

**TENDER FOR
SUPPLY, INSTALLATION AND COMMISSIONING OF
PORTABLE MARINE EMISSION ANALYSERS
FOR MARINE DIESEL ENGINE EXHAUST &
AMBIENT MEASUREMENTS**

**TENDER NO: IMUV/2013-2014/RP004/002
Dated 28-12-2013**

**INDIAN MARITIME UNIVERSITY
VISAKHAPATNAM CAMPUS
GANDHIGRAM
VISAKHAPATNAM - 530005
ANDHRA PRADESH**

Telephone-0891-2578360-64
Fax-0891-2577754
Email: it@nsdrc.res.in

I N D E X		
Section / Annexure	Particulars	Page No
Section - 1	Notice Inviting Tender	3
Section - 2	Definitions	6
Section - 3	General Conditions and Directions for the Guidance of Tenderer	8
Section - 4	Special Conditions of Tender and Supply	13
Section - 5	Other General Conditions	15
<u>Section - 6</u>	<u>Schedule of Requirements</u>	
6.1	Scope of The Tender	17
6.2	Bill of Materials	17
6.3	Technical specifications	18
6.4	Training and Support	19
6.5	Maintenance	19
6.6	Comprehensive Warranty	20
6.7	Supply	20
6.8	Delivery	21
6.9	User Acceptance Testing	21
6.10	Documentation	21
6.11	Acceptance/Completion	22
Annexure - 1	Contents of Technical Bid	23
Annexure - 2	Contents of Price Bid	24
Annexure - 3	Form of Bank Guarantee	25
<u>Annexure - 4</u>	<u>Response Sheets for Technical Bid</u>	
RST-1	Response Sheet for Technical Bid	28
RST-2	Supplier's Authorisation Form	29
RST-3	Reference Sites	30
RST-4	Infrastructure Facilities	31
RST-5	Methodology	32
RST-6	Compliance Statement	33
RST-7	Items Quoted by the Tenderer	34
<u>Annexure - 5</u>	<u>Response sheet for Price Bid</u>	
RSP-1	Response Sheet for Price Bid	35

SECTION 1
NOTICE INVITING TENDER

- 1.1 Indian Maritime University, Visakhapatnam Campus invites sealed tenders for **“Supply, Installation and Commissioning of Portable Marine Emission Analysers for Marine Diesel Engine Exhaust & Ambient Measurements”** for the Plan Scheme for Conducting Studies on “Emissions from Vessels Operating in Indian Coast, Inland Waterways & Harbour Craft” sponsored by Ministry of Shipping, Govt. of India.
- 1.2 The Cost of Tender document is 500-00 (Rupees Five Hundred Only) payable by way of Demand Draft drawn on any Nationalized/Scheduled Bank in favour of Indian Maritime University, Visakhapatnam Campus Payable at Visakhapatnam. The tender document can also be downloaded from the web site www.nsdrc.com. In such case the cost of tender document shall be submitted along with the Tender
- 1.3 Tenderers are advised to study the Tender Document (including all Sections, Schedules and Annexures etc) carefully. Submission of Tender shall deem to have been done after careful study and examination of the Tender Document with full understanding of its implications.
- 1.4 Sealed tender prepared in accordance with the conditions enumerated in **Section-3** should be submitted to the Director, Indian Maritime University, Visakhapatnam Campus, Gandhigram, Visakhapatnam 530005, not later than the date and time mentioned, at the address given in this section.
- 1.5 All tenders must be accompanied by an Earnest Money Deposit (EMD) of **Rs.40000-00 (Rupees Forty Thousand only)**
- 1.6 This Tender Document is not transferable.
- 1.7 Schedule for Invitation to Tender

a) **Name of the Purchaser**

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh
Phone: 0891-2578360-64
Fax: 0891-2577754

b) **Location where the Equipment to be supplied**

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh

c) **Addressee and Address at which Tenders are to be submitted**

Director
Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh

d) **Date from which the Tender document is issued**

From 28th December 2013 on all working days till the due date of submission of the sealed tender

e) **Place of issue of Tender document**

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh

f) **Last Date for submission of the Tender**

On or before 1500 Hours on 21st January 2014

g) **Place of submission of Tender (Technical and Price Bid)**

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh

h) **Date of opening of Technical Bid**

At 1600 Hours on 21st January 2014

i) **Place of opening of Technical Bid**

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh, India

j) **Validity of Tender**

90 days from the date of opening of the Technical Bid.

k) The date of opening of price bid will be intimated after technical evaluation of the tenders.

l) **Date by which the supply to be completed.**

Within Three weeks from the date of placement of the Order.

1.8 **Pre-bid meeting**

Pre-bid meeting will be held on 7th January 2014 at 1000 Hrs at the following address

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh

1.9 Clarifications on the specifications, tender conditions etc, if any, will be clarified till submission of the tender. Any queries thereafter will be summarily rejected.

1.10 The tenderers may be required to make a technical presentation at Indian Maritime University, Visakhapatnam Campus on their offers and their capabilities prior to opening of the price bid. The date of the presentation will be intimated separately to the individual tenderers.

