



GOVERNMENT OF INDIA  
DEPARTMENT OF ATOMIC ENERGY  
BHABHA ATOMIC RESEARCH CENTRE  
VISAKHAPATNAM



भारतीय परमाणु अनुसंधान केंद्र  
BHABHA ATOMIC RESEARCH CENTRE

Computational Analysis Division

Ref: CAD/HEDM/WO/IND/19-20/02

Date: 11/09/2019

Sub: Notice inviting tender for "Fabrication and Supply of Customized High Frequency Power Source and Required Accessories"

1. Scope : Design, Development and Supply of Customized High Frequency Power Source and Required Accessories  
(Details: Annexure I, II, III)

Note: The items are for delivery and testing at IPR, Bhat, Gandhinagar, Gujarat

2. General guidelines for submitting tender

- You shall send your offer in a **sealed envelope** indicating delivery period, price inclusive of taxes and other relevant information by speed post/Courier to:

Head,  
Computational Analysis Division  
Bhabha Atomic Research Centre  
Anu Vihar, Mekarasi Hill, Village: Maduturu,  
Near Nagaravarm-Atchutapuram Highway  
Visakhapatnam 531011  
(Kind Attention : Shri. Subhrajit Guin, SO/C)

- Quotation shall reach us on or before 26/09/2019 by Speed Post/Courier Only
- On top left corner of the envelope please indicate  
Quotation For - Fabrication and Supply of Customized High Frequency Power Source and Required Accessories:  
Due Date 26/09/2019
- Price to be specified strictly as per template provided in Annexure-II.
- Overwriting, scratching etc. must be avoided in the quotation. Rewriting the whole figure shall carry out any alteration in the figure. The authorised person from the firm shall countersign such figure.
- The delivery period mentioned in the quotation shall be strictly adhered to. If the contractor fails to supply and secure extension of delivery date before effecting delivery of the supply against the contract, acceptance of such item by the purchaser will in no way prejudice the right of the purchaser to levy liquidated damage nor will it be entitled to the contractor for payment of statutory levies that comes into force after the expiry of the delivery date.
- Minimum Guarantee / Warranty period of the material shall be one year.
- Supplier shall mention clearly the PAN /TAN no. on quotation.
- GST number shall be clearly mentioned on Quotation
- All the charges and taxes shall be mentioned clearly.  
Please note that BARC being an R&D institution, GST rates are as follows  
- For Intra-state Supply of Goods: @ 2.5% SGST + 2.5% CGST  
- For Inter-state Supply of Goods: @ 5.0% IGST  
- GST exemption certificate shall be issued to the supplier.

(This is as per Office Order No. BARC/GST/12/2017 dt. 27.12.2017)

**3. PLACE OF DELIVERY AND TESTING: IPR, Bhat, Gandhinagar, Gujarat**

The inspected and accepted components shall be delivered to:

**The Stores Officer.  
Institute For Plasma Research  
Bhat, Gandhinagar,  
Gujarat-382428**

**4. PAYMENT TERMS:**

- a) Part payment/Advance or against delivery cannot be made.
- b) Payment will be made only after satisfactory completion of work and on production of (along with Delivery Challan):
  - i. Bill/Invoice containing Location of supply, separate tax components along with PAN and GSTN numbers
  - ii. Advance Stamped Receipt
  - iii. Bank Account No, Bank and Branch name with IFSC code.
  - iv. Undertaking stating that GST has been promptly deposited with the authorities
- c) It may be noted that:
  - i. Income tax @2% will be deducted from your bill.
  - ii. TDS(under GST) will be deducted as applicable from your bill of taxable goods and/or services, where the total value of such supply exceeds 2.50lakh.

**5. CONFIDENTIALITY CLAUSE :**

No party shall disclose any information to any third party, concerning the matters under this contract generally. In particular, any information identified as "Proprietary" in nature by the disclosing party shall be kept strictly confidential by the receiving party and shall not be disclosed to any third party without the prior written consent of the original disclosing party.

This clause shall apply to the sub-contractors, consultants, advisers or the employees engaged by a party with equal force. "Restricted information" categories under section 18 of the Atomic Energy Act, 1962 and "Official Secrets" under section 5 of the official secrets act, 1923;-

Any contravention of the above-mentioned provisions by any contractor, sub-contractor, consultant, adviser or the employees of a contractor will invite penal consequences under the aforesaid legislation. Prohibition against use of BARC's name without permission for publicity purposes:-The contractor or sub-contractor, consultant, adviser or the employees engaged by the contractor shall not use BARC's name for any publicity purpose through any public medial like press, radio, T.V. or Internet without the prior written approval of BARC.

