

**Government of India
Bhabha Atomic Research Centre
Nuclear Recycle Group**



Ref: NRG/NBDEMO-II/Oct2021/OPA-

Date: 25/10/2021

Subject: NIT for Minor Fabrication Due date:12/11/2021

Sealed quotations are invited for and on behalf of the President of India for the work as described below. The last date of submission of sealed quotation is 12/11/2021 up to 15:00 hrs at Room No 309, Service Building, WIP Complex, Trombay, Mumbai 400085. Please mention the reference number on the front cover of the sealed quotation. Sealed quotation shall only be sent through Postal Speed Post/Normal Post only. Hand delivery of the quotations is strictly not allowed. The sealed quotation will be opened on the same day at 15:30 hrs. in the office of authorized tender opening officer, NRG.

Description of work	Duration
Refurbishment of Electronics Lab, NRG	Three months

A) Vendor Evaluation Criteria:- Firms meeting the following criteria should only quote for the tenders. Quotations of the firms not fulfilling these requirements will be rejected.

- A. 1 Registered MSME *electronic component dealer*/local cash purchase reseller with work experience of value 1 lakh or above in procurement, supply of electronics to BARC.**
- A.2 Registered office space from where safe storage, packaging, delivery to BARC can be arranged.**
- A.3 Local office for service under standard warranty terms.**
- A.4 Bidder shall submit two envelope one technical offer and second is financial offer. The technical envelop shall include a printed hardcopy of detailed excel sheet with make, model [part No], quantity, name, website links for all the electronic parts under each item category and availability [in stock] status with date [validity], this excel sheet shall also be emailed to pdhag@barc.gov.in for online verification of compliance with tender scope of work by bidder. All the internet links shall be checked properly and working. Broken internet links will be treated as non compliance to scope of work. More than two source websites can be mentioned for electronic parts with limited stocks, alternate compatible component can be suggested however acceptance / rejection of vendor suggested alternate component is in scope of BARC. Bidder shall not include financial price in technical offer envelope. The financial envelope shall have printed hardcopy of complete offer with financial values included against items. Total price inclusive of tax shall be mentioned in word as well as numerical at end.**

1.0: General: The proposal is to refurbish electronic lab for NRG to develop advanced electronic hardware demo applications for WIP exhibition area. The scope of work for tender includes fabrication of nuclear battery, assembly of electronic components, supply, testing & installation of various items as per Annexure-I. FIM are electrical power from NB & RTG & application software. Vendor scope is to work as per BARC requirement mentioned in this tender, for refurbishment of electronic lab, NRG.

1.1: Refurbishment work: The work is proposed for undertaking in-house development for remote sensing, remote surveillance, remote beacon, Pulsed nanoW motor in WIP exhibition area based on the electric power generated by NB & RTG, hence refurbishment of the electronic lab, NRG is required. The refurbishment work shall facilitate development of demo applications using latest state of the art electronic modules for WIP exhibition area.

1.1 (a) For refurbishment of electronic lab, NRG following work shall be done. [Detail tech specs of work in Annexure I]]

Sr. No.	Demo Application	Hardware required to assemble the application
1.	Short range remote Sensing	Energy Harvester for trickle power from RTG,Low energy short range Wireless Transmission reception, MCU Controller and sensor , Touch screen with Display, Loose components, cables, wires, Lab tools, Test instruments,PCB rework set
2.	Short range remote surveillance	Energy Harvester for trickle power from RTG,Low energy short range Wireless Transmission reception, MCU Controller and sensor , SRAM, Touch screen with Display, Loose components, cables, wires, Lab tools, Test instruments,PCB rework set
3.	Long range remote surveillance/Beacon	Energy Harvester for trickle power from RTG,Low energy longrange Wireless Transmission reception, MCU Controller and sensor, Loose components, cables, wires, Lab tools, Test instruments,PCB rework set
4.	Pulsed NanoW Motor	Energy Harvester for trickle power from NB, Pin Diode & NB source Assembly 3D printed parts, Nd magnets, reluctance motor, coil EM,

