



RD:DP:MPX:F-04

Ref: 391700971

BHARAT HEAVY ELECTRICALS LIMITED
CORPORATE RESEARCH & DEVELOPMENT DIVISION
VIKASNAGAR, HYDERABAD - 500 093, INDIA

PHONES:23774494 (EXT:9804)

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ENQUIRY

Date 26-08-2017

Enquiry for Development of an Automation system for Gas Distribution test.

Enquiry No:391700971

Enquiry Date : 26-08-2017

Due Date: 16-09-2017

Indicative Delivery Date : 30-12-2017

Sl.No	Item Description	Unit	Qty
1	Wind wane Anemometer as per specifications	NO	2
2	Supply of Programmable Manipulator as per specifications	SET	1

Please submit your quotation for the above material in sealed cover superscribed with enquiry no, enquiry date and due date subject to our enclosed terms and conditions. The quotations shall reach us on or before the due date by 12 noon. The tenders can also be dropped in the tender box kept at the security gate,BHEL R&D. In case you are not in position to submit the offer,please send reply suitably specifying the reasons.

Sl.No	Description	Document Ref.
01	Enquiry, PQC, General Terms & Conditions, Commercial Terms & Conditions etc.	Volume - 1
02	Technical specifications, Scope of Supply etc.	Volume - 2

Ravi Singh
Sr Engineer
r.singh@bhel.in

	ENQUIRY & QUALIFYING CRITERIA	Volume - 1 Enquiry No 391700971
Development of an Automation system for Gas Distribution test.		

1	Tendor inviting officer / Authority, Designation and Address	Additional General Manager(MM) BHEL R & D, Vikas Nagar (Near Balanagar), Hyderabad -500093
2	Item Description - Qty	1) Wind wane Anemometer as per specifications - 2 NO 2) Supply of Programmable Manipulator as per specifications - 1 SET
3	Enquiry Reference no.	391700971
4	Indicative Delivery Date	30-12-2017
5	Due date, Time and place for submission of tender	16-09-2017 upto 12 noon. Sealed Quotations shall be addressed to Additional General Manager(MM), BHEL R & D Division, Vikas Nagar (Near Balanagar), Hyderabad AP,India Pin - 500 093 Quotations can also be deposited in the Tender box located at Security Gate of BHEL R & D BHEL shall not be responsible for any postal/courier delay.
6	Place, Date and time of Tech.Bid opening	Tender Opening Cell (Sangam) BHEL R & D Office. 16-09-2017, 2 PM
7	Mode of Submission of Tender	Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below. 1) First Cover shall contain: - Signed General Terms & Conditions (GTC) - Filled and Signed Commercial Terms & Conditions (CTC) - Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) - Signed commercial bid - Copy of Price-bid with price(s) cells blank (un-priced price bid) as per annexure 2) Second cover shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. If the price bid was found later to be different from the unpriced pricebid format in any way, the offer will be rejected summarily. The rates shall be quoted both in figures and in words. The offers can also be submitted through e-mail and have to be sent in PDF format (files with PDF extension only). Files having extensions other than PDF like RAR, EXE, JPEG etc. and with external links will not be considered. They have to be sent to e-mail id: 'eoffers@bhelrnd.co.in' only. Copies should not be marked to anyone. If the offers are marked to anyone other than to eoffers, their offer will not be considered. The e-mail offers should have two attachments. 1) One attachment shall contain - Signed General Terms & Conditions (GTC) - Filled and Signed Commercial Terms & Conditions (CTC) - Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) - Signed commercial bid - Copy of Price-bid with price(s) cells blank (un-priced price bid), as per annexure 2) Second attachment shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.

	PRE QUALIFYING CRITERIA(PQC)	Volume - 1 Enquiry No 391700971
Development of an Automation system for Gas Distribution test.		

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Experience	Bidder should have minimum 3 years of experience in developing and manufacturing Special purpose Machines (SPM) and automation systems, and should have handled/developed at least one Automation project earlier.	
2	References of Previous projects	Bidder should provide at least two references of earlier automation projects/prototype machines developed /development of SPMs etc. Executed earlier.	
3	Facilities	Bidder should have in-house facilities for design, development, manufacturing and testing of prototypes and SPMs.	
4			
	Relaxation of Norms for Startups	The condition of Prior Turnover and prior experience is relaxed for all startups whether Micro & Small Enterprises(MSEs) or otherwise subject to meeting of quality and technical specifications in accordance with the relevant provision of GFR,2005 and other DOE-PPD notifications for relaxation norms for startups issued from time to time.	

Signature of the bidder with Seal & Date

	GENERAL TERMS & CONDITIONS (GTC)	Volume - 1 Enquiry No 391700971
Development of an Automation system for Gas Distribution test.		

SL.No.	Clause	BHEL REQUIREMENT
1	Preferences to MSEs	Preferences as mentioned in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 shall be given to Micro and Small enterprises. Main points which are mentioned in the above Policy are as follows: 1) In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 percent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply at least 20 percent of total tendered value provided that the tendered quantity is divisible into two or more orders and adequate for the purpose; all qualifying bidders have agreed for acceptance of part-order quantity and participating MSE matches the L1 rate. 2) In case that two or more MSEs are within the L1 +15% band, all such MSEs will be offered the opportunity to match the L1 rate and 20% of the order will be shared equally by them. 3) Where the MSE is SC/ST owned, they shall be exclusively awarded a share of 4% of the above 20% in addition to equally sharing the balance 16% with other non-SC/ST MSEs . 4) In case of more than one SC/ST MSE matching the L1 price, they shall equally share 4% of the order , and additionally share the balance 16% with other non-SC/ST MSE bidders. 5) Up to 4% of the tendered quantity shall be procured from MSE's owned by SC/ST's at L1 price. Failure to participate by any MSE owned by SC/ST's this quantity shall be procured from other MSEs. 6) Above preferences are for procurement of only goods produced and services rendered by MSEs and not for any trading activities by them. An MSE Unit will not get any purchase preference over another MSE Unit. 7) MSE bidders must submit registration certificates from bodies specified by the Ministry of MSME. 8) SC/ST owned enterprises (i.e. SC/ST proprietorship, or holding minimum 51% shares in case of Partnership/Private Limited Companies) shall additionally submit relevant SC/ST certificates issued by any of the following: District/Additional District Magistrate /Collector/Deputy Commissioner/ Additional Deputy Commissioner/Deputy Collector/1st Class Stipendiary Magistrate/Sub-divisional Magistrate / Taluka Magistrate / Executive Magistrate/ Extra Assistant Commissioner Chief Presidency magistrate /Additional Chief Presidency magistrate /Presidency magistrate Revenue Officer not below the rank of Tehsildar Sub-divisional Officer of the area where the individual and/or his family normally resides a. The registration shall be valid as on date of placement of order. A self- attested photocopy of the relevant certificate shall be submitted as a support document. b. The registration must be for the items/category of items /services relevant to the tendered items/category of items/services All these benefits are subject to production of all statutory documents as per General Terms & Conditions (GTC) of enquiry along with Udyog Aadhaar Number
2	Late Tenders	Tenders received after due date/time(12:00hrs) will not be considered
3	Discrepancy in words and figures	(a) If, in the price structure quoted for the required goods/ Services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly. (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and (c). If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above. (d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
4	Two Part bid clarifications	In the case of Two-part bid, the vendor should furnish technical and commercial clarifications, if any, within stipulated time mentioned, failing which, it will be construed that the vendor is not interested in the tender and BHEL shall not consider the offer for further evaluation.
5	Price Impacts	In the event of any bidder, after finalizing the technical specifications and scope of supply, opting to revise their original bid, they have to submit the Price-Impact only. The Original price bid along with Price-Impact bid shall be opened during price bid opening. Unsolicited price impacts will not be considered.
6	Price bid evaluation	All offers in price bid opening or reverse auction shall be evaluated in Indian currency based on unit price, packing & forwarding, taxes/duties, freight charges if any, exchange rate. Loading due to non-acceptance of our standard commercial terms will be evaluated as per the LOADING FACTORS

		form as enclosed along with the enquiry. The exchange rate declared by State Bank of India under TT Selling rate on the technical bid open date shall be adopted for evaluating foreign currency bids.
7	Packing	The supplier shall be responsible for the goods being properly and adequately packed so as to prevent any loss, damage or deterioration during transit.
8	Withdrawal	In case the supplier withdraws their offer before placement of order, BHEL reserves the right not to send next enquiry(ies). In case the supplier withdraws the quotation after its acceptance by BHEL or fails to supply the goods as per the terms and conditions of contract, or at any time repudiated the contract wholly or in part, BHEL shall be at liberty to cancel the Purchase Order and to recover from the supplier the extra cost and other loss, incidentals due to the breach of contract on the part of the supplier through risk purchase.
9	Risk Purchase	In case of default/late delivery, BHEL reserves the right to make alternate arrangement for procurement at suppliers risk and cost.
10	Banned List	The offers of the bidders who are in the banned list and the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com . Guidelines for suspension of business dealings with suppliers/contractors are available on www.bhel.com under supplier registration page
11	Over All L1	Order will be placed on overall L1 basis. Vendors should quote for all items, otherwise the offer will be rejected.
12	Additional Information	Suppliers are requested to visit our web site regularly for any updates and additional information, "All corrigenda, addenda, amendments, time extensions clarifications, etc. to the tender will be hosted on BHEL website only". The corrigendum will not be published in news paper.
13	Arbitration	Subject to the jurisdiction of Hyderabad/Secunderabad, Andhra Pradesh, India in respect of any suit or other legal proceedings relating this contract.
14	Micro Small Enterprises (MSEs)	MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM II certificate along with CA certificate (Format as below) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) Where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents. Certificate by chartered Accountant on letter head This is to certify that M/s(hereinafter referred to as 'company') having its registered office at is registered under MSMED Act 2006, (Entrepreneur Memorandum No(Part-II) dtd....., Category..... (Micro/Small). (Copy enclosed). Further verified from the Books of Accounts that the investment of the company as on date..... as per MSMED Act 2006 is as follows : 1. For manufacturing Enterprises : Investment in plant and machinery (i.e. Original cost excluding land and building and the items specified by the ministry of small Scale Industries vide its notification No.S.O.1722(E) dated October 5, 2006. 2. For Service Enterprises : Investment in equipment (Original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006: Rs..... Lacs The above investment of Rs..... Lacs is within permissible limit of Rs..... Lacs for.....Micro/Small (Strike off which is not applicable) Category under MSMED Act 2006. Date: (Signature) Name- Membership number -- Seal of Chartered Accountant
15	Foreign Vendors	BHEL will deal directly with foreign vendors, where ever required, for procurement of goods. However, if the foreign principal desires to avail of services of an Indian agent, then foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of agency agreement (as per *). * The Agency Agreement shall specify 1) Agency commission, 2) Responsibilities of the agent, 3) Territory, 4) Agreement Period
16	Fraud Prevention Policy	The Bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

17	Signing & Stamping	Documents of BHEL's all Terms and conditions submitted with the offer shall be signed and stamped in each page of authorized representative of the bidder
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Documents submitted with the offer shall be signed and stamped in each page of authorized representative of the bidder

Read and agreed for all the above general terms and conditions

Signature of the bidder with Seal & Date

	COMMERCIAL TERMS & CONDITIONS (CTC)	Volume - 1 Enquiry No 391700971
Development of an Automation system for Gas Distribution test.		

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Late Delivery Penalty Clause	Failure to supply the goods and/or Failure to carryout the services within the stipulated delivery date will attract a penalty of 0.5% per week or part thereof for the value of the undelivered portion of the purchase order subject to a maximum of 10% of the total order value. The Penalty amount determined based on the delay in supply/services along with applicable GST thereon shall be recovered. In case of non acceptance to this LD Clause, 10% of basic material cost will be loaded on the quoted prices while cost comparison.(Please refer the enclosed 'Loading Factors' sheet).	
2	Payment terms for Indian Offers	Vendor to indicate appropriate applicable HSN code for Goods as well as SAC for services based on Inter/Intra state.In case the bidder has opted for composite GST scheme,the same may be stated explicitly in both and techno-Commercial & Price bids. BHEL will pay only basic price to the vendor and release the GST payment only when the proof of remittance is given.	
3	Reverse Auction	BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com). The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates. If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).	
4	Two part	Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below. 1) First Cover shall contain: a. Signed General Terms & Conditions (GTC) b. Filled and Signed Commercial Terms & Conditions (CTC) c. Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) d. Signed commercial bid e. Copy of Price-bid with price(s) cells blank (un-priced price bid)as per annexure 2) Second cover shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. If the price bid was found later to be different from the unpriced pricebid format in any way, the offer will be rejected summarily. The rates shall be quoted both in figures and in words. The offers can also be submitted through e-mail and have to be sent in PDF format (files with PDF extension only). Files having extensions other than PDF like RAR, EXE,JPEG etc. and with external links will not be considered. They have to be sent to e-mail id: 'eoffers@bhelmd.co.in' only. Copies should not be marked to anyone. If the offers are marked to anyone other than to eoffers, their offer will not be considered. The e-mail offers should have two attachments. 1) One attachment shall contain a. Signed General Terms & Conditions (GTC) b. Filled and Signed Commercial Terms & Conditions (CTC) c. Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) d. Signed commercial bid e. Copy of Price-bid with price(s) cells blank (un-priced price bid), as per annexure 2) Second attachment shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.	

5	Weight and Packing Dimensions.	The Supplier shall indicate the shipping weight (Kgs) and dimensions(L x W x H in cms) clearly along with offer.	
6	Validity of Offer	90 days from date of techno-commercial bid opening.	
7	Agency Agreement	Guidelines regarding dealing with Indian agents of foreign suppliers 1. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of agency agreement. 2. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of government of India, issued from time to time. 3. The agency agreement should specify the precise relationship between the foreign OEM and services to be rendered by Indian agent / associate, whether general in nature or in relation to the particular contract, must clearly be stated by the foreign supplier / Indian Agent. Any payment, which the Indian agent / associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee shall be brought out in record in the agreement and be made explicit in order to ensure compliance to the laws of the country. 4. Any agency commission to be paid by BHEL to the Indian agent shall be Indian currency. 5. When ever Indian agents are representing on behalf of their principals, the relevant authorization letter and agreement copy to be enclosed along with technical bid to consider the offer.	
8	Delivery Period	<u>FOR INDIAN SUPPLIES :</u> Suppliers are requested to quote within the delivery date mentioned in the enquiry. They shall also mention one of the following delivery periods compulsorily. 1) Delivery Period from date of Purchase order ===== 2) Delivery Period from receipt of material / input data / drawings etc. from BHEL===== (if applicable) 3) Delivery Period from receipt of approval of design documents / drawings etc. by BHEL===== (if applicable) However BHEL shall inform the vendor about rejection of the offer before price bid opening in case of not meeting the delivery requirements of BHEL. <u>FOR FOREIGN SUPPLIES :</u> Suppliers are requested to quote within the delivery date mentioned in the enquiry. They shall also mention one of the following delivery periods compulsorily. 1. Delivery Period from date of Purchase order :===== 2. Delivery Period from receipt of input data / drawings etc. from BHEL===== (if applicable) 3. Delivery Period from receipt of approval of design documents / drawings etc. by BHEL===== (if applicable) 4. Delivery Period from date of LC Opening ===== (if applicable) 5. Delivery Period from date of PO acceptance ===== However BHEL shall inform the vendor about rejection of the offer before price bid opening in case of not meeting the delivery requirements of BHEL. Pl. mention any other issues/constraints like export clearance etc. explicitly, if any =====	
9	Nature of Vendor submitting the Offer	OEM / Agent / Representative / Dealer / Distributor / Stockist / Trader / Reseller / Channel Partner/ System Integrator / Any Other (Pl. Specify)	
10	Foreign Suppliers without Indian Agent	To be quoted in Foreign Currency. Purchase Order will be placed on Foreign Supplier.	

11	Foreign Principal availing services of an Indian Agent	Foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of Agency agreement. (as per *) To be quoted in Foreign Currency. Purchase order will be placed on Foreign Supplier. Agency Commission will be paid to Indian Agent in Indian rupees. * The Agency Agreement shall specify 1) Agency commission, 2) Responsibilities of the Agent, 3) Territory, 4) Agreement Period	
12	Indian Agent desirous of quoting imported Equipment	Any Indian Agent desirous of quoting imported Equipment, they should submit the quote in foreign currency along with copy of agency agreement (as per *). To be quoted in Foreign Currency. Purchase order will be placed on Foreign Supplier. Agency Commission will be paid to Indian Agent in Indian rupees. * The Agency Agreement shall specify 1) Agency commission, 2) Responsibilities of the agent, 3) Territory, 4) Agreement Period	

Note : All the clauses of the above format should be filled and submitted with the Techno Commercial Bid (Part-1). The filled in BHEL Commercial terms & Conditions format submitted with technical bid, responding to all the clauses duly signed with seal **only shall be considered**. Any other Commercial terms & conditions of bidders entered else where in their offer shall not be considered and are liable for rejection.

Read and understood the above commercial terms and conditions

Signature of the bidder with Seal & Date

	OTHER TERMS & CONDITIONS	Volume - 1 Enquiry No 391700971
Development of an Automation system for Gas Distribution test.		

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Taxes and Duties	Vendor shall inform HSN/SAC code and the breakup of the applicable tariff/taxes (CGST/SGST/IGST/UGST) based on from and to locations with individual components in part 1 bid.	
2	Details Required	PAN Number: GSTIN Registration Status: GSTIN No: GSTIN No. Issuance Date : Provisional/ Final Registration : Name of the Contact Person : Contact Phone / Mobile : Email id for correspondence : Address with PIN code and State:	
3	Concessional Taxes/Duties	Concessional taxes/duties, if any, available to BHEL as on date of price bid opening shall be taken into account for evaluating landed cost. Hence all offers shall be evaluated at available concessional rates of, if any, on or before opening of price bid date or otherwise it shall be evaluated with quoted/prevaling rates as on date of price bid opening for landed cost comparison. However, all suppliers have to accept Concessional taxes/duties in case if the same is available to BHEL as on date of dispatch.	
4	Special Note	Taxes and duties to be governed by GST acts. Strict adherence to new provisions by the vendors like timely submission of invoices, tax payment, filing of returns- GSTR-I etc. will form base of new regime for release of payment from BHEL. Hence, any financial loss occurred due to non-compliance of the GST provisions would be endured at defaulters end.	
5	Force Majeure clause	If at any time during the continuance of the contract the performance in whole or in part by either party of any obligations under the contract is prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) and notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof then neither party shall by reason of such events be entitled to terminate the contract. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason of occurrence of such events, then claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser the particulars of the events, if required with supporting evidence. Any waiver of time in respect of partial instalment shall not be deemed to be a waiver of time in respect of remaining deliveries	
6	Import License:	These items are being imported without any license under "Foreign Trade Policy 2015-2020", Export-Import Policy of India, General Provisions regarding Imports and Exports	
7	Payment Terms	For payment terms refer payment clause as per point no. 4 of general specifications of item specifications. a) For Indian offers: Payment will be made as per payment terms along with taxes by EFT/RTGS. b) For Foreign offers: Payment will be made as per payment terms by wire transfer. All bank charges inside India shall be to BHEL account. In case of deviation to payment terms, offer will be liable for rejection.	
8	Firm Prices	The prices shall be firm for entire period of contract.	
9	Unprice & Price bid format	Bidders are required to quote as per annexures IND-I&II and FOR-I	

Signature of the bidder with Seal & Date

	ITEM SPECIFICATIONS	Volume - 2 Enquiry NO 391700971
Development of an Automation system for Gas Distribution test.		

