



भारत हेवी इलेक्ट्रिकल्स लिमिटेड

(भारत सरकार का उपक्रम)

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

TCN - 09

Ref: PSER:SCT:NBN-C2067:TCN-09

Date: 15-09-2020

Sub	Tender Change Notice (TCN) - 09.	
Job	Construction of 4 nos 150 M Tall Single Flue RCC Chimney with Borosilicate Glass Block Lining System on MS Flue Can (excluding pile) at 4x250 MW BRBCL Nabinagar TPP FGD, Bihar.	
Ref	1.0	Tender no PSER:SCT:NBN-C2067:20.
	2.0	BHEL's NIT, vide reference no PSER:SCT:NBN-C2067:8042 Date: 14-07-2020.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:NBN-C2067:TCN-01 Date: 04-08-2020.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:NBN-C2067:TCN-02 Date: 10-08-2020.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:NBN-C2067:TCN-03 Date: 11-08-2020.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:NBN-C2067:TCN-04 Date: 18-08-2020.
	7.0	BHEL's TCN-05, vide reference no PSER:SCT:NBN-C2067:TCN-05 Date: 22-08-2020.
	8.0	BHEL's TCN-06, vide reference no PSER:SCT:NBN-C2067:TCN-06 Date: 28-08-2020.
	9.0	BHEL's TCN-07, vide reference no PSER:SCT:NBN-C2067:TCN-07 Date: 10-09-2020.
	10.0	BHEL's TCN-08, vide reference no PSER:SCT:NBN-C2067:TCN-08 Date: 14-09-2020.
	11.0	All other pertinent issues till date.

With reference to above, following points/documents, relevant to tender, may please be noted and complied with while submitting the offer.

1. Revised PRE QUALIFICATION CRITERIA (ANNEXURE-1), REV-01 is attached superseding previous criteria issued along with NIT. Bidder shall quote their offer accordingly.
2. Revised Price Schedule, **VOLUME-III-PRICE SCHEDULE-REV-01** is attached superseding **VOLUME-III-PRICE SCHEDULE-REV-00** issued earlier along with NIT. **Bidders shall quote as per this revised Volume-III, Rev-01 only.** Bidders are also requested to submit a declaration in techno-commercial offer that they have submitted their price bid as per **REVISED Price Schedule** format.
3. Revised Form -2 (Format for Local content) (Rev-01) attached, superseding Form -2 (Format for Local content) issued earlier along with NIT.
4. Introduction of Clause No 40.0 in NIT as per attached **Annexure-A to this TCN-09.**
5. Due date of submission of offer is extended from 15-09-2020 to 22-09-2020 (15-00 hrs). Bidders are requested to submit their offer by extended due date positively.
6. Revised 'No deviation certificate' as per enclosed Annexure-2. Bidder shall submit no deviation certificate as per enclosed format only.
7. All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,
for BHARAT HEAVY ELECTRICALS LTD

Dy. Mgr (SCT)

Encl: As Above.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : (033) 2339 8000

ANNEXURE-1 (REV-01)PRE QUALIFICATION CRITERIA

JOB	CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AT 4X250 MW BRBCL NABINAGAR STPP FGD, BIHAR (EXCLUDING PILE)
TENDER NO	PSER:SCT:NBN-C2067:20.

SL NO	CRITERIA
A	
1.0 (a)	BIDDER SHOULD HAVE AVERAGE MINIMUM ANNUAL FINANCIAL TURNOVER OF INR 1760.49 LACS DURING THE LAST 3 (THREE) YEARS, ENDING ON 31-03-2019 OR CORRESPONDING FINANCIAL YEAR FOLLOWED BY THE BIDDER AND HAVING POSITIVE NET WORTH AS ON LATEST AUDITED ACCOUNTS AS SUBMITTED FOR PARA 1(C).
(b)	BIDDER MUST HAVE EARNED PROFIT IN ANY ONE OF THE LAST THREE FINANCIAL YEARS ENDING ON 31-03-2019 OR CORRESPONDING FINANCIAL YEAR FOLLOWED BY THE BIDDER. AUDITED BALANCE SHEET AND PROFIT & LOSS ACCOUNT OF THE COMPANY FOR LAST 3 (THREE) FINANCIAL YEARS, ENDING ON 31-03-2019 OR CORRESPONDING FINANCIAL YEAR FOLLOWED BY THE BIDDER NEED TO BE SUBMITTED IN SUPPORT OF ABOVE.
(c)	IN CASE AUDITED BALANCE SHEET AND PROFIT AND LOSS ACCOUNT HAS NOT BEEN SUBMITTED FOR ALL THREE YEARS INDICATED ABOVE THEN THE APPLICABLE FINANCIAL AUDITED STATEMENTS SUBMITTED BY THE BIDDERS AGAINST THE REQUISITE THREE YEARS WILL BE AVERAGED FOR THREE YEARS.
(d)	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.
2.1	BIDDER SHOULD HAVE EXECUTED PILING OR CIVIL OR STRUCTURE OR 'CIVIL AND STRUCTURAL WORKS' OR RCC CHIMNEY OR RCC COOLING TOWER OR RCC SILO OR MILL BUNKER OR ANY COMBINATION OF THESE IN THE LAST 7 (SEVEN) YEARS, ENDING ON THE LATEST DATE OF BID SUBMISSION, VALUE OF WHICH SHOULD NOT BE LESS THAN EITHER OF THE FOLLOWING : A) 1 (SINGLE) WORK OF VALUE NOT LESS THAN INR 4694.65 LACS. OR B) 2 (TWO) WORKS OF VALUE NOT LESS THAN INR 2934.16 LACS EACH OR C) 3 (THREE) WORKS OF VALUE NOT LESS THAN INR 2347.32 LACS EACH RELEVANT DOCUMENT IN SUPPORT OF ABOVE SHALL BE SUBMITTED.
2.2	BIDDER SHOULD HAVE EXECUTED FOLLOWING JOB IN ANY POWER PLANT / INDUSTRIAL PROJECT DURING LAST 7 (SEVEN) YEARS, ENDING ON THE LATEST DUE DATE OF SUBMISSION OF OFFER.; A. AT LEAST SHELL OF ONE RCC CHIMNEY OF MINIMUM 100 MTR HEIGHT IN A RUNNING/COMPLETED CONTRACT. OR B. AT LEAST SHELL OF ONE NDCT (NATURAL DRAFT COOLING TOWER) OF MINIMUM 60 MTR HEIGHT IN A RUNNING/COMPLETED CONTRACT. RELEVANT DOCUMENT IN SUPPORT OF ABOVE SHALL BE SUBMITTED.
3.0	BIDDER SHOULD HAVE VALID PAN. RELEVANT DOCUMENT IN SUPPORT OF ABOVE SHALL BE SUBMITTED.
4.0	CONSORTIUM/JV BIDDING IS NOT ALLOWED.
B	GENERAL
1.0	'EXECUTED' MEANS BIDDER SHOULD HAVE ACHIEVED THE CRITERIA SPECIFIED ABOVE EVEN IF THE CONTRACT HAS NOT BEEN COMPLETED OR CLOSED.

2.0	BIDDER SHOULD FURNISH INFORMATION REGARDING PROJECTS IN HAND, CURRENT LITIGATION, ORDERS REGARDING EXCLUSION/ EXPULSION OR BLACK LISTING.
3.0	AFTER SATISFACTORY FULFILLMENT OF ALL THE ABOVE CRITERIA, OFFER SHALL BE CONSIDERED FOR FURTHER EVALUATION AS PER NIT AND ALL OTHER TERMS OF THE TENDER, SUBJECT TO CUSTOMER'S APPROVAL
4.0	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.

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

1. Bidder to submit Audited Balance Sheet and Profit and Loss Account for the respective years as indicated along with all annexures.
2. In case audited Financial statements have not been submitted for all the three years as indicated, then the applicable audited statements submitted by the bidders against the requisite three years, will be averaged for three years i.e total divided by three.
3. Net Worth (Only in case of companies) of the bidder should be positive. Net worth shall be calculated based on the latest Audited Accounts as furnished. Net worth = Paid up share capital + Reserves.
4. PROFIT shall be PBT earned during any one year of last three financial years.
5. 'Additional' Criteria in respect of 'Technical' criteria of PQR for Civil, Electrical, CI, unless otherwise specified:
 - i) 'Similar' work means
 - a. Piling or Civil or Structure or 'Civil and Structural works' or RCC Chimney or RCC Cooling Tower or RCC Silo or Mill Bunker or any combination of these shall be considered similar works for all packages mentioned under 'CIVIL WORKS'
 - b. Electrical or C&I or 'Electrical and C&I' shall be considered similar works for all packages mentioned under 'ELECTRICAL AND C&I WORKS'
6. For evaluation of PQR of Civil, Electrical and C&I packages, in case Bidder alone does not meet the 'Additional' pre-qualifying technical criteria, 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'.
7. Completion date for achievement of the technical criteria specified in the Common QR 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.
8. 'EXECUTED' means the bidder should have achieved the criteria specified in the Technical criteria of PQR even if the Contract has not been completed or closed
9. 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.
10. Unless otherwise specified, for the purpose of "Technical Criteria" of PQR , the word 'EXECUTED' means achievement of milestones as defined below -
 - "ACHIEVEMENT OF PHYSICAL QUANTITIES" as per PQRs.
 - "READINESS FOR COAL FILLING" of at least one Bunker, in respect of Mill Bunker Structure.
 - "CHARGING" in respect of Power Transformers/ Bus Ducts/ "HT/LT Switchgears" / "HT/LT Cabling".
 - For C&I works: "SYNCHRONISATION" in case of power project / "WORK EXECUTION of the value as defined in PQR" in case of industry.
 - "BOILER LIGHT UP" in respect of Boiler / CFBC / ESP.
 - "CHARGING OF ATLEAST ONE PASS" in respect of ESP(R&M)

- "GAS IN" in respect of HRSG.
- "STEAM BLOWING" in respect of Power Cycle Piping.
- "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.
- "FULL LOAD OPERATION OF THE UNIT" in respect of Insulation work.
- "SYNCHRONISATION" in respect of STG / GTG.
- "SPINNING" in respect of HTG.
- "GAS IN" in respect of FGD

11. Boiler means HRSG or WHRB or any other types of Steam Generator

12. Power Cycle piping means Main Steam, Hot Reheat, Cold Reheat, HP Bypass

13. 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.