SECTION 2 **DEFINITIONS**

- 2.1 Tenderer: Refers to the Person or the Firm or the Company to whom this Tender is issued.
- 2.2 Vendor / Contractor: Refers to the person or the firm or the Company with whom the order for the Supply of the Equipment is placed and shall be deemed to include the Vendor's/ Contractor's successors, their representatives (approved by the Purchaser), heirs, executors, administrators and permitted assigns, as the case may be, unless excluded by the terms of the Contract. Also referred to as the successful Tenderer.
- 2.3. Purchaser: Refers to IMU Visakhapatnam Campus
- 2.4. The Consignee of all the items shall be IMU, Visakhapatnam Campus
- 2.5. IMU (V): Refers to Indian Maritime University, Visakhapatnam Campus.
- 2.6. Goods: Refers to all equipment, other accessories, which the successful Tenderer is required to supply to IMU (V) under the Contract as indicated in this Tender.
- 2.7 Services: Refers to various Services indicated in this Tender and shall include services ancillary to the supply of the Goods, transportation, insurance and any other incidental services, such as warranty, maintenance for one year. Service as specified in this tender including the provision of technical assistance for integration of the supplied items and training and any other such obligations of the Tenderer as covered under the tender.
- 2.8 Items: Refers to all Goods and Services indicated in this Tender and shall include all accessories which are essential to meet the requirements specified.
- 2.9 Start Date: Refers the date on which the order is placed on the successful tenderer and accepted by the successful tenderer.
- 2.10 Acceptance/Completion Date: Refers to the date on which all the items along with accessories (refer 1.7 (I)) are supplied, tested and training is completed and acceptance of the Equipment by IMU (V).
- 2.11 The warranty period: For all supplied items the Comprehensive warranty shall be available for Two years from date of successful commissioning of the Equipment.
- 2.12 RST, RSP : RST refers to Response Sheet Technical (RST) and RSP refers to Response Sheet Price (RSP)

- 2.13 Portable: The tender is for portable measuring equipment inclusive of its accessories. Portable means able to be conveniently handled by one person. If for reasons of portability, any trolleys or suitcases are required to move the equipment, the quote should include all such gear as accessories.

SECTION - 3
GENERAL CONDITIONS AND DIRECTIONS
FOR THE GUIDANCE OF TENDERER

- 3.1 Tenders in sealed cover should be submitted as per the 'Schedule of Requirements' as indicated in **Section-6** in this tender and in accordance with instructions to Tenderers i.e. as per general conditions and directions for the guidance of Tenderer are to be submitted in duplicate to The Director, Indian Maritime University, Visakhapatnam Campus, Visakhapatnam.
- 3.2 Tender must be submitted in one sealed main cover containing Cover I and II separately and the main cover shall be super scribed as Tender for **"Supply, Installation and Commissioning of Portable Marine Emission Analyzers for Marine Diesel Engine Exhaust & Ambient Measurements"**. All the covers shall be addressed to the Director, Indian Maritime University, Visakhapatnam Campus, Visakhapatnam -530005. Name and address of the Tenderer shall also be written on all covers.
- 3.3 The Tenderer shall clearly write on Cover-I as **"Technical Bid for "Supply, Installation and Commissioning of Portable Marine Emission Analyzers for Marine Diesel Engine Exhaust & Ambient Measurements"** and on Cover-II as **"Price Bid for Supply, Installation and Commissioning of Portable Marine Emission Analyzers for Marine Diesel Engine Exhaust & Ambient Measurements"**
- 3.4 The contents of Techno-Commercial bid are placed at **Annexure 1** and contents of Price bid are placed at **Annexure 2**
- 3.5 All the contents of Cover -I shall be submitted in duplicate; and in Cover-II only one price bid shall be submitted.
- 3.6 On the date of opening of technical bid, only the Main Cover and Cover-I (Technical Bid) alone will be opened. Cover-II of various Tenderers will be put in a sealed cover in the presence of the Tenderers or their authorized representatives, who are present on the date of opening of Technical bid.
- 3.7 The price information should only be furnished in Price Bid (Cover II).
- 3.8 Tender documents are not transferable.
- 3.9 The Tenderer shall offer and quote for all items and services indicated in the Tender. Tender responses that do not cover all items shall be summarily rejected.
- 3.10 The Tenderer should enclose in the technical bid, full details of the items offered with full documentation, descriptive literature/leaflets supplementing the description to meet the specification as indicated in the tender. Models and Brands offered shall be clearly

indicated including all accessories. All documentation required is to be in English Language. The Tenderer shall clearly indicate OEM part/identification numbers for all the equipment and services supplied inclusive of warranty in technical response sheet **(RST- 07)**.

- 3.11 The Tender should be complete in all respects and if the Tender is incomplete the same may be rejected.
- 3.12 The Tenderer shall sign and affix stamp on all pages of the tender documents and a person, holding a power of attorney authorizing him to do so, shall make such signature. The letter of authorization is to be enclosed along with the covering letter of the technical and price bids.
- 3.13 The Tenderer shall offer the items specified in the Tender document, as the sole agency.
- 3.14 Amendment to Tender Document
- 3.14.1 At any time prior to the last date for receipt of the bids, IMU (V), may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Tenderer, modify the Tender Document by an amendment.
- 3.14.2 The amendment will be notified by Post or Fax or E-mail to all the Tenderers who have received the Tender Document and will be binding on them. An amendment notice sent by Fax or a signed confirmation copy through Post will follow E-mail.
- 3.14.3 In order to afford prospective Tenderers, reasonable time in which to take the amendment into account in preparing their bids, IMU (V) may or at its own discretion, extend the last date for receipt of bids.
- 3.15 The amount of Earnest Money Deposit is Rs.40000-00 (Rupees Forty Thousand only) and shall deposit in the form of Demand Draft drawn on any Nationalized / Scheduled Bank in favour of Indian Maritime University, Visakhapatnam Campus payable at Visakhapatnam. The Demand Draft should be enclosed to the Technical Bid and should not be sent separately. The Micro and Small Enterprises (MSEs) registered with National Small Industries Corporation (NSIC) are exempted from payment of EMD subject to submission of valid NSIC registration certificate along with the bid.
- 3.16 The Earnest Money deposited by the unsuccessful Tenderer will be refunded without any interest on placement of Order on the successful Tenderer. The EMD for the successful Tenderer shall be refunded on submission of Security Deposit equivalent to 10% of the order value in the form of Bank Guarantee.
- 3.17 All the taxes and duties, etc., applicable shall be indicated clearly in price bid. The offers that contain the prices in the technical bid will be invalid and such Tenders will be summarily rejected.

