



JHARKHAND STATE CO-OP MILK PRODUCERS' FEDERATION LTD  
Near Farmers Training Centre Campus, Sec-II, H.E.C., Dhurwa, Ranchi  
- 834004, Jharkhand  
Phone no: 7544003404/7360035219/0651-2443055/62  
Email: [purchase@jmf.coop](mailto:purchase@jmf.coop), WEBSITE: [www.jmf.coop](http://www.jmf.coop)



## **TENDER DOCUMENT**

(COMPLETE BIDDING DOCUMENT)

**SUPPLY, INSTALLATION AND COMMISSIONING OF SELF SUPPORTED  
CHIMNEY, FEED WATER TANK AND FLUE GAS DUCTING FOR THERMAX TEON  
500 (CAPACITY 500 kg/Hr) MULTI FUEL BOILER AT MEDHA DAIRY PLANT, (FOR  
LOCATION HOTWAR, DEOGHAR & KODERMA)**

**AND**

**TESTING AND COMMISSIONING OF TEON 500 BOILER ON COAL AS FUEL  
INCLUDING ALL STATUTORY APPROVAL FOR CHIMNEY AND BOILER'S  
INSPECTOR APPROVAL FOR FIRING AND OPERATION OF BOILER AT MEDHA  
DAIRY PLANT, (FOR LOCATION HOTWAR, DEOGHAR & KODERMA)**

**Single Stage – Two Part Bid**

**Tender No. JMF-PP-Boiler Teon-500/2020-21/028**

Important dates:

Publication of Tender Notice : 15/06/2020  
Receipt of completed tender : 30/06/2020 till 05:00 PM

*Name of Tenderer* : \_\_\_\_\_  
*Address* : \_\_\_\_\_  
\_\_\_\_\_  
*Tel./ Mob. no* : \_\_\_\_\_  
*Email Address* : \_\_\_\_\_

**Tender Fee: Rs. Nil/-**

All rights reserved. This material is confidential and proprietary of The Jharkhand State Co-operative Milk Producers' Federation Ltd(JMF) and no part of this material should be reproduced, published in any form by any means, electronic or mechanical including photocopy or any information storage or retrieval system nor should the material be disclosed to third parties without the written authorization of JMF



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## INTRODUCTION:

When the famous White Revolution of the seventies and eighties – Operation Flood - swept through the country, Jharkhand, then a part of undivided Bihar served merely as a market and saw little of its benefits. Even though India stood self-sufficient in milk production, the eastern state of Jharkhand still depends on import of milk from other states. It was only in June 2013 when Jharkhand State Cooperative Milk Producers' Federation Ltd. (JMFC) registered office at H.E.C., Sec-II, Dhurwa, Ranchi, (Jharkhand) – 834004 was formed by the Government of Jharkhand under Jharkhand Co-operative Societies Act, 1935 with brand name 'Medha' with an aim to promote dairying as a source of livelihood in the rural parts of the state and propel Jharkhand towards self-reliance in milk and milk products.

JMFC under the management of National Dairy Development Board (NDDB) started the milk procurement, processing and marketing activities in the state after taking over the existing Government Dairy at Ormanjhi in August 2014 and subsequently three other dairies at Deoghar, Koderma & Latehar. In 2016 NDDB supported in building a 1 Lakh Litre State of the Art Dairy Plant at Hotwar, Ranchi for the Jharkhand Milk Federation and today it is providing an alternative livelihood options to around 20000 rural families in the state of Jharkhand.

Jharkhand (झारखण्ड) is a state in eastern India. Ranchi was the centre of the Jharkhand movement (a movement called for a separate state for the tribal regions of South Bihar, northern Orissa, western West Bengal and the eastern area of what is present-day Chhattisgarh). The Jharkhand state was formed on 15 November 2000 by carving out the Bihar divisions of Chota Nagpur and Santhal Parganas. It's known for its waterfalls, the elegant Jain temples of Parasnath Hill and the elephants and tigers of Betla National Park.