14. 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).

X_0 = 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).

Y_0 = Monthly Whole Sale Price Index for All Commodities for last month of work execution

15. 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.

Format-1 /PQ Explanatory Note**Certificate for relationship between Parent Company / Subsidiary Company and the bidder**

To,

Dear Sir,

Sub: Bid for NIT Nodated..... for “.....” (name of the tender).

We hereby certify that M/s..... is Parent Company/ Subsidiary Company of M/s.....(the bidder) and details of equity holding of the Parent Company in Subsidiary Company as on(not earlier than seven days prior to the Bid Submission Date) are given as below:

Name of Parent Company	Name of Subsidiary Company	Percentage of Equity Holding of Parent Company in Subsidiary Company

(Insert Name and Signature of Statutory Auditor or practicing Company Secretary of the Bidder)

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Format-2 /PQ Explanatory Note

Undertaking from the Parent Company/ Subsidiary Company of the bidder

(On the Letter Head of Parent Company/ Subsidiary Company, as applicable)

From,
Name:
Full Address:

Telephone No.:
E-mail address:
Fax/No.:

To,
.....
.....

Dear Sir,

We refer to the NIT No..... dated..... for “.....” (name of the Tender).

“We have carefully read and examined in detail the NIT/Tender Terms and Conditions, including in particular, Clause of the NIT/Tender, regarding submission of an Undertaking, as per the prescribed Format 1 of the NIT/ Tender.

We confirm that M/s.....(the Bidder) has been authorized by us to use our Technical capability for meeting the Technical Criteria as specified in Clause.....of the PQR of the NIT/Tender referred above.

We agree to submit the Security Deposit equivalent to 1% of the total contract value in addition to Security Deposit to be submitted by Bidder as per Clause.....of the NIT/Tender for fulfillment of all obligations in terms of provisions of the contract, in the event of(the Bidder) being selected as the Successful Bidder.

We confirm that we along with M/s.....(the bidder), are jointly or severally responsible for successful performance of the contract.

We confirm that our company shall not participate in the above tender as a ‘Standalone Bidder’ or as a ‘Consortium bidder’ and also shall not authorize any other bidder to use our Technical capability for the above tender.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the referred NIT/Tender.

Signature of Managing Director/Authorized signatory of Parent/ Subsidiary Company

VOLUME-III PRICE SCHEDULE, REV-01	
JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.	
TENDER NO. PSER:SCT:NBN-C2067:20	
PREAMBLE	
SL NO	DESCRIPTION
1	This preamble forms part of tender document and schedule of items. The tenderer should read this preamble carefully before filling in rates for various items. Clauses under this preamble shall be read in conjunction with various volumes of tender and other tender sections as applicable and shall have precedence over any contrary statement mentioned anywhere in this document. The tenderer shall sign & stamp all the pages of the tender document as a token of their acceptance. Submission of unfilled formats with sign & stamp shall be construed as acceptance of the contents of the same.
2	The work shall be carried out strictly as per specifications, description of the items in these schedule and / or engineer's instructions. Drawings enclosed with the tender are only preliminary and for guidance/tender purposes giving some idea of the work involved. The work is to be executed as per terms & conditions of the tender and actual drawings/documents, which shall be furnished during execution.
3	Items of work provided in this schedule but not covered in this specification shall be executed strictly as per instruction of the engineer.
4	Unless specifically mentioned otherwise in the tender document, the tenderer shall quote for the finished items and shall provide for the complete cost towards power, fuel, tools, tackles, equipment, constructional plants, temporary works, labour, dismantling of all temporary piping, structures, valves, pumps, tanks & other misc. equipment, strengthening of roads/culverts/bridges etc. including arranging all clearances etc. required for carrying out different activities & tests, materials, levies, transport, layout, repairs, rectification, maintenance till handing over, supervisions, colonies, shops, establishments, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the work according to the complete tender document and this schedule.
5	The quantities of the various items mentioned in this schedule of items are approximate, based on very preliminary information and may vary to any extent or be deleted altogether. The quoted rates of each item will remain firm throughout the period of execution including extension, for reasons whatsoever, as long as variation in the total value of work executed under any part of this contract including extra items, if any but excluding any price variation remains, within plus minus fifteen percent ($\pm 15\%$) of the awarded price as per LOI.
6	Prior written approval of BHEL shall be sought by the contractor in case quantity variation of any item crosses +50% (plus fifty percent) limit during execution and approval to be obtained before execution of further quantity for this item.
7	In case Sealed /Paper Price Bids are opened for finalisation of the tender, for any Item Rate/BOQ based service contract, possibility of variation of quantity/ addition/deletion of items can not be ruled out. Under such circumstances, after execution of work, if it is observed that standing as L-1 is changed based on actual quantity executed, the bidder shall give suitable rebate to maintain your standing as L-1. Since this aspect can be assessed at the end of execution, necessary adjustment will be effected at the end of execution in final bill. This condition shall not be applicable where the tender is finalised through Reverse Auction.
8	BHEL reserve the right to rationalize the rates, quoted by L-1 bidder against unit rate items and/ or other optional items with respect to item-wise lowest rates (amongst the participating bidders), before placement of order. The rates of unit rate/optional items shall remain valid till execution of the order, if the job/work is awarded to the bidder.
9	The rates quoted shall be inclusive of cleaning of site of any vegetation, dressing, clearing of old structures and leveling etc. including fixing of grid pillars, benchmarks etc. required for commencement of site activities. No separate payment will be made towards the same. However, if separate rate for such item is available in the rate schedule, the same shall be considered.
10	Rates shall be quoted in figures and in words in clear legible writing. No overwriting is allowed. All scoring and cancellations should be countersigned and in case of illegibility the interpretation of engineer shall be final. All entries shall be in English language.
11	All works item wise shall be measured upon completion and paid for at the rates quoted and accepted as per BHEL approved payment schedule/billing break-up.
12	The tender shall be deemed to have visited site and made himself aware of all the site conditions, studied the specifications and details of work to be done within the time schedule attached and to have acquainted himself of the conditions prevailing at site before submission of his bid/offer. No claim whatsoever due to lack of knowledge of site conditions shall be entertained after award of the work.
13	No splitting of the job is envisaged unless the same is specifically indicated in the TCC/Vol-1F. Decision of BHEL in this regard shall be final and binding to the bidders.
14	Bidders are not allowed to alter the Price Schedule format including item description, quantity etc. and the offer is liable for rejection if the bidders submit their prices in Price Schedules modified by them. BHEL reserves the right to reject the offers of bidders who submit offers in Price Formats which are modified/ altered by them. Also putting any comments instead of rates/price in the designated column of the rate schedule shall make the offer liable for rejection.
15	Bidders to note that for Civil & Structural packages, against a particular item against a ST No. appearing in more than one schedule of the BOQ, same rate must be quoted in all schedules for that particular items with same descriptions. If by error, different rates are quoted in different schedules for same ST No. (i.e. item with same description), then the higher of the rates shall be considered for evaluation but awarding shall be done with the lower rate, if the bidder becomes L-1. The same modality shall be applicable for other item rate service contracts where item with same description is repeated in different schedules.
16	For Lumpsum Service Contract : The items/components indicated in the tender is indicative and may vary to any extent. No compensation shall be payable in case of any variation in the items/components listed in the bill of quantities if the executed weight remains within the variation limit. However, in case of deletion of any item or addition of new items over and above the items listed or variation of existing quantity beyond variation limit specified, adjustment (i.e. Payment or recovery as the case may be) shall be done on pro-rata basis based on the Rate per MT worked out from the quoted lumpsum Price and the total weight of components listed /indicated in price schedule plus 15% weight variation limit.
17	Engineer's decision shall be final and binding on the contractor regarding clarification of items in the schedule with respect to the other sections/volumes of the contract.
18	In case of tender for Civil and/or Structural works, if the Non-schedule items are not quoted by the bidder, it will be treated at par with rate of corresponding item of CPWD/PWD/DSR schedule as prescribed in the tender/BOQ cum Rate Schedule. PVC/escalation is not payable for these Non-scheduled items.
19	No interest, whatsoever, shall be payable by BHEL on the security deposit, any bank guarantee submitted or any amount due to successful bidder/contractor. No idling charge whatsoever (either for labour or any other resources) is payable by BHEL for any reason whatsoever.
20	Size and weights of various items are mentioned in the attached BOQ cum rate/price schedule for reference purpose only & these shall not be taken into consideration for quoting/calculating amount in the rate schedule. These shall be utilised as per relevant sections of tender. Bidders shall quote for each item in the rate column, taking unit as mentioned in the quantity column. Rates shall be filled in both figures and words. Amount shall be calculated based upon these rates multiplied by the mentioned quantity for the respective items.
21	Bidder's Total price shall be considered for evaluation unless stated otherwise.
22	In case of BOP packages, if Bidder does not quote/indicate the price for freight charges against indicated rate schedule, the same shall be considered as 2% of basic price and adjusted with the total quoted price against each item keeping the total quoted price unaltered.