6. You may contact us for any clarification before 26/09/2019 (Shri Subhrajit Guin, 0891-283-8073, sguin@barc.gov.in)

*Subhrajit Guin*  
09/09/19  
(Subhrajit Guin)  
SO/C, CAD

## Scope of work

### Design, Development and Supply of Customized High Frequency Power Source and Required Accessories

Brief Description:

The above work consists of the following

1. Designing a High Frequency source with components necessary to deliver required Power output.
2. Assembly of all electronic components and development of necessary circuitry.
3. Supply all the necessary accessories such as interfacing cables and power cables.

**Important: The vendor should have a technically competent team of engineers. All technical training and know-how related to usage of the High Frequency Power Source including their settings, connections etc will be imparted by the vendor and lies within the scope of work.**

#### **I. Development of High Frequency Source:**

- a. The Power source must be able to deliver a Max. Output Power of 250 W with provision to increase it from 0 to 250 W (in steps of 1 W)
- b. The Power source should be able to withstand a maximum reflected power of 100 W with provision to set the maximum reflected power allowed.
- c. The Power source should provide output at frequency of 13.56 MHz and through 50 Ohms N-type Female RF-Connector.
- d. Harmonics / Spurious frequencies should be limited to -20 dBc below fundamental.
- e. The front panel should facilitate a User-Input-Based RF ON/OFF feature.
- f. The front panel should display the following
  1. Forward power
  2. Reflected power
  3. RF ON/OFF
  4. C-Tune position
  5. C-Load position
  6. Auto/Manual mode for Impedance matching unit
  7. Interlock status
  8. RF Output voltage

All entries to be done using a soft key.
- g. Suitable interface for Impedance matching and computer interface should be provided – preferably RS232, USB or any standard Interface with Remote or Local Control.
- h. Input Requirement for the Power source should be 230 VAC, 50 Hz.
- i. The power source should be facilitated with Air-cooling system.
- j. Efficiency should be 60% (or more) at full rated RF power.
- k. RF Power Regulation and Stability (during Specified load mismatch, temperature change and Line Voltage change) should be 2% of Set Point (or better).

Consists of 2 broad sections.

Following fabrications are to be carried out [Refer Annexure III]:

SL No	Title	Material	Remarks
1	Housing	Aluminium	Houses the internal circuitry and facilitates air-cooling.
2	Internal Circuitry	--Standard Availability-- (design within scope of work as per above requirement)	Sizes conforming to the housing dimensions.

**II. List of Required Accessories:**

<b>Accessories to be supplied</b>	(1) RF Power Transfer cable. (2) Mains 230 V cable. (3) Operating and Service Manual. (4) Factory Test Certificate
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**III. General requirements:**

1. The entire assembly of the functional unit is within the scope of work of the vendor.
2. In case of any clarifications regarding the internal circuit, please contact the undersigned.
3. One-Year (or more) Standard Warranty has to be provided.
4. The vendors are encouraged to hold prior discussions with the indenter for any clarifications or suggestions.

*Subhrajit Guin*  
09/09/19,  
Subhrajit Guin  
SO/C, CAD  
Indenting Officer

**Contact Persons :**

**Contacts:**

1. **Shri Subhrajit Guin** (*Indenting Officer*)  
SO/C, Computational Analysis Division  
IPF Lab, BARC-Vizag  
Ph: 0891-2838-073  
Email: sguin@barc.gov.in
2. **Dr. S Pahari**  
SO/F, Computational Analysis Division  
BARC-Vizag  
Telefax: 0891-2838-072  
Email: sambaran@barc.gov.in

**COMMERCIAL QUOTE : TEMPLATE OF PRICE BREAKUP**

Prices should be stated strictly as per above template. Prices of all 10 items listed above should be provided.

<b>S. No</b>	<b>System</b>	<b>Price</b>
	<b>High Frequency Power Source</b>	
1	Assembly 1: High Frequency Source	-
2	Required Accessories	-
	Total	-
	Misc Charges (Freight etc)—if any	-
	Tax	-
	<b>Total (with Tax)</b>	-

Drawings for High frequency generator:

(i) The Housing:

