

E-TENDER SPECIFICATION

NO: BHE/PW/PUR/MAHAN-COH U2/3072

FOR

Capital Overhauling of TG Set incl HIP, LP including in situ HIP Seal fin replacement, Inspection of Lube oil system, servicing of TG valves & steam Strainers, HIP Angle ring replacement, HIP Insulation, C&I work, COH of Generator including Stator Capsule replacement, electrical testing & Associated Work U#2, 150 MW, Hindalco Mahan. Bargawan, (M.P.)

VOLUME – IA

TECHNICAL BID

- Notice Inviting Tender,
- Volume-IA : Technical Conditions of Contract,
- Volume-IB : Special conditions of Contract,
- Volume-IC : General conditions of Contract
- Volume-ID : Forms & Procedures



Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Power Sector - Western Region
345-Kingsway, Nagpur-440001

CONTENTS		
Volume No	Description	Hosted in website bhel.com (Briefly) and detailed in BHEL e-Procurement Portal as files titled
NIL	Tender Specification Issue Details	Part of Vol-IA-3072
NIL	Notice Inviting Tender	Part of Vol-IA-3072
I-A	Technical Conditions of Contract	Vol-IA-3072
I-B	Special Conditions of Contract	Part of Vol-I-BCD-3072
I-C	General Conditions of Contract	Part of Vol-I-BCD-3072
I-D	Forms & Procedures	Part of Vol-I-BCD-3072
II	Price Bid Specification	Vol-II-3072

E-Tender Specification Issue Details

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

NAME OF THE WORK:

Capital Overhauling of TG Set incl HIP, LP including in situ HIP Seal fin replacement, Inspection of Lube oil system, servicing of TG valves & steam Strainers, HIP Angle ring replacement, HIP Insulation, C&I work, COH of Generator including Stator Capsule replacement, electrical testing & Associated Work U#2, 150 MW, Hindalco Mahan. Bargawan, (M.P.)

EARNEST MONEY DEPOSIT: Refer Notice Inviting Tender

**LAST DATE FOR Refer Notice Inviting Tender
TENDER SUBMISSION .**

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING VOLUME-I AND VOLUME- II ARE ISSUED TO:

M/s.

.....

**PLEASE NOTE:
THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.**

3072

NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 5 of 76

Ref: BHE/PW/PUR/MAHAN-COH U2/3072

Date: 28-01-2025

NOTICE INVITING E-TENDER (NIT)

NOTE: BIDDER MAY DOWNLOAD/ UPLOAD THE TENDER/ OFFER FROM/ON BHEL E-PROCUREMENT PORTAL → <https://eprocurebhel.co.in>

To,

Dear Sir/Madam,

Sub : NOTICE INVITING E-TENDER

Sealed offers in two part bid system (National competitive bidding (NCB) ~~or International Competitive Bidding (ICB)~~ are invited from reputed & experienced bidders (meeting [PRE QUALIFICATION CRITERIA](#) as mentioned in Annexure-1) for the subject job by the undersigned on the behalf of BHARAT HEAVY ELECTRICALS LIMITED as per the tender document. Following points relevant to the tender may please be noted and complied with.

1.0 Salient Features of NIT

S No.	ISSUE	DESCRIPTION	
i	E-TENDER NUMBER	BHE/PW/PUR/MAHAN-COH U2/3072	
ii	Broad Scope of job	Capital Overhauling of TG Set incl HIP, LP including in situ HIP Seal fin replacement, Inspection of Lube oil system, servicing of TG valves & steam Strainers, HIP Angle ring replacement, HIP Insulation, C&I work, COH of Generator including Stator Capsule replacement, electrical testing & Associated Work U#2, 150 MW, Hindalco Mahan. Bargawan, (M.P.)	
iii	DETAILS OF TENDER DOCUMENT		
A	Volume-IA	Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc	Applicable
B	Volume-IB	Special Conditions of Contract (SCC)	Applicable
C	Volume-IC	General Conditions of Contract (GCC)	Applicable
D	Volume-ID	Forms and Procedures	Applicable
E	Volume-IE	Drawings	Applicable
F	Volume-II	Price Bid as specified in E-Procurement Portal	Applicable
iv	Issue of Tender Documents	Tender documents will be available for downloading from BHEL website (www.bhel.com) or e-procurement portal (https://eprocurebhel.co.in) as per schedule below: Start :29/01/2025, Time :09:00 Hrs Closes: 05/02/2025, Time: 13:00 Hrs Brief information of the tenders shall also be available at central public procurement portal. (https://eprocure.gov.in/epublish/app)	Applicable
v	DUE DATE & TIME OF OFFER SUBMISSION	Date: 05/02/2025, Time: 13.00 Hrs • Place: on E-Tender Portal https://eprocurebhel.co.in	Applicable

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 6 of 76

S No.	ISSUE	DESCRIPTION	
vi	OPENING OF TENDER (Techno-Commercial Bid)	<p>Date: 05/02/2025, Time: 17.00 Hrs</p> <p>Notes:</p> <p>(1) In case the due date of opening of tender becomes a non-working day, then the due date & time of offer submission and opening of tenders get extended to the next working day.</p> <p>(2) Bidder may depute representative to witness the opening of tender. For e-Tender, Bidder may witness the opening of tender through e-Procurement portal only.</p>	Applicable
vii	EMD AMOUNT	<p>Rs 2,00,000 (Rupees Two Lakhs Only)</p> <p>Or</p> <p>Proof of One Time EMD submitted in PSWR Nagpur</p> <p>Note : Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC</p>	Applicable
viii	COST OF TENDER	Free	
ix	LAST DATE FOR SEEKING CLARIFICATION	<p>One day before due date of offer submission.</p> <p>Along with soft version also, addressing to undersigned & to others as per contact address given below:</p> <p>1) Name: Varun Vaidya Designation: Manager Deptt: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Mobile-9792334127 Email : yvaidya@bhel.in</p> <p>2) Name: Biraj Roy Designation: Sr.Manager Deptt: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Mobile-9587886706 Email : biraj@bhel.in</p> <p>3) Mr. Dipesh Palit Designation: GM Deptt: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Email:</p>	Applicable
x	SCHEDULE OF Pre Bid Discussion (PBD)		Not Applicable
xi	INTEGRITY PACT & DETAILS OF INDEPENDENT	<p>1) Shri Otem Dai, IAS (Retd.)</p> <p>2) Shri Bishwamitra Pandey, IRAS (Retd.)</p> <p>3) Shri Mukesh Mittal, IRS (Retd.)</p>	Applicable

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 7 of 76

S No.	ISSUE	DESCRIPTION
	EXTERNAL MONITOR (IEM)	
xii	Latest updates	Latest updates on the important dates, Amendments, Correspondences, Corrigenda, Clarifications, Changes, Errata, Modifications, Revisions, etc to Tender Specifications will be hosted in BHEL webpage (www.bhel.com →Tender Notifications →View Corrigendum), Central Public Procurement portal (https://eprocure.gov.in/epublish/app) & on e-tender portal https://eprocurebhel.co.in and not in the newspapers. Bidders to keep themselves updated with all such information.

2.0 The offer shall be submitted as per the instructions of tender document and as detailed in this NIT. Bidders to note specifically that all pages of tender document, including these NIT pages of this particular tender together with subsequent correspondences shall be submitted by them, duly signed digitally using Class III DSC & uploaded in E-Procurement Portal, as part of offer. **Rates/Price including discounts/rebates, if any, mentioned anywhere/in any form in the techno-commercial offer other than the Price Bid, shall not be entertained.**

3.0 Not Used

4.0 Unless specifically stated otherwise, bidder shall deposit EMD as per clause 1.9 of General Conditions of Contract.

For Electronic Fund Transfer the details are as below:-

NAME OF THE BENEFICIARY	BHARAT HEAVY ELECTRICALS LTD
ADDRESS OF THE COMPANY	5 th Floor, SHREE MOHINI COMPLEX 345, KINGSWAY,NAGPUR
NAME OF BANK	STATE BANK OF INDIA
NAME OF BANK BRANCH AND BRANCH CODE	SBI,NAGPUR MAIN BRANCH ,CODE-00432
CITY	NAGPUR
ACCOUNT NUMBER	40227423158
ACCOUNT TYPE	MC-C C Clean (C&I)
IFSC CODE OF THE BENEFICIARY BANK BRANCH	SBIN0000432
MICR CODE OF THE BANK BRANCH	440002002

(Note -: In case of E-Tenders, proof of remittance of EMD should be uploaded in the E-Procurement Portal and originals, as applicable, shall be sent to the officer inviting tender within a reasonable time, failing which the offer is liable to be rejected.

5.0 Procedure for Submission of Tenders:

This is an E-tender floated online through our E-Procurement Site (<https://eprocurebhel.co.in>). The bidder should respond by submitting their offer online only in our e-Procurement platform at (<https://eprocurebhel.co.in>). Offers are invited in two-parts only.

Documents Comprising the e-Tender

The tender shall be submitted online ONLY EXCEPT EMD (in physical form) as mentioned below:

a. Technical Tender (UN priced Tender)

All Technical details (e.g. Eligibility Criteria requested (as mentioned below)) should be attached in e-tendering module, failing which the tender stands invalid & may be REJECTED. Bidders shall furnish the following information along with technical tender (preferably in pdf format):

- i. Earnest Money Deposit (EMD) furnished in accordance with NIT Clause 4.0. ~~Alternatively, documentary evidence for claiming exemption as per clause 29 of NIT.~~
- ii. Technical Bid (without indicating any prices).

b. Price Bid:

- i. Prices are to be quoted in the attached Price Bid format online on e-tender portal.
- ii. The price should be quoted for the accounting unit indicated in the e-tender document.

Note:

- It is the responsibility of tenderer to go through the Tender document to ensure furnishing all required documents in addition to above, if any. Any deviation would result in REJECTION of tender and would not be considered at a later stage at any cost by BHEL.
- A person signing (manually or digitally) the tender form or any documents forming part of the contract on behalf of another shall be deemed to warrantee that he has authority to bind such other persons and if, on enquiry, it appears that the persons so signing had no authority to do so, the purchaser may, without prejudice to other civil and criminal remedies, cancel the contract and hold the signatory liable for all cost and damages.
- A tender, which does not fulfil any of the above requirements and/or gives evasive information/reply against any such requirement, shall be liable to be ignored and rejected.

DO NOT'S

Bidders are requested NOT to submit the hard copy of the Bid. In case offer is sent through hard copy/fax/telex/cable/electronically in place of e-tender, the same shall not be considered. **Also, uploading of the price bid in prequalification bid or technical bid may RESULT IN REJECTION of the tender.**

Digital Signing of e-Tender

Tenders shall be uploaded with all relevant PDF/zip format. The relevant tender documents should be uploaded by an authorized person having Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION digital signature certificate (DSC).

The Requirement:

1. A PC with Internet connectivity &
2. DSC (Digital Signature Certificate) (**Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION**)

BHEL has finalized the e-procurement service Provider:-

NIC PORTAL (<https://eprocurebhel.co.in>)

For E-PROCUREMENT ASSISTANCE & TRAINING, NIC PORTAL HELPDESK CONTACTS AS PER FOLLOWING:

For any technical related queries, please call at 24 x 7 Help Desk Number

0120-4001 002

0120-4200 462

0120-4001 005

0120-6277 787

1. Peter Raj, NIC, Ph: 9942069052

Email Support: support-eproc@nic.in

Other details/update yourself from : <https://eprocurebhel.co.in>

The process of utilizing e-procurement necessitates usage of **DSC (Digital Signature Certificate) (Class 3- SHA2- 2048 BIT- SIGNING & ENCRYPTION)** and you are requested to procure the same immediately, if not presently available with you. Please note that only with DSC, you will be able to login the e-procurement secured site and take part in the tendering process.

The contact details of the DSC certifying authority:-

please refer <http://www.mca.gov.in/> → MCA SERVICES → DSC SERVICES

Vendors are requested to go through seller manual available on <https://eprocurebhel.co.in>.

Procedure for Submission of Tenders (To be used in case of Paper bid only): The Tenderers must submit their Tenders to Officer inviting Tender, as detailed below:

- ~~PART I consisting of 'PART I A (Techno Commercial Bid)' & 'PART I B (EMD)' in two separate sealed and superscribed envelopes (ENVELOPE I & ENVELOPE II)~~
- ~~PART II (Price Bid) in sealed and superscribed envelope (ENVELOPE III)~~
- ~~One set of tender documents shall be retained by the bidder for their reference~~

~~6.0 The contents for ENVELOPES and the superscription for each sealed cover/Envelope are as given below. (All pages to be signed and stamped) (To be used in case of Paper bid only):~~

Sl. no.	Description	Remarks
	Part I A	
	ENVELOPE I superscribed as: PART I (TECHNO COMMERCIAL BID) TENDER NO : NAME OF WORK : PROJECT : DUE DATE OF SUBMISSION : CONTAINING THE FOLLOWING:-	
i.	Covering letter/Offer forwarding letter of Tenderer.	
ii.	Duly filled in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.	

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 10 of 76

	<p>Note:</p> <p>a. In case of any deviation, the same should be submitted separately for technical & commercial parts, indicating respective clauses of tender against which deviation is taken by bidder. The list of such deviation shall be placed after document under sl no (i) above. It shall be specifically noted that deviation recorded elsewhere shall not be entertained.</p> <p>b. BHEL reserves the right to accept/reject the deviations without assigning any reasons, and BHEL decision is final and binding.</p> <p style="padding-left: 40px;">i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p style="padding-left: 40px;">ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p>	
iii. —	<p>Supporting documents/ annexure/ schedules/ drawing etc. as required in line with Pre-Qualification criteria.</p> <p>It shall be specifically noted that all documents as per above shall be indexed properly and credential certificates issued by clients shall distinctly bear the name of organization, contact ph. no, FAX no, etc.</p>	
iv. —	All Amendments/Correspondences/Corrigenda/Clarifications/Changes/Errata etc. pertinent to this NIT.	
v. —	Integrity Pact Agreement (Duly signed by the authorized signatory)	If applicable
vi. —	Duly filled in annexures, formats etc. as required under this Tender Specification/NIT	
vii. —	Notice inviting Tender (NIT)	
viii. —	Volume — I A : Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc.	
ix. —	Volume — I B : Special Conditions of Contract (SCC)	
x. —	Volume — I C : General Conditions of Contract (GCC)	
xi. —	Volume — I D : Forms & Procedures	
xii. —	Volume — II (UNPRICED — without disclosing rates/price, but mentioning only 'QUOTED' or 'UNQUOTED' against each item	
xiii. —	Any other details preferred by bidder with proper indexing.	

	PART-I B	
	<p><u>ENVELOPE — II superscribed as:</u></p> <p>PART-I (EMD)</p> <p>TENDER NO :</p> <p>NAME OF WORK :</p> <p>PROJECT:</p> <p>DUE DATE OF SUBMISSION:</p> <p><u>CONTAINING THE FOLLOWING:-</u></p>	

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 11 of 76

	Earnest Money Deposit (EMD) in the form as indicated in this Tender	
--	---	--

	PART-II	
	PRICE BID consisting of the following shall be enclosed	
	ENVELOPE-III superscribed as: PART II (PRICE BID) TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION:	
	CONTAINING THE FOLLOWING	
i	Covering letter/Offer forwarding letter of Tenderer enclosed in Part-I	
ii	Volume II — PRICE BID (Duly Filled in Schedule of Rates — rate/price to be entered in words as well as figures)	

	OUTER COVER	
	ENVELOPE-IV (MAIN ENVELOPE / OUTER ENVELOPE) superscribed as: TECHNO COMMERCIAL BID, PRICE BID & EMD TENDER NO: NAME OF WORK: PROJECT: DUE DATE OF SUBMISSION:	
	CONTAINING THE FOLLOWING:	
i	○ Envelopes-I ○ Envelopes-II ○ Envelopes-III	

- **SPECIAL NOTE: All documents/ annexures to be submitted should be uploaded in respective places in the E-Tender portal as per the list mentioned given in this NIT. BHEL shall not be responsible for any in-complete documents.**

- 7.0 Deviation with respect to tender clauses and additional clauses/suggestions in Techno-commercial bid / Price bid shall NOT be considered by BHEL. Bidders are requested to positively comply with the same.
- 8.0 BHEL reserves the right to accept or reject any or all Offers without assigning any reasons thereof. BHEL also reserves the right to cancel the Tender wholly or partly without assigning any reason thereof. Also BHEL shall not entertain any correspondence from bidders in this matter (except for the refund of EMD).

