1</td> <td>Conductor resistance test</td> <td>Clause No. 5.1(5)</td> <td>ENSE-DS-2006</td> <td>10</td> <td>IS 10810 part 5</td> </tr> <tr> <td>2</td> <td>Test for non-conductivity of water swellable tape/yarn of conductor</td> <td>Clause No. 5.1(6)</td> <td>ENSE-DS-2006</td> <td colspan="2">Through multimeter</td> </tr> <tr> <td>3</td> <td>Visual inspection for conductor cleanliness</td> <td>Clause No. 5.1(7)</td> <td>ENSE-DS-2006</td> <td colspan="2">Check for presence of any Aluminium dust</td> </tr> <tr> <td>4</td> <td>Conductor water penetration test</td> <td colspan="4">ICEA T-31-610</td> </tr> <tr> <td colspan="6">(II) Test on Conductor Screen</td> </tr> <tr> <td>5</td> <td>Thickness of semi conducting tape over conductor</td> <td>Clause No. 5.2(2)</td> <td>ENSE-DS-2006</td> <td colspan="2">Values to be noted by inspector</td> </tr> <tr> <td>6</td> <td>Test for conductivity of semi-conducting tape over conductor</td> <td>Clause No. 5.2(2)</td> <td>ENSE-DS-2006</td> <td colspan="2">Through Multimeter</td> </tr> <tr> <td>7</td> <td>Resistivity of extruded semi-conducting conductor screen</td> <td>Clause No. 5.2(4)</td> <td>ENSE-DS-2006</td> <td>Annexure E</td> <td>IS 7098 part 2</td> </tr> <tr> <td>8</td> <td>Thickness of extruded semi-conducting conductor screen</td> <td>Clause No. 5.2(3)</td> <td>ENSE-DS-2006</td> <td colspan="2">Value to be noted by inspector</td> </tr> </table>						Sr. No.	Test Name	Specific Value		Test Method		Clause No.	Reference Standard	Clause No.	Reference Standard	(I) Test on Conductor						1	Conductor resistance test	Clause No. 5.1(5)	ENSE-DS-2006	10	IS 10810 part 5	2	Test for non-conductivity of water swellable tape/yarn of conductor	Clause No. 5.1(6)	ENSE-DS-2006	Through multimeter		3	Visual inspection for conductor cleanliness	Clause No. 5.1(7)	ENSE-DS-2006	Check for presence of any Aluminium dust		4	Conductor water penetration test	ICEA T-31-610				(II) Test on Conductor Screen						5	Thickness of semi conducting tape over conductor	Clause No. 5.2(2)	ENSE-DS-2006	Values to be noted by inspector		6	Test for conductivity of semi-conducting tape over conductor	Clause No. 5.2(2)	ENSE-DS-2006	Through Multimeter		7	Resistivity of extruded semi-conducting conductor screen	Clause No. 5.2(4)	ENSE-DS-2006	Annexure E	IS 7098 part 2	8	Thickness of extruded semi-conducting conductor screen	Clause No. 5.2(3)	ENSE-DS-2006	Value to be noted by inspector	
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(III) Test on Insulation					
9	Tensile strength & Elongation at break (before ageing)	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 7
10	Insulation thickness	Clause No. 5.3(3)	ENSE-DS-2006	8	IS 10810 part 6
11	Eccentricity and Ovality insulation	Clause No. 5.3(3)	ENSE-DS-2006	Annexure A	IS 7098 part 2
12	Hot set test	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 30
13	Volume resistivity	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 43
14	Void & contamination test on core (by silicon oil dip method)	Clause No. 5.3(5)	ENSE-DS-2006	20.1	IS 7098 part 3
15	Surface smoothness of insulation	Clause No. 5.3(5)	ENSE-DS-2006	To be checked by inspector	
(IV) Test on Insulation Screen					
16	Resistivity of insulation screen	Clause No. 5.4(2)	ENSE-DS-2006	Annexure E	IS 7098 part 2
17	Thickness of insulation screen	Clause No. 5.4(2)	ENSE-DS-2006	Value to be noted by inspector	
18	Visual inspection for any convolution/ protrusion between conductor screen and XLPE insulation, XLPE insulation and insulation screen	Clause No. 5.3(5)	ENSE-DS-2006	To be checked by inspector	
19	Thickness & % Overlapping of semi-conducting water swellable tape	Clause No. 5.4(2)	ENSE-DS-2006	Value to be noted by inspector	
20	Thickness & % Overlapping of copper tape	Clause No. 5.4(2)	ENSE-DS-2006	Value to be noted by inspector	
(V) Test on Inner Sheath					
21	PVC thickness	Clause No. 5.8(4)	ENSE-DS-2006	8	IS 10810 part 6
22	Colour of inner sheath	Clause No. 5.8(1)	ENSE-DS-2006	Tobe checked by inspector	

