

**INDIAN INSTITUTE OF TROPICAL METEOROLOGY
PASHAN, PUNE-411008**

(PS/Tender/02/2012)

TENDER NOTICE

Director, Indian Institute of Tropical Meteorology (An autonomous Institute under the Ministry of Earth Science, Govt. of India), Dr.Homi Bhabha Road, Pashan, Pune- 411 008 (India) invites sealed tenders (Part-I – Technical Bid, Part-II – Financial Bid) in separate sealed covers from Manufacturers / Suppliers and their accredited selling agents for the supply, installation, commissioning, and satisfactory demonstration of **“Meteorological Towers” Qty – 04 Sets.**

Tender documents with details can be obtained from Purchase & Stores Section of the Institute or can be download from Institute's website.

Last date of receipt of Tender at IITM, Pune : 26th September 2012 at 12:00 hrs.
Opening of Tenders (Technical bids only) : 26th September 2012 at 15:00 hrs.

The Institute reserves the right to reject any or all tenders without assigning any reason thereof. For tender documents and further details please visit Government's Central Procurement Portal (CPP) <http://www.eprocure.gov.in> as well as this Institute's Website: <http://www.tropmet.res.in>

Senior Technical Officer-II, for Director
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INDIAN INSTITUTE OF TROPICAL METEOROLOGY
Pashan, Pune – 411 008

(Enclosure to Tender No. PS/Tender/02/2012 & Enquiry No. PS/128/45/2012/
dated 30.08.2012)

TECHNICAL SPECIFICATIONS

Supply and Installation of meteorological towers

Quantity: 4

50 meter tower at Darjeeling, West Bengal: 1

50 meter tower at Kaziranga National Park, Tezpur, Assam: 1

15 meter tower at Pichavaram, Tamilnadu: 1

24 meter tower at Mahabaleshwar, Maharashtra: 1

Characteristics of the site are given in Annexure 1

The tower quotation package should contain:

- A list of all materials/ components and installation charges included in the quoted price
- Land area requirements
- Tower drawings which summarize the tower components
- Foundation specification

Specifications

General

50 m towers: The proposed 50 m towers for mounting meteorological sensors shall be of segmented and **guy supporting type**. The general method of construction shall be lattice structure made of Angular members or members of other cross section.

15 m and 24 m towers: The proposed 15 m & 24 m towers for mounting meteorological sensors shall be of the **self supporting type**, i.e. self supporting structure without guy wires. The method of construction shall be lattice structure made of tubular members or members of other cross section.

The towers shall be supplied and erected complete with protective climbing ladder, automatic on/off aviation warning lights, grounding system and lightning arrestor.

The tenderer shall submit detailed design/stability calculations for the quoted tower and foundation together with all relevant data.

All tower members should be made of hot-dipped galvanized steel (galvanized according to IS: 4759-1968, IS: 1161-1998 and IS: 4736).

The vendor/ supplier should have proven expertise in supplying and erecting meteorological or similar towers as evidenced by documents.

The towers at all locations have to be erected without any disturbance to the ecosystem.

Design & Loading Parameters

The tower should be able to support a total payload of maximum 100 kg of meteorological sensors and accessories (including weights for sensor, cables, mounting fixtures) distributed over six to eight levels on 50 m towers and up to 80 kg distributed at four to six levels on the smaller towers.

The guide for assessing the load on the tower shall be the IS:800 standard or an equivalent standard not inferior to the IS Standards, and which shall be quoted in detail.

Tower should be structurally designed to survive a wind gust of 160 kmph (3 sec gust) and 10 minutes averaged wind speed up to 100 kmph.

The safety factor for the uplift of the tower foundation under gust winds of 200 kmph shall be stated.

Design Analysis

The Contractor shall submit full design calculations (As per IS: 800) for approval in compliance with the following:

An analysis shall be carried out to give deflection, rotations and loads in the main members. A linear elastic analysis is acceptable. At least two directions of wind loading shall be considered, but the full compass of loading shall be applied to the equipment, and the worst case or shear, torsion and thrust shall then be combined with the corresponding worst case of tower loading.

The tower foundations shall be designed and constructed to give a factor of safety from overturning equal to 1.7 or better during the survival wind speed.

