CEMENT CORPORATION OF INDIA LIMITED
(A Govt. of India Enterprise)
CORE -5, SCOPE COMPLEX
7, LODHI ROAD, NEW DELHI-110 003

TENDER NOTICE No.6(1)/13-MMO

Sealed and superscribed tenders are invited from manufacturers having adequate experienced organizations/manufacturers/suppliers having eligibility criteria as indicated in Part-III of our tender document, who can carry out **Design, Engineering, Manufacture, Supply, Civil /Structural Design including Civil Construction, Erection & Commissioning and Performance Test of Pollution Control Equipment (complete with fan, stack and other accessories) on turnkey basis with emission level of less than 30 mg/nm^3 at Bokajan Cement Factory (Assam) complete in all respect i.e. (i) Reverse Air Bag House (RABH) for 1200 TPD Pre-Calcinator Kiln and VRM combined, (ii) ESP for Clinker Cooler of 1200 TPD Kiln and (iii) Bag Filters for new Coal Mill and upgraded Cement Mill.**

Tender Notice No.	Item	Last date for sale of tender documents	Last date for submission of tender (by 2.30PM)	Earnest money deposit by way of DD/BG/FD (Rs.in lacs)
6(1)/13-MMO	(i) RABH	25.02.13	26.02.13	20.60
	(ii) ESP			8.00
	(iii) Bag Filters			5.40

The tender documents can be purchased from Sr. Manager (Fin.) at the above mentioned address on any working day between 3.00 pm to 5.30 pm on payment of Rs. 500/- (non-refundable) by way of DD/IPO in favour of Cement Corporation of India Ltd., payable at New Delhi. In addition to the sale of tender documents manually, the complete set of tender document is also available on our website No. www.cementcorporation.co.in. Interested parties may download the tender documents from the website, but the tenderer has to pay the amount towards cost of the tender document by DD/IPO at the time of submission of tender.

The tenders are required to be submitted in two parts, one containing techno-commercial bid along with the EMD in favour of Cement Corporation of India Ltd., New Delhi and the other containing price bid only. The tender should be submitted at CCI House, 87, Nehru Place, New Delhi 110019. SSI units registered with NSIC and Public Sector Undertakings are exempted from furnishing EMD. No tenderer can participate without having purchased manually or have downloaded CCI's tender documents and paid the requisite amount.

The techno commercial bids of above tender will be opened on 26.02.13 at 3.00 PM in the presence of interested tenderers or their authorised representatives who may like to be present in the office at Cement Corporation of India Ltd., 87, CCI House, Nehru Place, New Delhi-110019. Tenders received late or without earnest money shall not be entertained.

The Corporation reserves the right to reject any or all tenders without assigning any reasons thereof.

General Manager(MM)-I/C

TENDER FOR

INSTALLATION
OF
POLLUTION CONTROL EQUIPMENTS

AT

BOKAJAN CEMENT FACTORY

Cement Corporation of India Ltd.
Core-5, Scope Complex
7,Lodhi Road
NEW DELHI-110003

CEMENT CORPORATION OF INDIA Ltd.

Core-5, Scope Complex,7,Lodhi Road,NEW DELHI-110003

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Forwarding Letter

CEMENT CORPORATION OF INDIA Ltd.

Core-5, Scope Complex,7,Lodhi Road,NEW DELHI-110003

REGISTERED / SPEED POST / COURIER

No.: 6(1)/13-MMO Date: …….

M/s ……..….

……..

……..

……..

Sub.: ***TENDER FOR DESIGN, ENGINEERING, MANUFACTURE, SUPPLY, CIVIL/STRUCTURAL DESIGN, INCLUDING CIVIL CONSTRUCTION,ERECTION,COMMISSIONING & PERFORMANCE TEST OF RABH/ ESP/ BAG FILTERS ON TURN KEY BASIS WITH EMISSION LEVEL OF LESSTHAN 30 MG/NM^3 AT BOKAJAN CEMENT FACTORY (ASSAM) COMPLETE IN ALL RESPECT i.e. POLLUTION CONTROL EQUIPMENTS COMPLETE WITH FAN, STACK AND OTHER ACCESSORIES FOR THE FOLLOWING SECTIONS:***

I) REVERSE AIR BAG HOUSE FOR 1200 TPD PRE- CALCINATOR KILN AND VRM(COMBINED)

II) ESP FOR CLINKER COOLER OF 1200TPD KILN

III) BAG FILTERS FOR NEW COAL MILL AND UPGRADED CEMENT MILL.

Dear Sirs,

We are enclosing our tender documents for the above work detailed in the enclosed tender documents. Your offer in sealed cover containing separate sealed covers for (i) Commercial bid and (ii) Price bid along with one set of tender documents is invited at the above mentioned address in accordance with our terms and conditions of the tender which should reach us as per the schedule given below:

Time Schedule

Sl. No.	Particulars	Last date & time for Submission of tender	Date & time of Opening of tender
a)	Techno-commercial bid along with EMD and CCI tender documents duly signed (each page initialed) in token of acceptance of terms & conditions	26.02.2013 Up to 2.30 PM	26.02.2013 (At 3.00 PM)
b)	Price Bid	26.02.2013 Up to 2.30 P.M	*

*The time and date of opening of price bid will be informed to only those tenderers whose techno-commercial offers will be found acceptable.

2. A) The EMD must be submitted along with the Techno-commercial bid for a value of ₹.as under:

(i) For Reverse Air Bag House for 1200 TPD pre- calcinator Kiln and VRM (combined) - ₹20.60 lacs (Rupees twenty Lacs sixty thousand only)

(ii) For ESP for Clinker Cooler of 1200 TPD Kiln - ₹8.00 lacs (Rupees eight Lacs only)

(iii) For Bag Filters for new coal mill and upgraded cement mill.- ₹5.40 lacs (Rupees five Lacs forty thousand only)

EMD must not be enclosed with the price bid (refer clause No. I of Part-II). Offers not accompanied with the requisite EMD may not be considered.

2. B) EMD can be submitted by way of FDR / DD / BG.

3. The validity of the offer should be kept open for acceptance for four months from the date of opening of techno-commercial bid.

4. The price bids should be submitted only as per CCI's price bid format otherwise the tender is liable for rejection.

5. The tender documents comprise the following:

a) Covering letter, which must be submitted by the tenderer duly, signed.

b) Part-I: Instruction to Tenderers

c) Part-II: General terms & conditions

d) Part-III: Special terms & conditions

e) Part-IV: Technical Specification including annexure- IV-I to IV-3

Price Bid Performa - Annexure F & F.1 (Price schedule) to be submitted duly filled in separate sealed cover. Cost break up rates quoted may also be furnished.

Please confirm your participation by post.

Yours faithfully,

For CEMENT CORPORATION OF INDIA LTD

COVERING LETTER WHICH MUST BE SUBMITTED BY THE TENDERER

COVERING LETTER WHICH MUST BE SUBMITTED BY THE TENDERER DULY FILLED IN AND SIGNED

Ref.: …… Date: ……

To,

……
……
……
……

Sub.: ***TENDER FOR DESIGN, ENGINEERING, MANUFACTURE, SUPPLY, CIVIL/STRUCTURAL DESIGN, INCLUDING CIVIL CONSTRUCTION,ERECTION,COMMISSIONING & PERFORMANCE TEST OF RABH/ ESP/ BAG FILTERS ON TURN KEY BASIS WITH EMISSION LEVEL OF LESSTHAN 30 MG/NM^3 AT BOKAJAN CEMENT FACTORY (ASSAM) COMPLETE IN ALL RESPECT i.e. POLLUTION CONTROL EQUIPMENTS COMPLETE WITH FAN, STACK AND OTHER ACCESSORIES FOR THE FOLLOWING SECTIONS:***

I) REVERSE AIR BAG HOUSE FOR 1200 TPD PRE- CALCINATOR KILN AND VRM(COMBINED)

II) ESP FOR CLINKER COOLER OF 1200TPD KILN

III) BAG FILTERS FOR NEW COAL MILL AND UPGRADED CEMENT MILL.

Dear Sir,

With reference to your tender for the above work, We/I hereby submit our / my tender in two separate sealed envelopes duly sealed in a common envelope as per instructions in the tender documents. The required marking as per Clause 2 (b) of Part-I indicating reference of tender, has been done on all the envelopes.

A. The following documents are enclosed with the techno-commercial bids in one envelope super scribed “Techno-Commercial Bid”

1. One copy each of your terms and conditions in Part-I, Part-II, Part-III & Annexure-III.1 to III.5, duly signed on each page in token of acceptance of the same in its entirety.
2. Earnest money of ₹ ---------- in the form of FDR/Bank Draft No.: …….. Dated …….., drawn in favor of Cement Corporation of India Ltd., Payable at NEW DELHI / Bank Guarantee (in CCI format enclosed at Annexure-A) No…….dt…….
3. Certificate whether any officer of your Corporation is related to me/us or not (Annexure: B)
4. List of unexecuted orders in hand as per (Annexure: C)
5. Additional information to be furnished (Annexure: D)
6. Details of Plant & Machinery installed (Annexure: D-1)

7. Details of testing facilities installed (Annexure: D-2)

8. Details of orders executed, including CCI during last 7 years (Annexure: D-3)

9. A copy of our/my latest valid ITCC/latest Income Tax Return PAN No.duly attested by a gazette officer.

10. Partnership Deed/Memorandum of Articles of Association by partnership firms / companies duly attested by a gazette officer. In case of partnership deed, the same is registered / not registered. (Annexure: E).

11. Modvat credit - (Annexure – G)

B. The 'Price Bid' (Annexure-F& F.1) as per format prescribed only, has been enclosed in another separate sealed envelope super scribed "Price Bid".

C. Both these sealed cover has been enclosed in a common sealed cover and all these envelopes have been marked as under:-

a) Offer for ----------
b) CCI's Tender number ----------
c) Date of Opening of Tender ----------

We/I hereby declare that We/I have not been debarred from tendering for contracts in any of the departments of Govt./Semi Govt./Public Sector Undertaking and Local Bodies.

We/I certify that the information given by us/me in the tender documents is correct and if at any stage the same is found to be incorrect, the contract will be liable to be terminated / rescinded and action may be taken against us/me by the Corporation for damages.

We are / I am duly authorized / empowered to sign all the tender documents.

a) Name of the Tenderer : …….
b) Full Postal Address : ……..……..
c) Telegraphic Address : ……... Telefax: …..……..
d) Phone with STD Code : Office ……..……
: Residence: ……..……..…… fax: …….…….
e) E-mail ID : ……..……..

Yours faithfully,

(Signature of the Tenderer)

[Seal]

Witnesses (Name & Address)

Signature : 1. …… 2. ……..……
Name : ……..…… ……...……
Address : …… ……..……

PART-I

INSTRUCTIONS TO TENDERER

PART – I

CEMENT CORPORATION OF INDIA Ltd.
INSTRUCTIONS TO TENDERERS

1. GENERAL:

a) The tender should be addressed to the officer who has invited the tenders.

b) Any offer made in response to this tender when accepted by the Cement Corporation of India Ltd., will constitute a contract between the parties.

2. SUBMISSION OF TENDER:

a) Every tender shall be made out in English. All amounts shall be indicated by tenderer in figures as well as in words. Where there is any difference between prices quoted in figures and words, lower of the two shall prevail. Tender should be free from over-writings. All corrections and alterations should be duly attested by the tenderer. The work "Not quoted" should be written against item in the schedule for which the tenderer does not wish to quote.

b) Tender is to be sent by post or deposited in the tender box kept for this purpose in the office of CCI so as to be available within the date and time fixed in a sealed envelope in the manner prescribed below:-

i) Technical and commercial terms & conditions should be sent in a separate sealed cover and should be super-scribed as "COMMERCIAL BID."

ii) The Price portion should be sent in a separate sealed cover and should be super-scribed as "PRICE BID".

iii) Both these sealed covers should be sent in a common sealed cover and all the envelope should be marked as under:-

(1) Offer for _____

(2) CCI's Tender No. _____

(3) Date of Opening of Tender _____

iv) In the event of the tender being submitted by a firm, it must be signed separately by each partner thereof. In the event of the absence of any partner, it must be signed on his behalf by a partner holding power of attorney authorizing him to do so.

v) In the case of a Company, the tender should be signed in the manner as laid down in the said "Company's Articles of Association."

vi) A true copy of the partnership deed (and Articles and Memorandum of Company) duly attested should be furnished.

vii) Tenders received after the specified time and date are liable for rejection.

c) Tenders not submitted in the prescribed format and not completed in all respects are likely to be rejected.

d) The tender documents are non transferable. Only those firms can participate in whose name the tender has been sold.

e) The tender with terms & conditions in Part-I, II and III duly signed on each page shall be sent along with Earnest Money Deposit with a covering letter as prescribed. Earnest Money Deposit shall not be kept in the Price Bid, but shall be enclosed with the "COMMERCIAL BID."

f) Tenderers shall not be entitled to claim any costs, charges, expenses or incidentals for or in connection with the preparation and submission of their tenders even though the Corporation may decide to withdraw the "Invitation of Tender" / reject any or all tender (s) without assigning any reason thereof.

g) Tenderer must submit copy of his latest Income-Tax Clearance Certificate / PAN No. / Latest Income Tax Return from appropriate Income Tax Authority in the form prescribed therefore duly attested by a Gazetted Officer.

3. OPENING OF TENDER:

a) Tenders will be opened on the specified date and time in the office of the Officer inviting the tender or as directed by him, in the presence of those tenderers who may choose to be present. The representatives will have to establish the identity to the satisfaction of the Corporation by producing introductory letters from the firms/Company. Otherwise they may not be allowed to be present at the tender opening.

b) The tenders not received in separate covers as explained above are liable for rejection.

4. CLEAR UNDERSTANDING:

When a tenderer submits his tender in response to this tender document, he will be deemed to have understood fully about the requirements, terms & conditions. No extra payment will be made or any other claim whatsoever entertained on the pretext that the tenderer did not have a clear idea of any particular point(s).

5. VALIDITY OF OFFER:

Tender shall remain open for acceptance for 120 days or as may be specified from the date of opening of commercial bids. No revision/ modification in the tendered rate will be allowed during the period of original validity of tender or the extendable period except for any reduction/revision as may be asked for specifically by CCI during negotiations.

6. REFERENCE LIST:

The tenderer(s) should submit along with their tender(s) the list of unexecuted orders in hand, if any, for same/similar jobs and period by which jobs are proposed to be completed (Performa enclosed Annexure 'C').

7. AWARD OF CONTRACT:

a) The Corporation reserves the right:-

i) To accept in its sole and unfettered discretion any tender for whole or part quantities / part work or to reject any or all tenders without assigning any reasons thereof and without entitling the tenderer to any claim whatsoever.

ii) To award the contract to one or more number of firms either on equal price or on different prices.

iii) To enter into a parallel contract simultaneously or at any time during the period of the contract with one or more tender(s) as the Corporation may deem fit.

iv) To place adhoc order simultaneously or at any time during the period of the contract with one or more tenderer(s) for such quantity and for such jobs as the Corporation may deem fit.

b) Normally no price negotiation will be conducted. Tenderers are advised to quote lowest rates on firm basis in their offers.

c) Firms, which have failed to fulfill earlier contractual obligations, may not be considered.

d) If no separate agreement has been signed by the parties to the contract, the LOI/Order resulting from this tender including all negotiations and detailed order to be issued subsequently with its terms and conditions and stipulations as agreed to by the tenderer and to the extent modified during negotiations, constitutes the contract agreement relating to the work between the successful tenderer and the Corporation and the parties shall be bound by the terms and conditions and all provisions of this contract.

e) The Corporation does not bind itself to accept the lowest or any tender or to assign any reason for non-acceptance of the same.

f) The Corporation shall mean and include the administrative and executive officers of its corporation office at New Delhi as well as of factories / Projects as the case may be who are identified to deal with matter relating to this contract on its behalf.

8. In case of the due date of sale/ submission/ opening of tender falling on Government holiday(s), the succeeding working day/date will be treated as due day/date automatically. However, the time will remain unchanged.

9. The tenderer should have adequate experience in the related field and should furnish supporting documents giving details of similar job executed during last seven years.

PART-II

GENERAL TERMS & CONDITIONS

PART – II
CEMENT CORPORATION OF INDIA Ltd
(A GOVT. OF INDIA ENTERPRISE)
PART- II : GENERAL TERMS AND CONDITIONS

1.0 EARNEST MONEY DEPOSIT:

1.1 All tenderers including those registered with the Corporation should furnish earnest money as specified in the NIT by way of FDR / Bank Draft drawn in favor of Cement Corporation of India Ltd., payable at NEW DELHI or Bank Guarantee from any Nationalized Bank for equivalent amount as per CCI's format. Tender received without the Earnest Money deposit, as specified in the tender, will be liable for rejection. Any other money held by or pending with the Corporation against any other contracts will not be generally adjusted /treated as EMD for this tender.

1.2 Earnest Money will be forfeited if the rates are revised / or modified upward during the validity period or extended period, if any. Earnest Money will also be forfeited if the Security Deposit is not furnished within 15 days from the date of LOI or work not started after acceptance of the tender's offer by CCI.

1.3 The Earnest Money deposit will not bear any interest.

1.4 The Earnest Money deposit of successful tenderers would be adjusted towards the Security Deposit and that of others will be refunded, except in the cases mention in 1.2 above and mentioned in Clause 2.3 below.

1.5 Public Sector Undertakings (Centre/State) and SSI Units registered with NSIC are exempted from submission of Earnest Money deposit. The SSI Units shall furnish a documentary proof to the effect that they are registered with NSIC along with tender documents.

2.0 SECURITY DEPOSIT:

2.1 The amount of Security Deposit shall be deposited by the successful tenderers within 15 days of acceptance of offer i.e. issue of Rate Contract / P.O. /LOI / W.O.

2.2 Failure to furnish Security Deposit in accordance with the condition of the tender within 15 days of the acceptance of offer / issue of Rate Contract / P.O. will be considered to be breach of contract, would give the Corporation right to terminate the contract and forfeit the EMD amount. For such breach of contract, the Corporation will also be entitled to take any other course of

action against the successful tenderer as it may deem fit like stoppage of business dealings/debarring from tendering etc.

2.3 The Security Deposit may be made either by Bank Guarantee or Bank Draft in favor of cement Corporation of India Ltd., from any nationalized bank in the prescribed form as given in Annexure 'A' valid for a period of 6 (six) months beyond the date of completion of contract with a further claim period of 3 months. The Earnest Money deposit in the form of Bank Draft will be adjusted towards portion of Security Deposit, in the case of successful bidder.

2.4 If work is not started after acceptance of tenderer's offer, EMD/SD will be forfeited.

2.5 In the event of any approved upward revision in the value of the contract, the successful tenderer will, on receiving intimation, make further deposit as specified by the Corporation towards the increased value of the contract.

2.6 The Security Deposit will not bear any interest. The Corporation reserves the right to adjust security deposit towards amount due to it from the successful tenderer against this contract or against any other contract with this Corporation and in such an event the successful tenderer on receipt of notice from the Corporation shall make further deposit to restore the security deposit to the full amount.

2.7 The Security Deposit shall be liable to be forfeited wholly or partly at the sole discretion of the Corporation, should the successful tenderer either fail to complete the jobs assigned to him/them as per agreed time schedule or to fulfill his/their contractual obligations or to settle in full his/ their dues to the Corporation.

2.8 The Corporation is empowered to deduct from the Security Deposit or from any other outstanding amount any sum that may be fixed by the Corporation as being the amount of loss or losses or damages suffered by it due to delay in performance or non-performance of any of the conditions of the tender/contract. The Corporation will, however, not be bound to prove any demonstrable loss or damages suffered.

2.9 The Corporation shall have a lien over all or any money that may become due and payable to the Contractor under this contract or any other contract or transaction of any other nature either all alone or jointly with others and unless the contractor pay and clears the claims of the Corporation immediately on demand, the Corporation shall be entitled at all times to deduct the said sum due from the Contractor from any money/Security

deposit which may have become payable to the Contractor or may become due at any future date under this contract or any other contract or transaction whatsoever between the Contractor and the Corporation without prejudice and in addition to the other rights of the Corporation to recover the amount of any such claim by other remedies legally available.

2.10 Bank Guarantee as required under this contract or agreed to against any advances made by the Corporation / Contract performance / equipment performance / guarantee etc. shall be extended by the Contractor whenever so required by the Corporation and without any question for covering the period of completion and finalization of work, performance etc. Failure to do so, shall entitle the Corporation to en-cash the Bank Guarantee against it towards any dues, recoveries, L.D. etc.

3.0 MEMBER OF THE CORPORATION NOT INDIVIDUALLY LIABLE:

No Director or official or employee of the Corporation shall in any way be personally bound or liable for acts or obligations of the Corporation under the Contract or answerable for any default or omission in observance or performance of any of the acts, matters or things which are herein contained.

4.0 CORPORATION NOT BOUND BY PERSONAL REPRESENTATION:

The Contractor shall not be entitled to any increase in the rates or any other right or claim whatsoever by reason of any representation, explanation or statement or alleged representation, promise or assurance given or alleged to have been given by any employee of the Corporation.

5.0 NON PERFORMANCE OF CONTRACT/CANCELLATION OF CONTRACT / RIGHT OF THE CORPORATION:

5.1 The Corporation reserves the right to cancel the contract if the Contractor fails to carry out the jobs assigned to him as per contract and as per instructions given by the authorized Representatives of the Corporation. In addition, Corporation may also take any other remedial measures in such an event as described hereunder:

5.2 Any bribe, commission, gift or advantage given, promised or offered by or on behalf of the tenderer, their partners, agents, or servants to any officer,

servant or representative of the Corporation for obtaining for execution of this or any other contract or for receiving payments under the contract shall in addition to the criminal liability he may incur, will subject to tenderer to cancellation and the Corporation shall be entitled to deduct the amount so payable from any moneys otherwise due to the tenderer under this or any other contract. Any question or dispute as to whether the tenderers have incurred any liability under the clause shall be settled by the Corporation in such manner and on such evidence or information as it may deem fit and sufficient and the Corporation decision in this regard shall be final and conclusive.

