

E - TENDER SPECIFICATION NO:

BHE:PW:NGP:PUR:RNG-MARWA-COH:3202

Capital Overhauling of TG Set including complete overhauling of IP Turbine, LP Turbine including MPI & NFT of Free standing blades, overhauling of MS & HRH strainer, Servicing of HP-Bypass Valves, Servicing of CRH NRV, Governor Setting & valve characteristics, Trim Balancing of TG Rotor, Complete Overhauling of Drive Turbine of TDBFPs and Generator & Exciter allied works for Unit #1 of 2x500 MW, ABVTPS, Marwa .

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

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I-A	Technical Conditions of Contract	Vol-IA-3202
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E-Tender Specification Issue Details

E-Tender Specification No: BHE:PW:NGP:PUR:RNG-MARWA-COH:3202

NAME OF THE WORK:

Capital Overhauling of TG Set including complete overhauling of IP Turbine, LP Turbine including MPI & NFT of Free standing blades, overhauling of MS & HRH strainer, Servicing of HP-Bypass Valves, Servicing of CRH NRV, Governor Setting & valve characteristics, Trim Balancing of TG Rotor, Complete Overhauling of Drive Turbine of TDBFPs and Generator & Exciter allied works for Unit #1 of 2x500 MW, ABVTPS, Marwa .

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.

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NOTICE INVITING TENDER

Bharat Heavy Electricals Limited



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Ref: BHE:PW:NGP:PUR:RNG-MARWA-COH:3202

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:NGP:PUR:RNG-MARWA-COH:3202	
ii	Broad Scope of job	Capital Overhauling of TG Set including complete overhauling of IP Turbine, LP Turbine including MPI & NFT of Free standing blades, overhauling of MS & HRH strainer, Servicing of HP-Bypass Valves, Servicing of CRH NRV, Governor Setting & valve characteristics, Trim Balancing of TG Rotor, Complete Overhauling of Drive Turbine of TDBFPs and Generator & Exciter allied works for Unit #1 of 2x500 MW, ABVTPS, Marwa	
iii	DETAILS OF TENDER DOCUMENT		
A	Volume-IA	<i>Technical Conditions of Contract (TCC) consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc</i>	<i>Applicable</i>
B	Volume-IB	<i>Special Conditions of Contract (SCC)</i>	<i>Applicable</i>
C	Volume-IC	<i>General Conditions of Contract (GCC)</i>	<i>Applicable</i>
D	Volume-ID	<i>Forms and Procedures</i>	<i>Applicable</i>
E	Volume-IE	<i>Drawings</i>	<i>Applicable</i>
F	Volume-II	<i>Price Bid as specified in E-Procurement Portal</i>	<i>Applicable</i>
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 :26-12-25, Time :17:00 Hrs Closes: 29-12-25, Time: 13:00 Hrs Brief information of the tenders shall also be available at central public procurement portal. (https://eprocure.gov.in/epublish/app)	<i>Applicable</i>
v	DUE DATE & TIME OF OFFER SUBMISSION	Date: 29-12-25, Time: 13.00 Hrs • Place: on E-Tender Portal https://eprocurebhel.co.in	<i>Applicable</i>
vi	OPENING OF TENDER	Date: 29-12-25, Time: 17.00 Hrs	<i>Applicable</i>

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S No.	ISSUE	DESCRIPTION	
	(Techno-Commercial Bid)	<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>	
vii	EMD AMOUNT	<p>One Time EMD submitted in PSWR Region OR RS 2,00,000 (Indian Rupees Two lakhs Only) OR MSE Certificate for EMD Exemption</p>	<i>Applicable</i>
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: Chaitram Patel Designation: Engineer Dept: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Mobile-8055451608 Email : chaitram@bhel.in</p> <p>2) Name: Varun Vaidya Designation: Manager Dept: Purchase Address: Floor no. 5 & 6, Shree Mohini Complex, 345 Kingsway, Nagpur-440001 Mobile-9792334127 Email : vaidya@bhel.in</p>	<i>Applicable</i>
x	SCHEDULE OF Pre Bid Discussion (PBD)	NA	Not Applicable
xi	<u>INTEGRITY PACT & DETAILS OF INDEPENDENT EXTERNAL MONITOR (IEM)</u>	<p>1) <u>Dr. Sarat Kumar Acharya, Ex-CMD, NLC</u> 2) <u>Shri R. Mukundan, IRPS (Retd.)</u> 3) <u>Shri Madan Lal Meena, IAS (Retd.)</u></p>	<i>Applicable</i>
xii	Latest updates	<p>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.</p>	

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

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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	5th 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.

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- 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:

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- ~~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		
	<p><u>ENVELOPE – I superscribed as:</u></p> <p>PART I (TECHNO COMMERCIAL BID)</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> <p>i. Covering letter/Offer forwarding letter of Tenderer.</p> <p>ii. Duly filled in 'No Deviation Certificate' as per prescribed format to be placed after document under sl no (i) above.</p> <p><u>Note:</u></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>i). In case of acceptance of the deviations, appropriate loading shall be done by BHEL</p> <p>ii). In case of unacceptable deviations, BHEL reserves the right to reject the tender</p> <p>iii. 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> <p>iv. All Amendments/Correspondences/Corrigenda/Clarifications/Changes/ Errata etc. pertinent to this NIT.</p> <p>v. Integrity Pact Agreement (Duly signed by the authorized signatory)</p> <p>vi. Duly filled in annexures, formats etc. as required under this Tender Specification/NIT</p>	

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vii.	Notice inviting Tender (NIT)	
viii.	Volume - I A : <u>Technical Conditions of Contract (TCC)</u> consisting of Scope of work, Technical Specification, Drawings, Procedures, Bill of Quantities, Terms of payment, etc.	
ix.	Volume - I B : <u>Special Conditions of Contract (SCC)</u>	
x.	Volume - I C : <u>General Conditions of Contract (GCC)</u>	
xi.	Volume - I D : <u>Forms & Procedures</u>	
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		
	ENVELOPE - II superscribed as: PART I (EMD) TENDER NO : NAME OF WORK : PROJECT: DUE DATE OF SUBMISSION: CONTAINING THE FOLLOWING:	
	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:	

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	DUE DATE OF SUBMISSION:	
CONTAINING THE FOLLOWING:		
+	<ul style="list-style-type: none"><input type="radio"/> Envelopes I<input type="radio"/> Envelopes II<input type="radio"/> 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 Assessment of Capacity of Bidders:

Bidder's capacity for executing the job under tender shall be assessed based on its 'LOAD and PERFORMANCE' and 'AVERAGE ANNUAL TURNOVER', as per the following:

I. **LOAD:** Load takes into consideration ALL the contracts of the Bidder under execution with BHEL Regions, irrespective of whether they are similar to the tendered scope or not. The cut off month for reckoning 'Load' shall be the 3rd Month preceding the month corresponding to the 'latest date of bid submission', in the following manner -

(Note: For example, if latest bid submission is in Jan 2017, then the 'load' shall be calculated up to and inclusive of Oct 2016)

Total number of Packages in hand = Load (P)

Where 'P' is the sum of all unit wise identified packages (refer table-1) under execution with BHEL Regions as on the cut off month defined above, including packages yet to be commenced, excepting packages which are on Long Hold.

II. **PERFORMANCE:** Here 'Monthly Performance' of the bidder for all the packages (under execution/ executed during the 'Period of Assessment' in all Power Sector Regions of BHEL) SIMILAR to the packages covered under the tendered scope, excepting packages not commenced shall be taken into consideration. The 'Period of Assessment' shall be 6 months preceding and including the cut off month. The cut off month for reckoning 'Period of Assessment' shall be the 3rd Month preceding the month corresponding to 'latest date of bid submission', in the following manner:

(Note: For example, if 'latest date of bid submission' is in Jan 2017, then the 'performance' shall be assessed for a 6 months' period up to and inclusive of Oct 2016 (i.e. from May 2016 to Oct 2016), for all the unit wise identified packages (refer Table I))

i). **Calculation of Overall 'Performance Rating' for 'Similar Package/Packages' for the tendered scope under execution at Power Sector Regions for the 'Period of Assessment':**

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This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for all the similar Package/packages', divided by the total number of Package months for which evaluation should have been done, as per procedure below:

- a) $P_1, P_2, P_3, P_4, P_5, \dots, P_N$ etc. be the packages (under execution/ executed during the 'Period of Assessment' in all Regions of BHEL) SIMILAR to the packages covered under the tendered scope, excepting packages not commenced. Total number of similar packages for all Regions = P_T (i.e. $P_T = P_1 + P_2 + P_3 + P_4 + \dots + P_N$)
- b) Number of Months 'T₁' for which 'Monthly Performance Evaluation' as per relevant formats, should have been done in the 'Period of Assessment' for the corresponding similar package P₁. Similarly T₂ for package P₂, T₃ for package P₃, etc. for the tendered scope. Now calculate cumulative total months 'T_T' for total similar Packages 'P_T' for all Regions (i.e. $T_T = T_1 + T_2 + T_3 + T_4 + \dots + T_N$)
- c) Sum 'S₁' of 'Monthly Performance Evaluation' Scores (S₁₋₁, S₁₋₂, S₁₋₃, S₁₋₄, S₁₋₅.... S_{1-T1}) for similar package P₁, for the 'period of assessment' 'T₁' (i.e. $S_1 = S_{1-1} + S_{1-2} + S_{1-3} + S_{1-4} + S_{1-5} + \dots + S_{1-T1}$). Similarly, S₂ for package P₂ for period T₂, S₃ for package P₃ for period T₃ etc. for the tendered scope for all Regions. Now calculate cumulative sum 'S_T' of 'Monthly Performance Evaluation' Scores for total similar Packages 'P_T' for all Regions (i.e. 'S_T' = S₁ + S₂ + S₃ + S₄ + S₅ + S_N)
- d) Overall Performance Rating 'R_{BHEL}' for the Similar Package/Packages (under execution/ executed during the 'Period of Assessment') in all the Power Sector Regions of BHEL

$$\begin{aligned}
 & \text{Aggregate of Performance scores for all similar packages in all the Regions} \\
 & = \frac{\text{Aggregate of months for each of the similar packages for which performance}}{\text{should have been evaluated in all the Regions}} \\
 & = \frac{S_T}{T_T}
 \end{aligned}$$