9.0 PERFORMANCE OF BIDDERS:

- 'Monthly Performance' of the bidder for all the package covered under the tendered scope shall be captured for the packages Under execution'. (refer Table-1)
- The monthly performance rating, shall be calculated as per Online Systems i.e. Contractor Performance Evaluation System (CPES) and Safety Performance Evaluation System (HSEPES). The scores assigned in HSEPES shall be scaled down to 10 and assigned in CPES against the category "HSE" (mentioned in Form F-15).

➤ **Explanatory note:**

- Identified Packages (Unit wise) **Table-1**

Civil	Electrical and C&I	Mechanical
i). Enabling works	i). Electrical	i). Boiler & Aux (All types including CW Piping if applicable)
ii). Pile and Pile Caps	ii). C&I	ii). Power Cycle Piping/Critical Piping
iii). Civil Works including foundations	iii). Others (Elect. and C&I)	iii). ESP
iv). Structural Steel Fabrication & Erection	iv). Electrical Enabling Works	iv). LP Piping
v). Chimney		v). Steam Turbine Generator set & Aux
vi). Cooling Tower		vi). Gas Turbine Generator set & Aux
vii). Others (Civil)		vii). Hydro Turbine Generator set & Aux
		viii). Turbo Blower (including Steam Turbine)
		ix). Material Management
		x). FGD
		xi). ACC
		xii). Others (Mechanical)

- 'Under execution' shall mean works in progress as per the following:
 - (a) Up to execution of 90% of anticipated Contract Value in case of Civil, MM, Structural and Turbo Blower Packages
 - (b) Up to Steam Blowing in case of Boiler/ESP/Piping Packages
 - (c) Up to Synchronization in all Balance Packages

Note: BHEL at its discretion can extend (or reduce in exceptional cases in line with Contract conditions) the period defined against (a), (b) and (c) above, depending upon the balance scope of work to be completed.

- Contractor shall provide the latest contact details i.e. mail-ID and Correspondence Address to SCT Department, so that same can be entered in the Contractor Performance Evaluation System, and in case of any change/discrepancy same shall be informed immediately. Login Details for viewing scores in Contractor Performance Evaluation System shall be provided to the Contractor by SCT Department.
- Performance Evaluation for Activity Month shall be completed in Evaluation Month (i.e. month next to Activity Month) or in rare cases in Post Evaluation Month (i.e. month next to Evaluation Month) after

approval from Competent Authority. In case scores are not acceptable, Contractor can submit Review Request to GM Site/ GM Project latest by 27th of Evaluation Month or 5 days after approval of score, whichever is later. However, acceptance/rejection of 'Review Request' solely depends on the discretion of GM Site/GM Project. After acceptance of Review Request, evaluation score shall be reviewed at site and the score after completion of review process shall be acceptable and binding on the contractor.

- Project on Hold due to reasons not attributable to bidder -
 - **Short hold:** Evaluation shall not be applicable for this period.
 - **Long hold:** Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation shall not be considered for this period.
- Performance evaluation as specified above in this clause is applicable to Prime bidder and Consortium partner (or Technical tie up partner) for their respective scope of work.

10.0 Since the job shall be executed at site, bidders must visit site/ work area and study the job content, facilities available, availability of materials, prevailing site conditions including law & order situation, applicable wage structure, wage rules, etc. before quoting for this tender. They may also consult this office before submitting their offers, for any clarifications regarding scope of work, facilities available at sites or on terms and conditions.

11.0 For any clarification on the tender document, the bidder may seek the same in writing or through e-mail and/or through e-procurement portal, as per specified format, within the scheduled date for seeking clarification, from the office of the undersigned. BHEL shall not be responsible for receipt of queries after due date of seeking clarification due to postal delay or any other delays. Any clarification / query received after last date for seeking clarification may not be normally entertained by BHEL and no time extension will be given.

12.0 BHEL may decide holding of pre-bid discussion [PBD] with all intending bidders as per date indicated in the NIT. The bidder shall ensure participation for the same at the appointed time, date and place as may be decided by BHEL. Bidders shall plan their visit accordingly. The outcome of pre-bid discussion (PBD) shall also form part of tender.

13.0 In the event of any conflict between requirement of any clause of this specification/ documents/drawings/data sheets etc. or requirements of different codes/standards specified, the same to be brought to the knowledge of BHEL in writing for clarification before due date of seeking clarification (whichever is applicable), otherwise, interpretation by BHEL shall prevail. Any typing error/missing pages/ other clerical errors in the tender documents, noticed must be pointed out before pre-bid meeting/submission of offer, else BHEL's interpretation shall prevail.

14.0 Unless specifically mentioned otherwise, bidder's quoted price shall deemed to be in compliance with tender including PBD.

~~15.0 Bidders shall submit Integrity Pact Agreement (Duly signed by authorized signatory who signs in the offer), if applicable, along with techno-commercial bid. This pact shall be considered as a preliminary qualification for further participation. The names and other details of Independent External Monitor (IEM) for the subject tender is as given at point (1) above.~~

"Integrity Pact (IP)"

Registered Office: BHEL House, Siri Fort, New Delhi – 110 049, India
Website: www.bhel.com

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 14 of 76

- (a) ~~IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.~~

Sl. No.	IEM	Email
1.	Shri Otem Dai, IAS (Retd.)	iem1@bhel.in
2.	Shri Bishwamitra Pandey, IRAS (Retd.)	iem2@bhel.in
3.	Shri Mukesh Mittal, IRS (Retd.)	iem3@bhel.in

- (b) ~~The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.~~
- (c) ~~Please refer Section 8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.~~

~~Note:~~

~~No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided below:~~

~~Details of contact person(s):~~

Name:	Sh P K Biswas	Biraj Roy/ Sr.Manager (Purchase)
Dept:	Purchase Department	
Address:	Floor No. 5 & 6, Shreemohini Complex, 345 Kingsway, Nagpur 440001	
Email:	pkbiswas@bhel.in	biraj@bhel.in
Phone:	8617711054	9587886706

16.0 The Bidder has to satisfy the Pre-Qualifying Requirements stipulated for this Tender in order to be qualified. The Price Bids of only those bidders will be opened who will be qualified for the subject job on the basis of satisfying the Pre-Qualification Criteria specified in this NIT as per Annexure-I (as applicable), past performance etc. and date of opening of price bids shall be intimated to only such bidders. BHEL reserves the right not to consider offers of parties under HOLD.

17.0 In case BHEL decides on a 'Public Opening', the date & time of opening of the sealed PRICE BID shall be intimated to the qualified bidders and in such a case, bidder may depute one authorized representative to witness the price bid opening. BHEL reserves the right to open 'in-camera' the 'PRICE BID' of any or all Unsuccessful/Disqualified bidders under intimation to the respective bidders.

18.0 Validity of the offer shall be for **six months** from the latest due date of offer submission (including extension, if any) unless specified otherwise.

19.0 **Reverse Auction:** "BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com on "supplier registration page".) for this tender. RA shall be conducted among all the techno-commercially qualified bidders.

Price Bids of all the techno-commercially qualified bidders shall be opened and same shall be considered as initial bids of bidders in RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

20.0 On submission of offer, further consideration will be subject to compliance to tender & qualifying requirement and customer's acceptance, as applicable.

21.0 In case the bidder is an "Indian Agent of Foreign Principals", 'Agency agreement has to be submitted along with Bid, detailing the role of the agent along with the terms of payment for agency commission in INR, along with supporting documents.

22.0 The bidders shall not enter into any undisclosed M.O.U. or any understanding amongst themselves with respect to tender.

23.0 VOID

24.0 The bidder shall submit/upload documents in support of possession of 'Qualifying Requirements' duly self-certified and stamped by the authorized signatory, indexed and properly linked in the format for PQR. In case BHEL requires any other documents/proofs, these shall be submitted immediately.

25.0 The bidder may have to produce original document for verification if so decided by BHEL.

26.0 The consultant / firm (and any of its affiliates) shall not be eligible to participate in tender(s) for the related works or services for the same project, if they were engaged for the consultancy services.

27.0 Guidelines/rules in respect of Suspension of Business dealings, Vendor evaluation format, Quality, Safety & HSE guidelines, Experience Certificate, etc. may undergo change from time to time and the latest one shall be followed. The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' is available on www.bhel.com on "supplier registration page".

28.0 The offers of the bidders who are on the banned/ hold list and also the offer of the bidders, who engage the services of the banned/ hold firms, shall be rejected. The list of **banned/ hold firms** is available on BHEL web site www.bhel.com.

28.1 Integrity commitment, performance of the contract and punitive action thereof:

28.1.1 Commitment by BHEL:

BHEL commits to take all measures necessary to prevent corruption in connection with the tender Process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

28.1.2 Commitment by Bidder/ Supplier/ Contractor:

- (i) The bidder/ supplier/ contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.
- (ii) The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.
- (iii) The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the prices or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extent guidelines of the company available on www.bhel.com and / or under applicable legal provisions.

29.0 ~~Micro and Small Enterprises (MSE)~~

~~Any Bidder falling under MSE category, shall furnish the following details & submit documentary evidence/ Govt. Certificate etc. in support of the same along with their techno-commercial offer.~~

Type under MSE	SC/ST owned	Women owned	Others (excluding SC/ ST & Women Owned)
Micro			
Small			

~~**Note:** If the bidder does not furnish the above, offer shall be processed construing that the bidder is not falling under MSE category.~~

- ~~a) MSE suppliers can avail the intended benefits in respect of the procurements related to the Goods and Services only (Definition of Goods and Services as enumerated by Govt. of India vide Office Memorandum F. No. 21(8)/2011 MA dtd. 09/11/2016 office of AS & DC, MSME) only if they submit along with the offer, attested copies of either Udyam Registration Certificate or EM-II certificate having deemed validity (five years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or Udyog Aadhar Memorandum (UAM) & Acknowledgement or EM-II Certificate along with attested copy of a CA certificate (**format enclosed as Annexure — 3**) where deemed validity of EM-II certificate of five years has expired applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the last date of Technical Bid submission. Non-submission of such documents will lead to consideration of their bids at par with other bidders. No benefits shall be applicable for this enquiry if the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. Documents submitted by the bidder may be verified by BHEL for rendering the applicable benefits.~~

30.0 The Bidder along with its associate/ collaborators/ sub-contractors/ sub-vendors/ consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

31.0 PREFERENCE TO MAKE IN INDIA:

For this procurement, the local content to categorize a supplier as a Class I local supplier/ Class II local Supplier/Non-Local Supplier and purchase preferences to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for the items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part-II bids against this NIT.

31.1 Compliance to Restrictions under Rule 144 (xi) of GFR 2017

- I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent Authority for the purpose of this Clause shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).*
- II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.*
- III. "Bidder from a country which shares a land border with India" for the purpose of this Clause means: -*
 - a. An entity incorporated established or registered in such a country; or*
 - b. A subsidiary of an entity incorporated established or registered in such a country; or*
 - c. An entity substantially controlled through entities incorporated, established or registered in such a country; or*
 - d. An entity whose beneficial owner is situated in such a country; or*
 - e. An Indian (or other) agent of such an entity; or*
 - f. A natural person who is a citizen of such a country; or*
 - g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above*
- IV. The beneficial owner for the purpose of (III) above will be as under:*
 - 1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.*

Explanation

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

b. *“Control” shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.*

2. *In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership.*

3. *In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person has ownership of or entitlement to more than fifteen percent of the property or capital or profits of the such association or body of individuals.*

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

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

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

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

Note:

(i) *The bidder shall provide undertaking for their compliance to this Clause, in the Format provided in Annexure-11.*

(ii) *Registration of the bidder with Competent Authority should be valid at the time of submission as well as acceptance of the bids.*

32.0 Bid should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection.

All overwriting/cutting, etc., will be numbered by bid opening officials and announced during bid opening.

33.0 In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders.

In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/ draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s).

Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

34.0 The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.

35.0 Order of Precedence:

In the event of any ambiguity or conflict between the Tender Documents, the order of precedence shall be in the order below:

- a. Amendments/Clarifications/Corrigenda/Errata etc. issued in respect of the tender documents by BHEL
- b. Notice Inviting Tender (NIT)
- c. Price Bid
- d. Technical Conditions of Contract (TCC)—Volume-1A
- e. Special Conditions of Contract (SCC) —Volume-1B
- f. General Conditions of Contract (GCC) —Volume-1C
- g. Forms and Procedures —Volume-1D

It may please be noted that guidelines/ circulars/ amendments/ govt. directives issued from time to time shall also be applicable.

For BHARAT HEAVY ELECTRICALS LTD

(General Manager - Purchase)

Enclosure:

01. Annexure-1: Pre Qualifying Requirements.
02. Annexure-2: Check List.
- ~~03. Annexure-3: Certificate by Chartered Accountant~~
04. Annexure-4: Reverse Auction Process Compliance Form
05. Annexure-5: Authorization of representative who will participate in the online Reverse Auction Process
06. Annexure-6: RA Price Confirmation and Breakup
- ~~07. Annexure 7: Integrity Pact~~
08. Annexure-8: Undertaking as per PQR C4 of Annexure-1 i.e. PQR
09. Annexure-9: Declaration reg. Related Firms & their areas of Activities
010. Annexure-10: DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH JUNE, 2020 AND SUBSEQUENT ORDER(S)
011. Annexure 11: DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017
012. Annexure 12: Important information.

PRE QUALIFYING CRITERIA

E-Tender Spec No: BHE/PW/PUR/MAHAN-COH U2/3072	
JOB	Capital Overhauling of TG Set incl HIP, LP including in situ HIP Seal fin replacement, Inspection of Lube oil system, servicing of TG valves & steam Strainers, HIP Angle ring replacement, HIP Insulation, C&I work, COH of Generator including Stator Capsule replacement, electrical testing & Associated Work U#2, 150 MW, Hindalco Mahan. Bargawan, (M.P.)

S No	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Applicability	
A	Submission of Integrity Pact duly signed (if applicable) (Note: To be submitted by Prime Bidder & Consortium / Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)	Not Applicable	
B	B) Technical PQR B.1 At least one Job of "Erection and Commissioning' / 'General Overhauling' of Turbine & Generator of STG" AND B.2 One Overhauling involving at least one module along with Generator of rating ≥ 110 MW capacity Power plant against direct order from BHEL / PSUs / State Electricity Utilities/ Equipment owner in last 07 (Seven) years, ending on latest due date of submission of offer. Note: 1) Relevant Supporting Documents of WORK ORDER COPY AND WORK COMPLETION CERTIFICATES shall be submitted. Work completion certificates are not required if works are executed under BHEL. 2) The word EXECUTED means: The work shall have been completed up to SYNCHRONISATION (Synchronization date shall be considered for evaluation)	Applicable	
C-1	Financial TURNOVER Bidders must have achieved an average annual financial turnover (audited) of ₹33.90 Lakhs or more over last three Financial Years (FY) i.e. '2021-22 , 2022-23 & 2023-2024'.	Applicable	
C-2	NETWORTH (only in case of Companies) Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive.	Applicable	
C-3	PROFIT Bidder must have earned profit in any one of the five Financial Years as applicable in the last five Financial Years (" 2019-2020,2020-21, 2021-22 , 2022-23 & 2023-24 as on date "). Bidders to submit audited balance sheets and profit & loss statements for the years as supporting documents..	Applicable	

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 21 of 76

C-4	Bidder must not be under Insolvency Resolution Process or Liquidation or Bankruptcy Code Proceedings (IBC) as on date, by NCLT or any adjudicating authority/authorities, which will render him ineligible for participation in this tender, and shall submit undertaking (Annexure-8) to this effect	Applicable	
D	VOID	Not Applicable	
E	Approval of Customer (if applicable)	Not Applicable	
F	Price Bid Opening Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E		BY BHEL
G	Consortium tie-ups	Not Applicable	

Explanatory Notes for the PQR (unless otherwise specified in the PQR):

Explanatory Notes for PQR B.1 (Technical)

1. The evaluation currency for this tender shall be INR.
2. For the criteria (B.1), actual executed value shall be considered.
3. Value of work is to be updated with indices for "All India Avg. Consumer Price index for industrial workers" and "Monthly Whole Sale Price Index for All Commodities" with base month as per last month of work execution and indexed up to three (3) months prior to the month of latest due date of bid submission as per following formula-

$$P = R + 0.425 \times R \times \frac{(X_N - X_0)}{X_0} + 0.425 \times R \times \frac{(Y_N - Y_0)}{Y_0}$$

Where

P = Updated value of work

R = Value of executed work

X_N = All India Avg. Consumer Price index for industrial workers for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

X₀ = All India Avg. Consumer Price index for industrial workers for last month of work execution

Y_N = Monthly Whole Sale Price Index for All Commodities for three months prior to the month of latest due date of bid submission (e.g. If latest bid submission date is 02-Mar-17, then bid submission month shall be reckoned as March'17 and index for Dec'2016 shall be considered).