5.3 In case of any compelling circumstances or for any other reasons and in the opinion of the Corporation, the contract needs to be determined and terminated at any stage during the execution, the Corporation shall be entitled to do so, giving one month's notice in writing. In such an eventuality, no compensation whatsoever for any arrangement is made by the Contractor or for any liabilities incurred by him or any consequential loss will be payable by the Corporation except the payment for work actually done at contracted rates, after making good all dues, recoveries L.D. if any etc. CCI also reserves its right to suspend the contract for any compelling reasons if in the opinion of the Corporation, it is so required. In such an eventuality, the time of completion will be extended to the extent of suspension period but no claim whatsoever for any damages, increase in rates, idle wages / machinery etc. will be payable to the Contractor.

5.4 the Corporation also reserves the right to make risk purchase from the open market by tender or by any other mode of purchase at the risk and cost of supplier in respect of such quantities that the supplier fails to deliver in accordance with the schedule of delivery agreed to, after giving due notice to the supplier.

6.0 <u>SUB-LETTING OF CONTRACT</u>:

The contractor shall not sublet or assign this contract or any part thereof without obtaining prior written permission of the Corporation. In the event of the contractors' subletting or assigning the contract or any part thereof without such permission, the Corporation shall have the right to rescind the contract and the contractor shall be liable to the Corporation for any loss or

damage which the Corporation may sustain in consequence or arising out of such cancellation. Even in case subletting is permitted by the Corporation the party to whom subletting is proposed, will be subject to approval of the Corporation. However, the Corporation will not recognize any contractual obligations with the person or party to whom the contract, has been sublet including compensation under Workmen's compensation Act and the contract will be held responsible for the satisfactory, due and proper fulfillment of the contract.

7.0 CHANGES IN CONSTITUTION:

7.1 Where the Contractor is a partnership firm, a new partner shall not be introduced in the firm except with the previous consent in writing of the Corporation which may be granted only upon furnishing of a written undertaking by the partner to perform the contract and accept all liabilities incurred by the firm under the contract prior to the date of such undertaking.

7.2 On the death or retirement of any partner of the Contractor's firm before complete execution and performance of the contract, the Corporation may, at its option rescind the contract and in such case the contractor shall have no claim, whatsoever to compensation of any kind, consequential loss etc. against the Corporation.

7.3 Without prejudice to any of the rights or remedies under this contract, if the contractor is a proprietorship concern and proprietor dies during the subsistence of the contract, the Corporation shall have the option to terminate the contract without paying compensation of any kind consequential loss etc. to any claimant i.e. legal heirs and successors.

8.0 FORCE MAJEURE CONDITIONS:

8.1 If any time during the continuance of the agreement/contract it becomes impossible by reasons of war, or war like operations, strikes, lock-outs, riots, civil commotion, epidemical sickness pestilence, earthquake, fire, storms or floods, the contractor shall during the continuance of such contingencies, not be bound to execute the contract during this period as per agreement/ contract time schedule. The work shall be resumed immediately the contingency has have ceased or otherwise determined and contractor's obligations shall continue to be in force for correspondingly extended period after the resumption of execution. The contractor shall however, inform the corporation by registered post about such acts at the beginning and end of

the above causes of delay within ten days of occurrence and cessation of such force majeure conditions.

8.2 In the event of delay lasting over one month, if arising out of cause of force majeure the Corporation reserves the right to cancel the order/contract without any compensation whatsoever, and/or any consequential loss etc.

8.3 Only events of Force Majeure which affect the work at the time of its occurrence shall be taken into cognizance. The Corporation shall not be liable to pay any extra costs or increased rates due to delay under Force Majeure conditions. Only appropriate extension of time will be granted.

9.0 NOTICE:

9.1 Any notice hereunder may be served on the Contractor by registered post/ mail at his last known address. Proof of issue of any such notice at this address shall be conclusive proof of having received the notice by the contractor.

10.0 DISPUTE UNDER THIS CONTRACT AND ARBITRATION:

10.1 In the event of any question/ dispute, breach of or difference arising in respect of the meaning and scope of terms & conditions herein or in connection with any matter under this agreement (except for those matters which are to be decided as per provisions made in these terms and conditions), the same shall be referred to the Chairman-cum- Managing Director of Cement Corporation of India Limited for appointment of a Sole Arbitrator. There will be no objection if the Arbitrator so appointed is or was an employee of the Corporation and whether he had at any time in discharge of his duties as an employee of the Corporation had expressed views on all or any of the matters in dispute or difference or dealt with the matter in substance. The Arbitrator shall give award with reasons in respect of each claim, dispute or difference referred to him in the event the value of the dispute(s) exceeds Rs. 50,000/-. The award of the Arbitrator shall be final and binding on the parties to this contract.

10.2 Subject to aforesaid, the Arbitration and Conciliation Act, 1996 and the rules made there under and any statutory modifications thereof for the time being in force shall apply to the arbitration proceedings under this clause.

10.3 The work, under the contract shall be continued uninterrupted during the pendency of the arbitration proceedings and no payment due from one to

the other parties therein shall be withheld on account of pendency of such proceedings unless such payment related to the matter under Arbitration.

10.4 The venue of the Arbitration shall be New Delhi or such other place as the arbitral tribunal at his discretion may determine.

11. JURISDICTION:

11.1 It is hereby agreed by the parties here to that only courts at NEW DELHI shall have the jurisdiction to decide or adjudicate upon any disputes, which may arise out of or be in connection with this agreement.

12.0 LAWS GOVERNING THE CONTRACT:

12.1 This contract shall be governed by the Laws of Union of India in force.

13.0 WAIVER NOT TO IMPAIR THE RIGHTS OF THE CORPORATION:

13.1 Any delay in exercising or omission to exercise any right, power or remedy accruing to the Corporation upon any default under this contract shall not impair any such right, power or remedy or shall be construed to be inaction of the Corporation in respect of any such default or any acquiescence by the Corporation effect or impair any right, power or remedy of the Corporation under this contract.

14.0 CONDITIONS GIVEN BY THE TENDERS:

14.1 With the acceptance of the terms & conditions described in this tender, any terms and conditions given by the tenderers contrary to those conditions shall be treated as withdrawn by the tenderer(s).

15.0 OTHER COMMERCIAL TERMS & CONDITIONS

15.1 PRICES:

(a) Total prices quoted shall be firm till completion of the contract and shall be inclusive of ED, Taxes, duties, packing, forwarding charges etc. and on F.O.R./F.O.T. station of dispatch / destination as the case may be.

(b) Any statutory levy / variation in the excise duty, cess on ED and sales tax and entry tax etc on the items ordered (final finished items for which rates are quoted) at the rates prevailing on the date of scheduled delivery or at the rates prevailing on the date of supply whichever is

lower, shall be borne by the Corporation. However, supplier has to furnish documentary evidence i.e. Notification for such levy / variation.

(c) Prices are to be quoted on firm basis and there shall be no variation of the same during the period of contract unless specifically agreed to and provided in the contract.

(d) If the dispatches are made within the scheduled time, prices as per the contract will be payable. However, if the dispatches are delayed, the Corporation will have the option to either charge liquidated damages or rate difference calculated on the basis of prices pertaining to the schedule date of dispatch and / or prices applicable to the actual date of dispatch i.e. prevailing rate, whichever is higher i.e. ordered value minus liquidated damages or prevailing rate whichever is lower, will be paid. However, extension in the validity of the contract will be required if the dispatches are made after expiry of the contract. If at any time, during the said period, the supplier reduces the sale price of such stores or sell such stores to any other person at a price lower than the price chargeable under the contract, he shall forthwith notify such reduction or sale to the Corporation and the price payable under the contract for the stores supplied after the date of coming into force such reduction or sale, shall stand correspondingly reduced.

15.2 SALES TAX/ VAT:

VAT/ The Central or State sales tax, if applicable will be paid at concessional rate on the cost of the finished goods being supplied including excise duty thereon at the rates prevailing at the time of scheduled delivery period subject to the suppliers claiming the same as a separate item in their bill. The paying authority shall furnish 'C' form / declaration form at the time of final settlement of the bills. The supplier shall furnish the following certificate on the body of the bill claiming aforesaid amount of Sales Tax / VAT.

"It is certified that the goods, on which VAT/ sales tax has been charged, have not been exempted under the VAT/Central Sales Tax Act, or the State Sales Tax Act or the rules made there under. The amount charged on

account of VAT/ sales tax on those goods are not more than what is payable under the provisions of the relevant act, or the rules made there under.:"

"Certified further that we (our branch/ or Agent) ……. Address ……. …….. are registered as dealers in the State of ……. Under local Registration No. …….. and in the State of ……. Under Central Registration No. …….. for purpose of Sales Tax/ VAT."

15.3 EXCISE DUTY & CESS ON EXCISE:

In case Excise duty & Cess on Excise Duty is payable on the finished goods which are to be supplied, the supplier shall record the following certificate on their bills.

"It is certified that the excise duty & cess on excise duty, on the goods on which it has been charged, has actually been paid by us and is not more than that is payable under the provisions of the relevant act, or the rules made there under. Excise duty gate pass should be enclosed along with the supplies and photo copy of ED gate pass should be enclosed along with copy of invoice to be forwarded to C.O. MM deptt."

15.4 PACKING AND MARKING:

a) All machinery equipments, hardware items and materials prone to deterioration shall be adequately packed to protect them against all damages, pilferage, rust etc. during transit and from atmosphere. Packing shall be adequate and suitable for transport by Rail / Road as required. Each package shall contain order no. and date and name of consignee.

b) Each consignment must relate to one purchase order only. Where dispatch of material against more than one order in a single consignment / case is warranted, the material against each order should be packed separately. Order numbers should be visibly marked outside all packages for easy identification.

c) Any loss, damages or pilferage in transit due to faulty / inadequate packing or on any other account will be to the account of the supplier.

d) All packing and forwarding charges are to be borne by the supplier.

15.5 DELIVERY AND LIQUIDATED DAMAGES:

a) The successful tenderer, on receipt of Work Order/Purchase Order, will finalise a detailed manufacturing schedule keeping in view the overall delivery schedule as per the order. He will indicate the completion dates of critical activities and on approval by CCI Ltd. the same will form the basis for monitoring the progress when the items are taken up for manufacture. The copies of the schedule shall be forwarded to Inspecting Authority besides Material Management Department.

b) LD for delay in deliver shall be levied @ ½ % per fortnight or part thereof on the belated supplies against each indent subject to maximum of 5% of the delayed portion of supplies against that indent. The corporation will, however, not be bound to prove that it has suffered to the extent of LD claimed. The LD for delay in delivery shall be levied on the landed cost at CCI's units inclusive of basic prices, taxes, duties & freight etc.

c) The time and date of delivery is the essence of the contract and the goods must be dispatched within the time and subject to the conditions specified. For such breach of contract, the Corporation will be entitled to take any other course of action against the supplier as it may deem fit like stoppage of business dealings / debarring from tendering etc.

15.6 FREIGHT:

a) Stores, ordered for, must be dispatched in such a way that the total freight charges whether based on cubic measurement or weight should be minimum keeping in view that the under load consignment are to be avoided.

b) The supplier shall obtain clear and unconditional Railway Receipt/Parcel way bill/Lorry receipt from the Carriers.

c) The supplier shall have to make arrangements for the dispatch of all over size dimensional consignment to purchaser's site and shall be responsible for taking permission, if necessary, from the concerned authorities for the movement of such oversize consignments from the station of dispatch to destination station. All expenses incurred in this connection shall be borne by the supplier.

15.7 INVOICING:

a) Two copies (one of which should be in original) of invoice, packing list/ delivery challan along with railway receipt / Lorry receipt/ Parcel waybill, Inspection certificate issued by the inspecting authority or similar other documents as above should be sent to the consignee. The documents as above should be sent within 72 hours from the dispatch of the consignments to avoid payment of demurrage / wharfage. Any demurrage / wharfage paid by the Corporation due to non / late receipt of documents will be to the account of supplier.

b) A telegraphic intimation giving details of RR/ Lorry receipt / Parcel way bill, consignment details, such as no. of packages, weights and values shall be sent to the consignee in advance.

c) One copy of invoice pre-receipted along with copies of packing list, delivery challan and inspection certificate issued by the inspection authority shall be sent to the paying authority. In case the dispatch documents are to be sent through bank, advance copy of the invoice shall be sent to the paying authority within 72 hours of the dispatch of the consignments.

d) One copy of the invoice along with a copy of packing list delivery challan shall be sent to the Officer who has placed the order.

e) If any extra charges including wharfage or demurrage are incurred in taking delivery of the consignment due to supplier's failure to observe the conditions mentioned above same will be recovered from the supplier.

15.8 <u>INSPECTION</u>:

(A) In case of supply

i) Pre-inspection at supplier's work will be carried out by P & I Dept. of CCI/ Unit / any other agency at the sole discretion of CCI Ltd.

ii) All inspection calls will be issued from the works and not sales Office with the stamp of the supplier, giving a clear notice of 21 days from the date of stamp of the Post Office when any items are offered for inspection.

iii) Inspection will cover checking of all items being manufactured by the supplier at his own works, at the works of his sub-supplier and also of any of his bought out items.

iv) The supplier will provide all facilities including tools, instruments and other apparatus to inspecting officer to facilitate inspection and avoid delay in work on this account.

v) `The test would normally be conducted as per BIS standards wherever available and in other cases as per prevalent engineering practices for consignments, checking of material will be done for chemical analysis, physical properties, visual inspection, non-magnetic property, test certificates and other non-destructive tests (if specified in the purchase order). Test verification of chemical composition will be done in a Govt. laboratory / Govt. approved laboratory / any other reputed laboratory at the discretion of CCI wherever required.

vi) The Inspector will have access to the premises / workshop of supplier, his sub-supplier at all reasonable times to undertake inspection, take samples, take any other measurement or readings and to check the progress of any of the items.

vii) Inspection will include checking of Raw Materials manufacturing procedures, stage inspection (as per stages to be indicated / required by CCI during execution) and final inspection. All detailed records about the stage inspection will always be kept by the manufacturer and CCI inspector will be at liberty to check those records on demand.

viii) For any sub contracted items, supplier will inspect them himself before offering them to CCI for inspection. In this regard, the supplier will submit his inspection report along with all documents while giving inspection call for sub-contracted items.

ix) The supplier will immediately on receipt of the order, draw an inspection plan with CCI's requirements.

x) Final inspection will be carried out when the material / equipments are ready in all respect preferably before painting. The extent and type of inspection will depend upon type of equipment / item and its function in general and will include items like checking of critical dimensions, physical tests, straightness / flatness and surface finish, checking of hardness of components, carrying out load / no load trails, dynamic / static balancing, leakage and hydraulic tests contract impression, tooth profile and back lash etc.

xi) The manufacturer will supply to the inspector all test certificates and records of their own internal inspection at the time of final inspection. These will include manufacturing records, destructive and non destructive tests, impulse test etc.

xii) If the inspector has advised the supplier to do certain rectification before dispatch of materials, these instructions will be carried out and materials will not be dispatched without these rectifications. Inspection by CCI inspectors will not absolve the supplier from his responsibility regarding the quality of materials supplied by him or his sub-contractors/ sub-suppliers. CCI will have the right to reject the materials if after their receipt at site, it is found that the rectifications advised by CCI were not carried out or the items do not give the specified performance as per the specifications and the guarantees.

xiii) For long delivery items, the supplier will send a monthly progress report indicating the latest status of each item / assembly to enable CCI to know the progress of work.

xiv) Not with standing the stage / final inspection done at the works of supplier, CCI reserves the right to inspect or test the goods at its destination site and any defects / short-comings noticed will be made good by the supplier/ work as per contracted time schedule, at his own expenses.

xv) CCI reserves the right to inspect any bought out item and in this regard the supplier will submit all necessary records, data and documents so as to enable CCI inspector to undertake inspection.

xvi) No material will be dispatched under any circumstances without clearance from CCI Corporate office.

xvii) All costs involved in connection with inspection/ testing at their works/ their sub supplier works will be borne by the supplier.

(B) In case of works:-

All the terms mentioned in (A) wherever applicable will stand valid in this case also in addition to the following:-

i) The Contractor will provide all facilities inspection and avoid delay in work on this account.

ii) Final inspection will be carried out when the equipment is ready in all respects.

iii) If the inspector has advised the contractor to do certain rectification, these instructions should be carried out.

iv) All costs involved in connection with inspection / testing / will be borne by contractor.

15.9 WARRANTY REGARDING QUALITY OF MATERIALS SUPPLIED

a) Supplier shall guarantee that all the items supplied by them whether manufactured by them or their sub-contractor or purchased from any other source and supplied to the corporation shall be new and free from all defects arising due to defective material or manufacturing defects. Items supplied shall be first class workmanship with effective design.

b) The supplier shall warranty to replace, rectify or repair free of cost at the factory site, the component or part of item proved to have become unserviceable due to any of the above defects within period of 12 months from the date of commissioning/ use of the material or 18 months from the date of dispatch of item(s) whichever is later. In the event of the supplier not complying with the above within a reasonable time, the corporation will have the option to rectify/ repair or replace the defective part(s) / component after giving three weeks notice to the supplier and recover the cost from the supplier.

16. CCI reserves the right to request for diversion of dispatch of materials to any of its other units. Difference in taxes, duties and freight charges if any, shall be borne by CCI.

17. In the event of negotiations, only downward revision of rates will be allowed. Any change in techno-commercial terms as agreed earlier, will not be permitted at this stage. Hence any qualifying remarks in the price bid revised/ negotiated offer will not be entertained and shall render the tender liable for rejection and forfeiture of earnest money deposit.

PART-III

SPECIAL TERMS & CONDITIONS

PART – III

SPECIAL TERMS AND CONDITIONS:

TENDER FOR DESIGN, ENGINEERING, MANUFACTURE, SUPPLY, CIVIL/STRUCTURAL DESIGN, INCLUDING CIVIL CONSTRUCTION, ERECTION, COMMISSIONING & PERFORMANCE TEST OF RABH/ ESP/ BAG FILTERS ON TURN KEY BASIS WITH EMISSION LEVEL OF LESSTHAN 30 MG/NM^3 AT BOKAJAN CEMENT FACTORY (ASSAM) COMPLETE IN ALL RESPECT i.e. POLLUTION CONTROL EQUIPMENTS COMPLETE WITH FAN, STACK AND OTHER ACCESSORIES FOR THE FOLLOWING SECTIONS:

I) REVERSE AIR BAG HOUSE FOR 1200 TPD PRE- CALCINATOR KILN AND VRM(COMBINED)

II) ESP FOR CLINKER COOLER OF 1200TPD KILN

III) BAG FILTERS FOR NEW COAL MILL AND UPGRADED CEMENT MILL.

In addition to the General Terms and Condition of tender under Part – I & II, the following terms and conditions will also apply to the contract. These special terms and conditions of Part-III and Part-IV and Its Annexure-IV-1 to Annexure IV-3, if contradictory to any conditions in Part – I & II, will prevail upon the conditions given therein.

The order will be released in three parts i.e. Part – A, B & C. The contract shall be finalized/ decided on lowest basis of total of part-A, B & C of individual section separately on turnkey basis i.e. i.e. (i) RABH for kiln and VRM (combined), (ii) ESP for Clinker Cooler and (iii) Bag Filters for Coal Mill, Cement Mill Classifier and Cement Mill Vent.

Part–A: From Design, Engineering, and Manufacturing and up to the stage of supply of material at site,

Part–B: For Civil and Structural.

Part–C: For Erection & Commissioning.

A. ELIGIBILITY CRITERIA:-

A.1 Experienced Parties having following eligibility criteria can submit their offer against this tender –

I) FOR REVERSE AIR BAG HOUSE FOR 1200 TPD PRE- CALCINATOR KILN AND VRM(COMBINED)

(i) Only experienced parties having executed projects of similar nature preferably in Cement industries who can execute this job on turnkey basis should only apply.

(iii) Average annual financial turn over during the last 3 years (08-09 to 10-11), ending 31st March of the previous financial year, should not be less than ₹. 3.10 crores

(iv) Experience of having successfully completed similar work during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:-

a) Three similar completed works costing not less than ₹. 4.12 crores.

or

b) Two similar completed works costing not less than ₹. 5.15 crores.

or

c) One similar completed work costing not less than ₹. 8.24 crores.

(II) FOR ESP FOR CLINKER COOLER OF 1200TPD KILN

(i) Only experienced parties having executed projects of similar nature preferably in Cement industries who can execute this job on turnkey basis should only apply.

(ii) Average annual financial turn over during the last 3 years (08-09 to 10-11), ending 31st March of the previous financial year, should not be less than ₹. 1.20 crores

(iii) Experience of having successfully completed similar work during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:-

a) Three similar completed works costing not less than ₹. 1.60 crores.

or

b) Two similar completed works costing not less than ₹. 2.00 crores.

or

c) One similar completed work costing not less than ₹. 3.20 crores.

D) FOR BAG FILTERS FOR NEW COAL MILL AND UPGRADED CEMENT MILL.

(i) Only experienced parties having executed projects of similar nature preferably in Cement industries who can execute this job on turnkey basis should only apply.

(ii) Average annual financial turn over during the last 3 years (08-09 to 10-11), ending 31st March of the previous financial year, should not be less than ₹. 0.81 crores

(iii) Experience of having successfully completed similar work during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:-

a) Three similar completed works costing not less than ₹. 1.08 crores.

or

b) Two similar completed works costing not less than ₹. 1.35 crores.

or

c) One similar completed work costing not less than ₹. 2.16 crores.

B. <u>ABOUT BOKAJAN CEMENT PLANT</u>:-

The Bokajan Cement Factory (BCF) is located at Bokajan in District Karbi-Anglong (Assam) in North East India. This plant belongs to Cement Corporation of India Limited, BOKAJAN Cement Factory.

The cement plant is located about 20-kms north of DIMAPUR on NH 39 in BOKAJAN. It is well connected with other parts of ASSAM, NAGALAND & MANIPUR by road. Nearest Airport is DIMAPUR in NAGALAND. BOKAJAN has also connected by Broad Gauge line.

<u>PROPOSED INSTALLATION OF AIR POLLUTION CONTROL EQUIPMENT:</u>

The management has decided to enhance the clinkerisation capacity from 600TPD to 1200TPD and enhance the cement grinding capacity from 600TPD to 800TPD. It is proposed to install a new stream of 1200TPD dry process Kiln complete with Pre-calcinator, new Clinker Cooler, 12TPH Coal Mill and an additional matching i.e. 140TPH Vertical Raw Mill to meet out the requirement of new kiln system. The existing cement mill of 35 TPH capacities (size 3.03 m dia x 13.56 m long) will be enhanced by converting it into close circuit and installing pre-grinder for Mill feed. To cater to the requirement of Raw Material i.e. Limestone , an additional 200TPH Limestone Crusher will be installed.

The total scope of work has been divided into two parts.

(i) Design, Engineering, Modification, Supply, Civil / Structural Design, including Civil Works / Foundations, Erection & Commissioning, for Capacity Expansion of Bokajan Cement Factory (Assam) on Turn Key Basis. (Only new Clinkerisation stream shall be installed. Part of clinker shall be ground at Bokajan and balance clinker shall be ground in a separate grinding unit located near Silchar in Assam).

(ii) Design, Engineering, Modification, Supply, Civil / Structural Design, including Civil/ Structural design, construction, erection, commissioning & Performance test of ESPs/ Bag filters for Process Control Pollution Control Equipment on turnkey basis with emission level of less than 30mg/NM^3 at Bokajan Cement Factory (Assam).

The job at Sl. No.(i) has been assigned to a separate agency who is responsible for the main plant machinery required for capacity expansion including the pollution control equipment required for venting.

This tender is for installation of Process pollution control equipment i.e., RABH/ ESP/ Bag filters. The parameter / data for designing the pollution control equipment have been given by the said agency.

Since the capacity expansion covers only a new clinkerisation unit, there is no new Cement Mill in the scope of the agency of the main plant machinery. However to enhance the capacity of the existing cement mill from 35TPH to 50TPH (OPC), only close circuiting of the existing Cement Mill is in the scope of the main plant machinery supply agency. However, the new Bag filters are in the scope of supplier of pollution control equipment as per this tender.

- BOKAJAN Cement Factory has opted Reverse Air Bag House for kiln over Electrostatic precipitator for de-dusting the kiln gases & VRM.(combined) The output gas of kiln will pass through the Vertical Raw Mill and the vent gas from Vertical Raw Mill will be input for Reverse Air Bag House.
- ESP for clinker cooler.
- Bag dust collector for 800TPD Cement Mill
- Bag dust collector for 12TPH Coal Mill

Proposed Pollution Control Equipment with Location under the scope of pollution control equipment supplier-

Sl. No.	LOCATION	PROPOSED
	NEW PLANT:	
1	Vertical Roller Mill 140TPH	Reverse Air Bag House (Common for Raw Mill & Kiln)
2	Kiln 1200TPD WITH Pre-calcinator kiln	
3	Clinker Cooler 1200TPD	ESP
4	Coal Mill 12TPH	Bag Filter
5	Classifier of 800TPD CEMENT MILL (Upgraded)	Bag Filter with a combination of Twin Cyclone
6	Cement Mill Venting Dust Collector	Bag Filter

1.0 SCOPE OF WORK AND TECHNICAL SPECIFICATIONS:

1.1 The scope of work includes Design, Engineering (Mechanical, Civil, Electrical & Instrumentation), Modification, Manufacture, Supply, Civil / Structural design, Construction, Erection, Hooking up, Commissioning and Performance test of ESP/Bag Filters, complete with Fan, compressor, Stack and all other accessories, for process control pollution control equipment on turnkey basis with emission level of less than 30mg/NM^3 at Bokajan Cement Factory (Assam) as per the Technical Specifications described in Annexure-Part-IV enclosed herewith.

2.0 PRICES:

2.1 The Bank Guarantees as mentioned under different columns (EMD, Security Deposit & Performance Guarantee etc.) are to be submitted as per CCI formats from any Nationalized Bank only for equal amount as validity indicated in the relevant clause with claim period of further three months.

2.2 Prices are to be quoted on firm and F.O.R. destination basis inclusive of Packing/ Forwarding charges, insurance, octroi, ED, Cess on ED, Service Tax, VAT/SST/CST, freight & Entry Tax etc.etc. showing break up as per Price Bid format only. However, if there is any statutory levy / variation in the Excise Duty, cess on ED, Service Tax, VAT/SST/CST and Entry tax, during the contractual period, shall be payable as per actual, as applicable, on submission of documentary evidence. No escalation during the period of contract / execution of the entire contract/extended period on whatever reasons thereof will be allowed in prices.

2.3 The price should be quoted strictly in our prescribed Price Bid Performa only enclosed with the tender, both in figures and words to avoid ambiguities. In

case of any difference in figures and words, the lower amount will be taken into consideration.

2.4 The award of the contract will be solely at the discretion of CCI.

3.0 PROJECT SCHEDULE:

3.1 The complete job as per the scope of work specified above should be completed within 14 (fourteen months) from the date of placement of the Letter of Intent (LOI). The date of placement of the Letter of Intent shall be considered as the Zero date for all purposes.

3.2 The submission and approval of detailed General Arrangement Drawings of the system (Mechanical, Civil and Electrical & Instrumentation Schemes) and technical specifications should be completed within 45 days from the date of placement of the Letter of Intent. In order to limit the time to 45 days, the tenderer will be required to depute their concerned technical expert(s) to BOKAJAN unit along with a the drawings / technical specifications etc. for getting the approval of the same by the project consultant appointed by CCI. All modifications/alterations, if needed as a result of deliberations between CCI, their project consultant and the successful tenderer, will be required to be incorporated at site only so as to finalize and to freeze the work of design and engineering in totality in one go. The technical experts(s) deputed by the tenderer should be capable of taking “on the spot decisions” in regard to all the aspects of design and engineering. The minutes of the meeting between CCI, their project consultant and the tenderer will be drawn after the conclusion of the above deliberations for future reference.

Decision of CCI in respect of all technical specifications, design drawing, diagrams, schemes and selection of vendors will be final.

3.3 The successful tenderer has to submit item wise Billing Schedule for the supply of material within 45 days from the date of placement of letter of intent. The billing schedule may be item wise and / or on the tonnage basis as the case may be.

4.0 PAYMENT TERMS:

The tenderer should clearly mention in the Techno commercial Bid of the tender about the mode of payment whether through RTGS or by cheque or by Demand Draft. In the case of payment through RTGS and Demand Draft necessary charges shall be borne by the successful tenderer.

4.1 Part – A: UP-TO TO THE STAGE OF SUPPLY OF MATERIAL AT SITE

4.1.1 90% (Ninety percent) of the cost of material (Part-A) and 100% excise duty, cess on ED, taxes and freight in progressive manner shall be released within 15 days after receipt, physical inspection and acceptance of material/ equipments at our factory site and after adjustment of any recovery/ liquidated damages for delay in delivery, if any.

4.1.2 10% (Ten percent) of the cost of material / equipments other than taxes, duties and freight is to be released after successful erection and commissioning on submission of Bank Guarantee for equivalent amount towards performance guarantee/ warranty for a period of 12 months from the date of successful commissioning with a claim period of further 3 months. The BG towards performance guarantee will be returned within 2 months of completion of guarantee/ warranty period.

4.2 Part-B: FOR CIVIL AND STRUCTURAL

4.2.1 80% of works completed will be payable within a week against Running Bill on monthly bills submitted by the tenderer.

4.2.2 10% shall be payable on completion of total civil works on certification of CCI Site incharge.

4.2.3 10% is payable on submission of Bank Guarantee for equivalent amount towards performance guarantee/ warranty for a period of 12 months from the date of successful commissioning with a claim period of further 3 months. The BG towards performance guarantee will be returned within 2 months of completion of guarantee/ warranty period.

4.3 Part-C: FOR ERECTION AND COMMISSIONING

4.3.1 80% (Eighty percent) of erection and commissioning charges & 100 % Services taxes will be payable within a week against Running Bill on monthly bills submitted by the tenderer.

4.3.2 10% (Ten percent) shall be payable on completion of erection and commissioning on certification of CCI Site Incharge.

4.3.3 Balance 10% (Ten percent) is payable on submission of Bank Guarantee for equivalent amount towards performance guarantee/ warranty for a period of 12 months from the date of successful commissioning with a claim period of further 3 months. The BG towards performance guarantee will be returned within 2 months of completion of guarantee/ warranty period.

5.0 LIQUIDATED DAMAGE (FOR DESIGN, MANUFACTURE, SUPPLY, ERECTION & COMMISSIONING):

5.1 Any delay beyond the schedule duration, will attract penalty @ 0.5% delay per fortnight of the total contract value subject to the maximum ceiling of 5% of the total contract value comprising Part-A, Part-B & Part-C .

5.2 The date of successful commissioning will be treated as the date of completion for the purpose of calculating penalty. However, Performance Guarantee Test shall be carried out as per clause 5.1 of technical specifications (PART-IV)

5.3 Recoveries for L.D. will be made from the final bills of the party in respect of Part-A, Part-B & Part-C.

6.0 SECURITY DEPOSIT:

6.1 The successful tenderer to furnish Security Deposit equivalent to 5 % (Five Percent) of the total value of the contract by way of Demand Draft/ bank guarantee (in CCI format) in terms of Clause 2 of Part-II of the tender towards satisfactory performance of the contract within 15 days from the date of placement of the Letter of Intent. Indemnity Bond towards SD will not be accepted.

6.2 This Security Deposit shall be refunded immediately after the warranty period and on the basis of the certificate given by the CCI for the successful completion of the contract in terms of performance guarantee as per clause No. 5.0 of PART-IV, It shall be lawful for the Corporation, if any difference or dispute is likely to exist, to defer repayment of Security Deposit or any portion thereof, which may be due until such difference or dispute shall have been finally settled or adjusted.

7.0 INVOICING:

7.1 Three copies of invoices showing basic rates, excise duty, cess on excise duty, full amount of taxes / VAT, freight etc. etc. and amount (10%) to be released against submission of Performance Guarantee, along with gate pass for excise duty and cess on ED indicating actual amount ED/Cess on ED paid, packing list, delivery challan, Railway Receipt/Lorry Receipt/ Parcel way bill or similar other documents are to be sent to the consignee. Copy of these documents should also be sent immediately after dispatch of the consignment to the destination by fax to avoid demurrage / wharfage.

7.2 Three copies of invoices of which one shall be original duly pre-receipted along with packing list/ delivery challan shall be sent to the paying authority directly.

7.3 If any extra charges including wharfage/ demurrage are incurred in taking delivery of the consignment due to supplier's failure to observe the conditions mentioned above, the same would be recovered from the supplier.

8.0 CONSIGNEE:

8.1 HOD (MM) CCI Bokajan Unit. C/o Bokajan Cement Factory, Distt. Karbi-Anglong (Assam). However, the Consignment Note (C/N)/ L/R shall be endorsed by CCI in the name of tenderer's representative posted at Bokajan to facilitate receipt, transport and safe custody by him at CCI site.

8.2 The successful tenderer should ensure that their site in charge would be available at Bokajan unit, before the first lot of material reaches the unit, for ensuring the receipt of the material and its safe unloading as well as custody etc.

9.0 PAYING AUTHORITY: H.O.D. (Finance) – CCI Ltd, BOKAJAN

10.0 INSPECTION

10.1 Pre-dispatch inspection shall be done at the tenderer's works or the works of tenderer's vendors. The tenderers shall give an advance notice of minimum seven days for enabling CCI to depute the inspector. Material will be dispatched only after dispatch clearance certificate given by CCI's inspector.

10.2 The equipments shall also be inspected at CCI site by the Corporation's representative.

10.3 Inspection shall, in no way, absolve the supplier of their responsibilities of workmanship, quality and performance guarantee offered by them.

11.0 PERFORMANCE GUARANTEE:

Performance guarantee shall be as per Clause No. 5.0 of (PART-IV) i.e. Technical specifications of Pollution Control Equipment. Deductions shall be made for the shortfall of performance as per the details given under.-

11.1 PENALTY FOR SHORTFALL IN PERFORMANCE GUARANTEE VALUE AND REMEDY FOR NON-PERFORMANCE.

A) If the supplier fails to attain all or any of the stipulated performance guaranteed value within a trial period of three months from the date of commissioning, the CCI Ltd. may at the request of the supplier extend the aforesaid period up-to a further period of three months, in the CCI Ltd. sole discretion. If the supplier has not fulfilled the stipulated performance guarantees within the above trial period, he shall:

i) In all cases pay the penalty to the CCI Ltd. as specified herein clause B and C upon which the CCI Ltd. shall issue the final acceptance certificate.

AND

ii) In cases where absolute guarantee values have been stipulated as per clause D and E herein, proceed to rectify / replace part or whole of the equipment / plant during the period stipulated by the CCI Ltd. (not exceeding six months from the expiry of the trial period) and fulfill the performance guarantee values as stipulated. In such cases acceptance certificate shall not be issued till the supplier has fulfilled the performance guarantee.

B) PENALTY FOR SHORTFALL IN EMISSION LEVEL:

Liquidated damages shall be leviable for non-fulfillment of the performance guarantee values on the basis that for every 1% (One percent) shortfall in the guaranteed emission level, the liquidated damages shall be 1% (One percent) of the contract value of the concerned equipment up-to 5% (Five percent) of the shortfall, the fraction over the whole percentage being charged on an equivalent basis in addition.

In case of shortfall being more than 5%, (Five percent) the supplier shall have to modify the equipment failing which the CCI Ltd. shall have the right to do so at the risk and cost of the supplier.

C) PENALTY FOR EXCESS POWER CONSUMPTION:

For every 0.25 kWh/t, excess in power consumption, over the guaranteed value at the rate of the amount calculated as under in Rupees shall be paid by the supplier to the CCI Ltd. as liquidated damages with the fractional excess over the whole figure being charged on an equivalent basis in addition.

Guaranteed collection of particulate matter per hour x 24 hrs/day x 330 days x _____ Rs/kWh x 3 yrs.

Unit rate of power (Rs./kWh) shall be considered as per power rates prevailing in the plant region at the time of performance guarantee tests.

D) SHORTFALL IN WEAR RATES FROM THE GUARANTEED FIGURES:

In case of non-fulfillment of wear guarantees, the supplier shall replace the wear parts free of cost to CCI Ltd. at site. Such replacement will also be provided in case of spare sets of wear parts. The material of replaced parts shall meet the specified requirements.

E) ABSOLUTE GUARANTEES:

Absolute Guarantees specified for all Fans supplied for Pollution Control Equipment in terms of maximum design volume, static pressure and efficiency.

It is further clarified that in case of failure to achieve the aforesaid absolute performance guarantee value, in the aforesaid case, the option of payment of liquidated damages is not available to the Supplier and the Supplier has to achieve the specified performance guarantee values for the equipment by rectifying / replacing part or whole of the equipment within the periods specified as per clause A herein before:

12.0 WARRANTY:

12.1 The tenderer shall guarantee that all the equipments supplied by them whether manufactured at their works or by their sub-suppliers or purchased from any other source and supplied to the Corporation shall be new and free from all defects and shall be of first class workmanship and quality.

12.2 The tenderer shall warranty to replace, rectify or repair free of cost at our factory site, the components or parts of the machinery, including bought-out which have become unserviceable due to any of the defects within a period of 12 (twelve) months from the date of successful commissioning of the plant or 18 (eighteen) months from the date of completion of delivery whichever is later.

If the tenderer is not complying with the above within a reasonable time, the Corporation shall have the option to rectify, repair or replace the defective parts/ machinery after expiry of two weeks' notice at the risk and cost of the tenderer.

13.0 FREIGHT, INSURANCE AND HANDLING AT SITE:

The freight and insurance charges will be borne by the successful tenderer. All loading, unloading, transportation and storage at site will be done by the successful

tenderer. Suitable covered space shall be provided by CCI for critical and other sensitive components free of charges. Erection-cum-storage insurance shall also be included in the successful tenderer's scope.

14.0 PARTS LIST:

The successful tenderer shall have to submit six copies of equipment wise detailed part list for each equipment, to enable us to verify the items at the time of receipt and installation.

15.0 SUBMISSION OF DRAWINGS/SCHEMES/TECHNICAL DOCUMENTS etc:

Six (6) sets of complete descriptive Catalogue, Dimensional General Arrangement Drawings with Electrical /Instrumentation Schemes and Operational/Maintenance Manuals are to be furnished by the successful tenderer.

16.0 RETURNS:

Monthly report of the dispatches for each previous month shall be sent by the successful tenderer by 5th of the subsequent month to the CCI, BOKAJAN with following particulars:-

i) Quantity due for supply during the month.
ii) Quantity actually dispatched with reasons for variation.
iii) LR No. and date.
iv) Bill no. and date.
v) Quantity awaiting dispatches.

A copy of above shall also be submitted to CCI, Corporate office, GM (MM/OPNS) ,Core-5 , Scope complex,7,Lodhi Road, New Delhi-110003.

17.0 TENDERER TO INFORM HIMSELF FULLY

17.1 The tender shall carefully study the enclosed tender documents and the documents referred to therein before submitting his offer. The tenderer shall fully satisfy himself on the suitability of the equipment, layout and Data/Specifications as indicated in the tender document and at work site and take full responsibility for the safe and efficient operation and guarantee of the quality of the subject contract.

17.2 The tenderer shall inspect the site and the existing facilities and satisfy himself of the site conditions and shall collect any other information, which he may require before submitting the tender. Claims and objections due to ignorance of site conditions and/ or failure to get the required information and particulars shall not be considered after submission of the Tender.

17.3 Tenderers shall quote their rates separately for each item on unit rate basis as per the prescribed Performa enclosed with tender papers at Annexure-F& F.1.

18.0 ACCOMMODATION

A suitable accommodation may be provided by the Corporation for tenderer's staff/workmen, subject to availability on chargeable basis.

19.0 OFFICE AND STORES SPACE AT SITE

19.1 Suitable space for the Contractor's Site Office-cum stores for tools and tackles shall be provided free of cost by the Corporation.

19.2 The Contractor shall have to obtain prior permission to bring in and take out any of his materials, tools and tackles from factory premises.

21.0 TOOLS AND TACKLES:

The Contractor shall bring his tools and tackles required for the safe and timely execution of the job and bear the responsibility of its safe storage.

22.0 WORKING HOURS:

The Contractor's technicians shall observe working hours on three shifts as observed by the Corporation. The Contractor's technicians shall also be available for supervision of work beyond the normal working hours and on holidays, if job demands, for which no extra payment of any kind will be made by the Corporation.

23.0 SUPERVISION:

The Contractor will employ qualified and experienced Resident Engineer for overall supervision of the complete project. The Contractor will employ trained supervisor to carry out the work timely and safely. Contractor's Resident Engineer and the Supervisors would ensure the compliance of all the safety regulations of the statutory bodies of the Government. However, responsibility for the same would be with the Contractor.

The Contractor will ensure the presence of his Resident Engineer and Supervisors at work-site during the period of work and they will not leave station due to any reason without the permission of Corporation.

24.0 RESPONSIBILITY FOR COMPLETENESS:

Any work which may not be specifically mentioned in the specifications of contract or drawings but which are usual or necessary for completion of the work under the contract are to be provided / executed by the Contractor

without any extra charges and the contract work must be completed in all details to ensure the specified performance.

The Contractor will submit a satisfactory work completion report-cum-handover of work in writing to the Corporation, which should be acceptable to the Corporation.

25.0 If any equipment is damaged in the course of the execution of the contract, the Contractor will rectify or replace it at their cost and bring it back to the working condition. This will cover the Plant building also.

26.0 COMPLIANCE TO LABOUR LAWS:

26.1 The Contractor shall arrange the labor license, if required, for the work to be completed.

26.2 The Contractor will have to observe all the provisions of labor laws in force or as amended from time to time in respect of his work force.

26.3 Female labor should not be put at hazardous places. They will not be allowed to work between 6.00 P.M. to 6.00 A.M.

26.4 In case of any complaint of non-payment, the Corporation will deduct the pertaining amount from the Contractor's Bill and arrange for the aforesaid payment.

27.0 INSURANCE OF CONTRACTOR'S WORKFORCE:

The Contractor shall submit the Insurance Certificate covering all of their workmen against any accident arising out during the execution of work. Contractor will indemnify CCI against any damage caused to their employee/machine during concurrence of this contract.

Corporation shall not be liable for or in respect of any damages or compensation payable at law in consequent of any injury/death to any workmen or other person in Contractor's employment and against all claims, demands and expenses whatsoever or in relation there to.

PART-IV

TECHNICAL SPECIFICATION

PART-IV

TECHNICAL SPECIFICATIONS

TENDER FOR DESIGN, ENGINEERING, MANUFACTURE, SUPPLY, CIVIL/STRUCTURAL DESIGN, INCLUDING CIVIL CONSTRUCTION,ERECTION,COMMISSIONING & PERFORMANCE TEST OF RABH/ ESP/ BAG FILTERS ON TURN KEY BASIS WITH EMISSION LEVEL OF LESSTHAN 30 MG/NM^3 AT BOKAJAN CEMENT FACTORY (ASSAM) COMPLETE IN ALL RESPECT i.e. POLLUTION CONTROL EQUIPMENTS COMPLETE WITH FAN, STACK AND OTHER ACCESSORIES FOR THE FOLLOWING SECTIONS:

I) REVERSE AIR BAG HOUSE FOR 1200 TPD PRE- CALCINATOR KILN AND VRM(COMBINED)

II) ESP FOR CLINKER COOLER OF 1200TPD KILN

III) BAG FILTERS FOR NEW COAL MILL AND UPGRADED CEMENT MILL.

1.0 SCOPE OF WORK AND SUPPLY - AS PER ANNEXURE-IV-1

2.0 DESIGN DATA FOR NEW ESPs/ BAG FILTERS & TECHNICAL INFORMATION TO BE FURNISHED ALONG WITH TENDER OFFER - AS PER ANNEXURE-IV-2

3.0 CONDITIONS FOR ERECTION AND COMMISSIONING. - AS PER ANNEXURE-IV-3

4.0 COMPLETION PERIOD

Design, Engineering, Manufacture, Supply, including Civil/Structural design, Construction, Erection and Commissioning should be completed within 14(fourteen) months period from the date of placement of the Letter of Intent (LOI).

5.0 PERFORMANCE GUARANTEE

5.1 The performance guarantee test is to be carried out after one month or 500 running hours of the kilns and VRM, Coal Mill and Cement Mill, whichever is earlier. The period is to be reckoned from the date of completion of erection and commissioning including defect rectification.

The total duration of the performance guarantee test would be 72 hours of continuous operation of each unit. If there is any interruption during the continuous run of the system for 72 hours exceeding four hours on cumulative basis, Performance Guarantee Test is to be repeated for another 72 hrs. The test should be

(a) For the trouble free operation of the system.
(b) For guaranteed emission level.
(c) For the guaranteed power consumption.

The consultant appointed by CCI Ltd and the tenderer both, will be required to deliberate on the methodology of carrying out the Performance Guarantee test as indicated above and the draft protocol may be accordingly drawn up on the basis of mutually agreed terms. After successful completion of the Performance Guarantee Test, a protocol as mutually agreed is to be signed with CCI, giving the monitored data and certifying the results so obtained.

5.2 The successful tenderer shall guarantee the successful and satisfactory operation of the equipments and material supplied, erected and commissioned under the contract as per the specifications and documents.

5.3 The successful tenderer shall further guarantee that the equipments and material supplied by them and installed under their supervision shall be free from all defects in design, material and workmanship and shall upon written notice from the CCI Ltd., rectify such defects as developed under the normal use of the said equipments and material within the period of guarantee / warrantee specified in the relevant clause of terms and conditions of the contract PART-III.

5.4 The successful tenderer shall provide the instruments, including electrical meter, tools and tackle, equipments required for the performance guarantee test.

5.5 The modification/ alterations/ rectification, if any shall be carried out immediately on completion of the performance guarantee test, but in any case within a period of 15 days from the date of performance guarantee test, In case the tenderer fails to carry out the modification / alterations/ rectification within the above period, CCI reserves the right to carry out the same at the risk and cost of the tenderer.

6.0 SPECIFICATIONS OF ELECTRICAL INSTRUMENTATION ITEMS:

Electrical / Instrumentation items to be supplied under this tender i.e. HT & LT Motors, M C C's, electrical instruments, cables, switches, contractors, etc. should conform to the latest B.I.S. / International standards. M C C's will also comprise of one module for measuring power consumption of the system supplied by the tenderer.

ANNEXURE – IV-1

SCOPE OF WORK / SUPPLY

The scope of work includes:-

1. PART-A: DESIGN, MANUFACTURE AND SUPPLY

This includes Design, Engineering and supply for the new Pollution control equipments complete with Fan, Stack and all other auxiliaries, Civil, Mechanical, Electrical & Instrumentation and Insulation as proposed below:

New Pollution Control Equipment

Sl. No.	LOCATION	EQUIPMENT	Qty.
1(a)	Vertical Roller Mill 140TPH	Reverse Air Bag House (Common for Raw Mill & Kiln)	1
1(b)	Kiln 1200TPD WITH Pre-calcinator kiln		
2	Clinker Cooler for 1200TPD Kiln	ESP	1
3(a)	Coal Mill 12TPH	Bag Filter	1
3(b)	Classifier of 800TPD CEMENT MILL (Upgraded)	Bag Filter with a combination of Twin Cyclone	1
3(c)	800TPD Cement Mill (Upgraded) Venting Dust Collector	Bag Filter	1

Preparation of General Arrangement and other arrangement drawing, manufacture and supply of all equipments and accessories, required for the proposed system in totality. Civil design of foundations, structures, gallery, gallery supports, shed Electrical/instrumentation scheme including single line diagram etc. and preparation of related drawings. Design and fabrication of outlet connecting ducts and connecting the collector's discharge material transport to main plant storages / conveying system are in the scope of tenderer.

2.0 PART-B: SCOPE OF CIVIL AND STRUCTURAL

2.1 Civil and Structural works of all the equipment's Civil foundation for RABH, Clinker Cooler ESP, Cement Mill Classifier Bag Filter with twin cyclone, Cement Mill Vent Bag Filter and Coal Mill Bag Filter, including all Fans, Ducts and Stacks, Inlet and outlet duct supports Civil foundation and Structural works, shed galleries platform and all type of Structural works related to the above mentioned pollution control equipments are covered under the tenderer's scope.

2.2.1 The average soil bearing capacity for Design is 16.5T/M^2 as the Bokajan Cement Factory falls within systemic zone-V.For detail refer Specification for Civil Engineering and Design Annexure-IV-2-D

3.0 PART-C: SCOPE OF ERECTION AND COMMISSIONING

3.1 Erection and commissioning of all the equipments Mechanical, Electrical Instrumentation and Insulation of equipment and outlet ducts are covered under the tenderer's scope.

3.2 The erection should be completed without affecting the plant operation and it should be planned in such a manner that only a bare minimum plant shut down period is taken at the end for hooking up with the operating plant.

4.0 ERECTION OF MECHANICAL EQUIPMENTS:

4.1 It will cover the entire supplies made by the tenderer i.e. Outlet ducts, chutes, piping, screw conveyor, belt conveyor, air slide, sheds, structures, gallery, foundations etc.

4.2 Inter connections and tapping to the existing plant equipments/new plant equipments.

5.0 ERECTION OF ELECTRICAL & INSTRUMENTATION ITEMS:

5.1 Erection of electrical and instrumentation items and hooking up with the existing system.

5.2 Laying, glanding and terminating of all power, control and instrumentation cables.

5.3 Earthing of all electrical and instrumentation equipments with main grid as per electricity ruler amended up to date.

5.4 Condition for erection and commissioning is given separately; refer ANNEXURE-IV-3

6.0 GENERAL POINTS

As the tender for supply, design and erection is on turnkey basis the tenderer shall provide a common compressor for de-dusting all the pulse jet Bag Filters instead individual for each pulse jet Bag Filters. The common compressor shall be installed along with Air Dryer, moisture classifier and pressure regulator wherever required. The compressor is to be installed in the common compressor house and the air line should be routed through a pressure vessel to all individual Bag Filters. Two numbers (i.e. one for the system and another stand by) of equal capacity compressor is to be supplied and erected by the successful tenderer.

i) All the modifications required to be carried out in the existing system, hooking up of the proposed system with existing mechanical, electrical equipments and control system and removal of the existing equipments which come in the way of the proposed system.

ii) All civil and structural work, like foundations, gallery, trestles, covering sheds and any other civil modification required in the existing arrangement to install the proposed system etc.

iii) Control panel and power distribution board for supply to all drives should be designed and engineered by the tenderer but shall be as per approval of CCI and their consultant. Suitable local push buttons are to be provided.

iv) All power control and instrumentation cables required for the system and earth conductors for grounding with main grid.

v) All inter connecting chutes, ducting, piping etc. required for the new plant equipments.

vi) **Even though the scope of equipment supply is elaborated, it is the responsibility of the tenderer to ensure that Design, Manufacture, Supply, Erection and Commissioning is complete including auxiliaries, ducts chutes, supports, dampers, expansion joints and any other items required for proper functioning of the proposed Pollution Control Equipments**.

vii) Six sets of Operational and instructions manuals of all equipments, six prints of all drawings prepared for the system, fabrication and erection is to be submitted by the successful tenderer.

viii) One set of reproducible of all the drawings prepared for the proposal, along with its soft copy and data of all equipments and accessories supplied are to be submitted by the successful tenderer, after execution of the job by incorporating the changes made during erection and commissioning.

ix) Sheds / Gallery are to be illuminated by providing sodium vapor lamps of 125 watts, at every ten meters in the gallery and minimum two lamps in each shed. PVC armored Aluminium conductor cable size 2 x 2.5/4x 2.5 sq. mm to be laid for this purpose and to be kept in the scope of supply/ erection/commissioning. Beside, the above, suitable miniature circuit breaker panel with main MCB is to be provided/ installed by the tenderer.

x) The ESP should be of sturdy fabricated casing .The minimum thickness of the casing should 5- 6 mm special steel with bracings. Top floors supporting top boot and complete ESP to be covered with shed. Inter mediate floors to

be provided for equipment support, operation and maintenance. Separate *stairs shall be* provided for access to all floors.

xi) The tenderer shall provide ceramic tiles (wear resistance quoting) inside the inlet duct of ESP for clinker cooler.

GENERAL INCLUSION AND EXCLUSIONS

A. INCLUSION:

(i) CIVIL & STRCTURAL -

- Civil Engineering, Construction work, Foundation work Roofing and all Structural work related to the equipments under the scope of this tender.

(ii) MECHANICAL -

- Drive arrangement complete in all respect including fan, motor etc.
- All standard / special gear boxes required for the system.
- Complete drive system including both drive and driven pulley duly bored, V-belts, sprockets, guards etc. are included in the scope.
- All type of input and output couplings duly bored complete in all respects with guards.
- Base frame / base plate and slide rail for the equipments wherever required.
- Foundation bolts / fixing bolts / holding down bolts with nut and washers for all equipment.
- Metallic expansion joints complete set of compensator / flexible connections required in the process ducts, vents, including inlet/outlet duct with isolation/control dampers, actuators etc. equipment as required.
- Matching flanges with suitable sealing for equipment to connect chutes / ducts, gets, valves etc.
- All service / maintenance platforms and related steel structures integral to equipments.
- Compressed Air System, Compressor required for the system, Local Air Receiver, Fitting Valves Auxiliaries and Piping from, each equipment to a common point for individual package.
- Vibration damper for fans, blowers etc.
- Safety / alarm device for safe and efficient operation.
- Supply of Outlet ducting, venting, hoppers and chutes with supports, etc.

- Complete set of flow control and isolation dampers with matching flanges wherever required including those to be installed in the ducting, complete with actuators.
- Lubrication and hydraulic system complete in all respect with pumps, pipe lines filters, coolers protective system, drive arrangement drive motor, Coolers / lubrication, safety alarms, etc.
- All Equipments will be cover with proper Roofing/shed. The CGI sheets to be used for Roofing/ shed should not be higher than 20 SWG of SAIL/TATA make only.
- Finish painting
- First fill of lubricants, greases etc. for all equipment supplier.
- Insulation of all Pollution Control Equipment i.e. RABH, ESP and Bag Filter are to be completed in accordance with industrial provision for hot insulation. (Refer detail requirement of insulation in clause no. X, Thermal insulation)
- Inlet and outlet both ducts of Cement Mill venting Bag Filter is in the scope of this tender.
- Any items not specifically excluded from the scope of supply / work.

(iii) ELECTRICAL -

- RABH Fan motor to be 6.6KV rating.
- All LT Motors to be energy efficient.
- Necessary approval of related Electrical drawings from Electrical inspectorate to be arranged by the tenderer.

(**iv) INSTRUMENT -**

- Proximity switches for chute gates, valve position and similar application.
- End limit switches and torques switches built in the actuators of shut off Dampers / Gates, Regulating Damper, Dosing Valves, Control Valves, etc.
- Pressure switches for monitoring control Air, Seal Air pressure gearbox lube oil, Atomizing air, Air receiver, and Blower outlet.
- Pressure, flow and temperature switches / sensors and transmitters.
- RTDs for protection and monitoring of fan bearing and oil temperature.
- Cable glands, lugs and connecting junction boxes for instruments, motors and sub-control panel.

- Mounting Arrangements (viz. bracket, hole, flange mounting socket) for instruments not supplied by suppliers but required to be mounted on supplier's machine / equipment.
- Hand held programming unit for Aux. PLCs.
- Complete set of instruments including sensors, transmitter. The transmitter shall be suitable for 220V AC power supply. All output signals shall be 4-20mA galvanically isolated types. For temperature Measurement only RTD shall be provided.
- All safe / Alarm devices and Mimic Indications are essential with equipment.
- Position transmitters (4-20mA) built-in with the actuators of regulating Duty Damper, Dosing Valves, Control Valves, etc.
- Complete instrumentation for monitoring and safety of process and equipments.
- Mounting sockets on main machinery for RTD, etc.
- Flow sensing primary element for all flow measurement viz. orifice plate / venture tube or any other means.
- Level switches for Hoppers, Process Bag Filter Hoppers, Feed bins etc.
- Commissioning and start up of instruments, actuators and sub-control system included in supplier's scope.
- All variable Speed drives unless otherwise specified.
- Differential pressure switches for compressed Airline, Bag Filters, etc.
- All Gas analyzer.
- Differential pressure switches across bags with tubing with low, high and high contracts.
- Solenoid vales shall be suitable for 220V AC.
- Electronic controller suitable for operation from remote and local. It shall provide remote mode, healthy and differential Pressure high, running, fault signals for remote monitoring.
- Junction box with flexible cable to individual solenoid valves.
- Online opacity monitor.

B. <u>EXCLUSION:</u>

- Permit and Permissions for plant operations.
- Supply of Raw Materials, Power and Fuel for plant operations.
- Inlet connection to the Pollution Control Equipments is under the scope of Main Equipment Supplier except for cement mill venting Bag Filter.

ANNEXURE-IV-2

DESIGN DATA FOR NEW ESP/BAG FILTER &TECHNICAL INFORMATION TO BE FURNISHED ALONG WITH TENDER OFFER

1. DESIGNED DATA OF

1.1 DESIGNED DATA OF REVERSE AIR BAG HOUSE (RABH) FOR NEW 1200TPD KILN & RAW MILL COMBINED:

1.	Purpose	:	For cleaning of existing Gas from Pre-heater/for De-dusting VRM Vent Air
2.	Material to be handled	:	Partially calcined dust with Limestone dust
3.	Particle size distribution	:	
	10 – 45 micron (%)	-	85
	45 – 90 micron (%)	-	10
	90 – 212 micron (%)	-	3
	Above 212 micron (%)	-	2
4.	Moisture in out let gas (Kg /NM^3 of Gas)	:	3 - 5% approx
5.	Dust Concentration of gas gm/NM^3	:	120 (Inlet to RABH)
6.	Gas Volume to be handled M^3/ hr.	:	5,000Nm^3 /Minute at 220^{0}C At 630mm WG–Combined 90,000 Nm^3 / Hr. Direct
7.	Inlet Gas Temperature (Normal)	:	260^{0}C – 300^{0}C
8.	Inlet Gas Temperature (Occasionally)	:	400^{0}C
9.	Dew Point	:	60^{0}C
10.	Dust Concentration desired in clean gas	:	≤ 30mgm/Nm^3
11.	Nature of Dust	:	Abrasive
12.	Type of Cleaning	:	Reverse Air
13.	Filter Bag Material	:	BHA Tex ePTFE* membrane Filter Bag suitable for temperature up to 260^{0}C
14.	Type of discharge	:	Rotary Air Lock

- The following is proposed in the design of RABH –

1) The collection hopper is proposed to have six discharge points with six numbers of hand operated slide gate below the Bag house of 300mm x 300mm opening size.

2) The RABH should be complete in all respect i.e. with Inlet air cooling system (wet / dry), Bag house fan, Dampers, Reverse Air Fan Ducting from Bag

house outlet to fan and stack including Duct support expansion joints at inlet and outlet of RABH for the duct connection and stack for Bag House as per the circuit requirement.

- **The following items are in the scope of Main Plant Machinery Supplier -**

(1) Rotary Vane Feeder (RVF) below RABH - 6 Nos.

(2) Enmass conveyors below RVF - 3 Nos.

(3) Motorized Damper for Dilution Air at RABH inlet. - 1 No.

(4) Ducting up-to RABH inlet.

Refer to Flow Diagram ST/BKJ/KL/PCE-007

Note: Though the Rotary Vane Feeders (RVF) below RABH, Enmass Conveyors below RVF are in the scope of main plant machinery supplier design requirement has to be provided by the pollution control equipment vendor.

1.2. DESIGNED DATA OF ESP FOR NEW 1200TPD CLINKER COOLER:

1. Purpose : For cleaning of Exhaust Gas from Clinker Cooler Vent Air
2. Material to be handled : Clinker dust
3. Particle size distribution :
   - 10 – 45 micron (%) - 50
   - 45 – 90 micron (%) - 30
   - 90 – 212 micron (%) - 15
   - Above 212 micron (%) - 5
4. Moisture in out let gas (Kg/NM^3 of Gas) : Dry
5. Dust Concentration in gas gm/NM^3 (Max.) : 80
6. Gas Volume to be handled M^3/ hr. : 3500M^3/Min.at300^{0}C & 210mmWG
7. Inlet Gas Temperature (Normal) : 260^{0}C – 310^{0}C
8. Inlet Gas Temperature (occasionally) : 450^{0}C
9. Dew Point : 60^{0}C
10. Dust Concentration desired in clean gas : ≤ 30mgm/Nm^3
11. Nature of dust : Abrasive
12. Density of Gas : 0.60 – 0.65kg/M^3
13. Pressure drop in ESP : 20mm WG

- The following is proposed in the design of ESP –

1) The collection hopper is proposed to have two discharge points with two numbers of hand operated slide gate below the ESP of 300mm x 300mm opening size.

2) The ESP should be complete in all respect i.e. with Cooler Exhaust Fan, Dampers at Inlet of Cooler Exhaust Fan Ducting from Clinker Cooler outlet to fan and from outlet of Cooler Exhaust Fan to stack including Duct support expansion joints at inlet, outlet of ESP and outlet of Fan for the duct connection and stack for ESP Fan as per the circuit requirement.

- **The following items are in the scope of Main Plant machinery Supplier -**

(1) Rotary Air Lock below ESP, Cap. 5 TPH - 2 Nos.
(2) Ducting up-to ESP inlet.
Refer to Flow Diagram ST/BKJ/CO/PCE-008

Note: Though the Rotary Air Lock below ESP is in the scope of main plant machinery supplier design requirement has to be provided by the pollution control equipment vendor.

1.3(a). DESIGNED DATA OF BAG FILTER FOR NEW 12TPH COAL MILL:

1.	Purpose	:	For Deducting of Exhaust Gas from Mill
2.	Material to be handled	:	Pulverized coal dust coming out of Coal Mill system
3.	Particle size distribution	:	
	10 – 45 micron (%)	-	84
	45 – 90 micron (%)	-	11.7
	90 – 212 micron (%)	-	3.1
	Above 212 micron (%)	-	1.2
4.	Moisture in out let gas (Kg/NM^3 of Gas)	:	0.06
5.	Dust Concentration of gas gm/NM^3	:	430
6.	Gas Volume to be handled M^3/ hr.	:	40000M^3/Hr. at 90^{0}C & 500mmWG
7.	Inlet Gas Temperature (Normal)	:	90^{0}C - 120^{0}C
8.	Inlet Gas Temperature (occasionally)	:	130^{0}C
9.	Dew Point	:	60^{0}C
10.	Dust Concentration desired in clean gas	:	≤ 30mgm/Nm^3
11.	Nature of dust	:	Abrasive
12.	Type of cleaning	:	Reverse jet
13.	Filter Bag Material	:	Anti static polyester needle felt / BHA Tex ePTFE* membrane Filter Bag suitable for temperature up to 135^{0}C
14.	Type of discharge	:	Rotary Air Lock

- The following is proposed in the design of Coal Mill Bag Filter –

1) The collection hopper is proposed to have two discharge points with two numbers of hand operated slide gate below the Coal Mill Bag Filter.

2) The Coal Mill Bag Filter should be complete in all respect i.e. with Coal Mill Circulating Air Fan, Dampers at Inlet of Air Circulating Fan, Ducting from Coal Mill Bag Filter outlet to Fan and Fan to Stack including Duct support expansion joints at inlet and outlet of Coal Mill Bag Filter for the duct connection and stack for Coal Mill Bag Filter as per the circuit requirement Including thermal insulation of complete circuit.

3) The coal being prone to fire hazard, spark trap and Nitrogen Auto - Purging system or any other improved fire protection system is to be considered.

- **The following items are in the scope of Main Plant machinery Supplier -**
  (1) Rotary Air Lock below Coal Mill Bag Filter, Cap. 6 TPH each complete with drive etc. - 2 Nos.
  (2) Ducting up-to Coal Mill Bag Filter inlet.
  (3) Screw Conveyor, capacity 12TPH and 315mm dia x 6000mm long Refer to Flow Diagram ST/BKJ/CL/PCE-012.

Note: Though the Rotary Air Lock below Coal Mill Bag Filter and screw conveyor below Rotary Air Lock is in the scope of main plant machinery supplier design requirement has to be provided by the pollution control equipment vendor.

1.3(b) <u>DESIGNED DATA OF BAG FILTER FOR 800TPD UPGRADED CEMENT MILL:</u>

1. Purpose : For Dedusting of Classifier Exhaust Gas from Cement Mill Classifier
2. Material to be handled : Cement Dust coming out of the Cement Mill (OPC / PPC)
3. Particle size distribution :
   - 10 – 45 micron (%) - 50
   - 45 – 90 micron (%) - 35
   - 90 – 212 micron (%) - 10
   - Above 212 micron (%) - 5
4. Moisture in out let gas (Kg/NM^3 of Gas) : Negligible
5. Dust Concentration of gas gm/NM^3 : 790
6. Gas Volume to be handled M^3/ hr. : 99000 at 400mmWG
7. Inlet Gas Temperature (Normal) : 100^0C -125^0C
8. Inlet Gas Temperature (occasionally) : 130^0C
9. Dew Point : 40^0C
10. Dust Concentration desired in clean gas : ≤ 30mgm/Nm^3
11. Nature of Dust : Abrasive
12. Type of Cleaning : Reverse jet

13. Filter Bag Material : BHA Tex ePTFE* membrane Filter Bag suitable for temperature up to 135^0C
14. Type of discharge : Rotary Air Lock & Screw Conveyor

1.3(c). <u>DESIGNED DATA OF</u> <u>MILL VENT BAG FILTER</u>

1. Gas Volume to be handled M^3/ hr : 30000NM^3/hr
2. Pressure drop across mill : 120mmWG
3. Dust Concentration at Inlet to Bag Filter : 250gm/NM^3
4. Dust Concentration desired in clean gas : 30mgm/Nm^3
5. Type of Cleaning : Reverse jet

- The following is proposed in the design of Cement Mill Classifier Bag Filter –

1) Cement Mill Classifier Bag Filter is to be accommodated in the existing cement mill building.

2) The collection hopper is proposed to have two discharge points with two numbers of hand operated slide gate below the Cement Mill Classifier Bag Filter.

3) The Cement Mill Classifier Bag Filter and Mill Vent Bag Filter should be complete in all respect i.e. with Cement Mill Classifier Bag Filter, Circulating Air Fan, Dampers at Inlet of Air Circulating Fan, Ducting from Cement Mill Classifier Bag Filter outlet to Fan and Stack including Duct support expansion joints at inlet and outlet of Cement Mill Classifier Bag Filter for the duct connection and stack for Cement Mill Classifier Bag Filter as per the circuit requirement. The Mill Vent Bag Filter disposal equipments up-to the main circuit is in the scope of this tender. This also includes the thermal insulation of complete circuit within the scope of this tender.

4) The dust concentration in incoming gas is very high (i.e. 790gm/NM^3). Hence a Pre-collector like twin cyclone is to be provided by the tenderer in the inlet circuit of Cement Mill classifier Bag Filter with complete accessories i.e. hand operated slide damper and Rotary Van Feeder with drive below the Pre-collector provided.

- **The following items are in the scope of Main Plant machinery Supplier –**

(1) Ducting up-to Pre-collector / Bag Filter Inlet.

(2) Rotary Vane Feeders for classifier Bag Filter : 2 Nos.

(3) Screw Conveyors below the Classifier Bag Filter : 2 Nos.
Refer to Flow Diagram ST/BKJ/CM/PCE-010

Note: Though the Rotary Vane Feeder below classifier Bag Filter is in the scope of main plant machinery supplier design requirement has to be provided by the pollution control equipment vendor.

Data to be furnish by Pollution Control Equipment Tenderer:

The tenderer for pollution control equipment has to submit the following data, along with their offer, for consideration of Cement Corporation of India Ltd.-

(a) GA drawing along with Load data for cement mill and coal mill bag filter for incorporation in layout of these buildings.

(b) Load required from each Load centre.

(c) Flow sheet along with equipment list

(d) Cable connection from MCC/Field instruments/PLC up-to I/O Panel of Main Machinery.

2. <u>TECHNICAL INFORMATION TO BE FURNISHED BY THE TENDERER ALONG WITH TENDER OFFER:-</u>

A. <u>Operational Data (New RABH, ESPs, Bag Filters):</u>

Gas volume M^3/ hr. :

Inlet Gas temperature (Normal $)^0C$:

Inlet Gas temperature (Design $)^0C$:

Dew Point :

Dust Concentration in system Outlet gas gm/m^3 :

Dust Concentration in clean gas mg /m^3 :

B. <u>Mechanical Components, Parameter, (New RABH, ESPs, Bag Filters):</u>

B1. <u>ESPs</u>

Type of ESP :

Size of ESP :

No. of Electrical fields :

Height of fields :

No. of inter electrodes spacing :

Spacing between collecting electrodes plates :

Collecting electrodes area :

Gas flow M^3/hr. :

Inlet Gas temperature (Normal $)^0C$:

Inlet Gas temperature (Design $)^0C$:

Gas velocity in electrical fields :

Residence time (Taken for passage in the Electrical field) :

Housing (Material/thickness) mm :

Roof (Material/thickness) mm :

B2. RABH AND DUST COLLECTORS

Type :

Model :

Capacity :

No. of Bags :

Filter area per bag :

Total Filter area :

Air to cloth ratio :

Pressure drop across bag filter :

Overall dimensions :

Total weight of unit :
Type of hopper :
Screw Conveyor :
(Capacity & Drive Details)

Rotary Air Lock :
(Capacity & Drive Details)

Insulation- thickness, density & Quantity :

BAGS

Make of fabric of bags :

Fabric Material Fabric weight :

Bag size :

Permeability :

Max. operating temperature :

Normal operating temperature :

Weight :

Guaranteed life of bag :

PULSING ARRANGEMENT

Type :

Quantity :

Size :

Pulse duration :

Pulse interval :

C. Electrical Components, Parameters (ESPs, New RABH, Bag Filters):

C1. ESP

Number of HT power units :

Connecting voltage and frequency :

Make :

Type designation :

Output current of each unit :

Arrangement :

Peak Voltage :

Supply connected load by unit :

Rectifier :

Expected power consumption of ESP :

Number of collecting electrode rapping Motor:

Number of emitting electrode rapping motor :

Number of gas distribution rapping motor :

C2. RABH / BAG FILTERS

Make of fabric of bags :

Specification of Electrical and Instrumentation Control:

Specification of Safety devices :

Connected Load :

Guaranteed Power Consumption :

Connecting voltage and frequency :

Type designation :

Output current of each unit :

D. <u>Insulator Heating (New RABH, ESPs, Bag Filters);</u>

Number of heating elements :

Heating elements :

Output of each heating element :

Temperature regulation by :

No. of thermostats :

E. <u>Dust Discharge Devices (New RABH, ESPs, Bag Filters):</u>

Number of Screw Conveyor :

Kind of Screw Conveyor :

Diameter of Screw Conveyor (ϕ / Pitch) :

Drives HP/ RPM :

Number of Rotary Valves :

Arrangement :

Drives, for Valve (HP/RPM) :

F. <u>Fan (New RABH, ESPs, Bag Filters):</u>

Capacity of Fan :

	Gas Temp.	:
	Dew Point temperature	:
	Suction Pressure	:
	Fan size	:
	Fan type	:
	Impeller Diameter (ϕ)	:
	Arrangement of fan	:
	Trunk area	:
	Fan speed	:
	Guaranteed Power consumption at fan shaft	:
	Motor rating	:
	CO^2 Value	:
	Thickness of fan casing	:
	Thickness of side box	:
	Material of Impeller	:
	Bearing size	:
	Type of Bearing	:
	Full load torque	:
	Starting torque	:
	Damper torque	:
	Actuator torque	:
	Total efficiency	:
	Static efficiency	:
	(Performance curve of Fan)	

G. <u>Gas Conditioning Tower / Recuperater (New RABH, ESP):</u>

	Maximum volume of gas entering the conditioning tower / Recuperater	:
	Kiln Gas temperature at Conditioning Tower / Recuperater inlet	:
	Kiln gas temperature at Conditioning Tower / Recuperater outlet	:
	Dew Point temperature of Kiln Gas At CT / Recuperater inlet	:
	Dew Point temperature of Kiln gas At CT / Recuperater outlet	:
	Pressure drop in CT/Recuperater (mm WG)	:
	Water pumps capacity and head	:

Speed of water pump and HP	:
Cooling Air Fan Capacity M^3/Hr. at (mm WG)	:
Speed of Cooling Fan and HP	:
Physical Dimension of CT/ Recuperater	:
No. of Nozzles	:
Material of spraying nozzles	:
H.P. of screw conveyor / Rotary Airlock	:
Velocity of gas in CT/ Recuperater (M/Sec)	:
Time taken for passage (sec)	:
Water quality required	:
Water / Air quantity required	:

H. Detail of any other equipment not mentioned above but required for: -

Note:

1. For proper evaluation of tender the tenderer has to select the bought out items of standard make only. A list of reputed vendor for bought out / auxiliaries make is enclose at Annexure – IV-2- A, B, C & D.
2. For proper evaluation of tender, it is important that all the information/ technical data required and as given above is provided by the tenderer. Tenders wherein the information/ technical data are not furnished in the required format may not be considered.
3. Pin bush/love joy couplings are not acceptable, only Fluid coupling/ Geared/ Bibby Resilience/ Tyre couplings of Fenner/ NAW / GMBH/Elecon/Greaves Cotton/ Welman Incandscent make are to be used.
4. Only antifriction bearings SKF / FAG are to be used at all places. Bush bearings are not acceptable.
5. Only FMG/ NAW/ Crompton Greave / Elecon make gearboxes are to be used.
6. The equipments are to be designed for round the clock operation.
7. Provision of local push button, Pull Cord, Emergency switches, Sway switch, control panel and site isolator to be made.
8. All instrument accessories installed at site must conform to IP-65.
9. Cable schedule for power and control cable as per cable route to be submitted along with the offer.

10. Guaranteed power consumption as a whole.

11. **DRAWINGS**

Six sets of proposal drawings comprising following shall be submitted:-

a) Flow Chart.

b) General Arrangement in regard to electrical and instrumentation.

c) Power, Control and instrument wiring diagram.

12. BAR-CHART

Bar chart indicating schedule of various activities such as, design, engineering, supply of material, Civil and Structural work, erection and commissioning for the stipulated period should be furnished.

13. REFERENCE LIST

List of supplies made for similar application with design data, performance certificate of their clients, copy of purchase orders etc. should be furnished with the tender in order to assess their capabilities.

14. BOUGHT-OUT ITEMS

Make of bought-out items should be listed separately. The bought – out items should be procured from reputed manufacturers only. However, CCI reserves its right to reject any vendor.

15. SPARE PARTS

15.1 A detailed list of recommended spare parts list with specifications for two years operation is to be submitted along with the techno-commercial offer. The relevant rates are to be quoted separately in the price bid.

15.2 The award of offer for the purchase of the recommended spares may not be made at the time of issue of the letter of intent for this tender. The validity period for the price may be kept not less than six months from the date of submission of the price-bid for the spares.

15.3 CCI reserves the right to buy all or some of the spares recommended by the tenderer. The quantity ordered for each spare will also be as per the requirement of CCI.

15.4 **For the evaluation of this tender the price of the recommended spares will not be taken into consideration for assessing the lowest offer. The price -bid for the recommended spares should be submitted separately as indicated in the price-bid.**

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ANNEXURE-IV-2-A

LIST OF REPUTED VENDOR FOR BOUGHT OUT / AUXILIARIES MAKE (MECHANICAL)

Sl. No.	ITEM DESCRIPTION	NAME OF THE VENDOR	CONTACT
1.	**GEAR BOX**		
		NEW ALLENBERRY Works	
		FLENDER MACNEIL Ltd.	
		ELECON ENGINEERING Company Ltd.	
		CROMPTON GREAVE	
2.	**BUCKET ELEVATOR**		
		AUMUND ENGINEERING Pvt. Ltd.	
		BHP ENGINEERS	
		ENEXCO TEKNOLOGIES India Ltd.	
		BEUMER TECHNOLOGY India Pvt. Ltd.	
3.	**FANS**		
		BATLIBOI Environmental Engineering Ltd.	
		FLAKTWOOD India Ltd.	
		REITZ India Ltd.	
		ANDREW Yule & co.	
4.	**PNEUMATIC SCREW PUMP**		
		FLS Ltd.	
		ALSTOM PROJECTS INDIA LTD	
5.	**BELT CONVEYOR**		
		TRF	
		MASYC PROJECTS	
		TECPRO Systems	
		INDIANA Conveyors Ltd.	
		VINAR Systems Pvt. Ltd.	
6.	**ROTARY AIR LOCKS**		
		HYQUIP	
		BEMCI	
		BEVCON	
		SANGHAVI Engineering	
		FLUID Air India Ltd.	
7.	**SLIDE GATES**		
		COBIT Engineering. Pvt. LTD. 8	
		SANGHAVI Engineering	
		MASYC Projects	
		DCL BULK Technologies Pvt. Ltd.	
8.	**FLAP VALVES**		
		COBIT Engineering Pvt. Ltd.	
		HALLMARK Technical Services Pvt. Ltd.	
		SANGHAVI Engineering	
		MASYC Projects	
		OSWAL Engineers	
		HYQUIP	
9.	**COUPLING**		
		FENNER	
Sl. No.	**ITEM DESCRIPTION**	**NAME OF THE VENDOR**	**CONTACT**
		ELECON	
		GREAVES COTTON	

		WELMAN INCANDSCENT	
10.	**FLOW CONTROL GATE**		
		EEL India Limited	
		ENEXCO Technologies India Ltd.	
		SANGHAVI Engineering	
		DCL Bulk Technologies Pvt. Ltd.	
		UNITED TECHNOMECH Engineers Pvt. Ltd.	
11.	**DUST EXTRACTION GATE**		
		AUMUND	
		BHP Engineers	
		ENEXCO Technologies India Ltd.	
		DCL Bulk Technologies Pvt. Ltd.	
		UNITED TECHNOMEGH Engineers P. Ltd.	
12.	**SCREW CONVEYORS & CHAIN CONVEYORS**		
		MASYC Projects	
		BHP Engineers	
		TECPRO Systems	
		HYQUIP	
		MAHINDRA Engineering & Chemical Products	
13.	**DIVERTING GATE**		
		AUMUND ENGG. Pvt. Ltd.	
		BHP Engineers	
		ENEXCO Technologies India Ltd.	
		BEUMER	
		UNITED TECHNOMECH Engineers P. Ltd.	
14.	**EXPANSION JOINTS**		
		KELD ELLENTOFT India Pvt. Ltd.	
		GBM Manufacturing (P.) Ltd.	
		FLEXOCON Engineers	
15.	**COMPRESSORS**		
		ATLAS COPCO (India) Ltd.	
		KIRLOSKAR Pneumatic Co. Ltd.	
		INGERSOLRAND (India) Limited	
		ELGI Equipments	
16.	**AIR SLIDES & BLOWERS**		
		ENEXCO Technologies India Ltd.	
		DCL Bulk Technologies Pvt. Ltd.	
		THYRATRON	
		CON-WEIGH Systems Pvt. Ltd.	
		EEL India Limited	
17.	**ROOT BLOWERS**		
		KAY International	
		TRIVENI Maneklal Vaccum Technology P. Ltd.	
		ROOTS Blowers (I) Pvt. Ltd.	
		USHA Compressors Pvt. Ltd.	

ANNEXURE-IV-2-B

LIST OF REPUTED VENDOR FOR BOUGHT OUT ELECTRICAL

Sl. No.	ITEM DESCRIPTION	NAME OF THE VENDOR	CONTACT
1.	**CABLES**		
		HAVELLS India Limited	
		TCL Cables	
		KEI Industries Limited	
		UNIVERSAL Cables Limited	
		RPG Cables Limited	
		GEM Cables & Conductors Limited	
		POLYCAB Wires Pvt. Ltd.	
2.	**MCCs' AND PCCs'**		
		ABB Limited	
		GE Power Controls India Pvt. Ltd.	
		SIEMENS Limited	
		LARSEN & Toubro Limited	
3.	**6.6 KV SWITCH BOARDS**		
		KIRLOSKAR Electric Company Ltd.	
		SIEMENS Limited	
		AREVA Limited	
		ABB Limited	
4.	**LT MOTORS**		
		SIEMENS Limited	
		ABB Limited	
		ALSTOM Limited	
		KIRLOSKAR Electric Company Ltd.	
		CROMPTON Greaves Limited	
5.	**CAPACITOR BANKS (HT & LT)**		
		LARSEN & Toubro Limited	
		AREVA LTD.	
		UNIVERSAL Cables Limited	
6.	**LRS, GRR & SOFT STARTERS**		
		PIONEER Electrical Works	
		ENTERPRISING Engineers	
7.	**TRANSFORMERS**		
		VOLTAMP Transformers Pvt. Ltd.	
		KIRLOSKAR Electric Company Limited	
		CROMPTON Greaves Limited	
		AREVA Limited	
		ABB Limited	
		TRANSFORMERS & Rectifiers (India) Ltd.	
		HIND Rectifier	

Sl. No.	ITEM DESCRIPTION	NAME OF THE VENDOR	CONTACT
8.	**AC & DC DRIVES**		
		LARSEN & Toubro Limited	
		CONTROL Engineering Company	
		KIRLOSKAR Electric Company Ltd. (FOR D C DRIVE)	
		ABB Limited	
		SIEMENS INDIA LTD	
9.	**ILLUMINATION SYSTEMS**		
		BAJAJ Electricals Ltd.	
		WIPRO Lighting	
		CROMPTON Greaves Ltd.	
		KVA Electricals Pvt. Ltd. (Philips)	
		HAVELLS India Limited	
10.	**DC MOTOR**		
		KIRLOSKAR Electric Company Ltd.	
		INTEGRATED Electric Company Pvt. Ltd.	
		CROMPTON Greaves Limited	

ANNEXURE-IV-2-C

LIST OF REPUTED VENDOR FOR BOUGHT OUT INSTRUMENTATION

Sl. No.	ITEM DESCRIPTION	NAME OF THE VENDOR	CONTACT
1.	**PLC**		
		ABB Limited	
		FLS Automation India Pvt. Ltd.	
		SIEMENS Limited (Industrial Solutions & Services)	
		GE Fanuc Systems Pvt. Ltd.	
		ROCKWELL Automation India Ltd.	
		L & T Limited	
2.	**SOLID FLOW FEEDERS, LOAD CELLS**		
		SCHENCK Jenson & Nicholson	
		TRANSWEIGH (I) Limited	
3.	**GAS ANALYSER**		
		ABB LTD., Analytical & Advanced Solutions	
		EMERSION Process Management (India) Pvt. Ltd.	
		ANALYSER Instrument Company	
4.	**ELECTRONIC EAR**		
		TOSHNIWAL Industries Pvt. Ltd.	
		KANA ELECTROMECH	
		FLS Automation India Pvt. Ltd.	
		SIEMENS Limited	
5.	**FIELD INSTRUMENTS WATER FLOW TRANSMITTERS**		
		IPS Automation Products P. Ltd.	
		CHINO LAXSONS (INDIA) Ltd.	
		EMERSION Process Management (India) Pvt. Ltd.	
		FITZER Instruments (India) Pvt. Ltd.	
		PYROTECH Electronics Pvt. Ltd.	
6.	**THERMOCOUPLES & RTD'S**		
		KANA ELECTROMECH	
		TOSHNIWAL Industries Pvt. Ltd.	
		PYROTECH Electronics Pvt. Ltd.	
7.	**PROXIMITY SWITCHES**		
		KANA ELECTROMECHS	
		JAYSHREE Electrons Pvt. Ltd.	
		PEPPERL + FUCH (I) Pvt. Ltd.	
		RADIX Microsystems	
		PYROTECH Electronics Pvt. Ltd.	
8.	**RADIATION PYROMETERS**		
		CHINO LAXSONS (India) Ltd.	
		TOSHNIWAL Industries Pvt. Ltd.	
		PYROTECH Electronics Pvt. Ltd.	
		WAAREE Instruments Solution	

Sl. No	ITEM DESCRIPTION	NAME OF THE VENDOR	CONTACT
9.	**PROGRAMMABLE SWITCHES**		
		POWERGEN	
		PYROTECH Electronics Pvt. Ltd.	
10.	**PRESSURE / TEMPERATURE TRANSMITTERS**		
		ABB Ltd.	
		CHINO LAXSONS (India) Ltd.	
		EMERSION Process Management (India) Pvt. Ltd.	
		PYROTECH Electronics Pvt. Ltd.	
		WAAREE Instruments Solution	
11.	**PRESSURE SWITCHES**		
		SWITZER Instruments Limited	
		INDFOSS Industries Limited	
		JAPSIN Instrumentation	
		FITZER Instruments (India) Pvt. Ltd.	
		WAAREE Instruments Solution	
12.	**LEVEL INSTRUMENTS**		
		NIVO CONTROLS (TOSHBRO Controls Pvt. Ltd.)	
		SAPCON Instruments Pvt. Ltd.	
		ENDRESS + HAUSER (INDIA) Pvt. Ltd.	
13.	**CURRENT / KW TRANSDUCERS**		
		KANA ELECTROMECH	
		PYROTECH Electronics Pvt. Ltd.	
		MASIBUS Process Instruments (P) Ltd.	
		WAAREE Instruments Solution	
		CHINO LAXSONS (India) Ltd.	
14.	**VIBRATION ANALYSERS**		
		ROTOMECH Instrumentation & Control	
		SCHENCK Avery Limited	
		PYROTECH Electronics Pvt. Ltd.	
15.	**TEMPERATURE SCANNERS**		
		PYROTECH Electronics Pvt. Ltd.	
		TOSHNIWAL Industries Pvt. Ltd	
		KANA ELECTROMECH	
		MASIBUS Process Instruments (P) Ltd.	
16.	**R to mA CONVERTORS**		
		PYROTECH Electronics Pvt. Ltd.	
		TOSHNIWAL Industries Pvt. Ltd.	
		MASIBUS Process Instruments (P) Ltd.	
		KANA ELECTROMECH	

ANNEXURE-IV-2-D

DESIGN CRITERIA
OF
POLLUTION CONTROL EQUIPMENTS
MECHANICAL

The following data's shall be taken into consideration before designing the equipment under this tender:-

Sl. No.	DESCRIPTION	VALUE
1	Altitude Above Mean Sea Level, Mtr.	135
2	Ambient Temperature – Maximum, (^{0}C) Minimum, (^{0}C) Average (^{0}C)	 41 6 32
3	Seismity	V Zone
4	Rainfall (Annual Average) (Cm)	100
5	No of raining days / year	180
6	Humidity – Maximum (%) Minimum (%)	 99 33
7	Wind velocity (as per IS-875, 1975 Part 3) (Mtr. / hr.)	198
8	Soil Bearing Capacity – Design (T/M^2)	16.5

(I) BASIC REQUIREMENTS:

1.0 GENERAL:

- All equipment to be supplied shall be new, of robust design & construction and shall correspond to state of the art of Air Pollution Control Equipment manufacturing technology. The equipment have to be selected which operate at optimum Pollution Control Norms and have a high degree of emission and energy efficiency, higher availability in operation and required less maintenance.
- The design criteria employed throughout shall be based on heave-duty industrial application, handling abrasive and very abrasive materials in dusty environments. The system shall be suitable for continuous operation at uniform maximum load without adverse effect on the life or maintenance of the equipment under prevailing conditions.
- All equipment and material shall be of a standard equal or better than specified herein or as laid down in the latest relevant international standards.
- The equipment and materials shall be suited to the local climatic conditions especially the high relative humidity and dusty environment prevailing and under upset conditions in a cement plant.

2.0 EQUIPMENT STANDARDIZATION, MATERIALS AND STANDARDS:

2.1 EQUIPMENT STANDARDIZATION:

- Identical equipment and components shall be used wherever practical to permit interchangeability of parts, minimize spare parts inventory, and simplify maintenance.

2.2 MATERIALS AND APPLICABLE STANDARDS:

- In general, the equipment/ component shall conform to the latest edition of relevant International Standards.
- The metric system (SI-Units exclusive) will have to be applied for design (all specifications, drawings and manuals) and for manufacturing of all machinery and equipment.
- The equipment shall also conform to the latest Electricity Rules and Statutory Requirement as regards safety, Earthing and other essential

provisions specified therein for installation and operation of Electrical plants. The Vendor has to provide all necessary data/ documentation/ information for obtaining the approvals from the statutory authorities.

- All materials shall be of the highest quality of their respective kinds and suitable for their application. The Vendor shall supply material and workmanship in accordance with the best and most modern practice.
- The chemical composition, tensile strength, elastic limit and elongation of the various materials employed, shall under no circumstances be inferior in quality to the minimum requirements of the relevant specifications.
- All components shall be new and shall be manufactured from identified sound materials, completely free from all imperfections, such as, cracks, flaws and inclusions.
- No material will be accepted in a condition known to be faulty even under guarantee of replacement in case of failure.
- Where reference is made to codes of practice and/ or standards the latest amendments there of shall be deemed to be incorporated.
- In cases, where the offer deviates from the generally accepted codes and standards, the Vendor shall indicated clearly in his offer the standards proposed to be adopted by him along-with details thereof and reasons for deviations.

3.0 MAINTENANCE AND SAFETY ASPECTS:

3.1 WALKWAYS, STAIRS AND PLATFORMS:

- All items of machines and equipment including stack and ducting, requiring periodic inspection, lubrication cleaning adjustment, monitoring, repair or replacement, or which are designed for manual operation shall be easily accessible either by virtue of their location or by means of stairs, galleries or platforms.
- Stack should be provided with at least two maintenance platforms.

3.2 SUPPORTING STRUCTURE, MAINTENANCE PLATFORMS & SAFETY ACCESSES:

- The supplier shall indicate all maintenance platforms, stairs and safety accesses for the equipment in their scope. The proper and safe access to

his equipment for the purpose of inspection and maintenance of the plant as well as emergency exit ways has to be indicated, recommended by them.

- For safety purposes hand-railings and kick plates shall be provided around all open platforms, stairways and walkways and landings. Vendor to recommend/ specify such specific needs required for their equipment.

3.3 CRANES / HOISTS/ CHAIN PULLEY BLOCKS:

- To enable easy and safe maintenance and / or replacement, repair service, the Vendor shall recommend sufficient Cranes, Hoists, Monorail trolleys or Chain Pulley blocks.

3.4 SAFETY:

- All equipment to be offered shall be provided with adequate safety devices according to international standards as well as the national standards of the country of the "CCI Ltd.".
- Safety guards will be used at all possible points of physical contact with moving machinery, i.e. V-belt guards, coupling guards, chain casing etc.
- Guards must also be provided around explosion vents and flap valves.

4.0 QUALITY AND OPERATIONAL ASPECTS:

4.1 SITE ASSEMBLY:

- The goods which are delivered at the site in semi-finished form due to size restrictions for shipping and transport, i.e. all pre-fabricated parts shall be properly prepared for the site assembly with appropriate matched holes/ marks preferably with dowel pin and with temporary bracings/ spiders and gadgets and shall be supplied with the prefabricated goods.
- All matching part will be alphabetically punched and marked with paint for proper assembly at site.

4.2 WELDING:

- Any specific criteria required for the welding at site must be enclosed with the packing list.

4.3 PAINTING:

- All hopers / collecting bins inside surface of should be applied with Teflon based HR quoting to avoid hopper jamming and to improve the material flow.
- All steel and cast surfaces of machinery, equipment and its supporting steel structures shall have a proper surface preparation and painted thereafter.
- All surfaces of equipment subjected to high temperatures should be applied with heat resistance paints. Supplier has to submit a list of such equipment for approval to CCI Ltd.
- Before undertaking the painting work the painting scheme shall be proposed by the Supplier for CCI Ltd./ Consultant's approval. Following shall be considered during preparation of Painting scheme.
- All machinery/ equipment shall be supplied with finished painting as applicable.
- All surfaces shall be dry abrasive blast cleaned as per latest standard.
- Grease & Oil shall be removed by solvent cleaning.
- All exposed sharp edges shall be grounded.
- All inside and outside surfaces unless lined with refractory, ceramic, etc. shall be painted with one coat of Red-oxide Zinc Chromate primer of thickness 25-30 micron, as per IS:2074.
- For equipments subjected to temperature more than 100^0C shall be applied with Two Coats of Heat Resistant Aluminium paint as finish painting. No primer shall be applied.
- Suitable color coding shall be considered.

4.4 NAME PLATES:

❖ The following metal plates of corrosion resistant material (min. 1.6-mm thickness) shall be fitted to the machines and the equipment as follows.

(i) Manufacturer's label with the usual technical data, e.g. capacity, power, RPM, duty, type/ quantity of lubricants to be used and year of manufacturing.

(ii) Plate of reasonable size having the equipment number good readable engraved according to the final coding as per plant classification.

(iii) Instruction plates, as far as necessary for safe operation, in English.

(iv) Arrow showing the direction of rotation and / or Flow.

4.5 SPECIAL TOOLS/ TACKLES:

- Special tools required for the operation or maintenance of any piece of equipment shall be supplied with the equipment.

4.6 BOLTS, SCREW THREADS, HOLDING-DOWN BOLTS AND BASE PLATES:

- All bolts and nuts shall have metric threads only and of IS standard.
- All bolts, nuts, washers and securing devices for the proper assembly of the equipment shall be included. This means also all foundation bolts and fastening devices required for the attachment of the equipment to the steel structure or concrete works or foundations, as well as sliding rails for V-belt drives to be mounted on base plates, e.g. fan drives.
- Further, all base plates, frames, anchoring, fastening and shimming material necessary for proper installation shall be included.

4.7 PROTECTION DURING TRANSPORT / STORAGE AT SITE:

- All the exposed parts will be provided with anti-rust coating and the machine internals will be covered with protective coating or suitable lubricant.

4.8 WEAR PARTS AND WEAR PROTECTION:

- All equipment exposed to wear, fans, grates, chutes, etc. shall be executed from high wear resistant materials and / or provided with wear protection liners.

4.9 VIBRATION PREVENTION:

- Drive trains of the main machinery (main fans and blowers) should be analyzed for critical speeds, and any coincidence with operation speeds should be avoided.

- The anti-vibration pads and blocks shall be provided for all the fans.

5.0 ENVIRONMENTAL ASPECTS:

Basic concept of collection system is a VENTING System and not a Material Handling System. The ultimate goal of a venting system is to provide maximum dust suppression with a minimum dust collection. The component of a venting system is:-

- ❖ Dust collector
- ❖ Exhaust Fan
- ❖ Stack
- ❖ Duct Work

- The duct work line from the hood to the dust collector
- The duct work is a vital component of a venting system. There are three key components which constitute the duct work are:-
    1. The pickup hood
    2. The balancing damper
    3. Material Handling Equipment

5.1 DUST COLLECTOR:

BAG HOUSE AND BAG FILTERS

All Bag House ad Bag Filters shall fulfill the following requirements -

(A) DUST EMISSION IN NUISANCE BAG FILTERS:

- To operate a dust-free plant all deducting points of the equipment shall be skillfully designed with adequate size of Bag Filters, with provisions for adjustment and fine tuning. These deducting points should cover.
    (i) Hopper, bins.
    (ii) Exhaust gases
    (iii) Dust production machinery.
- Provision for manual dust sampling points to be kept for major stacks. Bag Filter shall be designed to achieve emission level of less than 30mg/ Nm^3.

(B) DUST EMISSION IN PROCESS BAG FILTER/ ELECTROSTATIC PRECIPITATORS (ESP):

- Filter Bags shall The all Bag House/ Bag Filters shall be designed to achieve less than 30 mg/ Nm^3 dry at the full rated output of the equipment with N-1 chambers of the dust control equipment working where N is the total number of installed chambers.
- In all Bag House/ Bag Filters chamber should be compartmentalized so that a section at a time can be taken out of service for maintenance.
- All Bag House/ Bag Filters /ESP outer casing shall be fabricated from 6mm or higher thickness plate.

(C) BAG FILTER INTERNAL

❖ **Filter Bag**

- Filter Bags shall have Snap band Cuffs with double beaded grooved gaskets.
- For RABH only BHA Tex ePTFE* membrane Filter Bag suitable for operating temperature up to 260^0C (500^0F) is acceptable.
- For others i.e. Coal Mills and Cement Mills only BHA Tex ePTFE* membrane Filter Bag suitable for operating temperature up to 135^0C (275^0F) is acceptable.
- And for Other Venting Bag Filters only Pulse Pleat Filter Elements suitable for 135^0C (275^0F) BHA make is acceptable.

❖ **Filter Cages**

- Epoxy coated cages / stainless steel cages only suitable for above bags are acceptable.

❖ **Cleaning System**

- Low pressure pulse cleaning system shall be adopted.

6.0 EXHAUST FAN

01 FILTER FAN:

- The fans shall be statically and dynamically balanced before shipment from the manufacturer's works. The vibration intensity of the fans shall be checked during the commissioning of the plant. Measuring method, vibration velocity limits and other test conditions shall be agreed upon and included in the final contract as a part of the guarantee.
- Fans working in an abrasive atmosphere shall have their impeller blades hard surfaced either by welding or spraying.
- All fans shall be located on the clean air-side of the dust collectors and suitable for 24-hours operation.
- Fan blades shall be of the backward curved with high efficiency (above 80%) type.
- Fan shall be designed for 115 per cent of dust collector calculated capacity.
- Speed of the fan shall be limited to 1500-rpm and circumferential speed of impeller shall not exceed 150 m/s.
- Drive motor shall be directly coupled with fan by fluid coupling and be suitable for operation at damper fully open with cold air.
- Motorized inlet dampers to be provided for all process bag filters. Variable Speed drive should be ADOPTED to control draft and reduce energy consumption.
- Anti-vibration pads as required.
- Each fan consists of:
    a. Fan assembly complete
    b. Motorized actuator operated damper (on/off type) for fans to be provided.
    c. Metallic expansion joints at inlet and outlet is to be provided.
    d. Vibration isolator for fan.

(II) PROCESS FANS (BAG HOUSE FAN, CEMENT MILL CLASSIFIER FAN etc.)

(a) **TYPE :** High efficiency Centrifugal (efficiency shall not be less than 85%).

(b) **DUTY :** To be designed for continuous 24 hours/ day, 7 days/ week operation.

(c) **SPEED:**

- Below 1000-rpm for large/ critical fans (above 132-kW) and fans handling dusty gases; below 1500-rpm for others.

(d) **RATED CAPACITY:**

- Rated capacity shall be at least 25% capacity higher on volume and 15% on pressure than that required for the process after considering system leakage etc.
- The vender shall submit the characteristic curves for all fans.

(e) **IMPELLER:**

- Fans handling dusty gasses shall have radial tipped backward curved blades.
- Liners to be provided for abrasive dust handling.
- Clean air Fans shall have high efficiency backwards curve.
- Removal of impeller assembly should be possible without shifting the drive motor.

(f) **DESIGNED CRITICAL SPEED:** 1.25 times (minimum) the maximum Speed of the fans.

(g) **CASING:** Horizontal split casing with linear.

(h) **COUPLING:**

- Bibby / fluid coupling.

(i) **BEARING:**

- Bearing oil temperature shall not excess 300^0C.
- For all fans above 75-kW or handling high temperature gases shall be provided with oil lubricated bearings.

- Bearings may be provided with suitable heat dissipaters or water/ air cooling to maintain lubricant temperature within the limit. All fans must have RTD for bearings.
- Life of bearings for fan with a capacity of > 100,000 m^3 / hr shall be 50,000 operating hours.
- Life of bearing for fan with a capacity of <100,000 m^3/ hr shall be 75,000 operating hours.

(j) COMPENSATORS:

- Metallic type Flexible connection to the ducting, for isolation of vibrations, shall be provided at inlet & outlet.

(k) INLET DAMPER:

- Multi-vane louver type dampers shall be provided for the fans handling dusty gases. For clean air fans, inlet guide vane dampers may be provided. For small fans below 22-kW butterfly type dampers with actuators may be provided. Motorized dampers, wherever required, shall be operated by a servo-motor equipped with 1000 Ohms Potentio-meter, complete with 4-20 mA galvanic alloy isolated signal transmitter, end position limit switches and torque switches, inlet cone adjustment from outside should be possible. Dampers shall have anti-friction bearings. Bearing should be mounted outside the frame with proper dust sealing.

(l) ANTI -VIBRATION PADS:

- All process fans are to be provided with anti-vibration pads.

(m) VIBRATION LEVELS:

- For fans absorbing less than 300-kW power velocity (maximum): 1.1 - mm/sec.
- For fans absorbing more than 300-kW power velocity (maximum): 2.8- mm/ sec.

(n) INSTRUMENTS:

- With large fans (Such as Bag House and Cement Mill), local instruments such as bearing temperature sensors (PT 100) 3 – wire type, and vibration sensors are to be provided. Transmitters with 4-20 Ma galvanic ally isolated analog outputs to be included for vibration sensors.

(o) STACK:

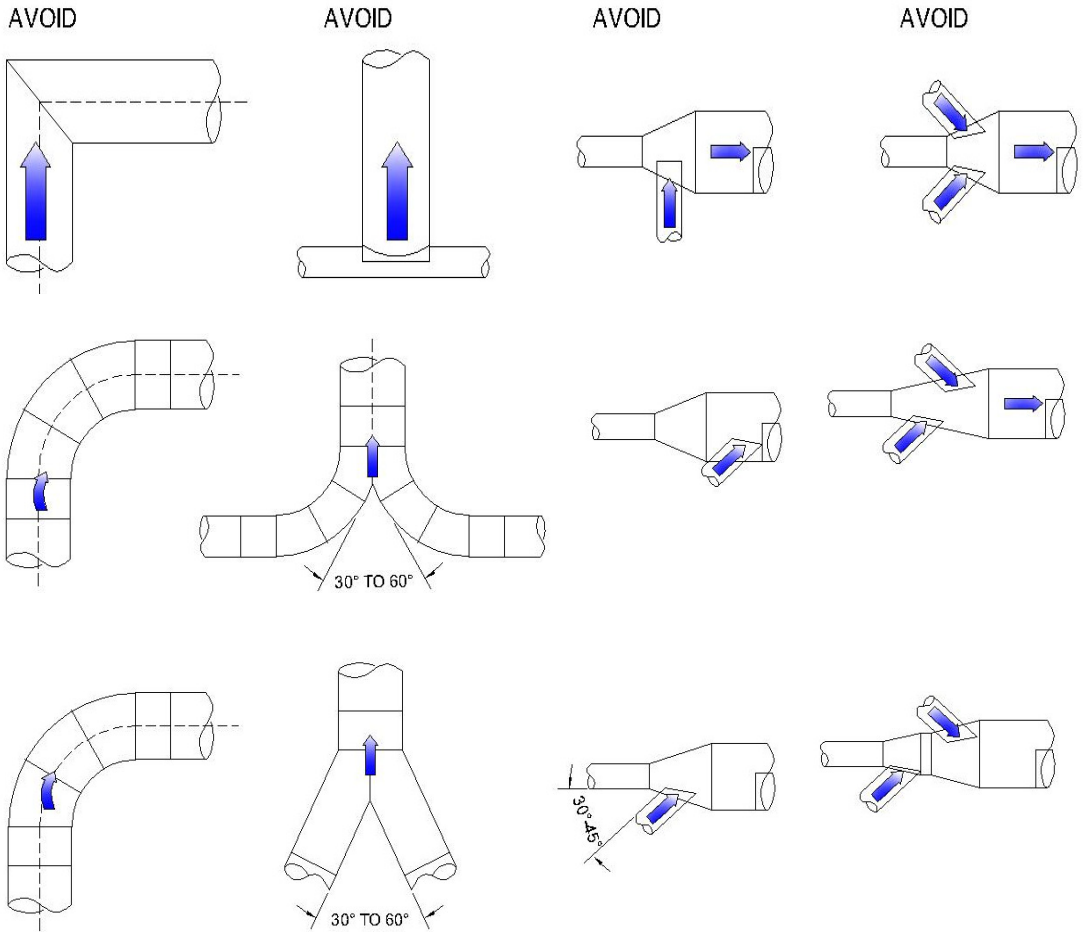
- Stack height – for the particulate matter emission is estimated as Q (Tones/hr) the stack height, H in meters is shall be - $H = 74 (Q)^{0.27}$
- If the stack height arrived by using the formula given above is more than 30mtr. Then this higher stack should be used.
- In no case should the height of the stack be less than 30mtr (Thirty Meter from ground level). The proposed height of stack from ground level is given below –

  (1) RABH – 60 meters (Sixty Meters)
  (2) Cement Mill classifier Bag Filter – 35 meters (Thirty Five Meters)
  (3) Mill Vent Bag Filter – 35 meters (Thirty Five Meters)
  (4) Coal Mill Bag Filter - 32 meters (Thirty Two Meters)
  (5) Clinker Cooler ESP - 32 meters (Thirty Two Meters)
- Stack should have at least two maintenance platforms one at the top of stack and another above the Fan discharge duct.
- The maintenance platforms shall have safety railing and stairs from the ground level up-to the platforms.
- Stack should be of self supporting design.
- The stack shall be provided with lightning protection arrangements in accordance with IS 2309:1963.
- Wall thickness shall not be less than 10(Ten)mm in any section of stack.
- Stack should be fabricated as per the BIS standard IS 6533 (Part-1 & 2) and the material should be tested quality.
- Stack interior and exterior surface should be given protective treatment i.e. the interior and exterior surface painted to protect against heat and corrosion conforming to IS 6533 part-2: 1989 clause-13.
- All stacks should be provided with proper canopy.

(p) Duct Work

The properly design duct work is the key of success for any pollution control equipment. Hence intensive care is to be taken in designing the duct. The following the guidelines for proper designing of ducting are produced here as a guideline.

➧ To avoid and imbalance and either dilute or overload the ventilation system, proper volume the ventilation system requires to handle, is to be determined. The duct with lower velocity encourages material to fall out and duct with higher velocity encourages abrasion. Hence to avoid duct should be designing with optimum sizing. As a general rule the duct work should be design to size the duct cross-sectional area for velocity between 17 – 20 mtr. / Second.



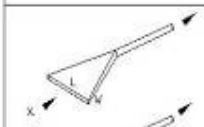
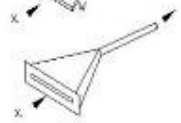
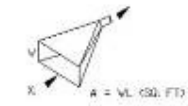
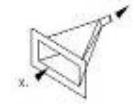
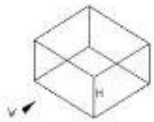
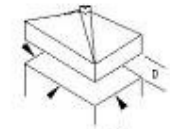
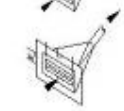
1. The pickup hood –

The pickup hood should be designed to ventilate the dust generation point while minimizing the amount of product introduced into the dust collection system. The detailed design reference of Pickup hood is tabulated below for the reference of tenderer:

2. The balancing damper

Balancing damper should be designed in such a manner that it should not increase the power consumption of dust collecting equipment.

MATERIAL HANDLING EQUIPMENT

HOOD TYPE	DESCRIPTION	ASPECT RATIO, W/L	AIRFLOW
HOOD TYPE	DESCRIPTION	ASPECT RATIO, W/L	AIRFLOW
	SLOT	0.2 OR LESS	Q = 3.7 LVX
	FLANGED SLOT	0.2 OR LESS	Q = 2.6 LVX
	PLAIN OPENING	0.2 OR GREATER AND ROUND	Q = V (10x2 +A)
	FLANGED OPENING	0.2 OR GREATER AND ROUND	Q = 0.75V (10x2 +A)
	BOTH	TO SUIT WORK	Q = VA = VWH
	CANOPY	TO SUIT WORK	Q = 1.4 PVD SEE VS - 99-03 P = PERIMETER D= HIGHT ABOVE WORK
	PLAIN MULTIPLE SLOT OPENING 2 OR MORE SLOTS	0.2 OR GREATER	Q = V(10x2 + A)
	FLANGED MULTIPLE SLOT OPENING 2 OR MORE SLOTS	0.2 OR GREATER	Q = 0.75V (10x2 +A)

LEGEND

Q = REQUIRED EXHAUST FLOW RATE CFM; X = DISTANCE, HOOD FACE TO FARTHEST POINT OF SOURCE; V = CAPTURE VELOCITY AT DISTANCE X, FPM; L = LENGTH IN FEET; W = WIDTH IN FEET; A = HOOD FACE AREA IN FEET

CONVEYOR FOR HANDLING DUST:

Conveying equipment handling the dust collected by the deducting equipment shall be designed to carry 33% more than the full load under maximum stable operation.

(III) AIR SLIDES:

All air slides shall fulfill the following requirements.

1.0 AIR SLIDE DESIGN:

i. Enclosed type and well sealed.

ii. Sight glasses and inspection opening at upper channel.

iii. Suitably protected polyester fabric.

iv. Cloth covered by metal screen at material feed points, and at location where air slides change direction; also (fully covered) for the air sliders handling coarse material.

v. Height to width ratio of 1.5:1.

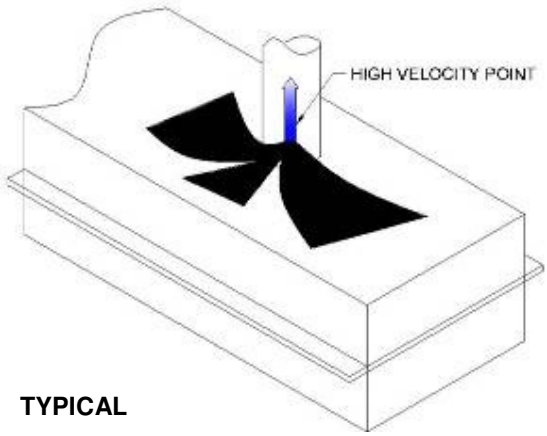
- Air to cloth ratio : 2(m^3/ min)/ m^2
- Air volume : 2.5 (m^3/ min) m^2
- Air pressure
  - Air Slide<500-mm : 250-500-mmWG
  - Air slide>500-mm : 500-1250-mmWG
- Air intake
- Deducting air quantity 150% of the fan air quantity.
- Air connection shell is providing for each chamber separately.

2.0 DISCHARGE GATES:

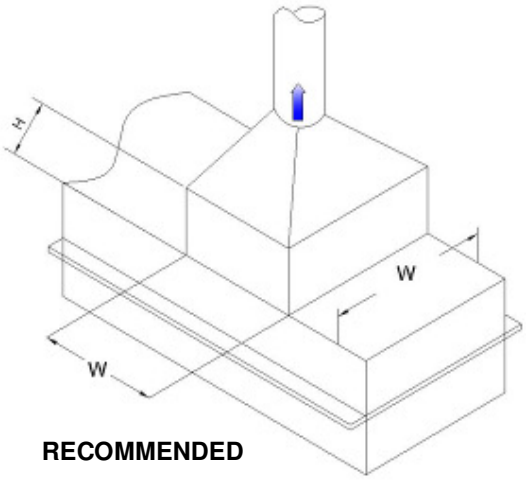
- Motorized with limit switches.

***Air Slide Conveyor Venting System:**

- The vent should be designed to move the conveying air away from the product at a low velocity. The vent duct should be located on a box seating directly on the air conveyor as illustrated in the diagram. The box should be squire to be same dimensions as the slide in both height and width, and have a sloped transition on top of the conveying duct diameter.



TYPICAL



RECOMMENDED

(IV) SCREW CONVEYORS:

- All screw conveyors shall fulfill the following requirements.

1.0 DRIVE:

- Geared motor shall be provided with minimum gearbox ratings of 1.6 of motor power.
- Motor rating to be based on 100% trough filled condition.

1.2 SCREW:

- Filling degree maximum 30% for size selection.
- Maximum circumferential speed 0.75m/s.
- Length should be maximum 6-m (Hanger bearings are not acceptable.)
- Reverse flight screws shall be provided at both ends to keep areas free of dust.
- Bearings shall be anti-friction type provided with effective seal.
- Inspection covers to be provided with safety measures (locks).
- Maximum clearance between casing and screw shall be 1.5-mm.
- Pipe diameter selection shall be such that maximum deflection shall be limited to 6-mm.
- Hard facing of flights shall be done with minimum depth of 3-mm.
- Continuous duty 24-hrs./ day and 7- days/ week operation

(V) AIR LOCKS:

- Capacity should be designed for 12.5% of material handling and for continuous duty.
- Rotary type for all type of materials.
- The clearance between casing and blades shall be designed to prevent flushing through it. For flu shy materials spring plates shall be provided with the rotor blades for sealing.
- Feeders working against positive pressure shall be suitable to operate against the pressure indicated. In such case, suitable venting arrangement shall also be provided.
- Air locks should be driven by conventional gearbox directly coupled or chain & chain sprocket mounted to foot mounted motor. Geared motor driven airlocks are not acceptable.
- Torque limiter shall be provided wherever required.

1.0 CHUTES AND LINERS:

- Feed and discharge chutes shall be made out of 8-mm thick MS plate with 10-mm wear resistant liners (Tiscral / Sail Hard).
- Feed and discharge chute shall be provided from conveyor to conveyor.

2.0 DISCHARGE HOOD:

- Properly designed discharge hood for effective deducting and dust tight flexible rubber access door shall be provided.
- Suitable liners shall be provided.
- The height of discharge hood shall be 1500-mm from belt top. Required Vent connection hood with flange shall be included.

(VI) BLOWERS:

- General:

a) **TYPE:** High efficiency centrifugal.

b) **DUTY:** To be designed for continuous, 24-hrs. / Day, 7-days / week operation.

c) **SPEED OF BLOWER:** Below 1500-rpm, direct drive.

d) LUBRICATION: Splash or forced lubrication:

- All the hose connection should be supplied in the required length to suit the site location and no fabrication of hoses and fitting of the end connection shall be carried out at site.
- Gearbox lubrication system shall have built in oil filtration pump with 8-micron filter.
- Field instrumentation shall included display of temperature and pressure at all individual locations within the gearbox and for its accessories like oil cooler and tanks etc. apart from all the safety instruments.
- Oil cooler shall be sized to cool the water up-to 32-33^{0}C.
- Lubrication system shall include all safeties and shall most modern. Gearbox lubrication monitoring system design and specification shall be CCI Ltd., representative / consultant's guidelines. Also gearbox with lubrication system shall be. Tested (no load trail) at manufacturers works in presence of CCI Ltd., representative / consultant before dispatch.

(e) TEMPERATURE MONITORING:

- For gear oil and bearing temperature, monitoring and Vibration Monitoring through 3-wire RTDs wherever required.
- Vibration monitoring equipment shall be included, as required.

(f) INPUT AND OUTPUT COUPLING:

- For equipments below 37-kW drive type couplings (unless otherwise specified in technical specification) may be provided at the input and output side. Above this fluid coupling at inlet and geared coupling at output shall be provided.

(g) SPARES:

Spares like input shaft with the matching gear, seals and high-speed bearings are to be included with the gearbox.

(h) GUARANTEE:

Larger Gearboxes shall be guaranteed for a period of 10-years from the date of commissioning.

(i) DESIGN CAPACITY:

25% higher on volume and 15% o pressure than the rated requirement.

(j) BEARINGS : Anti-friction.

(k) DAMPER : Manual

(l) AIR FILTER : Inlet and filter shall be mounted on the blower.

(m) CASING : Mild steel.

(n) IMPELLER : Cast Steel/Cast Aluminium, mounted directly on the motor shaft.

(o) BASE FRAME : Combined base for blower and motor.

- Flexible connection to the ducting/ pipeline for isolation of vibration.
- Safety valve setting should correspond to 1.5 times operating pressure.
- Piping system with throttle valve.
- Anti-vibration pads.
- Single stage, air cooled blowers/ non-lubricated type compressors to be provided along with corresponding standby/ duty equipment.
- Motor suitable for cold start at damper full open condition.
- Compressor to be complete with safety valves, air receiver, air dryer.
- Compressor / Blower to be complete with necessary set of valves.
- Equipment shall be provided with 1-working + 1-standby (100% standby), 2-working + 1-standby (50% standby) or 3-working + 1-standby (33% standby).

(VII) EXPANSION JOINTS:

- Expansion joints are required to be provided in the ducts, which are used in the transfer of high temperature gases for thermal expansion or isolation of vibration.
- Metallic expansion joints are preferred of handling high temperature gases or at the locations not easily accessible.
- Expansion joints have to be manufactured to ensure protection against dust abrasion and/ or dust deposition.
- The design of the expansion joints should confirm to EJMA code required.

(XIII)PROCESS DAMPERS:

Dampers shall be suitably designed based on the process requirement. The design of dampers shall be one of the followings and shall be motorized or pneumatic based on the application.

- Multi-vane louver type dampers shall be provided for the fans handling dusty gases. For clean air fans, inlet guide vane dampers may be provided.
- For small fans below 22-kW, butterfly type dampers with actuators may be provide. Inlet cone adjustment from outside should be possible.
- Shut-off dampers for isolation purpose.
- Cooling air dampers for gas dilution and exhaust dampers for venting of gases.
- Dampers to have anti-friction bearings. Bearing should be mounted outside the frame with proper dust sealing.
- Suitable seal air/ cooling air fan shall be provided wherever required.
- Wherever variable speed drive is used for fan, inlet damper is not required.

(IX) CHUTES:

All transfer chute/ connections shall be designed considering following aspects:

- The minimum valley angle shall correspond to the material characteristic.
- All chutes, covered skirt-boards and hoods shall be provided with suitable hood connection termination at a duct flange.
- Chute connection shall be of flanged and bolted construction. At least one flange between two fixed locations shall be shipped loose to facilities ease of field erection.
- Chute support connection shall either be bolted or welded in design, but shall designed to facilitate ease of field erection and assembly of parts.
- All chutes handling abrasive, sticky material shall be provided with suitable liners.
- All chutes handling clinker dust shall be provided with stone boxes and lining.
- Chutes shall be constructed of 6-mm thick plate minimum.

- Bolted liners shall be provided wherever required.
- A hinged inspection door shall be provided wherever necessary.

(E) NOISE EMISSION:

- The fundamental principles for the noise emission levels shall be ISO 3774, 3746, 4871, 6081. Further for determination of noise level ISO 11201 to 11204 shall apply.
- As an indication the following shall be considered.

  (i) At the work places maximum level is 85 Db (A) at a distance of 1.0 m from source.

  (ii) At the closest point of the nearest living area outside the building maximum level is 50 Db (A) night and 60Db (A) day (06:00-21:00h).

  (iii) The fans to be provided with the silencers.

  (iv) Wherever these standards are not met, proper equipment re-designs/ acoustic hoods shall be provided.

(X) THERMAL INSULATION:

The Thermal Insulation shall conform to the following:

- **Type** - Lightly Resin Bonded Rock Wool Mattresses with one side G.I. Wire netting conforming to IS: 8123.
- **Density** - 100Kg/m^3
- **G.I. Wire netting** - ¾" x 24 SWG.
- **Cladding Material** - 22 SWG plain aluminium / G.I. Sheet
- 10 gauge G.I. Sheets lugs to be provided to hold the insulation mattress in position on equipments of higher dia ducts.
- All ancillary material shall be of best commercial quality.
- MS Spacer rings made not of 25 x 3mm MS Flat each to be fixed to hold the sheet metal cladding in position for equipments and pipe lines above 4" dia only.
- LRB mattresses backed with one side GI Wire netting of size ¾" x 24 SWG in required thickness and stitching the joints with GI Lacing wire is to be provided.
- 22SWG Plain aluminium sheet with proper grooves and overlaps and held in position by means of GI self tapping screws and sealing the sheet joints using

suitable sealant. Further the cladding shall be secured by means of Aluminium band 20mm x 22 G at 45mm c/c (centre to centre)

- Insulation is to be provided at Pollution Control Equipment, outlet ducts, from equipment to Fan, and Fan casing. The thickness of LRB Rock Wool Matters shall be as below -
    - RABH complete Fan and ducting - 75 mm thick.
    - Cooler ESP Fan and ducting – 75mm.
    - Coal Mill Bag Filter – 50mm
    - Cement Mill classifier Bag filter (Fan & ducting inclusive) – 50mm.
    - Cement Mill Vent Bag filter (Fan & ducting inclusive) – 50mm.
- The measurement of the Insulation shall be done jointly as per IS-14164-1994.

SPECIFICATION FOR CIVIL ENGINEERING AND DESIGN:

- The Tenderer has to follow the latest issues of the IS specifications and codes as applicable.
- **Wind Loads:** All structures shall be designed to withstand wind pressure resulting from maximum wind velocity as per site conditions in accordance with the relevant standards and requirements.
- **Earthquake Loads:** All structures shall be designed to sustain the seismic load according to relevant IS standard.
- **Stability:** Calculations to determine overturning and uplift forces shall be made with the shape factors set forth for primary frames and systems. The overturning moment calculated from the wind pressure shall not exceed 2/3 of the resisting dead load.
- **Atmospheric Temperature Effect:** When any portion of a structure is not free to expand or contract under variation of temperature, allowance shall be made for the stresses resulting from temperature changes by $\pm 30^0$ for metal structures and by $\pm 20^0$ for plain and reinforced concrete structures.
- **Load Combinations:** The following basic load combinations shall be considered but not limited to:
    - Dead load + live load : No increase in allowable stress (For Stability check)
    - Dead load + live load: Certain increase (For design)

- Dead load + live load + wind or earthquake: Certain increase in allowable stresses.
- Dead load + wind or earthquake: certain increase in allowable stresses.

  Wind and earthquake loads need not to be assumed to act simultaneously.

- **Foundations:** Foundations for light structures and constructions may be designed as isolated or strip footings. Isolated footings for portal framed structures shall in general be linked together by means of tying beams.

  Peripheral foundations for heavy constructions such as Heavy Duty Fan and Stacks etc. may be designed as annular stripped footings. Nevertheless, it could be advisable to design such foundations, together with those of the internal columns and/or works, as general raft foundation slabs, so as to limit the effective pressure on the soil to the soil bearing capacity according to the conclusions of the detailed geo-technical investigation.

  A similar design and construction is also recommended for foundations of piers, supports and bases of all equipment generating important vibrations.

- **Materials:**

  (a) All foundations for equipment, structures and shall be design in reinforced concrete.

  (b) Cement for foundations concrete shall be OPC or alternative design mix approved by CCI

- **Equipment and Heavy Construction Supports:**

  The design calculation will expressly consider all operation and accidental loads resulting from the thermal movement and thermal radiation.

- **Material:** The superstructure of the fans foundations and all other heavy equipment support shall be designed as reinforced concrete construction.

- **Reinforced Concrete Structure:**

  Structure RCC Structure are in general be designed as monolithic frames, that is, all bearing elements-columns and load bearing wall, slabs and their supporting beams and girders-made of RCC and closely linked to each other b the reinforcing bars.

- **Joints:** Expansion setting joints will be provided to accommodate thermal and settlement effects. The distance between the joints, their features and their disposition are to be designed in relation to the structure characteristics and its capacity to absorb the resulting deformations and movements.
- **Stairs, platforms and walkways:** Staircases of buildings as well as service platforms and walkways for equipment will be designed as steel construction according to the principles stated hereinafter.
- **Structure- Joint and bracing system:** Expansion and setting joints shall be provided to accommodate thermal and settlement effects. Distance between transverse expansion joints in steel structures will be generally provided at an interval not exceeding 80m in the longitudinal direction.

  The building shall be designed for adequate rigidity and stability in both lateral and longitudinal directions.

  Lateral rigidity shall be provided by means of firmly fixing/embedding the column base into concrete foundation and developing fixation at the eaves and valley levels where the beam is connected with the column shaft.

  Longitudinal rigidity shall be ensured by the combination of roof bracings and vertical bracings between columns.

  The transverse framing and longitudinal bracing system shall be designed to provide rigidity and resistance against wind, seismic forces, tractive forces and surge loads and any other force caused by the vibration of equipment supported on the building structure.

  Each portion of the building between expansion joints shall be treated as an independent building and care must be taken to give rigidity to each sc section of the building. A minimum of one set of roof and column bracings shall be provided in each row between the expansion joints. It is recommended that a completely braced frame be formed in the longitudinal direction every 60-80 meters by providing bracings at roof level and between columns.

  Floors for machinery of all kinds, together with the supporting framework will be adequately braced. Special consideration will be given in the design of floors or structures supporting mechanical equipment to minimize vibration and maintain alignments and levels.

- **Stairs, ladders and walkways:**

  Staircases are generally to be provided instead of vertical ladders, except where ladders are absolutely necessary.

  In process buildings, all stairs are to be made of steel with chequered plate of minimum thickness not less than 5/7 mm or open gratings (in places of possibility of dust accumulation).

  Handrails will be provided for the staircases. The main dimensions given below will preferably be followed.

  - Minimum width of flight : 100mm
  - Slope with the horizontal : 40^0
  - Tread width : 250mm
  - Riser : 160 mm – 180mm
  - Max. vertical distance between landing platform : 4m
  - Handrails : 1m high with top
  - Handrail and mid rail Toe boards : 100mm high

  When ladders have to be used they are designed confirm to the following particulars:

  - Minimum with : 500mm
  - Maximum spacing of RNG : 300mm
  - Safety cage shall be provided when the height of ladders : 3.5m
  - Arrangement of cage : as per standard

ANNEXURE-IV-3

TERMS & CONDITIONS FOR ERECTION AND COMMISSIONING

1.0 RESPONSIBILITY OF THE SUCCESSFUL TENDERER: -

1.1 A schedule for erection work will be made out by the contractor keeping in view the supply schedule and the construction schedule for carrying out the job sequentially within the overall time schedule as specified in the order.

1.2 Unloading and handling of all equipment forming scope of supply, from the railway wagons or road transport (truck/trailer) to the contractor's storage shed/yards or to storage points within the plant areas, as may be indicated by CCI Ltd. shall be carried out by the successful tenderer. However, required storage area will be provided by CCI for electrical and imported components.

1.3 Safety of contractor's equipment during transportation and handling and safe custody of all equipments during storage including those handed over/ issued by the CCI Ltd. will be responsibility of the successful tenderer.

1.4 successful tenderer at his expenses comply with all labor laws and indemnify Cement Corporation of India Ltd. (CCI) against accident/ damage caused to their equipment or employees.

1.5 Handling and transportation of all equipment from storage sheds/ yards/ storage points/ CCI's godown/ CCI's storage yards to the equipment foundation and placing them over the foundations.

1.6 The contractor shall be responsible for demurrage and wharf age charged by railways, all damages, shortages and security of materials and equipments under his charge till the same are erected and commissioned on full load, certified in writing as such and taken over by the CCI Ltd.

2.0 TOOLS AND TACKLES

2.1 Arrangement of all tools and tackles, instruments, cranes, winches, derricks, ropes, sleepers, lifting and transport equipment, jacks, chain blocks, crow bars, welding and gas cutting sets, testing and checking equipments etc. in adequate numbers will be the responsibility of tenderer.

3.0 CHECKING OF EQUIPMENT FOUNDATION

3.1 Checking of levels, foundation center distances cross-checking, alignment of civil foundations and structures for machinery installation purpose.

3.2 The modifications required in the existing civil structures and other structures for erecting the proposed ESP / Bag Filters system are also in the scope of erection work.

4.0 COMPLETION OF ERECTION WORK

4.1 Rectification / modification as required before erection as well as during erection and after trial run of machineries with and without load shall be the responsibility of the contractor.

4.2 Arrangement of adequate number of safety equipments for erection and storing shall be the responsibility of the contractor.

4.3 Arrangement of all necessary erection material like machined and un-machined packing will be made by the contractor.

4.4 Erection, staging structures and necessary supporting hardware, consumables as may be required shall be arranged by the contractor.

4.5 Contractor would also provide erection drawing, permissible erection tolerances and relevant Performa in reproducible sheets / soft copy for individual equipment erection and checks. All checking of the erected machinery would be done with these basic drawings and tolerances.

4.6 The contractor may carry out fabrication work at site for which facilities like space will be provided free of cost and power supply on chargeable basis by CCI.

4.7 Side cladding work shall be carried out neatly and as per standard practices.

4.8 The contractor at his own cost for all equipments, gallery, supports and structures etc. will do painting with red-oxide and two coats of paints.

4.9 The existing equipments removed from their foundations including the scrap material, if any, are to be shifted to a place indicated by CCI. The entire work premises are to be cleaned after the completion of erection work.

5.0 ELECTRICAL AND INSTRUMENTATION ERECTION:

For electrical and instrumentation equipment and other related items, special conditions, over and above those given in the preceding pares are given below.

5.1 All the equipments are to be suitable mounted, assembled, aligned and inter-connected with various sections, checking of each components for satisfactory mechanical and electrical operation and cleaning of contacts, mounting of loose supplied components to their respective positions, setting of relays in accordance with the requirements,

5.2 Laying of LT, control, instrumentation and special cables including supply/fabrication of all cable accessories such as junction boxes, indoor, outdoor and termination / straight through/tee jointing kit for cables; cable glands; cable lugs; cable ferrules, rigid/flexible piper; cable racks/ supports/ trays etc. Cable lying shall be as per approved schedule and shall be carried out in a neat and systematic manner with codified markings.

5.3 Supply and erection of Earthing stations; main and connections with all accessories for the Pollution Control Equipment System including control arrangement. The work includes Earthing of all drives, cables, power equipment and electrical boxes. The instrumentation panels and screened cables should be separately and effectively earthed. All works shall be carried out in accordance with Indian Electricity Rules and the code of practice as per Indian Standards.

5.4 Supply and erection of lighting system inside the covered gallery under the scope of this order, as per statutory requirement.

5.5 All erection and standard tests as per BIS and electricity regulations shall be carried out, documented and countersigned by the CCI's representative which shall be an integral part of the installation and commissioning work.

5.6 All drawings and layouts should be provided for getting approved by us from the competent State Government authorities as per the rules in Vogue.

6.0 OTHER TERMS AND CONDITION

6.1 Commencement and completion period of erection

6.1.1 The detailed time schedule for erection is to be prepared in consultation with CCI and the consultant appointed by CCI. The details time schedule will be approved by CCI and the consultant appointed by CCI. Alteration of schedule will be kept to minimum but not changed.

6.1.2 Erection of equipment of a section will be considered completed, when each unit is ready for trial & commissioning. If any defects or deficiencies are found during the pre-commissioning test, or trial run, due to sub-standard quality of equipment, workmanship of the contractor, the same shall be rectified/ removed by the contractor expeditiously. An interim certificate of completion of the concerned equipment will be issued by CCI after satisfactory completion / defect rectification. However, the final certificate for the erection will be issued for the section as a whole when it is ready for trial & commissioning.

6.2 CONTRACTOR'S SITE SUPERVISORY STATE:

6.2.1 All necessary staff headed by the Site Manager or Resident Engineer Should be available at site according to the progress of erection and quantum of erection. Replacement in case of unforeseen eventualities shall be done expeditiously. Manager will be considered as Chief Authority representing the contractor for all purpose of communications with CCI and his representative. He will also be responsible for his sub-supplier representatives, staff etc. for this purpose.

6.2.2 Site Electrical in-charge must possess valid Electrical Supervisory license.

6.3 SITE FACILITIES:

6.3.1 CCI will provide the contractor, on chargeable basis, necessary electrical power facilities within the factory premises for the purpose of erection and civil works. However cement and water will be provided free of cost to be used within factory premises.

6.3.2 Land for storage yard, site office and fabrication yard shall be made available to the contractor within the factory premises free of cost.

6.3.3 The accommodation to the staff/ employee of the contractor shall be provided by CCI on chargeable basis, if available.

6.3.4 Safety of personal will be the responsibility of the tenderer.

7.0 COMMISSIONING

Commissioning of the Pollution Control Equipment System will be done systematically within the agreed time schedule. The commissioning would be permitted by CCI and their consultant only after satisfactory completion of dry run (no. load) trials of individual equipment / system, interlocks, system controls, communication and alarms. Commissioning of individual equipment and complete section will be done under specified procedures to be mutually agreed upon.

ANNEXURE–A

PROFORMA
OF
BANK GUARANTEE

ANNEXURE - A

CEMENT CORPORATION OF INDIA LIMITED

PROFORMA OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

Where as M/s ……. (name and address of the party) a Company incorporated under the Companies Act, 1956, having its registered office at …… (hereinafter called the Tenderer) wish to participate in tender enquiry no…….. of the Cement Corporation of India Ltd., a Company incorporated under the Companies Act, 1956, having its registered office at SCOPE complex, Core-V, 7 Lodi Road, New Delhi 110003 (hereinafter called the 'Corporation') for ** supply/execution of …… (name of the supply item/work) for …….. (name of CCI's Project/Factory).

AND WHEREAS in terms of the tender conditions the tenderer is required to furnish to the CORPORATION a bank guarantee for the sum of Rs……. (Rupees …… (in words) as Earnest Money Deposit against the 'Tenderer's offer aforesaid.

AND WHEREAS we …….. (name and address of the bank) have at the request of the Tenderer agreed to give to the CORPORATION this guarantee as hereinafter contained.

We ……. (name of the bank) hereby undertake the guarantee to pay immediately to the CORPORATION on demand in writing by the CORPORATION the amount of Rs…… (Rupees …….. (in words), without any reservations and recourse, if the Tenderer shall for any reason backout, whether expressely or impliedly, from their said tender during the period of its validity of any extension thereof or the Tenderer fails to execute the order/ work awarded to them by the CORPORATION against the said tender.

We …….. (name of the bank) further agree that our liability to pay the aforesaid amount is not dependent or conditional on the CORPORATION proceeding against the Tenderer and we shall be liable to pay the amount, without any demur merely on a claim being raised by the CORPORATION.

The guarantee herein contained shall not be determined or affected by the liquidation or winding up, dissolution or change of constitution or insolvency of the said TENDERER but shall in all respects and for all purpose be binding and operative until payment of all moneys due to CORPORATION in respect of such liability or liabilities are paid.

NOTWITHSTANDING anything to the contrary in aforesaid paragraphs, our liability under the guarantee is restricted to Rs…….. (Rupees……. (in words), our guarantee shall remain in force till …….. (date) (to be given for 6 months from the date of opening of Techno-commercial bid). Unless a suit or action enforce a claim under the guarantee is filled on us within two months from the aforesaid date viz., ……, we shall be relieved and discharged from all liability thereunder.

We …… (name of the bank) lastly undertake not to revoke this guarantee during its currency except, with the previous consent of the CORPORATION in writing.

For ……

Dated……..

* Delete if not applicable

** Delete whichever is not applicable

ANNEXURE–B
CERTIFICATE OF RELATION WITH CORPORATION OFFICER

ANNEXURE- B

CEMENT CORPORATION OF INDIA LTD

BOKAJAN CEMENT FACTORY, BOKAJAN (ASSAM)

CERTIFICATE OF RELATION WITH CORPORATION OFFICER

I declare that the following officer (s) of the Corporation is/are related to me/ no officer of the Corporation is related to me:

Sl. No.	Name of the Officer	Post held	Place of posting

Signature :……..

Name in full :……..

Designation : ……

Name of the Party :……

Address :……

Place: ……..

Date: ……..

Seal

ANNEXURE–C

UNEXECUTED/PRESENT CONTRACTS/JOBS IN HAND

ANNEXURE- C

CEMENT CORPORATION OF INDIA LTD
BOKAJAN CEMENT FACTORY, BOKAJAN (ASSAM)

UNEXECUTED / PRESENT CONTRACTS/ JOBS IN HAND

Sl. No.	Name of Client	Nature of Work	Tonnage	Approx. value of contract (₹)In LACS)	Date of Start	Stipulated date of completion

Note: Please attach photocopies of contracts

Signature : …….

Name in full :……..

Designation :……..

Name of the Party :……..

Address :……..

Place: ……..

Seal

Date: ……...

ANNEXURE–D

FORMAT FOR ADDL. INFORMATION TO BE FURNISHED BY TENDERERS

ANNEXURE- D

CEMENT CORPORATION OF INDIA LTD
BOKAJAN CEMENT FACTORY, BOKAJAN (ASSAM)

FORMAT FOR ADDL. INFORMATION TO BE FURNISHED BY TENDERES

(REFER SPECIAL INSTRUCTIONS, PART-III SPECIAL TERMS & CONDITIONS)

Sl. No.	DESCRIPTION	TO BE FILLED BY TENDERER
1.	Name of the Firm	
2.(a)	Postal address (Head Office)	
	Phone (with STD Code)	
	Fax (with STD Code)	
	Telex	
	Gram	
	E-mail ID	
	Postal address (Factory)	
(b)	Phone (with STD Code)	
	Fax (with STD Code)	
	Telex	
	Gram	
	E-mail ID	
	Postal address (branch Office Incl. Delhi Office)	
(c)	Phone (with STD Code)	
	Fax (with STD Code)	
	Telex	
	Gram	
	E-mail ID	

Sl. No.	DESCRIPTION	TO BE FILLED BY TENDERER
3.	Whether Public Sector/ Private Sector/ Joint Sector etc.	
4.	Type of Organization	Proprietary/ Partnership/ Limited Any other Type: ……
A.	*In case of Proprietors/ Partnership* i) Name of the Proprietors/ Partners	1. :…….. 2. :…….. 3. :…….. 4. :…….. 5. :……... 6. :…….. 7. :……..
	ii) Whether business/ Partnership is registered	
	iii) Date of commencement of business	___/___/_____
	iv) Status of Income Tax assessment (Please attach copy of Valid Income Tax clearance certificate)	
	v) Name & address of the Bankers (Please attach reference letter from your banker)	
B.	In case of Limited Liability Company or Company Limited by Guarantees i) Amount of paid-up Capital	

Sl. No.	DESCRIPTION	TO BE FILLED BY TENDERER	
	ii) Name of Directors	1. …… 2. :…….. 3. :…….. 4. :…….. 5. :…….. 6. :…… 7. :……..	
	iii) Date of Registration of Company	––––/–––/–––––––	
	iv) Status of Income Tax assessment (Please attach copy of Valid Income Tax clearance certificate)		
	v) Name & address of the Bankers (Please attach reference letter from your banker)		
5.	Copies of last three years audited Balance sheets of company (including Profit & Loss Statement) to be enclosed.		
6.	Date of commencement of production of item for which tender is being submitted	––––/––––/–––––	
7.	Annual turnover for last 3 years of the category/ item for which tender is being submitted.	Financial Year	Amount (Rs. in LACS)
8.	List of plant & Machinery installed (Detailed to be furnished as per Annexure :D-1)		

Sl. No.	DESCRIPTION	TO BE FILLED BY TENDERER
9.	Details of orders executed/ completed including CCI's, if any, during last 3 years (Details to be furnished as per Annexure: D-2). Photocopies of orders/ contracts along with Performance Certificates form buyers to be enclosed.	
10.	Present order in hand (Details to be furnished as per Annexure-C). Photocopies of orders/ contracts to be attached.	
11.	Details of Foreign collaboration, if any. (Please attach photocopies of collaboration agreement, if it is there).	
12.	Financial a) Investment o fixed assets of building, fitting & fixtures.	
	b) Investment on Plant & Machinery, Tools and dyes etc.	
13.	Testing facilities i) Is your firm authorized to used ISI certification mark (Please give authority reference with copies)	
	ii) Are these testing facilities adequate in line with ISI	
	iii) What are the test facilities (Test Equipments Annexure-D2)	
14.	Are you on the approved list with any of the following Supply of items quoted:	
	- Any Public Sector Undertakings	
	- Cement Plants	
	- Other reputed agency (Enclose Photocopies of Registration Certificates)	

Sl. No.	DESCRIPTION	TO BE FILLED BY TENDERER	
15.	List of Enclosures attached by Vendors to be indicated	Enclosed	Not Enclosed
	a) Latest Income Tax Clearance Certificate / Latest Income Tax Return		
	b) Partnership Deed, if applicable		
	c) Copies of last three years audited Balance sheets with profit & Loss A/cs		
	d) List of Plant & Machinery (as per Annexure: D-1)		
	e) Photocopies of Performance Reports form the customers		
	f) Details of presents orders in hand (as per Annexure-C)		
	g) Photocopy of foreign collaboration, If applicable		
	h) Reference from the Bankers indicating financial status of the company		
	i) Details of Testing facilities (as per Annexure-D2)		

It is hereby solemnly declared that the above information and the date furnished in the enclosed Annexure is true to the best of our knowledge.

Signature :…….

Name in full :…….

Designation :…….

Name of the Party :…….

Address :…….

……

Place : ……..

Date : ……..

Seal

ANNEXURE: D–1

DETAILS OF PLANT AND MACHINERY INSTALLED

ANNEXURE: D-1

DETAILS OF PLANT & MACHINERY INSTALLED

(If applicable)

Name of Firm: ……

Sl. No.	Machinery	Size/ Capacity	Qty.	Year of Manufacture	General Condition

Signature :……

Name in full :……

Designation :……

Name of the Party :……

Address :……..

:……..

Place : ……

Date : ……...

Seal

ANNEXURE: D–2

DETAILS OF TESTING FACILITIES INSTALLED

ANNEXURE: D-2

DETAILS OF TESTING FACILITIES INSTALLED

Name of Firm: ……

Sl. No.	Item	Size/ Capacity	Qty.	Year of Manufacture	General Condition

NOTE: Also specify if test facilities like Radiography, Magnetic crack detection ultrasonic, physical test and chemical test facilities are available. Also indicate and type-testing facilities.

Signature : ……
Name in full : ……
Designation : ……
Name of the Party : ……
Address : ……..
: ……..

Place: ……

Date: ……...

Seal

ANNEXURE: D–3

DETAILS OF ORDERS EXECUTED

ANNEXURE: D-3

DETAILS OF ORDERS EXECUTED

INCLUDING CCI DURING THE LAST SEVEN YEARS

Name of Firm……

Sl. No.	Name of the party to whom supplied	Value	Date of order	Date of delivery	Date of Actual completion

Note: Please attach few latest major order copies along with performance certificate if any.

Signature : ……

Name in full : ……

Designation : ……

Name of the Party : ……

Address : ……..

: ……..

Place: …….

Date: ……...

Seal

ANNEXURE–E

PARTNERSHIP DEED TO BE ATTACHED

ANNEXURE: E

Partnership Deed / Memorandum of Articles of Association by partnership firms / companies duly attested by a gazette officer. In case of partnership deed, the same is registered / not registered.

TO BE ATTACHED

ANNEXURE-G

CEMENT CORPORATION OF INDIA LIMITED
(A Govt. of India Enterprise)

MODVAT CREDIT

We are entitled for availment of MODVAT Credit in respect of excise duty cess on ED paid on exciseable materials.For availing MODVAT Credit, following documents are required to be submitted to our respective Units along with supply of materials :-

i. A clear invoice-cum-excise, gatepass, cess on excise duty etc pass having excise duty tariff head No., duly stamped and signed by the supplier.

ii. The excise duty and cess rate and amount should be clearly shown separately in the invoice-cum-excise gate pass.

iii. The duplicate copy of invoice-cum-gate pass meant for transporter with title Transporter Copy'.

Please confirm all the documents would be submitted along with each and every supply to our Units for availment of the MODVAT Credit. In case any of the documents is not submitted, MODVAT Credit amount will be debited from your bill for the concerned supply.

Please submit this Annexure duly sealed and signed alongwith techno-commercial bid as token of acceptance of the above.

In case excise duty and cess on excise duty is not applicable, the same may be clearly mentioned alongwith techno-commercial bid.

ANNEXURE–F

PRICE BID FOR NEW REVERSE AIR BAG HOUSE AND ESP'S

CEMENT CORPORATION OF INDIA LIMITED, BOKAJAN CEMENT FACTORY **ANNEXURE – F (i)**

PRICE BID:- NEW REVERSE AIR BAG HOUSE

Tender No. :6(1)/13-MMO

DESCRIPTION	BASIC (₹ In Lac)	SERVICE TAX	ED	Cess on ED	VAT/CST/SST	Freight & other charges	Entry Tax	Total	
								Figure	Words
PART - A: ***DESIGN, MANUFACTURE & SUPPLY AT SITE*** a) RABH complete with Fan, Stack and other accessories for 1200TPD Kiln –									
b) Ducting, Duct Supports etc. – Per system / Lump sum									
PART - B: ***CIVIL & STRUCTURAL WORK*** * • RABH complete with Fan, Stack and other accessories for 1200TPD Kiln –									
PART - C: ***ERECTION AND COMMISSIONING*** • RABH complete with Fan, Stack and other accessories for 1200TPD Kiln –									
PART - D: ***RECOMMENDED SPARES FOR TWO YEARS OPERATION*** • RABH complete with Fan, Stack and other accessories for 1200TPD Kiln –									

*List of spares with item wise cost to be attached separately.

- Certified that the above rates have been given in accordance with the technical bid of the tender and conforms all the requirements of Special Terms & Conditions Part-III and Part-IV & Annexure.IV-1, 2, 3, & 4 of Part-IVI.
- The Lowest Quoted (L1) rate shall be evaluated on the basis of total of PART-A +B +C only. The price of recommended spares given at PART-D will not be taken into consideration for the calculation of final rate.

* Cement for civil work shall be issued free of cost by CCI from packing plant inside the factory

Signature : ……

Name in Full : ……

Designation : …….. (Seal

CEMENT CORPORATION OF INDIA LIMITED, BOKAJAN CEMENT FACTORY **ANNEXURE – F (ii)**

PRICE BID:- NEW ESP (CLINKER COOLER)

Tender No. :6(1)/13-MMO

*List of spares with item wise cost to be attached separately

DESCRIPTION	BASIC (₹ In Lac)	SERVICE TAX	ED	Cess on ED	VAT/CST/SST	Freight & other charges	Entry Tax	Total	
								Figure	Words
PART – A: ***DESIGN, MANUFACTURE & SUPPLY AT SITE*** a) ESP complete with Fan, Stack and other accessories for 1200TPD Clinker – Cooler									
b) Ducting, Duct Supports etc. – Per system / Lump sum									
PART – B: ***CIVIL & STRUCTURAL WORK*** * ESP complete with Fan, Stack and other accessories for 1200TPD Clinker - Cooler									
PART – C: ***ERECTION AND COMMISSIONING*** ESP complete with Fan, Stack and other accessories for 1200TPD Clinker - Cooler									
PART - D: ***RECOMMENDED SPARES FOR TWO YEARS OPERATION*** ESP complete with Fan, Stack and other accessories for 1200TPD Clinker - Cooler									

*List of spares with item wise cost to be attached separately.

- Certified that the above rates have been given in accordance with the technical bid of the tender and conforms all the requirements of Special Terms & Conditions Part-III and Part-IV & Annexure.IV-1, 2, 3, & 4 of Part-IVI.
- The Lowest Quoted (L1) rate shall be evaluated on the basis of total of PART-A +B +C only. The price of recommended spares given at PART-D will not be taken into consideration for the calculation of final rate.
- Cement for civil work shall be issued free of cost by CCI from packing plant inside the factory

Signature : ……

Name in Full : ……

Designation : …….. (Seal

ANNEXURE–F.1

PRICE BID FOR NEW BAG FILTERS

CEMENT CORPORATION OF INDIA LIMITED, BOKAJAN CEMENT FACTORY **ANNEXURE – F.1 (i)**

PRICE BID:- NEW BAG FILTER (COAL MILL)

Tender No. :6(1)/13-MMO

DESCRIPTION	BASIC (₹ In Lac)	SERVICE TAX	ED	Cess on ED	VAT/CST/SST	Freight & other charges	Entry Tax	Total	
								Figure	Words
PART – A: ***DESIGN, MANUFACTURE & SUPPLY AT SITE*** a) Bag Filter complete with Fan, Stack and other accessories for New Coal Mill – 12TPH									
b) Ducting, Duct Supports etc. – Per system / Lump sum									
PART – B: ***CIVIL & STRUCTURAL WORK*** * • Bag Filter complete with Fan, Stack and other accessories for New Coal Mill – 12TPH									
PART – C: ***ERECTION AND COMMISSIONING*** • Bag Filter complete with Fan, Stack and other accessories for New Coal Mill – 12TPH									
PART - D: ***RECOMMENDED SPARES FOR TWO YEARS OPERATION*** • Bag Filter complete with Fan, Stack and other accessories for New Coal Mill – 12TPH									

* **List** of spares with item wise cost to be attached separately.

- Certified that the above rates have been given in accordance with the technical bid of the tender and conforms all the requirements of Special Terms & Conditions Part-III and Part-IV & Annexure.IV-1, 2, 3, & 4 of Part-IVI.
- The Lowest Quoted (L1) rate shall be evaluated on the basis of total of PART-A +B +C only. The price of recommended spares given at PART-D will not be taken into consideration for the calculation of final rate.

* Cement for civil work shall be issued free of cost by CCI from packing plant inside the factory

Signature: ……
Name in Full : ……
Designation : …….. (Seal

CEMENT CORPORATION OF INDIA LIMITED, BOKAJAN CEMENT FACTORY **ANNEXURE – F.1 (ii)**

PRICE BID:- NEW BAG FILTER (CEMENT MILL)

Tender No. : 6(1)/13-MMO

DESCRIPTION	BASIC (₹ In Lac)	SERVICE TAX	ED	Cess on ED	VAT/CST/SST	Freight & other charges	Entry Tax	Total	
								Figure	Words
PART – A: ***DESIGN, MANUFACTURE & SUPPLY AT SITE***									
Classifier Bag Filter complete with Fan, Stack and other accessories for 800 TPD Cement Mill (Upgraded) –									
*Ducting, Duct Supports etc. – Per system / Lump sum									
Cement Mill Venting Dust Collector									
*Ducting, Duct Supports etc. – Per system / Lump sum									
PART – B: ***CIVIL & STRUCTURAL WORK*** *									
a. Classifier Bag Filter complete with Fan, Stack and other accessories for 800TPD Cement Mill (Upgraded)									
b. Cement Mill venting Bag Filter									
PART – C: ***ERECTION AND COMMISSIONING***									
a. Classifier Bag Filter complete with Fan, Stack and other accessories for 800 TPD Cement Mill (Upgraded) –									
b. Bag Filter for Venting Dust Collector									
PART – D: ***RECOMMENDED SPARES FOR TWO YEARS OPERATION***									
a. Classifier Bag Filter complete with Fan, Stack and other accessories for 800 TPD Cement Mill (Upgraded) –									
b. Bag Filter for Venting Dust collector									

***** List of spares with item wise cost to be attached separately.

- Certified that the above rates have been given in accordance with the technical bid of the tender and conforms all the requirements of Special Terms & Conditions Part-III and Part-IV & Annexure.IV-1, 2, 3, & 4 of Part-IV.
- The Lowest Quoted (L1)rate shall be evaluated on the basis of total of PART-A +B +C only. The price of recommended spares given at PART-D will not be taken into consideration for the calculation of final rate.

***** Cement for civil work shall be issued free of cost by CCI from packing plant inside the factory

Signature : ……..
Name in Full : ……..
Designation : …….. (Seal)

PROJECT IMPLEMENTATION SCHEDULE

PROJECT IMPLEMENTATION SCHEDULE – CCI Ltd. BOKAJAN
POLLUTION CONTROL EQUIPMENT SUPPLY ERECTION AND COMMISSIONING

Sl. No.	ACTIVITY	DURATION IN MONTHS															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Submission of G.A. Drawings and Technical specifications																
2	Manufacturing of Equipment and supply at site																
3	Civil Work for foundation etc. (New)																
4	Fabrication Ducting at site (New)																
5	Erection of Equipments (New)																
6	No Load Trial (New)																
7	Commissioning of New Equipment																
8*	Replacement of Cement Mill ESP by Bag Dust Collector Dismantling, Fabrication & Erection complete (25 days)																

*1. **Preparatory work is to be done without stopping the plant.**

CRITICAL PATH

Replacement work

Site Fabrication

For,

Prepared by : SPONGYTECH

LIST OF DRAWINGS ATTACHED

LIST OF DRAWINGS ATTACHED

Sl. No.	SECTION	DRAWING / FLOW SHEET NO.
	*DWG	*PDF
1.	Cement Plant Layout with Proposed Installation	ST/BKJ/LO-001(Rev-1)
2.	Flow Sheet for Pre-heater & Kiln	ST/BKJ/KL/PCE/FS-007 (Rev-1)
3.	Flow Sheet for Grate Cooler	ST-BKJ-CO-PCE-FS-008 (Rev-1)
4.	Flow Sheet for Clinker Grinding Section	ST/BKJ/CM/PCE/FS-010 (Rev-1)
5.	Flow Sheet Coal Drying & Grinding	ST/BKJ/CL/PCE/FS-012 (Rev-1)
6.	P & I Diagram for PCE Rotary Kiln (1200TPD Rotary Kiln & VRM)	ST/BKJ/KL/PCE/PI-007 (Rev-1)
7.	P & I Diagram for PCE (1200TPD Grate Cooler)	ST/BKJ/CO/PCE/PI-008 (Rev-1)
8.	P & I Diagram for PCE (Cement Mill)	ST/BKJ/CM/PCE/PI-010 (Rev-1)
9.	P & I Diagram for PCE (Coal Mill)	ST/BKJ/CL/PCE/PI-012 (Rev-1)
10.	Main HT & LT SLD	ST/BKJ/ELE/PCE/SLD-013 (Rev-1)
11.	Plant Control & Automation System	ST/BKJ/ELE/PCE/INST-014 (Rev-1)

***DWG** – Click Section Name to Open in Auto CAD Format.
***PDF** – Click Drawing/Flow Sheet no. to Open in PDF Format

Flow Sheet for Pre-heater & Kiln