Ranchi, the state capital has been selected as one of the hundred Indian cities to be developed as a smart city under PM Narendra Modi's flagship Smart Cities Mission. The city has a moderate climate and was the summer capital of Bihar until Jharkhand was separated in the year 2000. It is popularly known as a "City of Water Falls".


Area: 652 km<sup>2</sup>

Metropolitan area: 1,295 km<sup>2</sup>

Elevation: 651 m

Weather: 34 °C, Wind N at 13 km/h, 29% Humidity

Population: 10.7 lakhs (2011)

The word 'Medha'  means Goddess Sarasvati-the Deity of Knowledge. Like the purity of the reverent deity, our sincere effort is to provide the people of Jharkhand the best of nature.

Our core philosophy at Medha is to stay true to our roots with a commitment to serve the people of the state with the best quality, hygienic, unadulterated milk which contributes to the development of a healthy and strong people i.e.,

**'Har boond mein Sehat, Har boond mein Jharkhand'**



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## Instruction to Bidder / Tenderer

1. The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document. Failure to furnish all information or authentic documentation required by the Bidding Document may result in rejection of the Bid.
2. The Bid shall comprise of two envelopes (one containing the Technical Bid and the other the Financial or Price Bid) to be submitted simultaneously under one main envelope.
3. The Bidder shall submit the Technical Bid and Financial Bid using the appropriate Bid Submission Format provided in Bidding/ Tender document or as requested in Bid document. The forms/ formats must be completed without any alterations to their format, and no substitutes shall be accepted.
4. Tender bid can be sent by post/ courier or submitted by hand at our office by time as specified in tender notice. Tenders received late will be rejected.
5. Bid can be submitted by hand or by post/ courier. For bids submitted by post or Courier, it is bidder's responsibility that bid reaches our office on or before the scheduled time and date.
6. In case tender opening date is declared a Holiday, bids shall be opened on next working day at the same time specified in tender.
7. The unit rates and the prices shall be quoted by the Bidder entirely in Indian Rupees unless otherwise specified in Bidding/ Tender document in case of International Competitive Bidding (ICB). All payments shall be made in Indian Rupees only, unless otherwise specified in the Bidding/ Tender document.
8. To establish their eligibility, Bidders shall complete the eligibility criteria specified /requested in the Bid/ Tender document.
9. To establish the conformity of the Goods and Related Services to the Bidding Document, the Bidder shall furnish as part of its Bid, the documentary evidence (specifications, designs and drawings and others), supply samples where asked for, demonstrate trials or carry out tests as specified in Bidding /tender document.
10. Any attempt by a Bidder to influence the Procuring Entity "The Jharkhand State Cooperative Milk Producers' Federation Ltd. (JMF)", in the examination, evaluation, comparison, and post qualification of the Bids or Contract award decisions may result in the rejection of its Bid, in addition to the legal action which may be taken by the Procuring Entity under the Act and the Rules.
11. Information relating to the examination, evaluation, comparison, and post-qualification of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until information on Contract award is communicated to all Bidders.
12. To assist in the examination, evaluation, comparison and qualification of the Technical or Financial Bids, the Bid evaluation committee may, at its discretion, ask any Bidder for a clarification regarding its Bid. The committee's request for clarification and the response of the Bidder shall be in writing.
13. Any clarification submitted by a Bidder with regard to his Bid that is not in response to a request by the Bid evaluation committee shall not be considered.
14. The determination of qualification of a Bidder in evaluation of Technical Bids shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder and in accordance with the qualification criteria indicated in Qualification and Evaluation Criteria. Factors not included in Qualification and Evaluation Criteria shall not be used in the evaluation of the Bidder's qualification.
15. The Bid evaluation committee shall have full powers to undertake negotiations where it deemed necessary. Negotiations may, however, be undertaken only with the lowest Bidder(s) only.
16. JMF reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract award without assigning any reasons thereof and without thereby incurring any liability to the Bidders.
17. JMF shall award the contract to the Bidder whose offer has been determined to be the lowest in accordance with the evaluation criteria set out in Evaluation and Qualification Criteria and if the Bidder has been determined to be qualified to perform the contract satisfactorily.