- e) Bidders to note that the risk of non-evaluation or non-availability of the 'Monthly Performance Evaluation' reports as per relevant formats is to be borne by the Bidder.
- f) Table showing methodology for calculating 'a', 'b' and 'c' above

Sl. No.	Item Description	Details for all Regions								Total
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	
1	Similar Packages for all Regions → (under execution/ executed during period of assessment)	P ₁	P ₂	P ₃	P ₄	P ₅	...	P _N	Total No. of similar packages for all Regions = P_T i.e. Sum (Σ) of columns (iii) to (ix)	
2	Number of Months for which 'Monthly Performance Evaluation' as per relevant formats should have been done in the 'period of assessment' for corresponding Similar Packages (as in row 1)	T ₁	T ₂	T ₃	T ₄	T ₅	...	T _N	Sum (Σ) of columns (iii) to (ix) $= T_T$	

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Sl. No.	Item Description	Details for all Regions								Total
		(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)	(x)	
3	Monthly performance scores for the corresponding period (as in Row 2)	S ₁₋₁ , S ₁₋₂ , S ₁₋₃ , S ₁₋₄ , ... S _{1-T1}	S ₂₋₁ , S ₂₋₂ , S ₂₋₃ , S ₂₋₄ , ... S _{2-T2}	S ₃₋₁ , S ₃₋₂ , S ₃₋₃ , S ₃₋₄ , ... S _{3-T3}	S ₄₋₁ , S ₄₋₂ , S ₄₋₃ , S ₄₋₄ , ... S _{4-T4}	S ₅₋₁ , S ₅₋₂ , S ₅₋₃ , S ₅₋₄ , ... S _{5-T5}	...	S _{N-1} , S _{N-2} , ... S _{N-3} , S _{N-4} , ... S _{N-TN}	-----	
4	Sum of Monthly Performance scores of the corresponding Package for the corresponding period (as in row-3)	S ₁	S ₂	S ₃	S ₄	S ₅	...	S _N	Sum (Σ) of columns (iii) to (ix) = S _T	

ii). Calculation of Overall 'Performance Rating' (R_{BHEL}) in case at least 6 evaluation scores for 'similar Package/Packages' for the tendered scope ARE NOT AVAILABLE, during the 'Period of Assessment':

This shall be obtained by summing up the 'Monthly Performance Evaluation' scores obtained by the bidder in all Regions for ALL the packages, divided by the total number of Package months for which evaluation should have been done. 'R_{BHEL}' shall be calculated subject to availability of 'performance scores' for at least 6 'package months' in the order of precedence below:

- 'Period of Assessment' i.e. 6 months preceding and including the cut-off month
- 12 months preceding and including the cut-off month
- 24 months preceding and including the cut-off month

In case, R_{BHEL} cannot be calculated as above, then Bidder shall be treated as 'NEW VENDOR'. Further eligibility and qualification of this bidder shall be as per definition of 'NEW VENDOR' described in 'Explanatory Notes'.

iii). Factor "L" assigned based on Overall Performance Rating (R_{BHEL}) at Power Sector Regions:

Sl. no.	Overall Performance Rating (R _{BHEL})	Corresponding Value of 'L'
1	=60	NA
2	> 60 and \leq 65	0.5
3	> 65 and \leq 70	0.45
4	> 70 and \leq 75	0.4
5	> 75 and \leq 80	0.375
6	> 80 and $<$ 90	0.35
7	\geq 90	0.33

iv). Performance Systems: The performance rating as mentioned in II (i) and (ii) above, 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).

III. i) 'Assessment of Capacity based on 'LOAD and PERFORMANCE':

- 'Assessment of Capacity of Bidder' is based on the Maximum number of packages for which a vendor is eligible, considering the performance scores of similar packages, as below:

Max number of packages P_{Max}= (R_{BHEL} - 60) divided by corresponding value of 'L', i.e. (R_{BHEL} - 60)/L

Note:

- In case the value of P_{Max} results in a fraction, the value of P_{Max} is to be rounded off to next whole number
- For R_{BHEL} = 60, P_{Max} = '1'

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The Bidder shall be considered 'Qualified' on 'Performance basis' as per 'Assessment of Capacity of Bidder' for the subject Tender if $P \leq P_{Max}$
(Where P is calculated as per clause 'I' above)

b) In addition to above, the contractor shall be considered disqualified for ongoing tender(s) of BHEL, in case contractor fails to obtain an overall average score of 6 or more than 6 (six) (in the scaled down scores of HSEPS) out of 10, in a period of '6 months preceding and including the cut-off month'. The period of '6 months preceding and including the cut-off month' can be extended to 12 months and further to 24 months, to account for 'performance scores' for at least 6 'package months'. Bidders who did not qualify this condition shall not be considered under the provisions of clause 9 IV (iv) of NIT.

ii) Assessment of Capacity based on 'AVERAGE ANNUAL TURNOVER':

If the 'value of contracts in hand' across all PS Regions by a contractor is less than the product of "annual average turnover of the Contractor and multiplying factor", then such bidder shall be considered qualified on 'Annual Average Turnover basis'. The 'value of contracts in hand' will be computed by summing up "50% of the annualized awarded value of each contract" unless performance evaluation is not closed in the online CPES.

Based on the performance rating of the Contractor, the above mentioned multiplying factor shall be as below:

Sl. no	Overall Performance Rating (R_{BHEL})	(Multiplying factor to Average Annual Turnover)
1	≥ 60 and ≤ 65	1
2	> 65 and ≤ 70	1.5
3	> 70 and ≤ 75	2
4	> 75 and ≤ 80	2.5
5	> 80	3

'Assessment of Capacity of Bidder':

The bidder will be considered qualified for the tender if it qualifies on 'Load and Performance basis' as well as on 'Average Annual Turnover basis'.

However, 'New Vendor' / 'Consortium Partner' shall be considered qualified based on only 'Load and Performance' (they will be regarded pre-qualified on 'Average Annual Turnover' criteria).

IV. Explanatory note:

i). Similar package means Boiler or ESP or Piping or Turbine or Civil or Structure or Electrical or C&I etc. at the individual level irrespective of rating of Plant and irrespective of whether the subject tender is a single package or as part of combined/composite packages. Normally Boiler, ESP, Piping, Turbine, Electrical, C&I, Civil, Structure etc. is considered individual level of package. For example, in case the tendered scope is a Boiler Vertical Package comprising of Boiler, ESP and Power Cycle Piping (i.e. the 'identified packages as per Table-1 below), the 'PERFORMANCE' part against sl.no. II above, needs to be evaluated considering all the identified packages (i.e. Boiler, ESP and Power Cycle Piping) and finally the Bidder's capacity to execute the tendered scope is assessed in line with III above.

ii). 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
iii). Civil Works including foundations	iii). Others (Elect. and C&I)	Piping/Critical Piping
iv). Structural Steel	iv). Electrical	iii). ESP

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Fabrication & Erection v). Chimney vi). Cooling Tower vii). Others (Civil)	Enabling Works	iv). LP Piping v). Steam Turbine Generator set & Aux vi). Gas Turbine Generator set & Aux vii). Hydro Turbine Generator set & Aux viii). Turbo Blower (including Steam Turbine) ix). Material Management x). FGD xi). ACC xii). Others (Mechanical)
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iii). Bidders who have not been evaluated for at least six package months in the last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions, shall be considered "NEW VENDOR".

A 'NEW VENDOR' shall be considered qualified subject to satisfying all other tender conditions.

A 'NEW VENDOR' if awarded a job (of package/packages identified under this clause) shall be tagged as "FIRST TIMER" on the date of first LOI from BHEL.

The "FIRST TIMER" tag shall remain till completion of all the contracts against which vendor has been tagged as First Timer or availability of 6 evaluation scores within last 24 months preceding and including the Cut-off month in the online BHEL system for contractor performance evaluation in BHEL PS Regions.

A Bidder shall not be eligible for the next job as long as the Bidder is tagged as "FIRST TIMER" excepting for the Tenders which have been opened on or before the date of the bidder being tagged as 'FIRST TIMER'.

After removal of 'FIRST TIMER' tag, the Bidder shall be considered 'QUALIFIED' for the future tenders subject to satisfying all other tender conditions including 'Assessment of Capacity of Bidders'.

iv). Consequent upon applying the criteria of 'Assessment of Capacity of Bidders' detailed above on all the bidders qualified against Technical and Financial Qualification criteria, if the number of qualified bidders reduces to less than four, then for further processing of the Tender, BHEL at its discretion reserves the right to also consider the bidders who are "not qualified" as per criteria of 'Assessment of Capacity of Bidders' and for this, procedure described in following three options shall be followed:

- a) All the bidders having Overall Performance Rating ('R_{BHEL}') ≥ 60 shall be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
- b) If even after using option "a", the number of qualified bidders remains less than four, then in addition to bidders considered as per option "a", "First timer" bidders having average of available performance scores ≥ 60 upto and including the Cut Off month shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
- c) If even after using option "a" and "b", the number of qualified bidders remains less than four, then in addition to bidders considered as per option "a" and "b", "First timer" bidders for whom no performance score is available in the system upto and including the Cut Off month, shall also be considered qualified against criteria of 'Assessment of Capacity of Bidders'.
- d) If even after using option "a", "b" and "c" the number of qualified bidders remains less than four, remaining bidders shall be "listed" as per their descending order of Overall Performance Rating ('R_{BHEL}') or average of available performance scores for "First timer" bidders upto and including the Cut Off month.

Bidders as per option "a", "b", "c" and additional top bidders as "listed" above shall be considered qualified against criteria of 'Assessment of Capacity of Bidders' to make the total numbers of qualified bidders as four.

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In case, from the "listed" bidders, more than 1 "listed" bidder are having the same average performance score, then all such bidders shall be considered.

Example-

If 3 bidders are considered from "a", "b" and "c".

From remaining "listed" bidders, 3 top bidders have same average performance scores. Then all 3 "listed" bidders shall be considered.

Note:- In case, the number of bidders qualified against Technical and Financial Qualification criteria itself is less than four, then all bidders shall be considered qualified against criteria of 'Assessment of Capacity of Bidders' for further processing of tender.

v). '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.

vi). 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.

vii). 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.

viii). Project on Hold due to reasons not attributable to bidder -

- a. Short hold: Evaluation shall not be applicable for this period, however, Loading will be considered.
- b. Long hold: Short hold for continuous six months and beyond or hold on account of Force Majeure shall be considered as Long Hold. Evaluation as well as Loading 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.

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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 be 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)"

(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	IEM	Email
1	Dr. Sarat Kumar Acharya, Ex-CMD, NLC	lem1@bhel.in
2	Shri R. Mukundan, IRPS (Retd.)	lem2@bhel.in
3	Shri Madan Lal Meena, IAS (Retd.)	lem3@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:

Name:	Sh V K Arya	Varun Vaidya/ Manager (Purchase)
Dept:	Purchase Department	
Address:	Floor No. 5 & 6, Shreemohini Complex, 345 Kingsway, Nagpur-440001	
Email:	vkarya@bhel.in	vaidya@bhel.in
Phone:	-	9792334127

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 I Public Procurement (Preference to Make in India), Order 2017 dated 19-07-2024 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

(Addl. 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.
013. ~~Annexure 13 : Bid Security Declaration Form~~

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[ANNEXURE - 1](#)

PRE QUALIFYING CRITERIA

E-Tender Spec No: BHE:PW:NGP:PUR:RNG-MARWA-COH:3202	
JOB	Annual Overhauling of 500MW, KWU design BHEL make Turbo Generator set including machining of Exciter rotor slip ring area and Exciter overhauling and TDBFP -Drive Turbines of Unit No.6 at Ukai TPS

S No	PRE QUALIFICATION CRITERIA	Bidders claim in respect of fulfilling the PQR Criteria	
		Applicability	
A	<p>Submission of Integrity Pact duly signed (if applicable)</p> <p>(Note: To be submitted by Prime Bidder & Consortium /Technical Tie up partner jointly in case Consortium bidding is permitted, otherwise by the sole bidder)</p>	Not Applicable	
B	<p>B) Technical PQR</p> <p>B.1 Atleast One Job of 'Erection and Commissioning' / 'General Overhauling' of Turbine & Generator of rating ≥ 250 MW capacity (STG) last 07 (Seven) years, ending on latest due date of submission of offer.</p> <p>AND</p> <p>B.2 One overhauling involving atleast Two modules (HP/IP/LP) with Generator of rating ≥ 250 MW capacity (STG) Power plant against direct order from BHEL / PSUs / State Electricity Utilities/Private customer/Equipment owner in last 07 (Seven) years, ending on latest due date of submission of offer.</p> <p>Note: Relevant Supporting Documents of WORK ORDER COPY shall be submitted</p>	Applicable	
C-1	<p>Financial TURNOVER</p> <p>Bidders must have achieved an average annual financial turnover (audited) of ₹39.00 Lakhs or more over last three Financial Years (FY) i.e 2022-23, 2023-2024' & 2024-2025'.</p>	Applicable	
C-2	<p>NETWORTH (only in case of Companies)</p> <p>Net worth of the Bidder based on the latest Audited Accounts as furnished for 'C-1' above should be positive.</p>	Applicable	
C-3	<p>PROFIT</p> <p>Bidder must have earned profit in any one of the five Financial Years as applicable in the last five Financial Years, (2020-21, 2021-22, 2022-23, 2023-24 & 2024-25 as on date). Bidders to submit audited balance sheets and profit & loss statements for the years as supporting documents.</p>	Applicable	
C-4	<p>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</p>	Applicable	
D	<p>Assessment of Capacity of Bidder to execute the work as per sl. No 9 of NIT (if applicable)-NOT APPLICABLE</p>	Not Applicable	
E	<p>Approval of Customer (if applicable)</p>	Applicable	
F	<p>Price Bid Opening</p> <p>Note: Price Bids of only those bidders shall be opened who stand qualified after compliance of criteria A to E</p>		BY BHEL

G	Consortium tie-ups	Not Applicable	
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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-

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

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.

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Format-1

Not Applicable

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Format-2

Not Applicable

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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	Bid security declaration to be submitted.	
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
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

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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 ACCCOMPANIED BY THE PRESCRIBED **ABOVE APPLICABLE DOCUMENTS** ARE LIABLE TO BE SUMMARILY REJECTED.

DATE :

AUTHORISED SIGNATORY

(With Name, Designation and Company seal)

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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.
dt:....., 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

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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.

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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	

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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. **BHE:PW:NGP:PUR:RNG-MARWA-COH:3202** 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:

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ANNEXURE – 7

INTEGRITY PACT

Not Applicable

ANNEXURE – 8

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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: BHE:PW:NGP:PUR:RNG-MARWA-COH:3202

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:

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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: _____

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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: **BHE:PW:NGP:PUR:RNG-MARWA-COH:3202**,
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.

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ANNEXURE-11

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: **BHE:PW:NGP:PUR:RNG-MARWA-COH:3202**,
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.

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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:vaidya@bhel.in Ph: +91 – 712 – 2858 –715
GM Purchase, Email: vkarya@bhel.in

1. **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
2. **All Statutory Requirements as applicable for this project shall be complied with.**
3. **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"

4. **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 Hongkond and Shanghai Banking Corporation Ltd
ICICI Bank Ltd.
IDBI Ltd.
Punjab National Bank
Standard Chartered Bank

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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".

5. 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.

6. Conflict of Interest among Bidders/ Agents:

"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:

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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.”

7. ~~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~~

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

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

10. 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.

11. 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.

12. Interest bearing recoverable advances- Cl no. 2.13 of GCC, is not applicable.

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13. Performance Guarantee of Workmanship for the work done / Defect liability period shall be as per 2.24 of GCC with the amendment in Cl 2.24.1 as 90 Days commencing from the date of synchronization of Unit..

14. Being an overhauling job & overlapping of various job in same area splitting of Work is not allowed.

15. Following Amendment in Cl 1.14 EXECUTION OF CONTRACT AGREEMENT of the GCC:

Cl 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><i>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.</i></p> <p><i>The contract agreement shall be deemed to have come into force from the date of acceptance of LOI by the subcontractor.</i></p>

16. Conflict of Interest among Bidders/ Agents:

"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

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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.”

17. Limitation of Liability in Clause 2.22 of General Conditions of contract for services/works has

been amended as below:

“Notwithstanding anything to the contrary in this Contract or LOA or Work Order or any other mutually agreed document between the parties, the maximum liability, for damages, of the contractor, its servants or agents, shall under no circumstances exceed an amount equal to the Price of the Contract or the Work Order. Neither party shall be liable to the other for any indirect or consequential loss or damage, including but not limited to loss of use, loss of profits, or loss of contracts, or special, punitive, exemplary losses whatsoever, arising out of or in connection with this contract.

This shall not be applicable on the recoveries made by Customer from BHEL on account of Contractor, any other type of recoveries for workmanship, material, T&P etc. due from the contractor.”

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Annexure-13 for Bid Security Declaration

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

To,

GM/Purchase
BHEL PSWR
Floor No. 5 & 6, Shree Mehini Complex,
345 Kingsway, Nagpur 440001

Dear Sir/Madam,

Sub: Bid Security Declaration

E-Tender Spec No: BHE:PW:NGP:PUR:RNG-MARWA-COH:3202

JOB Description :

1. I/We Mr/ Ms..... authorised person to sign the bid documents for tender pertaining to the captioned scope do hereby declare that I/We have gone through the entire tender documents including terms and condition mentioned in the tender documents and undertake to comply with them.
2. I/We further declare that we will not withdraw our bid or modify our offer during the period of validity of the bid after the deadline for submission of such documents.
3. If I/we withdraw or modify the bids during the period of validity, or if I/We are awarded the contract and fail to sign the contract, if applicable or to submit security deposit as defined in the tender document/LOA, we will be suspended for the period of time as specified in the tender document from being eligible to submit bids/proposals to BHEL.