1.2. INSTALLATION PRACTICES:

1. The contractor shall use proper electrical plug/sockets. Use of loose wiring will not be permitted.
2. The contractor shall use all safety gears like helmets, safety belts, safety shoes etc. and follow safe installation practices. All the safety precautions shall be meticulously followed, the instructions given by Engr. In Charge & Safety Coordinator from time to time shall be abided.
3. Installation shall be neat and workmanship shall be of excellent quality.
4. The Contractor should supply and install all the fixtures, which may not be specifically mentioned in above, but necessary for the completeness of the work, without any additional cost.
5. All the accessories such as clamps, MS boxes, MS Angles, screws, fixers, ravel plugs, PVC flexible conduits etc. should be supplied by the Contractor.
6. The contractor shall be responsible for any loss or damage during transportation, handling and storage of system or any component of the system.
7. The installation of the above work should be as per the guidance of Engineer-in-charge of work.

1.3 INSPECTION & TESTING:

1. All the items / materials shall be inspected at purchaser, Functional tests shall be repeated at site after installation & commissioning.
2. Inspection and defects rectifications:- Any defects observed or detected shall be rectified /replaced by the contractor at his/her own cost.

1.4 Warranty: All items shall be covered under OEM given warranty and document for same shall be handed over. Supply of brand new items is only acceptable hence PO copies of third party orders shall be given to BARC for verification of purchase dates.

2.0: WORKING CONDITIONS: The contractor shall arrange all equipment and personnel required for the successful completion of the work. Contractor shall clean the site after work and dispose the waste generated properly. Contractor shall stick to the schedule given and complete the work before work order expiry. No extension will be given. The vendor should arrange transport of materials required for carrying out the work in advance i.e. prior to starting of the field jobs. Please note materials /tools etc entry to the site & their exits is subjected to security checks & procedure laid down by BARC security sections & shall be strictly followed during the site execution. Electricity and Water will be provided free of cost for the above work inside BARC for testing.

3.0: Notes for bidder:

- 3.1 Offers will be evaluated in two parts first technical basis. Second on overall cost basis. hence it is mandatory for bidder to consider entire scope of work and quote on lump sum basis e.g. 1 set cost shall be given for each item category and at end total cost of all item categories shall be given as total cost inclusive of GST. Two sealed envelopes shall be sent. The first will have technical offer, printed excel sheet with part no, purchase link, quantity, make model, availability. Email the softcopy to pdhag@barc.gov.in before due date from vendor email ID. The make model will be verified online and using the hardcopy document. After the technical scrutiny, qualifying offers will be selected for financial bid opening.
- 3.2: Quotation shall be valid for minimum 30 days from the date of opening.
- 3.3: The bidder shall be of qualified for similar types of works with PO /WO references to be submitted.
- 3.4: The Payment will be made as per Government procedure after the job is completed satisfactorily in all respects and has been approved by the officer supervising the job. Payment shall be made only on

satisfactory completion of work, removal of debris/waste arising out of the work carried out from site and on production of bill in duplicate, advance stamped receipt, guarantee / warranty certificates, stores receiving voucher duly signed by ASO (if applicable), No Demand Certificate from Security. In general after submission of all the papers mentioned in work order, it takes about a month period for releasing the payment, as per standard practice followed in BARC. Income tax @ prevailing rate at the time of execution of work and applicable surcharge on Income Tax as applicable & education cess on IT & SC as applicable will be deducted from the bill.

3.5: Work shall be completed within three months of release of work order.

3.6: Quotations are to be printed on letter head and should mention Goods and Services Tax (GST) Registration Number as well as any other prevailing Tax Registration Number registered with local, state/Central authority, PAN Number of the firm, Service Tax Registration Number etc.

3.7: Quotations that are received in computer generated form are to be construed as invalid and will be rejected.

3.8: Similarly claims raised by the firms are also to be in Printed Invoice formats consisting of the above Registration Numbers.

3.9: It is necessary to mention Taxes Registration Numbers clearly in the quotation, without which the offers will not be considered.

4.0 Undertaking: The vendor shall give undertaking stating that he/she has understood the entire scope of work inclusive of technical, supply, installation, testing and commissioning requirements as well as other associated security/safety and other general requirements.

5.0: Procedure for submission of Bid(Off-line through Speed/Normal post only) and further Evaluation : The Vendor has to submit the bid in hard copy in sealed Single envelop through Speed Post only. However this envelop shall contain two sealed sub envelops, one sub envelope marked as Technical bid & other sub envelope marked as Financial Bid. Both these sub Envelopes shall also have Ref. no. of this Tender. No intermixing of Bids is allowed. Bid without two sealed sub-envelops shall be rejected & no more further communication will be made against this tender. Initially Technical Bids will be opened and Vendor Evaluation will be carried out as mentioned above in Sr. No. A. 1 to A.4.

Contact undersigned for any other technical inquiry about the job.

(D G Parulekar)
SO/F, Phone: 25591140
Email:pdhag@barc.gov.in

Sr No	Demo Application [source mouser, digikey, element14]	Quantity
1.	Short Range Remote Sensing	1 Set
	BQ25505RGRR*	3Nos.
	IC Adapter, Fibreglass, 20-QFN/20-LFCSP, 2.54mm Pitch Spacing, 15.24mm Row Pitch*	3Nos.
	3296X-1-505LF	8Nos.
	R82EC2100DQ50J	2Nos.
	ESW475M025AC3AA	2Nos.
	DEM8045Z-220M=P3	1Nos.
	CFR16J10R	2Nos.
	3362P-1-105LF	2Nos.
	5980000201	2Nos.
	SIS862DN-T1-GE3	2Nos.
	1 Ufd 50 V Electrolytic Capacitor 1 Micro Farad 50 Volt, 25 Piece	1Nos.
	470ufd 25 V Electrolytic Capacitor 470 Micro Farad 25 Volt, 50 Piece	1Nos.
	10M Ohm Resistors, 1/4W, 5%, CFR (Pack of 100)	100Nos.
	BQ25505RGTR 20 pin	1 Nos.
	IC Adapter QFN20 pin	1 Nos.
	MICROFC-SMTPA-30035-GEVB	1 No.
	STEVAL-BCN002V1B	1 No.
	RPI4-MODBP-8GB	2 Nos.
	Raspberry Pi 15.3W USB-C Power Supply for Raspberry Pi 4 Model B	<u>2 Nos.</u>
	T7689AS, Raspberry-PI	<u>2 Nos.</u>
	RPI NOIR Board	<u>1 No.</u>
	Pi Picoboard	<u>5 Nos.</u>
	2453, Adafruit	<u>1 Nos.</u>
	2098, Adafruit	<u>1 Nos.</u>

	1596, Adafruit	1 Nos.	
	1651, Adafruit	1 Nos.	
	1947, Adafruit	1 Nos.	
	"Pure Copper" Breadboard Wire, 22 Gauge Wire, Hookup Wire (Package : set of 5 piece, each colour wire is of 2 metres length(Total 10 Mtrs)	1 No.	
	Generic Elementz Nickel Plated 840 Points Bread Board or Solderless Piecesb Circuit Test Board, White	5 Nos.	
	jumper Wires Male to Male, Male to Female, Female to Female/breadboard jumper wires (10 pc male to male ; 10 pc female to female ; 10 pc male to female)	10 Nos.	
	Shockley Electronics 10nF, 0.01uf (103J) Film, Paper Capacitors +/- 10% 400V,	1 No.	
	Electrobot Labeled 18 Values Ultimate Capacitor Kit	1 No.	
	Power bank MI 20Ah	2 Nos	
	mini USB cable boat make	10 Nos.	
	FL 88 B solder flux pen	1 No.	
	SMD291NL solder flux syring	1 No.	
	TS391SNL50 solder paste	1 No.	
	D01841 [hot air soldering de soldering strn] UK plug	1 No.	
	Uk to India AC plug power	1 No.	
	Techtest 60W 220V Temperature Adjustable Electric Welding Solder Soldering Iron Rework Station	1 No.	
	Themisto Aluminium Soldering Wire 50gm Roll	1 No.	
	Magnetic Soldering Helping Hands Stand with Magnifying Glass and Light,	1 No.	
2.	Short Range Remote Surveillance		1 Set
	BQ25505RGRR*	2 Nos	
	IC Adapter, Fibreglass, 20-QFN/20-LFCSP, 2.54mm Pitch Spacing, 15.24mm Row Pitch*	2 Nos	
	3296X-1-505LF	4Nos.	
	R82EC2100DQ50J	2Nos.	
	ESW475M025AC3AA	2Nos.	
	DEM8045Z-220M=P3	1Nos.	