<p style="text-align: center;">VOLUME-III PRICE SCHEDULE, REV-01</p>			
JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.			
TENDER NO. PSER:SCT:NBN-C2067:20			
SCHEDULE - 1 : TOTAL PRICE			
SL NO	DESCRIPTION	PRICE SCHEDULE REF	TOTAL PRICE (IN INR)
1.0	TOTAL PRICE FOR CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AT 4X250 MW BRBCL NABINAGAR STPP FGD, BIHAR (EXCLUDING PILE)	SCH 2 - PRICE BREAK UP	<u>IN FIGURES:-</u>
2.0	NON-SCHEDULE ITEM For items not covered in Schedule 2, quote % above or % below or at par of the CPWD Schedule of rates 2018		
a)	Rate of complete item		% above / _____ % below/ at par of CPWD Rate Schedule 2018
b)	Rate of supply of material at site only		% above / _____ % below/ at par of CPWD Rate Schedule 2018
c)	Rate for execution complete excluding supply of materials.		% above / _____ % below/ at par of CPWD Rate Schedule 2018
NOTE			
1.0	Bidder shall quote total price for SCH-2- Part only at Sl No. 1 above. All other amounts / rates of each item of works in respective schedules / parts will be derived based on allocated percentages. As such, any uncalled figure/ amount noted at any other place / schedule of Volume-III will not be reckoned & will stand null & void.		
2.0	Bidder to note that total price at Sl No. 1 above shall be considered for evaluation & awarding. As such grand total price should be complete in all respect for the full scope defined and considering all terms and conditions.		
3.0	Bidder's quoted total price of SCH-2 at Sl. No 1 above, shall be apportioned into amount of various items of works based on allocated percentages against respective item, in respective schedules / parts. As such, bidder shall not indicate / quote any amount / rate in these schedules / parts and any amount / rate quoted against any item shall not be taken into cognizance / account and offer may be liable for rejection.		
4.0	Based on the itemwise percentage allocations, the amount for the individual items of the Bill of Quantity shall be arrived at. The rates of individual items shall be derived from the amount against each items and its quantity after rounding off to upto 2 decimal places. However, RA bill payment shall be done after rounding off the gross amount to two decimal points. Any adjustment, if required, due to such methodology, will be effected / adjusted in final bill.		
5.0	Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per Sl No.4 above.		
6.0	Any item as per scope of work, if not included in the price quoted above and shown separately will not be taken cognizance of and the offer shall be liable for rejection.		
7.0	Price format shall not be changed by bidder in any case and it may lead to cancellation of their offer.		
8.0	The quoted price shall be excluding GST including freight on FOR site basis.		
9.0	The quantity of items may vary during execution mainly due to actual requirement etc. The unit rates work out from the overall amount quoted & accepted by BHEL shall be considered and no separate unit rates shall be allowed. Unit rates shall be valid throughout the contract period.		
10.0	For payment of non schedule items, the rate shall be derived from CPWD Schedule - 2018.		

**VOLUME-III
PRICE SCHEDULE, REV-01**

JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE - 2 : BREAK UP OF TOTAL PRICE

SL NO	DESCRIPTION	PRICE SCHEDULE	WEIGHTAGE
		<u>REF</u>	
1.0	TOTAL PRICE FOR CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN AT 4X250 MW BRBCL NABINAGAR STPP FGD, BIHAR (EXCLUDING PILE)		
a	SERVICE (Part -1)	SCH 3	0.768370020
b	SUPPLY (Part - 2)	SCH 4	0.231629980
2.0	TOTAL		1.00000000

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
Part-1A CIVIL WORKS					
1	Earth work in excavation in all types of soil including ash which can be excavated by any means including setting out, levelling, dewatering (but excluding special type of dewatering viz. well point method), shoring & strutting wherever required (but excluding Steel sheet piling), dressing the sides & bottom, all lifts, ramming/compacting the excavated bottom, stacking, disposal of surplus excavated materials within a lead up to 1 km, spreading/levelling of disposed materials etc all complete for following depths below ground level. [Measurement of excavation shall be paid as per actual quantity at site as per direction of Engineer in charge]				
a	Depth from ground level but not exceeding 2 m	cum	2550	10200	0.00192935
b	Depth exceeding 2 m but not exceeding 4 m	cum	2150	8600	0.00203704
c	Depth exceeding 4 m but not exceeding 6 m	cum	500	2000	0.00059302
3	Breaking pile head up to cut off level and exposing pile reinforcement for embedment in pile cap etc including all material, labour, incidental etc. and transportation of concrete debris up to disposal yard complete as per specification, drawing and as directed by the engineer-in-charge for the following.				
	Pile with 760 mm diameter	EACH	155	620	0.00207183
7	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm compacted thickness using/with selected materials directly from excavation and compacted as specified including watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete & other buried items etc.]				
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	2900	11600	0.00166044
8	Back filling upto any depth below ground level around foundations, plinths, trenches, drains etc to proper grade and level in layers not exceeding 300 mm compacted thickness using/with approved borrowed soil (borrowed soil to be arranged by the bidder) and compacted as specified including supplying borrowed soil, royalty (if any), watering, ramming/compaction by manual/mechanical means, dressing etc all complete for the following including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge. [Measurement of Backfilling shall be paid as per excavation quantity after deduction for concrete & other buried items etc.]				
b	Each layer compacted so as to achieve at least 90% maximum dry density as per IS-2720 (Part-VII)	cum	200	800	0.00010023
9	Extra over item No. 1 and 3 to 7 for carriage of excavated earth/selected materials for every 500 m or part thereof beyond an initial lead of 1 km.	cum	2200	8800	0.00030861
11	Supplying and filling sand upto any depth below grade slab, around foundations, etc. in layers not exceeding 300 mm compacted thickness and compacted so as to achieve at least 80% relative density as per IS-2720 (Part-XIV) including spreading, watering, ramming/compaction by manual / mechanical means, dressing, royalty (if any) etc. all complete including necessary men/women, materials, equipment, loading, transportation, unloading etc as per specification, drawing and as directed by engineer- in-charge.	cum	550	2200	0.00957856
12	Supplying and laying (inside chimney in the space below the grade level slab) crushed rock range 63 mm to 45 mm in layers not exceeding 200 mm in thickness including breaking of stone boulders to required sizes, filling the interstices with selected sand and compacting to 85 % of original volume of stone stack for all lifts etc. all complete. Payment shall be made for the measurement of the volume of the compacted fill.	cum	200	800	0.00382422
13	Transportation from batching plant & laying Nominal Mix plain cement concrete (M 7.5) with graded aggregate (with maximum size of coarse aggregate not exceeding 40 mm) at all levels for all kinds of work like mass concrete, lean concrete, mudmat, filling etc. including labour, materials, equipment, handling, transporting, batching, curing, testing etc. all complete as per specifications, drawings and instructions of the Engineer. [Ready mix concrete will be provided by BHEL free of cost at batching plant]	cum	110	440	0.00057293