Signature of the Authorised Signatory
(With Name, Designation and Company seal)

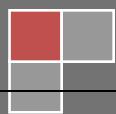
Place:

Date:

3202

TECHNICAL CONDITIONS OF CONTRACT (TCC)

BHARAT HEAVY ELECTRICALS LIMITED



TECHNICAL CONDITIONS OF CONTRACT (TCC)

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TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter - I: PROJECT INFORMATION

1.0	Project Information
	<p>1) Purchaser : M/s. CSPGCL ,ABVTPS Marwa</p> <p>2) Project Title : Capital Overhauling of TG Set including complete overhauling of IP Turbine, LP Turbine including MPI & NFT of Free standing blades, overhauling of MS & HRH strainer, Servicing of HP-Bypass Valves, Servicing of CRH NRV, Governor Setting & valve characteristics, Trim Balancing of TG Rotor, Complete Overhauling of Drive Turbine of TDBFPs and Generator & Exciter allied works for Unit #1 of 2x500 MW, ABVTPS, Marwa.</p> <p>3) Railway Station : Champa</p> <p>4) Nearest airport : Raipur</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 -1: GENERAL OVERHAULING WORK SUCH AS INSPECTION OF ALL BEARINGS, ALIGNMENT OF ROTOR, SWING CHECK, ROLL CHECK & BUMP CHECK OF CASINGS, MOP OVERHAUL ETC.

1. Measurement of oil guard clearances for all bearing pedestals, loosening of all bearing pedestals covers & lifting of pedestals covers. Bearing yoke /Yoke key clearance recording, Removal of yoke, Measurement of oil catcher clearance, bearing top half removal and measurement of bearing oil clearances. Carrying out Repair/ Replacement of Keys, oil guard ring strips, oil catcher ring strips etc as per requirement. Necessary workshop facilities will be provided by CSPGCL free of cost at CSPGCL workshop.
2. Ensure the freeness of Turbine rotor for hand barring by adjustment of JOP lift settings, roll check corrections as per requirement.
3. Recording of coupled run out (CRO) of all coupling/journals/shafts etc.
4. Carry out swing check at HPT front journal and exciter end.
5. Measurement of reference control readings at HP, IP, LP, Generator etc. and measurement of thrust bearing total float. Carry out necessary scrapping, lapping and corrections as per requirement.
6. Measurement of LP front and rear gland clearances and carrying out necessary corrections etc as per requirement.
7. Decoupling of HP-IP, IP-LP, LP-Gen, Gen-Exciter and HP-MOP couplings. Recording of misalignment readings. Checking of HP, IP, LP, Generator Rotor journals/couplings/shafts free run out.
8. Removal of LPT outer cover. Carryout Roll Check of LP Turbine. Carry out necessary corrections/adjustments by repairing/replacing of keys, packers, eccentric pins etc.
9. Carry out DPT & inspection of LPT Extraction Bellows.
10. Checking of Centering of HP and IP Turbine. Carry out roll check, bump check & Horn drop test of HP & IP Turbine. Carry out necessary corrections/ adjustments by repairing/replacing keys, packers etc.
11. Complete dismantling of main oil pump assembly (MOP). Thorough cleaning of all components. If required bottom casing to be removed from pedestal for replacement of complete pump assembly. DP test of components as per requirement & carry out necessary repair/ replacement/revisioning of the components etc. as per requirement. Assembly of main pump in front bearing pedestal & carry out Alignment of main oil pump with turbine shaft, adjustment & Correction if any. Coupling of main oil pump with turbine shaft.
12. Inspection and measurement of bearing clearances for all bearing. Removal of top & bottom halves of bearings. Carry out DP test / Ultrasound test for all bearing halves. (Ultrasound test kit/ DP test kit along with accessories to be brought by the party). Measurement of bore for all bearings. Carry out necessary scrapping / lapping /

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

polishing on bearings supports / Journals etc as per requirement. Carry out necessary scrapping / Grinding etc on the bases of Cylindrical / Spherical supports of the bearings to correct the taperness etc. as per requirement. Replacement of Jacking oil hoses for all bearings if required. **Replacement of one bearing is included in the scope of Work. However more than one bearing & bellow is to be replaced with extra cost & time.**

13. Carry out alignment of all coupling within the allowable limits by doing necessary corrections in bearing supports etc.
14. Coupling of HP-IP, IP-LP, LP-Generator and Gen-Exciter coupling including necessary Reaming and Honing of coupling holes as per requirement. Machining of coupling bolts as per coupling hole size if required can be carried out at CSPGCL Central workshop free of cost.
15. Taking coupled run out (CRO) of HP-IP, IP-LP, LP-GEN, GEN-Exciter coupling. Carry out swing check at HP front journal and exciter end journals. Carry out necessary adjustment/scrapping/corrections to the extent possible as per requirement.
16. Checking of Centering of HP & IP Turbine. Carry out roll check, bump check & Horn drop test of HP & IP Turbine. Carry out necessary corrections/adjustments by repairing/replacing keys, packers etc.
17. Barring gear nozzle inspection and resetting of nozzle and assembly.
18. DP test of welding joints of AOP/JOP oil pipelines connected to bearing pedestal to be checked and attended if found defective. Radiography also to be done for repaired / new welding joints of oil pipelines if any.
19. Thorough cleaning of bearing halves. Box up of bearings, Yokes, Bearing pads, oil catcher etc. for all bearings. Maintaining necessary bearing clearances. Fixing the rotor in zero position for C&I instrument calibration.
20. Thorough cleaning of bearing pedestals and box up of all bearing pedestals. Inspection of all jacking oil hoses, seal oil hoses and replacement as per requirement. Checking of shaft lift at individual journals and carry out necessary adjustment.
21. Removal of oil throttles from Lube oil supply line to each bearing pedestals. Fixing of line filters in all lube oil supply lines. Carry out oil flushing with intermediate cleaning of line filters, lube oil duplex filter & MOT basket strainers etc as per requirement.
22. Boroscopic inspection of lube oil lines before bearing box up and after oil flushing before final restoration oil throttle.
23. **Skilled & experienced EOT Crane Operators for both the cranes for round the clock working 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 be 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.

SCHEDULE: 3: ARRANGEMENT OF HYDRAULIC TORQUE WRENCH

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

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Chapter – II: SCOPE OF WORK

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 torqueing.

SCHEDULE :4: COMPLETE OVERHAULING OF IPT MODULE: -

1. Removal of Spray insulations from IP turbine outer casing etc as per requirement and through cleaning of the same.
2. Removal of IP Turbine inlet pipe flange connection bolts, IP Extraction pipe flange connection bolts as per requirement.
3. Removal of IP Turbine outer casing parting plane studs and removal of outer casing.
4. Carry out Roll check of IP Turbine inner casing.
5. Jacking of IP inner casing bottom half. Removal of IP Turbine inner casing parting plane studs. Removal of Inner casing top- half.
6. Checking of flow path clearance of IP turbine (both axial & radial) etc.
7. Removal of IP rotor & placing on the stand. Checking of axial & radial run outs of IP rotor.
8. Checking of rotor blades for looseness & dull sound.
9. Removal of IP turbine inner casing axial & radial keys, eccentric pins / bushes etc and removal of IP inner casing bottom half as per requirement.
10. Measurement of coupling face run outs, convexity / concavity at IP shaft both front & rear. Carry out necessary face corrections as per requirement by scrapping / polishing / lapping / matching etc so as to obtain swing check values at HP end.
11. White fused Alumina blast Cleaning of rotor, and Inner casing (Top and Bottom half) and all other components as per requirement including arrangement of white fused alumina.
12. Temporary box up of IP inner casing for checking / correction of the casing ovality & parting plane gap in cold condition. Checking of gap at parting plane shrouds of fixed blades and carry out necessary build up by welding & grinding to achieve desired interference.
13. Necessary cutting of inter stage casing & rotor fins as per requirements for achieving necessary radial clearance and roll check values etc.
14. Removal of Front & rear gland segments. Repair & replacements of gland fins for rotor & casing etc. as per requirement.
15. Carrying out DPT / ultrasound testing of parting plane fasteners, IPT inner casing steam inlet zone.
16. Carry out DPT of angle seal rings of IP inlet pipes & IP extraction connections and rectification /replacement of the same as per requirement after ensuring clearances as per drawing.
17. Placement of IP inner casing bottom half and carry out centring of inner casing etc and fixing of inner casing axial & radial keys, eccentric pins & bushes etc as per requirement.
18. Placement of IP rotor on Inner casing and checking of flow path clearance of IP turbine (both axial & radial) etc. Box up of IP Inner casing by electrical induction heating method of fasteners.
19. Carry out roll check, centering and bump check of IP Turbine inner casing & necessary correction in Keys, Packers etc as per requirement.
20. Placements of IP outer casing top half and Box up of IP Turbine outer casing by electrical induction heating method of fasteners. Carry out roll check, bump check and centering & necessary correction etc. as per requirement.
21. Bolt tightening of IP inlet pipe connections & extraction pipe connections etc after necessary repair / replacement of sealing rings etc.