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## TENDER NOTICE

The Jharkhand State Cooperative Milk Producers' Federation Ltd. (JMFL), registered under Jharkhand Co-operative Societies Act, 1935 is engaged in milk procurement, processing and marketing activities of item milk and milk products in the state of Jharkhand and is popularly known for its brand 'Medha'. Under an MoU, the Federation is being managed by the National Dairy Development Board (NDDB).

Sealed offers are invited from reputed manufactures/suppliers for the Supply, Installation and Commissioning of Self Supported Chimney, Feed Water Tank and Flue Gas Ducting for Thermax Teon 500 (Capacity 500 Kg/Hr) Multi Fuel Boiler at Medha Dairy Plant, Location: Hotwar, Deoghar & Koderma and Testing & Commissioning of Teon 500 Boiler on coal as fuel Including all statutory approval for Chimney and Boiler's Inspector Approval for Firing and Operation of Boiler at Medha Dairy Plant, Location: Hotwar, Deoghar & Koderma. Details of items can be seen in the enclosed format.

Offers may be submitted to the undersigned **on or before June 30, 2020 by 17:00 hrs** in a sealed cover super-scribed clearly with "Offers for Supply, Installation and Commissioning of Self Supported Chimney, Feed Water Tank and Flue Gas Ducting for Thermax Teon 500 (Capacity 500 Kg/Hr) Multi Fuel Boiler at Medha Dairy Plant, (For Location : Hotwar, Deoghar & Koderma) and Testing & Commissioning of Teon 500 Boiler on coal as fuel Including all statutory approval for Chimney and Boiler's Inspector Approval for Firing and Operation of Boiler at Medha Dairy Plant, (For Location : Hotwar, Deoghar & Koderma).

The Head Office is Located at Ranchi (Jharkhand) and is inviting offers as per prescribed proforma

The quantity detail is mentioned as below:

S. No.	Description	Qty	Location for Installation	Remarks
1.	MS Self supported min. 30 m high chimney for boiler	03 Nos	Medha Dairy Plant, Hotwar Medha Dairy Plant, Deoghar & Medha Dairy Plant, Koderma	
2.	Feed Water Tank, cap 2 KL	03 Nos		
3.	Flue Gas Ducting between boiler to TMC to ID fan to chimney (6 mtr each location)	18 mtr		
4.	MS Structure for supporting TMC (Including Installation of TMC)	03 Lot		
5.	Commissioning of Boiler and all Statutory approval	03 Job		

**Detailed specifications & Scope of work for is enclosed as Annex-II**

The tender document can also be downloaded from our website [www.jmf.coop](http://www.jmf.coop)

Filled in tender document duly signed & stamped in all pages of tender document with subject line: "Tender for Supply, Installation and Commissioning of Self Supported Chimney, Feed Water Tank and Flue Gas Ducting for Thermax Teon 500 (Capacity 500 Kg/Hr) Multi Fuel Boiler at Medha Dairy Plant, (For Installation Location Hotwar, Deoghar & Koderma)" should reach us on or before **30 June 2020 by 17:00 Hrs.** at the below Address ONLY.