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
14	Transportation from batching plant & laying design mix cement concrete with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) for reinforced concrete work at all levels for all kinds of work, including labour, materials, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and reinforcing steel. [Ready mix concrete will be provided by BHEL free of cost at batching plant)				
i	For all works below ground level (except chimney shell)				
b	Grade M-30 (foundations, etc)	cum	2325	9300	0.01473848
ii	For all other works				
a	Grade M-25 grade level slab, pit, trenches, drain etc.	cum	40	160	0.00022821
c	Grade M-35 for chimney shell, corbels and external platforms and other shell attachments.	cum	25	100	0.00030839
d	Grade M-25 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc.	cum	10	40	0.00007349
A14	Providing & laying design mix cement concrete with graded aggregate (maximum size of coarse aggregate not exceeding 20 mm) for reinforced concrete work at all levels for all kinds of work, including labour, materials, equipment, handling, transporting, batching, mixing, placing, levelling, compacting, curing, testing etc. and rendering or cleaning and finishing the exposed surface with cement mortar (1:3) to give smooth and even surface, all complete as per specifications, drawings and instructions of the Engineer, but excluding all formwork and reinforcing steel. [Supply of Concrete is in the scope of Contractor)				
i	For all works below ground level (except chimney shell)				
b	Grade M-30 (foundations, etc)	cum	25	100	0.0011901
ii	For all other works				
a	Grade M-25 grade level slab, pit, trenches, drain etc.	cum	10	40	0.00045789
c	Grade M-35 for chimney shell, corbels and external platforms and other shell attachments.	cum	3975	15900	0.2380957
d	Grade M-25 for all other components of the super structure, roof slab, mini -shells, beams, columns wall etc.	cum	10	40	0.00054947
B14	Extra over Sl. No. A14 for controlling of temperature of fresh concrete to less than 23 degree centigrade using ice, including all related arrangements for providing, storing and mixing of ice with water, cooling of aggregates etc. All complete as per specification, drawing and instruction of engineer in charge.	cum	1750	7000	0.01526844
15	Providing and applying three coats of bitumen grade 85/25 as per IS 702 (@ 1.7kg/sqm) with 1% antistripping compound conforming to IS 6241 in foundation, shell, pedestal etc on concrete surfaces exposed to soil / ash including surface preparation etc. all complete.	Sqm	900	3600	0.00179438
16	Providing and placing steel reinforcements of TMT steel of grade Fe-500 /Fe 500D conforming to IS:1786 and having minimum elongation 14.5% , for reinforced concrete work, at all levels, for all kinds of work, including transportation, cleaning, derusting, straightening, cutting, bending, binding in position with annealed wire and/or welding, providing concrete cover blocks, pins, separators, chairs, supports for reinforcement, etc. with all materials, labour, equipment, handling, testing, transportation to & from stores etc., preparation of bar bending schedules, all complete as per specifications, drawings and instructions of the Engineer.				
i	For all works below ground level (except chimney shell)				
a	High strength deformed bars [Reinforcement bars will be issued by BHEL Free of cost]	Mt	259	1036	0.01435352
ii	For all other works				
a	Mild steel reinforcement bars [Mild steel reinforcement procurement in vendors scope]	Mt	10	40	0.0056179
b	High strength deformed bars [Reinforcement bars will be issued by BHEL Free of cost]	Mt	440	1760	0.0268228
A17	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section for all works below ground level (except chimney shell) for all depths, including labour, materials, equipment, waste of forms, shoring, strutting, scaffolding, staging, tieing, nailing, caulking, bolting etc. and removal of form work and staging etc. all complete as per specifications, drawings and instructions of the Engineer.	Sqm	800	3200	0.00251875

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
B17	<p>Inner and outer faces of wind shield with slip form shuttering: Providing and fixing formwork using slipform (inner and outer faces) for concreting in chimney for cast in situ, reinforced concrete works of any type and section for all elevations, including labour, materials, equipment, waste of forms, scaffolding, staging, tieing, nailing, caulking, bolting, maintenance, dismantling etc. all complete as per specifications, drawings and instructions of Engineer in charge. (Area of inner face and outer face shall be measured separately.)</p> <p>Mode of Measurement:- Total formwork quantity in chimney shell applicable to Slipform work as per specifications & drawings shall be jointly measured and certified. Certified quantity(SQM) to be paid in line to the unit rate of B17a i), B17a ii) & B17a iii).</p> <p>(The slipform arrangement material shall be the property of contractor)</p>				
a	<p>Design, Engineering, Approval of Drawings, Supply & Installation of Slipform system as per approved drawings duly reviewed & vetted by approved Third Party/Engineering for chimney or silo or any other shell/structure work at site including all safety requirements/arrangements, installation of all supporting items like structural members, winch arrangement, wooden platforms, jacks(including testing by Third Party) & jack-rods, lighting arrangements, panels, passenger cage, nuts/bolts, manpower, all other arrangements necessary for concreting & material shifting, providing spares for smooth operation, dismantling, etc all complete.</p> <p>Quantity measured for B17a i), B17a ii) & B17a iii) shall be same and shall be restricted to the quantity measured in B17 a iii)</p>				
i)	For Mobilisation & Installation(Payment of the total certified quantity of the shell shall be made for mobilisation of slipform only after start of successful slipping as certified by Engineer in charge.)	Sqm	15000	60000	0.04578775
ii)	For Dismantling of the Slipform System(Payment of the total certified quantity of the shell shall be made only after complete dismantling of slipform as certified by Engineer in charge.)	Sqm	15000	60000	0.01144694
iii)	<p>Slipping/Providing formwork at inner and outer faces of wind shield with slip form shuttering with slipform arrangement.</p> <p>(Cost for design, mobilisation, installation & dismantling of slipform shall be paid separately in Item No B17 i) & B17 ii) and cost for slipping/Providing & maintenance of slipform work to be paid in this item)</p> <p>Measurement for payment to be done progressively as per actual slipping executed at site.</p>	Sqm	15000	60000	0.05723468
C17	Providing and fixing formwork of approved quality for cast-in-situ, plain or reinforced concrete works of any type and section for all other components of the superstructure like slabs, beams, columns, walls, enclosures, mini shells, external platforms, corbels, other shell attachments, chases/recesses in shell etc. including labour, materials, equipment, waste of forms, all complete as per specifications, drawings and instructions of the Engineer.	Sqm	400	1600	0.00335221
18	Providing and fixing formwork in shell openings and pockets (above 0.1 sq.m surface area) including cutting, formation of shapes and all other operations required for making the required shape and size, removal of formwork, all complete as per specifications, drawings and instructions of the Engineer.	Sqm	110	440	0.00092186
19	Providing and placing in position at all levels, building paper (kraft paper), as per IS:1397, between concrete surfaces including the cost of labour, material, etc. complete as per drawings and instruction of the Engineer.	Sqm	55	220	0.00001831
20	Providing and installing, at all levels, bitumen impregnated fibre boards, 12 mm thick, conforming to IS:1838, as joint filler at joints in concrete, including nailing, coating of both faces with coal tar pitch/bitumen, including the cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Sqm	25	100	0.00008739
21	Providing and filling, at all levels, bitumen sealing compound (hot applied type) conforming to IS:1834, for sealing gaps and joints in concrete, including cleaning, mixing, heating, pouring or injecting, application of primer, cost of all labour, material and equipments etc., complete as per drawings, specifications and instructions of the Engineer.	Kg	400	1600	0.00040821
22	Preparing detailed fabrication drawings and after approval by the Engineer, supplying, fabricating, erecting and installing miscellaneous steel parts to be embedded/cast in concrete (like staircase embedments, corbel face plates, etc) at all positions and levels including the cost of all labour, materials and equipments for setting materials in concrete, grouting, welding, bolts & bolting, expansion anchors, drilling, cutting, etc. complete as per drawings and specification.	Mt	3	12	0.00180773

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
B23	Transportation from Store(Material supplied by contractor under item no. S B23 of SCHEDULE-4), erection and alignment of shop fabricated structural steel of grade E 250 in rolled/ built up section conforming to IS:2062, mild steel rounds in columns, beams, struts, monorails, stays, safety chains, ladders, MS gratings, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates,gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, decking and seal plates, galleries etc. with consumables, alignment, erection bolts & nuts (weight of erection bolts and nuts not payable), assembly, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), etc all complete.	Mt	210	840	0.02031791
C23	Extra over ST NO. B23 for blast cleaning of steel structures to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied in Shop immediately after blast cleaning by airless spray technique.	Mt (of steel)	210	840	0.00673622
D23	Extra over ST NO. B23 for providing and applying (by airless spray technique) intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications.	Mt (of steel)	210	840	0.00581105
E23	Extra over ST NO. B23 for providing and applying Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer.	Mt (of steel)	210	840	0.00581105
A24	Transportation from store, erection and alignment of factory made chequered plate (Material supplied by contractor under item no. S A24 of SCHEDULE-4) in platforms, staircases etc. including 1 coat of redoxide zinc-chromate primer after erection etc. all complete. (Cost on account of supply of factory made chequered plate is payable separately under item no. S A24 of SCHEDULE-4)	Mt	35	140	0.00205917
25	Fixing in positng of high strength structural bolts, nuts and washers (Material supplied by contractor under item no. S25 of SCHEDULE-4 SUPPLY) for structural steel work at all level etc. complete. (Cost on account of supply of bolts, nus & washers is payable separately under item no. S 25 of SCHEDULE-4)	Quintal	60	240	0.00261858
26	Providing, fabricating and erecting at all levels, structural steel flues of grade E250 conforming to IS:2062 complete with all bends, flanges, stiffeners, all other flue attachments, support system, staying system, collars, access manholes and gas sampling ports alongwith gaskets,material and equipment, transporting from store, lifting to all heights, setting in place, cutting, grinding, drillings, bending, bolts and bolting, welding, preheating and post-heating for welding, testing, etc. and other required accessories, , including connection design & preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, all complete as per specifications and drawings. [Structural steel shall be issued by BHEL free of cost]	Mt	255	1020	0.06460654

VOLUME-III PRICE SCHEDULE, REV-01					
JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.					
TENDER NO. PSER:SCT:NBN-C2067:20					
SCHEDULE- 3 - SERVICE (Part-1)					
SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
26 (i)	Supply & application including blast cleaning of outer surface of steel flue to near white metal surface conforming to Sa 2 ½ finish of ISO 8501-1 with surface profile 40-60 Micron and providing and applying two component moisture curing zinc (ethyl) silicate primer coat (having minimum 80% of metallic Zinc content in dry film, solid by volume minimum 60% ±2%) of minimum 70 micron DFT including the cost of all labour, material, equipments, protection of surface and cleaning, scaffolding, touch-up painting etc., complete as per drawings, specifications and instructions of the Engineer. Zinc dust composition and properties shall be Type-II as per ASTM D520-00. Primer coat shall be applied immediately after blast cleaning by airless spray technique.	SqM	1950	7800	0.00260531
26 (ii)	Providing and applying (by airless spray technique) on outer surface of steel flue liner, an intermediate coat of two component polyamide cured epoxy with MIO Content (containing lamellar MIO minimum 30% on pigment, solid by volume minimum 80% ±2%) of minimum 100 micron DFT after an interval of minimum 24 hours (from the application of primer coat) and of approved make including the cost of all labour, material, equipments, protection and cleaning, scaffolding, touch-up painting etc. all complete as per drawing and specifications.	SqM	1950	7800	0.00224843
26 (iii)	Providing and applying on outer surface of steel flue liner, Finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT over steel sections already having intermediate coats, including the cost of all labour, material, equipments, protection and cleaning, scaffolding etc. all complete as per drawing and specifications. This coat shall be applied after an interval of minimum 24 hours (from the application of sealer coat) and within six (6) months (from the completion of Intermediate coat). Colour and shade of the coat shall be as approved by the Employer.	SqM	1950	7800	0.00224843
A26	Transportation from store & installation of closed cell borosilicate glass block lining system at all elevations, on ground or in erected position, with minimum 38 mm thick borosilicate glass block, adhesive membrane having a minimum thickness of 3 mm including preparation, blast cleaning of internal surface of steel flue liner to near white metal surface finish conforming to Sa 2 ½ finish as per ISO 8501-1 and application of suitable primer, in supervision and as directed by and satisfaction of borosilicate glass block manufacturer, testing etc all complete as per specification, drawings and as directed by the glass block manufacturer & Engineer-in-charge including cost of skilled labour, material, tools & tackles, equipments, working platform etc all complete. Installation of borosilicate lining shall be done under controlled temperature and humidity conditions, as mentioned in specification, including providing all equipments required to create controlled temperature & humidity conditions inside chimney during installation, hot air blow cleaning of internal surface before application etc. all complete. [borosilicate glass blocks, adhesive membrane with mixing machine, primer paint will be issued free of cost by BHEL]	SqM	1950	7800	0.06904068
26F	Fabricating and erecting C276 strips, plates, gutters/vanes/pipes, bends, fittings and any other appurtenances (Material supplied by contractor under item no. S 26F of SCHEDULE-4 SUPPLY) as required at all elevation in chimney for collection and withdrawal of condensate from inside of flue liner to outside based on the approved design in line with gas-flow-model study report, sealing, testing including surface preparation, TIG or any other type of specialised welding for C276 Strips etc all complete as per specification, drawing and as directed by the Engineer-in-charge. Measurement for payment shall be done for net weight of C276 strip only(weld thickness not to be considered). (Cost on account of supply of material is payable separately under item no. S 26F of SCHEDULE-4)	Kg	1400	5600	0.00699061
27	Providing, fabricating and installing at various locations and elevations of the chimney system the following miscellaneous mild steel items complete with the cost of all labour, material and equipment, transporting, lifting, setting in place, cutting, grinding, drilling, welding, bolts and bolting, anchor fasteners and anchoring, priming, painting, grouting etc. complete as per drawings and specifications:				
a	Mild steel ladders with cage, hood access hatch, louvers, bird screens, hood drain basin covers and other miscellaneous mild steel items not specifically mentioned.	Mt	9	36	0.00612401
b	32/40 mm nominal bore medium class tubular hand railing for stair case and internal and external platforms.	Mt	13	52	0.00923897
c	Providing minimum 275 gsm Hot dipped galvanisation on mild steel parts as per specification.	Mt	5	20	0.00137163
d	Providing minimum 610 gsm Hot dipped galvanisation on mild steel parts as per specification.	Mt	17	68	0.007928

VOLUME-III PRICE SCHEDULE, REV-01					
JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.					
TENDER NO. PSER:SCT:NBN-C2067:20					
SCHEDULE- 3 - SERVICE (Part-1)					
SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
29A	Supplying, fabricating and installing gas sampling and gas opacity measurement ports made of C276 pipe in chimney liners, including bolts, non metallic gaskets, cover plates and any other accessories as required, painting etc, all complete as per specification, drawing and as directed by the engineer-in-charge.	kg	100	400	0.00144433
30AA	Trannsportation from store, fabricating and erecting titanium sheet (Material supplied by contractor under item no. S 30AA of SCHEDULE-4 SUPPLY) wrapped over insulation of chimney liner above roof level, including nuts, bolts, washers, screws and any other accessories as required for proper fixing, surface finishing, testing, preparation of detailed fabrication drawings etc all complete per specification, drawing and as directed by the Engineer-in-charge. (Cost on account of supply of material is payable seperately under item no. S 30AA of SCHEDULE-4)	kg	1200	4800	0.00392021
31	Preparing detailed fabrication drawings and after approval by the Engineer, providing, fabricating and installing at all levels, stainless plates (including stainless steel screws and fasteners) of grade AISI 316Land lead sheets beams and over the mild steel in the platform beam bearing, flue supports bearings, flue restraints brackets/ buffers etc. including the cost of all labour material & equipment, transporting, lifting to all heights, setting in place, cutting, grinding, drilling, welding of stainless steel using compatible & approved stainless steel electrodes, testing & machining flat and polishing the contact surfaces of stainless steel, coating the polished surfaces with silicone grease, etc., complete as per drawings and specifications.				
a	Stainless steel components.	kg	120	480	0.0004564
b	Lead Sheets.	Kg	40	160	0.00023419
A32	Design, supply, fabrication and installation of expansion compensator joints, comprising of non-metallic material (elastomeric) suitable for wet stack operations and acid resistant to withstand acidic flue gas condensates arising out of flue gas parameters & operating conditions as per specification and shall also prevent dust accumulation, including nuts, bolts, washers, screws and any other accessories as required, preparation of detailed fabrication drawings etc all complete as per specification, drawing and as directed by the Engineer-in-charge. Design of expansion joint shall comply EPRI guideline to avoid contact of condensate with expansion joint material and to ensure drainage of condensate and the same shall be approved by BHEL/NTPC.	Sqm	20	80	0.00399161
37	Supplying, and placing in position (at the beam supports bearings) Neoperne pads between concrete surface and mild steel including the cost of all labour materials, cutting to shape, grinding, drilling etc., complete as per drawings and specifications.	Cum	0.5	2.0	0.00229688
43	Providing, and fixing asbestos ropes at expansion joints at all elevation for packing/sealing etc all complete as per specification, drawing and as directed by the Engineer-in-charge for the following.				
b	12 mm diameter	Rm	205	820	0.00021826
47	Supply and installation of resin bonded rock wool insulation having a density of not less than 100 kg/cu.m with an installed thickness of not less than 100 mm in two layers of each 50 mm thick including plated or galvanised accessories such as pins/studs/anchors/wire netting, speed washers, tying wires, etc, on the outer surface of steel flue liners/on the inside surface of concrete windshield/ inside surface of concrete minishells/ under the cast iron caps and wherever as required at all elevation, testing etc all complete as per specification, drawing and as directed by the Engineer-in-charge.	Sqm	200	800	0.00190798
49	Supply and packing/sealing of rock wool insulation with loose rock wool having a density not less than 100 kg/cu.m between the insulated minishells at expansion joints/ between the lining segments and wherever as required at all levels including filling, ramming, testing, etc. all complete as per specification, drawing and as directed by the Engineer-in-charge.	Cum	5	20	0.00036461
50	Providing and painting with acid and heat resisting black bituminous paint conforming to type I(i) of IS:158 in not less than 4 coats having a DFT of not less than 150 microns over inside surface of chimney shell/inside and outside surfaces of minishells/underside of root slab/ other concrete components/surfaces of the existing chimney and wherever as required etc at all elevation including surface preparation, primer etc so as to give a good finish all complete as per specification, drawing and as directed by the Engineer-in-charge.	Sqm	100	400	0.00016436
56	Providing and painting, at all levels, the external surfaces of chimney shell and wherever as directed by the Engineer, with acid and heat resistant polyurethane paint in alternate bands of colours 'signal red' and 'pure/bright white including the cost of all labours, material and & equipment surface preparation, primer and finish painting, protecting, cleaning etc. complete as per drawings and specification.	Sqm	100	400	0.00029449