Any computer analysis must be accompanied by a brief written interpretation of the program, along with the input sheets and the results and any other information necessary to give a complete understanding of the program and interpretation of the results.

Due allowance in the analysis shall be made for all discrete attachments e.g. sensor booms, sources for drag data and area calculation methods shall be reported along with the calculations.

The fabrication and erection drawings prepared by the contractor should be submitted to approving authorities before starting fabrication and erection.

Workmanship

All steel lattice shall be cut to jig and all holes in the steelwork shall be drilled or punched to jig. All steel parts shall be carefully cut and holes located so that when the members are in position the holes will be opposite each other before being bolted up.

Verticality

The verticality of the tower must be ensured and measured with a Theodolite or other suitable equipments and the deflection of tower should not exceed 2 deg.

Ladders & rest platforms

Tower shall be provided with protected climbing ladders providing safe means of climbing the towers by maintenance personnel.

The ladder shall not be less than 250mm wide, with rungs fixed at not more than 300mm spacing.

Construction design of ladder should be such that the ladder cage steps are rigid and not prone to generate wind noise.

Fall arrestor system should be provided along the vertical climbing ladder.

Rest platforms should be provided at every 10 meters.

Sensor Booms

Instrument/sensor retractable booms of length extendable up to 2 meter from tower edge and suitable for mounting meteorological sensors on the towers need to be provided with mountings. The design should take care of the alignment of all the booms with respect to the vertical plane and retractable in horizontal plane.

Aircraft obstruction lights

Tower shall be fitted with aircraft warning lights as required by the Civil Aviation Authorities. The fittings shall be of casted aluminum metal construction and shall be a LED based for giving a suitable distribution of red light , without losses due to color filters. The lamp shall have auto on/off mechanism for switching on at night and switching off during day time. The power supply cable shall be PVC sheathed mineral insulated, and fitted with watertight glands with PVC hoods at entries to fixtures and the terminal box.

Painting

Towers shall be marked and painted as required by the Civil Aviation Authorities and also to protect from corrosion.

Lightning protection

A lightning arrestor shall be mounted at the top of the tower which will include within its cone of protection all tower components. The rod shall be bonded to a down copper conductor connected to the site system from earth of the feed of the tower. The earth termination system shall be designed by the Contractor.

Connections within the earthing system are particularly prone to corrosion by electrolysis and care shall be exercised in selecting materials for tapes or rods buried in the ground. The entire system must be designed to ensure that no path to earth can be found through the tower equipment. The Contractor shall supply detailed technical information of the quality and design of the system to be supplied.

Safety accessories

A pair of safety harnesses/ climbing belt and six carabiners of self-locking and closing type suitable to connect lanyards and lifelines to anchorage points should be provided with each tower.

The safety harness/ climbing belt should have the sliding sleeve which allows the climber to ascend/ descend the tower while constantly attached to the cable or rail of the fall arrester system.

Note : Optional : AMC (Annual Maintenance Contract) for next two years after the warranty period may please be shown separately in quotation.

Annexure 1

Characteristics of proposed tower locations

1. Darjeeling, West Bengal

The forest site where the 50 m tower has to be installed is located on a mountainous terrain, approximately **55 km** away from Darjeeling. The forest is known as “*Selembong*” forest and is under Darjeeling forest division, Govt. of West Bengal.

Coordinates of the site: Lat: 27⁰ 04', Long: 88⁰ 08', Altitude: 7500 ft

Average tree height: 25 m

Tower has to be erected on a slight sloppy terrain. Soil surface is hard.

Road transportation is available up to 100 m distance from the proposed tower location.

2. Kaziranga National Park, Tezpur, Assam

The proposed location for the 50 m tower is in Kaziranga National Park, Tezpur, Assam.

Coordinates of the Kaziranga National Park: Lat: 26°30' N to 26°45' N, Lon. 93°06' E to 93°36' E, Elevation: 100 – 300 ft.

Average tree height: 25 m

Tower has to be erected on a nearly flat terrain. Soil surface is semi-hard.

Road transportation is available up to 100 m distance from the proposed tower location.

3. Pichavaram, Chidambaram, Tamilnadu

The 15 m tower has to be erected in a mangrove forest located in Cuddalore District, Tamil Nadu.