- 3.18 The prices quoted should be on Indian Rupee basis and should include the base price (inclusive of freight, forwarding, Insurance coverage till acceptance and delivery at IMU (V), testing and training along with applicable taxes and duties. The taxes and duties, if any, shall be indicated clearly in the Tender and the same shall be taken into account to arrive at the total price for delivery at IMU (V). IMU (V) does not bind itself to accept claims for extra payment for items not included in the Tender. Any revision in Statutory levies during the period between placement of Order and successful commissioning of the equipment would be paid by IMU (V) on receiving documentary evidence for such revisions against the information furnished in the Tender.
- 3.19 The Tenderer shall abide by the specifications and terms and conditions as mentioned in this tender.
- 3.20 The successful Tenderer on receipt of the Order shall furnish Security Deposit for 10% of the total value of the order (Final accepted tender value) by way of unconditional irrevocable Bank Guarantee from a Nationalized/Scheduled Bank in the form hereto annexed (**Annexure 3**) within 7(Seven) days from the date of issue of the Order, failing which the Order may be cancelled. Under such event the purchaser shall have the right to procure the items at his discretion. On receipt and acceptance of the Bank Guarantee by IMU (V), Earnest Money Deposit submitted with the Tender will be refunded. No interest will be allowed on the Earnest Money Deposit from the date of its receipt until it is refunded. The MSEs registered with NSIC are exempted from payment of Security Deposit up to their monetary limit as specified in their NSIC certificate
- 3.21 EMD of the Tenderer would be forfeited if –
- (a) The tenderer is not willing to abide by the terms of conditions after submission of tender.
 - (b) The tenderer does not honour the clarifications provided to IMU (V).
 - (c) Withdraws or amends or impairs or derogates from the tender in any respect within the period of validity of its tender before receipt of final acceptance.
 - (d) Fails to submit Bank Guarantee as indicated in this tender within the stipulated time. (This is applicable to tenderer whose tender has been accepted)
- 3.22 Tenders will be opened on the day and time as indicated in this document. Eligible Tenderers as above should send letter of authorization with attested specimen signature of their representative who are deputed to attend at the time of opening of Tenders. Representative without such authorization letters may not be permitted to be present to witness the opening. (Only one person is authorized to attend on behalf of each Tenderer for Bid Opening).
- 3.23 Offers received through Telegraphic/Fax/E-Mail will be treated as defective, invalid and rejected.

- 3.24 The Specifications of equipment to be supplied refer to the minimum requirements that the Tenderer is required to meet. Tenders in non-compliance of the minimum specifications would be summarily rejected. The tenderer is required to quote for any accessories etc., which are required to make the Equipment fully operational and functional even though not specified in the tender.
- 3.25 Only detailed complete offers received prior to closing time and date of the Tenders will be taken as valid.
- 3.26 Eligibility Criteria for Tenderers
- 3.26.1 The Tenderer shall be capable of meeting the schedule of requirements.
- 3.26.2 The Tenderer shall be the Original Equipment Manufacturer (OEM) / their authorized / certified partner or authorized reseller. He shall furnish necessary authorization from the OEM and authorizing him to provide all goods and services support indicated in this tender and confirming that necessary assistance would be provided to him in providing required support during the Warranty Period (**RST- 02**)
- 3.26.3 The Tenderer should have an annual turnover of Rs.2.00 Crores for the last three years. The annual reports including audited reports shall be enclosed with the technical bid of the tender. The tenderer should support the annual turnover with particulars. (**RST- 03**)
- 3.26.4 The Tenderer shall be operating in the field of sales and Service of similar items. He shall have an office with sufficient service engineers trained to provide support services. The Tenderer shall also have sufficient spares on hand for providing the uptime as indicated in this tender (**RST- 04**).
- 3.27 Methodology: (**RST- 05**)
- 3.27.1 The Tenderer shall furnish a clear methodology in meeting various requirements of this tender including -
- Supply of Marine Emission Analyser(s) with full functionality to measure the list of pollutants mentioned in the tender and to ensure portability of the equipment and its accessories.
 - Acceptance Testing
 - Training
 - Interface / data transfer to computer with software to facilitate such transfer
 - Comprehensive Warranty support

3.28 Placement of Order:

- 3.28.1 After evaluation and finalization of bids received, IMU (V) would place the Order on the successful Tenderer. The tender will be awarded to the tenderer who is technically qualified and whose value is the lowest. .
- 3.28.2 The date on which the order is placed on the successful tenderer and accepted and accepted by the successful tenderer would be treated as the start date. Prior to issue of the Order, IMU (V) reserves the right to include/modify/exclude specific terms and conditions of Tender.
- 3.28.3 The successful tenderer is required to submit a Bank Guarantee within stipulated period as per the pro-forma attached in **Annexure 3**, for 10% of the Order value (Final accepted value) towards Security Deposit / Performance guarantee. The Bank Guarantee should remain valid for a period of 60 days beyond the date of completion of all obligation of the Supplier, including warranty obligations.
- 3.28.4 IMU (V) reserves right to modify the terms and conditions to the Order, so as to meet contingency situations, which can arise from time to time. Such modifications would be discussed and agreed upon by the successful Tenderer taking into consideration the cost, time and other implications. After finalization of modification, the Order may be suitably amended, if required.
- 3.28.5 IMU (V) reserves right to change quantities or withdraw some of the items from bill of materials before issuing the order.
- 3.29 IMU (V) reserves the right to amend any of the requirements, terms and conditions of this Tender.

3.30 Terms of Payment

- 3.30.1 50% of value after delivery at site and inspection.
- 3.30.2 Balance after Installation, Testing and Acceptance.

SECTION - 4
SPECIAL CONDITIONS OF TENDER

- 4.1 Successful Tenderer shall be responsible for the insurance, safe delivery of the goods at IMU (V). The successful Tenderer is responsible for all the supplies of goods and services till the acceptance date after which the ownership is transferred to IMU (V).
- 4.2 In the event of the placement of the Order, the consignment shall be booked in the name of Indian Maritime University, Visakhapatnam Campus, Visakhapatnam - 530005. Any demurrage charges that may become payable on account of the Successful Tenderers failure to consign the materials duly, shall be to the successful Tenderer Account.
- 4.3 The prices offered for the goods and services offered, except for any statutory duties and levies, shall be firm and not subject to any variation at any stage till the completion of the contract in all respects. This must be clearly stated in the covering letter for Technical and price bids.
- 4.4 The time of delivery is important and must be clearly stated in the Tender and strictly adhered to in the event of a tender being awarded. The delivery time would commence from the start date.
- 4.5 In case of delay in the supply, IMU (V) shall issue to the successful Tenderer; a memo in writing, pointing out the delay in the supply and calling upon the successful Tenderer to explain the cause for the delay within 3 days of the receipt of the memo.
- 4.6 If IMU (V) is not satisfied with the explanation offered, the successful Tenderers security deposit may be forfeited and or IMU (V) may withhold payment of pending bills in whole or in part. If the security deposit or any part thereof is forfeited by an order of IMU (V) and such order becomes final, the successful Tenderer shall make good the security deposit or part of such deposit so forfeited within a fortnight thereafter.
- 4.7 If the successful tenderer fails to execute the Supply/Works in all respects within the period specified or within such extended period as may be allowed, the successful tenderer shall pay a sum equivalent to 1% of the value of the total tender price per week (Seven days) or part thereof subject to a maximum limit of 10% of the value of the each of the item tender as liquidated and ascertained damages.
- 4.8 The supply shall be subject to inspection by IMU (V) and IMU (V) decision as to the acceptance or rejection of any goods as not conforming to specification, shall be final and binding on the successful tenderer. Such of the goods which are rejected shall be removed by the successful tenderer their own expense and replaced by fresh ones within a reasonable time.

- 4.9 Bank guarantee will be returned only after successful completion of warranty period of one year from the date of acceptance of the equipment.
- 4.10 It must be clearly understood that the prices quoted in the tender are to include everything required to be done as per the specification and the conditions of tender and supply for the proper execution of supply/works although special mention thereof may have been omitted in the specification. The specifications indicated are for minimum and shall include accessories etc as required even though not specified in the tender to make the system fully operational.
- 4.11 The purchaser has the right to change/ withdraw the quantities of any items in the tender prior to signing of contract. The successful tenderer shall agree to supply the additional quantities for the same price and comprehensive warranty in the event the purchaser places a repeat order for some of the items within next six months.

SECTION - 5
OTHER GENERAL CONDITIONS

- 5.1 The Goods/Services to be supplied by the tenderer shall be of the quality or sort specified and in every respect equal and answerable to the specifications sent with the tender and shall be subject to the approval of the IMU (V).
- 5.2 The Goods/Services are to be delivered at specified place in IMU (V) premises in Visakhapatnam, free of delivery charges as per specified time.
- 5.3 Delivery of Goods/Services will not be considered complete until such goods or materials have been inspected and passed at the place specified for delivery by IMU (V). The detailed list of components (Equipment and Service) supplied by the tenderer and Bill of Materials shall be provided well in advance for facilitating inspection by IMU (V).
- 5.4 Rejected Goods shall be removed by and at the expenses of the tenderer within seven days after notice. If not so taken away, the IMU (V) may seize the goods or materials to be removed and charge the tenderer with all expenses incurred in such removal.
- 5.5 The tender or any part share or interest in it shall not be transferred directly or indirectly to any person whomsoever without the written consent of IMU (V).
- 5.6 It shall be lawful for IMU (V), without giving any notice to the contractor, to purchase in the open market any goods or materials covered by the tender and if such goods or materials are not available to purchase suitable substitute, as to which, the decision of the IMU (V) shall be final and binding on the Contractor, in the event of the Contractor;
- (a) Having delivered goods or materials not of the contracted quality.
 - (b) Having failed to supply goods or materials within the time specified.
 - (c) Having refused or being unable to supply goods or materials covered by tender either in whole or in part.
- 5.7 In the event of the breach of any of the provisions of contract by the contractor, IMU (V) shall have the right to terminate the tender summarily.
- 5.8 In the event of IMU (V) terminating the contract for breach by the contractor of any of the provisions thereof, the contractor shall be liable for any loss suffered by IMU (V) up to the time of the termination of the contract and for any further loss which the IMU (V) may suffer during the remainder of the period originally covered by the contract.
- 5.9 In the event of the death, insanity or insolvency of the contractor, IMU (V) shall have the right to terminate the contract summarily and to purchase in the open market any Goods/ Services covered by the contract. In this case, the contractor shall not be liable for any excess in the price paid, for any such purchases over the tender price. In case of

consortium the lead partner should nominate any other consortium member to bear the liabilities, and in case of individual organization the responsibility shall be taken up by the organization itself or by the legal successor.

- 5.10 With every delivery of goods or materials under this contract, invoices in triplicate shall be sent by the contractor to the IMU (V) receiving officer who will retain the original and duplicate copy with him, and return the triplicate copy to the contractor with the actual quantities weights and/or number duly acknowledged thereon after the goods or materials have been inspected and passed as per clause therein before mentioned.
- 5.11 Any notice to the tenderer shall deemed to be sufficiently served, if given or left in writing at his usual or latest known place of abode or business.
- 5.12 Upon the complete fulfilment of the contract by the contractor to the satisfaction of IMU (V) the amount deposited by the contractor, as security for the due fulfilment of the contract will be returned to him less the amount if any due by the contractor, not later than a month.
- 5.13 If however, the security is made up by a Bank Guarantee executed by a Bank, on behalf of the contractor it will be discharged and returned to the Bank, after collecting amount if any due by the contractor, not later than a month.
- 5.14 In these conditions unless there is something in the subject or context inconsistent there with words importing the singular shall include the plural and vice-versa words importing the masculine gender shall include the feminine and the words importing persons shall include bodies corporate.

SECTION - 6
SCHEDULE OF MINIMUM REQUIREMENTS

6.1 Scope of the Tender:

6.1.1 Supply of Equipment

6.1.1.1 The supply shall include complete equipment including accessories and spares as described in the subsequent paragraphs of the "Technical Specification".

6.1.2 Demonstration

6.1.2.1 The successful Tenderer shall depute their Service Engineer for calibration of the equipment. The Service Engineer shall demonstrate the satisfactory operation of equipment at IMU (V) campus. IMU (V) may request to demonstrate the functioning of the equipment by asking to perform a diesel engine stack emissions measurement.

6.1.3 Manuals & Drawings.

6.1.3.1 Two Sets of operation and maintenance instruction manuals for the complete equipment shall be supplied along with the equipment.

6.1.3.2 One set of service agents and depots lists shall be supplied along with the equipment.

6.1.4 General

6.1.4.1 The equipment in its entirety shall give complete satisfaction to the IMU (V).

6.1.4.2 The equipment is to measure and analyze emissions in the exhaust of marine diesel engines. The equipment should be capable of measuring NO_x, SO_x, THC, CH₄, CO₂, O₂, CO, Exhaust gas temperature in the marine diesel engine exhaust and capable of measuring Ambient Air temperature, Atmospheric pressure, Atmospheric relative humidity. The equipment should be portable and transportable by one person. All accessories to facilitate such functionality and one set of calibration gases and calibration kit required to calibrate the equipment.

6.2 Bill of Materials

Sl. No	Equipment to measure the following	Qty in Nos
1	NO _x as (NO + NO ₂)	1
2	CO ₂	1
3	O ₂	1

Tender for Supply, Installation and Commissioning of Portable Marine Emission Analyzers for Marine Diesel Engine Exhaust & Ambient Measurements - Tender No: IMUV/2013-2014/RP004/002 dated 28th December 2013

4	CO	1
5	SO _x	1
6	THC / CH ₄	1
7	Exhaust Gas Temperature	1
8	Ambient Air Temperature	1
9	Atmospheric Pressure	1
10	Atmospheric Relative Humidity	1
11	Calibration Gas Kit (Consisting of required gases)	1 set
12	Interface with computer for data transfer including software, cables, adapters and drivers to facilitate the data acquisition in computer.	

6.3. Technical Specifications

a) Equipment for Marine diesel engine Stack Emission Measurement-Portable

Sl. No	Measuring	Qty.	Range	Standards to comply (one of the listed)
1	NO _x as (NO + NO ₂)	1	0-10/0-100/0-1000/0-10000 ppm	ASTM D6522-11 /US EPA*/ IMO NO _x Technical code /EU
2	CO ₂	1	0 - 21% by Volume	ASTM D6522-11 /US EPA*/ IMO NO _x Technical code /EU
3	O ₂	1	0 - 21% by Volume	ASTM D6522-11 / US EPA*/IMO NO _x Technical code /EU
4	CO	1	0 - 10000 ppm	ASTM D6522-11 / US EPA* /IMO NO _x Technical code /EU
5	SO _x	1	0 – 10/0-5000 ppm	US EPA* / ISO/IS/EU
6	THC / CH ₄	1	0 - 10000 ppm	US EPA* / ISO/ IS /IMO NO _x Technical code/EU
7	Exhaust Gas Temperature	1	0°C - 1000°C	NIST / IS/EU/ISO

b) Equipment for measuring Ambient Air parameters-Portable

8	Ambient Air Temperature	1	0°C - 100°C	NIST/IS/EU/ISO
9	Atmospheric pressure	1	600 - 1060 hpa (hectopascal) @ 0°C to 60 °C range	NIST /IS/EU/ISO
10	Atmospheric Relative Humidity	1	0 - 100 % Rel	NIST/IS/EU/ISO
11	Calibration Gas Kit (Consisting of required gases)	1 Set	Calibration of above sensors	-

12	Interface with computer for data transfer including software, cables, adapters and drivers to facilitate the data acquisition in computer.
----	--

Abbreviations:

US EPA*	United States Environmental Protection Agency
NIST	National Institute of Standards & Technology, US
ASTM	American Society for Testing & Materials
IS	Indian Standards
EU	Euro Norm <i>also (EN)</i>
ISO	International Standards Organisation

*With US EPA, instruments tested as per ETV (Environmental Technological Verification program) are also acceptable standards.

6.4 Training and Support

6.4.1 The contractor shall impart training to IMU (V) personnel on operation of the equipment. The training shall be imparted in a phased manner without disrupting the working of the IMU (V).

6.4.2 The contractor shall make his own arrangements for supplying training material, equipments required for training etc. All training shall be imparted at Visakhapatnam Campus of IMU (V) only.

6.4.3 IMU (V) will provide necessary space, infrastructure free of cost for conducting the training.

6.4.4 *The training provided by the contractor shall cover:*

- i) Operation of the equipment along with course/reference material for each individual
- ii) Operational level training along with course/reference material for each individual

6.4.5 On completion of training, the contractor shall submit an evaluation report on the participants along with course details.

6.4.6 IMU (V) shall certify satisfactory completion of training.

6.4.7 Completion of training is a pre-requisite for acceptance of the equipment.

6.4.8 All charges pertaining to the training shall be quoted in the price bid separately.

6.5. Maintenance

6.5.1 The contractor shall provide necessary preventive and corrective maintenance support services for the supplied equipment; support should be available by phone, e-mail, sending the engineer to IMU (V) to solve the problem as soon as possible.

6.6. Comprehensive Warranty

- 6.6.1 Warranty support services: A comprehensive warranty for the supplied equipment shall be provided for 2 years from the date of final acceptance of the equipment by IMU (V). The contractor will be notified of any defect or claim arising under this warranty and the warranty support shall be provided at site.
- 6.6.2 If the contractor having been notified fails to remedy the defect within one week days, IMU (V) may proceed to take such remedial action as may be necessary at the contractor's expense. The period that the equipment is out of commission as a result of contractor's failure to remedy the defects notified shall result in extension of the warranty period correspondingly and imposition of penalty.
- 6.6.3 All the equipment, accessories and sensors shall have a calibration and Repairs and Maintenance facilities available in India.

6.7. Supply

- 6.7.1 Licenses for all the software supplied along with the equipment under the scope of supply shall be in the name of IMU (V).
- 6.7.2 The equipment should normally function under its own power (Rechargeable / dry cell batteries). If rechargeable batteries are used then a battery charger should be supplied meeting the power tolerance requirement.
- 6.7.3 Power Tolerance: The equipment or its battery charger shall operate correctly from a 220Volts (+/- 15%) and 50 Hz (+/-6%) power supply. It should be capable of withstanding permissible voltage and frequency variations without any damage to the equipment or loss of the information.
- 6.7.3 Manuals, documentation and software: In addition to the Manuals given by the Manufacturers, the successful Tenderer shall prepare full documentation.
- 6.7.4 All equipments, accessories, and items which are useful and necessary shall be deemed to have been included in the scope of work. The installation shall be complete in all details whether such details have been mentioned in the specifications or not.
- 6.7.5 The contractor warrants that the equipment supplied under the contract are new, unused, of the most recent or current models and incorporate all recent improvements in design and materials unless provided otherwise in the tender. The tenderer further warrants that the equipment supplied under this tender shall have no defect arising from design, materials or workmanship (except in so far as the design or material is required by the purchaser's specifications) or from any act or omission of the tenderer.

6.7.6 The equipment should be capable of storing sufficient measured data history in the equipment and should be able to transfer the data stored into a computer. The scope of supply includes all means by way of drivers, software and interface cables and adapters to facilitate such transfer.

6.8. Delivery

6.8.1 The tenderer is required to deliver and test the complete equipment within three weeks from the date of signing of the agreement.

6.9. User Acceptance Testing

6.9.1 Inspection and Tests: The compliance of the equipment with the standards mentioned in 6.3 should be proved by submission of a valid certificate in original of approval of the equipment by the OEM. The certificate should be valid and verifiable.

6.9.3 If a demonstration test is requested at IMU(V), Prior to testing, the contractor shall describe in advance, the tests which propose to demonstrate the correct working of the entire setup both individually and as an integrated system and the same shall be approved by IMU (V) prior to commencement of tests.

6.9.4 The above tests shall demonstrate the satisfactory operation of all sensors as an integrated system covering the full range of facilities of the equipments.

6.9.5 The acceptance tests for supplied goods, shall be carried out at IMU (V) by the contractor with the participation of concerned personnel from IMU (V).

6.9.6 In case of the acceptance tests are not concluded to the satisfaction of IMU (V) the contractor shall repair or replace, at the contractor's cost, the whole or any part of the equipment as may be necessary for conclusion of the acceptance tests to the satisfaction of IMU (V) within the reasonable period agreed by IMU (V). Demonstration of performance of the equipment should be repeated in the acceptance test.

6.9.7 IMU (V) reserves the right to accept the delivered items with deviations, provided the contractor agrees to rectify the deviations within an acceptable time period. Regarding the acceptance date, decision of IMU (V) would be final.

6.9.8 The contractor shall provide necessary consumables till the completion of acceptance testing.

6.10. Documentation

6.10.1 The successful tenderer shall provide IMU (V) with necessary documents including the following:

- a) Operational and Maintenance Manuals of equipments
- b) Equipment serial numbers and models
- c) Test Certificates, Licenses if any
- d) Acceptance test results and acceptance status
- e) Training Material
- f) Full documentation with the software

6.10.2 Hardcopy of the above shall be handed over to nominated personnel of IMU (V). Soft copy of the documents shall also be provided where applicable. Handing over of documents to IMU (V) by contractor is a pre-requisite for Acceptance.

6.10.3 Manuals for the instruments are to be supplied with respect to operation, maintenance, ordering spares / technical services.

6.10.4 Test certificates for all the sensors shall be submitted along with the supplies.

6.11. Acceptance/Completion

6.11.1 The activity shall deem to have been completed with the completion of Supply & testing of the equipment including training.