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(VI) Test on Armour					
For 3 core cable					
23	Tensile test	8	IS 3975	IS 1608	
24	Mass of zinc coating	Table 1	IS 4826	IS 6745	
25	Uniformity of zinc coating	9	IS 3975	IS 2633	
26	Adhesion test	9	IS 3975	IS 3975	
27	Diameter and no. of wires	Clause No.5.9(3)	ENSE-DS-2006	Value to be noted by inspector	
28	Coverage %	Clause No.5.9(5)	ENSE-DS-2006	Value to be noted by inspector	
For 1 core cable					
29	Tensile test	8	IS 8130	6	IS 1608
30	Wrapping test	8	IS 8130	5	IS 1755
31	Resistance test	8	IS 8130	8	IS 10810 Part 42
32	Diameter and no. of wires	Clause No.5.9(3)	ENSE-DS-2006	Value to be noted by inspector	
33	Coverage %	Clause No.5.9(5)	ENSE-DS-2006	Value to be noted by inspector	
(VII) Test on Outer Sheath					
34	Thickness	Clause No.5.10(3)	ENSE-DS-2006	Value to be noted by inspector	
35	Tensile strength and Elongation at break (before ageing)	Table 2	IS 5831	8	IS 10810 part 7
36	Colour of outer sheath	Clause No.5.10(4)	ENSE-DS-2006	To be checked by inspector	
37	Surface uniformity of outer sheath (on full drum)/ shall be free from any damage void, nick, cavity.	Clause No.5.10(5)	ENSE-DS-2006	Through rewinding of drum (As per TATA POWER-specification)	
38	Presence of lead naphenate in PVC outer sheath	Clause No.5.10(1)	ENSE-DS-2006	To be checked by inspector	
39	Flammability test	As per IEC 332 part 1			
40	Oxygen index	As per ASTM 2863			
41	Temperature index	ASTM 2863			

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		42	Acid gas generation	IEC 60754			
		43	Smoke density	ASTM 2843			
		(VIII) Tests for complete cable					
		44	Partial discharge test	5 pC	As per type test	8	IS 10810 part 46
		45	High voltage test	63 kV for 5 minutes As per Clause no. 20.7.2	IS 7098 part 2	8	IS 10810 part 45
		46	Raw material consumption verification	Document verification as proof to be submitted			
				Invoice to be shown from procurement to consumption			
		(IX) Additional tests					
		47	Colour coding Identification over copper screen (for 3C cable)	Clause no. 5.5	ENSE-DS-2006	To be checked by inspector	
		48	Sequential marking check	Clause no. 6	ENSE-DS-2006	To be checked by inspector	
		49	Cable drum length verification	Clause no. 6	ENSE-DS-2006	To be checked by inspector	
		50	Packaging of cable on cable drum	By recyclable PVC sheet- As per Clause no.12	ENSE-DS-2006	To be checked by inspector	
		51	Weight of conductor/km	Clause no. 5.1(11)	ENSE-DS-2006	Value to be noted by inspector	
		52	Diameter of conductor	Clause no. 5.1(10)	ENSE-DS-2006	Value to be noted by inspector	
		53	Weight of XLPE insulation plus semiconducting screen (of conductor & insulation)/ km	Value to be noted by inspector			
		54	Diameter over cores	Clause no. 5.4(4)	ENSE-DS-2006	Value to be noted by inspector	
		55	Weight of water swellable tape/km	Clause no. 5.4(5)	ENSE-DS-2006	Value to be noted by inspector	
		56	Weight of copper tape/km	Clause no. 5.4(6)	ENSE-DS-2006	Value to be noted by inspector	
		57	Diameter over inner sheath	Value to be noted by inspector			
		58	Weight of armour/ km	Clause no. 5.9(7)	ENSE-DS-2006	Value to be noted by inspector	
59	Cable sealing end	Clause no. 5.11	ENSE-DS-	Value to be noted by			