SCHEDULE: 5: COMPLETE OVERHAULING OF LPT MODULE INCLUDING MPI & NFT: -

1. Carry out dismantling and Roll Check of LP Turbine with inner outer casing, with inner -inner casing and after removal of top casings.
2. Jacking of inner outer casing bottom half. Removal of LP Turbine inner outer casing parting plane bolts & eccentric bolt. Removal of inner outer casing.
3. Removal of LP turbine inner-inner casing parting plane bolts & removal of inner-inner casing.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

4. Checking the flow path clearance of LP Turbine (both axial and radial).
5. Locking of front and rear gland box with locking fixtures. **(shall be brought by the bidder, if feasible CSPGCL shall arrange it from any other unit).**
6. Removal of front and rear gland box top half. Removal of gland seal segments. Repair & refinishing of gland fins etc. Replacement of gland seal if required.
7. Removal of LP rotor & placing on stand.
8. Cleaning of rotor, inner-outer casing, inner-inner casing and all other components manually as per requirement.
9. Cleaning of LP Rotor, inner-inner casing top half thoroughly with Alumina Blasting including arrangement of white fused alumina.
10. Checking of axial and radial run out of coupling faces etc in LPT, and where ever possible. Carry out face correction on coupling faces as per requirement.
11. Carry out MPI and NFT of free standing blades 2X2 stage (2L,2R,3L & 3R). Agency shall be arranged by bidder as consultation with site incharge of BHEL for assurance of quality.
12. Replacement of blades & minor repair in rotor grooves and blades if required after MPI & NFT shall be in vendor scope.
13. LPT exhaust hood atmospheric diaphragm to be checked and necessary correction to be done for modification of diaphragm.
14. Check the ovality of individual casing blade stages by tightening inner-inner casing, inner-outer casing without LPT rotor.
15. Carry out necessary visual inspection & DPT of condenser dome wall stiffing structure and spray trays etc inside condenser and carry out minor repairs as per requirement.
16. Placement of LP rotor on inner casing and box up of inner-inner and inner-outer casing by hot tightening etc as per requirement.
17. Carry out roll check of LP Turbine in stages of inner-inner casing, inner-outer casing and necessary correction in Keys. Packers and eccentric bolts etc as per requirement.
18. Replace parting plane rubber cord, size 8 mm, application of steam parting plane sealant and box up of LP Turbine outer casing.
19. Placement / Fitment of LP front and rear gland box top half and carrying out necessary adjustments.

LP TURBINE BLADES MPI/ NFT

(A) MPI of LP rotor free standing blades (2L,2R,3L & 3R):

- 1) Removal of all free standing blades from LP turbine rotor.
- 2) Cleaning of blade roots and rotor grooves thoroughly.
- 3) Carry out necessary MPI test for both Rotor grooves and blades.
- 4) Replacement of blades if required. Carry out necessary minor repair in Rotor grooves and blades if required.
- 5) Fitment of blades on the rotor with new clamping pieces and locking strips.
- 6) MPI test kit along with accessories etc. shall be brought by the bidder.

(B) NFT of LP rotor free standing blades (2L,2R,3L & 3R):

- 1) Removal of all free standing blades from LP turbine rotor.
- 2) Cleaning of blade roots and rotor grooves thoroughly.
- 3) Fixing of blades with technological pieces as per requirement (Technological pieces to be brought by the bidder)
- 4) Carry out necessary NFT on the blades.

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Chapter – II: SCOPE OF WORK

5) Replacement of blades if required. Carry out necessary minor repair in Rotor grooves and blades if required.

6) Fitment of blades on the rotor with new clamping pieces and locking strips.

Note:

1. **Replacement of one number of LPT extraction bellow involving 2 joints is in the scope of bidder, more than one shall be charged extra cost & extra time.**
2. **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 bidder. However, clamping pieces and locking plates required is in the scope of CSPGCL.**

SCHEDULE:6: SERVICING OF TG DECK SPRING:

Rotor System catenaries check at all bearings. Comparison of existing height of individual deck spring elements with erection value. Adjustment of deck spring height to achieve design / erection catenaries value. **Necessary general T&P, manpower etc, for the above job shall be in the scope of Bidder. Bidder shall also make necessary scaffolding in each column around deck spring to carry out above jobs. Arrangement of the GERB Engineer shall be in the scope of BHEL.**

SCHEDULE: 7: INSPECTION & COMPLETE OVERHAULING OF MS & HRH STRAINERS:

1. Construction of temporary platform for strainers servicing.
2. Cutting of drain pipe by grinder.
3. Removal of insulation as per requirement.
4. Fixing of Fixtures etc.
5. Removal bottom flange, Protective ring, Segmental split ring etc.
6. Removal of strainer element from strainer housing using jacks etc.
7. Removal of foreign element from strainer and cleaning. DP checking of weld joint between blanking plate & strainer mesh & rectification and repair of weld joint if any. If required, the new strainer element to be welded to the blanking plate.
8. Cleaning of strainer housing etc and installation of strainer element with new gasket & box up of strainer.
9. Charging of the system & attending of defects if any.
10. Carry out drain pipeline welding NDT of the welded joints.
11. Housekeeping of working area after completion of job.
12. Re-insulation & seating of strainers.

NOTE: Arrangement of radiography test of weld joints is in the scope of bidder

SCHEDULE: 8 : COMPLETE OVERHAULING OF CRH NRV & SERVOMOTOR:

1. Making necessary scaffolding and approach platform for CRH NRV.
2. Removal of existing insulation cladding sheet and insulation in the top cover area of NRV.
3. Removal of oil pipe from NRV servomotor, Decoupling of Servomotor from valve. Spindle and removal of servomotor from position.
4. Opening the top cover of CRH NRV by making proper lifting arrangement and removal of all internals like flap, spindle etc.
5. Cleaning of all internals including pressure seal area and checking for any erosion mark in gasket sealing area. Carry out DPT as per requirement.
6. Repair and replacement of defective component.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter – II: SCOPE OF WORK

7. Build up and repair of eroded portion by grinding and matching.
8. Box-up of NRV with new pressure seal gasket/ components.
9. Tightening of the cover to the required torque and hot tightening of the same after charging.
10. Fixing the Servomotor in position, coupling the servomotor with NRV spindle and fixing of oil pipes of servomotor.
11. Attending leakage after charging.
12. Checking opening & closing operation of NRV from Hydraulic oil pressure.
13. Re-insulation & cladding of CRH NRV.
14. Removal of temporary platforms and scaffoldings.
15. Housekeeping of working area after completion of work.

SCHEDULE: 9 : REVISIONING OF HP BYPASS (BP-1 & BP-2) VALVES:

1. Disconnection of oil hoses of hydraulic actuator of HPBP Valves. Making temporary platform for valve dismantling & overhauling work.
2. Decoupling of hydraulic actuator from the valve spindle & removal of complete hydraulic actuator body.
3. Cutting of spray pipe line & de-bolting of flange from the valve body.
4. Loosening & removal of gland retainer. Removal of gland packing.
5. De-bolting & removal of Jet cage assembly from the valve body.
6. Removal of valve spindle.
7. Complete inspection of all the components of valves in presence of BHEL/CSPGCL engineer.
8. Lapping of body seat with CI body block specifically prepared.
9. Metaling & Matching of spindle seat if required
10. Final lapping of body seat with valve spindle.
11. 100% blue matching of both the seats.
12. Assembly of valve with replacement of all spiral wound gasket & pure graphite gland packing.
13. Welding, stress relieving & NDT test to be done for all the joints which has been cut during dismantling.
14. Fitment of hydraulic actuator, connection of hoses & coupling with valve spindle after alignment.
15. Successful commissioning of valve.
16. Connection of spray pipe line by welding.
17. Pad insulation of damaged portion or re-insulation & cladding of valves. House keeping of working area after completion of work.
18. Attending defect if any occurred after charging.
 - Seat repair/ replacement is excluded from bidder scope.

SCHEDULE -10: GOVERNORING RACK SETTING & VALVE CHARACTIRISTICTS

1. Checking of Hydraulic & Elect hydraulic Governor & its setting as per design.
2. Setting of governing oil pressure as per design & requirement.
3. Cleaning of all Pilot valve of HP& IP Control valve & CRH NRV.
4. Operation checking & setting of HP & IP Control valve characteristics as per curve.
5. Operation checking & setting of HP & IP stop valve and servicing of test valve if required.
6. Operation checking & setting of CRH NRV.

SCHEDULE- 11: VIBRATION ANALYSIS & TRIM BALANCING (ASSISTANCE ONLY)

BHEL-PSWR

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

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Chapter – II: SCOPE OF WORK

BHEL will deploy engineers and technicians along with instrument for vibration analysis and trim balancing during rolling and synchronization as per requirement to bring down TG set vibrations to normal acceptable level.

Note: -

1. Manpower Assistance shall be provided to BHEL by bidder.
2. 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.
3. Bidder has to arrange separate vehicle in consultation with BHEL site In-charge along with one escort for safe transportation of vibration analyzer machine from the place as informed by BHEL site in-charge and return back the machine to the place as instructed.

SCHEDULE :12: CHECKING & SETTING OF CRITICAL PIPING & HANGER SUPPORT:

Checking, repairing & setting of Cold Value of hanger & supports of Critical Piping in TG Area including HP Line, IP Line, LPBP, CRH & HRH pipe lines.

SCHEDULE-13: - MAJOR OVERHAULING OF DRIVE TURBINE OF TDBFP

(This job involves complete dismantling of BFP Drive turbine, its valves, bearings etc. Carry out necessary repair & replacement. Alignment & centering etc. as per detail scope of work given below, Box up of BFP drive turbine)

1. Removal of Covers and insulations of drive turbines as per requirement & through cleaning of the same (Insulation etc. removal is in the bidder scope).
2. Removal of Integral piping (Lube oil, control oil piping, steam piping etc.) connected to Turbine.
3. Providing manpower assistance in removal of C&I probes/connections etc. as per requirement.
4. Dismantling of coupling between Turbine to Main pump, Turbine to gearbox and between Gear box to Booster pump.
5. Checking the alignment and coupling distance of Turbine - Main pump, Turbine - Gearbox & Booster pump - Gearbox.
6. Checking of float of thrust bearing of Drive turbine, main pump & Booster pump.
7. Opening of bearing housings and lifting of bearing top half. Opening of Front & Rear Top cover of bearing pedestal in case of Drive Turbine & Opening of bearing top cover of BFP & BP.
8. Checking of TOC & SOC of all bearing of Drive Turbine, BFP & BP.
9. Replacement of bearing in case of excessive clearance or found rubbing of bearing as per requirement.
10. Measurement of rotor position relative to outer casing of bearing housing, alignment checks of rotor to casing.
11. Measurements of radial and axial run out at various points of turbine rotor as per requirement.
12. Disconnection of Emergency stop valve (ESV), Main control valve (MCV) servomotor, Nozzle Control valve, Aux control valve (ACV) & its servomotor and integral oil piping.
13. Dismantling of Emergency stop valve (ESV), Main control valve (MCV) servomotor. Inspection of valve cone, bush, disc etc. Inspection of valve internals such as valve disc & seat etc. Lapping and blue matching of valve disc with seat if required. Box up of valves with new / repaired spares as per requirement. Inspection of steam inlet strainers. DPT of strainer element. Replace/repair of strainer element as per requirement.
14. Replace/repair of strainer element as per requirement.
15. Removal of Nozzle control valves from Turbine Upper half. Placing of control valve on suitable support. Inspection of valve disc, Lapping and blue matching with seat if required. Adjustment of steam admission valves if required. Replacement of bush & lantern ring if required.

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16. Removal of turbine casing parting plane studs & taper pins. Check the turbine casing parting plane gaps before loosening the parting plane studs & after loosening the parting plane studs. Carry out necessary scrapping & matching in parting plane to remove high spots. Fitting of guide pins and raising of casing top half along with guide blade carriers, shaft glands and labyrinth seal.
17. Placing the top half on a suitable support in inverted position. Cleaning / alumina blasting of Casings. Alumina & sand blasting machines shall be brought by the party.
18. Measurement of clearances of Gland labyrinth seals and inter stage seals. Measurement of clearances of non-spring loaded seals. Measurement of turbine flow path clearance (both radial & axial). Checking the thrust-bearing float before removing the thrust bearings.
19. Removal of bearing bottom halves, DPT / Ultrasonic test (UT) and dimensional checks of bearings. Necessary Repair and replacement of bearings as per requirement. DPT / Ultrasonic test (UT) kits shall be arranged by the party.
20. Check the seating contact of the rotor journal on the bearings. Check and record bearing oil clearances and yoke to bearing clearances and set the valves as per drawing. Replacement of Journal / Thrust bearing/ thrust bearing pads if required.
21. Lifting of rotor and placing on suitable support, checking of rotor, and blading. Integrity check of rotor. Inspection of rotor blades for erosion and deposits. Cleaning / alumina blasting of rotor. Alumina & sand blasting machines shall be brought by the party.
22. Thorough cleaning of bottom half of the casing in-situ.
23. Clean and examine all measuring, sealing surfaces etc. of casing. Measure / examine joint faces of casings (parting plane faces) and correct as necessary by scrapping etc. Examine and free all nuts & bolts. Examine & refit pins if required.
24. Check precision holes i.e. taper pins, parallel pins etc., examine pins and refit both if necessary & reaming if required. Examine support and guide surfaces, smoothen or renew as necessary. Assembly of both casings together and measure casing bore horizontal and vertical & recoding of casing ovality. Carry out parting plane feeler check. Carry out necessary scrapping & matching in parting plane to remove high spots.
25. Check and examine seal steam glands. Examine and clean joint faces and bolts. Examine and free all nuts, bolts and pins. Examine sealing strips and renew if necessary, as per requirement.
26. Removal of Casing & bearing pedestal keys for carrying out Centering / roll check of turbine. Carry out necessary corrections & adjustments as per requirement.
27. Remove and inspect over speed trip device. Inspect & measure front & rear bearing journals, thrust bearing section and sealing ring section of rotor. Examine bearing sealing strips. Renew sealing strips if necessary, as per requirement.
28. Clean and examine front / rear journal bearings and bearing housings. Examine joints & holes. Examine & free all nuts & bolts, adjusting devices & guides. Dismantle hand trip valve, clean, free inspect and reassemble. Clean bearing sealing rings, inspect and fit new strips if required. Clean & refit journal bearings. Clean & refit thrust bearing. Visual inspection of bearing pedestal etc.
29. Placing of rotor in bottom half after placing bottom half of both front and rear journal bearings. Mounting of thrust bearing. Check axial float of rotor and adjust thrust-bearing position. Check flow path clearance of Turbine and make protocol. Matching of thrust pads if required.
30. Checking of concentricity of rotor with casing and with front and rear pedestals. Check and record reference readings. Checking & recording of clearances and condition of sole plate packers at front & rear pedestals. Check and record clearances between longitudinal fitted keys at front & rear pedestals. Setting of packers and keys clearances to the design value by replacing or machining of the existing keys and packers. Skew and parallelity check of bearings and corrections as required.

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31. Placement of top half of casing along with guide blade carrier and seal steam glands. Check position of casing to rotor. Tighten joint bolts (torque tightening) of outer casing, seal steam glands, and exhaust hood flanges as per requirement & measurement of elongation of studs. Making of necessary protocols. Measurement & recording of elongation of each studs. This should be within the specified tolerance as mentioned in the drawing.
32. Checking of rotor to casing alignment for axial and radial and positioning of bearing housings. Carry out Centering / roll check of turbine. Carry out necessary corrections & adjustments as per requirement.
33. Overhauling of Emergency stop valve (ESV), Main control valve (MCV) servomotor.
34. Mounting of Emergency stop valve (ESV), Main control valve (MCV) servomotor, Nozzle Control valve etc.
35. Measurement of clearances at palm packers. Carry out necessary corrections & adjustments as per requirement.
36. Carrying out alignment of Turbine - Main pump, Turbine - gearbox and gearbox to booster pump and adjustment as per requirement.
37. Checking of total float for Drive turbine, Main pump & booster pump and adjust accordingly.
38. Inspection of gear box between drive turbine and booster pump. Dismantling the gear box. Measurement & recording of gear clearances, bearing clearances, axial float etc. DPT of gear components/ bearing etc. Assembly of gear box with old / new spares as per requirement. Inspection & DPT of gear coupling components.
39. Servicing of emergency speed governor including fly bolts. Repair and replacement of emergency speed governor as per requirement after proper matching with Rotor. Adjust over speed device if required.
40. Inspection of turning gear. Carry out DPT. Repair & replacement as per requirement. Final box up front/ rear bearing pedestals, turning gear and overhauling and box up of hand barring gear.
41. Providing manpower assistance for mounting of C&I instrument.
42. Carry out oil flushing of Lube oil and setting of Turbine JOP shaft lift.
43. Checking & setting of turbine governing characteristics.
44. Housekeeping of working area.
45. Installation of coupling between drive turbine-BFP, Coupling between Turbine gear box and Gear box booster pump.
46. Trial run of TDBFP with pump and attending of defects if any

SCHEDULE-14: - COMPLETE OVERHAULING OF LP BYPASS STOP AND CONTROL VALVES

1. Making necessary scaffolding & approach platform for stop valve whenever required.
2. Removal of grills and canopy whenever required.
3. Removal of glass wool insulation from both stop and control valves.
4. Removal of oil piping from actuator, Decoupling of actuator from valve & removal of actuator from position.
5. Loosing of cap nuts of valve cover & removal of valve cover from valve casing.
6. Dismantling & cleaning of valve internals. Carry out DPT in order to check surface crack.
7. Repairing / Replacing the defective components and assembly of all internals after lapping etc.
8. Putting the valve internals in position. Tightening of cap nuts of valve cover.
9. Fitting of actuators and oil piping and Coupling of actuator with valve.
10. Charging of system and attending of defects if any.
11. Hot tightening of fasteners after charging whenever required.
12. Characteristic setting of valves in presence of BHEL engineer.
13. Removal of temporary platform & scaffolding and placing of grills & canopy.
14. Housekeeping of working area and disposal of removed insulation.

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Note: -

1. Overhauling of LP Bypass Cooling Water Control Valves of LPBP System excluded from the scope of work.
2. Servicing of actuator excluded from the scope of work.
3. Seat repair / replacement of any valves if required shall be done on extra cost and time.

SCHEDULE:15: MAJOR OVERHAULING OF GENERATOR, EXCITER & AUXILIARY

A. STATOR:

1. Dismantle both side Stator End shields and replace all Gaskets.
2. Check condition of Stator core and winding (AFTER ROTOR THREAD OUT)
3. Check slot wedge tightness and rectify defect observed if any.
4. Check winding support structure and all other Stator bolts and rectify defects.
5. Replace all necessary generator flange.
6. Check expansion joint of Stator Water pipeline and replace if necessary.
7. Carrying out winding Hydraulic test as per norms and attending any **minor** leakage in water and nitrogen circuits.
8. Dismantling and cleaning of H₂ coolers, Replacement of all gaskets and conducting Hydraulic test of all the coolers and attending leakages if any.
9. Cleaning of stator, thorough inspection of stator, stator core, stator cooling gas circuit and hydrogen cooler water pipes, stator overhang bracket bolts, core bar bolts and other fasteners inside the stator are to be inspected for tightening and proper locking of nuts and bolts.
10. Inspection of stator and slot wedge, checking for tightness and tightening of loose wedges by de wedging and re-wedging by using suitable packers below the wedges. Tightness mapping chart to be prepared before and after carrying out actual wedge tightening work.

Note: - If any major repair observed then same shall be carried out on extra cost & time.

11. Conducting wedge tightness test of generator stator as per protocol.
12. Conducting ELCID Test and attending any defect thereof. (limited to minor job)
13. Checking of tightness and healthiness of end winding support system.
14. Opening all the manholes and checking core bolt gaps & O ring replacement.
15. **Removal of Generator Phase and Neutral Link and replacement of Bushing Sealing Gaskets, O-rings and Bushing Insulator (If required spare shall be arranged by CSPGCL).**
16. Checking of all electrical Connections of Stator like Bushing connection, bar to bar connection and rectification of defects.
17. Testing of stator as per schedule of testing.
18. Cleaning of conical filters.
19. Varnishing on stator winding.
20. Box-up (after rotor thread in) and conducting air tightness test of generator and attending leakages if any.

B. GENERATOR ROTOR:

1. Perform Run-out checks as per BHEL protocol.
2. Decouple Rotor, Thread out rotor and check rotor visually.
3. Take IR value of rotor. Winding Resistance and Impedance of rotor.
4. Conduct **RSO Test on Rotor**.
5. Check Rotor wedge and retaining rings.
6. Inspect the winding and Gas duct under retaining ring and by stroboscope.
7. Dismantle Compressor Assembly.
8. Carry out DP Test of compressor blades and retaining ring after removal of paint.
9. Check the IR of the Compressor segments and rectify if found less.
10. Surface matching of coupling.
11. Check Bearing surface and Shaft Seal surface and rectify any defect. Check IR of bearing saddles.

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12. Perform Gas tightness test on Generator Rotor and attend leakage if any. Replace Current Carrying bolt and sealing washers, if necessary. Arranging Experts shall be in the scope of bidder.
Note: - Above job (Sl. no. 12) shall be executed under optional job (Schedule-18).
13. Clean all dismantled parts thoroughly before box up.
14. Rotor thread in and box-up.
15. Boxing up of all dismantled parts as per procedure, seal body IR measurement and bringing the IR value to the recommended value.
16. Replacement of all JOP Hose pipes.
17. Alignment of LP-Gen. (shifting / lifting of Stator to be done if required and then bolt stretching of stator foundation bolts to be carried out as per BHEL protocol.
18. Thorough cleaning to be carried out in Generator Bushing chamber and all flexible links and Teflon tube connections to checked and if found loose or damaged to be attended.

C. EXCITER:

1. Decoupling of Gen-Exciter.
2. Removal of PMG and Main exciter stators after removing electrical connections.
3. Removal of all pipe lines to Brg No 7.
4. Removal of Brg No7 top cover and top half of Bearing shell.
5. Checking of IR value of Pedestal and if found less attending the same.
6. Removal of Exciter coolers and Flap gates.
7. Swing check of Exciter rotor for reference.
8. Removal of top half of main exciter.
9. Removal of exciter rotor and placing it on stand.
10. Carrying out gas tightness test of Exciter rotor and attending leakage, if any. Replacement of Exciter Current carrying bolt and washers, if required. Arranging Experts in the scope of bidder.
Note: - Above job (Sl. no.10) shall be executed under optional job (Schedule-19).
11. Cleaning of all dismantled parts and Windings thoroughly.
12. Checking of all windings for any defect and rectifying the same if any.
Note: - If any major repair observed then same shall be carried out on extra cost & time.
13. Inspect the bandage wire for any looseness or damage and rectifying the same if found necessary.
14. Check and blue match the coupling flange.
15. Check the multi-contact band and replace the same if found defective.
16. Visually inspect the Exciter rotor, bearing-seating portion and rectify any defect.
17. Cleaning of Exciter coolers and carrying out Hydraulic testing of the same as per BHEL protocol and attending leakages if any.
18. Cleaning of Diode wheel assembly such as diode, heat sink, fuse etc. Removal of all fuses after marking for electrical testing of assembly. Replacement of fuses /diodes with fasteners of diode wheel assembly if required/available.
19. Check ground fault detection system and rectify any fault.
20. Clean the filters of Exciter dome.
21. Replacement of all gaskets and providing proper sealing of Exciter dome.
22. Checking of all foundation bolts of Exciter bed and if found loose or damaged to be attended.
23. Alignment of Gen-Exciter, swing check and coupling.

D. BEARINGS:

1. Visual inspection of Brgs 5, 6 & 7 for any damage.
2. Carrying out DP & Ultra sonic test of the bearings.
3. Replacing JOP hoses of all the three bearings if found damaged.
4. Checking of Brg Insulation and rectifying the problem if any as per norms.
5. Blue matching of Bearings with Seating and then with shaft journal.
6. Checking of Oil catcher and deflector plates and replacement of fins if required.

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7. Complete cleaning of seating portion of Bearings.

E. SHAFT SEALS:

1. Check for oil leakage in Seal oil pipelines inside Generator and attending the leakage.
2. Checking clearances of Seal rings at both ends as per BHEL protocol.
3. Visual inspection of seal rings for any damage.
4. Carrying out DP/UT test on both the Seal rings and replacement of the same if found damaged.
5. Thorough cleaning of Seal body.
6. Blue matching of Seal body parting plane, Oil catcher, parting plane and Seal oil Teflon bush surface.
7. Inspection of all Teflon bushes and replacement of the same if found damaged.
8. Checking of Seal oil hoses of impulse lines and replacing the same if found damaged.

F. SEAL OIL SYSTEM:

1. Inspection of SOT and SOST tank. Removal of top cover, cleaning of tank and removal of float valves.
2. Inspection of float valves, DPT of ball of float valves, dismantling, cleaning and assembly of float valves. Check working of float valves.
3. Cleaning of H2 & Air side oil coolers (Tube & shell side) and hydraulic test as per testing schedule.

G. PRIMARY WATER SYSTEM:

1. Checking of all filters in primary water circuit.
2. Check complete Primary water system for leakage after Hydraulic test and attend the same.

H. GAS SYSTEM:

1. Check all valves for leakage and attend the same.
2. Checking condition and performance of CO2 flash evaporator.
3. Checking working and performance of all filter valve regulators in hydrogen filling circuit.
4. Check and attend all Gas leakages of entire Hydrogen System (from gas room to Generator).

H. COOLERS:

1. Clean H₂ coolers on waterside.
2. Cleaning of Primary water coolers if required.
3. Cleaning of seal oil coolers.
4. Cleaning of exciter coolers.
5. Perform pressure test on coolers.
6. Replace all gaskets. (NB all associated jobs included.).

TEST TO BE CONDUCTED

Sl.No.	Description of Tests	Acceptable Norms
1	Hydraulic pressure test of Hydrogen gas coolers(No leakage is allowed)	8 Bar for 30 minutes
2	Hydraulic pressure test for Brushless exciter coolers(No leakage is allowed)	8 Bar for 30 minutes
3	Gas tightness test of TG Rotor. (No visual leakage is allowed. The test is to be conducted either with nitrogen or Helium.)	6 Bar for 6 hrs. Pressure drop not more than 0.5 bar
4	Gas tightness test of Exciter Rotor. (No visual leakage is allowed. The test is to be conducted either with nitrogen or Helium.)	6 Bar for 6 hrs. Pressure drop not more than 0.5 bar
5	Hydraulic test for stator winding and Primary water system.(No visual leakage is allowed.)	6 Bar for 48 hrs. by N2 cushion
6	Hydraulic test pressure for seal oil and ring relief oil inlet pipeline in the end shield. (No leakage and pressure drop is allowed.)	10 Bar for 15 minutes

BHEL-PSWR

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E-Tender Specification Number: BHE:PW:NGP:PUR:RNG-MARWA-COH:3202

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7	Pneumatic test for seal oil and ring relief oil inlet pipeline. (No leakage & pressure drop is allowed.)	6 Bar for 30 minutes
8	Hydraulic test of seal oil cooler	
	(i) Shell side	10 Kg for 30 minutes
	(ii) Tube side (No leakage is allowed)	10 Kg for 30 minutes
9	Hydraulic test of stator water coolers	
	(i) Shell side	10 Kg for 30 minutes
	(ii) Tube side (No leakage is allowed)	10 Kg for 30 minutes
10	Test on diodes for reverse blocking capability (by 1 KV DC with two diodes in parallel ckt.)	IR> 5 Mega-ohm
11	Measurement of fuse resistance on the diode wheel by passing 10 Amps regulated D.C. Current	155+6 % Micro ohm at 20 deg. C
12	I.R. measurement of heat sinks(By 500 V DC)	Min 10 Mega-ohm
13	Tan Delta & capacitance test of stator winding up to 12KV.	
14	Partial discharge test of stator winding at 12KV.	
15	Computerized Digital ELCID test as per norms	
16	Wedge tightness check of stator wedges as per norms	
17	DC Winding Resistance and Impedance measurement of rotor.	
18	Digital RSO test as per norms.	
19	Measurement of leakage current of Diodes	
20	DP and UT test of retaining rings as per norms.	
21	DP testing of Compressor blades & baffle ring as per norms.	
22	DP and UT test of Bearing and seal rings as per norms.	
23	Air tightness test of generator 4.0 kg/cm ² for 24hours.	