Y₀ = Monthly Whole Sale Price Index for All Commodities for last month of work execution

Explanatory Notes for Technical Criteria (B2):

1. VOID
2. Unless otherwise specified, for the purpose of "B2 Technical Criteria", the word 'EXECUTED' means achievement of milestones as defined below -
 - a. "ACHIEVEMENT OF PHYSICAL QUANTITIES" as per PQRs.
 - b. "READINESS FOR COAL FILLING" of at least one Bunker, in respect of Mill Bunker Structure.
 - c. "CHARGING" in respect of Power Transformers/ Bus Ducts/ "HT/LT Switchgears" / "HT/LT Cabling".
 - d. For C&I works: "SYNCHRONISATION" in case of power project (Excluding Nuclear Projects) / "WORK EXECUTION of the value as defined in PQR" in case of industry & Nuclear Projects.

- e. "BOILER LIGHT UP" in respect of Boiler / CFBC / ESP.
 - f. "CHARGING OF ATLEAST ONE PASS" in respect of ESP(R&M)
 - g. "GAS IN" in respect of HRSG.
 - h. "STEAM BLOWING" in respect of Power Cycle Piping.
 - i. "HYDRAULIC TEST"/ ANY OTHER EQUIVALENT TEST LIKE "100% RT/UT OF WELDED JOINTS" of the system in respect of Pressure parts/ LP Piping/CW Piping.
 - j. "FULL LOAD OPERATION OF THE UNIT" in respect of Insulation work.
 - k. "SYNCHRONISATION" in respect of STG / GTG.
 - l. "SPINNING" in respect of HTG.
 - m. "GAS IN" in respect of FGD
3. Boiler means HRSG or WHRB or any other types of Steam Generator.
4. Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass.
5. For the purpose of evaluation of the PQR, one MW shall be considered equivalent to 3.5 TPH where ever rating of HRSG/BOILER is mentioned in MW. Similarly, where ever rating of Gas Turbine is mentioned in terms of Frame size, ISO rating of the same in terms of MW shall be considered for evaluation.

Explanatory Notes for PQR -C (Financial):

C-1:

- i. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated against C-1 above.
- ii. Evaluation of Turnover criteria shall be calculated from the Audited Balance Sheet and Profit & Loss Account for the three Financial Years (FY).
- iii. In case audited Financial statements have not been submitted for all the three years as indicated against C-1 above, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years.
- iv. If financial statements are not required to be audited statutorily, then instead of audited financial statements, financial statements are required to be certified by Chartered Accountant.

C-2: Net Worth (Only in case of companies) of the bidder should be positive.

Note: Net worth shall be calculated based on the latest Audited Accounts as furnished for 'C-1' above.

Net worth = Paid up share capital + Reserves

C-3: Bidder must have earned profit in any one of the FIVE financial years as applicable in the last three financial years as furnished for 'C-1' above.

Note: PROFIT shall be PBT earned during any one year of last FIVE financial years as in 'C-1' above.

C-4: Bidder must not be under Bankruptcy Code Proceedings (IBC) by NCLT or under Liquidation / BIFR, which will render him ineligible for participation in this tender, and shall submit undertaking to this effect.

Common Explanatory Notes:

- 1. For evaluation of PQR, in case Bidder alone does not meet the pre-qualifying technical criteria B1 above, bidder may utilize the experience of its Parent/ Subsidiary Company along with its own experience, subject to following:
 - a. The parent company shall have a controlling stake of $\geq 50\%$ in the subsidiary company (as per Format-1).
 - b. The Parent Company/ Subsidiary Company of which experience is being utilized for bidding shall submit Security Deposit(SD) equivalent to 1% of the total contract value

- c. The parent/ subsidiary company and bidder shall provide an undertaking that they are jointly or severally responsible for successful performance of the contract (as per Format-2).
 - d. In case Bidder is submitting bid as a Consortium Partner, option of utilizing experience of parent/subsidiary Company can be availed by Prime Bidder only.
 - e. Parent Company/ Subsidiary Company of which experience is being used for bidding, cannot participate as a 'Standalone Bidder' or as a 'Consortium bidder'.
2. Completion date for achievement of the technical criteria specified in the 'B' above should be in the last 7 years ending on the 'latest date of Bid Submission' of Tender irrespective of date of the start of work. Completion date shall be reckoned from the " Financial Year quarter of bid submission". (for e.g. -Work completed on 01.01.2014 shall be considered even if latest date of bid submission is 20.03.2021).
3. "Executed" means the bidder should have achieved the technical criteria specified in the Common QR even if the Contract has not been completed or closed.
4. In case the Experience/PO/WO certificate enclosed by bidders do not have separate break up of prices for the E&C portion for Electrical and C&I works (i.e. the certificates enclosed are for composite order for supply and erection of Electrical and C&I and other works if any), then value of Erection & Commissioning for the Electrical and C&I portion shall be considered as 15% of the price for supply & erection of Electrical and C&I.
5. Following shall be complied with in case of consortium:
 - a. The Prime Bidder and Consortium Partner(s) are required to enter in to a consortium agreement and certify to BHEL regarding existence and validity of their consortium agreement in line with validity period mentioned in NIT.
 - b. Prime Bidder and Consortium partners shall be approved by Customer for being considered for the tender (applicable if customer approval is required).
 - c. Number of partners including prime Bidder shall be NOT more than 3 (three).
 - d. Prime Bidder alone shall necessarily comply with "B1Technical Criteria" except for mechanical package where B1 criteria is not applicable.
 - e. Prime Bidder and Consortium Partner shall together comply with the 'Pre-Qualification Requirements' specified for the respective category of technical requirement as per "B2 technical criteria".
 - f. Prime Bidder shall comply with all other Pre Qualifying criteria for the Tender unless otherwise specified.
 - g. All other conditions shall be read in conjunction with clause no 23.0 of NIT.
 - h. Prime Bidder shall be the Bidder who has a major share of work.
 - i. Prime Bidder shall be responsible for the overall execution of the Contract.
 - j. Performance shall be evaluated for Prime Bidder and the Consortium partner for their respective scope of work.
 - k. In case the Consortium partner backs out, another consortium partner meeting the QRs, has to be engaged by Prime Bidder and if not, the respective work will be withdrawn and executed on risk and cost basis of the prime bidder.
 - l. In case Prime Bidder withdraws or insolvency / liquidation / winding up proceedings have been initiated / admitted against the Prime Bidder, BHEL reserves the right to cancel, terminate or short close the contract or take any other action to safeguard BHEL's interest in the Project / Contract. This action will be without prejudice to any other action that BHEL can take under Law and the Contract to safeguard interests of BHEL
 - m. After successful execution of one work with a consortium partner under direct orders of BHEL, the Prime Bidder shall be eligible for becoming a 'standalone' bidder for works similar to that for which consortium partner was engaged, for subsequent tenders.

n. The Consortium partner shall submit SD equivalent to 1% of the total contract value in addition to the SD to be submitted by the Prime Bidder for the total contract value.

BIDDER SHALL SUBMIT ABOVE PRE-QUALIFICATION CRITERIA FORMAT, DULY FILLED-IN, SPECIFYING RESPECTIVE ANNEXURE NUMBER AGAINST EACH CRITERIA AND FURNISH RELEVANT DOCUMENT INCLUSIVE OF WORK ORDER AND WORK COMPLETION CERTIFICATE ETC IN THE RESPECTIVE ANNEXURES IN THEIR OFFER.

Credentials submitted by the bidder against "PRE QUALIFYING CRITERIAS" shall be verified for its authenticity. In case, any credential (s) is/are found unauthentic, offer of the bidder is liable to the rejection. BHEL reserves the right to initiate any further action as per extant guidelines for Suspension of Business Dealings.

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 25 of 76

Format-1

Not Applicable

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 26 of 76

Format-2

Not Applicable

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 27 of 76

ANNEXURE - 2

CHECK LIST

NOTE: - Tenderers are required to fill in the following details and no column should be left blank

1	Name and Address of the Tenderer		
2	Details about type of the Firm/Company		
3.a	Details of Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
3.b	Details of alternate Contact person for this Tender	Name : Mr/Ms Designation: Telephone No: Mobile No: Email ID: Fax No:	
4	EMD DETAILS	DD No: Date : Bank : Amount: Please tick (√) whichever applicable:- ONE TIME EMD / ONLY FOR THIS TENDER	
5	Validity of Offer	TO BE VALID FOR SIX MONTHS FROM DUE DATE	
		APPLICABILITY (BY BHEL)	ENCLOSED BY BIDDER
6	Whether the format for compliance with PRE QUALIFICATION CRITERIA (ANNEXURE-I) is understood and filled with proper supporting documents referenced in the specified format	Applicable	YES / NO
7	Audited profit and Loss Account for the last three years	Applicable/Not Applicable	YES/NO
8	Copy of PAN Card	Applicable/Not Applicable	YES/NO
9	Whether all pages of the Tender documents including annexures, appendices etc. are read understood and signed	Applicable/Not Applicable	YES/NO
10	Integrity Pact	Applicable/Not Applicable	YES/NO
11	Declaration by Authorized Signatory	Applicable/Not Applicable	YES/NO
12	No Deviation Certificate	Applicable/Not Applicable	YES/NO
13	Declaration confirming knowledge about Site Conditions	Applicable/Not Applicable	YES/NO
14	Declaration for relation in BHEL	Applicable/Not Applicable	YES/NO
15	Non-Disclosure Certificate	Applicable/Not Applicable	YES/NO

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 28 of 76

16	Bank Account Details for E-Payment	Applicable/Not Applicable	YES/NO
17	Capacity Evaluation of Bidder for current Tender	Applicable/Not Applicable	YES/NO
18	Tie Ups/Consortium Agreement are submitted as per format	Applicable/Not Applicable	YES/ NO
19	Power of Attorney for Submission of Tender/Signing Contract Agreement Power of Attorney of Consortium Partner.	Applicable/Not Applicable	YES/NO
20	Analysis of Unit rates	Applicable/Not Applicable	YES/NO

NOTE: STRIKE OFF 'YES' OR 'NO', AS APPLICABLE. TENDER NOT ACCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

DATE :

AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

BHEL PSWR
Notice Inviting Tender
E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 29 of 76

ANNEXURE 3

Certificate by Chartered Accountant on letter head

(applicable upto 31st March 2021 in line with MSME notification no. S.O. 2119 (E), dated 26th June 2020)

This is to Certify that M/S
(hereinafter referred to as 'company') having its registered office at
..... is registered under MSMED Act 2006, (Entrepreneur
Memorandum No. (Part II)/ Udyam Registration Certificate No.
..... dtd:, Category: (Micro/Small/Medium)).
(Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year as per MSMED Act 2006 is as follows:

1. ~~For Manufacturing Enterprises:~~ Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No. S.O.1722(E) dated October 5, 2006:
Rs Lacs
2. ~~For Service Enterprises:~~ Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006:
Rs Lacs
3. ~~For Enterprises~~ (having EM II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum): Investment in plant and machinery or equipment is Rs. Lacs and turnover is Rs. Lacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)
4. ~~For Enterprises~~ (having EM II Certificate/ valid NSIC Certificate or Udyog Aadhar Memorandum): Investment in plant and machinery or equipment is Rs. Lacs and turnover is Rs. Lacs (as notified in MSME notification no. S.O. 2119 (E) dated 26.06.2020)

~~(Strike off whichever is not applicable)~~

~~The above investment of Rs Lacs is within permissible limit of Rs Lacs for Micro / Small/ Medium (Strike off which is not applicable) Category under MSMED Act 2006.~~

~~Or~~

~~The enterprise has been graduated upward from its original category (micro/small/medium) (strike off which is not applicable), the enterprise shall maintain its prevailing status till expiry of one year from the close of year of registration, as notified vide S.O. No. 2119 (E) dated 26.06.2020 published in the gazette notification dated 26.06.2020 by Ministry of MSME.~~

~~Or~~

~~The enterprise has been reverse graduated from its original category (micro/small/medium) (strike off which is not applicable), the enterprise will continue in its present category till the closure of the financial year and it will be given the benefit of the changed status only with effect from 1st April of the financial year following the year in which such change took place, as notified vide S.O. No. 2119 (E) dated 26.06.2020 published in the gazette notification dated 26.06.2020 by Ministry of MSME.~~

~~Date:~~

~~(Signature)~~

~~Name:~~

~~Membership Number:~~

Seal of the Chartered Accountant

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 30 of 76

ANNEXURE-4

Reverse Auction Process Compliance Form

(The bidders are required to print this on their company's letterhead and sign, stamp before RA)

To

- M/s. {Service provider
- Postal address}

Sub: Agreement to the Process related Terms and Conditions

Dear Sir,

This has reference to the Terms & Conditions for the Reverse Auction mentioned in the RFQ document for {Items} against BHEL enquiry/ RFQ no. { } dt. {.....}

This letter is to confirm that:

- 1) The undersigned is authorized official/ representative of the company to participate in RA and to sign the related documents.
- 2) We have studied the Reverse Auction guidelines (as available on www.bhel.com), and the Business rules governing the Reverse Auction as mentioned in your letter and confirm our agreement to them.
- 3) We also confirm that we have taken the training on the auction tool and have understood the functionality of the same thoroughly.
- 4) We also confirm that, in case we become L1 bidder, we will FAX/ email the price confirmation & break up of our quoted price as per Annexure - 6 within **two** working days (of BHEL) after completion of RA event, besides sending the same by registered post/ courier both to M/s. BHEL and M/s. {Service provider.}

We, hereby confirm that we will honor the Bids placed by us during the auction process.

With regards

Signature with company seal

Name:

Company / Organization:

Designation within Company / Organization:

Address of Company / Organization:

Sign this document and FAX/ email it to M/s {Service provider} at {.....} prior to start of the Event.

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 31 of 76

ANNEXURE – 5

Authorization of representative who will participate in the on line Reverse Auction Process:

1	NAME OF THE BIDDER	
2	NAME & DESIGNATION OF OFFICIAL	
3	POSTAL ADDRESS (COMPLETE)	
4	TELEPHONE NOS. (LAND LINE & MOBILE BOTH)	
5	E-MAIL ADDRESS	
6	NAME OF PLACE/ STATE/ COUNTRY, WHEREFROM S/HE WILL PARTICIPATE IN THE REVERSE AUCTION	

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 32 of 76

ANNEXURE – 6

Reverse Auction price confirmation and breakup
(To be submitted by L1 bidder after completion of Reverse Auction)

To

- M/s. Service provider
- Postal address

CC: M/s BHEL POWER SECTOR WESTERN REGION, Nagpur

Sub: **Final price quoted during Reverse Auction and price breakup**

Dear Sir,

We confirm that we have quoted.

Rs. _____ (in value) &
_____ (in words)

for item(s) covered under tender enquiry No. dtd

~~Total price of the items covered under above cited enquiries is inclusive of {Packing & forwarding, GST, E.D., C.S.T., freight and insurance charges up to {.....} District, {.....} State and Type Test Charges etc., (exclusive of service tax), other as per NIT}~~

as our final landed prices as quoted during the Reverse Auction conducted today {date _____}
which will be valid for a period of {~~in nos. & in words~~} days. as mentioned in the subject tender.

Yours sincerely,

For _____

Name:

Company:

Date:

Seal:

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 33 of 76

ANNEXURE – 7

INTEGRITY PACT

Not Applicable

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 34 of 76

ANNEXURE – 8

UNDERTAKING

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir/Madam,

Sub: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/ BANKRUPTCY PROCEEDINGS

Ref: NIT/Tender Specification No:

I/We,

declare that, I/We am/are not under insolvency resolution process or liquidation or Bankruptcy Code Proceedings (IBC) as on date, by NCLT or any adjudicating authority/authorities, which will render us ineligible for participation in this tender.

**Sign. of the AUTHORISED SIGNATORY
(With Name, Designation and Company seal)**

Place:

Date:

ANNEXURE-9

DECLARATION

Date: _____

To _____

BHEL, _____

Email: _____

Sub: **Details of related firms and their area of activities**

Dear Sir/ Madam,

Please find below details of firms owned by our family members that are doing business/ registered for same item with BHEL, _____ (NA, if not applicable).

1	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
2	Material Category/ Work Description	
	Name of Firm	
	Address of Firm	
	Nature of Business	
	Name of Family Member	
	Relationship	
.....		

Note: I certify that the above information is true and I agree for penal action from BHEL in case any of the above information furnished is found to be false.

Regards,

(_____)

From: M/s _____

Supplier Code: _____

Address: _____

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 36 of 76

ANNEXURE-10

**DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER 2017 DATED 04TH JUNE,
2020 AND SUBSEQUENT ORDER(S)**

(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04th June, 2020 and subsequent order(s).

Ref : 1) NIT/Tender Specification No:
2) All other pertinent issues till date

We hereby certify that the items/works/services offered by..... *(specify the name of the organization here)* has a local content of _____ % and this meets the local content requirement for '**Class-I local supplier**' / '**Class II local supplier**' ** as defined in Public Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

- | | |
|----------|----------|
| 1. _____ | 2. _____ |
| 3. _____ | 4. _____ |

...

Thanking you,
Yours faithfully,

**(Signature, Date & Seal of
Authorized Signatory of the Bidder)**

**** - Strike out whichever is not applicable.**

Note:

1. Bidders to note that above format Duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidder's quoted value is in excess of Rs. 10 crores, the authorized signatory for this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practising cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder.

ANNEXURE-11

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 37 of 76

DECLARATION REGARDING COMPLIANCE TO RESTRICTIONS UNDER RULE 144 (xi) OF GFR 2017
(To be typed and submitted in the Letter Head of the Entity/Firm providing certificate as applicable)

To,

(Write Name & Address of Officer of BHEL inviting the Tender)

Dear Sir,

Sub: Declaration regarding compliance to Restrictions under Rule 144 (xi) of GFR 2017

Ref : 1) NIT/Tender Specification No:
2) All other pertinent issues till date

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I certify that _____ *(specify the name of the organization here),*

(a) is not from such a country / ☐

(b) has been registered with the Competent Authority *(attach valid registration by the Competent Authority, i.e., the Registration Committee constituted by the Dept. for Promotion of Industry and Internal Trade (DPIIT));* ☐

and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. *(attach relevant valid registration, if applicable)*

I hereby certify that we fulfil all requirements in this regard and is eligible to be considered.

Thanking you,
Yours faithfully,

**(Signature, Date & Seal of
Authorized Signatory of the Bidder)**

Note: Bidders to note that in case above certification given by a bidder, whose bid is accepted, is found to be false, then this would be a ground for immediate termination and for taking further action in accordance with law and as per BHEL guidelines.

**BHEL PSWR
Notice Inviting Tender**

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 38 of 76

Annexure-12: IMPORTANT INFORMATION

E -Tender for this work is invited by BHEL PSWR NAGPUR and offer shall be submitted through BHEL e-procurement portal only. All correspondences regarding this tender shall be through E-procurement portal.

Postal Address:

GM /Purchase BHEL PSWR,
SRIMOHINI COMPLEX, Floor No. 5 & 6, 345 KINGSWAY, NAGPUR 440001, INDIA

Following are the concerned BHEL officials to whom bidders can contact in case of any difficulty:

Manager Purchase, Email: vvaitya@bhel.in Ph: +91 - 712 - 2858 - 713

GM Purchase, Email:

2. Refer Chapter XII of Volume IB Special Conditions of Contract regarding Suspension of Business Dealings: The abridged version of extant 'Guidelines for suspension of business dealings with suppliers/ contractors' has now been uploaded on www.bhel.com on "supplier registration page" at the following link:
http://www.bhel.com/vender_registration/pdf/Suspension_guidelines_abridged.pdf

3. All Statutory Requirements as applicable for this project shall be complied with.

4. Following clause shall form part of the HSE documents issued under Chapter IX of Volume IB 'Special Conditions of Contract'

"In case of any financial deduction made by Customer for lapses of safety other than what is provided elsewhere in the contract, the same shall be charged on back-to-back basis on the defaulting contractor without prejudice to any other right spelt anywhere in the tender /contract"

5. **Acceptance of Bank Guarantee (BG)**
Revision in Acceptance of Bank Guarantee (BG) Clause no. 1.10.3 (iv) of Vol I C GCC:

Clause No. 1.10.3 (iv) of Vol IC GCC is revised as below: -

"Bank Guarantee issued by:

- a. Any of the BHEL consortium bank listed below:

State Bank of India
ABN Amro Bank N.V.
Bank of Baroda
Canara Bank
Citi Bank N.A.
Corporation Bank
Deutsche Bank
HDFC Bank Ltd.
The Hongkong and Shanghai Banking Corporation Ltd
ICICI Bank Ltd.

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 39 of 76

IDBI Ltd.
Punjab National Bank
Standard Chartered Bank
State Bank of Travancore
State Bank of Hyderabad
Syndicate Bank

- b. Any public sector Bank (other than consortium banks) with a clause in the text of Bank Guarantee that **"It is enforceable at Nagpur, Maharashtra"**.
- c. Any private sector banks, with a clause in the text of Bank Guarantee that **"It is enforceable by being presented at any branch of the bank"**.

Note: "Bank Guarantees issued by Co-operative Banks are not acceptable".

6. Broad Terms & Conditions of Reverse Auction:

In continuation to Clause 19.0 of NIT (Notice Inviting Tender) following are the broad terms and conditions of Reverse Auction:

"BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) (<https://www.bhel.com/guidelines-reverse-auction-2024>) for this tender. RA shall be conducted among the techno-commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking."

Note:-

- 1. Reverse Auction will be conducted if two or more bidders are techno-commercially qualified .
- 2. Wherever RA is opted in a tender, the techno-commercially qualified H1 will not be allowed to participate in RA. In case more than one H1 bidder quote the same rate, the Price Offer received last, as per the time log of the Portal, shall be removed first, on the principle of last in, first out by the system.
- 3. However, H1 will be allowed to participate in RA in the following cases:
 - a) If number of techno-commercially qualified bidders are only 2 or 3.
 - b) In case Primary product of only one OEM is left in contention for participation in RA on elimination of H1.
 - c) For cases where there are more than 3 techno-commercially qualified bidders, if lowest bidder in sealed price bid is non-MSE and H-1 is eligible MSE and H-1 price is coming within price band of 15% of Non-MSE lowest bidder.
 - d) For cases where there are more than 3 techno-commercially qualified bidders, if lowest bidder in sealed price bid is non-MII and H-1 is eligible MII and H-1 price is coming within price band of 20% of Non-MII lowest bidder.

7. Conflict of Interest among Bidders/ Agents:

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 40 of 76

“A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. ***The bidder found to have a conflict of interest shall be disqualified.*** A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if:

a) they have controlling partner (s) in common;

or

b) they receive or have received any direct or indirect subsidy/ financial stake from any of them;

or

c) they have the same legal representative/agent for purposes of this bid; **or**

d) they have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder; **or**

e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/ sub-assembly/ Assemblies from one bidding manufacturer in more than one bid; **or**

f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorize only one agent/dealer. There can be only one bid from the following:

1. The principal manufacturer directly or through one Indian agent on his behalf; **and**

2. Indian/foreign agent on behalf of only one principal;

or

g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; **or**

h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/ common business/ management units in same/ similar line of business.”

8. Bidders kindly to take note that EMD (Earnest Money Deposit) shall be furnished by MSE bidders as well, as per the amount and procedure indicated in the NIT/GCC

9. Price Variation Compensation Clause no 2.17 of standard GCC shall not be applicable

10. Overrun compensation clause no. 2.12 of standard GCC shall not be applicable

BHEL PSWR
Notice Inviting Tender

E-Tender Specification No: BHE/PW/PUR/MAHAN-COH U2/3072

Pg 41 of 76

11. LIQUIDATED DAMAGES/PENALTY: As per clause no. 2.7.9 of GCC with the amended of Liquidated Damage/Penalty at the rate of 0.5% of the contract value, per day of delay or part thereof subject to a maximum of 10% of the contract value.
12. Progress Monitoring, Monthly Review and Performance Evaluation of Vol-I BCD is not applicable. Separate Performance evaluation as per SAS format shall be considered for evaluation purpose.
13. Interest bearing recoverable advances- CI no. 2.13 of GCC, is not applicable.
14. Performance Guarantee of Workmanship for the work done / Defect liability period shall be as per 2.24 of GCC with the amendment in CI 2.24.1 as 06 months from the date of synchronization of Unit. Any defects arising due to poor workmanship shall have to be attended free of cost during DLP.
15. **Being an overhauling job & overlapping of various job in same area splitting of Work is not allowed.**

14. Following Amendment in CI 1.14 EXECUTION OF CONTRACT AGREEMENT of the GCC:

CI 1.14 EXECUTION OF CONTRACT AGREEMENT of the GCC	Amended as
<p>The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent/ Award by Bharat Heavy Electricals Limited.</p> <p>The successful tenderer shall be required to execute an agreement in the prescribed form, with BHEL, within a reasonable time after the acceptance of the Letter of Intent/Award, and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized/empowered by the tenderer. The expenses for preparation of agreement document shall be borne by BHEL.</p>	<p>The successful tenderer's responsibility under this contract commences from the date of issue of the Letter of Intent by Bharat Heavy Electricals Limited.</p> <p>The successful tenderer shall be required to execute an agreement in the prescribed form, with BHEL, within a reasonable time after the acceptance of the Letter of Intent/Award, and in any case before releasing the first running bill. The contract agreement shall be signed by a person duly authorized/empowered by the tenderer. The expenses for preparation of agreement document shall be borne by BHEL.</p> <p>The contract agreement shall be deemed to have come into force from the date of acceptance of LOI by the subcontractor.</p>

3072

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC) CONTENTS

SI No	DESCRIPTION	Chapter
Volume-IA	Part-I: Contract specific details	
1	Project Information	Chapter-I
2	Scope of Works	Chapter-II
3	Special Terms and Other Conditions	Chapter-III
4	T&Ps and MMEs to be deployed by Contractor	Chapter-IV
5	Quality Requirements	Chapter-V
6	Time Schedule	Chapter-VI
7	Terms of Payment	Chapter-VII
8	Taxes and other Duties	Chapter-VIII
9	Schedule of Rates and Quantities	Chapter-IX

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I: PROJECT INFORMATION

1.0	Project Information
	<p>1) Purchaser : M/s. Hindalco , Mahan</p> <p>2) Project Title : Capital Overhauling of TG Set incl HIP, LP including in situ HIP Seal fin replacement, Inspection of Lube oil system, servicing of TG valves & steam Strainers, HIP Angle ring replacement, HIP Insulation, C&I work, COH of Generator including Stator Capsule replacement, electrical testing & Associated Work U#2, 150 MW, Hindalco Mahan. Bargawan, (M.P.)</p> <p>3) Railway Station : Bargawan</p> <p>4) Nearest airport : Jabalpur</p>

The Bidder shall visit site and get acquainted himself with the conditions prevailing at site before submission of the bid. The information given here in under are for general guidance and shall not be contractually binding on BHEL/ Owner. All relevant site data/information as may be necessary shall have to be obtained /collected by the Bidder.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

The work under the scope of these specifications is broadly as follows.

PRE SHUTDOWN WORK

1. Mobilization of site.
2. Arranging Gate pass, insurance & Accommodations to the contract personnel.
3. Shifting of material store and T&Ps.
4. Shifting of special T&Ps to turbine floor.
5. Removal of Enclosures Cover if required and erect back after OH if available.
6. Shifting of special T&Ps to turbine floor.
7. Removal of Enclosures Cover if required and erect back after OH if available.

SCOPE OF WORK:

SCHEDULE -01: GENERAL OVERHAULING OF TURBINE & GENERATOR INCLUDING EOT CRANE OPERATORS:

1. Removal of all pedestal covers and bearing 1 to 5 top halves after dismantling the acoustic enclosure.
2. Bearings T/H removal & checking of clearances.
3. Coupled run out checks of all rotors.
4. Record swing checks value of HPT rotor after decoupling of LP- GEN.
5. Centering Checks of HP-IP casing.
6. Rolling checks of HP-IP and LP turbines before removal of bottom bearings.
7. Decoupling of combined HP-IP and LP, LP-Gen. rotors after taking pre-dismantles readings.
8. Inspection of bearings by Ultrasonic / DP testing. Replacement of hydraulic oil hoses for JOP oil line.
9. Lifting of LP outer casing.
10. Checking of facial run out of HP-IP, LP & Generator rotor as per requirement.
11. Check bedding & blue contact of thrust pads of bearing 1, O-ring liner & shell to replace, blue contact with body and cylindrical support.
12. LP cross around pipe inspection through manhole opening.
13. Inspection & tightness checking of bearing supports.
14. Rectification of bearing oil clearance value by scraping or replacement if necessary. Adjustment, repair of bearing, supports as per requirement. Replacement of Two number of bearings is included in the scope.
15. Resetting of all bearings. Oil seals and pedestal oil guard rings including repair/replacement as per requirement. Refitting of all bearings and setting of bearing Pads Yoke keys etc. as per requirement.
16. Inspection of pre stress of anchor bolt of bearing pedestals / base plates including Generator and ensure the design elongation value. (Spare Anchor bolt shall be supplied by HIL if the bolt found damage/ crack during the process of pre-stressing). Locking of foundation Bolts to be ensured.
17. Final Alignment of combined HP-IP and LP, LP-GEN rotors after bearing inspection. This includes adjustment of packers, bearing pedestals, bearing supports, lubrication of packers, keys their blue matching, dismantling and assembly of End shield, Air seal and Fan guards as per requirement.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

Sealing of Generator hot & cold chamber and dismantling and re- centering of Generator & main exciter as per requirement.

18. Horn drop checks of HP-IP Casing and rectification by Shims / Packers if required.
19. HP-IP casing bump checks with decoupled condition.
20. Coupling of HP-IP & LP and LP-GEN rotors. CRO check after coupling.
21. Swing check of HPT rotor after final coupling. Adjustment if any to the extent possible.
22. Final casing centering of HP-IP casing by dial gauge. This includes adjustment of packers as per requirement.
23. Final rolling checks of HP-IP and LP turbines. This includes adjustment of packers as per requirement.
24. Rotor float and thrust pad check of thrust bearing and repair/ replacement as required.
25. Centering of LPT front & rear gland boxes, and adjustment in Gland box keys as per requirement.
26. Inspection of CAP bellows and LPT extraction bellows. Inspection of LPT atmospheric relief diaphragms and replacement of gasket as per requirement. (Bellow replacement shall be carried out on extra cost & time). Overload line flange O-ring replacement as required.
27. Final box up of LPT outer cover.
28. Box up of all bearings and pedestals.
29. Oil flushing and Periodical cleaning of line filters and basket strainers during oil flushing as per requirement.
30. Normalization of throttle after completion of oil flushing.
31. Turbine rotor JOP lifts adjustment. Record JOP lift & oil pressure in individual bearings.
32. Putting machine on barring gear.
33. AC JOP replacement with spare AC JOP provided by HIL during OH and re assembly of previously removed AC JOP after completion of OH.
34. EOT Crane Operators for both the cranes for round the clock working shall be in the scope of bidder.
35. HIP Turbine front and rear gland steam flange gasket to be replaced, work include removal and proper fixing/re-application of insulation in particular affected area. Insulation material shall be in the scope of bidder.

Note: - Bidder has to depute Reputed Testing Agency along with Test kit & accessories to carry out DP & Ultrasonic test etc. in consultation with BHEL Site-In-Charge.

SCHEDULE: 02: COMPLIANCE OF ALL HSE REQUIREMENTS & ARRANGEMENT OF SAFETY ENGINEERS

- 1) Two (02) Nos Safety Engineers are to be deployed by the contractor for complete duration of Overhaul in consultation with BHEL Site-In-Charge. Safety Engineer should be qualified from approved institute. Certificate shall be produced at the time of deployment. HSE diploma will not have allowed. You may depute as an additional support to site supervisor for safe working.
- 2) Bidder has to fulfil all HSE related requirement at site.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

SCHEDULE: 03: ARRANGEMENT OF HYDRAULIC TORQUE WRENCH

- 1) All couplings should be loosen & tighten by Hydraulic Torque Wrench. It is in the scope of bidder.

Note: All Dismantling and trial coupling, assembly to be done by Hydraulic torque wrench. EOT crane will not be used. Before mobilization ensure proper capacity of machine for torquing.

SCHEDULE:04: LP TURBINE OVERHAULING.

1. Support the LP inner outer casing at bottom.
2. Open parting plane & lift upper half.
3. Open inner-inner casing parting plane studs & lift upper half.
4. Record axial & radial steam flow path & correction as per requirement.
5. Record interstage free run out.
6. LP Gland box removal and correction for making clearances.
7. Air ingress point attending work in LP front and rear gland and bellow area.
8. Removal of rotor, cleaning of rotor & upper half casing with **alumina blasting including arrangement of required alumina**. Cleaning of lower half with **dry ice blasting**, inspection of rotor & casing. LP rotor face runs out check as per req.

NOTE: Arrangement of Alumina Blasting with Enclosure & Dry Ice Blasting shall be in the scope of bidder.

9. Check ovality of Inner-Inner casing with & without tightening of parting plane bolts
10. Placing rotor in zero position, recording clearances & box up inner- inner followed by inner outer casing.
11. Carry out roll check of inner outer casing & align the casing.
12. Cleaning and Inspection and DPT of LP casing extraction bellows as per requirement.
13. Replacing all LPT diaphragms (Safety relief diaphragms) as per requirement with new one and inspection for leakage.
14. Check ovality of Inner-Inner casing with & without tightening of parting plane bolts.
15. LP Turbine last stage (10th) free-standing blade dismantling and cleaning.
16. LP turbine last stage (10th) blades and blade roots in rotor to be checked by MPI.
17. LP turbine last stage (10th) blades NFT to be carried out as per design requirement.

NOTE: Blade Clamping pieces and clamping plates to be provided by HIL. MPI and NFT testing with technological items in the scope of bidder.

18. LP gland fins replacement and fin height machining in-situ by maintaining design gland clearances.
19. LP gland box and LP gland header cleaning and centering is in the scope of bidder.

Note: Bidder has to depute Reputed Testing Agency along with Test kit & accessories to carry out MPI and NFT test in consultation with BHEL Site-In-Charge. Technological pieces shall be arranged by party

SCHEDULE: 05: REMOVAL & REASSEMBLY OF HP-IP CASING AND ROTOR

1. Removal of insulation from HP-IP casing top half.
2. Centering, Roll & Bump check.
3. Dismantling & Removal of HP/IP & HP BP overload valves including piping.
4. Locking of inlet, outlet & extraction pipelines connected to HP-IP casing.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

5. Loosening of outer casing parting plane studs by using induction heating machine (arrangement of induction heating machine in bidder scope).
6. Removal of outer casing T/H.
7. Loosening of inner casing parting plane studs by using induction heating machine.
8. Removal of inner casing T/H.
9. Steam Flow path clearances recording and lifting of rotor.
10. Loosening of Cap nuts of HP and IP inlet valve flanges with induction heating and making Gap by pushing valve bodies outward for releasing Angle rings for HIP Inner Casing B/H.
11. B/H inner casing lifting.
12. Alumina Blast cleaning of rotor and inner casing including arrangement of alumina.

NOTE: Arrangement of Alumina Blasting with Enclosure shall be in the scope of bidder.

13. Manual cleaning of casing bottom half.
14. Physical Inspection of casing and rotor Blades.
15. Ovality Check of Inner-Inner, placing inner casing bottom, rotor.
16. Alignment of HIP with LP and steam flow path clearances check
17. Boxing up of HP-IP inner casing and outer casing.
18. Centering, Roll & Bump check.
19. Preparation of any pipe line alignment & fit up of joints connected to HP-IP casing after final alignment of TG rotors.

SCHEDULE:06: SEAL REPLACEMENT OF HIP TURBINE.

1. Installation of Refinishing fixture in HIP inner casing.
2. Removal of all old sealing fins from HIP rotor, HIP inner casing and HIP outer casing.
3. Cleaning of all sealing grooves.
4. Insertion of new sealing fins with caulking wire in the grooves.
5. Machining of the sealing fins to the desired height as per drawing.
6. Dressing and deburring of all the sealing fins after machining.
7. Placement of HIP rotor in position in HIP Outer casing bottom half (without HIP inner casing bottom half).
8. Placement of the HIP Outer casing top half and P/P hot tightening (for temporary box up).
9. HIP rotor roll-checking with HIP outer casing.
10. HIP outer casing P/P loosening with induction heating and casing top half and rotor removal from position.
11. If the roll checking values is not achieved at this stage, do the correction in seal fin heights and per requirement by machining again. And repeat the steps from 7 to 10 for achieving the required roll check values.
12. After achieving required roll checking values for HIP rotor and HIP outer casing, removed the HIP outer casing and rotor from position.
13. Placement of HIP inner casing bottom half in position.
14. Placement of HIP rotor in position (with HIP inner casing bottom half).
15. Steam flow path checking and correction to the designed values.
16. Placement of the HIP inner casing top half and P/P hot tightening (for temporary box up).
17. HIP inner casing roll checking with rotor.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

18. HIP inner casing P/P loosening with induction heating and casing top half and rotor removal from position.
19. If the roll checking values is not achieved at this stage, do the correction in seal fin heights and per requirement by machining again. And repeat the steps from 14 to 18 for achieving the required roll check values.
20. After achieving required roll checking values for HIP rotor and HIP inner casing, removed the HIP inner casing and rotor from position.
21. After achieving required flow path values and roll check values for HIP turbine, proceed for the further assembly.
22. Manpower should know about machinery of related area.
23. Contractor should maintain daily attendance in register.
24. To keep equipment area neat and clean and maintain area in safe working condition.

Note:

1. Sealing fins and caulking wire for refining shall be arranged by HIL Mahan.
2. Bidder has to depute suitable Agency along with all T&P & Accessories to carry out seal replacement of HIP turbine and machining job in consultation with BHEL Site-In-Charge.

SCHEDULE: 07: REMOVAL OF EXISTING INSULATION AND APPLICATION OF CERAMIC PAD INSULATION OF THE HIP TURBINE.

1. Removal and disposal of the existing insulation of HIP Turbine. (HIL to provide the designated place for disposal of discarded insulation material in plant)
2. Ceramic pad insulation of the HIP turbine and related adjacent valves and pipes area. (Supply of Ceramic pad insulation material and application will be in the scope of bidder)

SCHEDULE:08: INSPECTION OF TG OIL SYSTEM, MOT CLEANING & MOT COOLER SERVICING.

1. Lube Oil Duplex Filter Cleaning.
2. Main TG Lube oil coolers cleaning and inspection. Glove Valve to be installed in inlet & outlet of water line.
3. Inspection & Servicing of TG Oil System including EOP-AC, AOP-AC, LOP-AC, LOP-DC, JOP. Work also include NRVs, PRVs, line supports etc related work. Ensure Lub oil header Pressure as per system requirement and auto operation barring gear with AC JOP. Except Motor servicing at work.
4. Oil transfer & MOT Cleaning. HIL only ensure centrifuge operation other work related with transfer of oil in your scope including centrifuge bowl cleaning work. (Necessary arrangement & Assistance shall be provided by HIL during oil transfer).
5. MOT Bucket Strainer Cleaning before & after oil flushing. Wire mesh to be replaced if found any abnormality.

SCHEDULE:09: OVERHAULING OF HYDRAULICALLY OPERATED MAIN TURBINE VALVES AND ACTUATORS.

- a) HP/IP/LP valve – 8 Nos.
- b) HP Bypass overload valve (top of HP-IP casing)- 1 No

Work Schedule:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

1. Decoupling and removal of EHC.
2. Dismantling of valves.
3. Cleaning, checking and DP test as per requirement. Repairs and replacement of components if any.
4. Complete lapping of seats and discs as per requirement to full extent possible and seat cutting if necessary.
5. Assembly of valves.
6. Dismantling of actuators, cleaning of components as per requirement, repair/replacement of various parts as per requirement.
- 7 Assembly of EHC, placement and coupling with valves.

SCHEDULE:10: OVERHAULING OF HYDRAULICALLY & PNEUMATICALLY OPERATED TURBINE AUXILIARIES VALVES AND AIR CYLINDER (QTY -14).

1. LP bypass valve (Hora make) combined stop & control valve. -2 Nos SV & 02 Nos CV
2. CRH QC NRV including Both Air Cylinder-2 Nos.
3. HP heater-5 QC NRV including One Air Cylinder-2 Nos.
4. Deaerator QC NRV including Both Air Cylinder -2 Nos.
5. LP Heater -3 QC NRV including One Air Cylinder -2 Nos.
6. LP Heater -2 QC NRV including One Air Cylinder -2 Nos.

Work Schedule:

1. Decoupling and removal of Air Cylinder/actuators.
2. Dismantling of valves.
3. Cleaning, checking and DP test as per requirement. Repairs and replacement of components if any.
4. Complete lapping of seats and discs as per requirement to full extent possible and seat cutting if necessary.
5. Assembly of valves.
6. Dismantling of Air Cylinder, cleaning of components as per requirement, repair/replacement of various parts as per requirement.
7. Assembly of servomotors, placement and coupling with valves

SCHEDULE:11: OVERHAUL OF STRAINERS (M.S.-2Nos & HRH-2Nos):

1. Dismantling of MS & HRH strainers with preheating.
2. Cleaning, checking of components and repair/ replacement as per requirement.
3. Complete measurement of strainer element and strainer body and recording clearances.
4. Repair of any damaged parts if required.
5. Box up of strainers.
6. Steam Leakage and abnormal sound rectification in HRH strainer.
7. MS &HRH Strainers: Casing & others parts surface crack test to be carried out.

SCHEDULE:12: TG C&I WORK DURING OVERHGAULING (ASSISTANCE):

- 1) Removal, calibration & installation of All TSI instrument- shaft vibration, housing vibration, casing vibration, differential expansion, Casing expansion, bearing temperature instrument, inner casing

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

temperature HP -IP, speed sensor, axial shift, eccentricity, top- bottom temperature, all types of vibration & temperature installed over turbine.

- 2) Verification of above signal from field to DCS display end via panel.
- 3) HP-IP inner casing temperature provided by HIL and it has to be replaced by your end.
- 4) Calibration certificates & Testing Report to be submitted after completion of all jobs.
- 5) Calibration kit(TK3) to be provided by HIL.
- 6) If any sensor or instrument is not working then a new sensor or instrument will be provided by HIL.

NOTE:

1. For TSI Instrument Expert for OEM shall be arranged by BHEL however Hindalco Mahan to extend their manpower support for removal & installation.
2. Necessary manpower Assistance shall be provided by bidder to BHEL/Hindalco during the job.

SCHEDULE :13: GENERATOR STATOR CAPSULE REPLACEMENT INCLUDING COH OF GENERATOR, TESTING OF GENERATOR.

(A) GENERATOR AIR SEAL INSPECTION, GENERATOR AIR COOLERS - 6NOS

1. Removal of Generator front and rear pedestal cover and top half of spherical bearing.
2. Removal of Generator end cover, air seal stand with air seal, fan guard and Exciter body assembly for alignment correction
3. Generator hot & cold chamber sealing with foam rubber & silastice sealant to done.
4. Generator box-up with fan guard, seal with stand and end cover including exciter to be done after alignment correction.
5. Dismantling Generator Air coolers.
6. Cleaning of Generator air seal Coolers cleaning by brushing.
7. Replacement of all the rubber gaskets.
8. Hydraulic Test of air coolers as per design pressure.
9. Painting of the cooler body. Paint to be provided by HIL.
10. Final installation of coolers in position.

(B) - OVERHAULING OF GENERATOR WITH ROTOR THREAD-OUT.

1. Pedestal no 3 top cover removal.
2. Bearing no 3 Yoke & top half removal and TOC /SOC recording.
3. LP-Generator decoupling and alignment checking.
4. Removal of end shields, air seal stands with air seal, fan guard of both sides.
5. Removal of exciter assembly.
6. Exciter stator cleaning and varnishing.

Note: Bectol Red for Rotor and exciter to be provided by HIL .

7. Dismantling Generator rotor fan blades. (if required during dismantling)
8. Preparation for Generator rotor removal.
9. Dismantling pedestal 4 and 5 lube oil and Jacking oil pipe lines.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

10. Arrangement of removal of generator rotor including chipping of floor & welding of plate / beam as required & rotor threading out.
11. Generator rotor thread out.
12. Generator rotor both side retaining ring and fan blade checking and testing by DP and UT.
13. Inspection of bearings 3,4 and 5 by Ultrasonic / DP testing.
14. Replacement of JOP hose for bearing 3,4 and 5.
15. Checking of facial run out of LP & Generator rotor as per requirement. And coupling face correction if required.
16. Check bedding & blue contact of bearing 3,4 and 5.
17. Pedestal 4 &5 blue matching with stator and respective parts.
18. Checking support tightness of bearing no 3.
19. Rectification of bearing oil clearance value by scraping or replacement if necessary. Adjustment, repair of bearing, supports as per requirement.
20. Resetting of bearing 3 ,4 and 5. Oil seals and pedestal oil guard rings including repair/replacement as per requirement. Refitting of all bearings and setting of bearing Pads Yoke keys etc. as per requirement.
21. Inspection of pre-stress of anchor bolt of bearing pedestals / base plates including Generator and ensure the design elongation value. (Spare Anchor bolt shall be supplied by HIL if the bolt found damage/ crack during the process of pre-stressing). Locking of foundation Bolts to be ensured.
22. Rotor external cleaning & varnishing. (Enamel red for varnish to be provided by Bidder).
23. Inspection of stator bushings (Gaskets replacement if necessary).
24. Cleaning of Generator stator with Acetone and inspection before rotor threading in.
25. Threading in of rotor.
26. Placing of rotor on bearing no. 4 & 5 pedestals.
27. Assembly of pedestal 4 and 5 lube oil and Jacking oil pipe lines.
28. Assembly of Generator rotor fan blades.
29. LP -Gen rotor alignment and correction.
30. LP-Gen rotor coupling and CRO after final alignment.
31. Mounting of fan guards & checking of clearances.
32. Assembly of end shields, air seal stands with air seal both sides.
33. Exciter assembly & centering of exciter components.
34. Centering of LPT front & rear gland boxes, and adjustment in Gland box keys as per requirement.
35. Box up of bearings and pedestals 3 ,4 and 5.
36. Preparation for pedestal oil flushing.
37. Oil flushing and Periodical cleaning of line filters and basket strainers during oil flushing as per requirement.
38. Normalization of throttle after completion of oil flushing.
39. Turbine rotor JOP lifts adjustment. Record JOP lift & oil pressure in individual bearings.
40. Putting machine on barring gear.
41. AC JOP replacement with spare AC JOP provided by HIL during OH and re-assembly of previously removed AC JOP after completion of OH.
42. Exciter removal & erection along with rotating diode removal as per requirement.
43. PMG removal & erection along with rotating diode removal as per requirement.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

(C) - GENERATOR STATOR CAPSULE REPLACEMENT & INSPECTION AND TESTING :

Generator Disassembly

1. Removal of Generator stator acoustic enclosure.
2. Dismantling of stator Cooler duct from position.
3. Dismantling of Stator Outer top cover from position.
4. Painting of Generator stator cooler duct with high temperature epoxy paint (white/ grey)
5. Painting of Generator stator outer top cover with high temperature Epoxy paint (White /grey)

Stator Capsule Replacement

6. Mark the core center line of existing stator capsule with piano wire.
7. Cut the weld joints between stator frame top and bottom half ribs and remove top halves.
8. Cut the weld joint between rectangular stiffener and stator longitudinal rib at six locations.
9. Lift and remove the existing stator capsule.
Note: Special tools, Slings & centering fixture to be arranged by BHEL.
10. Place the new stator capsule into stator frame.
11. Align the new stator capsule such that the core center line aligns with marked core center line of existing stator capsule.
12. Weld rectangular stiffener and stator longitudinal rib at six locations.
13. Weld rectangular stiffener to interface plate at six locations.
14. Place stator frame top halves and weld to stator frame bottom half ribs. Inspection, Cleaning and Testing.
15. Painting of new welded area of stator frame with high temperature Epoxy paint.
16. Inspection of journals, slots, Rotor fan and ventilation holes etc.
17. EDT tests.

Generator assembly

18. Generator stator top half assembly with new profile rubber sealing.
19. Generator stator cooler duct assembly in position with new rubber gaskets.
20. Assembly of Generator stator acoustic enclosure.
21. Replacement of existing generator flexible with new on considering its life and compatibility with new connectors during adaption, New Flexible connectors (48 Nos.) to be provided by Hindalco.
22. Bidder manpower assistance during C&I job (Stator RTDs and CO2 flooding RTDs wiring from stator winding to JB only)

Generator Electrical / NDT Testing

Generator Stator

1. Insulation resistance & PI with 5 kV Megger
2. DC Winding Resistance Measurement
3. Tan Delta Test & Capacitance Measurement
4. Partial Discharge Test

Generator Rotor

1. Insulation resistance
2. DC Winding Resistance Measurement

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

3.AC Impedance Measurement

4 Digital RSO Test

5. Voltage Balance Check.

Exciter

1.Insulation resistance

2.DC Winding Resistance Measurement

3 Diode Wheel Check (Polarity Checks).

Note: - Removal & erection of exciter with diodes as per requirement under bidder scope.

PMG

1.Insulation resistance

2.DC Winding Resistance Measurement

Note: - Removal & erection of PMG as per requirement under bidder scope.

NDT tests

1.DP&UT tests on Retaining rings, Journals &Bearings

2.DP on Fan blades

(D) UNLOADING OF NEW CAPSULE

1. Unloading from trailer, unpacking, cleaning & inspection of new capsule.

Note: - Packing material of new capsule has to keep safe, since this material has to be utilized during packing of old capsule.

SCHEDULE:01: (E) PACKING & LOADING OF OLD CAPSULE

1. Packing & loading of old capsule on trailer.

Note: - Unloading of new capsule is in the scope of bidder, the packing material comes along with new capsule to be kept in safe custody by hindalco, same packing material shall be used for packing of old capsule under bidder scope.

(F) ARRANGEMENT OF EOT CRANE OPERATORS.

1. Skilled EOT Crane Operators for both the cranes for round the clock working shall be in the scope of BHEL.

Note: - Bidder has to depute Reputed Testing Agency along with Test kit & accessories to carry out electrical test, DP & Ultrasonic test etc. in consultation with BHEL Site-In-Charge.

OPTIONAL SCOPE OF WORK:

SCHEDULE :14: ANGLE-RING INSPECTION/REPLACEMENT OF HIP TURBINE (without main steam pipe line cutting)

1.Remove the insulation up to root of valves body.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

2. Loose the stud with help of induction heating, (arrangement of induction heating machine in bidder scope)
 3. Lock the pipe lines and remove the valve body from HIP body.
 4. Dismantling of all the angle rings from position and cleaning and DPT.
 5. Measure the dimension of angle-ring for comparison with design value.
 6. Replace the angle-ring if any deviation observed.
 7. Box up the valve with HIP body with required bolt elongation by induction heating.
 8. Any work required for successful completion of work in vender scope.
- Note: New angle rings and threaded ring with locking grub screws and pins to be provided by HIL.

SCHEDULE: 15: REPLACEMENT OF TG BEARING OTHER THAN TWO BEARING.

Replacement of bearing other than two (which is included in schedule-01) shall be carried out.

SCHEDULE: 16: DYNAMIC BALANCING OF TG DURING ROLLING (ASSISTANCE ONLY)

1. If required Dynamic Balancing (Trim Balancing) of TG during Rolling to be done by BHEL Vibration expert.

Note:

1. Vibration expert and Vibration analysis kit in the scope of BHEL. HIL will provide the normal and high-density balancing weights for HIP Rotor and LP rotor and non-magnetic weights for Generator rotor as required during balancing.
2. **Manpower Assistance shall be provided to BHEL by bidder.**
3. Above job shall not cover under chapter-6 (time schedule clause 6.1.2). Since it shall be carried out after start of barring gear and during rolling & synchronization machine which is totally driven by customer. Hence Payment shall be made on certification of BHEL site-incharge without any time extension.

SCHEDULE: 17: REPLACEMENT OF LP EXTRATION BELLOW.

1. Removal of the damaged LP extraction bellow from the position.
2. Inspection of the new spare extraction bellow by DPT.
3. Fit up of the new bellow in position.
4. Welding of the new bellow in the position.
5. DPT checking of the welding and bellow in position.

Note: New Spare bellow to be provided by HIL.

SCHEDULE:18: - ARRANGEMENT OF TG EXPERTS: -

1. Two (02) Nos Experts of TG & associated areas is to be deployed by the contractor for complete duration of Overhaul in consultation with BHEL Site-In-Charge.

TECHNICAL CONDITIONS OF CONTRACT (TCC)
Chapter – II: SCOPE OF WORK

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

3.1 **SPECIAL TERMS AND CONDITIONS:**

1. Bidder to strictly follow all the necessary guidelines issued by Customer, District Magistrate, State Government and Central government to control Covid-19 outbreak.
2. The bidder shall submit following documents to the BHEL Engineer in charge before starting of the work at site: -
 - a) Valid labour license of total Nos. of labours.
 - b) Valid labour Insurance policy to cover all the workers.
 - The Contractor shall necessarily take Workmen Compensation Policy and if required Third Party Liability Policy shall be taken by bidder.
 - c) **Medical Fitness Certificate of each worker issued by registered medical practitioner with Covid-19 test report.**
 - d) A photocopy of employment card issued to each worker as per format prescribed in factory rules.
 - e) List of safety appliance provided by the contractor to their workers with receipt.
 - f) Valid test certificate issued by competent authority as per factory rules for the T&P (like pulling / lifting devices, slings, machines etc.) to be utilized at site.
 - g) List of personnel's and workers deputed / deployed along with their full address proof, Police verification etc., shall be get done of his workers by the contractor.
 - h) Submission of Indemnity Bond.

Subcontractor should assure that the repair of the equipment covered in the scope of this offer will be conducted with the best of skills and know how available with Subcontractor and in conformance with the clearances and adjustments set forth in manufacture's drawing instruments and other information's furnished to Subcontractor.
3. Bidder shall visit site well in advance for identification & to ensure availability of required special T&P as well as other infrastructure required.
4. During execution of site it may be required to close the site temporarily, In this case De-Mobilization & Re mobilization charges shall not be payable.
5. All consumables required for the overhauling will be bidder`s scope.
6. The various setting, clearances, adjustments and benchmarks will be restored to the extent possible during rectification to the condition as per the erection and commissioning log sheets available with customer. If however we are not able to produce erection / commissioning log sheets, efforts will be made to attend the best possible parameter or the conditions as observed at the time of dismantling of the equipment in consultation with us.
7. Subcontractor must prepare PERT CHART/BAR CHART. Daily monitoring will be done jointly and log sheets of important activities should be noted down and signed jointly.
8. Daily work planning, scheduling & reviewing of work will be done by the party every morning & evening and daily programme must be submitted on daily basis to EIC. Party also to submit the progress exception report. Agency should also submit filled protocol duly signed every day/after completion of work.
9. All the works shall be carried out as per the instructions and to the satisfaction of the Engineer In-charge.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

10. The contractor will attend contributory to faulty and poor workmanship during commissioning and trial run of the equipment.
11. Round the clock working under expert supervision shall be ensured by the contractor deploying two equal parallel strength of groups in 12 hrs. Shift with equal T&P for all the jobs so as to complete the work in stipulated period or earlier.
12. Agency has to engage his manpower for 24-hour work in all working days/holidays as per the instruction of Engineer-in-charge headed by responsible and experienced Engineers/Supervisors. The agency has to submit detailed manpower deployment program for round the clock work before commencing overhauling works
13. It is the responsibility of contractor to keep the plant, equipment, machinery and surrounding area clean.
14. Removal of insulation from turbine, stop and control valve, associated pipe lines and through cleaning of subjected area is in the scope of bidder.
15. Agency has to engage competent/skilled manpower as per the requirement of the respective jobs. BHEL reserve the right to disallow any worker to continue the work, if found unsuitable for the specific job.
16. The names of working persons like Site in-charge, supervisors, foreman, main fitters to be deployed during the job with full details has to be submitted stating their area of work and experience and specialization of the work to site in-charge before the start of work. BHEL may ask to change/delete the person not found suitable for the work at any point of time during execution of job. For any addition and deletion of the working person prior permission from BHEL shall be taken.
17. Subcontractor has to ensure that all the key persons must continue till completion of job i.e. machine comes on load. Subcontractor manpower (adequate) should remain at site for a period of **03 days after machine comes on full load.**
18. **Mobilization of full strength manpower and T&P shall be done immediately within 03 days after receipt of LOI or as per Intimation from BHEL.**
19. Work distribution sheet for all the workers/supervisors deployed shall be submitted to BHEL one day in advance on daily basis.
20. Subcontractor should mobilize additional resources such as plant, equipment's, material as may be required by site in-charge to improve the progress of the work if the progress of the work is not satisfactory.
21. Subcontractor should get registered under relevant sales tax and or work contract Act (VAT) where the jobs are executed.
22. Party has to quote lump sum rate for all activities mentioned in the price bid as the actual quantities may vary during overhauling of the unit for which the contractor is not permitted to raise any dispute or claims. Items mentioned as optional will be taken up depending on condition, availability of spares and requirement.
23. Radiography and stress relieving of the joints are in the scope of the contractor.
24. **Removals, insulation supply & application of insulation are in the scope of the contractor.**
25. Scrap & insulation etc. is to be shifted to scrap disposal area as indicated by the Site-in-charge.
26. One administrative personnel to control the resources and attendance of the workers to be ensured.
27. Contractor shall arrange certified HP welder for welding job as required whose welding test will be conducted.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

28. Free electricity shall be provided by customer but duties if any as applicable shall be paid by contractor.
29. Argon, Oxy- Acetylene gas shall be arranged by the contractor with cutting/welding set / argon welding set and other welding appliances.
30. Enerpack make close height Hydraulic jacks of 50T and 100T capacity - 4 nos. each shall be arranged by the contractor in 100 % working conditions.
31. If the duration of work continues beyond stipulated period due to any reason, no claim for compensation will be entertained.
32. The work details are brief & for Subcontractor knowledge only. Subcontractor will have to do all the related works as per requirement.
33. The contractor will be responsible to pay the damages to the property of Board or individual caused by his worker during the course of contract. If the contractor fails to pay the same it will be recovered from his bill.
34. No compensation claimed for idle labor for any reason will be entertained by BHEL.
35. All general tools and plants for execution of the work will have to be arranged/ maintained by the contractor at his own cost & risk.
36. In normal course, the interpretation of the under signed on any matter or decision given by him on any disputable points will be final and binding on the contractor.
37. Successful bidder is to obtain labor license before the start of the work.
38. Successful bidder is to obtain necessary “No Dues” certificate before de-mobilization from site.
39. Successful bidder has to arrange Site mobile recharge till the site closing.
40. LAP-TOP with latest configuration, DVD/CD writer/pen drive, its peripherals including printer-scanner and one USB Modem for Internet connectivity to be provided for BHEL site office.
41. Barring Gear is the essence of the contract.
42. Sufficiently adequate man power T&P and other resources should be mobilized by the contractor to operate round the clock work progress with standby technicians to be deployed immediately if need arises. Offer should be submitted considering these requirements.
43. Accommodation for the sub-contractor’s manpower will be provided if made available by the customer as per the applicable charges.
44. Contractor shall arrange vehicle for his manpower transportation.
45. Magnetic base drilling machine along with drill/reamer is required (Wherever Applicable) for dowelling of cylindrical support of bearing in case of their replacement.
46. Taper reamer along with drill is to be arranged for dowelling of MOP (Wherever Applicable).
47. The agency shall erect approach platform as per requirement and dismantle the same.
48. The agency shall be fully responsible for maintenance of records of his employees.
49. The agency shall start the work only after instruction by contract operating authority.
50. **Scaffolding pipes, clamp, aluminium planks, Jallies &, 40 mm thick wooden planks are to be arranged by Sub-contractor for various platforms as required for the and Safety will be taken on priority basis.**
51. **Bidder has to arrange certified person to approve scaffolding erected before use.**
52. Contractor reconciles the material and submits along with the bill. To credit the balance spares worn out articles/spares and scrap in the main store.
53. Contractor shall clean the surrounding working area within three days immediately after completion of work/ Machine taken onto barring.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

54. Give proper assistance to maintain the readings at site for the protocol.
55. Condenser tube bundles shall be covered properly with wooden planks/scaffolding boards, tarpaulins etc at the top of tube bundle to prevent falling of foreign material on condenser tubes from top of condenser/LP turbine.
56. Cast iron plates shall be first matched with calibrated surface plate by manual scrapping & matching and then above cast-iron plates shall be used for scrapping coupling faces to correct convexity/concavity/taperness of coupling faces.
57. Adequate numbers of tarpaulin are to be arranged by the sub-contractor for covering of various equipment during insulation removal / application.
58. For carrying out MPI, NFT, UT, DPT etc. agency should engage competent certified personnel/vendors along with calibrated instruments/equipment's etc.
59. Ultrasound test kit, MPI, DP Test kit of standard makes like ITW SIGNODE / CHECK MATE / ORION 400 ml Aerosol cans and suitable colour paint to repaint the weld joint after DP test along with required accessories and consumables
60. Transportation of material required during overhauling from central work shop to site is in the scope of bidder. Tractor & trailer, hydra, crane shall be arranged by bidder for shifting of materials.
61. Once Turbine Rotors are removed from their casings, high spots on their coupling faces shall be removed & they will be placed on the turbine bearings. The rotors will be coupled with complete loose/fitted coupling bolts & stretched to full value for measurement of coupled run-out & swing value. Necessary correction by scraping etc. shall then be done, if required, in order to achieve acceptable run-out/swing values. This process of correction may require more than one attempt. Similar process shall be applied to Gen-Exciter coupling for achieving exciter end swing value.
62. The agency/sub agency shall have to take utmost care of spares parts/materials during dismantling, assembly, storage and handling of equipment's etc as applicable.
63. The contractor shall be fully responsible for erection of rigid and stable (enough) scaffolding for the safety of persons carrying out work. (Scaffolding material shall be arranged by bidder).
64. The agency shall be fully responsible for the safety of his personnel during the work at site, and shall ensure the use of safety appliances by his workmen.
65. Calibrated surface plate of size 1 Mtr. x 1 Mtr. and flatness within 06 microns. This is required to correct convexity/concavity and taperness of coupling faces.
66. Preheating/post heating, stress relieving and RT will be arranged by agency.
67. Agency has to give necessary assistance for drawn of spares from stores & returning the damaged spares to store.
68. Any fixture required for the above job shall be fabricated by the agency.
69. IBR qualified welder for use in welding of high-pressure pipes etc., as applicable.
70. Machines, T&P required for reaming & honing of coupling holes shall be arranged by agency.
71. To & fro transportation of their entire team on their own from place of stay to airport/station, from place of stay to site and to meet other essential requirements.
72. All testing equipment required as per above scope of work shall be in the scope of agency.
73. The agency shall provide all necessary assistance while commissioning back the Turbine, Generator & aux systems mentioned above and shall rectify, if any, problems encountered during commissioning.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

74. The agency shall provide all necessary assistance during commissioning of T/G Set
75. Hydraulic torque wrench with operator shall be arranged by bidder for decoupling & trial coupling, final coupling.
76. All Casing and Valves fasteners should be loosened / tightened by Induction Heating Method. Suitable capacity Induction Heating Machine shall be in the scope of bidder. In addition to this gas heating arrangement should be kept ready for emergency.
77. Blast cleaning shed erection and dismantling and cleaning of scrap alumina and alumina dust around the blast shed.
78. Alumina blasting work of turbine rotor, blades, guide blade carriers, valve cone, valve stem etc. should be carried out at two places round the clock, Bidder shall observe safety precaution while carrying out alumina blasting.
79. Required white fused Alumina powder shall be arranged by bidder.
80. Removal of thermal insulation wherever required for working.
81. Sufficient Halogen Lamps shall be in the scope of bidder.
82. Skilled EOT Crane operators, for round the clock working for Two cranes are in bidder's scope.
83. Reaming & honing of coupling holes if required shall be carried out by the bidder.
84. Bidder has to fulfil all HSE related requirement at site.
85. Supply of paint shall be in the scope of bidder.

NOTE:

1. The specific (minor) work which is not mentioned in the scope of work but required to be carried out for completion of subject work is in the bidder's scope.
2. Decision of BHEL site in charge regarding interpretation of the scope of work shall be final.

LIAISON WITH ALL STATUTORY AUTHORITIES:

- Compliance of statutory provisions, whether mentioned in this contract or not shall be binding on the contractor.
 - a) If there is any change in labour laws after the contract has been awarded, then the new law shall automatically be binding on the contractor.
 - b) No additional financial compensation shall be paid by BHEL to the contractor on account of increased expenditure caused by a) and b) above.
 - c) Liasoning with local commercial tax dept. to obtain Coml. Tax exemption certificate.

PAYMENT TO WORKERS:

- Payment to workers shall be done in the presence of BHEL representative or through bank account only.
 - a) The contractor shall intimate the day of payment at least three days in advance in writing along with copy of the pay sheet and attendance cards.
 - b) All workmen shall be covered by PF Rules irrespective of their period of employment.
 - c) Payment shall be made inside the plant premises and during office hours.

SUBMISSION OF DOCUMENTS:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

- The contractor shall submit following documents at appropriate time either before or during the execution of the work and as directed by Site in-Charge.
1. Test certificates of Pulling and Lifting machines and appliances.
 2. Details of workers to be deployed with name, address, category.
 3. Details of supervisory staff to be deployed.
 4. Authorization for receipt of materials and for signing of Measurement Books etc,
 5. Labour license specific to the contract.
 6. List of T&P brought into plant premises along with their serial numbers and dates/years of purchase.
 7. All the Staff/Workers deputed for the Job should have Insurance Cover and document in this regard should be submitted along with 1st RA Bill.
 8. List of consumables brought into plant premises along with their serial numbers and dates/years of purchase, along with test certificates wherever applicable.
 9. Insurance policy for the workers to be deployed in this contract.
 10. Safety undertaking.
 11. Copy of ESI certificate to be furnished.
 12. Proof of Payment of GST.

(Sl.No.11 to 12 are required before final bill is processed).

The contractor shall submit following documents in report form within 15 days from commissioning of unit after the overhaul/shut down work is completed:

- Details of work executed.
- Measurements against different schedules in compiled form.
- Material issue details.
- Material consumption details.
- Material returns details.
- Details of retrenchment benefits given to workmen.
- Details of issue of PF slip to workmen.
- Details of settlement of accident benefits if any to workmen
- Copies of pay sheets to workmen.
- Details and proof of remittance of PF to workmen (before final bill).
- No dues clearance from different stores of customer
- Valid labour license

Statutory Inspection

- Please refer General and Special Conditions of Contract. In addition to it the scope includes getting the approvals from the statutory authorities (like IBR, smoke nuisance inspector, anti-pollution authorities, labour officials). This includes arranging for inspection visits of such authorities periodically as per requirement, submitting documents etc. and payment of fees connected with it.

3.6 Safety:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

Contractor should engage at 01 no. Qualified Engineer in each shift during the contract period. Strict Safety measures have to be followed at Site. Contractor shall also adhere to all the safety provisions of our customer. In case violation of any provision at site fine of Rs.500/- to Rs.2000/- at the discretion of our site in-charge shall be imposed for each of such occasion and shall be recoverable from the contractor's bill.

1. The contractor should ensure the use of 24 volt hand lamps and 24 volt transformer by his workers. The all electrical gadgets shall have plug top & proper earthing.
2. All T&P like pulling and lifting machine, chain pulley blocks, slings, D-shackles should be maintained in proper working condition. Necessary test certificate has to be submitted by contractor for lifting tools & tackles. Third party testing certificates is also must in C.G.
3. The contractor shall be fully responsible for the safety of his workers.
4. The Use of ISI mark safety helmet, ISI mark safety shoes, Goggles, hand gloves, ear plugs and nose mask is a must. In addition to this, a full body (safety) harness, face shield must be provided to workers carrying out work at height & cutting/ welding/ grinding respectively. Gas cutting set with flash back arrester etc. should be provided by the contractor and should ensure the use of these safety equipment's, all PPE by his worker while working.
5. Scaffolding should be erected properly and strong enough with hand rails and it should not be used before getting it checked by Engineer-in-charge. It can be used after green tag from safety department.
7. The contractor shall be solely responsible for the safety of his workers & employees. The contractor must ensure that the persons working in site/nature jobs/ skilled jobs/ working with the welding machines, grinders, cutting set & other special T&P shall be having experience & expertise to perform that job. Contractor should engage physically and mentally fit manpower. The electrical connection / repair jobs shall be done only by the electricians.
8. The contractor shall ensure that prior to start of work all his workers shall get the safety training.
9. The contractor shall also take care for the safety of the equipments & persons working in the vicinity.
10. Customer at its own discretion may decide to recheck / retest some or all of the T&P / machines of the contractor inside the plant premises.
11. The helmets, safety shoes and safety belts issued by the contractor shall be conforming to relevant IS standards.
12. The contractor shall maintain the first aid box at site.

PROVISION OF PPEs

- Personnel Protective Equipment (PPEs), in adequate numbers, will be made available at site & their regular use by all concerned will be ensured
- The following matrix recommends usage of minimum PPEs against the respective job.

Sl.NO	Type of Work	PPEs
1	Concrete and asphalt mixing	Nose mask ,hand glove ,apron and gum boot
2	Welders/Grinders/Gas cutters	Welding/face screen, apron, hand gloves, nose mask and ear muffs if noise level exceeds 90dB. Helmet fitted with welding shield is preferred for welders
3	Stone /concrete breakers	Ear muffs, safety goggles, hand gloves
4	Electrical Work	Rubber hand glove, Electrical Resistance shoes
5	Insulation Work	Respiratory mask, Hand glove, safety goggles

BHEL-PSWR

Technical Conditions of Contract –Volume I A (Part I: Contract Specific Details)

E-Tender Specification Number: BHE/PW/PUR/MAHAN-COH U2/3072

Page 63 of 76

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter –III: SPECIAL TERMS AND CONDITIONS

6	Work at height	Double lanyard full body harness, fall arrestor (specific cases)
7	Grit/Sand blasting	Blast suit, blast helmet, respirator, leather gloves
8	Painting	Plastic glove, Respirators (particularly for spray painting)
9	Radiography	As per BARC guidelines

- The PPEs shall conform to the relevant standards as below and bear ISI mark.

Relevant is-codes for personal protection

IS:2925-1984	Industrial safety Helmets
IS:4770-1968	Rubber gloves for electrical purpose.
IS:6994-1973(Part-I)	Industrial safety Gloves(Leather & Cotton Gloves)
IS:1989-1986	Leather Safety boots and shoes.
IS:5557-1969	Industrial and safety rubber knee boots.
IS:6519-1971	Code of practice for selections care and repair of Safety foot wear.
IS:11226-1985	Leather Safety footwear having direct molding sole.
IS:5983-1978	Eye protectors.
IS:9167-1979	Eye protectors.
IS:1179-1967	Eye & face protection during welding
IS:3521-1983	Industrial Safety Belt and Harness
IS:8519-1977	Guide for selection of industrial Safety equipment for body protection
IS:9473-2002,14166-1994, 14746-1999	Respiratory Protective Devices

The list is not exhaustive. The safety officer may demand additional PPEs based on specific requirement.

NOTE: All employee of vendor should wear company uniform along with company logo at work place. Please follow strictly. Otherwise it may lead to penalty under safety provision.

3.7 Important Safety Conditions: Agency has to ensure utmost safety at all associated workplace/s. Penalty for non-compliance of safety rules each time.

- Non using safety shoes per person per occasion --Rs.1000
- Non using safety helmet per person per occasion --Rs.1000
- Non using safety belt per person per occasion --Rs.1000

3.8 OTHER TERMS AND CONDITIONS

- Successful bidder has to extend manpower assistance for minor cleaning/scraping, etc.
- ~~A copy of tender document with each page duly signed and stamped shall be submitted along with your offer as a token of your unconditional acceptance to this tender condition.~~ Also any deviation to the tender conditions shall be submitted in a separate paper duly signed by the bidder, any overwriting / correction by the bidder on the tender will not be recognized and the offer may be rejected on this ground.
- General and special conditions of contract' enclosed herewith will be fully applicable, except otherwise stated in this enquiry. In case of any conflict, the conditions specified in this enquiry letter will prevail over that of the 'General and special conditions of contract'.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

4. LIST OF MANPOWER REQUIRED

Sl.No	Manpower	Category	No. of Persons
1.	Site-in charge	Highly Skilled	1
2.	Foreman	Highly Skilled	4
3.	Supervisor	Skilled	4
4.	Store Keeper	Skilled	2
5.	HP Welder	Highly Skilled	1
6.	Welder (Non IBR)	Skilled	2
7.	Gas cutter	Skilled	2
8.	Millwright Fitter	Highly Skilled	4
9.	EOT Crane Operator	Highly Skilled	4
10.	Sarang	Skilled	4
11.	Fitter	Skilled	10
12.	Electrician	Semi-Skilled	2
13.	Jr.Filter	Semi-Skilled	12
14.	Insns.Lagger / Carpenter	Semi-Skilled	1
15.	Grinder Man	Skilled	4
16.	Rigger	Semi-Skilled	8
17.	Helper	Un-Skilled	35
18.	Office Boy	Semi-Skilled	2
19.	Safety Engr	Safety officer	2
20.	Expert Manpower	Turbine, Generator, Governing Valves, & Associated Experts	2
Total manpower required			106 Nos.
Except Engaged Agency Manpower			Approx 10 nos.

This is an indicative list; the sub-contractor shall deploy adequate manpower to carry out the work round the clock and as per requirement of the site during execution of the Job.

Note: Site in-charge should be qualified Engineer, B.E. (Mechanical) and all the supervisors should have diploma in engineering.

Successful bidder has to arrange suitable mobile communication facility for BHEL site-in charge

4.1 Man power & T&P:

- Adequate manpower along with T&P should be deployed at site. All the T&P required for the work shall be arranged by the contractor and all T&P should reach the site immediately as machine is under

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

shutdown. All the measuring instruments shall be duly tested / calibrated and valid certificate to that effect should be submitted to our Site In-charge before start of the work.

1. A deployment plan along with experience and name of the Site In-charge, Engineers, Supervisors, Foreman and main technicians to be submitted on per shift basis.
2. LAP-TOP with latest configuration, DVD/CD writer, its peripherals including printer-scanner and one USB Modem for Internet connectivity to be provided for BHEL site office.
3. One office boy in each shift is to be provided for BHEL site office.
4. Well experienced experts (at Least 25 years' job experience) shall be arranged by bidders.

4.2 LIST OF TOOLS AND PLANTS TO BE ARRANGED BY CONTRACTOR

01. Taper gauge, slip gauge set, depth gauge and depth micrometer.
02. Feeler gauge sets, feeler strips of 0.03 to 0.10 mm size.
03. One set of 2-meter-long feeler gauge strips (0.05 to 1.0 mm).
04. Dial indicators New with magnetic bases (12 dials of diameter 40 mm travel – 5 mm).
05. Micrometers (inside and outside up to 300 mm, 450mm, 600mm & 1000mm).
06. Telescopic gauge (2 sets). Bevel protractor and combination sets.
07. Try square.
08. Straight edge for coupling and bearing checking.
09. Set of parallel blocks/ V blocks.
10. Vernier calipers, (150 and 300 mm), measuring steel tapes and 5 meters steel rulers.
11. Precision spirit level (with micro head).
12. 2 sets of D.E. and Ring spanners (6-36mm).
13. 2 sets of box spanners (6 to 20mm and 22-50mm).
14. Allen keys of various sizes (from 2mm. onwards).
15. D.P.Test Kit (with consumables).
16. Crowbars tin cutters, pliers (cutting plier, nose plier grip plier circlip-outside and inside).
17. Screw drivers and sledge hammers – 10 lbs – 1 lbs.
18. Adjustable wrenches, pipe wrenches and heck saws.
19. Single ended spanners (36 mm and above).
20. Flat, half round, triangular bearing scrappers-8", to 12".
21. Files flat round, half round and square, rough and smooth (sizes 6", 9" and 12").
22. Bench Grinders, straight grinders GQ4 and GQ6, Angle grinders.
23. Reamers upto 30 mm. Taper reamers.
24. Drilling machine with magnetic stand upto –30 mm with drill bits.
25. Flexible grinders with grinding stones and cutters of different Shapes and sizes, Angles Grinders and Sander machine.
26. Number punch, letter punch, centre punch and hole punches etc.....
27. Steel wire brushes, wire brush wheels, nylon wire brushes and Painting bushes.
28. Reamers and honing tools with proper jigs and fixtures for carrying out coupling hole Reaming /honing.
29. Lifting devices eye bolts, D-shackles, slings of various sizes Guide rods etc.....

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

30. Chain pulley blocks upto 10 tons-4, 5 tons-4, 2 tons-4 pull/lift.
31. Copper/Brass rods dia. ½" to 1 ½" X 450 mm.
32. Tap and die sets 6 to 36 mm.
33. Surface plate 450 X 450 mm.
34. Torch light/hand lamps with cables, 230/24 V transformer.
35. Torque wrench and torque multiplier.
36. Wooden mallet, Nylon Mallet.
37. Hand glove-asbestos, Manila rope, asbestos cloth leather and Rubber gloves.
38. Set of needle files.
39. Air blower – electric.
40. Electric drills – ¼", ½", and 5/8".
41. Ball pen hammer of various sizes.
42. Gas cutting and heating set with torches regulators, hoses and cylinder minimum two sets).
43. Arc welding generator/rectifiers with regulator, cables, Electrode holders and shields, TIG welding holders.
44. Pneumatic – grinders.
45. Hose pipes for compressed air.
46. Bench vices.
47. Hydraulic jacks 5, 10, 25, 50 & 150 tons capacity and screw jacks- 5 to 10 tons.
48. Hydraulic pump for testing coolers and 500 V megger.
49. Electric switchboards with RCCB and flood light arrangements with fuse boxes and isolating switches, Plugs and sockets.
50. In addition to above T and P contractor will be required to fabricate fixtures such as pullers etc. for removal of any other equipments related to the scope of work.
51. Pedestal fans/air coolers.-04 nos if required
52. Wooden sleepers.
53. Wooden Planks.
54. Magnifying glass.
55. Plastic helmets, Fiber helmet.
56. Gas cutting/welding goggles, grinding goggles.
57. Bearing pullers.
58. Tarpaulin.
59. Insulation testers and Meggers 500 V and 1000 V at least 1 No. each.
60. Any other T and P as per requirement and as per our General and special conditions of Contracts.
61. Digital Multimeter
62. Analogue multimeter of Motwane make
63. Scaffolding materials
64. heating torch-4 nos, , Pneumatic / cutter.

NOTE:

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

1. The above list is only indicative for work in one unit; and not exhaustive. Arrangement for any other T and P required for completion of the job shall be the responsibility of the contractor and shall be arranged by him.
2. All the tools and tackles/measuring instruments shall be duly tested/calibrated and valid certificate to that effect should be submitted to our site in-charge before the start of work.