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		60	Weight of outer sheath/ km	Clause no. 5.10(7)	ENSE-DS-2006	Value to be noted by inspector
		61	Diameter of complete cable	Clause no. 5.12(g)	ENSE-DS-2006	Value to be noted by inspector
7.3	ROUTINE TEST	Routine Tests				
					Clause No.	Reference Standard
		Conductor resistance test			19.3	IS 7098 part 2
		Partial discharge			19.3	IS 7098 part 2
		High voltage test with power frequency			19.3	IS 7098 part 2
		Resistance test for Aluminium armour			19.3	IS 7098 part 2
7.4	ADDITIONAL TESTS	Additional tests for Concentricity, Voids, Contamination tests on insulation parameters as performed according to IS 7098 Part 3 to be performed to ensure that the cable should meet the following characteristics:				
		1. Core consistency with hot set/creep less than 100%				
		2. No voids larger than 75 microns per 16.4 cubic cm				
		3. No ambers larger than 250 microns per 16.4 cubic cm				
		4. No contaminants larger than 125 microns and less than 5 between 50-125 microns per cubic 16.4 cubic cm tested.				
		5. Cable insulation concentricity greater than 90% tested				
		6. No protrusions greater than 75 microns at the conductor shield and 125 microns at the insulation shield				
		7. Raw material consumption				
		8. Colour coding identification over copper screen (for 3C cable)				
		9. Sequential marking check				
		10. Cable drum length verification				
		11. Packaging of cable on cable drum				
		12. Diameter over outermost sheath of cable				

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	1/12/2023	1/12/2023	1/12/2023

The Tata Power Company Ltd			TECHNICAL SPECIFICATION OF HT CABLES
ENSE-DS-2006-R00			Date of Issue: 1/12/2023
8.0	TYPE TEST CERTIFICATES	Requirement: The Bidder shall furnish the type test certificates of the 11/22/33 kV cable for the tests as mentioned in Clause no.7 of this specification and as per the corresponding standards. All the type tests shall be conducted at certified test laboratories like CPRI / ERDA / KEMA Accredited Lab as per the relevant standards. Type test report shall be submitted for the type, size and rating of the cable mentioned in the bid/ OR for any size higher (than required) of similar type and similar voltage grade. Type test should have been conducted in certified Test Laboratories during the period not exceeding 5 years from the date of opening the bid. In the event of any discrepancy in the test reports i.e., any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to Tata Power-Mumbai. Additional certification should be provided stating that: The cable produced is expected to meet long duration performance criteria based on quality and consistency of manufacturing. In the event of any discrepancy in the test reports i.e. any test report not acceptable or any/all type tests (including additional type tests, if any) not carried out, same shall be carried out without any cost implication to TATA POWER. In case the type test certificates are dated beyond 5 years and up to 10 years maintaining basic component design same then deviation should be submitted on vendor letter head. TATA POWER will have the rights to accept/reject the same	
9.0	PRE-DESPATCH INSPECTION	The Material shall be subject to inspection by a duly authorized representative of the Tata Power. Inspection may be made at any stage of manufacture at the discretion of Tata Power-Mumbai and the equipment, if found unsatisfactory as to workmanship or material, the same is liable to rejection. Bidder shall grant free access to the places of manufacture to Tata Power-Mumbai's representatives at all times when the work is in progress. Inspection by Tata Power-Mumbai or its authorized representatives shall not relieve the bidder of his obligation of furnishing equipment in accordance with the specifications. The inspection of cable during manufacturing will be done especially while copper tape screening and forming of laid up cores for new vendors. Material shall be dispatched after specific MDCC (Material Dispatch Clearance Certificate) is issued by Tata Power-Mumbai. Following documents shall be sent along with material a) Test reports b) MDCC issued by Tata Power-Mumbai	