	CFR16J10R	2Nos.	
	3362P-1-105LF	2Nos.	
	5980000201	2Nos.	
	SIS862DN-T1-GE3	2Nos.	
	1 Ufd 50 V Electrolytic Capacitor 1 Micro Farad 50 Volt, 25 Piece	1Nos.	
	470ufd 25 V Electrolytic Capacitor 470 Micro Farad 25 Volt, 50 Piece	1Nos.	
	BQ25505RGTR 20 pin	2 Nos.	
	IC Adapter QFN20 pin	2 Nos.	
	W3554B0293 part no Antenna connector option Ufl female 29cm cable	2 Nos.	
	Roinco 433MHZ Lora RA02 Long Range RF Wireless Module with 2.4 Ghz Antenna	4 Nos.	
	RPI4-MODBP-8GB	1 Nos.	
	Raspberry Pi 15.3W USB-C Power Supply for Raspberry Pi 4 Model B	<u>1 Nos.</u>	
	<u>T7689AS, Raspberry-PI</u>	<u>1 Nos.</u>	
	<u>RPI NOIR Board</u>	<u>1 No.</u>	
	<u>Pi Picoboard</u>	<u>5 Nos.</u>	
	<u>2453, Adafruit</u>	<u>1 Nos.</u>	
	<u>2098, Adafruit</u>	<u>1 Nos.</u>	
	<u>1596, Adafruit</u>	<u>1 Nos.</u>	
	<u>1651, Adafruit</u>	<u>1 Nos.</u>	
	<u>1947, Adafruit</u>	<u>1 Nos.</u>	
	GPE-4323 DC Power supply four channel Indian plug AC	1 No.	
3.	Long Range Remote Surveillance/ Beacon		1 Set
	BQ25504RTGR	1Nos.	
	Adapter PCB - SMD to DIP - QFN16 to DIP16, MGSL 0217	1Nos.	
	3296X-1-505LF	12Nos.	
	R82EC2100DQ50J	8Nos.	

	ESW475M025AC3AA	8Nos.	
	DEM8045Z-220M=P3	3Nos.	
	CFR16J10R	8Nos.	
	3362P-1-105LF	8Nos.	
	5980000201	8Nos.	
	SIS862DN-T1-GE3	8Nos.	
	1 Ufd 50 V Electrolytic Capacitor 1 Micro Farad 50 Volt, 25 Piece	3Nos.	
	470ufd 25 V Electrolytic Capacitor 470 Micro Farad 25 Volt, 50 Piece	3Nos.	
	Radiation Survey Meter with alert ticker gamma Scout	1 No.	
	Picoscope 2206b MSO mixed signal scope	1 No.	
4.	Pulsed NanoW Motor Scope is to assemble motor as per BARC requirement		1 Set
	multipurpose SS work table 3' x 5'	1 No.	
	Height Adjustable Office Stool	1 No.	
	Nd magnets 6mm-12mm 0.1 mm Cu coil	20 nos	
	Pin Diode Assembly Mounting and fabrication service	1 no	

Important instructions:

Bidder shall not include the price in technical envelope, Bidder shall mention above annexure with necessary data e.g. part no make quantity validity [weblink to verify item] in technical bidding. Bidder shall send hardcopy envelope as well as softcopy email of the technical offer to pdhag@barc.gov.in before due date.

Bidder shall include the total price for each demo application inclusive of tax in financial envelope. Bidder shall submit two sealed envelopes one for technical offer and second for financial offer. Both envelopes shall be send in single bigger envelope with mention of tender no, ref and addressed to engineer in charge.

All data in technical as well as financial offer shall be verified by bidder. Incorrect technical and financial bid shall lead to rejection of offer.