Coordinates of the proposed location are: Lat/ Lon: 11°23' N, 79°47' E, Altitude: 10 ft

Average Tree height: 6 m

The proposed tower location is inundated by the tidal water daily and hence, the soil is wet/ semi-marshy. During flood/ rain season, three feet water will be there for about one month.

Piling will be required for the tower foundation, which will have to be done manually.

The proposed tower location is surrounded by water body and tower materials will have to be transported by boat for a distance of about 1 km from the boat jetty.

4. Mahabaleshwar, Satara District, Maharashtra


The 24 m tower has to be erected in a forest site located at Mahabaleshwar, Maharashtra. The forest is under Satara forest division, Govt. of Maharashtra.

Coordinates of the proposed location are: 17° 56' 59" N, 73° 40' 22" E, Altitude 4400 ft.

Average tree height is 10 m.

Tower has to be erected on a slight sloppy terrain. Soil surface is hard.

Road transportation is available up to 200 m distance from the proposed tower location.



(V. R. Mali)
Senior Technical Officer-II
for Director

INDIAN INSTITUTE OF TROPICAL METEOROLOGY PUNE 411 008

TERMS & CONDITIONS

ENQUIRY NO: **PS/128/45/2012**

Tender Notice No. **PS/Tender/02/2012**

- 1) The Tenderers are requested to give detailed sealed tender in their own forms in two Bids i.e.
Part – I Technical Bid.
Part - II Commercial Bid, both the bids addressed to the Director, Indian Institute of Tropical Meteorology, Dr. Homi Bhabha Road, NCL Post, Pashan, Pune – 411 008, INDIA.
- 2) This tender is not transferable.
- 3) If a request is made to IITM for Tender Documents a sum of **Rs.500/- (Rs. Five Hundred only) (Non-refundable)** has to be paid in the form of Demand Draft drawn in favour of "The Director, Indian Institute of Tropical Meteorology, Pune" **preferably from Nationalized Bank**. Otherwise tender will not be considered.

Tender documents are also available on Institute's website, bidder can download the same. However, tender fees as mentioned above required to pay along with technical bid.

- 4) Tenders addressed to the Director, Indian Institute of Tropical Meteorology, Pune 411008 are to be submitted for each item in duplicate in double cover, under two bids system. Superscribed with Tender No. **PS/128/45/2012 (Tender Notice No. PS/ Tender/02/2012)** for purchase of "**Meteorological Towers**" Qty – **04 Sets** due on **26th September 2012**.
- 5) You have to submit two separate bids in two separate envelopes and you may keep both the bid envelopes in an envelope for sending to us.

One envelope will contain only the TECHNICAL SPECIFICATIONS of the indented equipment.

Another envelope will contain only the financial bid in which price and any other information, which has financial implications, will only be given.

The main envelope, which will contain both the bids, should be super scribed with our tender enquiry No.**PS/128/45/2012** due on **26th September 2012**.

- 6) Please indicate page nos. on your quotation ex. If the quotation is containing 25 Pages, please indicate as 1/25, 2/25, 3/25 -----25/25.
- 7) Cost of the items should be mentioned clearly in the Commercial Offer (Part-II) only.

- 8) Last date for the receipt of completed tender is **up to 12:00 hrs. on 26th September 2012** & will be opened (Technical Bid only) on the same day **at 15:00 hrs** in the presence of the representatives of the vendors present.
- 9) The tender must be valid for a period of at least **90** days from the date of opening.
- 10) The purpose of certain specific conditions is to get or procure best Equipment / service etc. for IITM. The opinion of Technical Committee shall be guiding factor for Technical short listing.
- 11) Supplier shall finally warrant that all the stores, equipment and components supplied under the SUPPLY ORDER shall be new and of the first Quality according to the specifications and shall be free from all the defects (even concealed fault, deficiency in the design material and workmanship).
- 12) Tender must clearly indicate the features offered unit price, VAT tax, transport, transit-insurance, installation charges. Institute cannot furnish any certificate for exemption or reduction in VAT tax or any other duty/tax. The vendor should mention the price of the equipment and the duties/taxes to be paid such as customs duty/excise duty/VAT taxes etc. separately.
- 13) The complete equipment including operational manuals should be supplied within stipulated period mentioned in the supply order and the vendor should install the equipment within **One Month** after the delivery at the respective sites.
- 14) As this Institute is exempted from payment of Custom Duty and Excise Duty, exemption certificate will be issued on request and as per Govt. rules.
- 15) The equipments must carry on-site warranty for **One Year** from the date of installation of tower & completion of acceptance test. Warranty period will stand extended for a period of total downtime of the equipments.
- 16) The vendor has to furnish a Bank Guarantee to the extent of 10% of the order value from a nationalized bank in the prescribed format valid for the entire period of warranty including extension if any.
- 17) No advance can be paid.
- 18) The **payment terms** shall be as follows:
 - i) 60% payment against delivery.
 - ii) 30% payment after satisfactory installation, and successful completion of acceptance tests and training.
 - iii) 10% payment after execution of Bank Guarantee from a Nationalized Bank and successful completion of acceptance test. The Bank Guarantee will remain valid until the expiry of warranty period including the extensions if any.

- 19)The prices quoted should be firm and irrevocable and not subject to any change whatsoever, even due to increase in cost of raw material components and fluctuation in the foreign exchange rates and excise duty.
- 20)Vendor should arrange appropriate training to the users free of charge, **if required**.
- 21)Indicate the names of the Indian reputed Organizations where you have supplied the similar equipment and may attach the satisfactory performance report of the Meteorological Towers from user Organization.
- 22)The vendor should have supplied and deployed similar kind of Installation in govt. Institutes like IITM (research and educational). Completion certificate for the same should be enclosed.
- 23)a) If you have supplied identical or similar equipment to other Institutes under Ministry of Earth Sciences and Ministry of Science & Technology, the details of such supplies for the preceding three years should be given together with the prices eventually or finally paid.
- b) Based on the above information IITM will have its option to obtain details of the equipment, their performance, after sales services etc. for evaluation of the tender, directly from the concerned Labs. /Scientists etc.
- 24)The Institute is autonomous scientific research organization under the Ministry of Earth Sciences and is a recognized center for studies leading to M.Sc. and Ph.D. of the University of Pune and various other Universities. As such, all possible concessions / discounts / rebates applicable for educational Institutions may be given.
- 25)The Tenderers / bidders are requested to quote for Educational Institutional Price for equipment, since we are eligible for the same.
- 26)The vendor should have appropriate facilities and trained personnel for supply, installation and warranty-maintenance of the equipment to be supplied. Detailed information in this regard may be furnished.
- 27)Kindly attach a copy of your latest DGS&D, New Delhi registration Certificate under the compulsory Scheme of Ministry of Finance regarding the registration of Indian Agent of foreign supplier wherever it is applicable.
- 28)The Tenderer is required to furnish the Permanent Account Number (PAN) Allotted by the Income Tax Department. If registered with the National Small Industries Corporation, the registration number, purpose of registration and the validity period of registration' etc. should also be provided in Technical Bid for Indian Agents.
- 29)Vendor should clearly mention the following:
- **Make and model of every item quoted.**

- Delivery period.
- Company profile with a list of those institutes/users should be attached where vendor has supplied the equipments in question in past.
- A letter of AUTHORISED REPRESENTATIVE from the Principal should invariably be attached with quotation
- A copy of latest Income Tax clearance Certificate from Income Tax Department (INDIA)

30) Discount offered should be mentioned clearly in the commercial bid only.

31) Octroi Duty payment if any, the same may please be shown separately.

32) Acceptance tests to be prescribed later will be carried out after installation and the items will be taken over only after successful completion of the acceptance tests.

33) The equipments are required to be installed at **various places in India** as stated at specifications parts of above and subsequently Training is to be provided to the concerned persons of the Institute, **if required**.

34) The item should be supplied with manuals and the manuals including technical / Electronic drawings / circuit diagrams should be complete in all respects to operate the system without any problem.

35) The Tenderer / bidder has to state in detail the Electrical Power/UPS requirements, floor Space, head room, foundation needed and also to state whether Air-conditioned environment is needed to house the system and to run the tests. i.e. pre-installation facilities required for installation may please be intimated in the technical bid. *

36) Goods should not be dispatched until the Vendor receives a firm order.

37) The Date and Time of opening for Part-II (Commercial Bid) will be intimated only to technically acceptable Tenderers / bidders for the item at a later date.

38) **Earnest Money Deposit:**

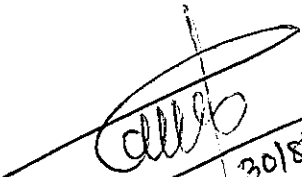
- a) The Earnest Money Deposit of **Rs. 1,10,000/- (Rs. One Lac Ten Thousand only)** must be paid / sent along with your technical bid in the form of a Demand Draft, Banker cheque or Bank Guarantee (**from a Nationalized Bank only**) drawn in favour of The Director, Indian Institute of Tropical Meteorology, Pune payable at Pune, otherwise your technical & financial bids will not be considered at all. The Earnest Money of successful bidder will be returned only after installation, satisfactory demonstration and on acceptance of the equipment by the user Scientist / HOD as per the terms of our purchase order. If the successful bidder fails to fulfill the contractual obligations before the due date, he will forfeit the EMD.

The Earnest Money of the unsuccessful bidder whose technical bid has not been found suitable will be returned within **forty five days** after receipt of Technical Committee recommendations.

- b) Those who are registered with Central Purchase Organization (e.g. DGS&D), National Small Industries Corporation or the concerned Ministry / Department need not to furnish EMD along with their bids.
 - c) Though EMD has to be submitted by Demand Draft, Banker's Cheque or Bank Guarantee, we prefer to have Bank Guarantee for easy return to the bidders once a decision is taken by IITM. (Specimen of Bank Guarantee is enclosed at Annexure 'A').
 - d) Tenders not accompanied with Demand Draft / Bank Guarantee towards "Earnest Money Deposit" will summarily be rejected.
- 39) Successful bidder is required to furnish an amount equivalent to 10% of the total order value as a '**Performance Security Deposit**' in the form of Demand Draft / Bank Guarantee (from any Nationalized Bank only) in favour of 'Director, IITM, Pune'.
- Performance Security should remain valid for a period of sixty days beyond the date of completion of all contractual obligation of the supplier including warranty obligation.
- 40) Part and incomplete tenders are liable to be rejected.
- 41) Conditional Offers will not be considered.
- 42) The tenders must be clearly written or typed without any cancellations / corrections or overwriting.
- 43) Fax / E-mail / Telegraphic / Telex tenders will not be considered.**
- 44) IITM will not be responsible:
- a) For delayed / late quotations submitted / sent by Post / Courier etc.
 - b) For submission / delivery of quotations at wrong places other than the Office of Director, IITM, Pune – 411 008.
- 45) If the supplier fails to Supply and Install the system as per specifications mentioned in the order within the due date, the Supplier is liable to pay liquidated damages of one percent value of the Purchase Order awarded, per every week delay subject to a maximum of 10% for every week beyond the due date and such money will be deducted from any money due or which may become due to the supplier.
- 46) In case of any dispute regarding part-shipment, non-compliance of any feature etc., the Director, Indian Institute of Tropical Meteorology, Pune will be the final authority to decide the appropriate action and it will be binding on the vendor.

- 47) The Vendor Should give prompt support valid for three years with 48 hours response time and max next day resolution.
- 48) The vendor needs to have a full fledged office, PoC or testing centre to showcase and test the functionality of the ordered equipments at the installation site as stated at specifications parts of above.
- 49) Director reserves the right to reject any or all tenders without assigning any reason.

Note : *Technical compliance sheet may please be given in Technical Bid & cost of the item may please be mentioned in Commercial Bid only.*



30/5/24

(V. R. Mali)

Senior Technical Officer-II
for Director

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BID SECURITY FORM

Whereas 1 (hereinafter called "the Bidder") has submitted its bid dated (*date of submission of bid*) for the supply of _____ (*name and/or description of the goods*)(hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE _____ (*name of bank*) of (*name of the country*), having our registered office at (*address of bank*)(hereinafter called "the Bank"), are bound unto (*name of Purchaser*) (hereinafter called "the Purchaser") in the sum of _____ for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this ___ day of 20___ THE CONDITIONS of this obligation are:

1. If the Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity:
 - a) fails or refuses to execute the Contract Form if required; or
 - b) fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, Without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee shall remain in force up to forty five days beyond the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

(Signature of the Bank)
Name of Bidder.