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The Tata Power Company Ltd			TECHNICAL SPECIFICATION OF HT CABLES
ENSE-DS-2006-R00			Date of Issue: 1/12/2023
		c) Invoice in duplicate d) Packing list e) Drawings & catalogue f) Guarantee / Warrantee card g) Delivery Challan h) Other Documents (as applicable).	
10.	INSPECTION AFTER RECEIPT AT STORES	The material received at Tata Power-Mumbai store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection and one copy of the report shall be sent to Contracts & Engineering department. The material received at TPC, Mumbai store shall be inspected for acceptance and shall be liable for rejection, if found different from the reports of the pre-dispatch inspection or any other parameters observed after delivery. The material should be delivered at TPC, Mumbai stores within 45 days from the date of manufacturing, same shall be checked during delivery and overdue material shall not be accepted. Bidders to plan the delivery accordingly. Bidders to attend and rectify the same at his own cost. The material shall be accepted in stores only after rectification of any observed flaw. Billing shall be processed only after acceptance of the material.	
11.0	GUARANTEE	Bidder shall stand guarantee towards design, materials, workmanship & quality of process / manufacturing of items under this contract for due and intended performance of the same, as an integrated product delivered under this contract. In the event any defect is found by TATA Power-Company Limited, up to a period of at least 60 months from the date of commissioning or 72 months from the date of last supplies made under the contract whichever is later, (the time scale of 60/72 months could be enhanced subject to mutual agreements). 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 TATA Power-Company Limited, failing which TATA Power-Company Limited will be at liberty to get it replaced/rectified at Bidder's risks and costs and recover all such expenses plus the TATA Power-Company Limited's own charges (@ 20% of expenses incurred), from the Bidder or from the "Security cum Performance Deposit" as the case may be. Free replacement: 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 TATA Power-Company Limited.	

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The Tata Power Company Ltd			TECHNICAL SPECIFICATION OF HT CABLES
ENSE-DS-2006-R00			Date of Issue: 1/12/2023
12.0	PACKING AND TRANSPORT	a) Standard length of Cable: The cable shall be supplied in continuous standard length of 250 mtrs (3 cores) & 500 mtrs (Single core) running meters with +/- 5% tolerance. b) Filling condition: Drum shall not be overfilled. c) Cable drum: The cable shall be wound on non-returnable steel drums without any extra cost d) Sealing of cable ends: The ends of the cable shall be sealed by means of heat shrinkable polyolefin end caps. Additional 2 nos. end caps shall be provided with each drum. e) Requirements for Cable drums: Cable drums shall be so constructed as to have required mechanical strength so that the drum flanges and other components do not break during transport, in actual use or in storage. The flanges and the outside surface of the barrel shall be free from protruding materials/projections/ unevenness/ sharp edges that can damage the cable or hands of the operator during rotation of drums. f) Bottom end of cable should be clamped on drum by jute or nylon rope. g) All ferrous metal parts used shall be treated with a suitable rust-free finish or coating to avoid rusting during transit or storage. The drums shall withstand normal handling and transport. h) Rail/ Road transportation: The bidder shall ensure that the equipment covered under this specification shall be prepared for rail/road transport in a manner so as to protect the equipment from damage in transit. i) Packaging shall be as per climate change perspective. Cable wound on cable drum shall be covered by recyclable PVC sheet for dust proof.	
13.0	TENDER SAMPLE	Sample of Material not required	
14.0	QUALITY CONTROL	The bidder shall submit with the offer Quality assurance plan indicating the various stages of inspection, the tests and checks which will be carried out on the material of construction, components during manufacture and bought out items and fully assembled component and equipment after finishing. As part of the plan, a schedule for stage and final inspection within the parameters of the delivery schedule shall be furnished. Tata Power-Mumbai reserves the sole rights for the type test of random sample from the lot and in case of any discrepancy or deviation from the Type test certificates submitted along with the bid, the complete Lot shall be rejected. Tata Power-Mumbai's engineer or its nominated representative shall have free access to the bidder's works to carry out inspections.	
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The Tata Power Company Ltd			TECHNICAL SPECIFICATION OF HT CABLES
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15.0	MINIMUM TESTING FACILITIES	Bidder shall have adequate in-house testing facilities for carrying out all routine and acceptance tests as per relevant International / Indian standards.	
16.0	MANUFACTURING ACTIVITIES	The successful bidder will have to submit GTP & Drawing with 15 days from placement of order/OLA for approval. The date of Code -2/ Code-1 approval given by TATA Power will be treated as first day for assessment of LD (if applicable).	
17.0	SPARES, ACCESSORIES AND TOOLS	Not Applicable	
18.0	DRAWINGS AND DOCUMENTS	Following documents shall be prepared based on the specifications and statutory requirements with complete BOM and shall be submitted with the bid: a) Filled-in Technical Parameters b) General description of the equipment and all components including brochures c) Type test Certificates d) Experience List. e) Cross sectional drawing of the cable with each layer-wise dimensions. f) Rating factors for variation in ground and air temperature, depth of laying, thermal resistivity of soil and different laying configuration of cables. g) A detailed list of bought out items which got into the manufacture of cables should be furnished indicating the name of the firms from whom these items are procured. h) Bidder to submit Short Circuit Calculation for armour as per the armour coverage percentage for each cable rating. All the Documents and Drawings shall be in English Language.	
19	SCHEDULE "A" GUARANTEED TECHNICAL PARTICULARS:	Bidder to submit clause wise compliance.	

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The Tata Power Company Ltd			TECHNICAL SPECIFICATION OF HT CABLES
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20.0	SCHEDULE "B" DEVIATIONS	<u>(TO BE ENCLOSED WITH TECHNICAL BID)</u> All deviations from this specification shall be set out by the Bidders, clause by Clause in this schedule. Unless specifically mentioned in this Schedule, the tender shall be deemed to confirm the purchaser's specifications.								
		<table border="1"> <thead> <tr> <th>Sr. No.</th> <th>Clause No.</th> <th>Details of deviation with justifications</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="height: 300px;"></td> </tr> </tbody> </table>			Sr. No.	Clause No.	Details of deviation with justifications			
		Sr. No.	Clause No.	Details of deviation with justifications						
We confirm that there are no deviations apart from those detailed above.										
Seal of the Company _____ Designation _____ Signature _____										

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The Tata Power Company Ltd		TECHNICAL SPECIFICATION OF HT CABLES
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ANNEXURE – 1
INSPECTION TEST PLAN

Sr. No.	Test name	Specific value		Test method	
		Clause No.	Reference Standard	Clause No.	Reference Standard
(I) Test on Conductor					
1	Conductor resistance test	Clause No. 5.1(5)	ENSE-DS-2006	10	IS 10810 part 5
2	Test for non-conductivity of water swellable tape/yarn of conductor	Clause No. 5.1(6)	ENSE-DS-2006	Through multimeter	
3	Visual inspection for conductor cleanliness	Clause No. 5.1(7)	ENSE-DS-2006	Check for presence of any Aluminium dust	
4	Conductor water penetration test	ICEA T-31-610			
(II) Test on Conductor Screen					
5	Thickness of semi-conducting tape over conductor	Clause No. 5.2(2)	ENSE-DS-2006	Value to be noted by inspector	
6	Test for conductivity of semi-conducting tape over conductor	Clause No. 5.2(2)	ENSE-DS-2006	Through multimeter	
7	Resistivity of extruded semi-conducting conductor screen	Clause No. 5.2(4)	ENSE-DS-2006	Annexure E	IS 7098 part 2
8	Thickness of extruded semi-conducting conductor screen	Clause No. 5.2(3)	ENSE-DS-2006	Value to be noted by inspector	
(III) Test on Insulation					
9	Tensile strength & Elongation at break (before ageing)	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 7
10	Insulation thickness	Clause No. 5.3(3)	ENSE-DS-2006	8	IS 10810 part 6
11	Eccentricity and Ovality of insulation	Clause No. 5.3(3)	ENSE-DS-2006	Annexure A	IS 7098 part 2
12	Hot set test	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 30
13	Volume resistivity	Table 1 of Clause No.5	IS 7098 part 2	8	IS 10810 part 43
14	Void & contamination test on core (by silicon dip method)	Clause No. 5.3(5)	ENSE-DS-2006	20.1	IS 7098 part 3

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15	Surface smoothness of insulation	Clause No. 5.3(5)	ENSE-DS-2006	To be checked by inspector	
(IV) Test on Insulation Screen					
16	Resistivity of insulation screen	Clause No. 5.4(2)	ENSE-DS-2006	Annexure E	IS 7098 part 2
17	Thickness of insulation screen	Clause No. 5.4(2)	ENSE-DS-2006	Value to be noted by inspector	
18	Visual inspection for any convolution/ protrusion between conductor screen and XLPE insulation, XLPE insulation and insulation screen	Clause no. 5.3(5)	ENSE-DS-2006	To be checked by inspector	
19	Thickness & % Overlapping of semi- conducting water swellable tape	Clause no. 5.4(2)	ENSE-DS-2006	Value to be noted by inspector	
20	Thickness & % Overlapping of copper tape	Clause No. 5.4(2)	ENSE-DS-2006	Value to be noted by inspector	

(V) Test on Inner sheath					
21	PVC thickness	Clause No. 5.8	ENSE-DS-2006	8	IS 10810 part 6
22	Colour of inner sheath	Clause No. 5.8	ENSE-DS-2006	To be checked by inspector	
(VI) Test on Armour					
For 3 core cable					
23	Tensile test	8	IS 3975	IS 1608	
24	Mass of zinc coating	Table 1	IS 4826	IS 6745	
25	Uniformity of zinc coating	9	IS 3975	IS 2633	
26	Adhesion test	9	IS 3975	IS 3975	
27	Diameter and no. of wires	Clause No. 5.9	ENSE-DS-2006	Value to be noted by inspector	
28	Coverage %	Clause No. 5.9	ENSE-DS-2006	Value to be noted by inspector	
For 1 core cable					
29	Tensile test	8	IS 8130	6	IS 1608
30	Wrapping test	8	IS 8130	5	IS 1755
31	Resistance test	8	IS 8130	8	IS 10810 Part 42
32	Diameter and no. of wires	Clause No. 5.9(3)	ENSE-DS-2006	Value to be noted by inspector	
33	Coverage %	Clause No. 5.9(5)	ENSE-DS-2006	Value to be noted by inspector	
(VII) Test on Outer Sheath					

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PVC Outer Sheath for normal cable					
34	Thickness	Clause No. 5.10(3)	ENSE-DS-2006	Value to be noted by inspector	
35	Tensile strength and Elongation at break (before ageing)	Table 2	IS 5831	8	IS 10810 part 7
36	Colour of outer sheath	Clause No. 5.10(4)	ENSE-DS-2006	To be checked by inspector	
37	Surface uniformity of outer sheath (on full drum)/ shall be free from any damage- void, nick, cavity.	Clause No. 5.10(5)	ENSE-DS-2006	Through rewinding of drum (As per TATA POWER specification)	
38	Presence of lead naphthenate in PVC outer sheath	Chemical test Clause no. 5.10(1)	ENSE-DS-2006	To be checked by inspector	
39	Flammability test	As per IEC 332 part 1			
40	Oxygen index	As per ASTM 2863			
41	Temperature index	ASTM 2863			
42	Acid gas generation	IEC 60754			
43	Smoke density	ASTM 2843			

(VIII) Tests for complete cable						
44	Partial discharge test		5 pC	As per type test	8	IS 10810 part 46
45	High voltage test		21 kV for 5 minutes As per Clause no. 20.7.2	IS 7098 part 2	8	IS 10810 part 45
46	Raw material consumption	Document verification as proof to be submitted				
		Invoice to be shown from procurement to consumption				
(IX) Additional tests						
47	Colour coding identification over copper screen (for 3C cable)	Clause no. 5.5	ENSE-DS-2006		To be checked by inspector	
48	Sequential marking check	Clause no. 6	ENSE-DS-2006		To be checked by inspector	
49	Cable drum length verification	Clause no. 6	ENSE-DS-2006		To be checked by inspector	
50	Packaging of cable on cable drum	By recyclable PVC sheet- As per Clause no.12	ENSE-DS-2006		To be checked by inspector	
51	Diameter over outermost sheath cable	Clause No. 5.12	ENSE-DS-2006		Value to be noted by inspector	

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AGREED TERMS & CONDITIONS (ATC)- Indigenous Supply

Bidder's Name: M/s. _____

RFQ ref. No. CC25VJS044

Enquiry Description: 1 year OLA for Supply of HT Cable of Various Ratings 11kV, 22kV, 33 kV for Mumbai Distribution

Bidder's Offer Ref.: <pls mention your offer reference no here>

1. SUBMISSION OF THIS DOCUMENT DULY SIGNED, SHALL CONSTRUCT THAT ALL THE CLAUSES OF AGREED TERMS AND CONDITIONS HAVE BEEN ACCEPTED BY YOU. PURCHASE ORDER, IF ANY, SHALL BE GOVERNED BY THE CONFIRMATION PROVIDED HERE.

S. No.	Description	BIDDER'S RESPONSE
A	<u>TECHNICAL</u>	
1	Acceptance of technical specifications / scope of work including General/Technical notes as per Tender specification In case of deviation, confirm that the same has been furnished separately.	
2	Confirm data sheets duly filled in have been submitted, wherever required as requested in Technical specification/ Scope of work	
B	<u>COMMERCIAL</u>	
3	Bid Validity Confirm Bid Validity 180 days from date of bid submission.	
4	Firm price: Price Variation applicable with base month as June 2024 (Switchgear IEEMA circular of June published in July 2024)	
5	Delivery Terms Confirm delivery terms DAP (FOR) basis for any spares/consumables	
6	Packing & Forwarding Confirm that Packing & Forwarding charges including Special Packaging Requirement (if applicable) are included in base price	
7	Freight Charges Confirm that Freight charges are included in base price	
8	Taxes and duties: GST: __% HSN/ SAC Code: Any other tax as applicable:	
9	Price Reduction / LD / SLA: Confirm that Bidder agrees to the LD charges as specified in GCC Supply	
10	Delivery Period: Mention the delivery timelines from the date of order	
11	Payment Terms Acceptance: Confirm acceptance to the Payment terms as specified in GCC Supply.	
12	Warranty / Latent Defect Liability Period: Confirm that Bidder agrees to the clause as specified in Technical specs	
13	Contract Performance Bank Guarantee:	

S. No.	Description	BIDDER'S RESPONSE
	Confirm acceptance to Submission of Unconditional Bank Guarantee as per GCC Supply.	
14	Testing and Inspection charges (if applicable): Confirm the quoted are Inclusive of all testing and inspection charges as per Tender specification	
15	Compliance to other terms & conditions Acceptance of all other terms & conditions as forming the Part of the RFQ/ Tender document and communicated vide subsequent addendum(s) if any: In case of deviation, confirm that the same has been furnished separately.	

*Bidders / Vendor shall note that in case of any contradiction between the Agreed Terms and Conditions (ATC); and the Bidders offer, the ATC shall prevail.

Bidder's Authorised Signatory and stamp:

Name:

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
- At consignee end by Purchaser.
 - 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 statutes, 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 statutes: (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

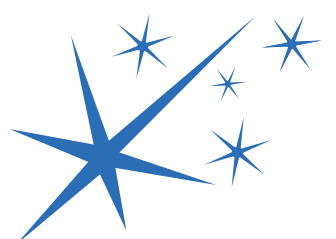
- We will uphold the values of honesty, partnership and fairness in our relationship with stakeholders
- We shall provide and maintain a clean, healthy and safe working environment for employees, customers, partners and the community
- We will strive to consistently enhance our value proposition to the 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 Tohmatu India LLP, 6 floor, AIPL Business, Sector 62, Gurugram, Haryana 122102