SL.No.	Item			
1	Wind wane Anemometer as per specifications			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
		Vane type anemometer specification	Refer the document attached : GD Test-Write up-Flow Chart-anemometer-Aug 2017 and specification No:Q-E-01-16-826-RD-39/SP-001/Clause 7.0	
		List of Probable vendors	Vendors list attached for reference for procurement of vane type anemometer only.	
2	Supply of Programmable Manipulator as per specifications			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
		Specifications of manipulator	Document attached for specifications: Technical Specs-GD Test-Rev002 Final-July 2017 (For development, manufacturing and supply)	
		Clarifications	In case the bidder need any clarifications on the development, please contact the concerned on Mobile No. 9985306531 and Email : kvvrāju@bhel.in	
G	General Specifications			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
	1	Delivery schedule:	All parts /machinery /accessories developed under this enquiry should be delivered by the bidder as per the date mentioned in the PO.	
	2	BHEL Officials visit to vendor's works	BHEL R&D representative shall be allowed to witness the development progress as and when required.	
	3	In case of any technical clarifications required by the bidder	For any clarifications, the bidder can contact the concerned by mail or mobile: kvvrāju@bhel.in Mobile No:+919985306531	
	4	Payment	Payment shall be made as per below: 90% of PO value will be made within 30 days after delivery and acceptance of the consignment and the balance 10% of the PO value will be made after successful field trials/modifications if any. The field trial will be completed within 2 months after receipt and acceptance of the consignment. However, if the bidder wants to get the balance 10% of the PO value payment before the field trial, the same can be released against submission of suitable bank guarantee for the 10% of the PO value valid for 4 months.	
	5	All Intellectual Property Rights (IPR)	Patents, copyrights and design rights etc. related to this order shall be property of BHEL R&D and supplier shall not apply or claim for any IPR,	

			related to this order, arising during or after development of this order.	
6	Pre-Despatch Inspection (PDI)		Pre-dispatch inspection will be carried out at vendor's works by the BHEL R&D team. Indian vendors should inform at least 10 days in advance for PDI at their works. Foreign vendors should inform at least 25 days in advance for PDI at their works.	

* Vendors are advised to write specifications in detail and not to write like 'Complied/ Yes / No ' etc. in specifications.

Signature of the bidder with Seal & Date

LOADING FACTORS



NOTE : IN CASE OF DEVIATION TO BHEL TENDER SPECIFIED TERMS, LOADING FACTOR INDICATED IN FOLLOWING TABLE WILL BE APPLIED TO QUOTED PRICE WHILE EVALUATING THE LOWEST QUOTE

A. FOR INDIGENOUS PURCHASES					
SLNO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
A.1	SUPPLY OF EQUIPMENT	PAYMENT TERMS	100% PAYMENT, WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AT BHEL R & D	SAME	NIL
				PAYMENT AGAINST PROFORMA INVOICE / DESPATCH DOCUMENTS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE TOTAL PO VALUE FOR ONE MONTH
				FULL ADVANCE PAYMENT WITH BANK GUARANTEE	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE TOTAL PO VALUE FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND BALANCE PAYMENT WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND BALANCE PAYMENT ON RECEIPT AND ACCEPTANCE OF MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT FOR ONE MONTH
A.2	SUPPLY OF EQUIPMENT INCLUDING ERECTION AND COMMISSIONING (E&C)	PAYMENT TERMS	90% PAYMENT, WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AND BALANCE 10% WITH IN 30 DAYS OF COMPLETION OF E&C.	SAME	NIL
				100% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF SUPPLIES AND E&C	NIL
				90% PAYMENT AGAINST PROFORMA INVOICE/ DESPATCH DOCUMENT AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C.	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON 90% OF THE VALUE OF PO FOR ONE MONTH
				90% PAYMENT AGAINST PROFORMA / DESPATCH DOCUMENT AND BALANCE 10% AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON TOTAL VALUE OF THE PO FOR ONE MONTH
				90% ADVANCE PAYMENT WITH BANK GUARANTEE AND BALANCE 10% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON 90% OF THE PO VALUE FOR DELIVERY PERIOD (ROUNDED OFF TO THE NEAREST MONTH) + 1 MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND (90 - X) % PAYMENT ON RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO THE NEAREST MONTH) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE (90-X)% AMOUNT FOR ONE MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND BALANCE (90 - X) % PAYMENT AFTER RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO THE NEAREST MONTH) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT (100-X)% FOR ONE MONTH

B. FOR FOREIGN PURCHASES (IMPORTED)									
SL.NO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS				
B.1	SUPPLY OF EQUIPMENT	PAYMENT TERMS	100% PAYMENT BY WIRE TRANSFER WITHIN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AT BHEL R&D. (DESPATCH DOCUMENTS WILL BE SENT TO BHEL R&D DIRECTLY ALONG WITH BANK DETAILS.)	SAME	NIL				
				SIGHT DRAFT ON PRESENTATION OF DESPATCH DOCUMENTS VIZ INVOICE, A/B/E/T/C TO OUR BANKERS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) ON THE BASIC VALUE FOR ONE MONTH PLUS PAYMENT RELATED BANK CHARGES INCURRED BY BHEL				
				LC PAYMENT AGAINST DESPATCH DOCUMENTS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL				
				FULL ADVANCE PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR DELIVERY PERIOD(Rounded off to nearest month) + 1 MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL				
				PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER/LC WITH BANK GUARANTEE AND BALANCE PAYMENT WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL				
				PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER/LC WITH BANK GUARANTEE AND BALANCE PAYMENT ON RECEIPT AND ACCEPTANCE OF MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL				
				B. FOR FOREIGN PURCHASES (IMPORTED)					
				SL.NO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
				B.2	SUPPLY OF EQUIPMENT INCLUDING ERECTION AND COMMISSIONING (E&C)	PAYMENT TERMS	90% PAYMENT BY WIRE TRANSFER WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	SAME	NIL
								SIGHT DRAFT ON PRESENTATION OF DESPATCH DOCUMENTS VIZ INVOICE, A/B/E/T/C TO OUR BANKERS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) FOR ONE MONTH PLUS PAYMENT RELATED BANK CHARGES INCURRED BY BHEL
90 PAYMENT BY WIRE TRANSFER /LC AGAINST DESPATCH DOCUMENTS BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) ON 90% OF BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL								
90% PAYMENT BY WIRE TRANSFER /LC AGAINST DESPATCH DOCUMENTS BALANCE 10% AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL								
90% OF BASIC VALUE AS ADVANCE PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) ON 90% OF THE BASIC VALUE FOR DELIVERY PERIOD (Rounded off to nearest month) + ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL								
				PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE AND BALANCE (90-X)% PAYMENT BY WIRE TRANSFER /LC AFTER RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE (90-X)% FOR ONE MONTH				
				PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE AND BALANCE (90-X)% PAYMENT BY WIRE TRANSFER /LC AFTER RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to the nearest month) + ONE MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT (90-X)% FOR ONE MONTH				
				C. PENALTY FOR DELAYED DELIVERY (COMMON FOR INDIGENOUS AND IMPORTS)					
				SL.NO	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS	
				C	LD CLAUSE	IN THE EVENT OF DELAY IN AGREED CONTRACTUAL DELIVERY, PENALTY OF 0.5% (HALF PERCENT) PER WEEK BUT LIMITED TO A MAX OF 10% OF TOTAL ORDER VALUE WILL BE APPLICABLE	AGREED	NIL	
IF NOT AGREED	LOADING @ 10% OF THE BASIC MATERIAL COST								
IF AGREED FOR X%	LOADING @ (10-X)% OF THE BASIC MATERIAL COST								
D. GUARANTEE/WARRANTY PERIOD (COMMON FOR INDIGENOUS AND IMPORTS)									
SL.NO	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS					
D	GUARANTEE/WARRANTY PERIOD	STIPULATED OR REQUIRED GUARANTEE/ WARRANTY PERIOD(X)	AGREED	NIL					
		MINIMUM ACCEPTABLE GUARANTEE / WARRANTY PERIOD(Y)	NOT AGREED FOR STIPULATED BUT AGREED FOR MINIMUM GUARANTEE/WARRANTY(Y)	LOADING @ 10 % OF THE ORDER VALUE PER ANNUM FOR THE REDUCED GUARANTEE PERIOD (X-Y)					

BHEL R&D

Terms & Conditions of Reverse Auction



Against this enquiry for the subject item/ system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit online sealed bid in the Reverse Auction. Non-submission of online sealed bid by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, BHEL will provide the calculation sheet (e.g. EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL standard practice.
12. Bidders shall be required to read the "Terms and Conditions" section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction?, which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

AUTHORISATION LETTER FOR E-PAYMENT/ NEFT / RTGS
(PLEASE FILL UP THE FORM COMPLETELY IN CAPITAL LETTERS ON YOUR COMPANY LETTERHEAD ONLY)

Vendor Code (to be filled by BHEL)	
------------------------------------	--

Type of Request (Tick one)	NEW	CHANGE
1 Company Name		
2 Address		
3 City with PIN Code		
4 State		
5 PAN Number		
6 TIN/ VAT No.		
7 CST No.		
8 Service Tax No.		
9 Name of Contact Person		
10 Mobile number		
11 Ph. no. with STD Code		
12 Fax No. with STD Code		
13 Email ID		
14 Website (URL)		

BANK DETAILS FOR EFT / RTGS

1	Bank Name	
2	Branch	
3	Branch Code	
4	Branch Address	
5	Branch Phone No	
6	Account No.	
7	Account Type: SB/ Current/ other (Specify)	
8	MICR Code	
9	IFSC Code	

I, as an authorized representative / owner of the above named company, hereby state as under:

1. Enclosed here with a cancelled cheque in support of our company's bank details.
2. Authorize BHEL R&D Hyderabad, to electronically make payments to the designated bank account with bank charges, if any, to our account.
3. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
4. I hereby certify that the particulars given above are true, complete and correct.
5. This authority remains in full force until BHEL receives and acknowledge written notification requesting change or cancellation.

Date :
Company
Seal

Authorised Signatory
Designation :



RD:MPX:F-13

Bharat Heavy Electricals Limited

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

VENDOR REGISTRATION FORM

(Indigenous supplier)

[FORM TO BE SUBMITTED* BY THE BIDDER ALONG WITH TECHNICAL-BID]

Before filling, please refer to instructions on page-4

1.0 VENDOR PROFILE:

1.1 Name and address of the vendor:

Phone Nos.:

Fax No.:

Email: 1.

2.

1.2 Local representative name & address in Hyderabad/Secundrabad :

Phone Nos.:

Fax No.:

Email:

Contact Person:

Mobile No:

2.0 TYPE OF ORGANISATION:

PROPRIETORSHIP	Company:	Sister Concern (mention vendor registration number of main organization)	
Partnership	CORPORATION	Small Scale Industry	ANY OTHER(Please specify)

In case of SSI unit, copy of registration to be enclosed. It is requested that MSME registration certificate to be enclosed and tick the following:

Type of Major Activity: Manufacturing / Service

Category of Enterprise: Micro / Small / Medium

Social Category : GENERAL / SC / ST / OBC

Udyog Adhaar Number (UAN): _____

3.0 ANNUAL TURN OVER:

#	Year	Turn-Over, Rs.
1	Current Year(budgeted)	
2	Previous year (200 - 0)	
3	Prior Year (200 - 0)	

4.0 NAME AND ADDRESS OF THE BANKER:

4.1 Bank Name

4.2 Branch name

4.3 Account number

4.4 Account Type

4.5 MICR Code:

4.6 IFSC Code(RTGS/NEFT):

4.7 Bank Phone number(s),

Blank cheque, duly cancelled, to be enclosed.

Please note that all payments shall be made through Electronic clearance services to your above account against the orders executed, if any.

5.0 REGISTRATION PARTICULARS(relevant copies to be enclosed)

5.1 IT Permanent Account No.(PAN):

5.2 State Sales Tax/VAT Registration No:

5.3 Central Sales Tax Registration No:

5.4 ED Registration No:

5.5 Service Tax Registration No:

5.6 PF Account No:

5.7 Labour Licence No:

5.8 ESI Account No:

6.0 CONTACT PERSON: S/Sri:

Designation:

Phone / Mobile No:

7.0 TOTAL NUMBER OF EMPLOYEES:

Graduates(Engr/Scientists/Mgmt/Fin.)	Consultants	Workers		
		Sup./Skilled	Semiskilled	Unskilled

8.0 LIST OF PRODUCTS/ SERVICES OFFERED:

#	Products/ Services	Capacity
1		
2		
3		
4		
5		

9.0 REFERENCE LIST :

(Only recognized public and private sector companies, attach if printed copy available)

#	Customer	Volume / Year
1		
2		
3		
4		
5		

10.0 INFRASTRUCTURE / FACILITIES:

#	Facility (with specifications)	Age/ Year procured
1		
2		
3		
4		
5		

11.0 REGISTRATION WITH OTHER BHEL UNIT/UNITS:

#	Unit	Registration No	Year
1			
2			
3			
4			

12.0 ANY OTHER INFORMATION :**DECLARATION:**

The information furnished above is true and authentic.

(CEO / PROPRIETOR)

SEAL:
DATE:

Note:

-
1. Registered bidders, having BHEL (R&D) registration no. or have submitted this format for registration, need not furnish this information again.
 2. The competent authority reserves the right to accept or reject the registration.
 3. Vendors approved for registration will be informed by mail / email, as convenient. A separate communication will be sent in case of non-registration also, citing reasons thereof.
 4. BHEL reserves the right to take penal action as deemed fit if any of the information provided by the vendor(s) is found to be incorrect.
 5. AGM, Head (MM) may be contacted for clarification/additional information on registration.

Instructions

1. Fill all items. Please mention "N.A." for items/ clauses not applicable.
2. Use A4 sheets for this document and the enclosures. Use of additional sheets is permitted if space provided is not adequate.
3. Attach copies of latest documents in respect of items 5.0 (Registration no.s)
4. Photographs of registered office and the chief executive/proprietor shall be furnished.



RD:MPX:F-14

Bharat Heavy Electricals Limited

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

SUPPLIER REGISTRATION FORM

(FOREIGN SUPPLIER)

ALL COLUMNS SHOULD BE PROPERLY FILLED IN THE SPACE PROVIDED FOR.WHEREVER IT IS NOT APPLICABLE PLEASE WRITE "NOT APPLICABLE".INCOMPLETE OR INCORRECT FORMS MAY NOT BE CONSIDERED.

1.0 GENERAL INFORMATION:

1.1 NAME OF COMPANY

1.2 DETAILS OF HEAD OFFICE:

ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :
 WEB SITE :

1.3 DETAILS OF FACTORY/WORKS:

ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :
 WEB SITE :

1.4 DETAILS OF MARKETING AGENT

ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :
 WEB SITE :

1.5 CHIEF EXECUTIVE

1.6 CONTACT PERSON(S)

FOR PRODUCT OFFERED

NAME(S) :
 OFFICIAL CPACITY :
 ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :

1.7 YEAR OF ESTABLISHMENT

1.8 PRODUCTION CAPACITY PER ANNUM

1.9 PARTICULARS OF PRODUCT INCLUDING SPECIFICATION AND RANGE OFFERED FOR REGISTRTION (Attach brouchers and catalogues)

1.10 NAME(S) OF BANKERS

1.11 BANKER'S CERTIFICATE

1.12 PORT OF LOADING

1.13 NEAREST AIRPORT

1.14 NAME OF THE INDIAN AGENT, IF ANY
WITH AUTHORIZATION LETTER

2.0 FINANCIAL INFORMATION:

2.1 TOTAL CAPACITY

2.2 ANNUAL TURN OVER FOR LAST 3 YEARS

2.3 WHEHER CREDIT LICENSE ACCEPTABLE YES/NO

3.0 QUALITY MANAGEMENT SYSTEMS

ENCLOSED FORMAT PART-B

3.1 EXPERIENCE LIST FOR SAME/ SIMILAR ITEMS
TO BE ENCLOSED

4.0 FUTURE EXPANSION PLANS:

(Give details)

5.0 LIST OF ENCLOSURES:

(Including brouchers, catalogues, technical literature etc)

6.0 ANY OTHER INFORMATION:

SIGNATURE OF SUPPIER (Authorized signatory)

NAME :
DESIGNATION :
DATE :
OFFICIAL SEAL

Note:

1. BHEL Reserves the right to take penal action as deemed fit if any of the information provided by the vendor is found to be incorrect.
2. Please attach separate sheets, if space found is inadequate



Bharat Heavy Electricals Limited

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

Ph: 040 – 23772704, Fax: 040 – 23770698, email: mpx@bhelrnd.co.in

RD:MPX:F-13

GUIDE LINES REGARDING DEALINGS WITH INDIAN AGENTS OF FOREIGN SUPPLIERS

- i. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an indian agent, then the foreign principal should ensure compliance to regulatory guidelines - which require mandatory submission of an Agency Agreement.
- ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- iv. Any agency commission to be paid by BHEL to the Indian agent shall be in indian currency only.
- v. Whenever Indian agents are representing on behalf of their principals the relevent authorisation letter and agreement copy to be enclosed along with Technical bid to consider the offer.

UN-PRICED BID FORMAT - INDIAN SUPPLIER

Enquiry Description	Enquiry No	Enquiry Date	Vendor's Name and Address	

Supply

S. No.	Item Description	Units	Qty.	Unit Rate (INR)	Total C=(A*B)	HSN Code
COL. No 1	2	3	4	5	6	7
			(A)	(B)	C=A*B	
	Deliverable Item**					
1.0a	Wind vane anemometer as per specifications	No.	2	Quoted	Quoted	
1.0b	Supply of programmable manipulator as per specifications	Set	1	Quoted	Quoted	
1.1	Other (Misc.) charges	_____%				
1.2	Packing and Forwarding charges	_____%		Quoted	Quoted	
1.3	Subtotal (EXW Price)				Quoted	
1.4a	Freight to BHEL R&D Stores, Vikasnagar Hyderabad	_____%		Quoted	Quoted	
1.4b	Insurance to BHEL R&D Stores, Vikasnagar Hyderabad	_____%		Quoted	Quoted	
1.5a	CGST	_____%		Quoted	Quoted	
1.5b	SGST	_____%		Quoted	Quoted	
1.5c	IGST	_____%		Quoted	Quoted	
1.5d	Cess, if any	_____%		Quoted	Quoted	
1.6	Total Price (Delivery to BHEL R&D Stores, Hyderabad) =1.3+1.4a+1.4b+ 1.5a+1.5b+1.5c+1.5d			Quoted	Quoted	

SIGNATURE OF THE BIDDER WITH SEAL

**** Items may be quoted in same format only as per actual nomenclature and part numbers with quantity and unit price at appropriate location. All columns to be filled. If any item does not carry any value it must be mentioned as zero (0).**

Actual taxes/ rates as applicable at the time of placement of Purchase Order

Note:

1. Submission of GST Registration details along with the Un-priced bid is required for consideration of the Offer.
2. Kindly provide the HSN/SAC code and the breakup of the tariff/taxes (CGST/SGST/IGST/UGST) based on from and to locations with individual components.
3. Concessional taxes/duties, if any, available to BHEL as on date of price bid opening shall be taken into account for evaluating landed cost.
4. Hence all offers shall be evaluated at available concessional rates of, if any, on or before opening of price bid date or otherwise it shall be evaluated with quoted/prevaling rates as on date of price bid opening for landed cost comparison. However, all suppliers have to accept Concessional taxes/duties in case if the same is available to BHEL as on date of dispatch.
5. Suppliers are requested to quote on FOR BHEL R&D Stores, Vikasnagar, Hyderabad-500093
6. This Un-Price bid format should be submitted along with Techno-Commercial Bid.
7. Rates to be quoted in figures with corresponding words.
8. Rates quoted against supply shall be inclusive testing/modifications/support services if any as per specification No: **Q-E-01-16-826-RD-39**
9. All taxes and Duties to be submitted in Unpriced Bid also
10. Taxes and duties to be governed by GST acts. *Strict adherence to new provisions by the vendors like timely submission of invoices, tax payment, filing of returns-GSTR-I etc. will form base of new regime for release of payment from BHEL. Hence, any financial loss occurred due to non-compliance of the GST provisions would be endured at defaulters end.*
11. Vendor's undertaking: I/We have read and understood the NIT terms and conditions.

SIGNATURE OF THE BIDDER WITH SEAL

PRICED BID FORMAT- INDIAN SUPPLIER

Enquiry Description	Enquiry No	Enquiry Date	Vendor's Name and Address	

Supply

S. No.	Item Description	Units	Qty.	Unit Rate (INR)	Total C=(A*B)	HSN Code
COL. No 1	2	3	4	5	6	7
			(A)	(B)	C=A*B	
	Deliverable Item**					
1.0 a	Wind vane anemometer	No.	2			
1.0 b	Supply of programmable manipulator as per specification: Q-E-01-16-826-RD-39 /SP-001	Set	1			
1.1	Other (Misc.) charges	_____%				
1.2	Packing and Forwarding charges	_____%				
1.3	Subtotal (EXW Price)					
1.4 a	Freight to BHEL R&D Stores, Vikasnagar, Hyderabad	_____%				
1.4 b	Insurance to BHEL R&D Stores, Vikasnagar, Hyderabad	_____%				
1.5a	CGST	_____%				
1.5b	SGST	_____%				
1.5c	IGST	_____%				
1.5d	Cess, if any	_____%				
1.6	Total Price (Delivery to BHEL Stores) =1.3+1.4a+1.4b+1.5a+1.5b+1.5c+1.5d					

1. Rates to be quoted in figures with corresponding words.
2. Rates quoted against supply shall be inclusive testing/modifications/support services if any as per specification No: Q-E-01-16-826-RD-39
3. All taxes and Duties to be submitted in Unpriced Bid also
4. Vendor's undertaking: I/We have read and understood the NIT terms and conditions.

SIGNATURE OF THE BIDDER WITH SEAL

UN-PRICED BID FORMAT– FOREIGN SUPPLIER

Enquiry Description	Enquiry No	Enquiry Date	Vendor's Name and Address	

Supply

S. No.	Item Description	Units	Qty	Unit Rate with Currency	Total $C=(A*B)$	HSN Code
COL NO-1	2	3	4	5	6	7
			(A)	(B)	$C=A*B$	
	Deliverable Item**					
1.0a	Wind vane anemometer as per specifications	No.	2	Quoted	Quoted	
1.0b	Supply of programmable manipulator as per specifications	Set	1	Quoted	Quoted	
1.1	Other (Misc. charges)	_____ %				
1.2	Packing and Forwarding charges	_____ %		Quoted	Quoted	
1.3	Sub. total (EXW Price)					
1.4	Any other Charges	_____ %		Quoted	Quoted	
1.5	CIF Hyderabad Airport Charges	_____ %		Quoted	Quoted	
1.6	Sub Total, CIF Hyderabad Airport Charges					
2.0	Landed Cost Calculations					
2.1	Exchange rate on Technical bid opening date, to be filled by BHEL			BHEL	BHEL	
2.2	Sub Total, CIF Hyderabad Airport Charges in Indian Currency (INR), to be filled by BHEL (1.6*2.1)			BHEL	BHEL	
2.3	Basic Customs duty, (INR)			BHEL	BHEL	
2.4	Cess, (INR)			BHEL	BHEL	
2.5	IGST,(INR)			BHEL	BHEL	
2.6	Total, imports (Delivery to BHEL R&D Stores, Hyderabad), (2.2 to 2.6), (INR)			BHEL	BHEL	

Indian agency commission is included in the price quoted: _____% (please specify the line item / items).
Please attach Agency agreement copy.

** Item may be quoted in same format only as per actual nomenclature and part numbers with quantity and unit price at appropriate location. All columns to be filled. If any item does not carry any value it must be mentioned as zero (0).

Actual taxes/ rates as applicable at the time of placement of Purchase Order

Note:

SIGNATURE OF THE BIDDER WITH SEAL

1. This Un-Price bid format should be submitted along with Techno-Commercial Bid.
2. Kindly provide the HSN /SAC code and the applicable duties and taxes with breakup of components.
3. Concessional taxes/duties, if any, available to BHEL as on date of price bid opening shall be taken into account for evaluating landed cost.
4. Hence all offers shall be evaluated at available concessional rates of, if any, on or before opening of price bid date or otherwise it shall be evaluated with quoted/prevaling rates as on date of price bid opening for landed cost comparison. However, all suppliers have to accept Concessional taxes/duties in case if the same is available to BHEL as on date of dispatch.
5. TERMS OF DELIVERY: CIF Hyderabad Airport.
6. Delivery date shall be taken as IGM filing date + 3 days. Accordingly LD, if any shall be calculated.
7. Rates to be quoted in figures with corresponding words.
8. Rates quoted against supply shall be inclusive testing/modifications/support services etc.as per specification No: Q-E-01-16-826-RD-39 /SP-001
9. Supplier's undertaking: I/We have read and understood the NIT terms and conditions.

SIGNATURE OF THE BIDDER WITH SEAL

PRICED BID FORMAT - FOREIGN SUPPLIER

Enquiry Description	Enquiry No	Enquiry Date	Vendor's Name and Address	

Supply

S. No.	Item Description	Units	Qty	Unit Rate with Currency	Total $C=(A*B)$	HSN Code
COL NO-1	2	3	4	5	6	7
			(A)	(B)	$C=A*B$	
	Deliverable Item**					
1.0a	Wind vane anemometer	No.	2			
1.0b	Supply of programmable manipulator as per specification: Q-E-01-16-826-RD-39 /SP-001	Set	1			
1.1	Other (Misc. charges)	_____ %				
1.2	Packing and Forwarding charges	_____ %				
1.3	Sub. total (EXW Price)					
1.4	Any other Charges	_____ %				
1.5	CIF Hyderabad Airport Charges	_____ %				
1.6	Sub Total, CIF Hyderabad Airport Charges					
2.0	Landed Cost Calculations					
2.1	Exchange rate on Technical bid opening date, to be filled by BHEL			BHEL	BHEL	
2.2	Sub Total, CIF Hyderabad Airport Charges in Indian Currency (INR), to be filled by BHEL (1.6*2.1)			BHEL	BHEL	
2.3	Basic Customs duty, (INR)			BHEL	BHEL	
2.4	Cess, (INR)			BHEL	BHEL	
2.5	IGST,(INR)			BHEL	BHEL	
2.6	Total, imports (Delivery to BHEL R&D Stores, Hyderabad), (2.2 to 2.6), (INR)			BHEL	BHEL	

1. Rates to be quoted in figures with corresponding words.
2. Rates quoted against supply shall be inclusive testing/modifications/support services etc. as per specification No: Q-E-01-16-826-RD-39 /SP-001

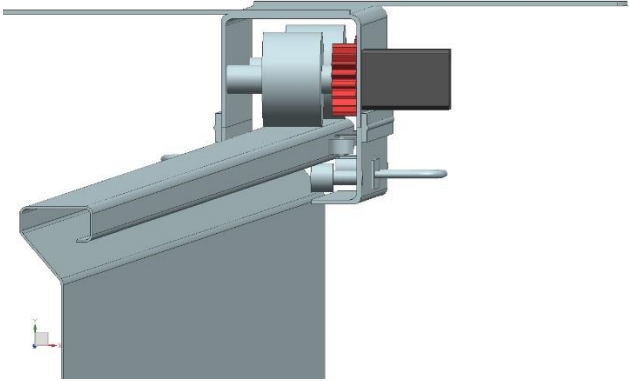
SIGNATURE OF THE BIDDER WITH SEAL

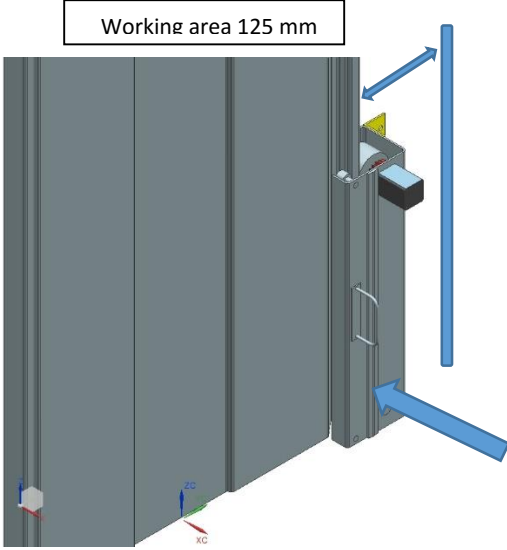
Development of an automated system for Gas Distribution Test

Specification number: **Q-E-01-16-826-RD-39/SP-001** Drawing No: **2-79-020-00974**

Reference Documents: GD Test-Write up-Flow Chart-anemometer & GD test AnimationMVI

Description: A programmable manipulator to crawl along with collecting electrode G-Profile edge carrying vane type anemometer, collecting velocity data and storing it into a local memory with all accessories (Servo/Stepper motors, PLC/Micro-controllers, Drives, Sensors, Grippers, magnetic wheels adjustable self-locking hinges, wiring and pendants etc..) as per specifications.

S No	Specification	Bidder's Compliance
1	Objective: Development of programmable manipulator (vertical slider) with all necessary accessories (Gripper wheels/Magnetic wheels, Drives, Stepper/servo motors, PLC/Micro controls, Programmable HMI, Local memory for data storage, integrating vane type anemometers etc..) for measuring air velocities across internals of ESP (Electro Static Precipitator) of a boiler/Auxiliaries as per the process plan explained in the documents attached.(reference documents & Drawing)	
2 2.1	Pre-qualification criteria: As shown in the NIT document.	
3 3.1	Scope of work of bidder: Design, Development, manufacture and supply of the vertical slider (for vertical motion holding G-Profile of collecting electrode plate with magnetic/gripper wheels, stepper/servo/DC or any other kind of motors as shown in Fig) with profiled/machined sections of lightweight material like aluminum (preferably) . 	
3.2	The slider should have either expandable spring loaded gripper mechanism (adjustable spring loaded hinge joint) or any other mechanism to firmly hold the G profile of collecting electrode both sides for easy removal and re-assembly as shown in Fig.	

	 Arrow mark shows the spring loaded hinge joint either side ** The available working area of 125 mm from the edge of the electrode profile as shown above should be taken into consideration while developing the vertical slider. The scheme shown above is only for understanding the concept of development in the similar lines. Bidders can change/modify it in their proposals to meet ultimate requirement of BHEL.	
3.3	Design and development of a microcontroller/PLC based controller to control the movement of vertical slider up/down, triggering the anemometer probes to capture velocity data and to store same velocity data into a local memory unit, chronologically in a .csv/.xls/.txt file format.	
3.4	Supply and integration of wind vane anemometer/probes with the vertical slider program. (Specifications of vane type anemometer is attached along with the make of anemometers- Bidders can buy anemometers (Vane type, 70 mm Dia) from the list of makes mentioned or equivalent probes of international standard.	
3.5	Development of UI to generate program for controller taking input from user. (Start, stop, pause, no of locations for measurement, distance between the two consecutive measurement points.	
3.6	The height of vertical slider should be 600 mm or less and to be equipped with gripper wheels/motors/drives/controls /PLCs/memory unit/anemometer probes etc.. .It should have less overall weight to avoid slippage due to self-weight and also to shift entire assembly from one electrode to another easily. It is necessary to provide a self-locking /braking system to avoid free fall. Necessary power source to be in-built into the vertical slider and power supply cable to be light weight and of sufficient length.	
3.7	For exact dimensions of the collecting electrode G-Profile, Please refer the drawing No:2-79-020-00974.(Section PP)	



Bharat Heavy Electricals Limited
Corporate R&D Division, Vikasnagar
Hyderabad-500093

3.8	The entire system developed should have socket for external power supply (for regular and standby operation). Internal distribution of supply to all parts (like motors, controllers, drives, PLCs, memory units etc) should be from one common source and should be wired neatly for aesthetic appearance.	
3.9	A plug and play type of pendent (Similar to master controller HMI) should be supplied along with the prototype unit to use it as standby in case of emergency and also to operate the vertical slider unit in manual/auto mode.	
3.10	The bidder should understand the functioning of the proposed system with the help of the animation attached. (GD Test AnimationMVI)	
4.0	Development proposal by the bidders:	
4.1	Bidder should study the scope of the development and should understand the concept and purpose of development. In case if any clarification required, the bidder can contact the concerned official on mobile: 9985306531 and can mail us at kvvraju@bhel.in .	
4.2	If required Bidders can have a pre-bid visit to BHEL R&D , Hyderabad to understand the development proposal /workable design covering the entire scope of work of development. Our offices are open from 08.00 AM to 05.00 PM on all working days.	
4.3	Bidders can visit BHEL R&D to physically see the collecting electrode system and understand the development scope before submitting their offers against BHEL R&Ds enquiry.	
4.4	Bidders should be fully conversant with the proposed development before bidding. They should get all their doubts clarified by BHEL to develop the scheme as per BHEL's requirement and specifications. The bids which are not in-line with the BHELs requirement shall be rejected.	
5.0	Support and services by the bidder	
5.1	Operation and Maintenance manuals should be submitted by the bidder after successful development and demo the prototype at our works incorporating all drawings, details of wheels, motors, mechanisms, controllers, other parameters, anemometer details, circuit diagrams etc..	
5.2	Since this development of SPM is unique, the successful bidder has to extend support services during testing and field trials at BHEL R&D. it may be necessary that In case if any changes/modifications to be made to make the system fail-safe, the bidder has to carry out the same without any extra claim what so ever. Bidder has to show and prove continuous operation of the automated slider mechanism for 6-8 hours along the collecting electrode G Profile edge during PDI to ensure machine's reliability. Collecting electrode plate will be provided by BHEL.	
6.0	Intellectual Property	
6.1	All the schemes, designs, concepts , process and software will be an intellectual property of BHEL	

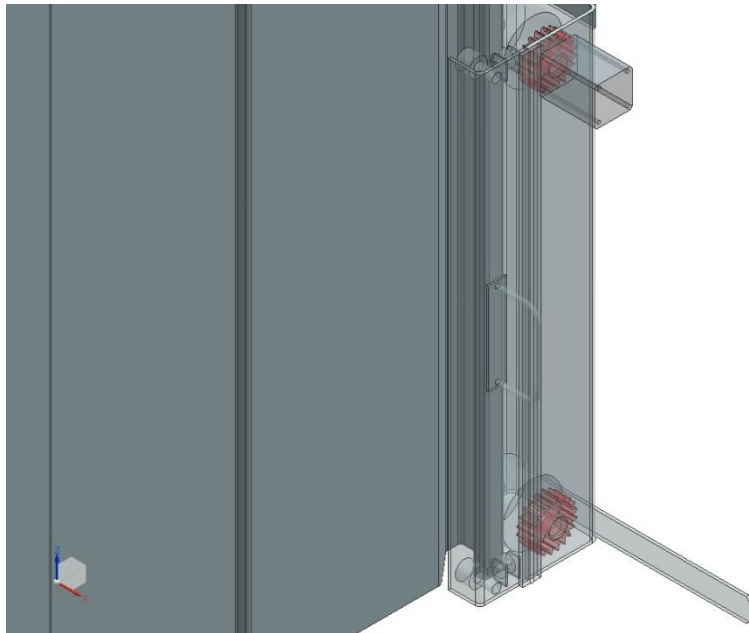
7.0 Specification and make of Anemometer/probes:

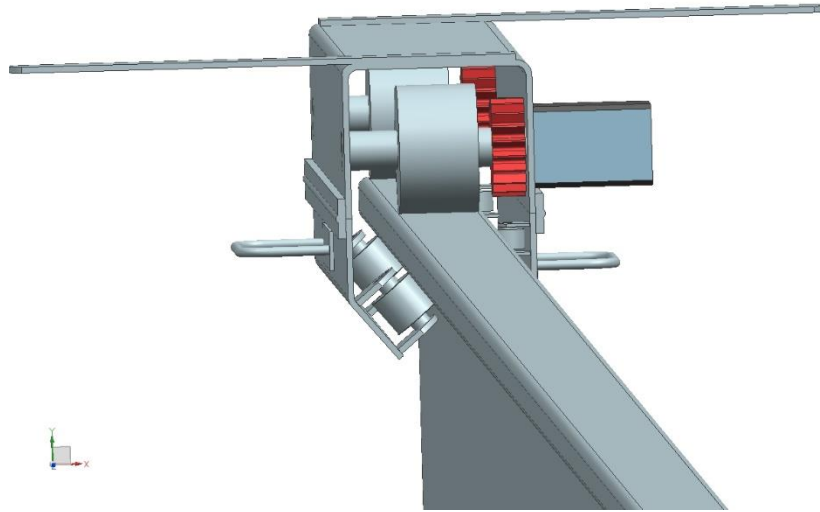
Standard make probes from M/s KIMO, M/s Kanomax Japan Inc, M/s Rototherm inc, M/s Kane-May or equivalent probes to be used. The probe to be triggered by the PLC for capturing velocity data as decided by the user and to store the same into local memory.

1.	Air velocity measurement range:	0.3 to 25.0 m / sec
2.	Accuracy	$\pm 0.25\%$ F.S plus $\pm 0.75\%$ or $\pm 1\%$ of reading ± 1 digit of reading.
3.	Resolution of the instrument	shall be 1 Ft/sec also readable equivalent value in m/sec.,
4.	Vane / windmill	Suitable anemometer shall be supplied. Size of the vane to be Minimum 70 mm diameter only.
5.	Data Storage	All the measured data should be stored in a memory card/USB in .csv or .xls format

Hotwire type probes are not acceptable.

Typical pictures of the proposed development





Development of automated system for collecting air velocities across the ESP (Electro Static Precipitator)

ESP is one important boiler auxiliary in any typical coal fired boiler used for collecting the ash from the flue gas produced out of coal firing from the boiler

A typical ESP is shown here



The ESP have a set of collecting and emitting electrodes arranged in vertical rows hanging from roof top with a gap of 200 mm between two. ESP is divided into number of passes in parallel and each pass will have many fields in series.

It is necessary to ensure uniform distribution of gas across the ESP fields to ensure maximum dust/ash collection of both collecting and emitting electrodes. In general by virtue of its construction due to gas ducts and funnels and also the ID fans, the gas flow may not be uniform over the cross section of the ESP fields. It is necessary to conduct gas distribution test before the ESP is commissioned.

Present method of the gas distribution test:

A team of Engineers enter in to the ESP with all man holes closed in the gas and air circuit of the boiler system, and ID and FD fans are ON, a person goes to top with help of available structures and collect the air velocity readings at 800mm (Approx) along the height of collecting electrode with the help of wind vane anemometers and the readings will be recorded by another person. A typical ESP will have a cross section of 15 meters X 15 meters which takes longer time for taking readings at every grid point of 800mm x 800mm which is cumbersome and time taking. On completion of one set of readings, they are evaluated and coefficient of variation is calculated and the zones of high, medium and low velocities across the cross section are identified. Deflection plates are used to divert air stream from high velocity zones to medium and low velocity zones by duly fixing the plates on the gas distribution plates (perforated plates), available at the inlet of the each pass (i.e between inlet funnel and the first field).

Again the crew takes second set of readings at all the points as done in the first set and the exercise continues on trial and error basis till required coefficient of variation is reached.

The Proposed Automation System:

It is planned to design and develop an automated system with an automatic moving mechanism, travelling in pre-programmed horizontal / vertical direction with the help of horizontal/vertical slider. The system will take support of collecting electrode's G-profile for vertical movement with necessary gripping mechanism, drive wheels (Either magnetic, rubber). A horizontal adjustable slider mounted on top/bottom of vertical sliding mechanism will carry a set of two anemometers to captures the air velocity readings at every 800mm distance. The anemometers can be mounted on either side or at one side (One at top and one at bottom). The velocity data will be stored in local memory (memory card/USB) in a described format.

The following pictures shows the vertical slider concept with gripper wheels.(Fig 1)

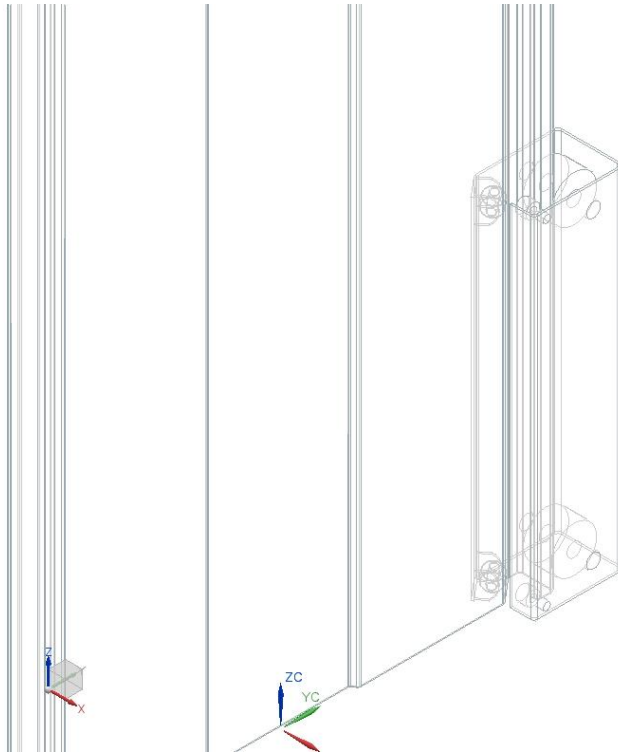


Fig 1

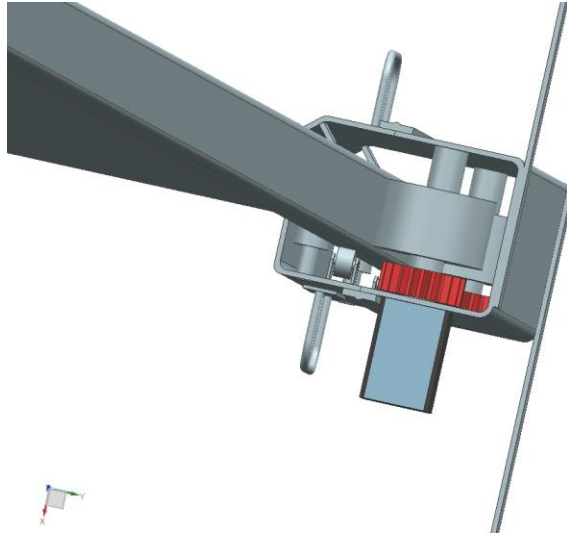


Fig 2 : Proposed scheme with drive and gripper wheels

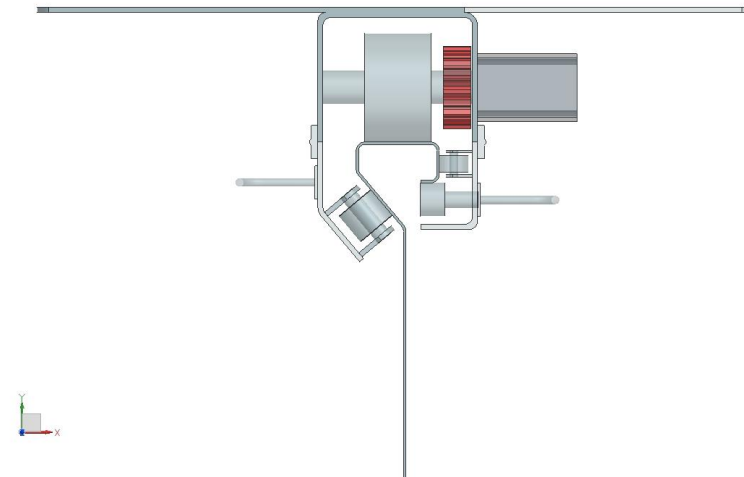


Fig 3 : Top view of the prototype mechanism

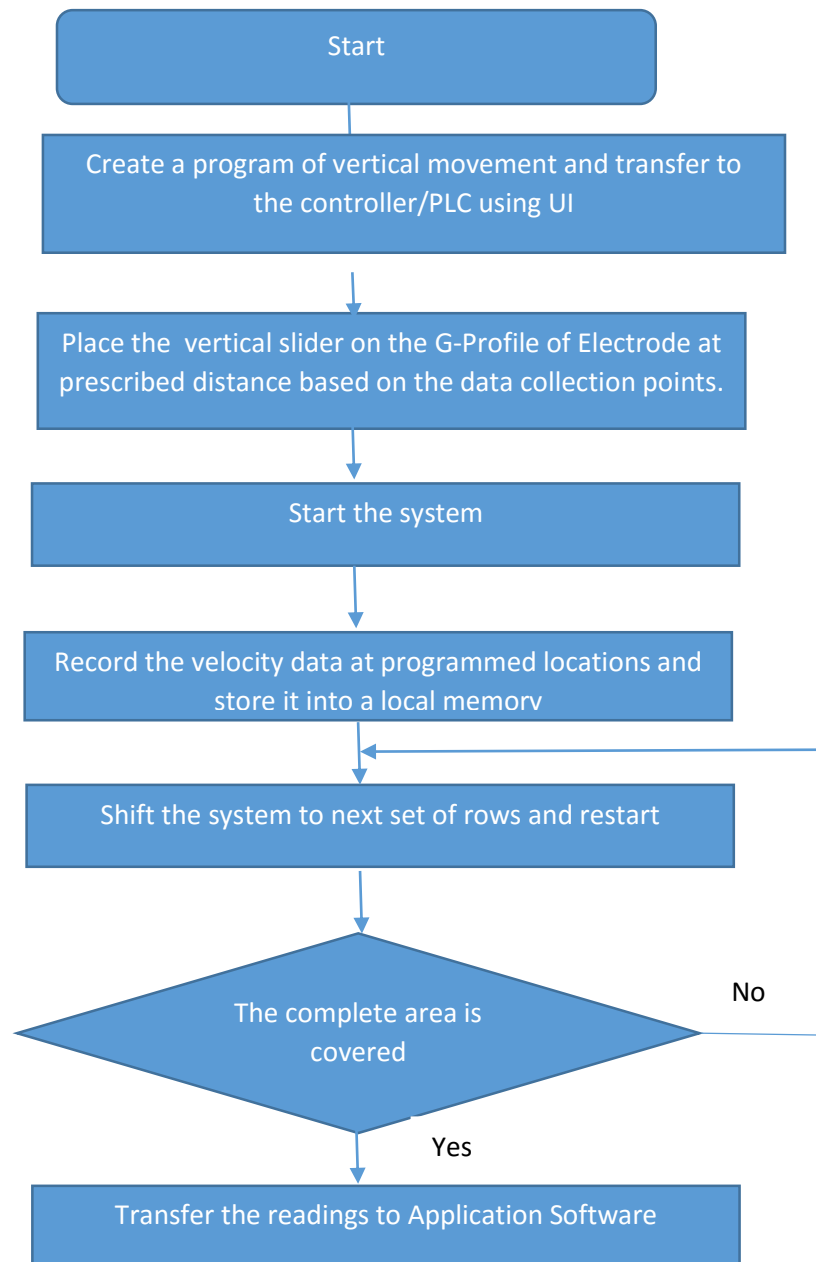
This data will be used by the application software developed by BHEL which will automatically import the stored velocity data and will accordingly calculate the coefficient of variation.

The features of the proposed automated system are as follows:

- Two anemometers will be installed on the vertical slider.
- The vertical slider mechanism comprising of drive wheels, gripper wheels, programmable controls, memory units and sensors etc.. will slide vertically along the collecting electrode G-profile using servo/stepper motors.
- The vertical slider will be fitted with drive wheels and gripper wheels against the collecting electrode edge (G-Profile) profile and it will move in vertical (Up/Down) direction along these electrodes as programmed.
- The motors will be controlled by a micro controller/PLC based system which will be programmed for vertical movements including data capture points through an UI.

- The microcontroller/PLC should take input from the user through an UI and accordingly generate the motion algorithm for vertical movement of the slider mechanism, stopping at desired location, instantly triggering the anemometers for collecting and storing the velocity data and move up to the next location for collecting next set of velocity data and continues.
- Once a vertical row is completed, the vertical slider shall be un-plugged from the edge (G-Profile) of the collecting electrode and shall be assembled to the next row of electrode.
- The system will automatically record the velocity data at 800mm x 800mm grid points (not fixed) and will store the same into a local memory in a .csv file.
- After taking all the reading the stored velocity data (csv file) will be imported to an application software (developed by BHEL) through serial communication/memory stick/SD card
- The movement of the motors and the recording of the velocity data will also be controlled through a manually operated hand held pendant (plug and play type).
- The vertical slider should be of 600 mm length or less preferably made of a lightweight aluminium plates with smooth surfaces and without any sharp corners. All controls, motors, gripper wheels, PLCs, power supplies, HMIs etc are to be mounted on the vertical slider itself.

Flow chart of operation and logic development

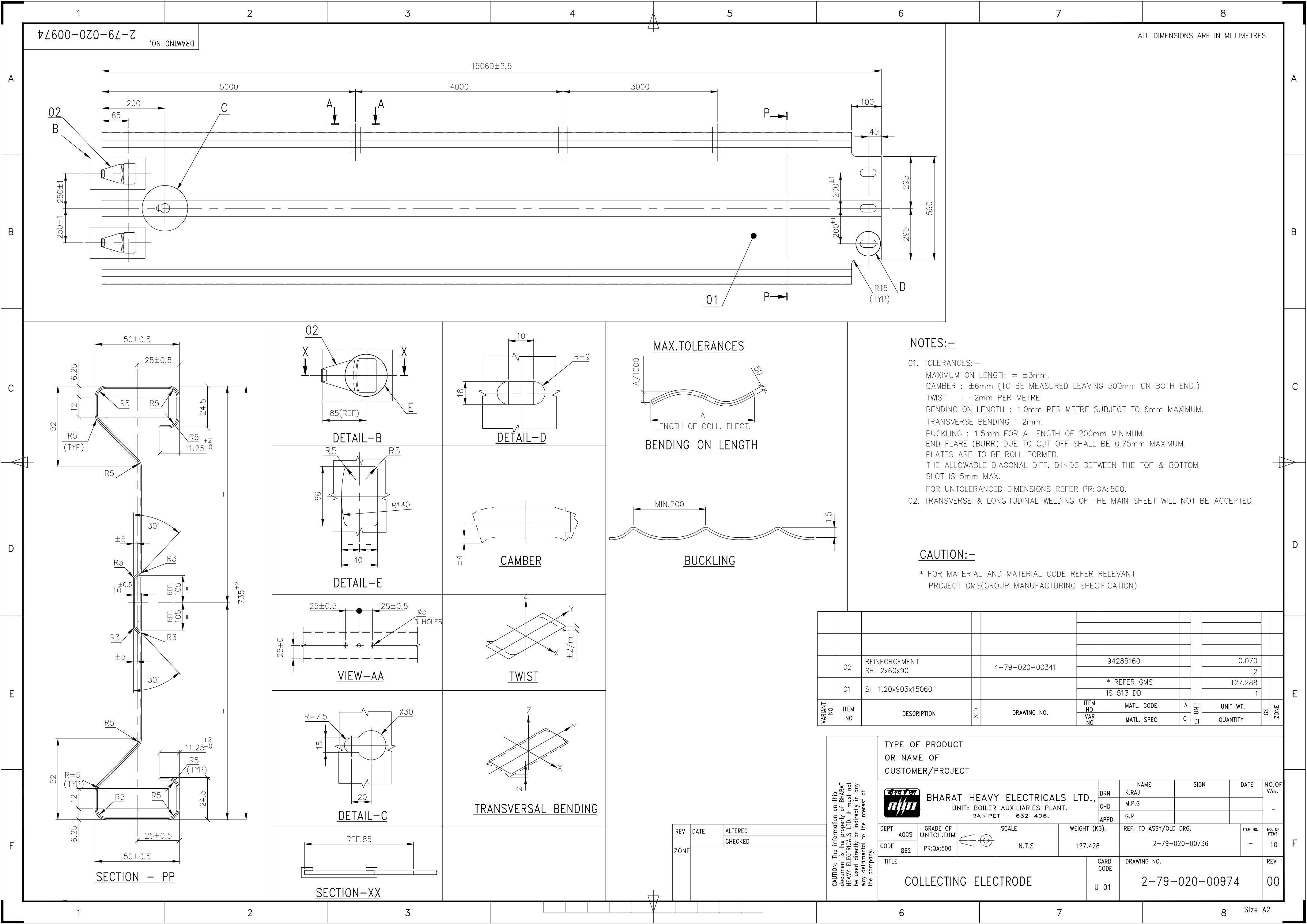


Vendor's Scope:

1. Supply and integration of wind vane anemometer with required specifications.
2. Design and development of the vertical slider (for vertical motion) with lightweight material preferably profiled/machined sections with expandable spring loaded gripper mechanism (adjustable) to firmly hold the G profile of collecting electrode .
3. Development of UI to generate program for controller taking input from user.
4. Design and development of a microcontroller/PLC based controller to control the movement of vertical and horizontal slider and to store the velocity data in a csv/xls file as well.

Specification of Anemometer/probe (Vane type):

1.	Air velocity measurement range:	0.3 to 25.0 m / sec
2.	Accuracy	$\pm 0.25\%$ F.S plus $\pm 0.75\%$ or $\pm 1\%$ of reading ± 1 digit of reading.
3.	Resolution of the instrument	shall be 1 Ft/sec also readable equivalent value in m/sec.,
4.	Vane / windmill	Suitable for the instrument shall be supplied. Size of the vane Minimum 70 mm diameter
5.	Data Storage	All the measured data should be stored in a memory card/USB in .csv or .xls format
Hotwire type probes are not acceptable.		



DRAWING NO. 2-79-020-00974

ALL DIMENSIONS ARE IN MILLIMETRES

NOTES:-

01. TOLERANCES:-
MAXIMUM ON LENGTH = ±3mm.
CAMBER : ±6mm (TO BE MEASURED LEAVING 500mm ON BOTH END.)
TWIST : ±2mm PER METRE.
BENDING ON LENGTH : 1.0mm PER METRE SUBJECT TO 6mm MAXIMUM.
TRANSVERSE BENDING : 2mm.
BUCKLING : 1.5mm FOR A LENGTH OF 200mm MINIMUM.
END FLARE (BURR) DUE TO CUT OFF SHALL BE 0.75mm MAXIMUM.
PLATES ARE TO BE ROLL FORMED.
THE ALLOWABLE DIAGONAL DIFF. D1~D2 BETWEEN THE TOP & BOTTOM SLOT IS 5mm MAX.
FOR UNTOLERANCED DIMENSIONS REFER PR:QA:500.

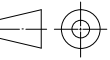
02. TRANSVERSE & LONGITUDINAL WELDING OF THE MAIN SHEET WILL NOT BE ACCEPTED.

CAUTION:-

* FOR MATERIAL AND MATERIAL CODE REFER RELEVANT PROJECT GMS(GROUP MANUFACTURING SPECIFICATION)

VARIANT NO	ITEM NO	DESCRIPTION	STD	DRAWING NO.	ITEM NO VAR NO	MATL. CODE	A C	UNIT DI	UNIT WT. QUANTITY	GS	ZONE
	02	REINFORCEMENT SH. 2x60x90		4-79-020-00341		94285160			0.070		
									2		
	01	SH 1.20x903x15060				* REFER GMS IS 513 DD			127.288		
									1		

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TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT													
				BHARAT HEAVY ELECTRICALS LTD., UNIT: BOILER AUXILIARIES PLANT. RANIPET - 632 406.				DRN	NAME	SIGN	DATE	NO.OF VAR.	
								CHD	M.P.G			-	
								APPD	G.R				
DEPT		AQCS	GRADE OF UNTOL.DIM			SCALE		WEIGHT (KG).		REF. TO ASSY/OLD DRG.		ITEM NO.	NO. OF ITEMS
CODE		862	PR:QA:500			N.T.S		127.428		2-79-020-00736		-	10
TITLE								CARD CODE		DRAWING NO.		REV	
COLLECTING ELECTRODE								U 01		2-79-020-00974		00	

REV	DATE	ALTERED
		CHECKED
ZONE		

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List of suppliers for anemometers

PABITRA MOHAN Regional Manager (South) TECHMARK ENGINEERS & CONSULTANTS No - 9, G1 , B - BLOCK , Siva Sakthi Bhavan, 17TH Street,ThillaiGanga Nagar,Nanganallur,Chennai-600 061	Tel :22670474 , 6525 8801,43588925 TeleFax: (44)22670474, Mobile No.:9444046974,Web.www.techmark.co.in E-mail.:pabitra@techmark.co.in , south@techmark.co.in
Priya. A, Sales Representative DIGITAL MEASUREMENT METROLOGY INC. 26 Automatic Road, Unit 4 Brampton, ON, Canada L6S 5N7	Tel: 1-866-960-9400 Ext # 35 • Fax: (905) 790-9266 www.dmm.ca • priya@dmm.ca
M/s Keith Electronics 426, ANSAL Chamber – II 6, Bhikaji Cama Place New Delhi – 110 066.	Principals M/s Kanomax Japan Inc.
The British Rototherm Co. Ltd Kenfig Industrial estate Margam, Port Talbot West Glamorgan SA 13 2 PW United Kingdom	Mail: sales@rototherm.co.uk Telephone: +44 (0) 1656 740 551 Facsimile: +44 (0) 1656 745 915
M/s Nevco Engineers Pvt. Ltd G-2,Door no: 32, 28th Street Thillai Ganga Nagar, Chennai – 600 061	Principals Kane-May England PH : 00 91 44 22671466 ,22671455 FAX : 00 91 44 22671455 E-mail : sekhar@nevcoindia.com www.nevco.co.in
Airflow Technical Products Inc 23 Railroad Avenue Netcong, NJ 07857, USA	E-mail: info@airflow.com Tel: 1-800-247-8887 or 973-691-4825 Fax: 973-691-470
Chirayush I. Gandhi Director Sales and Technical Support. Principle Kimo Electronic Pvt. Ltd. 5/6 Magnum Opus, Shanthinagar, Vakola, Mumbai 400055.-India.	Tel. 91-222-6651771/2/4/5/6/7 Fax. 91-222-6651777 Mob. 91-9324254557/8/9
OMEGA ENGINEERING LIMITED ONE OMEGA DRIVE RIVER BEND TECHNOLOGY CENTRE NORTHBANK IRLAM MANCHESTER M44 5BD UK, FREEPHONE SALES 0800 488 488 (UK ONLY) Email: sales@omega.co.uk Tel: +44 (0)161 777 6611	Fax: (203)-359-7700\ Email: sales@omega.com www.omega.com Carla Baines Sales Administrator Direct Tel: +44 (0)161 777 2244 Fax: +44 (0)161 777 6622 Email: cbaines@omega.co.uk Web: http://www.omega.co.uk