6.11.2 Upon completion of Supply/Work and after successful completion of other prerequisites like acceptance testing, Training etc, as prescribed in this document, IMU (V) shall receive a written undertaking from the contractor that the works have been completed and accordingly a certificate of completion would be issued in respect of the supply/works. The warranty period for the supplied system would commence from the date of Acceptance/Completion.

CONTENTS OF TECHNO-COMMERCIAL BID

1. Covering letter containing
 - a) Tenderer Name & Address
 - b) Letter of authorisation to sign the tender document on behalf of the Firm
 - c) Bid validity
 - d) Confirmation to all clauses of the tender
 - e) Adherence to Prices quoted throughout the tender.
2. EMD in the form of Demand Draft
3. Eligibility Criteria
 - a) Bidders Particulars (**RST-01**)
 - b) Supplier's Authorization form (**RST-02**)
 - c) Annual Reports for the last three years
 - d) Signed copy of the Tender Document
4. Compliance Statement to specifications (**RST-03**)
5. Specifications, Brochures, Model, Leaflets etc., of all the equipment supplied along with OEM's Compliance
6. Items quoted by the Tenderer (**RST-04**)
7. Site requirements
8. Methodology including acceptance testing (refer to section 3.27)

ANNEXURE - 2

CONTENTS OF PRICE BID

1. Covering Letter containing:
 - a. Tenderer Name & Address
 - b. Bid validity
 - c. Letter of authorisation to sign the tender document on behalf of the Firm
 - d. Adherence to Prices quoted throughout the tender

2. Price Bid (**RSP-01**)

ANNEXURE - 3

FORM OF BANK GUARANTEE

Bank Guarantee No: _____

Date: _____

Valid up to _____

To

Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam - 530 005

Sir,

In consideration of Indian Maritime University, Visakhapatnam Campus, Visakhapatnam _____ a having its Campus at Gandhigram, Visakhapatnam - 530 005, Andhra Pradesh (hereinafter referred to as "IMU (V), Visakhapatnam Campus") which expression shall mean and include its successors and assignees and having an Order No. _____ dated _____ for _____ (hereinafter called "The Contract") which expression shall include all the amendments thereto with _____ having its Registered Office at _____ (hereinafter referred to as "The Contractor"), which expression shall unless repugnant to the context or meaning thereof, shall include all its successors, administrators, executors and assignees and IMU (V), Visakhapatnam Campus having agreed that The Contractor shall furnish the IMU (V), Visakhapatnam a Bank Guarantee for of ` _____ (Rupees _____ only) as per the terms of Tender document No _____ dated _____ and Order dated _____.

We, _____ registered under the laws of India having its registered / head office at _____, (hereinafter referred to as the Bank) which expression shall unless repugnant to the context of meaning thereof, include all its successors, administrators, executors and permitted assignees do hereby guarantee and undertake to pay immediately on first demand in writing and any/all monies to the extent of Rs. _____ (Rupees _____ only) without any demur, reservation, contest or protest and/or without any reference to the Contractor. Any such demand made by the IMU (V), Visakhapatnam on the Bank by serving return notice shall be conclusive and binding, without any proof, on the bank as regards the amount due and payable, notwithstanding any dispute pending before any Court, Tribunal, Arbitrators or any other Authority and/or any other matter or things whatsoever, as liability under these presents being absolute and unequivocal. We agree that Guarantee herein contained shall be irrevocable and shall continue to be enforceable until it is discharged by IMU (V), Visakhapatnam in writing. This guarantee shall

not be determined, discharged or affected by liquidation, winding up, dissolution or insolvency of the Contractor and shall remain valid, binding and operating against the Bank.

The Bank also agrees that IMU (V), Visakhapatnam of its option shall be entitled to enforce this Guarantee against the bank as a principal debtor, in the first instance, without proceeding against the Contractor and notwithstanding any security or other guarantee that IMU (V), Visakhapatnam may have in relation to the Contractor's liabilities.

The Bank, further agrees that IMU (V), Visakhapatnam shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extent time of performance by the said Contractor from time to time or to postpone for any time or from time to time exercise of any of the powers vested in IMU (V), Visakhapatnam against the said the Contractor and forebear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor or for any forbearance, act or omission on the part of IMU (V), Visakhapatnam or any indulgence by IMU (V), Visakhapatnam to the said Contractor or any such matter or thing whatsoever which under the laws relating to the sureties would, but for this provision have effect of so relieving us.

The Bank further agrees that the guarantee herein contained shall remain in full force until _____ and all dues of IMU (V), Visakhapatnam under or by virtue of this contract have been fully paid and its claim satisfied or discharged or till IMU (V), Visakhapatnam discharges the guarantee in writing, whichever is earlier.

This guarantee shall not be discharged by any change in our constitution, in the constitution of IMU (V), Visakhapatnam or that of the Contractor.

The Bank confirms that this Guarantee has been issued with observance of the appropriate laws of the country of issue.

The Bank also agrees that this Guarantee shall be governed and construed in accordance with Indian Laws and subject to the exclusive jurisdiction of Indian Court of the place from where tenders have been invited.

We further agree that as between us and IMU (V), Visakhapatnam for the purpose of this Guarantee any notice given to us by IMU (V), Visakhapatnam that the money is payable by the Contractor and any amount claimed in such notice by IMU (V), Visakhapatnam shall be conclusive and binding on us notwithstanding any difference between IMU (V), Visakhapatnam and the Contractor or any dispute pending before any Court, Tribunal Arbitrator or any other authority. We further agree that this Guarantee shall not be affected by any change in our constitution or that of Contractor. We also undertake not to revoke this Guarantee during its currency.

Notwithstanding anything contained herein above, our liability under this Guarantee is limited to Rs. _____/- (Rupees _____ only) and Guarantee shall remain in force until _____.

We must receive any claim under this Guarantee before the expiry of this Bank Guarantee. If we have received no such claim by the said date, the rights of IMU (V), Visakhapatnam under this Guarantee will cease. However, if such a claim has been received by us within the said date, all the IMU (V), Visakhapatnam's right under this Guarantee shall be valid and shall not cease until we have satisfied that claim.

In witness whereof, the Bank through its authorized officer has set its hand and stamp on this _____ Day of _____ 2013 at _____

Date:

Authorized Signatory of the bank
(With Bank Seal)

Place:

Witness No.1

Witness No.2

ANNEXURE-4

RST- 01:

RESPONSE SHEET FOR TECHNICAL BID

BID PARTICULARS FOR TENDER No: _____

1. Name of the Bidder : _____
2. Address of the Bidder : _____
: _____
: _____
3. Bidder's proposal number and date : _____

Signature of the Tenderer with Seal

Date :

Place :

RST-02:

SUPPLIER'S AUTHORISATION FORM

To

Director
Indian Maritime University
Visakhapatnam Campus
Gandhigram
Visakhapatnam-530005
Andhra Pradesh, India

Ref: Tender No. _____

Sir,

WHEREAS _____ who are official producers / authorized Sales and Service dealers, of _____ do hereby authorize _____ located at _____ (to submit a bid and sign Tender with you for resale and support of the following Products supplied by us, for the quantities, specifications and delivery schedule called for by the Schedule of Requirements associated with the above Invitation for Bids:

Product Description	Type

We hereby extend to you a full guarantee and warranty and maintenance support, availability of spares for 5 yrs from the date of submission of the tender, in accordance with the Conditions of Tender along with the standard product warranty, and duly authorize the Bidder to act on our behalf in fulfilling all warranty and support obligations with respect to the above-listed products offered for resale by the Bidder in relation to this Invitation for Bids.

Name _____ in the capacity of _____

Signed _____

Duly authorized to sign the authorization for and on behalf of _____

Dated on _____ day of _____

Note: This letter of authorization must be on the letterhead of the supplier, must be signed by a person competent and having the power of attorney to bind the supplier, and must be included by the Bidder in its bid.

RST-03:

REFERENCE SITES

Sl No	Client's Name Address	Equipment supplied commissioned	Executed by (name of Tenderer)	Value of supply (Rs. in Lakhs)	Date of commissioning by Tenderer	Present Operational Status

Signature of the Tenderer:

Dated:

Place:

RST-04:

INFRASTRUCTURAL FACILITIES FOR SERVICE SUPPORT

Sl. No.	Address where Service Centre is situated	Contact Person	Availability of Stores (YES/NO)	Year of Establishment

Note: Letter to indicate that the service center is authorized by the OEM is to be included.

Signature of the Tenderer:

Dated:

Place:

RST-05:

METHODOLOGY (Refer 3.27)

Sl No	Item Description	Methodology Adopted along with time plan
1	Supply, Installation and Commissioning of Portable Marine Emission Analysers for Marine Diesel Engine Exhaust & Ambient Measurements and accessories inclusive of Training	

Signature of the Tenderer

Dated:

Place:

RST-06:

COMPLIANCE STATEMENT

Sl. No	Item Description	Compliance to Specification Yes/No
1	Supply, Installation and Commissioning of Portable Marine Emission Analysers for Marine Diesel Engine Exhaust & Ambient Measurements and accessories inclusive of Training	

Signature of the Tenderer with Seal

Date :

Place :

RST-07:

ITEMS QUOTED BY THE TENDERER
(Item wise Details)

Sl. No	Item Description	Make & Model	Specifications	Qty quoted for
Supply, Installation and Commissioning of Portable Marine Emission Analyser for Marine Diesel Engine Exhaust & Ambient Measurements to measure the following				
1	NOx as (NO + NO2)			
2	CO ₂			
3	O ₂			
4	CO			
5	SO _x			
6	THC /CH4			
7	Exhaust Gas Temperature			
8	Ambient Air Temperature			
9	Atmospheric Pressure			
10	Atmospheric Relative Humidity			
11	Calibration Gas Kit			
12	Accessories			
13	Any other item(s) not included in the specification but required for the functionality of the equipment			

Signature of the Tenderer with Seal

Date :

Place :

ANNEXURE 5

RSP-01

RESPONSE SHEETS FOR PRICE BID

Sl. No	Item Description	Qty	Rate per Unit / No (in Figures and Words)	All applicable Taxes and Duties in %	Amount of all applicable taxes (in Figures and Words)	Total Amount inclusive of all taxes and duties (in Figures and Words)
Supply, Installation and Commissioning of Portable Marine Emission Analyser for Marine Diesel Engine Exhaust & Ambient Measurements to measure the following						
1	NOx as (NO + NO2)	1				
2	CO ₂	1				
3	O ₂	1				
4	CO	1				
5	SO _x	1				
6	THC / CH ₄	1				
7	Exhaust Gas Temperature	1				
8	Ambient Air Temperature	1				
9	Atmospheric Pressure	1				
10	Atmospheric Relative Humidity	1				
11	Calibration Gas kit	1 No				
12	Accessories					
13	Any other item(s) not mentioned in the specification but is required for ensuring functionality of the equipment.					
Total Amount in Figures						
Total Amount in Words						

Note: The taxes and duties applicable should be clearly specified by the Tenderer in the Price Bid and charges such as Insurance, Freight and forwarding shall be borne by the Tenderer

Signature of the Tenderer with Seal

Date :

Place :