4.3 CONSUMABLES TO BE ARRANGED BY CONTRACTOR

(The list is indicative only and not exhaustive)

01. Kerosene oil.
02. Rustolene.
03. Petrol/white Petrol/Benzene/CRC/CTC/WD-40-% litre.
04. Grease/Graphite Grease.
05. Hacksaw Blades.
06. Waste cloth/Cotton.
07. Marking/lint free cloth/Muslin.
08. Asbestos cloth/Asbestos cord.
09. Prussian blue.
10. Graphite (flaked) powder/Molykote/Mosil.
11. Cardiom compound.
12. Holdtite/shellac/Gasket sealing compound.
13. Lead wire 1.0 m/1.5 mm/0.5 mm.
14. Liquid soap.
15. Carborandum grinding paste coarse/fine/Diamond lapping paste.
16. Emery papers/Rolls.
17. Cutoff wheels.
18. Grinding wheels.
19. Oil stones, Mounted wheels, rotary cutters.
20. D. P. test chemicals.
21. Gas Cylinders for cutting/welding.
22. Chalk pieces, marking pens, thermoschalks upto 400c
23. Insulation tape, Johnson Tapes.
24. Sander discs and wheels.
25. Polyethylene sheets.
26. Araldite, M. Seal, Instabond, Dendrite.
27. CRC 2-26, white spirit.
28. Electric fuse wire, cables for the connections
29. 2.5 mm² Cu cable (flexible) of 200 mtr. length.
30. Ortho phosphoric acid
31. CRC Lectra-clean.
32. plastic sheet general purpose electrodes for welding purpose, industrial oxygen, acetylene, Nitrogen gas cylinder, epoxy gel red (make Dr. beck), Dilutenet, thinner, Hardener, EH 411/Metallon, E-2082, Becktol Red, Araldite, glass tape.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – IV: T&Ps and MMEs to be deployed by Contractor

33. Infrared Temperature gun for breech nut opening.

NOTE:

The above list is only indicative for work in one unit & not exhaustive. Arrangement for any other consumables required for completion of the job shall be the responsibility of the contractor & shall be arranged by him.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – V: Quality Requirements

QUALITY REQUIREMENT

- Various inspection/ quality control / quality assurance procedure/ methods at various stages will be as per BHEL/ customer quality control procedure/ codes/ IBR and other statutory provisions and as per BHEL Engineer's instructions.
- Preparation of quality assurance log sheets and protocols with customer's engineers, welding logs, other quality control and quality assurance documentation as per BHEL Engineer's instructions, is within the scope of work/ specification.
- A daily log book should be maintained by Area In-charge of contractor on the job incorporating erection / alignment / welding clearance /radiography / progress of work etc. and the same shall be submitted to BHEL. Also, daily reports shall be submitted to BHEL.
- All the important measurements like pre-assembly checking of alignment leveling/ centering work etc. shall be recorded in the daily log book with sketches based on BHEL drawings indicating readings/ measurements actually taken and signed by BHEL/ Customer/ Contractor representatives.
- The inspection/measuring and testing equipments should be of brand, quality and accuracy, as specified by BHEL engineer and should have valid calibration certificates traceable to national/international standards.
- Total quality is the watchword of the work and contractor shall strive to achieve the quality standards, procedures laid down by BHEL. He will follow the instructions as per BHEL drawings and quality standards.
- The welder's performance will be reviewed from time to time as per the BHEL/ IBR standards and any welder not performing to the standards set by BHEL/ IBR standards will be removed from working, Contractor shall arrange for the alternate welders immediately.
- **STAGE INSPECTION BY BHEL / CUSTOMERS ENGINEERS**
Apart from day-to-day inspection/ stage inspection of equipments by BHEL engineers, the equipments may be checked at various stages by customer's engineers and quality assurance teams. Contractor shall arrange all labour, tools/tackles etc. for such inspections free of cost.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VI: Time Schedule

6.1 TIME SCHEDULE & MOBILIZATION

6.1.1 INITIAL MOBILIZATION:

After receipt of fax LOI, Contractor shall discuss with Project Manager / Construction Manager/BHEL Site In charge regarding mobilization. A Full-fledged team with T&P shall be mobilized **within 03 days on receipt of LOI or BHEL intimation.**

6.1.2 MOBILIZATION FOR ERECTION, TESTING, ASSISTANCE FOR COMMISSIONING, OVERHAULING ETC.

The activities for Overhauling shall be started as per directions of Site In-charge of BHEL. Contractor shall mobilize further resources (in addition to those required for activities under clause no. 6.1.1) as per requirement to commence the Capital Overhauling of TG Set incl HIP, LP including in situ HIP Seal fin replacement, Inspection of Lube oil system, servicing of TG valves & steam Strainers, HIP Angle ring replacement, HIP Insulation, C&I work, COH of Generator including Stator Capsule replacement, electrical testing & Associated Work U#2, 150 MW, Hindalco Mahan. Bargawan, (M.P.) and progressively augment the resources to match schedule of the project.

OVERHAULING TIME SCHEDULE IS THE ESSENCE OF THIS CONTRACT. SUBCONTRACTOR SHOULD COMPLETE ALL WORK WITHIN 35 DAYS (FROM STOPPING OF BARRING GEAR TO MACHINE PUT BACK ON BARRING GEAR) OF TIGHT SCHEDULE.

As informed by Hindalco Mahan, Unit#2 shall be stopped for overhauling tentatively from 15.02.2025

Validity of Contract: - 12 Month from the date of LOA.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VII: TERMS OF PAYMENT

7.1 Payment Terms :-

- 1) 20% on completion of mobilization of site, completion of dismantling work. Documents like Insurance & Labour License to be submitted along with first bill.
- 2) 60% on completion of assembly work & machine put on barring gear.
- 3) Final 20% after commissioning & synchronization of machine and also on payment of all dues and submission of all the documents like No Dues certificate from Customer, HR & CLC clearance, EPF challan, Insurance, Labour License, Labour Payment sheets, proof of payment of GST, Indemnity Bond to be submitted along with final bill etc.

Note :

1. **For final bill:** -If required documents are not submitted by bidder within 90 days from the date of commissioning, then Penalty of 1% per week of the total contract value will be levied & it is subject to maximum 5% of the contract value shall be deducted from contractor 's bill.
2. Penalty of 1% per day of the total contract value will be levied for improper mobilization of man power and 1% per day for T & P and consumables separately subject to maximum 5% of the contract value shall be deducted from contractor 's bill
3. While submitting the invoices, Vendor should mention their Bank Account No. on each of their invoices for the purpose of making e-payment.
4. The bill due for payment shall be submitted to the Engineer in-charge of BHEL **along with documentation of Refund of Retention Money Format No. F24 (Rev 00)** (revised format is attached in VOL I BCD 'forms and procedure') at site for necessary verification and processing through proper channel.

Note 2: Work may be started before the required Security Deposit is collected. However payment can be released only after collection/ recovery of security deposit.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: TAXES AND DUTIES

8. TAXES, DUTIES, LEVIES (Rev 14 dated 09/10/2020)

- 1) All taxes excluding GST, GST Cess & BOCW Cess but including, Royalties, fees, license, deposits, commission, any State or Central Levy and other charges whatsoever, if any, shall be borne by you and shall not be payable extra.
- 2) Any increase of the taxes excluding GST, GST Cess & BOCW Cess, at any stage during execution including extension of the contract shall have to be borne by the contractor. Quoted/ accepted rates/ price shall be inclusive of all such requirements. Please note that since GST on output will be paid by BHEL separately as enumerated below, your quoted rates/ price should be after considering the Input Credit under GST law at your end.
- 3) **GST :**
The successful bidder shall furnish proof of GST registration. GST along with Cess (as applicable) legally leviable & payable by the successful bidder as per GST Law, shall be paid by BHEL. Hence Bidder shall not include GST along with Cess (as applicable) in their quoted price.
- 4) GST charged in the Tax Invoice/Debit note by the contractor shall be released separately to the contractor only after contractor files the outward supply details in GSTR-1 on GSTN portal and input tax credit of such invoice is matched with corresponding details of outward supply of the contractor and has paid the GST at the time of filing the monthly return
- 5) E-invoicing under GST has been implemented with effect from 1st October 2020 for all the taxable persons having turnover more than the threshold limit in any preceding financial year from 2017-18 onwards. Therefore, for all the taxable persons falling under the purview of E-invoice, it is mandatory to mention a valid unique Invoice Reference No. (IRN) and QR code as generated from E-Invoicing portal of the Government for the purpose of issuing a valid Tax Invoice. Only an E-invoice issued in the manner prescribed under rule 48(4) of CGST Rules shall be treated as valid invoice for reimbursement of GST amount.
If the successful Bidder is not falling under the purview of E-Invoicing then he has to submit a declaration in that respect along with relevant financial statements.
- 6) Bidder shall note that the GST Tax Invoice complying with GST Invoice Rules (Section 31 of GST Act & Rules referred there under) wherein the 'Bill To' details will as below:
BHEL GSTN – As per **Annexure -1**
NAME – Bharat Heavy Electricals Limited
ADDRESS – Site address
- 7) Bidder to immediately intimate on the day of removal of Goods (in case of any supply of goods) to BHEL along with all relevant details and a scanned copy of Tax Invoice to below email ids to enable BHEL to meet its GST related compliances :-
Email id --- to be intimated later on.
In case of delay in submission of the abovementioned documents on the date of dispatch, BHEL may incur penalty /interest for not adhering to Invoicing Rules under GST Law. The same will be liable to be recovered from the successful bidder, if such delay is not attributable to BHEL.
- 8) In case of raising any Supplementary Tax Invoice (Debit / Credit Note) Bidder shall issue the same containing all the details as referred to in Section 34 read with Rule 53.
- 9) Bidder shall note that in case GST credit is delayed/ denied to BHEL due to delayed / non receipt of goods and /or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: TAXES AND DUTIES

other reasons not attributable to BHEL, GST amount shall be recoverable from the vendor along with interest levied / leviable on BHEL, as the case may be.

- 10) Bidder shall upload the Invoices raised on BHEL in GSTR-1 within the prescribed time as given in the GST Act. Bidder shall note that in case of delay in declaring such invoice in your return and GST credit availed by BHEL is denied or reversed subsequently as per GST Law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from the bidder along with interest levied / leviable on BHEL.
- 11) Way Bill: Successful Bidder to arrange for way bill / e-waybill for any transfer of goods for the execution of the contract.

The Bidder has to make their own arrangement at their cost for completing the formalities, if required, with Issuing Authorities, for bringing materials, plants & machinery at site for execution of the works under this contract, Road Permit/ Way Bill, if required, shall be arranged by the contractor and BHEL will not supply any Road Permit/ Way Bill for this purpose.

- 12) **New taxes and duties:** Any New taxes & duties, if imposed subsequent to due date of offer submission as per NIT & TCN, by statutory authority during contract period including extension, if the same is not attributable to you, shall be reimbursed by BHEL on production of relevant supporting document to the satisfaction of BHEL. However, you shall obtain prior approval from BHEL before depositing new taxes and duties.

Benefits and/or abolition of all existing taxes must be passed on to BHEL against new Taxes, if any, proposed to be introduced at a later date.

In case any new tax/levy/duty etc. becomes applicable after the date of bidder's offer but before opening of the price bid, the bidder must convey its impact on his price duly substantiated by documentary evidence in support of the same before opening of the price bids. Claim for any such impact after opening the price bid will not be considered by BHEL for reimbursement of tax or reassessment of offer.

- 13) For transportation work, bidder shall declare in his quotation whether he is registered under GST, if yes, whether he intends to claim GST on forward charge basis. In absence of this declaration, BHEL will proceed further with the assumption that bidder intends not to claim GST on forward charge basis. However, in case of GST registered transporter, the amount to the extent of goods and service tax will be retained till BHEL avails the credit of GST. Further, transporter shall issue tax invoice which inter alia includes gross weight of the consignment, name of the consigner and the consignee, registration number of vehicle in which the goods are transported, details of goods transported, details of place of origin and destination, GSTIN of the person liable for paying tax whether as consigner, consignee or goods transport agency, and also containing other information as mentioned under rule 46.
- 14) **TDS under Income Tax shall be deducted at prevailing rates on gross invoice value from the running bills unless exemption certificate from the appropriate authority/ authorities is furnished.**
- 15) **TDS under GST shall be deducted at prevailing rates on applicable value from the running bills.**

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: TAXES AND DUTIES

- 16) TCS under Income Tax 1961 has been implemented with effect from 1st October 2020 for every seller having turnover more than threshold limit during financial year immediately preceding financial year in which the sale of goods is carried out, who receives any amount as consideration for sale of any goods of the value or aggregate of such value exceeding threshold limit other than export of goods or who is already covered under other provision of section 206C, collect from the buyer, TCS as per applicable rates of the sale consideration exceeding threshold limit subject to following conditions

B

- i. Buyer shall be as per clause (a) of section 206C- (1H)
- ii. Seller shall be as per clause (b) of section 206C- (1H)
- iii. No TCS is to be collected, if the seller is liable to collect TCS under other provision of section 206C or the buyer is liable to deduct TDS under any provision of the Act and has deducted such amount.

If Successful Bidder is falling under the purview of TCS then he has to submit a declaration in that respect along with relevant financial statements before the start of work or if bidder is falling under preview of TCS during the work in progress then bidder is compulsorily required to submit relevant financial statement in the beginning of the respective FY.

For TCS claim, vendor has to submit relevant documents required as per Income Tax Act.

- 17) Refer Annexure – 2 for BOCW Act & Cess Act.

ANNEXURE-1

State wise GSTIN no.s of BHEL

Sl. No	Projects under state	GSTIN
1	Andhra Pradesh	37AAACB4146P7Z8
2	Bihar	10AAACB4146P1ZU
3	Chhattisgarh	22AAACB4146P1ZP
4	Gujarat	24AAACB4146P1ZL
5	Jharkhand	20AAACB4146P5ZP
6	Madhya Pradesh	23AAACB4146P1ZN
7	Maharashtra	27AAACB4146P1ZF
8	Orissa	21AAACB4146P1ZR
9	Telangana	36AAACB4146P1ZG

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-IX: Schedule of Rates and Quantities

Sch no.	Description of Work	UOM	QTY	Percentage w.r.t total lumpsum price quoted in the price bid
1	GENERAL OVERHAULING OF TURBINE & GENERATOR INCLUDING EOT CRANE OPERATORS	LS	01	8.75%
2	COMPLIANCE OF ALL HSE REQUIREMENTS & ARRANGEMENT OF SAFETY ENGINEERS	LS	01	0.90%
3	ARRANGEMENT OF HYDRAULIC TORQUE WRENCH	LS	01	1.55%
4	LP TURBINE OVERHAULING	LS	01	9.50%
5	REMOVAL & REASSEMBLY OF HP-IP CASING AND ROTOR	LS	01	8.00%
6	SEAL REPLACEMENT OF HIP TURBINE	LS	01	15.00%
7	REMOVAL OF EXISTING INSULATION AND APPLICATION OF CERAMIC PAD INSULATION OF THE HIP TURBINE	LS	01	6.10%
8	INSPECTION OF TG OIL SYSTEM, MOT CLEANING & MOT COOLER SERVICING.	LS	01	3.00%
9	OVERHAULING OF HYDRAULICALLY OPERATED MAIN TURBINE VALVES AND ACTUATORS.	Nos.	09	4.55%
10	OVERHAULING OF HYDRAULICALLY & PNEUMATICALLY OPERATED TURBINE AUXILIARIES VALVES AND AIR CYLINDER	Nos.	14	4.00%
11	OVERHAUL OF STRAINERS	Nos.	04	2.25%
12	TG C&I WORK DURING OVERHGAULING	LS	01	0.55%
13	GENERATOR STATOR CAPSULE REPLACEMENT INCLUDING COH OF GENERATOR, TESTING OF GENERATOR.	LS	01	31.00%
14	ANGLE-RING INSPECTION/REPLACEMENT OF HIP TURBINE (without main steam pipe line cutting) - OPTIONAL	LS	01	1.55%
15	REPLACEMENT OF TG BEARING OTHER THAN TWO BEARING - OPTIONAL	Nos.	01	0.40%
16	DYNAMIC BALANCING OF TG DURING ROLLING (ASSISTANCE ONLY) - OPTIONAL	LS	01	0.55%
17	REPLACEMENT OF LP EXTRATION BELLOW - OPTIONAL	Nos.	01	0.55%
18	ARRANGEMENT OF TG EXPERTS - OPTIONAL	Nos.	02	1.80%
TOTAL Lump-sum value to be quoted by the bidder in VOL II Price Bid			100%	