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
57	Providing and painting, with epoxy phenolic coating system in three coats having 220 microns DFT over the external surfaces of chimney shell and wherever as required at all elevation in alternate bands of 'signal red' and 'bright white' colours including surface preparation, primer etc so as to give a good finish all complete as per drawing and specification. The coating system shall be as follows. All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Engineer-in charge.	Sqm	7500	30000	0.01720103
58	Providing and painting, with epoxy phenolic coating system in three coats having 220 microns DFT over the inside surface of chimney shell above roof/ horizontal surface of shell at top/underside of concrete roof slab and wherever as required at all elevation including surface preparation, primer etc so as to give a good finish all complete as per drawing and specification. The coating system shall be as follows. All concrete surfaces shall be provided with two component transparent polyamide cured epoxy sealer coating (having solid by volume minimum 40% ±2%) of minimum 50 micron DFT to be applied over cleaned surface in multiple coats. Surface to be coated shall be absolutely dry, clean and dust free. Sealer coat shall be followed with the application of Intermediate coat of epoxy phenolic coating (solid by volume minimum 63%) of minimum 100 micron DFT. This coat shall be applied after an interval of minimum 24 hours (from the application of primer coat) by airless spray technique. Intermediate coat shall be followed with the application of finish coat of two-pack aliphatic Isocyanate cured acrylic finish paint (solid by volume minimum 55% ±2%) with Gloss retention (SSPC Paint Spec No 36, ASTM D 4587, D 2244, D 523) of Level 2 (after minimum 1000 hours exposure, Gloss loss less than 30 and colour change less than 2.0 ΔE) and minimum 70 micron DFT. This coat shall be applied after an interval of minimum 10 hours and within six (6) months (from the completion of Intermediate coat), Colour and shade of the coat shall be as approved by the Engineer-in charge.	Sqm	250	1000	0.0004109
59	Proving and laying over the chimney roof, a composite acid and heat protection treatment including providing of slopes for roof drainage including the cost of all labour, material and equipment, etc., complete as required for preparing the roof concrete, laying under bed of plain cement concrete screed to slopes, preparation of screed surface for painting, painting the screed surface with black bituminous paint, applying bitumenmastic in layers, laying acid resisting(A/R) mortar bed and laying 75 mm thick acid resisting(A/R) bricks with A/R mortar, curing, pointing (with phenolic based A/R cement), protection and cleaning, finishing, etc., complete as per drawing and specifications.	Sqm	140	560	0.00342199
60	Providing, fitting & fixing, outlet and overflow, cast iron roof drain heads (with gratings) in chimney roof including sockets, adapters, brackets, hangers, supports, etc., casting-in and jointing to 150 mm nominal bore rainwater pipes, grouting, etc. including the cost of all labour material and equipment, transporting, lifting, setting in place, painting, etc. complete as per drawing and specifications.	Each	8	32	0.00061984
61	Providing, fitting and fixing rainwater pipes at all levels internally from the chimney roof to ground level upto the hood drain basin including shoes, bends, junctions, flanges, hoppers, sockets, adaptors, brackets, hangers, supports, anchor fasteners, spacers, pipe sleeve through shell, silicon or vulcanised butyl sealant, foam backing material, jointing, socketing, grouting, caulking, primer and finish painting etc. complete including the cost of all labour, material and equipment, complete as per drawing and specifications:				
a	150 mm nominal bore cast iron pipes.	Rm	32	128	0.00051621
b	150 mm nominal bore medium class galvanised mild steel pipes.	Rm	300	1200	0.00531745
62	Providing and laying 50 mm thick cement concrete flooring (comprising of 12 mm thick metallic concrete hardener topping over 38 mm thick under bed of concrete) over the grade level slab inside the chimney, including the cost of all labour, material and equipment, etc. complete as required for preparation of base, laying underbed and topping, finishing, rounding of edges, corners and junctions, curing, testing, etc. complete as per drawing and specifications.	Sqm	380	1520	0.00138857

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
63	Providing and installing an electrically operated semi grill type steel roll-up door (with the bottom one third of the curtain in solid type) at chimney base, in opening of approx size of 85 square m, with all hardware and mechanisms, fittings and fixtures, locking arrangements, frames, fasteners, gear handle arrangement for standby manual operation, all electrical accessories such as motors, control systems, cables, etc. including the cost of all labour, material and equipment, fixing in position, grouting primer and finish painting, testing, etc., complete as per drawing and specifications.	Each	1	4	0.00187385
64	Providing and installing at any level and location, mild steel, double plate, personnel access doors, in shell openings of size 1.1m by 2.15m, complete with all fittings and fixtures, locking arrangements, frames, fasteners including the cost all labour, material and equipment, lifting to all heights, setting in place, grouting primer and finish painting, etc., complete as per drawing and specifications.	Each	1	4	0.00014191
67	Supplying, fabricating and installing mild steel hatches at various locations in the chimney system complete with locking arrangements, frames, insulation, fittings and fixtures and all mechanisms and accessories reqd. for proper operation including all labour, painting etc. complete as per drawings and specifications.				
a	Hood Access Hatch	Each	1	4	0.0002206
68	Conducting load testing on girders for 1.25 times the full load, on ground, including provision of test bed and jacks, dial gauges and other supplies complete as per specification and drawings and approval of engineer in-charge.	Pair	1	4	0.00152139
70	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with Combextra GP-1 or equivalent. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	Cum	0.5	2.0	0.00017212
71	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement : 1 coarse sand : 2 aggregate of 6 mm down graded stonechips) using non shrink admixture. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	0.5	2.0	0.00006348
72	Erection of Elevator (supplied by contractor under item no. S 72 of SCHEDULE-4 SUPPLY) from ground upto top of chimney with landing at various platform level complete as per spec. and drawings. (Cost on account of supply of Elevator is payable separately under item no. S 72 of SCHEDULE-4)	Lumpsum	1	4	0.01267346
73	Supplying, fabricating and erecting FRP Pipes with all bends, flanges, stiffeners, all other flue attachments, including support system, collars, connection with C276 pipes and any other accessories as required outside chimney flue liner at all elevation based on the approved design in line with gas-flow-model study report, including surface finishing, sealing, lamination, moulding, testing, guarantee/warranty etc. complete as per drawings, specification, manufacturer's recommendations and relevant codes.	Kg	450	1800	0.00122727
Part-1B	ELECTRICAL WORKS				
	Installation, testing & commissioning of following items as per specification) (Material as per SI No. SE1 to SE29 of SCH-4 SUPPLY)				
E1	415V, 200A, 50 KA for 1 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) , 12 nos. of 100A SFU (TPN) outgoing alongwith 100KVA lighting transformer (415/433) V in Incomer, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) complete in all respects	no.	1	4	0.00118558
E2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) with 2 nos. of SFU (TPN) incomers with auto changeover facility using contactors and 8 nos. 100A SFU (TPN) outgoings complete in all respects. In case load requirement of chimney can not be met by 50 KVA lighting transformer after considering loading, 100 KVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser.	no.	1	4	0.0015017
E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 20 outgoing (16A SP MCBs)	no.	2	8	0.00043162
E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A SFU(TPN) incomer and 12 outgoings (16A, SP MCBs)	no.	2	8	0.00037468
E5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control aviation lighting system.	no.	1	4	0.00026482
E6	Aviation obstruction lights (mounted on door panel openable from interior) :				

**VOLUME-III
PRICE SCHEDULE, REV-01**

**JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN
(EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.**

TENDER NO. PSER:SCT:NBN-C2067:20

SCHEDULE- 3 - SERVICE (Part-1)

SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
a.	High intensity flashing light Type-A (LED type) as per ICAO standard having intensity of 20,0000 candles depending upon background illuminance & flashing frequency 20-60/min with all accessories, photocell, timer etc.	no.	12	48	0.0078232
E7	Aviation Distribution Board (ADB) with one 32A SFU (TPN) incomm and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	no.	1	4	0.00010007
E8	Flood light type 120W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	6	24	0.00038093
E9	Well glass type 30W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	64	256	0.00107928
E10	Well glass type 70W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	35	140	0.00009257
E11	Well glass type 50W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	20	80	0.00004232
E12	63Amp welding switch socket with plug & other Mounting accessories	no.	3	12	0.00008849
E13	3 pin, 1 ph, 240V, 20Amp. Industrial Power sockets complete with plug Switches etc.	no.	3	12	0.00002938
E14	AI conductor, HR PVC insulated, Armoured, PVC inner sheath,PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.				
a	3/8 C x95mm ² AI for connection between ACDB/ELDB/ welding sockets	Mtrs.	1500	6000	0.00244815
b	3/8 Cx35mm ² AI for Lighting panel incoming supply	Mtrs.	1000	4000	0.00083664
c	4C x16mm ² AI for connection between ALP/ADB/Aviation Lights	Mtrs.	250	1000	0.00026606
b	4C x 2.5mm ² Cu Control cable for Aviation lighting system	Mtrs.	500	2000	0.00016136
E15	Cu conductor, HR-PVC insulated, PVC inner sheath,PVC outer sheathed and FRLS type 1100V grade conforming to IS-1554 Part I.				
a	2.5 mm ²	Mtrs.	2000	8000	0.00026972
b	4.0 mm ²	Mtrs.	5000	20000	0.00086836
E16	GI pipe conduit with minimum 25 mm dia with GI junction boxes, GI pull boxes (Size 200x200x100mm of 16 SWG sheet steel for junction & pull boxes) & accessories etc. complete in all respects.	Mtrs.	2000	8000	0.00164298
E17	PVC coated Flexible steel conduit 25mm dia with accessories	Mtrs.	100	400	0.00001453
E18	Lightning protection Air terminal : Lead coated copper material of 20 mm dia & 3 metre long.	no.	6	24	0.00021303
E19	50x6 Lead Coated GI Strip for coronal band on flue and top platform	Mtrs.	150	600	0.00013572
E20	Electrical equipment earthing materials including down conductors 50x6 GI Strip	Mtrs.	700	2800	0.00055881
E21	Electrical equipment earthing materials including down conductors 25x3 GI Strip	Mtrs.	700	2800	0.00018616
E22	8 SWG GI wire for equipment earthing	Mtrs.	2000	8000	0.00012796
E23	Test links for 50x6 down conductors enclosed in 200mm X 200mm X 100mm GI box of 16SWG sheet steel.	no.	4	16	0.00007095
E24	40mm dia MS rod for earthing of down conductor	Mtrs.	200	800	0.0011827
E25	Earthpit with earthing electrode including brick chamber with cover, accessories etc. complete in all respect.	no.	6	24	0.00016275
E26	Telephone socket with junction box etc. complete	no.	6	24	0.0000546
E27	Telephone handsets complete	no.	6	24	0.00005271
E28	Telephone cable of minimum 0.6 mm dia annealed high conductivity electro copper conductor, PVC insulated, twisted, PVC tape wrapped, screened, tip corded, PVC sheathed, confirming to relevant ITD (Indian Telephones department) specification				
a	24 pairs	Mtrs.	300	1200	0.00018895
b	2 pairs	Mtrs.	100	400	0.0000151
E29	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc.				
a	150 mm wide	Mtrs.	400	1600	0.00193933
TOTAL					0.76837002

VOLUME-III PRICE SCHEDULE, REV-01					
JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.					
TENDER NO. PSER:SCT:NBN-C2067:20					
SCHEDULE- 4 - SUPPLY (Part-2)					
SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
	CIVIL WORKS				
S B23	Supply and fabrication (shop fabricated in customer approved shop as per specification) of structural steel of grade E 250 in rolled/ built up section conforming to IS:2062, mild steel rounds in columns, beams, struts, monorails, stays, safety chains, ladders, MS gratings, gantry girders, roof trusses, portals, laced purlins, space frames, hangers, wall beams, sheeting runners, brackets, stiffeners, stub columns, bracings, cleats, base plates, splice plates, gussets, end plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, decking and seal plates, galleries etc including blast cleaning, providing & applying primer, providing and applying intermediate, final and final finish coat of paint (blast cleaning, primer and paint shall be paid separately as per item no C23, D23 & E23 of SCHEDULE-3), connection design, preparation of fabrication drgs and appointment of a separate agency for review and approval of fabrication drgs in consultation with BHEL, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, assembly, edge preparation, preheating / post heating if required, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, protection against damage in transit etc all complete. (Final measurement of total qty of this item shall be shall be restricted to total quantity of Item no. B23 of SCHEDULE-3 admitted in final bill).	MT	210	840	0.09953396
S A24	Supplying factory made chequered plate with mild steel conforming to IS:2062 in platforms, staircases with edge binding strips and anti-skid nosing in treads etc. including 1 coat of redoxide zinc-chromate primer, fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete. (Final measurement of total qty of this item shall be shall be restricted to total quantity of Item no. A24 of SCHEDULE-3 admitted in final bill).	Mt	35	140	0.0136435
S 25	Supplying of high strength structural bolts up to and inclusive of 39 mm diameter and upto 1500 mm long (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. for structural steel work etc all complete. (Final measurement of total qty of this item shall be shall be restricted to total quantity of Item no. 25 of SCHEDULE-3 admitted in final bill).	Quintal	60	240	0.00611003
S 26F	Supplying C276 strips, plates, gutters/vanes/pipes, bends, fittings and any other appurtenances as required at all elevation in chimney for collection and withdrawal of condensate from inside of flue liner to outside based on the approved design in line with gas-flow-model study report all complete as per specification, drawing and as directed by the Engineer-in-charge. (Final measurement of total qty of this item shall be shall be restricted to total quantity of Item no. 26F of SCHEDULE-3 admitted in final bill).	Kg	1400	5600	0.01631142
S 30AA	Supplying titanium sheet (Grade 2 as per ASME B265) to be wrapped over insulation of chimney liner above roof level as per specification, drawing and as directed by the Engineer-in-charge. (Final measurement of total qty of this item shall be shall be restricted to total quantity of Item no. 30AA of SCHEDULE-3 admitted in final bill).	kg	1200	4800	0.00914715
S 33	Supply of fabricated ready to install expansion compensator in line with item no A32 of SCHEDULE-3 as spare including nuts, bolts, washers, screws and any other accessories as required for successful installation.	Sqm	10	40	0.0014505
S 72	Design, engineering and supply after approval by Engineer a rack and pinion type Elevator of min 400 kg load carrying capacity for erection as per item no. 72 of SCHEDULE-3, from ground upto top of chimney with landing at various platform level, including all fixtures and accessories complete as per spec. and drawings.	Lumpsum	1	4	0.0295714
ELECTRICAL WORKS					
	Design, Engineering, Supply including testing of following items as per specification				
S E1	415V, 200A, 50 KA for 1 sec, 4 wire AC Distribution Board with 1No. incomer (SFU) , 12 nos. of 100A SFU (TPN) outgoing alongwith 100KVA lighting transformer (415/433) V in Incomer, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) complete in all respects	no.	1	4	0.00276636
S E2	415V, 200A, 4 wire AC Emergency Lighting distribution board alongwith 50KVA lighting transformer (415/433 V, Dyn11, Z=4%, ±2x2.5% off ckt. Tap) with 2 nos. of SFU (TPN) incomers with auto changeover facility using contactors and 8 nos. 100A SFU (TPN) outgoings complete in all respects. In case load requirement of chimney can not be met by 50 KVA lighting transformer after considering loading, 100 kVA lighting transformer shall be provided alongwith suitably rated components without any commercial implications to the purchaser...	no.	1	4	0.00350396
S E3	Normal AC lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 20 outgoing (16A SP MCBs)	no.	2	8	0.00100712
S E4	Emergency lighting panel outdoor type with degree of protection IP 55 with One no. of 100A SFU(TPN) incomer and 12 outgoings (16A, SP MCBs)	no.	2	8	0.00087425

VOLUME-III PRICE SCHEDULE, REV-01					
JOB: CONSTRUCTION OF 4 NOS 150 M TALL SINGLE FLUE RCC CHIMNEY WITH BOROSILICATE GLASS BLOCK LINING SYSTEM ON MS FLUE CAN (EXCLUDING PILE) AT 4X250 MW BRBCL NABINAGAR TPP FGD, BIHAR.					
TENDER NO. PSER:SCT:NBN-C2067:20					
SCHEDULE- 4 - SUPPLY (Part-2)					
SL No.	Description	Unit	Quantity (1 Chimney)	Quantity (4 Chimneys)	Weightage
S E5	Aviation lighting panel outdoor type with degree of protection IP 55 with one no. 100A SFU (TPN) Incomer , 8 outgoing 32A SFU (TPN), photodetector and timer circuit along with 100A contactor to control aviation lighting system.	no.	1	4	0.00061791
S E6	Aviation obstruction lights (mounted on door panel openable from interior) :				
a	High intensity flashing light Type-A (LED type)as per ICAO standard having intensity of 20,0000 candles depending upon background illuminance & flashing frequency 20-60/min with all accessories, photocell, timer etc.	no.	12	48	0.01825413
S E7	Aviation Distribution Board (ADB) with one 32A SFU (TPN) incomer and 8 nos. SP 20A MCB. Construction is same as Lighting Panel.	no.	1	4	0.0002335
S E8	Flood light type 120W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	6	24	0.00088885
S E9	Well glass type 30W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	64	256	0.00251832
S E10	Well glass type 70W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	35	140	0.00021599
S E11	Well glass type 50W(approx) LED/HPSV luminaire with fitting (integrated /retrofitted LED/HPSV lamp) having an integral driver.The luminaire efficacy shall not be less than 80 Lm/W.	no.	20	80	0.00009874
S E12	63Amp welding switch socket with plug & other Mounting accessories	no.	3	12	0.00020648
S E13	3 pin, 1 ph, 240V, 20Amp. Industrial Power sockets complete with plug Switches etc.	no.	3	12	0.00006855
S E14	Al conductor, HR PVC insulated, Armoured, PVC inner sheath,PVC outer sheath, FRLS type 1100V grade conforming to IS-1554 Part I.				
a	3½ C x95mm2 Al for connection between ACDB/ELDB/ welding sockets	Mtrs.	1500	6000	0.00571235
b	3½ Cx35mm2 Al for Lighting panel incoming supply	Mtrs.	1000	4000	0.00195217
c	4C x16mm2 Al for connection between ALP/ADB/Aviation Lights	Mtrs.	250	1000	0.00062081
b	4C x 2.5mm2 Cu Control cable for Aviation lighting system	Mtrs.	500	2000	0.00037651
S E15	Cu conductor, HR-PVC insulated, PVC inner sheath,PVC outer sheathed and FRLS type 1100V grade conforming to IS-1554 Part I.				
a	2.5 mm2	Mtrs.	2000	8000	0.00062935
b	4.0 mm2	Mtrs.	5000	20000	0.00202617
S E16	GI pipe conduit with minimum 25 mm dia with GI junction boxes, GI pull boxes (Size 200x200x100mm of 16 SWG sheet steel for junction & pull boxes) & accessories etc. complete in all respects.	Mtrs.	2000	8000	0.00383362
S E17	PVC coated Flexible steel conduit 25mm dia with accessories	Mtrs.	100	400	0.00003390
S E18	Lightning protection Air terminal : Lead coated copper material of 20 mm dia & 3 metre long.	no.	6	24	0.00049707
S E19	50x6 Lead Coated GI Strip for coronal band on flue and top platform	Mtrs.	150	600	0.00031667
S E20	Electrical equipment earthing materials including down conductors 50x6 GI Strip	Mtrs.	700	2800	0.00130389
S E21	Electrical equipment earthing materials including down conductors 25x3 GI Strip	Mtrs.	700	2800	0.00043436
S E22	8 SWG GI wire for equipment earthing	Mtrs.	2000	8000	0.00029857
S E23	Test links for 50x6 down conductors enclosed in 200mm X 200mm X 100mm GI box of 16SWG sheet steel.	no.	4	16	0.00016556
S E24	40mm dia MS rod for earthing of down conductor	Mtrs.	200	800	0.00077549
S E25	Earthpit with earthing electrode including brick chamber with cover, accessories etc. complete in all respect.	no.	6	24	0.00037975
S E26	Telephone socket with junction box etc. complete	no.	6	24	0.0001274
S E27	Telephone handsets complete	no.	6	24	0.000123
S E28	Telephone cable of minimum 0.6 mm dia annealed high conductivity electro copper conductor, PVC insulated, twisted, PVC tape wrapped, screened, tip corded, PVC sheathed, confirming to relevant ITD (Indian Telephones department) specification				
a	24 pairs	Mtrs.	300	1200	0.00044089
b	2 pairs	Mtrs.	100	400	0.00003522
S E29	GS cable trays. Cable trays shall be of ladder type constructed of minimum 2 mm thick mild steel hot dip galvanise including cover, cabling material, accessories etc.				
a	150 mm wide	Mtrs.	400	1600	0.00452511
TOTAL					0.23162998

Form-2 (Format for local content) (Rev-01)

Format for Certification regarding Local content (LC) for Services or Works

[Certificate to be provided by local supplier from the Statutory Auditor or Cost Auditor of the company (in the case of companies) or from a practicing Cost Accountant or practicing Chartered Accountant (in respect of local suppliers other than companies)]

Date:

I < name of Statutory Auditor/Cost Auditor/ practicing Cost Accountant/practicing Chartered Accountant > do hereby certify that < name of authorized signatory of bidder > S/o, D/o, W/o _____, Resident of _____ has solemnly affirmed and declared as under:

That the percentage of local content for the Product/ Services/ Works offered by the bidder/supplier against the subject tender (**TENDER NO: PSER:SCT:.....**) is ____%. I certify that the item(s) offered by bidder meets the local content requirement for < **Class-I Local Supplier / Class-II Local Supplier/ Non-Local Supplier, tick the applicable option** >. Details of the location(s) at which the local value addition is made by bidder is enclosed.

That he/she agreed to abide by terms and conditions of Department of Industrial Policy & Promotion issued vide Notification No: P-45021/2/2017-B.E.-II Dated: 15-06-2017 & P-45021/2/2017-PP (BE-II) Dated: 28-05-2018, of Department of Promotion of Industry and Internal Trade issued vide Notification No: P-45021/2/2017-PP(BE-II) Dated: 29-05-2019 & P-45021/2/2017-PP (BE-II) Dated: 04-06-2020.

That the information furnished hereinafter by him/her is correct to best of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any other authority so nominated by the Government of India for the purpose of assessing the LC.

That the LC for all inputs which constitute the said Product/Services/Works has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of the LC of the Product/ Services/ Works mentioned herein is found to be incorrect and not meeting the prescribed LC norms, based on the assessment of an authority so nominated by the Government of India and he/she will be liable as under clause 9 (f) of **Public Procurement (Preference to Make in India) order 2017**.

He/she agrees to maintain all information regarding his/her claim for LC in the Company's record for a period of 2 years and shall make this available for verification to any statutory authorities

- i. Name and details of the Local supplier (registered Office, Manufacturing and location, nature of legal entity)
- ii. Date on which this certificate is issued
- iii. Product / Services/ Works for which the certificate is produced
- iv. Procuring agency to whom the certificate is furnished
- v. Percentage of LC claimed.
- vi. Name and contract details of the unit of the manufacturer
- vii. Sale Price of the product
- viii. Ex-Factory Price of the product
- ix. Freight, insurance and handling
- x. Total Bill of Material
- xi. List and total cost value of inputs used for manufacture of the Products/ Services/Works
- xii. List and total cost of inputs which are locally sourced. Please attach LC certificates from local suppliers, if the input is not in-house.
- xiii. List and cost of inputs which are imported, directly or indirectly

For and behalf of _____ <Name of Statutory Auditor/Cost Auditor/ practicing Cost Accountant/practicing Chartered Accountant>

Stamped & signed by Authorized signatory
<Insert Name, Designation and Contact No and date>

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691/ 23398000

ANNEXURE – A

Cl.No.40.0 of NIT is as follows:

Clause No.40.0: Bidder shall submit duly filled & signed Form-3 along with their techno-commercial offer towards compliance of Department of Expenditure's (DoE) Public Procurement Division Order ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020. In this connection, following may be noted:

- 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.
- 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 order 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 the majority of the directors or to control the management of 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 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 hold 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.
However, in this regard, provision of Clause no 1.15.9 of GCC shall also be applicable.

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

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FORM – 3
(To be submitted in the bidder's letter head)

In-line with Department of Expenditure's (DoE) Public Procurement Division Order vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020

Tender no.

Job:

"I/ we have read the clauses pertaining to Department of Expenditure's (DoE) Public Procurement Division Order (Public procurement no 1, 2 & 3 vide ref. F.No.6/18/2019-PPD dated 23.07.2020 & 24.7.2020) regarding restrictions on procurement from a bidder of a country which shares a land border with India. I/We hereby certify that I/ we the bidder < name of the bidder...> is / are not from such a country and eligible to be considered for this tender.

For and behalf of _____ (Name of the bidder)

(Signature, date & seal of authorized representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION, DJ-9/1, SALT LAKE CITY, KOLKATA - 700 091

फैक्स/Fax : (033) 23211960 फोन/Phone : बोर्ड/EPABX : 23211691/ 23398000

FORMAT FOR NO DEVIATION CERTIFICATE
(To be submitted in the bidder's letter head)

BHARAT HEAVY ELECTRICALS LIMITED,
 Power Sector - Eastern Region,
 Plot no 9/1, DJ Block, Sector - II, Salt Lake City,
 Kolkata – 700 091

Sub	No Deviation Certificate.	
Job	Construction of 4 nos 150 M Tall Single Flue RCC Chimney with Borosilicate Glass Block Lining System on MS Flue Can (excluding pile) at 4x250 MW BRBCL Nabinagar TPP FGD, Bihar.	
Ref	1.0	Tender no PSER:SCT:NBN-C2067:20.
	2.0	BHEL's NIT, vide reference no PSER:SCT:NBN-C2067:8042 Date: 14-07-2020.
	3.0	BHEL's TCN-01, vide reference no PSER:SCT:NBN-C2067:TCN-01 Date: 04-08-2020.
	4.0	BHEL's TCN-02, vide reference no PSER:SCT:NBN-C2067:TCN-02 Date: 10-08-2020.
	5.0	BHEL's TCN-03, vide reference no PSER:SCT:NBN-C2067:TCN-03 Date: 11-08-2020.
	6.0	BHEL's TCN-04, vide reference no PSER:SCT:NBN-C2067:TCN-04 Date: 18-08-2020.
	7.0	BHEL's TCN-05, vide reference no PSER:SCT:NBN-C2067:TCN-05 Date: 22-08-2020.
	8.0	BHEL's TCN-06, vide reference no PSER:SCT:NBN-C2067:TCN-06 Date: 28-08-2020.
	9.0	BHEL's TCN-07, vide reference no PSER:SCT:NBN-C2067:TCN-07 Date: 10-09-2020.
	10.0	BHEL's TCN-08, vide reference no PSER:SCT:NBN-C2067:TCN-08 Date: 14-09-2020.
	11.0	BHEL's TCN-09, vide reference no PSER:SCT:NBN-C2067:TCN-09 Date: 15-09-2020.
	12.0	All other pertinent issues till date.

Dear Sirs,

With reference to above, this is to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc. We also confirm that we have not changed/ modified the tender documents as appeared in the website/ issued by you and in case of such observance at any stage, it shall be treated as null and void.

We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT. We hereby confirm our unqualified acceptance to all terms & conditions, unqualified compliance to technical specification, integrity pact (if applicable) and acceptance to reverse auctioning process.

In the event of observance of any deviation in any part of our offer at a later date whether implicit or explicit, the deviations shall stand null & void.

We confirm to have submitted/uploaded offer/documents in accordance with tender instructions with acceptance of the terms & conditions of the tender by us and as per aforesaid references.

Thanking you,

Yours faithfully,

(Signature, date & seal of authorized
representative of the bidder)

पावर सेक्टर पूर्वी क्षेत्र (मुख्यालय)

POWER SECTOR EASTERN REGION DJ-9/1, SECTOR-II, SALT LAKE CITY, KOLKATA - 700 091

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