



Bharat Heavy Electricals Limited
ELECTRONICS SYSTEMS DIVISION
P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

TENDER DOCUMENT

NAME OF THE WORK:

***COMPREHENSIVE AMC FOR AIR CONDITIONING
PLANTS AT BHEL ESD***

OPENING DATE: 30.03.2022

THIS TENDER DOCUMENT CONTAINS 32 PAGES



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Phone: 25146191

NOTICE INVITING TENDERS

01. Tender Reference : BHEL/ESD-FS/AC/AMC/2022
Dtd. 08.03.2022
02. Name of the work : Comprehensive AMC for Air-
Conditioning Plants at BHEL ESD
03. Period of contract : 02 Years
04. Estimated Cost : Rs.16.11 Lakhs plus GST
(For two years)
05. Earnest Money Deposit : Rs. 38,000/-
06. Last Date & Time for the Receipt of Completed Tender. : **Before 1.15 PM on 30.03.2022**
07. Date & Time for : **At 1.30 PM on 30.03.2022**
Tender Opening (Technical Bid)
08. Place of submission of completed Tender: Tender document shall be dropped in
Wednesday tender box kept at
Reception in BHEL ESD, Plot no.-98,
Electronics City Ph-1, Bangalore-100

This tender document contains 32 pages including the following.

I. Technical Bid: Pages from 1- 28 (part-I)

- a) Technical-cum-commercial Bid
- b) Instructions to tenderers
- c) Scope of Work

II. Price Bid: Pages - 29 – 32 (part-II)

- Note:**
1. The tenderer shall read the tender documents carefully and fill all the columns neatly. Incomplete tenders will be rejected.
 2. The tenderer shall return the duly filled in tender document after affixing Signature on all the pages.
 3. The Tenderers shall ensure and put “Technical cum Commercial bid (Part – I)” & “Instructions to Tenderers” together in one cover and “Schedule of Work / Price Bid (Part – II)” in a separate cover. Both these covers shall be separately sealed and then put together in a single cover and sealed. All the sealed covers shall be properly identified with necessary information such as Tender reference, type of document put inside, date of tender opening to enable to open the correct document cover only.



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PART-1

TECHNICAL-CUM-COMMERCIAL BID (CAMC for Air-Conditioning Plants at BHEL ESD)
(To be furnished by the Bidder)

Name of work: Comprehensive AMC for Air-Conditioning Plants at BHEL ESD

Tender Ref: BHEL/ESD-FS/AC/AMC/2022 dtd. 08.03.2022

A) : Information Part:

S.N	Particulars	To be filled by Bidder
1.0	Name of the Contractor	
2.0	Address (Office)	
3.0	Address (Residence)	
4.0	Telephone Number	
	Office	
	Residence	
	Mobile No.	
5.0	Email id.	



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B) : Essential Criteria for Techno-Commercial Acceptance of Bid

S.N	Particulars	To be filled by Bidder
1.0	Experience Certificate for successfully completed similar works during immediate last 7 years as mentioned below: <i>(Similar work means CAMC works for central/package Air-conditioning systems)</i> One work not less than Rs 80% of Estimate or Two works of not less than 50% of Estimate or Three works of not less than 40% of Estimate (Copy of performance report from the organization where the work is executed is to be enclosed. Submission of Work Order copy is not adequate)	
2.0	Average Turn Over of the last three years (not less than 30% of estimate)	
2.1	Turn over - Previous financial year	Rs.
2.2	Turn over - 1 year before previous financial year	Rs.
2.3	Turn over- 2 years before previous financial year	Rs.
3.0	Whether Registered with ESI / PF Authority	Yes/ No
3.1	If Yes, indicate PF Registration No. (Copy of last month contribution paid receipt to be enclosed)	Enclosed / Not enclosed
3.2	If Yes, indicate ESI Registration No. (Copy of last month contribution paid receipt to be enclosed)	Enclosed / Not enclosed
3.3	If No, Is the tenderer willing to pay the ESI and PF contribution subject to BHEL Terms and conditions.	Yes/No
4.0	Security Deposit Clause as per NIT	Acceptable/ Not Acceptable
5.0	The bidder should have office in Bangalore with land line/mobile telephone and E-mail for emergency contact. Please provide address, Phone numbers & E-mail ID. If not, they should agree to open one in case order is placed on them.	Details:

Note: If any of the above mentioned criteria is not met the bid will be rejected



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C) : Other Conditions:

1	Form of EMD furnished <ul style="list-style-type: none">Bankers Cheque /DD / Pay Order / Cash (as permissible under the Income Tax Act)EFT details of fund transfer credited in BHEL A/c Document No. to be mentioned	
2	Electronic Funds Transfer(EFT) form (Ref Annexure in the Tender Document) Duly Filled and certified through bank may be enclosed	Enclosed/Not Enclosed
3	General Conditions of Contract & NIT	Acceptable/ Not Acceptable
4	Contract period mentioned in NIT	Acceptable/ Not Acceptable
5	Payment Terms defined in NIT	Acceptable/ Not Acceptable
6	PAN No. of Tenderer (Copy of the same to be enclosed)	Enclosed/Not enclosed
7	GSTIN (Copy of the same to be enclosed)	Enclosed/Not enclosed
7.1	If not registered under GST, undertaking to be submitted that contractor will register and furnish copy of certificate, before submitting the first bill	Acceptable/ Not Acceptable
8	Taxes quoted in price Bid. Tick as applicable with %	IGST Or SGST + CGST Or UTGST + CGST
9	SAC /HSN Code for the service tendered	



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INSTRUCTIONS TO TENDERERS

Name of work: Comprehensive AMC for Air-Conditioning Plants at BHEL ESD

1. Sealed Tenders for the above noted works are hereby invited from Contractors experienced in works of similar kind and magnitude.
2. Tenders should be addressed to Dy. Manager, Electronics Systems Division, Bharat Heavy Electricals Limited, Plot no. 98, Electronics City, Ph-1, Bangalore – 560 100. The full name and address of the tenderer, name of the work and the date of opening should be indicated on the cover.
- 2.1 The local address of the Contractor, the name of the person to whom all the correspondences are to be addressed should be indicated with telephone number (both office and residence), FAX /e-mail address, Mobile phone No. etc.
3. All entries in the tender documents should be in the same ink. Erasures and over writing are not permitted. The tenderer concerned with proper indication of the name, designation and address of the person signing should duly sign all cancellations and insertions.
4. Tenderers shall fill in all the required particulars in the blank spaces provided for this purpose in the tender documents and also sign each and every page of the tender document including the drawings (wherever applicable) attached there to before submitting tender.
5. Unit rates should be quoted in figures as well as in words in Indian Currency only i.e. Rupees and Paise with reference to each item and for all the items shown in the attached schedule.
6. In case the rate quoted in figures differ from those quoted in words, then
 - (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 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 additional 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 up to 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.
7. In quoting their rates, the tenderers are advised to take into account all factors including any fluctuations and market rates. No claim for enhanced rates will be



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

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entertained on this account after acceptance of the tender or during the currency of the contract. The changes in GST rates due to statutory amendment of GST ACT during the course of contract will be paid as applicable.

8. Goods and Services Tax (GST):

- 8.1 BHEL EDN GSTIN number is 29AAACB4146P1ZB. All invoices to contain BHEL GSTIN No.
 - 8.2 The Bidder shall mention his GSTIN number in all quotations and Invoices submitted.
 - 8.3 The Bidder shall also mention HSN (Harmonised System of Nomenclature) / SAC (Services Accounting Code) mandatorily in all quotations and invoices submitted.
 - 8.4 Invoice submitted should be in the format as specified under GST Laws viz. all details as mentioned in Invoice Rules like GSTN registration number, invoice number, quantity, rate, value, taxes with nomenclature – CGST, SGST, UGST, IGST mentioned separately, HSN Code / SAC Code etc. Invoice should be submitted in original for buyer plus duplicate copy.
 - 8.5 Payment of GST to Bidder will be made only if it is matching with data uploaded by the Bidder.
 - 8.6 Bidders to give undertaking that GST as mentioned in the Invoice has been paid either through cash or admissible input credit and also filed the returns at the time of submission of invoice.
 - 8.7 For invoices paid on Reverse charge basis – “Tax payable on reverse charge basis” to be mentioned on the invoice.
 - 8.8 In case GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount will be recoverable from vendor along with interest levied/leviable on BHEL.
 - 8.9 In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law will be recoverable from vendor/contractor along with interest levied/leviable on BHEL.
 - 8.10 TDS as per GST ACT will be applicable
9. (a) The rates quoted in the tender shall remain valid for a period of ‘THREE MONTHS’ from the date of opening of tender.
(b) Tenderer shall not increase their quoted rates, once the tenderer has submitted his quotation and during execution of the contract in case his tender is accepted.
 10. Quantities shown in the attached schedule are only approximate and are liable to variation without entitling the Contractor to any compensation, provided the total value of the contract does not vary by more than 20 % (twenty percent).



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ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

11. Before tendering, the tenderers are advised to inspect the site of work and its environments and be well acquainted with the actual working and other prevailing conditions, position of materials and labour. They should be well versed with BHEL General Conditions of Contract, Instructions to tenderers, drawing wherever applicable and specifications and all other documents which form part of the agreement to be entered into subsequent to award of work. The tenderers shall specially note that it is the tenderer's responsibility to provide any item which is not specially mentioned in the specification or drawing, but which is necessary to complete the work.
12. Details and quantities of each item of work shown in the "Bill of Quantities" attached here to be only approximate. They are given as a guide for the purpose of tendering only and are liable to variation and alteration at the discretion of the competent authority. The work under each item as executed shall be measured and priced at the corresponding rates to be quoted by the contractor in the Bill of Quantities attached here to.
13. Should a tenderer find discrepancies or omissions in the drawings wherever applicable / Specifications / Scope of work / Terms & Conditions attached to the tender documents or should be in doubt as to their meaning, he should at once address to the authority inviting the tender for clarifications.

Every endeavor is made to avoid any error which can materially affect the basis of the tender but the successful tenderer shall take upon himself to provide for the risk of any error which may be subsequently discovered and shall make no subsequent claim on account thereof.

14. In the event of tender being submitted by a firm, the tender must be signed separately and legibly by each partner or member of the firm or in their absence, by the person holding the power of Attorney on behalf of the firm concerned. In the latter case, a copy of the power of attorney duly attested by a Gazetted officer must accompany the tender.
15. In case, the date of tender opening falls on Holiday, the tender will be opened on the next working day.
16. Every tender must be accompanied by deposit receipt for the amount mentioned as Earnest Money Deposit. This earnest money will be refunded to the unsuccessful tenderers after finalisation of the award of work. In the case of successful tenderer, the earnest money will be retained as part of the Security Deposit for satisfactory completion of the work. Tenders without Earnest Money Deposit receipts are liable to be rejected. No interest will be paid on the earnest money deposits.
17. The EMD may be submitted in following forms:
 - a) Cash deposit as permissible under the extant of Income Tax Act (before tender opening only)
 - b) Electronic fund transfer credited in BHEL account. (before tender opening only)
The link to make EMD payment is given below.
<https://www.onlinesbi.com/preloging/jcollecthome.htm?corpID=5083>



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ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

Onlinesbi.com-> State Bank Collect -> Karnataka -> Industry -> Bharat Heavy Electricals Ltd. -> Others

Further to select payment nature and proceed as per the screen message.

- c) Banker's Cheque/ Pay Order/ Demand Draft In favour of BHEL (along with offer.)
18. If, after opening of tenders, a tenderer revokes his tender or increases his earlier quoted rates or after acceptance of his tender does not commence the work in accordance with the instructions of Engineer-in-charge, the Earnest Money Deposited by him will be forfeited and acceptance of his tender withdrawn. If only a part of the work included in the tender had been awarded to the tenderer, the amount of Earnest Money to be forfeited will be based on the value of the contract so awarded.
19. MSE suppliers can avail the intended benefits only if they submit along with the 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 attested copy of a CA certificate (Format enclosed at Annexure -1(Refer Page No.29) where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited) along with udyog aadhar memorandum. Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefits shall be applicable for this enquiry if any deficiency in the above required documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer.
20. BHARAT HEAVY ELECTRICALS LIMITED reserves the right to reject any or all the tenders received or accept any tender or part thereof without assigning any reason thereof. In the case of acceptance of a part of tender, the time for completion may also be reduced to the extent considered appropriate by the accepting authority.
21. Conditional and unsigned tenders, tenders containing absurd rates and amounts, tenders which are incomplete or otherwise considered defective, tenders which are not in accordance with the tender conditions laid down by the Accepting Officer and tenders not submitted in the prescribed forms are liable to be rejected.
22. The tenders should be accompanied by a list of contracts already held by the Contractor at the time of submitting the tender and giving the following particulars:
(a) Name of work, value and address.
(b) The balance work remaining to be done on the same.
24. Tenders submitted by post should be sent by "Registered Post with Acknowledgement due". These should be posted with due consideration for any delay in postal delivery. Tenders received after the due date of opening of tenders are liable to be rejected.



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ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
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25. The Contractor's responsibility under this contract shall commence from the date of receipt of the order or acceptance of his tender.
25. **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."
26. If a tenderer expires after the submission of his tender or after the acceptance of his tender, BHEL may, at their discretion, cancel such tender. If a partner of the firm expires after the submission of the Tender, after the acceptance of the Tender, BHEL may cancel such Tender at the discretion unless the firm retains its character (s).
27. BHARAT HEAVY ELECTRICALS LIMITED will not be bound by any power of Attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. They may however, recognise such power of Attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the contractor concerned.
28. If the tenderer deliberately gives wrong information in his tender, BHEL reserves the right to reject such tender at any stage. Further the tenderer will be liable for any damage caused.
29. Words imparting the singular number shall be deemed to include the plural number and vice-versa where the context so requires.
30. The General and Special Conditions of Contract are complementary to each other and where they are in conflict, the special condition shall prevail.
31. The expenses for completing the stamping the agreement shall be paid by the contractor.
32. The Contractor shall provide all the materials needed for trial run, testing including chemicals, and consumables etc which are not covered in the Price Bid. In quoting their rates, the Contractors are advised to take into account the cost of the above materials.
33. Should a tenderer or a contractor on the list of approved contractors have a relative or in the case of firm or Company of Contractors any of its shareholder's relative is employed in a Gazetted Capacity in the Electronics Division of Bharat Heavy Electricals Limited, Bangalore – 26, the authority inviting tenders shall be informed of this fact at the time of submission of the tender, failing which tender may be disqualified or if such a fact subsequently come to light, the relevant provisions of the General Conditions of Contract will apply.



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ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
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34. These 'INSTRUCTIONS TO TENDERERS' & 'GENERAL CONDITIONS OF CONTRACT OF BHEL' shall be deemed to form an integral part of the contract agreement for the work to be entered into. In cases of variation between the two in any matter, the conditions in the 'THE INSTRUCTIONS TO TENDERERS' shall prevail. The contractor has to obtain, at his cost, a copy of the BHEL GCC 2019, scrutinise the same, and when submitting his tender, indicate his acceptance of BHEL EDN GCC in the proforma enclosed at Annexure B.
- 38 All operations to be carried out by the Contractor during the execution of the contract such as drilling, welding etc., shall be done with proper equipment brought by the tenderer. Suitable power point will be provided and tapping from the power point to equipment shall be done using proper size of cable, equipment and after getting approval of connections from our Engineer-in-charge.
- 39 The Contractor shall comply with the provision of Employees Provident Fund and Miscellaneous Provisions Act 1952 and rules, regulations and other orders issued there under. He, as an employer, shall be liable to pay employer's contribution/deductions towards PF under the PF Act in respect of all labour employed by him, for the execution of the contract in accordance with the provisions of the Employees Provident Funds and Miscellaneous Provisions Act, 1952 as amended from time to time. For this purpose he shall indicate the code number obtained from the Regional Provident Fund Commissioner or he should obtain a code number if he has not and produce the Photostat copy of the challan / receipt of monthly remittance of the contribution made by him to the PF Commissioner. Final payments due to him will be released only on production of a "No due certificate" from the Regional Provident Fund Commissioner wherever applicable. He shall also furnish such returns as are due, under the Act, to be sent to the appropriate authorities through the Principal Employer".
- 40 The Contractor should get himself registered with the E.S.I. Authorities as an independent Employer, obtain a separate code number and remit the dues in respect of the labour employed by him for the work and produce the Challans / Receipts of remittance of the ESI contributions due under the E.S.I. Act to the Company authorities. He shall also furnish such returns, as are due, under the Act, to be sent to the appropriate authorities through the Principal Employer.
- 40.1 If any action is brought in by P.F. Commissioner/ESI authorities on BHEL for the work done by the Contractor for his labourers regarding PF/ESI amount due, short remittances, non-remittances etc., the Contractor shall defend the case on behalf of BHEL and/or reimburse BHEL the expenses so incurred.
- 40.2 If applicable, the Contractor shall apply and obtain license under Contract labor (R&A) Act 1970 and comply with the relevant provisions of this Act in respect of the labour employed by him for executing this contract. The Contractor shall furnish necessary returns to the authority through the Principal Employer.
- 41 If applicable, the Contractor shall insure all his laborers and materials. Any claim by his employees for the damages shall be settled by the contractor even action is against BHEL or to reimburse the legal expenses incurred by BHEL



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

- 42 Any action brought in by anybody on BHEL regarding patent, right etc., used by contractor in execution of work shall be defended by the contractor and /or reimburse to BHEL the cost of the same.
- 43 Contractor shall produce necessary records, documents, explanation whenever he is called upon to do, by any Government. Agencies like ESI, PF, VIGILANCE etc.,

44 TERMS OF PAYMENT:

Payment will be made on **quarterly basis** against your invoice after satisfactory Services, on submission of bill, against the certification by Supervisor / Executive in charge. Please note that the following documents shall be submitted along with the Bills.

- (a) Attendance sheet, wage register for the month, duly signed by the Engineer in charge of the contractor.
- (b) ESI & PF Statement as per the formats prescribed by BHEL.
- (c) ESI & PF Challan, remittance slips and ECRs.

45 SECURITY DEPOSIT

42.1 The successful tenderer shall deposit the Security deposit before start of the work. The rate of Security deposit will be 5% of contract Value.

42.2 Security deposit may be furnished in any one of the following forms

- I. Cash (as permissible under the Income Tax Act)
- II. Local Cheques of scheduled Banks (subject to realization)/Pay Order/ Demand Draft /Electronic Fund Transfer in favour of BHEL
- III. Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras etc. (Certificates should be held in the name of Contractor furnishing the security and duly pledged in favour of BHEL and discharged on the back)
- IV. Bank Guarantee from scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- V. Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, A/C. BHEL, duly discharged on the back.
- VI. Security Deposit can also be recovered at the rate of 10% from the running bills. However in such cases at least 50% of Security Deposit shall be deposited before start of the work and the balance 50% may be recovered from the running bills.
- VII. EMD of the successful tenderer shall be converted and adjusted against the security deposit.



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

VIII. The Security deposit shall not carry any interest.

NOTE: Acceptance of Security Deposit against Sl. No. (iii) and (v) above will subject to hypothecation or endorsement on the document in favour of BHEL-EDN. However, BHEL will not be liable or responsible in any matter for the collection of interest or renewal of the documents or in any other matter connected therewith.

43 REVERSE AUCTION

BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender. RA shall be conducted among the techno commercially qualified bidders.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

Reverse Auction will be conducted if two or more bidders are techno-commercially qualified. In case of two or three qualified bidders, there shall be no elimination of H1 bidder (whose quote is highest in sealed envelope price bid). In case of four qualified bidders, the H1 bidder shall be eliminated whereas in case of five qualified bidders, H1 & H2 bidders shall be eliminated. However, in case of six or more qualified bidders are available, RA would be conducted amongst first 50% of the bidders arranged in the order of prices from lowest to highest. Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of qualified bidders is odd (e.g. if 7 bids are qualified, then RA will be conducted amongst lowest four bidders). However, there will be no elimination of qualified bidders who are MSE or qualifying under PPP-MII, Order 2017, irrespective of the number of bidders qualifying techno-commercially. In case of multiple H1 bidders, all H1 bidders (excluding MSEs and bidders qualifying under PPP-MII, Order 2017) shall be removed provided minimum two bidders remain in fray, else no H1 removal.

The lowest bidder in sealed envelope price bid shall be shown as current L1 automatically by the system. System shall have the provision to indicate this bid as current L1 for further bidding. This price can be displaced by an even lower bid of a competing bidder. If the start price is lower than the lowest sealed envelope price bid, on acceptance of such start price by any bidder this bid would be indicated as current L1 for further bidding. However, if no bidder accepts the start price, RA shall be treated as cancelled for the respective line item(s) and the tender shall be processed accordingly. In case of no further bidding, RA will be deemed to have been successful with current L1 bidder. During RA, all bidders will see their rank and current L1 price on the screen. Once the RA is done, the ranking status would be based on the last quoted price of the bidder(s) irrespective of the quote received in RA or sealed envelope price bid.

No bidder shall be allowed to lower its bid below the current L1 by more than 5 decrements at one go.

SCOPE OF WORK:

I) LIST OF PLANTS COVERED UNDER COMPREHENSIVE AMC:

Sl no	Equipment Details	Qty in nos
1	Location: CE-Assembly, NPB, ESD Capacity: 200 TR AC Plant Make: Voltas Comprising of : a) Semi-hermetic screw compressor - 2 nos. b) Condenser - 14 nos c) Air Handling Unit (29000 CFM) - 2 Nos d) Chiller pump - 2 Nos. (1 No standby) e) Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	1
2	Location: CE-Testing, NPB, ESD Capacity: 230 TR AC Plant Make: Voltas Comprising of : a) Semi-hermetic screw compressor - 2 nos. b) Condenser - 16 nos c) Air Handling Unit (26000 CFM) - 2 Nos d) Chiller pump - 2 Nos. (1 No standby) e) Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	1
3	Location: Li-ion Cells Manufacturing Plant, ESD Capacity: 90 TR AC Plant Make: Bluestar Comprising of : a) Semi-hermetic screw compressor - 1 no. b) Condenser - 6 nos c) Chiller pump - 2 Nos. (1 No standby) d) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	2

4	<p>Location: SPD/SBD Building, ESD Capacity: 110 TR AC Plant Make: Carrier Comprising of :</p> <p>a) Semi-hermetic reciprocating compressors - 4 nos. b) Condenser - 8 nos c) Air Handling Units: 3 nos (13000 CFM - 1 No, 8000 CFM - 1 no, 28000 CFM - 1 no) d) Chiller pump - 4 Nos. (2 No standby) e) Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller) g) Humidifier and dehumidifier units in 28000 CFM and 13000 CFM AHUs)</p>	1
5	<p>Location: SBD Building, ESD Capacity: 30 TR AC Plant Make: Carrier Comprising of :</p> <p>a) Semi-hermetic reciprocating compressors - 1 nos. b) Condenser - 2 nos c) Chiller pump - 2 Nos. (1 No standby) e) Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)</p>	1
6	<p>Location: Li-ion Cell Testing Area, ESD Capacity: 11 TR Package AC Make: Voltas Model: ACDPUASC110D407P Comprising of :</p> <p>a) Scroll compressors - 2 nos. (Make: Danfoss, Model: HLP072T4LC6) b) Condenser (air-cooled) - 2 nos c) Package blower unit - 1 no d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc.</p>	5
7	<p>Location: SPD Testing Area, ESD Ductable Split AC Unit, Capacity: 5.5 TR, Make: Bluestar, Model: DSA661R1A Comprising of :</p> <p>a) Scroll compressor - 1 nos. b) Condenser (air-cooled) - 1 no c) Blower unit - 2 nos d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc.</p>	2

8	Location: SBD Area, ESD Capacity: 7.5 TR Ductable AC Make: Carrier Model: 40LC009C Comprising of : a) Scroll compressors - 3 nos. (Make: Carrier) b) Condenser (air-cooled) - 2 nos c) Blower unit -2 nos d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc.	2
9	Location: SBD Area, ESD Capacity: 5 TR Ductable AC Make: Carrier Model: 40LC006 Comprising of : a) Scroll compressors - 2 nos. (Make: Carrier) b) Condenser (air-cooled) - 2 nos c) Blower unit - 1 no d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc. e) Humidifier and dehumidifier unit in the ducts	1
10	Location - Conference Hall, Admin Building, ESD Tower AC 3.0 TR, Make- Voltas, Model: MFQ36CR	2
11	Location -SBD UPS Room, ESD Split AC 2.0 TR, Make - LG, Model: 15N6MR3TF6	1
12	Split AC 1.5 TR, Make: Llyod/ LG/ Videocon/ Voltas/ Onida	43

NOTE:

- a) In the event of dismantling/replacement/non utility of the plant by BHEL for more than a period of Three months of any of the above AC/chiller/Package AC/during the period of the contract, payment will be made for the particular plant on pro-rata basis for the period services rendered by the contractor.**
- b) Equipments in sl. nos. 4,5,8,9,10,11 and 12 will be handed over for CAMC tentatively from august-2022.**

- II) The scope of contract covers preventive maintenance and breakdown maintenance:**
- a) Preventive maintenance has to be carried out as per the PM schedule drawn by BHEL.
- b) Breakdown maintenance and repair/replacements to ensure satisfactory running of the plant will be carried out on BHEL lodging the complaint either by phone/email/fax/letter. The repair/servicing shall be under taken within 24 hrs of the complaint.

THE SCOPE SHALL INCLUDE THE FOLLOWING

- 1) **COMPRESSOR:** Repair of screw / semi hermetic compressors, Replacement of scroll compressors.
- 2) **CONDENSER:** Repair of Condenser Fans, Condenser coils (brazing etc), leakage arresting including gas charging after pressure testing and vaccumising.
- 3) **PUMPING SYSTEM:** Rewinding /repair of pumps /pump motors, piping leakages, valves, pipe fittings, Gauges, safety cutouts, insulation, strainers
- 4) **AHU:** Replacement of Belts of AHU, bearings, rewinding/repair of motor, repair/replacement of Heaters.
- 5) **REFRIGERANT SYSTEM:** Expansion valves, solenoid valves, leakage arresting including gas charging,
- 6) **ELECTRICAL SYSTEM:** Repair/replacement of all electrical from the main power control panel for the plant including Main switches, Cables, Power line Fuses, Cable lugs, Connectors, Contactors, Timer's, Over load relays, Single Phase preventers, Motors, Control, Thermostats, Humidistat, Pressure cut-outs controls etc.
- 7) **ELECTRONICS AND CONTROL:** Repair/Replacement of All instrumentation and control units including displays, HMI's, controllers and control systems, flow switches, thermal sensors, pressure sensors, control supply, microprocessors etc.

MATERIAL PROVIDED BY BHEL:

- 1) Compressor assembly as a whole in case of repairs not possible
- 2) Condenser coil assembly as a whole in case of repairs not possible.
- 3) AHU All types of filters i.e. Pre, Fine, Micro and Absolute filters.
- 4) PUMP assembly in case beyond repairs.

Decision of Executive Incharge will be final.

III) THE SERVICING SHALL INCLUDE: -

- 1) The Plants / equipments are to be maintained at their working capacity and by Carrying out preventive maintenance, as per the checklist for all of the above equipments /accessories once in four months. The preventive maintenance works shall be planned for Saturdays / Sundays Holidays in order to ensure maximum availability of the plant for production.
- 2) Overhauling of the equipment's/ compressor's/ pump's/Plant's etc, shall be carried out as and when required, depending upon plant condition, or once in a year, in consultation with Engineer in- charge.
- 3) The plant should be put back into service / operation, by carrying out repair /replacement of components/spares/accessories/piping and consumables such as Lubrication oil, Refrigerant gas etc as and when required.
- 4) The following tests shall be conducted for the plants during the contract period and test reports should be submitted after tests.

Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

- i. Efficiency test. (after every PM)
 - ii. Particle counts test. (every eight months)
 - iii. Air flow test (after every PM)
 - iv. No. of air changes. (after every PM)
 - v. Percentage of Fresh air (after every PM)
 - vi. Sound level of the plant (after every PM)
And conditioned area
 - vii. Vibration Level test along with (Half yearly)
Alignment corrections
- 5) After conducting tests for sound level and vibration level of the plants, if any variation with respect to standard values will be set right/ repair the plants well within the standard limits along with certificate.
- 6) Particle counts test shall be conducted for the conditioned areas of all the A/C plants.
- 7) The test shall be conducted for respirable particulate matter (RSPM) and oxygen level in the conditioned area half yearly through the agencies that are in the field of Air quality monitoring, and test reports to be submitted after test.
- 8) All the meters and gauges have to be calibrated at least once in a year, with traceability to national standards and furnish the calibration certificates and any defective gauges/meters have to be repaired /replaced along with calibration certificates traceable to national standards.
- 9) The refrigeration system shall be checked for any leakage of gas and lubrication oil and the same shall be charged/topped up as and when required.
- 10) Air cooled condenser coils to be cleaned as and when required with suitable cleansing agent in consultation with Engineer Incharge.
- 11) Pre filters, Plummer blocks, shaft, runners, drives, heaters and heater controls etc. of AHU'S shall be replaced whenever found defective.
- 12) Spares and consumables are to be used as per annexure – A1 & B1. In case spares and consumables are not in list enclosed then you have to obtain the concurrence of EIC before usage.The list of consumables/spares etc. is given in annexure C1.
- 13) Special care and attention be given to ensure that no damage is done to the equipment in terms of: -
- a) Avoiding leakage of refrigeration gas into the atmosphere through regular check up and prevention.



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

- b) Avoiding spillage of oils on the ground and ground contamination.
- c) Proper disposal of spent oil/wastes as per the company's procedures.
- d) Usage of eco-friendly chemicals/cleaning aspects for de-scaling/coil cleaning etc.
- e) Every breakdown /preventive maintenance service shall be followed by necessary Service Report indicating details of consumables/spares used separately.
- f) Compressors for Package units shall be replaced with either Factory reconditioned or new compressors of the same make in case of requirement.
- g) In case, the insulation/ cladding is removed during breakdown / preventive maintenance works shall be reinstalled/repaired/ replaced immediately.

IV) TOOLS, TACKLES AND MEASURING INSTRUMENTS:

All the necessary Tools, Tackles and Measuring Instruments required during preventive Maintenance works/Breakdown Maintenance works/Overhauling works/While conducting tests are to be arranged from your end as and when required at no extra cost.

V) GENERAL:

- 1) Returnable materials such as tools, equipments and replacement spares etc brought inside our premises shall be entered at our check post to enable you to take them back after the completion of works.
- 2) All the materials such as spares/consumables etc required for service /maintenance work shall be brought with necessary delivery challans duly Endorsed by our security at the material gate and hand over to us.
- 3) Your service personnel have to report to the Executive In charge/Supervisor in charge immediately after entering into our factory premises and before taking up any service /repair works.

VI) Penalty for nonperformance will be charged as below:

Sr. No.	Breakdown description	Completion period from the day of informing breakdown	Penalty
1	When full system is not	2 days of	For Non completion > 2

	available including standby and production requirements are not met.	reporting breakdown	days; penalty @ 1% of quarterly value of contract for that plant for per day delay of work.
2	When system is available but standby is under breakdown for any reasons or system is not meeting system requirements.	10 days	For Non completion >10 days; penalty @ 1% of quarterly value of contract for that plant for per week delay of work.

ANNEXURE A1

- I. As can be seen from the list of plants, we are having CARRIER/ VOLTAS/ Danfoss/ COPELAND/ BITZER compressors. Tenderers are required to arrange for the spares only from the manufacturers / their authorized dealers/OEM'S.
- II. For any other spares required for the system shall be used from the following makes.
1. BEARING : SKF / NBC/ ZKL/ NTN/TIMKEN/INA/FAG
 2. GAUGES : Fiebig / Waree /GURU
 3. CUT OUTS : Danfoss / Indfoss
 4. THERMOSTATS/
HUMIDISTATS : Danfoss / Indfoss / Honeywell/Johnson
 5. SOLENOID VALVES : Sprolan/ Danfoss
(LLSV)
 6. V-BELTS : Fenner/ Dunlop/Pix
 7. ELECTRICALS : **Refer Below**
 1. L.T. SDUs/FSUs/SFUs Siemens/ L&T/E.E./ C&S
 2. Change over switches C&S / HPL/ Indo Asian/ Hevell's
 3. Rotary/Selector switches Siemens/ L & T/ Kaycee/ Thaker/ Reco/
Switchtron/ Salzer
 4. Limit switches Siemens/ BCH
 5. Toggle switches Reco/ Kaycee
 6. CTs & PTs TELK/ Kappa/ Siemens/ Indcoil/AEL/Kalpa
 7. Motors BHEL/ Siemens/ ABB/ Crompton/ Kirloskar/
AEI/BEACON/BBC/NationalElectric company/
 8. Motor Starters Siemens/ L&T/ BCH
 - 9.. Overload relays Siemens / L & T/ BCH/EE
 10. Time delay relay Siemens/ BCH/ L&T/ EE
 11. Single phase Preventer Siemens/ L & T/ BCH
 12. Push button/Indication Lamps Vaishno/ Technic



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

13. Measuring Instruments	AE/ MECO/ IMP/ ENERCON/ ALACRITY
14. Protective Relays	EE/ Easun Rerole/ EMCO
15. Cables	CCI/ Universal/ Fort Gloster/ Asian/ Nicco/ Premier/ Polycab/Finolex
16. PVC insulated copper wires	Finolex/ Wincap/ Polycab/ Anchor
17. Copper Lugs	Dowell
18. Cable sockets/Glands	Dowels / Lotus/ Braco
19. Fuse distribution boards	E.E/ Siemens/ L & T./ Standard
20. MCB plug & socket Distribution Board	MDS/ Siemens / BCH
21. Cable sockets/Glands	Dowels / Lotus/ Braco

ANNEXURE C1

Frequently used spares/consumables requirement		
1	Refrigerant Freon 22	30 KG
2	Refrigerant 134 A	30 KG
3	Refrigerant R 407C	30 Kg
4	Gland Rope 10 mm	1 kg
5	Gland Rope 8 mm	1kg
6	ML 3 Contactor	1 nos
7	ML 3 Contactor kits	1 nos
8	MI 4 Contactor	1 Nos
9	MI 4 Contactor kits	1 Nos
10	HBC fuse center link TSF- 125 Amps	3Nos
11	HBC fuse HM type 125 Amps	3 Nos
12	HBC Fuse EIT 32 Amps	3 Nos
13	HBC Fuse TIA 32 Amps	3 Nos
14	HBC Fuse 6 Amps n type	3 Nos
15	Connector 25 Sq mm	6 Nos
16	Connector 16 Sq mm	6 Nos



Bharat Heavy Electricals Limited
ELECTRONICS SYSTEMS DIVISION
P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

ANNEXURE: 'B'

GENERAL CONDITIONS OF CONTRACT

It is hereby agreed by me/us that the BHEL EDN General Conditions of Contract including subsequent amendments/ additions/deletions to clauses if any, and conditions pertaining the settlement of disputes by Arbitration from an integral part of the tender documents and that the tender submitted by me/us is subject to the aforesaid BHEL EDN General Conditions of Contract which has been read and accepted by me/us.

SAFETY CODE

RESPONSIBILITIES OF THE CONTRACTOR IN RESPECT OF SAFETY OF MEN, EQUIPMENT, MATERIAL AND ENVIRONMENT

1. Before commencing the work, contractor submit a "SAFETY PLAN" to the authorized BHEL Official. The 'Safety Plan' shall indicate in detail the measure that would be taken by the contractor to ensure safety of men, equipment, material and environment during execution of the work. The plan shall take care to satisfy all requirements specified hereunder. The contractor shall submit safety plan along with his offer. During negotiations before placing of work order and during execution of the contractor BHEL shall have right to review and suggest modification in the Safety Plan. Contractor shall abide by BHEL decision in this respect.
2. The contractor shall take all necessary safety precautions and arrange for appropriate appliances as per direction of BHEL or its authorized officials to prevent loss of human lives, injuries to personnel engaged, and damage to property and environment.
3. The contractor shall provide to its work force and ensure the use of the following personal protective equipment as found necessary and as directed by the authorized BHEL officials:-
 - (I) Safety Helmets conforming to IS – 2925: 1984.
 - (ii) Safety Belts conforming to IS – 3521: 1983.
 - (iii) Safety Shoes conforming to IS – 1989: 1978.
 - (iv) Eye and Face Protection devices conforming to IS – 8520: 1977 and IS – 8940: 1978.
 - (v) Hand and body protection devices conforming to:
IS – 2573: 1975
IS – 6994: 1973
IS – 8807: 1978
IS – 8519: 1977.

All tools, tackles, lifting appliances, material handling equipment scaffolds, cradles, safety nets, ladders, equipments etc. used by the contractor shall be of safe design and construction. These shall be tested and certificate of fitness obtained before putting them to use and from time to time as instructed by authorized BHEL official who shall have the right to ban the use of any item.

All electrical equipment, connections and wiring for constructions power, its Distribution and use shall conform to the requirement of India Electricity Act and Rules. Only electricians licensed by the appropriate statutory authority shall be



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

employed by the contractor to carry out all types of electrical works. All electrical appliances including portable electric tools used by the contractor shall have safe plugging system to source of power and be appropriately earthed.

The Contractor shall not use any hand – lamp energized by electric power with supply voltage of more than 24 Volts. For work in confined spaces, lighting shall be arranged with power source of not more than 24 Volts.

The contractor shall adopt all fire safety measures as laid down in the “Code for Fire Safety at Construction sites” issued by the Safety Department of the Construction management (HQ) of BHEL and as per directions of the authorized BHEL official. A copy of the above referred “Code of Fire Safety at Construction Sites” shall be made available by BHEL to the contractor for reference, on demand by the contractor, during tendering stage itself.

Where it becomes necessary to provide and/or store petroleum Products, explosives, chemicals and liquid or gaseous fuel or any other substance that may cause fire or explosion, the contractor shall be responsible for carrying out such provisions and/or storage in accordance with the rules and regulations laid down in the relevant government acts, such as Petroleum Act, Petroleum and Carbides of Calcium manual of the chief controller of Explosives, Govt. of India. etc., Prior approval of the authorized BHEL official at the site shall also be taken by the contractor in all such matters.

The contractor shall arrange at his cost (wherever not specified) appropriate illumination at all work spots for safe working when natural daylight may not be adequate for clear visibility.

The contractor shall be held responsible for any violation of statutory regulations local, state or central and BHEL instructions, that may enrage safety of men, equipment, material and environment in his scope of work or another contractor's or agency's. cost of damages if any, to life and property arising out of such violation of statutory regulations and BHEL instructions shall be borne by the contractor.

In case of a fatal or disabling injury accident to any person at construction sites due to lapses by the contractor, the victim and/or his/her dependents shall be compensated by the contractor as per statutory requirements. However, if considered necessary, BHEL have the right to impose appropriate financial penalty on the contractor and recover the same from payments due to the contractor for suitably compensating the victim and/or his/her dependents. Before imposing any such penalty, appropriate enquiry shall be held by BHEL giving opportunity to the contractor to present his case.

In case of any damage to property due to lapses by the contractor, BHEL shall have the right to recover cost of such damages from payments due to the contractor after holding an appropriate enquiry.

In case of any delay in the completion of a job due to mishaps attributable to lapses by the contractor, BHEL shall have right to recover cost of such delay from



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

**P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100**

payments due to the contractor, after notifying the contractor suitably and giving him opportunity to present his case.

If the contractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given a reasonable opportunity to do so; provide necessary safety devices and equipment or to carry out instructions or to provide necessary safety devices and equipment or to carry out instructions regarding safety issued by the authorized BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the contractor after giving a notice of not less than seven days indicating the steps that would be taken by BHEL.

The contractor shall submit report of all accidents, fires and property damage, dangerous occurrence to the authorized BHEL official immediately after such occurrence, but in any case not later than twelve hours of the occurrence. Such reports shall be furnished in the manner prescribed by the contractor to the authorized BHEL official from time to time as prescribed.

Before commencing the work, the contractor shall appoint/nominate a responsible officer to supervise implementation of all safety measures and liaison with his counterpart of BHEL.

If Safety record of the contractor in execution of the awarded job is to the satisfaction of Safety Department of BHEL, issue of an appropriate certificate to recognize the safety performance of the contractor may be considered by BHEL after completion of the job.



Bharat Heavy Electricals Limited
ELECTRONICS SYSTEMS DIVISION
P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

**Electronic Funds Transfer (EFT) OR
 Paylink Direct Credit Form**

Please Fill up the form in **CAPITAL LETTERS** only.

TYPE OF REQUEST(Tick one): _____ CREATE _____ CHANGE

BHEL Vendor / Supplier Code:	
Company Name :	
Permanent Account Number(PAN):	
Address	

City: _____	PINCODE _____	STATE _____
-------------	---------------	-------------

Contact Person(s)	
Telephone No:	
Fax No:	
e-mail id:	

1 Bank Name:	
2 Bank Address:	

3 Bank Telephone No:	
4 Bank Account No:	
5 Account Type: Savings/Cash Credit	

6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank	
--	--

7 Bank swift Code(applicable for EFT only)	
--	--

8 Bank IFSC code(applicable for RTGS)	
---------------------------------------	--

9 Bank IFSC code(applicable for NEFT)	
---------------------------------------	--

- A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.
- B 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.
- C This authority remains in full force until BHEL, EDN,Bangalore receives written notification requesting a change or cancellation.
- D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:

Designation:

Company Seal

Telephone NO. with STD Code

Bank Certificate

We certify that _____ has an Account No _____ with us and we confirm that the bank details given above are correct as per our records.

Date:

(.....)

Place:

Signature

Please return completed form along with a blank cancelled cheque or photocopy thereof to:

Bharath Heavy Electricals Ltd,
 Attn: Electronics Division, Mysore Road,
 BANGALORE - 560 026
 In case of any Querry, please call : 080-26998403 or fax no. 080-26749217



Bharat Heavy Electricals Limited
ELECTRONICS SYSTEMS DIVISION
P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

Annexure - I

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) dttd:.....
Category: (Micro/Small)). (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the
latest audited financial year 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 :
Rs.....Lacs
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

(Strike off whichever is not applicable)

The above investment of Rs.....Lacs is within permissible limit of
Rs.....Lacs forMicro / Small (Strike off which is not applicable)
Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (Strike off which is not
applicable) and the date of graduation of such enterprise from its original category is
(dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such
enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published
in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name -

Membership number -

Seal of Chartered Accountant



Annexure - C

The Management is committed to be an environmentally sound company in its activities, products, services and to provide safe and healthy working environment covering its employees, Contractors, Contract labors, Trainees, Suppliers, Customers and all interested parties, as an integral part of business performance through:

- ★ Compliance with applicable Legal and other requirements related to Occupational Health, Safety and Environment.
- ★ Setting objectives and targets to eliminate / control / minimize environmental pollution, risks due to Occupational Health and Safety Hazards for preventing injury and ill health and reviewing the objectives and targets to have continual improvement in HSE performance.
- ★ Promotion of activities for conservation of resources by environmental management with focus on electrical energy and chemicals.
- ★ Communication of HSE policy to employees, customers, suppliers, contractors and all interested parties and enhancement of Environmental, Safety and Occupational Health and safety management systems by pro-active measures.
- ★ Commitment for regular evaluation and pro-active measures for prevention & control of environmental pollution / risks due to incidents and occupational diseases.
- ★ Appropriate training of employees, customers, suppliers, contractors and all interested parties on Health, Safety & Environmental (HSE) aspects.
- ★ Formulation and maintenance of HSE Management Programmes for continual improvement.
- ★ Periodic review & audit of HSE Management System to ensure its continuing suitability, adequacy and effectiveness.
- ★ Co-operation with concerned agencies / regulatory bodies engaged in HSE activities.

Sd/-

Date:

ED / EDN

II .Price Bid

BHEL/ESD-FS/AC/AMC/2022

SCHEDULE OF Comprehensive AMC for Air-Conditioning Plants at BHEL ESD

Sl no	Equipment Details	Qty in nos	CAMC Rate per quarter per qty	Total CAMC Cost per quarter	Total nos. of Quarters for service	CAMC Cost per 2 years
		A	B	C = A x B	D	E = C x D
1	Location: CE-Assembly, NPB, ESD Capacity: 200 TR AC Plant Make: Voltas Comprising of : a) Semi-hermetic screw compressor - 2 nos. b) Condenser - 14 nos c)Air Handling Unit (29000 CFM) - 2 Nos d)Chiller pump - 2 Nos. (1 No standby) e)Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	1			8	
2	Location: CE-Testing, NPB, ESD Capacity: 230 TR AC Plant Make: Voltas Comprising of : a) Semi-hermetic screw compressor - 2 nos. b) Condenser - 16 nos c)Air Handling Unit (26000 CFM) - 2 Nos d)Chiller pump - 2 Nos. (1 No standby) e)Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	1			8	



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

3	Location: Li-ion Cells Manufacturing Plant, ESD Capacity: 90 TR AC Plant Make: Bluestar Comprising of : a) Semi-hermetic screw compressor - 1 no. b) Condenser - 6 nos c)Chiller pump - 2 Nos. (1 No standby) d) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	2			8	
4	Location: SPD/SBD Building, ESD Capacity: 110 TR AC Plant Make: Carrier Comprising of : a) Semi-hermetic reciprocating compressors - 4 nos. b) Condenser - 8 nos c)Air Handling Units: 3 nos (13000 CFM - 1 No, 8000 CFM - 1 no, 28000 CFM - 1 no) d) Chiller pump - 4 Nos. (2 No standby) e) Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller) g) Humidifier and dehumidifier units in 28000 CFM and 13000 CFM AHUs)	1			7	
5	Location: SBD Building, ESD Capacity: 30 TR AC Plant Make: Carrier Comprising of : a) Semi-hermetic reciprocating compressors - 1 nos. b) Condenser - 2 nos c) Chiller pump - 2 Nos. (1 No standby) e) Chilled water makeup tank - 1 no f) Refrigeration circuit, cooling water circuit and all connected electrical, electronics and mechanical equipments and accessories etc. (Air cooled Chiller)	1			7	



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

6	Location: Li-ion Cell Testing Area, ESD Capacity: 11 TR Package AC Make: Voltas Model: ACDPUASC110D407P Comprising of : a) Scroll compressors - 2 nos. (Make: Danfoss, Model: HLP072T4LC6) b) Condenser (air-cooled) - 2 nos c) Package blower unit - 1 no d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc.	5			8	
7	Location: SPD Testing Area, ESD Ductable Split AC Unit, Capacity: 5.5 TR, Make: Bluestar, Model: DSA661R1A Comprising of : a) Scroll compressor - 1 nos. b) Condenser (air-cooled) - 1 no c) Blower unit -2 nos d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc.	2			8	
8	Location: SBD Area, ESD Capacity: 7.5 TR Ductable AC Make: Carrier Model: 40LC009C Comprising of : a) Scroll compressors - 3 nos. (Make: Carrier) b) Condenser (air-cooled) - 2 nos c) Blower unit -2 nos d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc.	2			7	



Bharat Heavy Electricals Limited

ELECTRONICS SYSTEMS DIVISION

P.B.No 10010, Plot No. 98, Electronics City Phase I,
Hosur Road, Bangalore - 560 100

9	Location: SBD Area, ESD Capacity: 5 TR Ductable AC Make: Carrier Model: 40LC006 Comprising of : a) Scroll compressors - 2 nos. (Make: Carrier) b) Condenser (air-cooled) - 2 nos c) Blower unit - 1 no d) Refrigeration circuit and all connected electrical, electronic and mechanical equipments and accessories etc. e) Humidifier and dehumidifier unit in the ducts	1			7	
10	Location - Conference Hall, Admin Building, ESD Tower AC 3.0 TR, Make- Voltas, Model: MFQ36CR	2			7	
11	Location -SBD UPS Room, ESD Split AC 2.0 TR, Make - LG, Model: 15N6MR3TF6	1			7	
12	Split AC 1.5 TR, Make: Llyod/ LG/ Videocon/ Voltas/ Onida	43			7	
Net Total CAMC Cost for 2 years						
GST@ 18%						
Gross Total CAMC Cost for 2 years						