**The Jharkhand State Cooperative Milk Producers' Federation Ltd**



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**Medha Dairy Plant, Beside Birsa Munda Central Jail, Hotwar, Ranchi-835217, Jharkhand.**

**The rate offered shall be on 'Free Delivery at Site (F.O.R.)' Basis to be delivered at our below Dairy Unit/Dairy Plant:**

**Medha Dairy Plant,**

(A Unit of Jharkhand State Co-Op. Milk Prod. Fed. Ltd.),  
Beside Birsa Munda Central Jail,  
Hotwar, Ranchi – 835217. (Jharkhand)

**Medha Dairy Plant,**

(A Unit of Jharkhand State Co-Op. Milk Prod. Fed. Ltd.),  
Molkoko, Post: - Lokai  
Ranchi-825410, Jharkhand

**Medha Dairy Plant,**

(A Unit of Jharkhand State Co-Op. Milk Prod. Fed. Ltd.),  
Chittolorhiya, Deo-Sang Road,  
Post: Deo-Sang, Deoghar-814114, Jharkhand

Any corrigendum, updates etc. relating to this tender will be published only in our web site and not in any other media including newspaper. Therefore, interested bidders may regularly visit our website or contact the undersigned.

**Managing Director**  
Jharkhand State Co-Op. Milk  
Producers' Fed. Ltd.



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### **ELIGIBILITY & TENDER SUBMISSION:**

SEALED-TENDERS are invited for Supply, Installation and Commissioning of Self Supported Chimney, Feed Water Tank and Flue Gas Ducting for Thermax Teon 500 (Capacity 500 Kg/Hr) Multi Fuel Boiler in single stage two cover system i.e. Pre-Qualification/Technical Bid (Technical Envelope) and Financial Bid (Commercial Envelope) as below:

#### **Envelope 1: Technical Bid**

The bidder should submit eligibility criteria, technical details as required in enclosed **Annex-I** and **Annex-II** in the Technical Bid.

#### **Envelope 2: Commercial Bid**

The bidders should quote the prices in Indian Rupees in price bid format in the Financial /Commercial Bid Format enclosed as **Annex-III** as per technical parameters/ specifications enclosed as **Annex-II**

Under this process, the Eligibility and qualification of the Applicant/ Agency will be first examined based on the detail submitted under first cover (Technical Bid) with respect to eligibility criteria and specifications prescribed in this tender document. The Price Bid under the second cover shall be opened for only those Applicants whose technical Applications are responsive to eligibility and qualifications requirements as per Tender document.

### **TERMS AND CONDITIONS:**

Submission of Tender/Bid in Sealed Envelope

#### **Envelope 1:**

- 1.1. Technical Bid: - Under technical bid, the Tenderer/ bidder interested, shall fill its complete profile in the enclosed format **Annexure – I – ‘Tenderers’ Profile’ & Annexure-II** and shall provide/ submit all such documents as requested/ required.
- 1.2. The items’ technical details/parameters/ specifications must be provided under the technical bid envelope.

#### **Envelope 2:**

- 1.3. Commercial Bid: -Under commercial bid, the price/ rate should be quoted on F.O.R. destination basis inclusive of packing forwarding, GST, insurance & transportation charges etc. in the enclosed format -**Annex-III– ‘Commercial Bid’**.

- 1.4. Bid Currencies: -The rate/ price should be quoted in Indian Rupees only.

#### **2.0 Period on Validity of Bids: -**

- 2.1. Bids shall remain valid for 90 days after the date of bid opening prescribed by JMF, Ranchi. A bid valid for a shorter period shall be rejected as non-responsive.

### **General Terms & Conditions: -**

1. The tender documents can be downloaded from our website [www.jmf.coop](http://www.jmf.coop) from 15.06.2020.
2. The Bidder interested, shall fill their complete profile in the attached **Annexure - I**.
3. The Supplier should quote for the job/ items in the prescribed format mention enclosed as **Annexure-II**.



