

**Volume – I**

**Tender Notification for**

**PROCUREMENT OF VARIOUS RATINGS OF DRY  
TYPE DISTRIBUTION TRANSFORMER IN BRPL**

**CMC/BR/24-25/RB/PR/RJ/1206**

**Due Date for Submission of Bids: 28.06.2024**

**BSES RAJDHANI POWER LTD (BRPL)  
BSES Bhawan, Nehru Place, New Delhi-110019  
Corporate Identification Number: U74899DL2001PLC111527  
Telephone Number: +91 11 3009 9999  
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**Section – I**

**REQUEST FOR QUOTATION**

**Tender Notification: CMC/BR/24-25/RB/PR/RJ/1206**

**Procurement of Various Ratings of Dry Type  
Distribution Transformer In BRPL**

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**SECTION – I: REQUEST FOR QUOTATION****1.0 Event Information**

**1.01** BRPL invites sealed tenders for supply of Dry Type Distribution Transformer from the manufacturers. The bidder must qualify the technical requirements as specified in clause 2.0 stated below. The sealed envelopes shall be duly super scribed as — **“BID FOR RATE CONTRACT FOR THE SUPPLY OF VARIOUS RATINGS OF DRY TYPE DISTRIBUTION TRANSFORMERS FOR VARIOUS SITES OF BRPL ,TENDER NOTICE CMC/BR/24-25/RB/PR/RJ/1206 DUE FOR SUBMISSION ON DT. 28.06.2024”**.

Sl. No.	Item Description	Specification	Requirement	Estimated Cost
			Total Qty.	
<b>BRPL, DELHI</b>				
1	Various Ratings of Dry Type Distribution Transformer for Various Sites in BRPL	SECTION V	57 Nos	11 Cr

**Note: Quantity may vary to any extent of +/- 30% of above mentioned total quantity.**

**1.02** The schedule of specifications with detail terms & conditions can be obtained from address given below against demand draft/Pay Order of **Rs.1180/- with GST-**, drawn in favour of **BSES RAJDHANI POWER LTD**, payable at New Delhi. The sale of tender documents will be issued from **08.06.2024** onwards on all working days upto **22.06.2024**. The tender documents can also be downloaded from the website **“www.bsesdelhi.com”**.

In case tender papers are downloaded from the above website, then the bidder has to enclose a demand draft covering the cost of bid documents as stated above in a separate envelope with suitable superscription —**“Cost of Bid Documents: Tender Notice Ref: CMC/BR/24-25/RB/PR/RJ/1206”**.This envelope should accompany the Bid Documents.

**1.03** Offers will be received upto **1000 Hrs. on dt. 28.06.2024** as indicated earlier and will be opened at the address given below dt. **28.06.2024 at 1445 Hrs.** in the presence of authorized representatives of the bidders. The schedule of specifications with detail terms & conditions are enclosed. It is the sole responsibility of the bidder to ensure that the bid documents reach this office on or before the due date.

**HEAD OF THE DEPARTMENT, 1st FLOOR, ‘C’ BLOCK,  
CONTRACTS & MATERIALS DEPARTMENT, BSES RAJDHANI POWER LTD,  
BSES BHAWAN,  
NEHRU PLACE, NEW DELHI-110019.**

**1.04** BRPL reserves the right to accept/ reject any or all Tenders without assigning any reason thereof and alter the quantity of materials mentioned in the Tender documents at the time of placing purchase orders. Tender will be summarily rejected if:

- i) Earnest Money Deposit (EMD) @ 1% (One percent) of the Tender value i.e. **Rs. 11,00,000/-** is not deposited in shape of Bank Draft in favour of BSES RAJDHANI POWER LTD, payable at New Delhi or Bank Guarantee executed on favour of BSES RAJDHANI POWER LTD.
  - ii) The offer does not contain “FOR, NEW DELHI price indicating break-up towards all taxes & duties”.
  - iii) Complete Technical details are not enclosed.
  - iv) Tender is received after due time due to any reason.
- 1.05** BRPL reserves the right to reject any or all bids or cancel/ withdraw the invitation for bids without assigning any reason whatsoever and in such case no bidder/ intending bidder shall have any claim arising out of such action time of placing purchase orders.

## **2.0 Qualification Criteria:-**

The prospective bidder must qualify all of the following requirements to be eligible to participate in the bidding. Bidders who meet following requirements will be considered as successful bidder and management has a right to disqualify those bidders who do not meet these requirements.

- 1) The bidder should have own manufacturing facility in India for Dry Distribution transformer of similar rating or higher since last 3 years. *Manufacturing and factory incorporation certificate/undertaking are submitted by bidder. The details of manufacturing units, locations and works from where supply against this tender shall be proposed to be furnished.*
- 2) The Bidder should have supplied at least 100 Nos of 1000 kVA transformer or higher rating to any utilities/SEB's/PSU's/reputed company wherein end user shall be Utility/SEB's/PSU's for developing distribution Network in last 5 years. Out of which 25% supplies should be of Dry Type Transformers .i. *Summary list of executed Purchase orders ii. Purchase order copies iii. Material delivery clearance certificate copy or delivery completion certificates or invoice copies*
- 3) Performance certificate for minimum 2 year satisfactory performance for Dry DT of similar rating or higher ratings supplied in last 7 years from the date of bid opening from at least two utilities/ SEB's/ PSU's/ Govt. organization.  
In case of bidder has a previous association with BRPL/BYPL for similar product and service, the performance feedback for that bidder by BRPL/BYPL shall only be considered irrespective of performance certificate issued by any third organization.  
*Performance Certificate*
- 4) The bidder should have servicing, repairing, testing & refurbishment facility in INDIA with necessary spares and testing equipments for providing prompt after sales service for

Dry Distribution Transformer. *Relevant Details/certificates/Undertaking. Details of the set-up available shall be brought out in the offer. The bidder shall submit undertaking along with the bid confirming the infrastructure details submitted.*

- 5) The bidder should have plant installed capacity to supply of 20 nos. Of transformers per month - *Installed Capacity Certificate.*
- 6) The Bidder must possess valid ISO 9001:2015 certification- *Valid copy of Certification*
- 7) Bidder should have Average Annual Sales Turnover of Rs 20 Crores or more in last 3 financial Years (i.e 2020-21, 2021-22, 2022-23)*Balance Sheet /CA Certificate to be submit*
- 8) The Bidder shall submit an undertaking “No Litigation” is pending with the BRPL or its Group/Associates Companies as on date of bid opening.- *Undertaking*
- 9) An undertaking (self-certificate) that the bidder has not been blacklisted/debarred by any central/state government institution including electricity utilities as on date of bid opening. – *Undertaking*
- 10) The bidder must have valid PAN No., GST Registration Number, in addition to other statutory compliances. The bidder must submit the copy of registrations and submit an undertaking that the bidder shall comply all the statutory compliances as per the laws/rules etc. before the start of the work- *Relevant Statutory Documents Copy/Undertaking*

### 3.0 Bidding and Award Process

Bidders are requested to submit their questions regarding the RFQ or the bidding process after review of this RFQ. BRPL response to the questions raised by various bidders will be distributed to all participating bidders through website.

#### a. Time schedule of the bidding process

The bidders on this RFQ package should complete the following within the dates specified as under:

S.No.	Steps	Activity description	Due date
1	Technical Queries	All Queries related to RFQ	On or before 22.06.2024 1500 Hrs.

2	Technical Offer	Documentary evidence in support of qualifying criteria. Technical Literature/ GTP/ Drawings/ Type test report, if any, etc., Testing facilities, any other relevant document, acceptance to commercial terms & conditions viz. delivery Schedule/ Period, Payment terms, PBG etc. Quality assurance plan, Deviation from the specification, list of plant & machinery and testing equipments Un priced items.	28.06.2024, 1000 Hrs
3	Commercial Offer	Prices for Transformer and Break up regarding basic price and taxes. Delivery commitment	28.06.2024, 1000 Hrs
4	Opening of technical bid	As per RFQ	28.06.2024, 1445 Hrs
5	Pre Bid Meeting	As per NIT	27.06.2024 1400 Hrs

This is a two part bid process. Bidders are to submit the bids (a) Technical Bid (b) Price Bid. Both these parts should be furnished in separate sealed covers super scribing with specification no., validity etc, with particulars as **Part-I “Technical Particulars & Commercial Terms & Conditions”** and **Part-II “Financial bid”** and these sealed envelopes should again be placed in another sealed cover which shall be submitted before the due date & time specified.

**Bidders are requested to submit the bid in one original plus one copy in duplicate.**

- **The Part-I (Technical Bid)** - Technical Bid should not contain any cost information whatsoever. In case of Bids where the qualification requirements, technical suitability and other requirements are found to be inadequate, Part-II “Financial Bid” will be returned unopened.
- **The Part-II (Financial Bid)** - Qualified bidders will be intimated after technical evaluation of all the bids is completed. The date and time of same shall be intimated in due course to the qualified bidders. Notwithstanding anything stated above, the Purchaser reserves the right to assess bidder’s capability to perform the contract, should the circumstances warrant such assessment in the overall interest of the purchaser. In this regard the decision of the purchaser is final.

#### 4.0 Award Decision

Purchaser intends to award the business on a lowest bid basis, so suppliers are encouraged to bid competitively. The decision to place purchase order / letter of acceptance solely depends on purchaser on the cost competitiveness across multiple lots, quality, delivery and bidder’s capacity, in addition to other factors that Purchaser may deem relevant.

The purchaser 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 any reason.

BSES reserves the right to split the tender quantity amongst techno commercially qualified bidders on account of delivery requirement in tender, quantity under procurement etc.

Splitting of tender quantity amongst more than one bidder shall be governed by below mentioned guidelines:

- If the quantity is to be split among 2 bidders, it will be done in the ratio of 70:30 on L1 price.
- If the quantity is to be split among 3 bidders, it will be done in the ratio of 60:25:15 on L1 price.
- In case quantity needs to be distributed and order splitting is required, distribution of quantity shall be maximum among three (3) bidders.

In the event of your bid being selected by purchaser (and / or its affiliates) and your subsequent DEFAULT on your bid; you will be required to pay purchaser (and / or its affiliates) an amount equal to the difference in your bid and the next lowest bid on the quantity declared in RFQ.

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

**Quantity Variation:** The purchaser reserves the rights to vary the quantity by +/- 30% of the tender quantity.

**Repeat Order:** BRPL reserves the right to place repeat order at the same rates & terms and conditions as per this tender against additional requirement subject to mutual agreement between BRPL & supplier.

## **5.0 Market Integrity:**

We have a fair and competitive marketplace. The rules for bidders are outlined in the Terms & Conditions. Bidders must agree to these rules prior to participating. In addition to other remedies available, we 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 Terms & Condition. Bidders who violate the marketplace rules or engage in behavior that disrupts the fair execution of the marketplace restricts a bidder to 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 the terms of the published in Request For Quotation.

## **6.0 Supplier Confidentiality**



All information contained in this RFQ is confidential and may not be disclosed, published or advertised in any manner without written authorization from BRPL. This includes all bidding information submitted.

All RFQ documents remain the property of BRPL and all suppliers are required to return these documents to BRPL upon request.

Suppliers who do not honor these confidentiality provisions will be excluded from participating in future bidding events.

## 7.0 Contact Information

All communication as regards this RFQ shall be made (i) in English, (ii) in writing and (iii) sent by mail, facsimile to:

	<b>Technical</b>	<b>Commercial</b>
Contact Name	Mr. Amit Tomar Copy to Mr. Gopal Nariya	Ms Rachna Jain Copy to Mr. Pankaj Goyal
Address	BSES RAJDHANI POWER LTD, 2nd Floor, B Block, Nehru Place, New Delhi – 110019	C&M Deptt. 1st floor, D- Block, BSES Rajdhani Power Limited, BSES Bhawan, Nehru Place, New Delhi -110019
Email-ID	<a href="mailto:amit.as.tomar@relianceada.com">amit.as.tomar@relianceada.com</a> <a href="mailto:gopal.nariya@relianceada.com">gopal.nariya@relianceada.com</a>	<a href="mailto:rachna.jain@relianceada.com">rachna.jain@relianceada.com</a> <a href="mailto:pankaj.goyal@relianceada.com">pankaj.goyal@relianceada.com</a>

**SECTION – II**

**INSTRUCTION TO BIDDERS (ITB)**

**PROCUREMENT OF VARIOUS RATINGS OF DRY  
TYPE DISTRIBUTION TRANSFORMER IN BRPL**

**CMC/BR/24-25/RB/PR/RJ/1206**

**A. GENERAL**

**1.00** BSES Rajdhani power Ltd, hereinafter referred to as the Purchaser are desirous of implementing the various Systems Improvement/Repair & Maintenance works at their respective licensed area in Delhi. The Purchaser has now floated this tender for procurement of Distribution Transformer as notified earlier in this bid document.

**2.00 SCOPE OF WORK**

The scope shall include Design, Manufacture, Testing at works conforming to the Technical Specifications enclosed along with Packing, Forwarding, Freight and Unloading and proper stacking at Purchaser's stores.

**3.00 DISCLAIMER**

3.01 This Document includes statements, which reflect various assumptions, which may or may not be correct. Each Bidder/ Bidding Consortium should conduct its own estimation and analysis and should check the accuracy, reliability and completeness of the information in this Document and obtain independent advice from appropriate sources in their own interest.

3.02 Neither Purchaser nor its employees will have any liability whatsoever to any Bidder or any other person under the law or contract, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage whatsoever which may arise from or be incurred or suffered in connection with anything contained in this Document, any matter deemed to form part of this Document, provision of Services and any other information supplied by or on behalf of Purchaser or its employees, or otherwise a rising in any way from the selection process for the Supply.

3.03 Though adequate care has been taken while issuing the Bid document, the Bidder should satisfy itself that Documents are complete in all respects. Intimation of any discrepancy shall be given to this office immediately.

3.04 This Document and the information contained herein are Strictly Confidential and are for the use of only the person(s) to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient's professional advisors).

**4.00 COST OF BIDDING**

The Bidder shall bear all cost associated with the preparation and submission of its Bid and Purchaser will in no case be responsible or liable for those costs.

**B BIDDING DOCUMENT****5.00 BIDDING DOCUMENTS**

5.01 The Scope of Work, Bidding Procedures and Contract Terms are described in the Bidding Documents. In addition to the covering letter accompanying Bidding Documents, the Bidding Documents include:

**Volume –I**

- a) Request for Quotation (RFQ) - Section – I
- b) Instructions to Bidders (ITB) - Section – II
- c) General Conditions of Contract - Section - III
- d) Quantity and delivery requirement - Section –IV
- e) Technical Specifications (TS) - Section –V

**Volume – II**

- a) Bid Form - Annexure – I
- b) Bid Format - Annexure – II
- c) Price Schedule - Annexure – III
- d) Commercial Terms & Conditions - Annexure - IV
- e) No Deviation Sheet - Annexure - V
- f) Qualification Criterion - Annexure - VI

5.02 The Bidder is expected to examine the Bidding Documents, including all Instructions, Forms, Terms and specifications. Failure to furnish all information required by the Bidding documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect will may result in the rejection of the Bid.

**6.00 AMENDMENT OF BIDDING DOCUMENTS**

- 6.01 At any time prior to the deadline for submission of Bids, the Purchaser may for any reasons, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by Amendment.
- 6.02 The Amendment shall be part of the Bidding Documents, pursuant to Clause 5.01, and it will be notified in writing by Fax/e-mail to all the Bidders who have received the Bidding Documents and confirmed their participation to Bid, and will be binding on them.
- 6.03 In order to afford prospective Bidders reasonable time in which to take the Amendment into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids.

**C PREPARATION OF BIDS**

**7.00 LANGUAGE OF BID**

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

**8.00 DOCUMENTS COMPRISING THE BID**

The Bid prepared and submitted by the Bidder shall comprise the following components:

- a) Bid Form ,Price & other Schedules (STRICTLY AS PER FORMAT)and Technical Data Sheets completed in accordance with Clause 9.0, 10.0, 11.0 and Technical Specification;
- b) All the Bids must be accompanied with the required EMD as mentioned in the Section-I against each tender.
- c) Power of Attorney or Authorization letter indicating that the person(s) signing the Bid have the authority to sign the Bid and thus that the Bid is binding upon the Bidder during the full period of its validity, in accordance with clause 12.0.

## 9.00 BID FORM

9.01 The Bidder shall complete an “Original” and another one “Copy” of the Bid Form and the appropriate Price & Other Schedules and Technical Data Sheets.

### 9.02 EMD

Pursuant to Clause 8.0(b) above, the bidder shall furnish, as part of its bid, a EMD amounting to 1% of the total bid value (FOR Destination) i.e. Rs. **11,00,000/-**. The EMD is required to protect the Purchaser against the risk of Bidder’s conduct which would warrant the security’s forfeiture.

The EMD shall be denominated in the currency of the bid, and shall be in the following form:

- a) A bank guarantee issued by any scheduled bank strictly as per the form at enclosed and shall be valid for a period of thirty (30) days beyond the validity of the bid.
- b) Bank Draft in favour of BSES RAJDHANI POWER LTD, payable at New Delhi.

Unsuccessful bidders’ EMD will be discharged or returned as promptly as possible as but not later than thirty (30) days after the expiration of the period of bid validity.

The successful bidder’s EMD will be discharged upon furnishing the performance security. The EMD may be forfeited:

- a) If the Bidder:
  - i) Withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form; or
- b) in the case of a successful Bidder, if the Bidder fails:
  - i) to sign the Contract, or
  - ii) to furnish the required performance security.

## 10.00 BID PRICES

10.01 Bidders shall quote for the entire Scope of Supply with a break-up of prices for individual items. The total Bid Price shall also cover all the Supplier's obligations mentioned in or

reasonably to be inferred from the Bidding Documents in respect of Design, Supply, Transportation to site, all in accordance with the requirement of Bidding Documents The Bidder shall complete the appropriate Price Schedules included herein , stating the Unit Price for each item & total Price.

- 10.02 The prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during execution of the supply work, breakup of price constituents, should be there. Prices quoted by the Bidder shall be—Firm “and not subject to any price adjustment during the performance of the Contract. A Bid submitted with an adjustable price quotation will be treated as non -responsive and rejected.

### **11.00 BID CURRENCIES**

Prices shall be quoted in **Indian Rupees (INR) only**.

### **12.00 PERIOD OF VALIDITY OF BIDS**

- 12.01 Bids shall remain valid for **120 days** post bid date.
- 12.02 Notwithstanding Clause12.01 above, the Purchaser may solicit the Bidder’s consent to an extension of the Period of Bid Validity. The request and the responses thereto shall be made in writing by Fax/e-mail.

### **13.00 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 of Clause 22.03 & 22.04 regarding the rejection of Bids, which are not substantially responsive to the requirements of the Bidding Documents.

### **14.00 FORMAT AND SIGNING OF BID**

- 14.01 The original Bid Form and accompanying documents (as specified in Clause9.0),clearly marked "Original Bid", plus one copy must be received by the Purchaser at the date, time and place specified pursuant to Clauses15.0 and16.0. In the event of any discrepancy between the original and the copies, the original shall govern.
- 14.02 The original and copy of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to sign on behalf of the Bidder. Such authorization shall be indicated by written Power-of-Attorney accompanying the Bid.
- 14.03 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

### **D SUBMISSION OF BIDS**

## **15.0 SEALING AND MARKING OF BIDS**

- 15.01 Bid submission: One original & one Copy (hard copies) of all the Bid Documents shall be sealed and submitted to the Purchaser before the closing time for submission of the bid.
- 15.02 The Technical Documents and the EMD shall be enclosed in a sealed envelope and the said envelope shall be superscribed with —**Technical & EMD**. The Financial bid shall be inside another sealed envelope with superscription — **Financial Bid**. Both these envelopes shall be sealed inside another big envelope. All the envelopes should bear the Name and Address of the Bidder and marking for the Original and Copy. The envelopes should be superscribed with —“**Tender Notice No, Due date of submission, Tender opening date**”.
- 15.03 The Bidder has the option of sending the Bids in person. Bids submitted by Telex/ Telegram/ Fax will not be accepted. No request from any Bidder to the Purchaser to collect the proposals from Airlines/Cargo Agents etc shall be entertained by the Purchaser.

## **16.0 DEADLINE FOR SUBMISSION OF BIDS**

- 16.01 The original Bid, together with the required copies, must be received by the Purchaser at the address specified not later than **1000 HRS on 28.06.2024**.
- 16.02 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with Clause 9.0, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

## **17.0 ONE BID PER BIDDER**

Each Bidder shall submit only one Bid. A Bidder who submits or participates in more than one Bid will cause all those Bids to be rejected.

## **18.00 LATE BIDS**

Any Bid received by the Purchaser after the deadline for submission of Bids prescribed by the Purchaser, pursuant to Clause 16.0, will be declared "Late" and rejected and returned unopened to the Bidder.

## **19.00 MODIFICATIONS AND WITHDRAWAL OF BIDS**

- 19.01 The Bidder is not allowed to modify or withdraw its Bid after the Bid's submission.

## **E. EVALUATION OF BID**

### **20.00 PROCESS TO BE CONFIDENTIAL**

Information relating to the examination, clarification, evaluation and comparison of Bids and recommendations for the award of a contract shall not be disclosed to Bidders or any other

persons not officially concerned with such process. Any effort by a Bidder to influence the Purchaser's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

## **21.00 CLARIFICATION OF BIDS**

To assist in the examination, evaluation and comparison of Bids, the Purchaser may, at its discretion, ask the bidder for a clarification of its Bid. 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.

## **22.00 PRELIMINARY EXAMINATION OF BIDS / RESPONSIVENESS**

- 22.01 Purchaser will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order.
- 22.02 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.
- 22.03 Prior to the detailed evaluation, Purchaser 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.
- 22.04 Bid determined as not substantially responsive will be rejected by the Purchaser and/or the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

## **23.0 EVALUATION AND COMPARISON OF BIDS**

- 23.01 The evaluation of Bids shall be done based on the delivered cost competitiveness basis.
- 23.02 The evaluation of the Bids shall be a stage-wise procedure. The following stages are identified for evaluation purposes: In the first stage, the Bids would be subjected to a responsiveness check. The Technical Proposals and the Conditional ties of the Bidders would be evaluated. Subsequently, the Financial Proposals along with supplementary Financial Proposals, if any, of Bidders with Techno-commercially Acceptable Bids shall be considered for final evaluation.
- 23.03 The Purchaser's evaluation of a Bid will take into account, in addition to the Bid price, the following factors, in the manner and to the extent indicated in this Clause:
- (a) Supply Schedule
  - (b) Deviations from Bidding Documents



Bidders shall base their Bid price on the terms and conditions specified in the Bidding Documents. The cost of all quantifiable deviations and omissions from the specification, terms and conditions specified in Bidding Documents shall be evaluated. The Purchaser will make its own assessment of the cost of any deviation for the purpose of ensuring fair comparison of Bids.

- 23.04 Any adjustment in price, which results from the above procedure, shall be added for the purposes of comparative evaluation only to arrive at an "Evaluated Bid Price". Bid Prices quoted by Bidders shall remain unaltered.

## **F. AWARD OF CONTRACT**

### **24.0 CONTACTING THE PURCHASER**

- 24.01 From the time of Bid submission to the time of contract award, if any Bidder wishes to contact the Purchaser on any matter related to the Bid, it should do so in writing.
- 24.02 Any effort by a Bidder to influence the Purchaser and/or in the Purchaser's decisions in respect of Bid evaluation, Bid comparison or Contract Award, will result in the rejection of the Bidder's Bid.

### **25.0 THE PURCHASER 'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS**

The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at anytime prior toward of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.

### **26.0 AWARD OF CONTRACT**

The Purchaser will award the Contract to the successful Bidder whose Bid has been Determined to be the lowest-evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the Contract. Purchaser reserves the right to award order other bidders in the tender, provided it is required for progress of project & provided he agrees to come to the lowest rate.

### **27.0 THE PURCHASER'S RIGHT TO VARY QUANTITIES**

The Purchaser reserves the right to vary the quantity i.e. increase or decrease the numbers/quantities without any change in terms and conditions during the execution of the Order.

### **28.0 LETTER OF INTENT/ NOTIFICATION OF AWARD**

The letter of intent/ Notification of Award shall be issued to the successful Bidder whose bids have been considered responsive, techno-commercially acceptable and evaluated to be the

lowest (L1). The successful Bidder shall be required to furnish a letter of acceptance within 7 days of issue of the letter of intent /Notification of Award by Purchaser.

## **29.0 PERFORMANCE BANK GUARANTEE**

The successful Bidder shall furnish the Performance Bank Guarantee for an amount of 10% (Ten percent) of the Contract Price in accordance with the format provided. The Performance Bond shall be valid for a period of twenty four months (24) from the date of the commissioning or thirty months (30) from the date of receipt of material (last consignment) at site/stores whichever is earlier plus 3 months towards claim period. Upon submission of the performance security, the EMD shall be released.

## **30.00 CORRUPT OR FRAUDULENT PRACTICES**

30.01 The Purchaser requires that the Bidders observe the highest standard of ethics during the procurement and execution of the Project. In pursuance of this policy, the Purchaser:

- (a) Defines, for the purposes of this provision, the terms set forth below as follows:
  - i) "Corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them ,or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
  - ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition.
- (b) Will reject a proposal forward if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question ;
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

30.02 Furthermore, Bidders shall be aware of the provision stated in the General Conditions of Contract.

**SECTION – III**

**GENERAL CONDITIONS OF CONTRACT (GCC)**

**PROCUREMENT OF VARIOUS RATINGS OF DRY  
TYPE DISTRIBUTION TRANSFORMER IN BRPL**

**CMC/BR/24-25/RB/PR/RJ/1206**

## GENERAL TERMS AND CONDITIONS

### 1.0 General Instructions

- 1.01 All the Bids shall be prepared and submitted in accordance with these instructions.
- 1.02 Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Purchaser will in no case shall be responsible or liable for these costs.
- 1.03 The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred/ sold to the other party.
- 1.04 The Purchaser reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Purchaser, the data in support of RFQ requirement is incomplete.
- 1.05 The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Purchaser's decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Purchaser.

### 2.0 Definition of Terms

- 2.01 "Purchaser" shall mean BRPL Limited, on whose behalf this bid enquiry is issued by its authorized representative / officers.
- 2.02 "Bidder" shall mean the firm who quotes against this bid enquiry issued by the Purchaser. "Supplier" or "Suppliers" shall mean the successful Bidder and/or Bidders whose bid has been accepted by the Purchaser and on whom the "Letter of Acceptance" is placed by the Purchaser and shall include his heirs, legal representatives, successors and permitted assigns wherever the context so admits.
- 2.03 "Supply" shall mean the Scope of Contract as described.
- 2.04 "Specification" shall mean collectively all the terms and stipulations contained in those portions of this bid document known as RFQ, Commercial Terms & Condition, Instructions to Bidders, Technical Specifications and the Amendments, Revisions, Deletions or Additions, as may be made by the Purchaser from time to time.
- 2.05 "Letter of Acceptance" shall mean the official notice issued by the Purchaser notifying the Supplier that his proposal has been accepted and it shall include amendments thereto, if any, issued by the Purchaser. The "Letter of Acceptance" issued by the Purchaser shall be binding on the "Supplier" The date of Letter of Acceptance shall be taken as the effective date of the commencement of contract.

- 2.06 “Month” shall mean the calendar month and “Day” shall mean the calendar day.
- 2.07 “Codes and Standards” shall mean all the applicable codes and standards as indicated in the Specification.
- 2.08 “Offer Sheet” shall mean Bidder's firm offer submitted to BRPL in accordance with the specification.
- 2.09 “Contract” shall mean the “Letter of Acceptance” issued by the Purchaser.
- 2.10 “Contract Price” shall mean the price referred to in the “Letter of Acceptance”.
- 2.11 “Contract Period” shall mean the period during which the “Contract” shall be executed as agreed between the Supplier and the Purchaser in the Contract inclusive of extended contract period for reason beyond the control of the Supplier and/or Purchaser due to force majeure.
- 2.12 “Acceptance” shall mean and deemed to include one or more of the following as will be stipulated in the specification:
- a) The written acceptance of material by the inspector at suppliers works to ship the materials.
  - b) Acceptance of material at Purchaser site stores after its receipt and due inspection/ testing and release of material acceptance voucher.
  - c) Where the scope of the contract includes supply, acceptance shall mean issue of necessary equipment / material takeover receipt after installation & commissioning and final acceptance.

### **3.0 Contract Documents & Priority**

- 3.01 Contract Documents: The terms and conditions of the contract shall consist solely of these RFQ conditions and the offer sheet.
- 3.02 Priority: Should there be any discrepancy between any term hereof and any term of the Offer Sheet, the terms of these RFQ shall prevail.

### **4.0 Scope of Supply - General**

- 4.01 The “Scope of Supply” shall be on the basis of Bidder’s responsibility, completely covering the obligations, responsibility and supplies provided in this Bid enquiry whether implicit or explicit.
- 4.02 Bidder shall have to quote for the Bill of quantities as listed in Section – IV of this RFQ.
- 4.03 Quantity variation and additional requirement if any shall be communicated to successful bidder during project execution.
- 4.04 All relevant drawings, data and instruction manuals.

## **5.0 Quality Assurance and Inspection**

- 5.01 Immediately on award of contract, the bidder shall prepare detailed quality assurance plan / test procedure identifying the various stages of manufacture, quality checks performed at each stage, raw material inspection and the Customer hold points. The document shall also furnish details of method of checking, inspection and acceptance standards / values and get the approval of Purchaser before proceeding with manufacturing. However, Purchaser shall have right to review the inspection reports, quality checks and results of suppliers in house inspection department which are not Customer hold points and the supplier shall comply with the remarks made by purchaser or his representative on such reviews with regards to further testing, rectification or rejection, etc.
- 5.02 Witness and Hold points are critical steps in manufacturing, inspection and testing where the supplier is obliged to notify the Purchaser in advance so that it may be witnessed by the Purchaser. Final inspection is a mandatory hold point. The supplier needs to proceed with the work past a hold point only after clearance by purchaser or a witness waiver letter from BRPL.
- 5.03 The performance of waiver of QA activity by Purchaser at any stage of manufacturing does not relieve the supplier of any obligation to perform in accordance with and meet all the requirements of the procurement documents and also all the codes & reference documents mentioned in the procurement document nor shall it preclude subsequent rejection by the purchaser.
- 5.04 On completion of manufacturing the items can be dispatched only after issue of shipping release by the Purchaser.
- 5.05 All testing and inspection shall be done without any extra cost.
- 5.06 Purchaser reserve the right to send any material out of the supply to any recognized laboratory for testing and the cost of testing shall be borne by the Purchaser. In case the material is found not in order with the technical requirement / specification, the charges along with any other penalty which may be levied is to be borne by the bidder. To avoid any complaint the supplier is advised to send his representative to the stores to see that the material sent for testing is being sealed in the presence of bidders representative.
- 5.07 Bidder has to sign quality agreement before supply of the material.

## **6.0 Packing, Packing List & Marking**

- 6.01 Packing: Supplier shall pack or shall cause to be packed all Commodities in boxes and containers and otherwise in such a manner as shall be reasonably suitable for shipment by road or rail to BRPL without undue risk of damage in transit.
- 6.02 Packing List: The contents of each package shall be itemized on a detailed list showing the exact weight and the extreme outside dimensions (length, width and height) of each container or box. One copy of the packing list shall be enclosed in each package delivered. There shall

also be enclosed in one package a master packing list identifying each individual package, which is part of the shipment. On any packaging where it is not feasible to place the packing list inside the container, all pertinent information shall be stenciled on the outside and will thus constitute a packing list.

### **7.01 Prices basis for supply of materials**

Bidders require quoting their prices on Landed Cost Basis and separate price for each item. For Supply to BRPL Delhi the price shall be inclusive of packing, forwarding, GST and freights. The above supply prices shall also include unloading at site stores. Transit and storage insurance will be arranged by BRPL; however bidder to furnish required details in advance for arranging the same by BRPL.

### **8.0 Variation in taxes, duties & levies:**

- 8.01 The total order value shall be adjusted on account of any variations in Statutory Levies imposed by Competent Authorities by way of fresh notification(s) within the stipulated delivery period only. However, in case of reduction in taxes, duties and levies, the benefits of the same shall be passed on to BUYER.
- 8.02 No other Taxes, Duties & Levies other than those specified above will be payable by BUYER except in case of new Levies, Taxes & Duties imposed by the Competent Authorities by way of fresh notification(s) subsequent to the issue of PURCHASE ORDER but within the stipulated delivery period.
- 8.03 Notwithstanding what is stated above, changes in Taxes, Duties & Levies shall apply only to that portion of PURCHASE ORDER not executed on the date of notification by Competent Authority. Further, changes in Taxes, Duties & Levies after due date of Delivery shall not affect PURCHASE ORDER Terms and Value.
- 8.04 PURCHASE ORDER value shall not be subject to any variation on account of variation in Exchange rate(s).

### **9.0 Taxes & Duties on raw materials & bought out components:**

- 9.01 Taxes & Duties on raw materials & bought out components are included in Order Value and are not subject to any escalation or variation for any reason whatsoever.
- 9.02 Taxes & Duties on raw materials & bought out components procured indigenously are included in Order Value and are not subject to any escalation or variation for any reason whatsoever.

### **10.0 Terms of payment and billing**

#### **10.01 For Supply of Equipments:**

- 100% payment shall be made within 45 days from the date of receipt of material at store/ site against submission of 10 % performance bank guarantee. (Refer 10.01)



10.02 Bidder to submit the following documents against dispatch of each consignment:

- i) Consignee copy of LR
- ii) Supplier detailed invoice showing commodity description, quantity, unit price, total price and basis of delivery.
- iii) Original certificate issued by BRPL confirming receipt of material at site and acceptance of the same.
- iv) Dispatch clearance / inspection report in original issued by the inspection authority
- v) Packing List.
- vi) Test Reports
- vii) Guarantee Certificate.
- viii) Insurance policy to be obtained by supplier

### **11.0 Price Validity**

11.01 All bids submitted shall remain valid, firm and subject to unconditional acceptance by BRPL Delhi for 120 days post bid-date. For awarded suppliers, the prices shall remain valid and firm till contract completion.

### **12.0 Performance Guarantee**

12.01 The successful Bidder shall furnish the Performance Bank Guarantee for an amount of 10% (Ten percent) of the Contract Price in accordance with the format provided. The Performance Bond shall be valid for a period of twenty four months (24) from the date of the commissioning or thirty months (30) from the date of receipt of material (last consignment) at site/stores whichever is earlier plus 3 months towards claim period. Upon submission of the performance security, the EMD shall be released.

Upon submission of the performance security, the EMD shall be released..

Thereafter bidder shall submit PBG on Purchase Order (PO) basis for 10% of the PO value (including GST). The Performance Bond shall be valid for a period of twenty four months (24) from the date of the commissioning or thirty months (30) from the date of receipt of material (last consignment of PO) at site/stores whichever is earlier plus 3 months towards claim period. It shall be in accordance with one of the following terms:

- a) Depositing pay order /demand draft of the relevant amount directly with BRPL at the address listed above or as otherwise specified by BRPL, either of which shall constitute the Performance Bond hereunder; or
- b) Bank guarantee from any nationalized bank in favour of BSES RAJDHANI POWER LTD (BRPL). The performance Bank guarantee shall be in the format as specified by BRPL.



**13.0 Forfeiture**

- 13.01 Each Performance Bond established under Clause 10.0 shall contain a statement that it shall be automatically and unconditionally forfeited without recourse and payable against the presentation by BRPL of this Performance Bond to the ICICI Bank at Mumbai, or to the relevant company/ correspondent bank referred to above, as the case may be, together with a simple statement that supplier has failed to comply with any term or condition set forth in the Contract.
- 13.02 Each Performance Bond established under will be automatically and unconditionally forfeited without recourse if BRPL in its sole discretion determines that supplier has failed to comply with any term or condition set forth in the contract.

**14.0 Release**

All Performance Bonds will be released without interest within seven (7) days from the last date up to which the Performance Bond has to be kept valid (as defined in Clause 10.0) except for the case set forth in Clause 21.0.

**15.0 Defects Liability Period**

- 15.01 The bidder to Guarantee the materials / items supplied against any defect of failure, which arise due to faulty materials, workmanship or design for the entire defects liability period. The Defect liability period shall be 60 months from the date of commissioning or 66 months from the date of delivery whichever is earlier. If during the defects liability period any materials / items are found to be defective, these shall be replaced or rectified by the bidder at his own cost within 30 days from the date of receipt of intimation

**16.0 Return, Replacement or Substitution.**

BRPL shall give Supplier notice of any defective Commodity promptly after becoming aware thereof. BRPL may in its discretion elect to return defective Commodities to Supplier for replacement, free of charge to BRPL, or may reject such Commodities and purchase the same or similar Commodities from any third party. In the latter case BRPL shall furnish proof to Supplier of the cost of such substitute purchase. In either case, all costs of any replacement, substitution, shipping, labour and other related expenses incurred in connection with the return and replacement or for the substitute purchase of a Commodity hereunder should be for the account of Supplier. BRPL may set off such costs against any amounts payable by BRPL to Supplier. Supplier shall reimburse BRPL for the amount, if any, by which the price of a substitute Commodity exceeds the price for such Commodity as quoted in the Bid.

**17.0 Effective Date of Commencement of Contract:**

- 17.01 The date of the issue of the Letter of Acceptance shall be treated as the effective date of the commencement of Contract.

**18.0 Time – The Essence of Contract**

18.01 The time and the date of completion of the “Supply” as stipulated in the Letter Of Acceptance / Purchase order issued to the Supplier shall be deemed to be the essence of the “Contract”. The Supply has to be completed not later than the aforesaid Schedule and date of completion of supply.

### **19.0 The Laws and Jurisdiction of Contract:**

19.01 The laws applicable to this Contract shall be the Laws in force in India.

19.02 All disputes arising in connection with the present Contract shall be settled amicably by mutual consultation failing which shall be finally settled as per the rules of Arbitration and Conciliation Act, 1996 at the discretion of Purchaser. The venue of arbitration shall be at Mumbai in India

### **20.0 Events of Default**

20.01 Events of Default. Each of the following events or occurrences shall constitute an event of default ("Event of Default") under the Contract:

- a) Supplier fails or refuses to pay any amounts due under the Contract;
- b) Supplier fails or refuses to deliver Commodities conforming to this RFQ/ specifications, or fails to deliver Commodities within the period specified in P.O. or any extension thereof
- c) Supplier becomes insolvent or unable to pay its debts when due, or commits any act of bankruptcy, such as filing any petition in any bankruptcy, winding-up or reorganization proceeding, or acknowledges in writing its insolvency or inability to pay its debts; or the Supplier's creditors file any petition relating to bankruptcy of Supplier;
- d) Supplier otherwise fails or refuses to perform or observe any term or condition of the Contract and such failure is not remediable or, if remediable, continues for a period of 30 days after receipt by the Supplier of notice of such failure from BRPL.

### **21.0 Consequences of Default.**

- a) If an Event of Default shall occur and be continuing, BRPL may forthwith terminate the Contract by written notice.
- b) In the event of an Event of Default, BRPL may, without prejudice to any other right granted to it by law, or the Contract, take any or all of the following actions;
  - i) present for payment to the relevant bank the Performance Bond;
  - ii) purchase the same or similar Commodities from any third party; and/or
  - iii) recover any losses and/or additional expenses BRPL may incur as a result of Supplier's default.

### **22.0 Penalty for Delay**

- 22.01 If supply of items / equipments is delayed beyond the supply schedule as stipulated in purchase order then the Supplier shall be liable to pay to the Purchaser as penalty for delay, a sum of 1% (one percent) of the contract price for every week delay or part thereof for undelivered quantities.
- 22.02 The total amount of penalty for delay under the contract will be subject to a maximum of ten percent (10%) of the contract price for undelivered quantities.
- 22.03 The Purchaser may, without prejudice to any method of recovery, deduct the amount for such damages from any amount due or which may become due to the Supplier or from the Performance Bond or file a claim against the supplier.

### **23.0 Force Majeure**

#### **23.01 General**

An "Event of Force Majeure" shall mean any event or circumstance not within the reasonable control directly or indirectly, of the Party affected, but only if and to the extent that:

- i) Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected party's ability to perform its obligations under this Contract and to mitigate the consequences thereof.
- ii) For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.
- iii) Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract.
- iv) Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken in order to comply with above clause.

23.02 Specific Events of Force Majeure subject to the provisions of above clause, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements:

23.03 Mitigation of Events of Force Majeure Each Party shall:

- i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure including recourse to alternate methods of satisfying its obligations under the Contract;
- ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and

iii) Keep the other Party informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

23.04 Burden of Proof In the event that the Parties are unable in good faith to agree that a Force Majeure event has occurred to an affected party, the parties shall resolve their dispute in accordance with the provisions of this Agreement. The burden of proof as to whether or not a force majeure event has occurred shall be upon the party claiming that the force majeure event has occurred and that it is the affected party.

23.05 Termination for Certain Events of Force Majeure. If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 3 months, the Parties shall promptly discuss in good faith how to proceed with a view to reaching a solution on mutually agreed basis. If a solution on mutually agreed basis cannot be arrived at within a period of 30 days after the expiry of the period of three months, the Contract shall be terminated after the said period of 30 days and neither Party shall be liable to the other for any consequences arising on account of such termination.

23.06 Limitation of Force Majeure event. The Supplier shall not be relieved of any obligation under the Contract solely because cost of performance is increased, whether as a consequence of adverse economic consequences or otherwise.

23.07 Extension of Contract Period due to Force Majeure event The Contract period may be extended by mutual agreement of Parties by way of an adjustment on account of any period during which an obligation of either Party is suspended due to a Force Majeure event.

23.08 Effect of Events of Force Majeure. Except as otherwise provided herein or may further be agreed between the Parties, either Party shall be excused from performance and neither Party shall be construed to be in default in respect of any obligations hereunder, for so long as failure to perform such obligations shall be due to and event of Force Majeure."

#### **24.0 Transfer And Sub-Letting**

24.01 The Supplier shall not sublet, transfer, assign or otherwise part with the Contract or any part thereof, either directly or indirectly, without prior written permission of the Purchaser.

#### **25.0 Recoveries**

25.01 Whenever under this contract any money is recoverable from and payable by the bidder, the purchaser shall be entitled to recover such sum by appropriating in part or in whole by detecting any sum due to which any time thereafter may become due from the supplier in this or any other contract. Should the sum be not sufficient to cover the full amount recoverable the bidder shall pay to the purchaser on demand the remaining balance.

#### **26.0 Waiver**

26.01 Failure to enforce any condition herein contained shall not operate as a waiver of the condition itself or any subsequent breach thereof.

**27.0 Indemnification**

27.01 Notwithstanding contrary to anything contained in this RFQ, Supplier shall at his costs and risks make good any loss or damage to the property of the Purchaser and/or the other Supplier engaged by the Purchaser and/or the employees of the Purchaser and/or employees of the other Supplier engaged by the Purchaser whatsoever arising out of the negligence of the Supplier while performing the obligations under this contract.

**SECTION – IV: QUANTITY AND DELIVERY REQUIREMENT**

Sl. No.	Item Description	Specification	Requirement	Delivery Schedule	Location
BRPL,DELHI					
1	Procurement of Various Ratings of Dry Type DT	SECTION V	57 Nos	In lots as per PO /BRPL requirement.	Stores BRPL Delhi
TOTAL					

**Annexure –I**

**BID FORM**

**Supply of Various ratings of Dry Type Distribution Transformers**

To

Head of the Department Contracts & Materials BSES Rajdhani Power Ltd BSES Bhawan, Nehru Place New Delhi– 110019

Sir,

We understand that BRPL is desirous of procuring “Dry Type Distribution Transformer” in its licensed distribution network area in Delhi. Having examined the Bidding Documents for the above named works, we the undersigned, offer to deliver the goods in full conformity with the Drawings, Conditions of Contract and specifications for the sum of AS PER PRICE BID ENCLOSED or such other sums as may be determined in accordance with the terms and conditions of the contract .The above amounts are in accordance with the Price Schedules attached herewith and are made part of this bid.

If our Bid is accepted, we undertake to deliver the entire goods as per delivery schedule given by you from the date of award of purchase order/letter of intent.

If our Bid is accepted, we will furnish a performance bank guarantee for an amount of 10% (Ten) percent of the total contract value for due performance of the Contract in accordance with the General Conditions of Contract.

We agree to abide by this Bid for a period of 120 days from the date fixed for bid opening under clause 9.0 of GCC, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

We declare that we have studied the provision of Indian Income Tax Law and other Indian Laws for supply of equipments/materials and the prices have been quoted accordingly.

Unless and until Letter of Intent is issued, this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest, or any bid you may receive.

There is provision for Resolution of Disputes under this Contract, in accordance with the Laws and Jurisdiction of Contract, Clause 19 of GCC .

Dated this.....day of.....20.....

Signature..... In the capacity of.....

.....duly authorized to sign for and on behalf of (IN BLOCK CAPITALS).....

**Annexure -II**

**FORMAT FOR EMD BANK GUARANTEE**

*(To be issued in a Non Judicial Stamp Paper of Rs.50/-purchased in the name of the bank)*

Whereas [name of the Bidder] (hereinafter called the “Bidder”) has submitted its bid dated [date of submission of bid] for the supply of [name and/or description of the goods] (hereafter called “the Bid”). KNOW ALL PEOPLE by these presents that WE [name of bank]at[Branch Name and address],having our registered office at[address of the registered office of the bank](herein after called —“the Bank”),are bound unto BSES Rajdhani Power Ltd., with its Corporate Office at BSES Bhawan Nehru Place, New Delhi -110019, (herein after called —the “Purchaser”) in the sum of \_\_\_\_\_ for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_ day of \_\_ 20\_\_.

THE CONDITIONS of this obligation are:

If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or

If the Bidder, having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity:

fails or refuses to execute the Contract Form ,if required; or  
fails or refuses to furnish the performance security, In accordance with the Instructions to Bidders/GENERAL CONDITIONS.;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that is its demand the purchaser will note that amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the bank)

Signature of the witness

**Annexure-III**

**PRICE FORMAT**

ENQUIRY NO & DATE: NIT: CMC/BR/23-24/RB/PR/RJ/1100

**PRICE SCHEDULE**

ITEM DESCRIPTION	QTY AS PER RFQ	UOM	EX-WORKS RATE/UNIT	CGST (%)	CGST AMOUNT	SGST (%)	SGST AMOUNT	IGST (%)	IGST AMOUNT	FREIGHT	LANDED RATE/UNIT	TOTAL LANDED COST (INR)
TRAFO,DISTR,DRY ;250KVA;11KV;433 V	05	Nos										
TRAFO,DISTR,DRY ;400KVA;11KV;433 V	05	Nos										
TRAFO,DISTR,DRY ;630KVA	29	Nos										
TRAFO,DISTR,DRY ;1000KVA;11KV;OU TDR TYP	16	Nos										
TRAFO,DISTR,DRY ;2000KVA;11KV;OU TDR TYP	02	Nos										

Note: 1.Prices shall be Firm

2.The prices received without break up of ex works, Freight, GST are liable for rejection

3. Pls. Indicate the exact percentage of taxes in figures and words.

4. If there is a discrepancy between the unit price and the total price THE UNIT PRICE shall prevail.

5. Bidders are requested to attach the covering letter head alongwith the price bid indicating reference no and date.

Bidders seal & signature



**Annexure – IV**

Enquiry No. : CMC/BR/24-25/RB/PR/RJ/1206

**COMMERCIAL TERMS AND CONDITIONS**

S/NO	ITEM DESCRIPTION	AS PER BRPL	CONFIRMATION OF BIDDER
1	Validity of prices	120 days from date of offer	
2	Price basis	Price Variation, FOR Delhi store basis, Prices shall be inclusive of all taxes & duties, freight upto Delhi stores. Unloading at stores be in vendor's scope Transit insurance in BRPL scope	
3	Payment Terms	100% payment within 45 days after receipt of material at stores	
4	Delivery schedule	As per our requirement	
5	Defect Liability Period	The bidder to Guarantee the materials / items supplied against any defect of failure, which arise due to faulty materials, workmanship or design for the entire defects liability period. The Defect liability period shall be 60 months from the date of commissioning or 66 months from the date of delivery whichever is earlier. If during the defects liability period any materials / items are found to be defective, these shall be replaced or rectified by the bidder at his own cost within 30 days from the date of receipt of intimation.	
6	Penalty for delay	1% per week of delay of undelivered units or part thereof subject to maximum of 10% of total PO value of undelivered units	
7	Performance Bank Guarantee	10% of total PO value for 24 months after commissioning or 30 months from date of supply, whichever is earlier plus 3 months towards claim period	

ENQUIRY NO: CMC/BR/24-25/RB/PR/RJ/1206

**NO DEVIATION SHEET**

SL NO	SL NO OF TECHNICAL SPECIFICATION	DEVIATION, IF ANY

**SIGNATURE & SEAL OF BIDDER**

**NAME OF BIDDER**

<b>Sl No</b>	<b>Item Description</b>	<b>YES/NO</b>
<b>1</b>	<b>INDEX</b>	<b>YES/NO</b>
<b>2</b>	<b>COVERING LETTER</b>	<b>YES/NO</b>
<b>3</b>	<b>BID FORM (UNPRICED) DULY SIGNED</b>	<b>YES/NO</b>
<b>4</b>	<b>BILL OF MATERIAL (UNPRICED)</b>	<b>YES/NO</b>
<b>5</b>	<b>TECHNICAL BID</b>	<b>YES/NO</b>
<b>6</b>	<b>ACCEPTANCE TO COMMERCIAL TERMS &amp; CONDITIONS</b>	<b>YES/NO</b>
<b>7</b>	<b>FINANCIAL BIDS (IN SEALED ENVELOPE)</b>	<b>YES/NO</b>
<b>8</b>	<b>EMD IN PRESCRIBED FORMAT</b>	<b>YES/NO</b>
<b>9</b>	<b>DEMAND DRAFT OF RS 1180/- DRAWN IN FAVOUR OF</b>	<b>BSES RAJDHANI POWER LTD</b>
<b>10</b>	<b>POWER OF ATTORNEY/ AUTHORISATION LETTER FOR SIGNING THE BID</b>	<b>YES/NO</b>

## **FORM FOR PARTICIPATION IN REVERSE AUCTION EVENT**

(To be signed & stamped by the bidder along-with bid)

BSES Rajdhani Power Ltd (BRPL) intends to use reverse auction through SAP-SRM tool as an integral part of entire tendering process. All bidders who are techno-commercially qualified on the basis of tender requirements shall participate in the reverse auction.

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

1. In case of bidding through Internet medium, bidders are advised to ensure availability of all associated infrastructure as required to participate in the reverse auction event. Inability to bid due to telephone glitch, internet response issues, software & hardware hangs/failures, power failures or any other reason shall not be the responsibility of BRPL.
2. In case bidder fails to participate in the reverse auction event due to any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid submitted by them as a part of tender shall be considered as bidder's Final .No Regret offer.Any off-line price bids received from a bidder in lieu of non-participation in the reverse auction event shall be rejected by BRPL.
3. The bidder is advised to understand the auto bid process t safeguard themselves against any possibility of non-participation in the reverse auction event.
4. The bidder shall be prepared with competitive price quotes during the day of reverse auction event.
5. The prices quoted by bidder in reverse auction event shall be on FOR Landed cost BRPL Store/site basis inclusive of all relevant taxes, duties, levies, transportation charges etc.
6. The prices submitted by the bidder during reverse auction event shall be binding on the bidder.
7. The bidder agrees to non-disclosure of trade information regarding bid details e.g.purchase, identity, bid process/technology, bid documentation etc.
8. BRPL will make every effort to make the bid process transparent. However award decision of BRPL will be final and binding on the bidder.
9. The prices submitted during reverse auction event shall be binding on the bidder.
10. No request for Time extension of the reverse auction event shall be considered by BRPL.

**Seal & Signature of Bidder**

**SECTION – V**

**TECHNICAL SPECIFICATIONS (TS)**




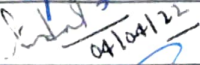
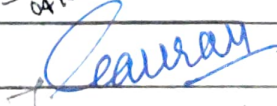

**VARIOUS RATINGS OF DRY TYPE DISTRIBUTION  
TRANSFORMER**

**CMC/BR/24-25/RB/PR/RJ/1206**

**The detailed technical specifications of Dry Type Distribution  
Transformer**



Technical Specification of  
Dry Type Distribution Transformer  
Specification no – BSES-TS-13-CRDT-R0

Rev:	0	
Date:	04 Apr 2022	
Prepared by	Abhishek Harsh	
	Vani Sood	 04/04/22
Reviewed by	Srinivas Gopu	
	Amit Tomar	 04/04/22
Approved by	Gaurav Sharma	
	K. Sheshadri	 04/04/22

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BSES-TS-13-CRDT-R0

TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER

Record of Revision

SI No.	Revision No	Item/ Clause no:	Nature of Change	Approved by
1				
2				
3				
4				
5				
6				
7				
8				



**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER****1.0 Scope of supply**

For scope of supply, refer annexure – A

**2.0 Codes & standards**

The Dry Type distribution transformers shall be designed, manufactured & tested in accordance with the following IEC & Indian standards

IS 2026- part 11/IEC 60076-11	Dry type Transformer
IS 11171	Dry Type Power Transformer
IS 2026	Power Transformers
IS 1271/IEC60085	Thermal Evaluation & Classification Of Electrical Insulation
IS/ IEC 60137	Bushing for Alternating voltage above 1000V
IS 10028	Code Of Practice For Installation And Maintenance of Transformers
IS 5	Ready Mixed Paint, Air Drying, Red-Oxide Zinc Chrome, Priming
IS 2932	Enamel, Synthetic, Exterior : A)Undercoating B) Finishing
IS 3347	Dimensions For Porcelain Transformer Bushings (For Use In Very Heavily Polluted Atmosphere)
IS 2026 part 12/IEC 60076-12	Loading Guide for dry type Power Transformers
IEC 60076	Power Transformers
IEC 60616	Terminal and Tapping Markings for Power Transformers
IEC 60726	Dry-Type Power Transformers.
IS/IECIEC 60529	Degrees of Protection Provided by Enclosures (IP Code).
Publication no. 317	CBIP Manual – Manual on transformers
	ECBC guideline-Energy conservation building guidelines

In the event of direct conflict between various order documents, the precedence of authority of documents shall be as follows:

- i. Guaranteed Technical Particulars (GTP)
- ii. This Specification
- iii Referenced Standards
- iv Approved Vendor drawings
- v. Other documents

**3.0 Major Design Criteria & Parameters of the Transformer**

3.1	Location of equipment	Generally Outdoor but may be located indoor also with poor ventilation
3.2	Reference design ambient temperature	50 deg C
3.3	Type	Dry, core type, step down
3.4	Type of cooling	AN
3.5	Reference Standard	IS: 2026 part -11, 11171
3.6	No. of phases	3

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

3.7	No. of windings per phase	2
3.8	Rated frequency ( Hz )	50 Hz
3.9	Highest system voltage HV side	12 KV
3.10	Highest system voltage LV side	460 V
3.11	Lightning Impulse withstand voltage	
3.11.1	For nominal system voltage of 11 kV	75 kV peak
3.12	Power Frequency Withstand Voltage	
3.12.1	For nominal system voltage of 11 kV	28 kV rms
3.12.2	For nominal system voltage of 415 V	3 kV rms
3.13	Major Design criteria	
3.13.1	Voltage variation on supply side	+ / - 10 %
3.13.2	Frequency variation on supply side	+/- 5 %
3.13.3	Transient condition	- 20 % or + 10 % combined variation of voltage and frequency
3.13.4	Service Condition	The transformer enclosure is to be designed for outdoor location with service condition as specified, but its full rating shall be available if located indoor in poorly ventilated atmosphere
3.13.5	Insulation level	
3.13.6	Short Circuit withstand level	As per rating & impedance of transformer.
3.13.7	Overload capability	As per IS 2026-12/IEC 60076 Part 12
3.13.8	Noise level	Shall not exceed limits as per NEMA TR-1 with all accessories running measured as per IEC 551 / NEMA standard
3.13.9	Radio Influence Voltage	Maximum 250 microvolt
3.13.10	Harmonic currents	Transformer to be designed for suppression of 3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup> harmonic voltages and high frequency disturbances.
3.13.11	Partial Discharges	10 Pico C (max)
3.13.12	Parallel operation	Shall be designed to operate in parallel with existing transformer. Details of existing transformers shall be forwarded to the bidder on request.
3.14	Major Parameters	
3.14.1	Rating in KVA	250/400/630/750/1000/1600/2000/2500
3.14.2	Voltage Ratio	11000/415 Volts
3.14.3	Vector Group	Dyn11
3.14.4	Percentage Impedance at <b>130 deg C</b>	
3.14.4.1	250 KVA	5 % with IS tolerance

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

3.14.4.2	400 KVA	5 % with IS tolerance
3.14.4.3	630 KVA	5 % with IS tolerance
3.14.4.4	750 KVA	5 % with IS tolerance
3.14.4.5	1000 KVA	5 % with IS tolerance
3.14.4.6	1600 KVA	6 % with IS tolerance
3.14.4.7	2000 KVA	6 % with IS tolerance
3.14.4.8	2500 KVA	6 % with IS tolerance
3.14.5	No Load Losses, KW	
3.14.5.1	250 KVA	0.7 KW
3.14.5.2	400 KVA	0.9 KW
3.14.5.3	630 KVA	1.2 KW
3.14.5.4	750 KVA	1.4 KW
3.14.5.5	1000 KVA	1.78 KW
3.14.5.6	1600 KVA	3.2 KW
3.14.5.7	2000 KVA	3.56 KW
3.14.5.8	2500 KVA	4.05 KW
3.14.6	Max. full load losses at <b>130 deg. C</b> , kW	
3.14.6.1	250 KVA	2.2 KW
3.14.6.2	400 KVA	3.4 KW
3.14.6.3	630 KVA	5.4 KW
3.14.6.4	750 KVA	6.0 KW
3.14.6.5	1000 KVA	7.5 KW
3.14.6.6	1600 KVA	12 KW
3.14.6.7	2000 KVA	15.25 KW
3.14.6.8	2500 KVA	17.0 KW
3.14.7	Winding Temperature Rise above ambient deg C	<b>90 deg C</b>
3.14.8	Flux Density	1.73 T max at 110% rated voltage
3.14.9	Tapping on HV winding	Off Circuit taps on HV winding , + / - 10% in steps of 2.5% , change of taps by link
3.14.10	Design Clearance phase to phase (between bare conductor of bushings)	
3.14.10.1	For nominal system voltage of 11KV	180 mm min.
3.14.10.2	For nominal system voltage of 415 V	25 mm min.
3.14.11	Design clearance phase to earth	
3.14.11.1	For nominal system voltage of 11KV	120 mm min.
3.14.11.2	For nominal system voltage of 415 V	25 mm min.
3.14.12	System Fault Level , HV side	350 MVA
3.14.13	System Fault Level , LV side	35 MVA
3.15	System Earthing	
3.15.1	HV	Not Required

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

3.15.2	LV	Solidly earthed
3.16	Fire Protection Class	Class F1 shall be required
3.17	Climate Class	C2 shall be required
3.18	Environment Class	E2 shall be required
3.19	IP class requirement	IP 34
3.20	Warranty Period	66 months from date of supply & 60 months from date of commissioning whichever is earlier.

**4.0 Construction & Design**

4.1	Enclosure (Housing)	
4.1.1	Material	CRCA sheet steel
4.1.2	Sheet thickness	
4.1.2.1	Side, doors, covers	2 mm minimum
4.1.2.2	Top & Bottom sheet	3 mm minimum
4.1.2.3	Frames	3 mm minimum
4.1.3	Perforation on bottom sheet	As per manufacturers standard
4.1.4	Finish of perforated bottom sheet if Provided	Hot dipped Galvanized
4.1.5	Fixing of perforated bottom sheet if Provided	By nut bolt arrangement with the frame
4.1.6	Canopy at top	Required minimum 3 mm thick with slope to prevent water retention. Slope of canopy shall be kept away from cable termination side.
4.6.1	Essential provision for canopy	Canopy shall be fixed on load bearing member and shall be removable from inside of the enclosure only. Canopy shall be provided with lifting lugs.
4.1.7	Degree of protection	IP 34, Wire mesh (6 x 6 mm) shall have powder coated water blocking plates behind the wire mesh fixed on structure, plates behind wire mesh on top side of the enclosure shall have pipe routed suitably up to bottom of enclosure to drain the water accumulated in the plate, necessary slope to facilitate draining to be provided in both top and bottom water blocking plate
4.1.8	Design of door	
4.1.8.1	Minimum no of doors on HV/ LV side	Minimum 3 on each of HV / LV side
4.1.8.2	Hinges for doors of a) HV & LV side, b) for CT box c) for Winding temperature scanner box	i) Antitheft design ( to make the door Non-removable type) ii) Minimum three hinges per door from top to bottom, Door suitable to be opened from outside iii) Door shall be earthed by flexible PVC insulated multi stranded copper wire of minimum 2.5 sqmm size.
4.1.8.3	Padlock Facility	Required at each HV /LV side door, CT box and WTI scanner box
4.1.8.4	Fixing of doors with the	By M6 size stainless steel Allen key screws.

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

	frame (applicable for CT box and Winding temperature scanner box too)	
4.1.8.5	Accessories	Welded Door handle , Danger plate on HV and LV side doors, caution plate for tap links for HT doors, Door limit switch on both HV and LV side doors to be wired up to WTI box terminal for tripping the transformer in case door is opened with the transformer energized, Phase marking plates on HV and LV doors
4.1.9	Design of covers on side other than HV /LV side	
4.1.9.1	Minimum no of covers on each side	Minimum 3 mm on each side
4.1.9.2	Hinges	None
4.1.9.3	Fixing of covers with the frame	With M6 size stainless steel Allen key screws and locking pin from inside so that the covers can be removed from inside only accessing the allen screw after opening door on HV or LV side only.
4.1.9.4	Accessories	Welded cover handle to be provided for handling while removing the cover minimum two nos per cover Covers shall be earthed by flexible PVC insulated multistranded copper wire of minimum 2.5 sqmm size.
4.2	Core	
4.2.1	Material	High grade , non ageing, low loss, high permeability, grain oriented, cold rolled silicon steel lamination. Core shall be low loss of 1Watt/kG (max)
4.2.2	Grade	Premium grade minimum M3 or better
4.2.3	Lamination Thickness with insulation	0.23 mm (max.)
4.2.4	Construction	The core shall be stack / wound-type annealed steel lamination having low loss and good grain properties, coated with high temperature insulation, bolted together and to the frames firmly to prevent vibration or noise. The core shall be properly stress relieved by annealing under inert atmosphere. The complete design of core must ensure permanency of the core losses with continuous working of the transformers. Vibration dampening pads provided to isolate the core and coil assembly from the base structure. The magnetic flux density is kept below the saturation point giving the better stability of the transformer in the long run.
4.2.5	Maximum Flux Density at 10 % over excitation / over fluxing	1.73 Tesla minimum allowed
4.2.6	Core Design Features	i) All steel sections used for supporting the core

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

		shall be thoroughly sand blasted after cutting , drilling, welding ii) Provision of lifting lugs for core coil assembly
4.3	Winding	
4.3.1	Material	Electrolytic Aluminium
4.3.1.1	Type	For HV shall be layer type & LV shall be with foil type.
4.3.2	Maximum current density allowed	1.5 Amp per sqmm (Max.)
4.3.3	Winding insulating material	Conductor insulation shall be class H where overall insulation class must be Class F (min), free from compounds liable to ooze out, shrink or collapse. Uniform insulation shall be applied to the windings and overall winding shall be cast resin.
4.3.4	Tappings	Off Circuit taps on HV winding , + / - 10 % in steps of 2.5 % , change of taps by link
4.3.4.1	Essential provisions for tap link	Shall be shrouded with cover made from insulating material. To prevent deposit of dust. Tap link inspection transparent window shall not be provided on the HV side door
4.3.5	Design Features	i) Stacks of winding to receive adequate shrinkage treatment ii) Connections braced to withstand shock during transport, switching, short circuit, or other transients. iii) Minimum out of balance force in the transformer winding at all voltage ratios. iv) Conductor width on edge exceeding six times its thickness v) The termination bus-bar coming out from winding shall be aluminium vi) Transposed at sufficient intervals. vii) Threaded connection with locking facility. viii) Winding leads rigidly supported , using guide tubes if practicable ix) Provision of taps as indicated in the technical particulars
4.3.6	Essential provision of HV and LV winding leads	Phase marking required near termination on both HV and LV side. Phase colour coding required on insulating sleeves on both HV and LV side. Phase sequence 1U, 1V, 1W from left to right looking inside from the HV side door. Phase sequence 2n, 2u, 2v, 2w from right to left looking inside from LV side door. Adequate HV termination clearance. Provision of check nut in all HV and LV winding lead connection.
4.4	Vibration Isolator	Vibration isolation pads shall be installed between core and coil assembly and enclosure base assembly to prevent the transmission of structure borne vibrations.
4.5	Bushing/Support Insulator/ Terminations	

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

4.5.1	Type of HV and LV Bushings, support insulators	Epoxy Resin Cast
4.5.2	Minimum creepage of bushing & support insulators	31mm/KV
4.5.3	Arcing Horns	Not Required
4.5.4	Termination on HV side	By cable within main enclosure
4.5.4.1	HV side cable size	11KV(E) grade, A2XCEWY 3CX150 sqmm
4.5.4.2	HV side cable entry	At bottom of enclosure through detachable gland plate
4.5.4.3	Gland plate material	Hot dipped Galvanized Steel 3 mm thick
4.5.4.4	Gland	Nickel plated brass double compression weatherproof cable gland
4.5.4.5	Cable Lugs	
4.5.4.6	HV side cable terminating busbar	Aluminium with size of 50X10 mm
4.5.4.7	Support of HT cable with enclosure	By MS flat of minimum size 50X10 mm
4.5.5	Termination on LV side	By cable with main enclosure/ By Bus Duct as per enquiry. In case of bus duct termination, there shall be separate box on LV side. The same box shall be suitable for cable termination & for bus duct arrangement also i.e. bus duct flange on the top & gland plate at the bottom/ as per enquiry.
4.5.5.1	LV side cable size	LV cable size, 650/1100 V grade, A2XY cable single core 630 sqmm unarmoured (appx. cable dia. is 40 mm)
4.5.5.2	LV side cable entry	At bottom of enclosure through detachable gland plate.
4.5.5.3	No. of cables on LV side	
4.5.5.3.1	250 KVA	2 runs per phase + 1 run in Neutral
4.5.5.3.2	400 KVA	2 runs per phase + 2 runs in Neutral
4.5.5.3.3	630 KVA	3 runs per phase + 2 runs in Neutral
4.5.5.3.4	750 KVA	3 runs per phase + 2 runs in Neutral
4.5.5.3.5	1000 KVA	4 runs per phase + 2 runs in Neutral
4.5.5.3.6	1600 KVA	6 runs per phase + 3 runs in Neutral
4.5.5.3.7	2000 KVA	7 runs per phase + 4 runs in Neutral
4.5.5.3.8	2500 KVA	9 runs per phase + 5 runs in Neutral
4.5.5.3	Gland plate material & type	Aluminium of 5 mm thick and gland plate should be single piece with "Knock Out" holes of dia. 45 mm.
4.5.5.4	Gland	Nickel plated brass double compression weatherproof cable gland
4.5.5.5	Cable Lugs	Shall be double hole lug with lug dia. Of 31 mm
4.5.5.6	LV side cable terminating busbar	Aluminium of size as follows
4.5.5.6.1	250 KVA	
	Phase	2 nos 100 x 10 mm
	Neutral	2 nos 100 x 10 mm
4.5.5.6.2	400 KVA	
	Phase	2 nos 100 x 10 mm

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

	Neutral	2 nos 100 x 10 mm
4.5.5.6.3	630 KVA	
	Phase	2 nos 100 x 10 mm
	Neutral	2 nos 100 x 10 mm
4.5.5.6.4	750 KVA	
	Phase	2 nos 100 x 10 mm
	Neutral	2 nos 100 x 10 mm
4.5.5.6.5	1000 KVA	
	Phase	2 nos 100 x 10 mm
	Neutral	2 nos 100 x 10 mm
4.5.5.6.6	1600 KVA	
	Phase	2 nos 120 x 12 mm
	Neutral	2 nos 120 x 12 mm
4.5.5.6.7	2000 KVA	
	Phase	2 nos 130 x 12 mm
	Neutral	2 nos 130 x 12 mm
4.5.5.6.8	2500 KVA	
	Phase	2 nos 160 x 12 mm
	Neutral	2 nos 160 x 12 mm
4.5.5.7	Support of LV cable with enclosure	By Aluminium (non magnetic) clamp size 50 x 3 mm fixed on MS bracket of size 50 x 10 mm supported from enclosure wall inside
4.5.5.8	Maximum Overall Dimension Acceptable ( length x width x height),mm x mm x mm	
	250 KVA	1600 x 1650 x 1850
	400 kVA	1700 x 1750 x 1850
	630 kVA	1900 x 1750 x 1850
	1000 kVA	2200 x 2100 x 2400
	1600 kVA	2460 x 2200 x 2600
	2000 KVA	2750 x 2250 x 2600
	2500 KVA	3000 x 2300 x 2650
4.5.5.9	Short Circuit withstand Capacity of the transformer	
4.5.5.9.1	Three phase dead short circuit at secondary terminal with rated voltage maintained on the other side	As per IEC 60076-5
4.5.6	Partial Discharge	Transformer to be free from partial discharge
4.5.7	Tappings	Off Circuit taps on HV winding , + / - 10 % in steps of 2.5 % , change of taps by link
4.5.8	Tap link current rating, Amp	
	250/400 kVA	60 A
	630/ 750 kVA	100 A
	1000/1500/2000 kVA	125 A
	2500 kVA	150 A
4.6	Current Transformer	



**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

4.6.1	Mounting	On LV side terminal busbars on all three phases with the help of fibre glass mounting plate
4.6.2	Maintenance requirements	Replacement should be possible without dismantling LV side support insulators
4.6.3	Accuracy Class	0.5
4.6.4	Burden	15 VA
4.6.5	Type	Resin Cast Ring type suitable for outdoor use
4.6.6	CT Ratio	
4.6.6.1	250 KVA	
4.6.6.2	400 KVA	600/5
4.6.6.3	630 KVA	1000/5
4.6.6.4	750 KVA	1200/5
4.6.6.5	1000 KVA	1500/5
4.6.6.6	1600 KVA	2500/5
4.6.6.7	2000 KVA	3000/5
4.6.6.8	2500 KVA	3500/5
4.6.7	CT Terminal Box	
4.6.7.1	Size	650 mm height x 450 mm width x 275 mm depth.
4.6.7.2	Fixing of instruments/meters within box	On slotted channel 40 x 12 mm size, channel fixed on vertical slotted angle 40 x 40 mm size at two ends
4.6.7.3	No of horizontal channels to be provided	Four
4.6.7.4	Fixing of terminals within box	On horizontal slotted channel with the help of C channel available with the terminals
4.6.7.5	Location	Within enclosure frame such that box door comes in line with enclosure surface
4.6.7.6	Box Door design	
4.6.7.7	Terminal strip	Nylon 66 material, minimum 4 sq mm, screw type for control wiring and potential circuit.
4.6.7.8	Cables & Wires	PVC insulated, extruded PVC inner sheathed, armoured, extruded PVC outer sheathed 1100 V grade control cable as per latest edition of IS 1554 part 1 minimum 2.5 sqmm for signals and 4 sqmm for CT with multistrand copper conductor & PVC insulated multistrand flexible copper wires of minimum 2.5 sqmm size, 1100 V grade as per latest edition of relevant IS
4.6.7.9	Cable Glands	Nickel plated brass double compression weatherproof cable gland
4.6.7.10	Lugs on wires	Tinned copper preinsulated Pin, Ring, Fork type as applicable
4.6.7.11	Potential signal in CT box	Tapped from main LV busbars
4.6.7.12	Hinges of CT terminal Box & WTI scanner box	Shall be of Anti theft type & shall not be visible from outside.
4.6.7.13	Essential provision	<ul style="list-style-type: none"> <li>i) Wiring diagram to be fixed on the back of door along with CT spec.</li> <li>ii) Wiring diagram, name plate / danger plate etc shall be made from Aluminium with black engraving &amp; shall be fitted by riveting at</li> </ul>

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

		appropriate place
4.7	Hardware	
4.7.1	External	Stainless Steel only
4.7.2	Internal	Cadmium plated except special hardware for frame parts and core assembly as per manufacturer's design
4.8	Gasket	Nitrile Cork based gasket across all doors & covers
4.9	Control cable specification (to be used by the vendor)	PVC insulated, extruded PVC inner sheathed, armoured, extruded PVC outer sheathed 1100 V grade control cable as per latest edition of IS 1554 part 1 minimum 2.5 sqmm for signals and 4 sqmm for CT with multistrand copper conductor. Control cables shall be of FRLS only.
4.10	Specification of wires to be used inside CT box , WTI box etc.	PVC insulated multistrand flexible copper wires of minimum 2.5 sqmm size, 1100 V grade as per latest edition of relevant IS
4.11	Terminal Blocks to be used by the vendor	Nylon 66 material, minimum 4 sq mm,screw type for control wiring and potential circuit.
4.11.1	Essential provision for CT terminals	Sliding link type disconnecting terminal block screwdriver operated stud type with facility for CT terminal shorting material of housing melamine/ Nylon66
4.12	Cable glands to be used by the vendor	Nickel plated brass double compression weatherproof cable gland
4.13	Cable lugs to be used by the vendor	
4.13.1	For power cables	Long barrel medium duty Aluminium lug with knurling on inside surface
4.13.2	For control cables	Tinned copper pre insulated Pin, Ring, Fork type as applicable
4.14	Painting of transformer, CT box, WTI box	
4.14.1	Surface preparation	By 7 tank pretreatment process or shot blasting method
4.14.2	Finish on internal surfaces	Powder coated, Epoxy polyester base, grade A, shade – White, Uniform thickness of 80 microns minimum.
4.14.3	Finish on external surface	Powder coated, Epoxy polyester base, grade A, shade – 7032, Uniform thickness of 120 microns minimum with 01 coat of primer & 02 coats of paint.
4.14.4	Finish shade on external surfaces	RAL 7032 Siemens Grey
4.14.5	Painting on welding	All welding to be applied zinc rich paint before final painting
4.15	Labels & Name Plate	All name plate, wiring scheme plate, R&D plate, caution plate, danger plate, phase identification plate, identification plate shall be aluminium with black engraving Sticker of any form is not acceptable.
4.15.1	Fixing of name plate	By riveting only at appropriate location
4.16	Insulating support material	Backelite shall not be used as a base plate for

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	for base plate for mounting components	mounting any components, insulating material non hygroscopic insulating material like FRP shall be used
4.17	Hazard sticker/plate	As per IS standard
4.18.0	Surge Arrester	Required, Connected on Transformer Primary side on all three phases
4.18.1	Type	Gapless Metal Oxide
4.18.2	Housing	Polymeric preferable, at bottom of HV winding
4.18.3	Surge Arrestor requirement for solidly grounded system	
4.18.4	System Voltage , kV rms	11
4.18.5	Rated Voltage of Arrestor, kV rms	9
4.18.6	Continuous operating voltage, kV rms	6.35
4.18.7	Maximum Continuous operating voltage, kV rms	7.65
4.18.8	Nominal Discharge Current, kA peak	10
4.18.9	Energy Absorption Capability, kJ/kV	Greater than 2.5
4.18.10	Creepage distance	31 mm /kV
4.18.11	Reference std	IS 3070 part 3 and IEC 99-4
4.19.0	Winding Temperature scanner	Required
4.19.1	No. of RTD inputs	Five (Three for windings, one for enclosure & one shall be spare) RTD for enclosure temperature monitoring shall be fixed at enclosure Top from inside to give max. Enclosure temp reading & shall be wired up to temp. Scanner to indicate the reading.
4.19.1.1	Location of winding RTD	At location of winding where maximum temperature is expected.
4.19.2	No of potential free trip contacts	Two
4.19.3	No of potential free Alarm contacts	Two
4.19.4	Auxiliary Supply	240 V AC, 1 phase, 50 Hz. Tapped from LV side busbar through a MCB located inside box.
4.19.5	Communication port	RS 485 port for interfacing with FRTU on Modbus protocol. Battery/Super capacitor for data transmission to SCADA in the event of Auxiliary supply fail
4.19.6	Winding Temperature Scanner terminal Box	Required
4.19.6.1	Size	As per manufacturers standard
4.19.6.2	Fixing of instrument within box	On side wall of enclosure
4.19.6.3	Fixing of terminals within the box	On C channel available with the terminals
4.19.6.4	Location	Within enclosure frame such that Marshalling Box &

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		WTI on same side & free access to all LV side doors.
4.19.6.5	Terminal Strip	Nylon 66 material, minimum 4 sq mm, screw type for control wiring and potential circuit.
4.19.6.6	Cables & Wires	PVC insulated, extruded PVC inner sheathed, armoured, extruded PVC outer sheathed 1100 V grade control cable as per latest edition of IS 1554 part 1 minimum 2.5 sq mm for signals and 4 sq mm for CT with multi strand copper conductor & PVC insulated multi strand flexible copper wires of minimum 2.5 sq mm size, 1100 V grade as per latest edition of relevant IS
4.19.6.7	Cable Glands	Nickel plated brass double compression weatherproof cable gland
4.19.6.8	Lugs on wires	Tinned copper pre insulated Pin, Ring, Fork type as applicable
4.19.6.9	Auxiliary supply in box	Tapped from main LV busbars, taken via MCB for isolation and protection of scanner, MCB to be fixed on DIN rail with clamps on two sides.
4.19.6.10	Essential provision	Wiring diagram to be fixed on the back of door along with brief details of scanner, HV side , LV side door limit switches to be wired up-to Terminal Block, Service socket to be provided with switch, fuse and link.

**5.0 Fittings and Accessories on Transformer**

5.1	Rating & Diagram Plate	Required
5.1.1	Material	Anodized Aluminium 16 SWG
5.1.2	Background	Satin silver
5.1.3	Letters, diagram & border	Black
5.1.4	Process	Etching
5.1.5	Name Plate details	<p>Following details shall be provided on rating and diagram plate as a minimum</p> <ul style="list-style-type: none"> <li>i) Type of transformer i.e cast resin with winding material</li> <li>ii) Standard to which it is manufactured</li> <li>iii) Manufacturer's name;</li> <li>iv) Transformer serial number;</li> <li>v) Month and year of manufacture.</li> <li>vi) Rated frequency in Hz.</li> <li>vii) Rated voltages in kV.</li> <li>viii) Number of phases.</li> <li>ix) Rated power in kVA.</li> <li>x) Type of cooling.</li> <li>xi) Rated currents in A.</li> <li>xii) Vector group symbol.</li> <li>xiii) 1.2/50is wave impulse voltage withstand level in kV.</li> <li>xiv) Power frequency withstand voltage in kV.</li> </ul>

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		<p>xv) impedance voltage at rated current and frequency in percentage at principal, minimum and maximum tap at highest temperature.</p> <p>xvi) load loss at rated current at highest temperature.</p> <p>xvii) No-load loss at rated voltage and frequency.</p> <p>xviii) auxiliary loss</p> <p>xix) Continuous ambient temperature at which ratings apply in C.</p> <p>xx) winding connection diagram with taps and table of tapping voltage, current and power</p> <p>xxi) Transport weight of transformer</p> <p>xxii) Weight of Core</p> <p>xxiii) Weight of Winding</p> <p>xxiv) Weight of core coil assembly</p> <p>xxv) Weight of enclosure and fittings</p> <p>xxvi) Total weight</p> <p>xxvii) tapping details</p> <p>xxviii) Phase CT details</p> <p>xxix) Class of insulation</p> <p>xxx) IP protection rating of the enclosure</p> <p>xxxi) Name of the purchaser</p> <p>xxxii) PO no. &amp; date</p> <p>xxxiii) Guarantee period</p> <p>xxxiv) Fire, Environment &amp; Climate Class</p>
5.2	Detachable Bi-directional flat Roller Assembly	Required
5.2.1	Roller center to center distance	Minimum 900 mm on the side of HV and LV termination Maximum 800 mm on the other side (perpendicular to HV, LV termination).
5.2.2	Essential provision	Roller dia. 150 mm min, roller to be fixed in such a way so that the lowermost part of the skid is above ground by at least 100 mm when the transformer is installed on roller.
5.3	Earthing pad on enclosure for transformer earthing complete with Stainless Steel nut, bolt, washers, spring washers etc.	Required with identification plate on outside of enclosure.
5.4	Core, frame to tank earthing	Required
5.5	Off circuit tapping links	Required. Shrouds to be provided on tap link
5.6	Tap link position plate	Required inside HV side door
5.7	Danger plate made of Anodized aluminum with white letters on red background on HV and LV side	Required
5.8	Skid with Haulage lugs	Required
5.9	Lifting lugs for complete	Required

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	transformer as well as enclosure	
5.9.1	Essential provision for lifting lugs	Lifting lugs for core coil assembly shall be provided in such a way that the weight shall not come on canopy while lifting. Lifting lugs for canopy/ enclosure shall be provided in such a way that the weight shall not come on canopy while lifting , it shall be born by supporting members.
5.10	Caution plate for tap links	Required
5.11	Ventilation louvers with stainless steel wire mesh and rain water guard	Required as per Manufacturer's design, but it is to be provided minimum required to prevent ingress of excessive dust.
5.12	Surge arrester & its grounding bushings	Required. Shrouds to be provided on surge arrester terminations
5.12.1	Essential provision	Surge arrester shall be erected vertically in such a way that the surge arrester can be removed at site without removing HV cable lug. Surge arrester shall not be used for any kind of support. Surge arrester grounding strip to be routed to the surge arrester grounding bushing near bottom of enclosure with proper support. Surge arrester grounding bushing shall be identified by identification plate on outside of enclosure. Surge arrester grounding bushing shall be supplied with all hardware to readily connect purchaser's ground lead.
5.13	LV additional neutral earthing bushing	Required, separate & outside the enclosure.
5.13.1	Essential provision	Busbar connecting the neutral to additional neutral bushing shall be properly supported and additional neutral bushing shall be identified by identification plate on outside of enclosure. Additional neutral bushing shall be supplied with all hardware to readily connect purchaser's ground lead.
5.14	Extra earthing stud for cable armour earthing	Required
5.15	Winding temperature scanner	Required
5.16	RTD in Winding and near top of enclosure.	Required
5.17	Space heater inside enclosure	Required
5.17.1	Mounting of space heater	By suitable spacers so that heater does not come in contact with panel wall directly.
5.18	Copper earthing link	Across all gasketed joints in the enclosure body.

**6.0 Approved make of components**

6.1	Core	Nippon/JFE/Posco/Thyssen Krupp
6.2	Aluminium	Hindalco, Nalco, Sterlite, Birla
6.3	Steel	Essar/SAIL/Tata
6.4	Winding Temperature	Precimeasure / Pecon

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	Indicator	
6.5	CT	Pragati/ECS/Kappa
6.6	Terminals	Elmex/Connectwell
6.7	Resin	Huntsmen
6.8	Lugs/Glands	Jainson/Dowells/Comet
6.9	Bushing/Support Insulator	Baroda Bushing/CJI/Jaipur Glass

\*Vendor shall take prior approval of BSES before using any other make than approved make.

**7.0 Quality Assurance**

7.1	Quality Assurance program	To be submitted before contract award. Program shall contain following i) The structure of the organization ii) The duties and responsibilities assigned to staff ensuring quality of work. iii) The bidder should have qualified technical & dedicated QA personnel at various stages of manufacture & testing. iv) Factory inspection of bidder may be carried out to ascertain the quality system and process in place at manufacturing facility. The same is applicable to bidders not approved with BSES. v) The system for purchasing, taking delivery and verification of materials vi) The system for ensuring quality of workmanship vii) The system for control of documentation viii) The system for the retention of records ix) The arrangements for the Supplier's internal auditing x) A list of the administration and work procedures required to achieve and verify Contract's quality requirements. These procedures shall be made readily available to the Purchaser for inspection on request
7.2	Quality Plan	To be submitted by the successful bidder for approval. Plan shall contain following as a minimum i) An outline of the proposed work and program sequence ii) The structure of the Supplier's organisation for the contract iii) The duties and responsibilities assigned to staff ensuring quality of work for the contract iv) Inspection Hold and notification points mutually agreed. v) Submission of engineering documents required

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		<p>by the specification</p> <p>vi) The inspection of materials and components on receipt</p> <p>vii) Reference to the Supplier's work procedures appropriate to each activity</p> <p>viii) Inspection during fabrication/ construction</p> <p>ix) Final inspection and test</p> <p>x) Successful bidder shall include submittal of Mills invoice, Bill of lading, Mill's test certificate for grade, physical tests, dimension, specific watt loss per kG for the core material to the purchaser for verification in the quality plan suitably</p>
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**8.0 Progress Reporting**

8.1	Outline document	To be submitted for purchaser approval for outline of production, inspection, testing, inspection , packing, dispatch, documentation programme
8.2	Detailed Progress report	<p>To be submitted to Purchaser once a month containing</p> <p>i) Progress on material procurement</p> <p>ii) Progress on fabrication</p> <p>iii) Progress on assembly</p> <p>iv) Progress on internal stage inspection</p> <p>v) Reason for any delay in total programme</p> <p>vi) Details of test failures if any in manufacturing stages</p> <p>vii) Progress on final box up</p> <p>viii) Constraints/Forward path</p>

**9.0 Inspection an Testing**

9.1	Inspection and Testing during manufacture	Only type tested equipment shall be acceptable
9.1.1	Enclosure	<p>i) Check correct dimensions between wheels demonstrate turning of wheels through 90 deg and further dimensional check</p> <p>ii) Check for physical properties of materials for lifting lugs etc. All load bearing welds, including lifting lug welds shall be subjected to required load tests.</p>
9.1.2	Core	
9.1.2.1	Mother Core coil	Verification & inspection of the mother coil at port & putting stamp & seal may be inspected by BSES.
9.1.2.2	Core sample type testing	Reconciliation of mother coil by checking stamp & seal at factory before slitting. One sample of CRGO to be sealed for testing at ERDA/CPRI. Following Tests shall be conducted on the sample per P.O.



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		<ul style="list-style-type: none"> <li>i) Specific core loss measurement</li> <li>ii) Magnetic polarization</li> <li>iii) Magnetic permeability</li> <li>iv) Specific core loss measurement after accelerated ageing test</li> <li>v) Surface insulation resistivity</li> <li>vi) Electrical resistivity measurement</li> <li>vii) Stacking factor</li> <li>viii) Ductility(Bend test)</li> <li>ix) Lamination thickness</li> <li>x) Magnetization characteristics (B-H curve)</li> </ul>
9.1.2.3	Core cutting	Bidder should have in house core cutting facility for proper monitoring & control on quality. In case it is done outside cutting shall be done in presence of BSES.
9.1.2.4	Core physical verification	<ul style="list-style-type: none"> <li>i) Check on the quality of varnish if used on the stampings. <ul style="list-style-type: none"> <li>a) Measurement of thickness and hardness of varnish on stampings.</li> <li>b) Solvent resistance test to check that varnish does not react in hot oil.</li> <li>c) Check over all quality of varnish by sampling to ensure uniform hipping colour, no bare spots. No ever burnt varnish layer and no bubbles on varnished surface.</li> </ul> </li> <li>ii) Check on the amount of burns.</li> <li>iii) Bow check on stampings.</li> <li>iv) Check for the overlapping of stampings. Corners of the sheet are to be apart.</li> <li>v) Visual and dimensional check during assembly stage.</li> <li>vi) Check on complete core for measurements of iron-loss and check for any hot spot by exciting the core so as to induce the designed value of flux density in the core.</li> <li>vii) Check for inter laminar insulation between core sectors before and after pressing.</li> <li>viii) Visual and dimensional checks for straightness and roundness of core, thickness of limbs and suitability of clamps.</li> <li>ix) High voltage test (2 KV for one minute) between core and clamps.</li> </ul> <p>Certification of all test results.</p>
9.1.2.5	Documents verification	<p>Following documents to be submitted during the stage inspection</p> <ul style="list-style-type: none"> <li>i) Invoice of supplier</li> <li>ii) Mills test certificates</li> <li>iii) Packing list</li> <li>iv) Bill of lading</li> </ul>

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		v) Bill of entry certificates by customs
9.1.3	Insulating Materials	<ul style="list-style-type: none"> <li>i) Sample check for physical properties of materials.</li> <li>ii) Check for dielectric strength.</li> <li>iii) Visual and dimensional checks.</li> <li>iv) Check for the reaction of hot oil on insulating materials.</li> <li>v) Certification of all test results.</li> </ul>
9.1.4	Windings	<ul style="list-style-type: none"> <li>i) Sample check on winding conductor for mechanical properties and electrical conductivity.</li> <li>ii) Visual and dimensional check on conductor for scratches, dept. mark etc.</li> <li>iii) Sample check on insulating paper for PE value, Bursting strength, Electric strength.</li> <li>iv) Check for the bending of the insulating paper on conductor.</li> <li>v) Check and ensure that physical condition of all materials taken for winding is satisfactory and free of dust.</li> <li>vi) Check for absence of short circuit between parallel strands.</li> <li>vii) Check for Brazed joints wherever applicable.</li> <li>viii) Measurement of voltage ratio to be carried out when core/ yoke is completely restocked and all connections are ready.</li> <li>ix) Weight of winding</li> <li>x) Certification of all test results.</li> </ul>
9.1.4	Tests on fitting and Accessories	As per Manufacturer's Standards
9.2	Routine Tests	<p>The sequence of routine testing shall be as follows</p> <ul style="list-style-type: none"> <li>i) Visual and dimension check for completely assembled transformer</li> <li>ii) Measurements of voltage ratio</li> <li>iii) Measurements of winding resistance at principal tap and two extreme taps.</li> <li>iv) Vector Group and polarity test</li> <li>v) Measurements of insulation resistance.</li> <li>vi) Separate sources voltage withstand test.</li> <li>vii) Measurement of iron losses and exciting current at rated frequency and 90%, 100% and 110% rated voltage.</li> <li>viii) Induced voltage withstand test.</li> <li>ix) Load losses measurement.</li> <li>x) Impedance measurement of principal tap (HV and LV) of the transformer.</li> <li>xi) Induced voltage withstand test (to be repeated if type tests are conducted).</li> <li>xii) Measurement of Iron loss (to be repeated if</li> </ul>

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		<p>type test are conducted).</p> <p>xiii) Measurement of capacitance and Tan Delta for HV and LV bushings</p> <p>xiv) Partial discharge test</p> <p>xv) Ratio of LV CT</p> <p>xvi) Magnetic balance test</p> <p>xvii) Power frequency voltage withstand test on all auxiliary circuits</p> <p>xviii) Temperature rise test #</p> <p>xix) Certification of all test results.</p> <p>Note:</p> <p>a) #Temperature rise test may be necessary to be carried out on one unit/lot. Purchaser's engineer, will at its discretion, select transformer for temp.rise test from any lot offered for inspection at manufacturer's works and witness the same for comparison with CPRI/ERDA lab type test results</p> <p>b) BSES may appoint recognized testing authority like CPRI /ERDA lab with their instruments &amp; engineer's team and measure no load loss, load loss and percentage impedance of the transformer at supplier's works at our own cost. Bidder shall agree and give them full co-operation during their stay &amp; testing at shop floor. The losses &amp; impedance values so obtained will be considered as final.</p>
9.3	Acceptance test at NABL lab	<p>Bidder should have in-house NABL accredited testing facility.</p> <p>In case of unavailability of same, one Transformer of each rating shall be randomly selected and sealed by BSES representative for complete acceptance test as per IS 2026-Part 11 ( including temperature test) at third party NABL Lab. Tests shall be conducted once per Rate contract.</p>
9.4	Type Tests	<p>On one transformer of each rating and type at CPRI/ERDA.</p> <p>i) Impulse withstand test on all three HV limbs of the transformers for chopped wave as per standard</p> <p>ii) Temperature rise test as per IS</p> <p>Note – Purchaser may choose to carry out short circuit, impulse &amp; temperature rise test on one unit from a lot offered for inspection at CPRI/ERDA lab . Cost of such tests shall be borne by the bidder.</p>
9.5	Special Tests	<p>On one transformer of each rating and type</p> <p>i) Dynamic &amp; Thermal (3 sec) Short Circuit Test as per IS 2026 at CPRI/ERDA</p>

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		<ul style="list-style-type: none"> <li>ii) Measure of zero seq. impedance (Cl. 16.10 IS 2026 Part I).</li> <li>iii) Measurement of acoustic noise level (Cl. 16.12 of IS 2026 Part I).</li> <li>iv) Measurement of harmonic level on no load current.</li> <li>v) Partial discharge test.</li> <li>vi) Enclosure Ingress protection at CPRI/ERDA</li> <li>vii) High voltage withstand test shall be performed on the auxiliary equipment and wiring after complete assembly.</li> </ul> <p>Cost of such tests, if extra, shall be quoted separately by the Bidder.</p>
9.6	Notification to bidders	<p>In case bidder had conducted type &amp; special tests from CPRI/ERDA on BSES design and there is no design change in the transformer less than 10 years from the date of the bid opening, then bidder need not to conduct the type test from CPRI/ERDA lab. The bidder shall submit the under taking that there is no change in design with respect to type tested design.</p> <p>The product offered must be of type tested quality. In case the product offered is never type &amp; special tested the same (as per above clause 9.4.&amp; 9.5), is to be conducted by bidder at his own cost at CPRI/ERDA</p>
9.7	Customer Hold Point	<ul style="list-style-type: none"> <li>i) GTP &amp; Drawings approval</li> <li>ii) Core Inspection(See CI No 9.1.2) Sample to be tested at CPRI/ERDA for each lot.</li> <li>iii) Core &amp; Coil Stage inspection of each lot to be offered for final testing.</li> </ul>

**10.0 Packing, Shipping, Handling and Storage**

10.1	Packing	
10.1.1	Packing protection	Against corrosion, dampness, heavy rains, breakage and vibration
10.1.2	Packing for accessories and spares	Robust wooden non returnable packing case with all the above protection
10.1.3	Packing details	<p>On each packing case details required as follows</p> <ul style="list-style-type: none"> <li>i) Individual serial number;</li> <li>ii) Purchaser's name;</li> <li>iii) PO number (along with SAP item code, if any) &amp; PO date</li> <li>iv) Equipment tag no. (if any)</li> <li>v) Destination</li> <li>vi) Manufacturer/Supplier's name;</li> <li>vii) Address of Manufacturer/supplier/it's agent</li> <li>viii) Description and quantity</li> <li>ix) Month &amp; Year of Manufacturing</li> </ul>

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		<ul style="list-style-type: none"> <li>x) Country of origin</li> <li>xi) Case measurements</li> <li>xii) Gross and net weights in kilograms</li> <li>xiii) All necessary slinging and stacking instructions.</li> <li>xiv) As built drawings &amp; O&amp;M manual. One copy with each transformer</li> </ul>
10.2	Shipping	<ul style="list-style-type: none"> <li>i) The bidder shall ascertain at an early date and definitely before the commencement of manufacture, any transport limitations such as weights, dimensions, road culverts, overhead lines, free access etc. from the manufacturing plant to the project site; and furnish to the Purchaser confirmation that the proposed packages can be safely transported, as normal or oversize packages, upto the plant site.</li> <li>ii) Any modifications required in the infrastructure and cost thereof in this connection shall be brought to the notice of the Purchaser</li> </ul>
10.3	Handling and Storage	Manufacturer instruction shall be followed. Detail handling & storage instruction sheet / manual needs to be furnished before commencement of supply.

**11.0 Deviations**

Deviations from this Specification shall be stated in writing with the tender by reference to the Specification clause/GTP/Drawing and a description of the alternative offer. In absence of such a statement, requirements of the Specification shall be met without exception.

**12.0 Drawings & Data Submission Matrix**

Drawing submission shall be as per the matrix given below. All documents/ drawing shall be provided on A3/A4 sheet in box file with separators for each section. PDF shall also be provided of all documents via USB. Deviation sheet and GTP shall be provided in excel sheet. Language of the documents shall be English only. Deficient/ improper document/ drawing submission may liable for rejection.

S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Prior to dispatch
1	Copy of specification along with company seal & signature on each page.	✓	✓	
2	Guaranteed technical particulars	✓	✓	
3	Outline dimension drawing for each major component, general arrangement drawing showing component layout an general schematic diagrams.	✓	✓	

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S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Prior to dispatch
4	Type test certificates, where available, and sample routine test reports	✓	✓	
5	Detailed reference list of customers already using equipment offered during the last 5 years with particular emphasis on units of similar design and rating	✓		
6	Details of manufacturers quality assurance standard and programme and ISO 9000 series or equivalent national certification.	✓		
7	Deviations from this specification. Only deviations approved in writing before award of contract shall be accepted.	✓		
8	Recommended spare parts and consumable items for the five years of operation with prices and spare parts catalogue with price list for future requirements.	✓		
9	Transport / shipping dimension and weights, space required for handling parts for maintenance	✓		
10	Quality assurance program.	✓	✓	
11	Programme for production and testing		✓	
12	General description of the equipment and all components, including brochures		✓	
13	Detailed dimension drawing for all components, general arrangement drawing showing detailed component layout		✓	
14	Rating and Diagram Plate		✓	
15	Wiring Diagram of Marshaling box		✓	
16	CT/VT termination box		✓	
17	Foundation details		✓	
18	Core coil Assembly		✓	
19	Wiring diagram Plate for CT Box		✓	
20	Tap Link position plate		✓	
21	Label plate for phase, Neutral, surge arrester & other essential parts		✓	

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S.no	Documents to be submitted	With the bid	After Award	
			For Approval	Prior to dispatch
22	Surge Arrester Arrangement		✓	
23	HV &LV Cable support		✓	
24	22kV Support insulator		✓	
25	3.3kV support insulator		✓	
26	CT mounting details		✓	
27	Scanner box mounting details		✓	
28	HT termination detail		✓	
29	LT termination details		✓	
30	Enclosure assembly & door arrangement		✓	
31	Louver back plate arrangement		✓	
32	Calculations to substantiate choice of electrical, structural, mechanical component size, ratings		✓	
33	Detailed loading drawing to enable the purchaser to design and construct foundations for the transformer.		✓	
34	Transport /shipping dimension with weights ,wheel base details, untanking height etc.		✓	
35	Terminal arrangements and cable box details		✓	
36	Lists of makes of all fittings and accessories		✓	
37	Statement drawing attention to all exposed points in the equipment at which contact with or in close proximity to other metals and stating clearly what protection is employed to prevent corrosion at each point		✓	
38	Complete casting process		✓	
39	Resin Data sheet		✓	
40	Detailed installation and commissioning instructions			✓
41	Inspection and test reports carried out in manufacturers works			✓
42	Test certificates of all bought out items. and catalogues			✓
43	Operation and maintenance instructions as well as trouble shooting charts.			✓

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER****Annexure A Scope of supply**

<b>Sr. No</b>	<b>Description</b>	<b>Scope of Supply</b>
1.0	Scope	Design, manufacture, assembly, testing at stages of manufacture as per this specification, final testing at manufacturer works on completely assembled transformer before dispatch, packing, transportation, delivery and submission of all documentation for the Distribution transformer with all accessories as below and Cl. 4 & 5 of this specification (Above is typical, It has to be validated on a case to case basis
1.1	Nickel Plated brass double compression glands for HV and LV, LVN cables (in case of termination by cable)	YES
1.2	Long barrel medium duty Aluminium lugs for power cables (in case of termination by cable)	YES
1.3	Nickel Plated brass double compression glands and tinned copper lugs for control cable termination in Marshalling box and CT/VT box for vendor's	YES
1.4	Cables and wires for transformer accessories, CTs etc. and internal wiring of CT	YES
1.5	Touch up paint	YES
1.6	Routine testing as per Cl. Of this specification	YES
1.7	Type testing as per Cl. of this specification	YES
1.8	Special testing as per Cl. of this specification	YES
1.9	Supervision of testing & commissioning of transformer	YES



**Annexure B Service Condition**

1.0	Delhi Atmospheric conditions	
1.2	Average grade atmosphere	Heavily polluted , dry
1.3	Maximum altitude above sea level	1000 M
1.4	Ambient Air temperature	Highest 50 deg C, Average 40 deg C
1.5	Design ambient air temperature	50 deg C
1.6	Relative Humidity	90 % Max
1.7	Seismic Zone	4
1.8	Rainfall	750 mm concentrated in four months

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER****Annexure C Guaranteed Technical Particulars (Data by Seller)**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Specified / Required</b>	<b>Offered</b>
1.0	General		
1.2	Make		
1.2	Type	core type , outdoor, step down	
1.3	Full rating available for installation of the same transformer in indoor poorly ventilated condition ( YES/ NO)		
1.4	IP Class		
1.5	Fire Protection Class		
1.6	Environment Class		
2.0	Nominal Continuous Rating, KVA		
2.1	HV Winding	250/400/630/750/1000/1600/2000/2500	
2.2	LV Winding	250/400/630/750/1000/1600/2000/2500	
3.0	Rated Voltage (kV)		
3.1	HV winding	11 KV	
3.2	LV winding	415 Volts	
4.0	Rated current (Amps )		
4.1	HV winding		
4.2	LV winding		
5.0	Connections		
5.1	HV winding	Delta	
5.2	LV winding	Star with additional neutral	
5.3	Vector Group Reference	Dyn11	
6.0	Impedance at principal tap rated current and frequency at 130 deg C		
6.1	Impedance	5/5/5/5/5/6/6/6 %	
6.2	Reactance		
6.3	Resistance		
6.4	Impedance at lowest tap rated current and frequency		
6.5	Impedance at highest tap rated current and frequency, %		
7.0	Resistance of the winding at 130 deg C ,at principal tap, ohm		

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

7.1	a) HV		
7.2	b) LV		
8.0	Zero sequence impedance, ohm		
8.1	a) HV		
8.2	b) LV		
9.0	Guaranteed maximum losses principal tap full load and 130°C without any positive tolerance kW		
9.1	No load losses (max)	As per Spec Cl.	
9.2	Load Losses (max)	As per Spec Cl.	
9.3	Total stray losses @ 130 deg C		
10.0	Temperature rise over reference design ambient		
10.1	Winding by resistance 0 C		
10.2	Maximum hot spot temperature, deg. C		
11.0	Efficiency		
11.1	Efficiency at 130 degC and unity power factor %		
11.1.1	At 110% Load		
11.1.2	At 100% Load		
11.1.3	At 80% Load	Not less than 99.5 %	
11.1.4	At 60% Load		
11.1.5	At 40% Load		
11.1.6	At 20% Load		
11.2	Efficiency at 130 degC and 0.8 power factor lag %		
11.2.1	At 110% Load		
11.2.2	At 100% Load		
11.2.3	At 80% Load	Not Less than 99.5 %	
11.2.4	At 60% Load		
11.2.5	At 40% Load		
11.2.6	At 20% Load		
11.3	Maximum efficiency at 130 deg C, %		
11.4	Load and power factor at which it occurs		
12.0	Regulation , (%)		
12.1	Regulation at full load at		

TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER

	130 deg C		
12.1.1	at unity power factor		
12.1.2	at 0.8 power factor lagging		
12.2	Regulation at 110% load at 130 deg C		
12.2.1	at unity power factor		
12.2.2	at 0.8 power factor lagging		
13.0	Details of enclosure		
13.1	Material		
13.2	Thickness of sides mm		
13.3	Thickness of bottom mm		
13.4	Thickness of cover mm		
14	Core		
14.1	Type:	Core	
14.2	Core material grade	Premium grade minimum M3 or better	
14.3	Thickness of lamination		
14.4	Insulation of lamination	With insulation coating on both sides	
14.5	Design Flux Density at rated condition at principal tap, Tesla	1.6 T	
14.5.1	Maximum flux density at 10 % over excitation /over fluxing, Tesla	1.73 Tesla maximum allowed	
14.6	Equivalent cross section area		
14.7	Guaranteed No Load current At 100% rated voltage , Amps		
14.7.1	HV		
14.7.2	LV		
14.8	Guaranteed No Load current At		
14.8.1	HV		
14.8.2	LV		
15	Type of Winding		
15.1	HV		
15.2	LV		
15.3	Conductor material	Electrolytic Aluminium	

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

15.4	Current density Amps/sqmm	Maximum allowed 1.5 A per sqmm.(max.)	
15.4.1	HV Winding		
15.4.2	LV Winding		
15.5	Gauge/area of cross section of conductor, sqmm		
15.5.1	HV		
15.5.2	LV		
15.6	Tappings provided as per Cl. 3.14.9 (YES / NO)		
15.7	Tap link Current rating , A		
16	Insulating Material		
16.1	HV Turn		
16.2	LV Turn		
16.3	LV Core		
16.4	HV - LV		
17	Insulating material thickness, mm		
17.1	HV Turn		
17.2	LV Turn		
17.3	LV to Core		
17.4	HV to LV		
18	Minimum design clearance, mm		
18.1	HV to earth in Air		
18.2	LV to earth in Air		
18.3	Between HV & LV in Air		
18.4	Top winding and yoke		
18.5	Bottom winding and yoke		
19	Bushing / Support Insulator		
19.1	Make		
19.2	Type		
19.3	Reference Standard		
19.4	Voltage class, kV		
19.4.1	HV side Bushing / Support insulator		
19.4.2	LV side line and neutral bushing / Support insulator		
19.5	Creepage factor for all bushing mm/KV		
19.6	Weight, Kg		
9.6.1	HV bushing / Support		

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

	insulator		
19.6.2	LV line and neutral bushing		
19.7	Free space required for bushing / Support insulator removal, mm		
19.7.1	HV bushing / Support		
19.7.2	LV line and neutral bushing / Support insulator		
20	Terminal connections		
20.1	HV		
20.2	LV		
20.3	Terminal Details		
20.3.1	HV side busbar size		
203.2	HV Termination suitable for cable size		
20.3.3	HV Termination height, mm		
20.3.4	HV side gland Plate dimension, mm x mm		
20.3.5	HV side gland Plate		
20.3.6	HV side Gland Plate Thickness, mm		
20.3.7	HV side Phase to clearance inside enclosure , mm		
20.3.8	HV side Phase to earth inside box, mm		
20.3.9	LV side busbar size		
20.3.10	LV Termination suitable for cable size		
20.3.11	LV Termination height, mm		
20.3.12	LV side gland Plate dimension, mm x mm		
20.3.13	LV side gland Plate material		
20.3.14	LV side Gland Plate Thickness, mm		
20.3.15	LV side Phase to phase clearance inside enclosure , mm		
20.3.16	LV side Phase to earth inside box, mm		

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

21	Current Transformer on LV phases		
21.1	Type		
21.2	Make		
21.3	Reference Standard		
21.4	CT Ratio		
21.5	Burden, VA		
21.6	Class of Accuracy		
22	CT terminal box size		
23	WT scanner terminal box size		
24	Alarm and Trip contact ratings of protective devices		
24.1	Rated / making/ breaking currents , Amp @ Voltage for		
24.1.1	Winding temperature		
25	Fittings and Accessories as per Cl. 5.0 provided (YES / NO)		
26	Painting as per clause 4.14 provided (Yes/No)		
27	Over all transformer dimensions		
27.1	Length, mm		
27.2	Width, mm		
27.3	Height, mm		
28	Weight data		
28.1	Core, kG		
28.2	Frame parts, kG		
28.3	Core and frame, kG		
28.4	Total Winding, kG		
28.5	Core , Frame, Winding, kG		
28.6	Enclosure, kG		
28.7	Total Transport weight of the transformer, kG		
28.8	Total weight of the transformer with all accessories		
29	Shipping Data		
29.1	Weight of heaviest package, kG		

**TECHNICAL SPECIFICATION OF DRY TYPE DISTRIBUTION TRANSFORMER**

29.2	Dimensions of the largest package (L x B x H) mm		
30	Surge Arrestor requirement		
30.1	Type		
30.2	System Voltage , kV rms		
30.3	Rated Voltage of Arrestor, kV rms		
30.4	Continuous operating voltage , kV rms		
30.5	Maximum Continuous operating voltage, kV rms		
30.6	Nominal Discharge Current, kA peak		
30.7	Energy Absorption Capability, kJ/kV		
30.8	Creepage factor		
30.9	Reference std		
31	WTI Scanner Details		
31.1	Make		
31.2	Model no.		
31.3	Manual submitted		
31.4	Modbus communication (Yes/No) port available		
32	Tests (As per Cl 9.0 of the spec)		
32.1	All in process tests confirmed (Yes/ No)		
32.2	All Type Tests confirmed (Yes / No)		
32.3	All Routine Tests confirmed (Yes/ No)		
32.4	All Special Tests confirmed (Yes/ No)		
33	Guarantee Period		