Checklist/ Measurements of Generator to be checked & recorded:

1. **Measurement of clearances in terminal box**
 - 1.1 Clearance between nearest metallic part of box and un-insulated portion of Bushing
 - 1.2 Creepage distance on insulated portion of bushing
2. **Functional inspection during assembly**
- 2.1 **Testing insulation resistance of following individual assemblies**
 - 2.1.1 Between Bearing shell support & End shield
 - 2.1.2 Inner Labyrinth Ring & End Shield
 - 2.1.3 Seal body and End shield
 - 2.1.4 Outer Labyrinth Ring & End Shield
- 2.2. **Generator rotor radial and axial alignment**
 - 2.2.1 Ensure proper rotor insertion
 - 2.2.2 Check for cleanliness of overhang & back of core
 - 2.2.3 Measurement of air gap between stator core & Rotor
 - 2.2.4 Measurement of distance from end of retaining ring to core at TS & ES for ensuring centre of core & Rotor in one line
 - 2.2.5 Measurement of distance from coupling end to stator end shield
- 2.3 Ensure proper fitting of End shields
- 2.4 Bearing shell clearances
- 2.5 Bearing clearances (TS & ES)
 - 2.5.1 Radial clearances of BRG. & Oil wipers on TE

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- 2.5.2** Radial clearances of BRG. & Oil wipers on EE
- 2.5.3** Vertical clearances between top of Bearing & Stopper on TE
- 2.5.4** Vertical clearances between top of Bearing & Stopper on EE
- 2.6** Radial clearances between retaining ring & air gap seal on ES
- 2.7** Inner Labyrinth Radial clearances (ES & TS)
- 2.8** Axial clearances of Gen on test bed
- 2.9** Radial clearances between Baffle ring Carrier and rotor
- 2.10** Radial clearances between rotating blades & Baffle ring
- 2.11** Measurement of insulation resistance between parts of the Baffle ring
- 2.12** Axial run out on End shield at seal body seating surface
- 2.13** Measurement of Thickness of seal body after machining (After taking corrections for deviation in axial run out)
- 2.14** Radial clearances of Seal bodies (TE & ES)
 - 2.14.1** Radial clearances at oil wipers on TE & EE Seal bodies
 - 2.14.2** Radial clearances between seal body & rotor
- 2.15** Seal ring clearances
 - 2.15.1** Verification of inner dia at center for any deformation
 - 2.15.2** Radial clearances of Seal rings
- 2.16** Outer Labyrinth Ring Radial clearances (TS & ES)

OPTIONAL

SCHEDULE- 16: - REPAIRING OF PHASE JOINTS INSULATION BOX

1. Rectification of Generator phase terminal box insulation-05 Nos.
2. Expert/Expert manpower shall be deputed at site for the above job.
3. Required General consumable and T&P shall be arranged by bidder.

Note: -

1. Repairing of phase joint/terminal insulation box limited to 5 Nos. only.
2. All Repairing material shall be arranged by CSPGCL

SCHEDULE- 17: - ATTENDING TO CC BOLT LEAKAGE OF GENERATOR ROTOR:

This is for attending the leakage of CC bolt in Generator rotor along with required consumables and expert manpower including special tools.

SCHEDULE: 18: ATTENDING TO CC BOLT LEAKAGE OF EXCITER ROTOR:

This is for attending the leakage of CC bolt in Generator rotor along with required consumables and expert manpower including special tools.

SCHEDULE:19: - ARRANGEMENT OF TG EXPERTS (OPTIONAL): -

- 1) Two (02) Nos Experts of TG & associated areas is to be deployed by the contractor as per site requirement in consultation with BHEL Site-In-Charge.

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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.
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.

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Chapter –III: SPECIAL TERMS AND CONDITIONS

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 02 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 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.
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.

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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.
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

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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&PŠ required for reaming & honing of coupling holes shall be arrange 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.
- 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. **Special electrodes shall be arranged by CSPGCL.**
- 77. **Gasket , gland packing , fasteners, shims etc. Oil & lubricant shall be provided by CSPGCL.**
- 78. **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.**
- 79. **Blast cleaning shed erection and dismantling and cleaning of scrap alumina and alumina dust around the blast shed.**
- 80. **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.**
- 81. **Required white fused Alumina powder shall be arranged by bidder.**
- 82. **Removal of thermal insulation wherever required for working.**
- 83. **Sufficient Halogen Lamps shall be in the scope of bidder.**
- 84. **Skilled EOT Crane operators, for round the clock working for Two cranes are in bidder's scope.**
- 85. **Reaming & honing of coupling holes if required shall be carried out by the bidder.**
- 86. **Bidder has to fulfil all HSE related requirement at site.**
- 87. **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.

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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:

- 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.

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- 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:

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

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- 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.

SI.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
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

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- 1.0 Successful bidder has to extend manpower assistance for minor cleaning/scrapping, etc.
- 2.0 ~~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.~~
- 3.0 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	5
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	12
12.	Electrician	Semi-Skilled	2
13.	Jr.Filter	Semi-Skilled	16
14.	Insn.Lagger / Carpenter	Semi-Skilled	1
15.	Grinder Man	Skilled	3
16.	Rigger	Semi-Skilled	8
17.	Helper	Un-Skilled	30
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			107 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 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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

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

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.....
30. Chain pulley blocks upto 10 tons-4,5 tons-4, 2 tons-4 pull/lift.
31. Copper/Brass rods dia. $\frac{1}{2}$ " to $1\frac{1}{2}$ "X450 mm.
32. Tap and die sets 6 to 36 mm.
33. Surface plate 450 X 450 mm.

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

34. Torch light/hand lamps with cables, 230/24 V transformer.
35. Torque wrench and torque multiplier.
36. Wooden mallet, Nylon Mallet.
37. Hand glover-asbestos, Manila rope, asbestos cloth leather and Rubber gloves.
38. Set of needle files.
39. Air blower – electric.
40. Electric drills – $\frac{1}{4}$ ", $\frac{1}{2}$ ", and $\frac{5}{8}$ ".
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:

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)

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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.
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.

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

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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.

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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 02 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 including complete overhauling of IP Turbine, LP Turbine including MPI & NFT of Free standing blades, overhauling of MS & HRH strainer, Servicing of HP-Bypass Valves, Servicing of CRH NRV, Governor Setting & valve characteristics, Trim Balancing of TG Rotor, Complete Overhauling of Drive Turbine of TDBFPs and Generator & Exciter allied works for Unit #1 of 2x500 MW, ABVTPS, Marwa 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 32 DAYS (FROM THE DATE OF STOPPING OF BARRING GEAR TO MACHINE PUT BACK ON BARRING GEAR) OF TIGHT SCHEDULE.

As informed by Customer CSPGCL, Unit#1 shall be stopped for overhauling tentatively from 25.12.2025.

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

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Chapter-VII: TERMS OF PAYMENT

Payment Terms :-

1. 40% on completion of mobilization of site, completion of dismantling work. **Documents like Insurance & Labour License to be submitted along with first bill.**
2. 40% 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 clearance if required, 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:

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.

TECHNICAL CONDITIONS OF CONTRACT (TCC)

Chapter-VIII: TAXES AND DUTIES

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

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- 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 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

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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.**

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**

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i. buyer shall be as per clause (a) of section 206C- (1H)

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- 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

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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 WORK SUCH AS INSPECTION OF ALL BEARINGS, ALIGNMENT OF ROTOR, SWING CHECK, ROLL CHECK & BUMP CHECK OF CASINGS, MOP OVERHAUL ETC.	LS	01	11.50%
2	COMPLIANCE OF ALL HSE REQUIREMENTS & ARRANGEMENT OF SAFETY ENGINEERS	LS	01	1.15%
3	ARRANGEMENT OF HYDRAULIC TORQUE WRENCH	LS	01	2.20%
4	COMPLETE OVERHAULING OF IP MODULE	LS	01	9.35%
5	C COMPLETE OVERHAULING OF LPT MODULE INCLUDING MPI & NFT	LS	01	13.70%
6	SERVICING OF TG DECK SPRING	LS	01	0.75%
7	INSPECTION & COMPLETE OVERHAULING OF MS & HRH STRAINERS	Nos.	04	3.10%
8	COMPLETE OVERHAULING OF CRH NRV & SERVOMOTORS	Nos.	01	0.75%
9	REVISIONING OF HP BYPASS (BP-1 & BP-2) VALVES	Nos.	02	1.55%
10	GOVERNORING RACK SETTING & VALVE CHARACTIRISTICTS	LS	01	1.55%
11	VIBRATION ANALYSIS & TRIM BALANCING (ASSISTANCE ONLY)	LS	01	0.75%
12	CHECKING & SETTING OF CRITICAL PIPING & HANGER SUPPORT	LS	01	1.55%
13	MAJOR OVERHAULING OF DRIVE TURBINE OF TDBFP	Nos.	02	17.75%
14	COMPLETE OVERHAULING OF LP BYPASS STOP AND CONTROL VALVES	Nos.	02	1.55%
15	MAJOR OVERHAULING OF GENERATOR, EXCITER & AUXILIARY	LS	01	25.00%
16	REPAIRING OF PHASE JOINTS INSULATION BOX (OPTIONAL)	LS	01	2.70%
17	ATTENDING TO CC BOLT LEAKAGE OF GENERATOR ROTOR (OPTIONAL)	LS	01	1.25%
18	ATTENDING TO CC BOLT LEAKAGE OF GENERATOR ROTOR (OPTIONAL)	LS	01	1.25%
19	ARRANGEMENT OF TG EXPERTS (OPTIONAL)	Nos.	02	2.60%
TOTAL Lump-sum value to be quoted by the bidder in VOL II Price Bid				100%