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4. The bidder must submit detailed Technical Specification of the above item along with tender document. The item must be as per technical specification provided in **Annexure-III**.
5. All entries in the tender form should be legible and filled clearly. If the space for furnishing information is insufficient, a separate sheet duly signed by the authorized signatory may be attached. No overwriting or cutting is permitted in the Price Bid Form. In such cases, the tender shall be summarily rejected.
6. The tenderer must quote their prices of equipment on F.O.R. Destination basis inclusive of packing forwarding, taxes, insurance & transportation charges etc.
7. The tenderer must follow the specifications while quoting for Supply, Installation and Commissioning of Self Supported Chimney, Feed Water Tank and Flue Gas Ducting for Thermax Teon 500 (Capacity 500 Kg/Hr) Multi Fuel Boiler at Deoghar Dairy, Deoghar and Testing & Commissioning of Teon 500 Boiler on coal as fuel Including all statutory approval for Chimney and Boiler's Inspector Approval for Firing and Operation of Boiler at Medha Dairy Plant, (Location for Installation: Hotwar, Deoghar & Koderma) as mentioned in enclosed Annexure – II.
8. The prices should be quoted F.O.R. Destination inclusive of packing forwarding, taxes, insurance & transportation charges etc. Rate must be quoted in enclosed “Annexure-III (Commercial/Financial Bid)”.
9. The tenderer must indicate their GST and PAN nos as mentioned in the proforma, failing which the offer of the party will be summarily rejected.
10. **Payment Terms:**
  - A. **SUPPLY:** 20% of supply price as Advance against Bank Guarantee valid till the supply is affected. 70% of supply price within 30 days from the date of receipt of materials & its acceptance and 10% after one year from the date satisfactory Commissioning and performance trial. However, this can be released along with 70% payment against submission of a bank guarantee for 10% value valid for one year from the date of Commissioning.
  - B. **INSTALLATION & COMMISSIONING:** 100% of installation price against completion of installation & commissioning and performance trial.
11. The tenderer shall have to pay Earnest Money Deposit 1% of the quoted price in form of crossed Demand Draft in favour of “Jharkhand State Cooperative Milk Producers Federation Ltd”, payable at Ranchi while submitting the tender. Submission of earnest money by any mode other than specified above shall not be accepted and the related tender shall not be eligible for consideration.
12. Earnest money deposit of unsuccessful tenderers will be returned within 30 days from the date of opening of the tenders. The earnest money deposit of the successful tenderers shall be released on completion of successful supply of entire quantity allotted /ordered within the stipulated period.
13. No interest will be paid on the earnest money for the period during which it (the earnest money) lying deposit with the Jharkhand Milk Federation.
14. The Company guarantees that the goods manufactured by it and delivered hereunder will be free of defects in materials and workmanship for a period of twelve (12) months from the date of shipment.
15. On receiving orders from JMF, the supply of Product at Jharkhand Milk Federation, Ranchi or any location specified by it shall be the responsibility of the supplier. The rejected material, if any, shall have to be lifted by the supplier at their own cost within a week time from the date of intimation



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from JMF. JMF shall not be responsible for any deterioration due to delayed lifting of the rejected material by the supplier.

16. Material to be suitably packed to prevent damages during transit.
17. JMF reserves the right to accept or reject any or all the offers without assigning any reason thereof. Managing Director, JMF shall be Arbitrator in case of any disputes and his decision will be final and binding on both the parties. For all legal matters & dispute Ranchi court shall be our Jurisdiction. Any money found recoverable shall be recovered under the public Demand Recovery Act without prejudice to any other mode of recovery.

**Managing Director**

**Jharkhand State Coop Milk Producers' Federation  
Ltd**







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**ANNEXURE – I**  
**TENDERER'S PROFILE**

No	Details			
1	Name of Vendor/ Tenderer			
2	Address Of Registered Office			
3	Address Of Factory/ Works			
4	Name Of Contact Person			
5	Contact Nos.			
6	Type Of Firm : Ltd Co/ Pvt. Ltd. / Partnership/ Proprietor			
7	Nature Of Firm: Manufacturer/ Traders / Autho. Dist. / Dealer			
8	Year Of Establishment			
9	Name Of Product, you Deal			
	Please, Specify in separate sheet (As per below Format)			
	S. No	Item Description (Shortly)	Make/Brand	
10	G.S.T. No & Reg. Date			
11	PAN No & Date			
12	Turn Over Of last 3 Year (Rs.)	1.	2.	3.
13	If You have maintained any quality standard (Pl. Specify)			
14	Name Of Clients (If required, Pl. Specify in separate sheet)	1.	2.	3.
15	Min. Lead Time Required (Days)			
16	Bank Details	Name of Bank : Branch Address:  Account No. : IFSC Code :		
17	Documents to Be Attached	1. Copy of Registration + PAN Copy + GST Regn. 2. ISO Certificates 3. Autho. Dealership 4. Fin. Statements 5. Product Brochures 6. Copy of PO's (Min.5)		
Recommendation:				
<b>Seal &amp; Sign. Of Vendor</b>				



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## ANNEXURE-II

**PART I: SUPPLY, INSTALLATION AND COMMISSIONING OF SELF SUPPORTED CHIMNEY, FEED WATER TANK AND FLUE GAS DUCTING FOR THERMAX TEON 500 (CAPACITY 500 kg/Hr) MULTI FUEL BOILER AT MEDHA DAIRY PLANT, (LOCATION FOR INSTALLATION: HOTWAR, DEOGHAR & KODERMA)**

**PART II: TESTING AND COMMISSIONING OF TEON 500 BOILER ON COAL AS FUEL INCLUDING ALL STATUTORY APPROVAL FOR CHIMNEY AND BOILER'S INSPECTOR APPROVAL FOR FIRING AND OPERATION OF BOILER AT MEDHA DAIRY PLANT, (LOCATION FOR INSTALLATION: HOTWAR, DEOGHAR & KODERMA)**

**NOTE: BIDDERS HAVE TO QUOTE BOTH PART I & PART II ABOVE**

### 1. FEED WATER TANK, CAPACITY 2 KL

The tank would be used as buffer store for boiler feed water. The tank shall also receive makeup water & have an arrangement to indicate the water level inside the tank.

S. N.	Description	Requirements
1.	Capacity	2000 L
2.	Features	Covered, vertical circular cross-section
3.	Finish	All welds should be ground smooth.
4.	Body	Fabricated from 5 mm thick MS plate.
5.	Insulation	50 mm thick mineral wool and 2mm MS sheet cladding.
6.	Manway	Ø 600 mm circular hinged door with quick opening arrangement - 1 no.
7.	Outlet	40 mm NB flanged with butterfly valve - 1 no.
8.	Inlet	40 mm at ¾ full level with ball float & butterfly isolation valve - 1 no.
9.	Overflow	40 mm NB flanged with water seal, funnel & connected to drain line
10.	Level Indicator	Magnetic level gauge with bi-coloured rotating flapper with calibrated scale for distant level
11.	Air vent	100 mm dia(min) vent head with baffles, SS removable wire mesh
12.	Drain	Provision with drain cup with 65 mm bends with butterfly valve – 1 set.
13.	Heating arrangement	A suitable sized port with counter flange for mounting suitable water heating arrangement



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14.	Feed water pump control	Water level probe with Alarm & tripping of feed water pump.
15.	Lifting arrangement & approach	Adequately sized Lifting lugs (4 Nos.), external MS rungs for tank inspection/ maintenance shall be provided
16.	Inside painting	Two coats of heat resistant epoxy primer followed by two coats of heat resistant epoxy paint.
17.	Outside paint	One coat of primer followed with 2 coats of synthetic enamel paint.

## 2. FLUE GAS DUCTING

Flue gases from the Outlet of each boiler shall be separately taken across separate Air pre-heater & shall be connected to a common Pollution Control equipment.

Flue gas ducting shall be suitable to receive and convey flue gases across the Mechanical dust collector, ID Fan from individual Boilers. MS ducting between the chimney & Boiler shall be fabricated from MS sheet of minimum 4 mm thickness & shall be designed for a peak flue gas velocity of 14 to 16 m/s. fabricated ducting segments shall be welded to each other and suitably supported within the Boiler House. The flue gas ducting shall be insulated with 50mm thick mineral wool insulation with 24 G Al. Sheet cladding & shall be connected to the chimney through a pair of flanges. The Main Flue gas ducting shall be connected to the pollution Control equipment; ID fan & shall have an expansion bellow. It is desirable to have Flue gas ducting from Boilers connected to the chimney separately.

## 3. CHIMNEY

Chimney shall be suitable to receive and convey flue gases from the Boiler. The chimney for the boiler shall be of self-supporting type, made out of mild steel sheets of suitable thickness. The steel plates and sections used in construction of the chimney along with other materials such as rivets, bolts, nuts, washers, gaskets including all consumables like welding rods etc., shall conform to the relevant IS. The chimney should be designed for minimum 20 years' life.

The chimney height shall be as per the Pollution Control Board's regulation. The design and construction of the chimney shall be conforming to IS: 6533 – Part 1 & 2 – 1989. The height of the chimney if indicated in data sheet is the minimum requirement and it will be the responsibility of supplier/contractor to provide the same as per the Pollution Control Board regulation.

While calculating the load on the chimney the following shall be considered:

Dead load considering the weights of the chimney shell and permanent fixtures such as ladders with protection cage, sampling platforms with railings, baffles, helical strakes, flanges, fasteners and all accessories.

The chimney should consist of all the accessories and the minimum requirement of few are as follows:

- **Base plate** with gussets plate (minimum thickness of 12 mm) and base stool.



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- **Inspection door** with minimum size of 1000 W x 800 W shall be provided. The door shall have handles and all associated accessories. The cut-out made on the chimney should have stiffeners of not less than 50 x 50 x 6 mm angles welded on the periphery of the cut-out in the chimney.
- **Access ladder with protection cage:**

The ladder should start base of the chimney and it should be upto the top of the chimney. The ladder shall be supported from the chimney with structural members of not less than 50 x 50 x 6 mm ISA and the ladder rung should be located at a distance of 250 mm from the chimney. The ladder rung should be made of 20 mm dia rod, the width of the rung should be of minimum 400mm and the ladder step should be at a frequency of 200 mm C/C. Safety enclosure or cage shall be provided for the ladder from 3m to the top.
- **Platform for flue gas sampling and inspection:**

The platform width should be not less than 800mm and should have 1000mm high railings, one additional support shall be provided in the middle of the railings, toe guard support shall be provided at the bottom of the railing. There should be suitable arrangement in the platform for draining out the rain water. Sampling port shall be provided for flue gas sample analysis as per the PCB regulation.
- **Conical cowl with cowl stays:**

The minimum cowl diameter should be 1.5 times the diameter of the top of the chimney section.
- **Twin aviation lights and warning lights.**

Aviation obstruction light fixture shall be made of Aluminium alloy casing with separate galleries to house a set of two 40 watts (minimum) LED lamps. The lamp fixture shall have suitable red domes and the lamp fixture shall be of reputed make. Aviation obstruction light point should be connected upto the IP 55 grade of protection Cast aluminium junction box installed at the base on the chimney with 3C x 2.5 sq.mm., PVC sheathed, PVC insulated copper cable. The circuit cable shall be run on the rigid PVC conduit, 2mm thick and shall be fixed on the chimney surface with suitable saddles and clamps mounted on the epoxy based insulators.
- **Lightning arrestor:**

Lightning arrestor should be of copper with minimum 3 or 5 prongs, the lightning arrestor should be connected to two earth stations. The earthing conductor should be of size should not less than GI 25 x 6 mm/or of equivalent size and conductor material as approved by the local statutory authorities. The earthing conductor should be mounted on the epoxy based insulators and not directly fixed to the chimney surface. Two earthing conductor should run parallel from the lightning arrestor and each connected to the independent earth stations. The earth stations in turn should be interconnected with one another.
- **The earth station** should be of GI plate conductor and constructed as per IS 3043 latest edition. The earth station should be complete with excavation, filling with charcoal/salt, watering pipe, funnel, earthing conductor, test link, 350 mm x350 mm CI hinged cover with frame complete with all masonry works.
- **Flue gas inlet:**

The cut-out made on the chimney should have stiffeners of not less than 50 x 50 x 6 mm angles welded on the periphery of the cut-out. The opening made on the chimney for the flue gas duct



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Near Farmers Training Centre Campus, Sec-II, H.E.C., Dhurwa, Ranchi  
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should be extended by 200 to 1000mm and terminated on counter flanges to facilitate connection of the ducting on the chimney.

- **Helical strakes** to reduce wind excited oscillations for the top 2/3<sup>rd</sup> height of the chimney.
  - **Chimney bottom should be insulated** upto 3 M height by 50 mm white mineral wool followed by cladding with 3 mm MS sheet. MS sheet cladding should be of butt welded construction.
  - All MS parts of the chimney shall be given initial surface treatment including degreasing, de-rusting etc., followed by a coat of primer. The chimney should be finally painted with two coats of suitable heat resistant paint.
  - **Foundation bolt** of adequate length and diameter (min 40 mm) shall be provided along with the anchoring channel of section ISMC 150 on the bolt base.
  - **Template shall be provided by the successful bidder suitable for the foundation bolts for casting the chimney foundation.**
4. **TMC Unit of Boiler:**

The TMC unit supplied with Thermax TEON 500 shall be erected on suitable MS structure and connected with boiler through flue gas ducting. Flue gas ducting from TMC shall be connected to the chimney. The supply & installation of MS structure for supporting the TMC including painting of structure is included in the scope of work.

**DATA SHEET:**

**Chimney:**

Height of Chimney : Minimum 30 m

Base dia of chimney : 750 mm

Top dia of chimney : 250 mm

Bottom conical height (1/3<sup>rd</sup> of total chimney height) of chimney; 10 m

Chimney bottom 1/3<sup>rd</sup> height shall be made of 10 mm thick MS sheet

Chimney second 1/3<sup>rd</sup> height shall be made of 8 mm thick MS sheet

Chimney top 1/3<sup>rd</sup> height shall be made of 6 mm thick MS sheet

**Flue Gas Duct:** Approximate outer duct dimensions are 420 mm x 320 mm. However, bidders are requested to collect the exact dimensions of flue gas duct either by visiting the site personally or from Thermax Ltd. before quoting its rate.



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### ANNEX-III

Qtn Ref. No. \_\_\_\_\_

Dated: ...../...../.....

#### (COMMERCIAL/FINANCIAL BID)

S.N	ITEM DESCRIPTION	QTY	SUPPLY		INSTALLATION	
			Unit Rate	Total Price	Unit Rate	Total Price
1.	MS Self supported min. 30 m high chimney for boiler	03 No.				
2.	Feed Water Tank, cap 2 KL	03 No.				
3.	Flue Gas Ducting between boiler to TMC to ID fan to chimney	18 mtr				
4.	MS Structure for supporting TMC (Including Installation of TMC)	03 Lot				
5.	Commissioning of Boiler and all Statutory approval	03 Job				
		Discount: ____%				
		Subtotal 1:				
		P & F:				
		Shipping/Handling ____%:				
		Insurance ____%:				
		Subtotal 2:				
		GST: ____%				
		Total Landed Cost:				

Bidder is mandatorily required to provide the detailed price of the quoted bid price detailing with Base price, P&F, Freight/Transportation, & Others on F.O.R. basis.

Date:

Place:

Tenderer Signature & Seal

Name:

Designation: