

INTERDISCIPLINARY CENTRE FOR ENERGY RESEARCH

Indian Institute of Science (IISc), Bangalore, INDIA

Tender Notice

Local Tender (Indian Bidders and OEM manufacturers in located in India)

Tender Notification Ref No.: ICER/ENQ/TNDR/PK/24-25/05 Date: 21st November 2024

The *Interdisciplinary Centre for Energy Research*, Indian Institute of Science Bangalore, invites tenders for supply of “**Orbital Welding Machine**”. This Invitation for Bids is open to all domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors only. All the bidders are requested to follow below mentioned Detailed Technical Requirements, Terms and Conditions for submission of bids.

1) Technical Specifications: Quantity : 1No.

Sr. no	Specification	Values
1	Power Supply Inverter	
1.a	Mains Voltage	3Φ, 400 V (-25% -+ 20%)
1.b	Mains Fuses	3 x 16 A
1.c	Open Circuit Voltage	>60 V
1.d	Setting range for welding current	<10 A upto >280 A
1.e	Efficiency	>0.95
1.f	Must have option for TIG and MMA welding and the Unit must be Modular with either gas or water cooled with MMA pulsing and TIG kHz pulsing up to 15 kHz having the Connection capability for remote control, function torch, cooling unit and must have provision for spot welding	
2	Weld Head Cooling Module	
2.a	Cooling output	>700 W
2.b	Flow rate	>4 lpm
2.c	Tank Capacity	>2 l
2.d	Coolant outlet pressure	Upto 4 bar
2.e	Mains Voltage	3Φ ,230 V
3	Orbital Weld Head Controller	
3.a	Integrated Touch Screen with case and 10m cable with a capability of Monitoring of gas and water cooling should include Torch Tacking Mode with up to 12 levels Division of welding parameters. Having circular display of welding process and must be able to save welding parameters in a PDF also must have capability to store unlimited welding programmes with monitoring of welding parameters along with the Connection facility for oxygen analysers having a Servo PC board for wire feed, Integrated AVC/OSC control . This must be able to change the parameters, current intensity and wire feed during the welding process by panel with a provision to connect External DIN A4 printers having Multi-range of <100->250V. Overvoltage protection must be provided	
3.1	Orbital Weld Head Controller Accessories	
3.1a	Holder Panel for Controller Orbital with Gas hose - 1/4" connector of min. 2m length and Purge hose - 1/4" connector (with Ball valve) of min. 8 m length and must have	

	workpiece lead with FIX clamp having a remote Control with min 10 m cable and Protection/Travel Case for the controller and all accessories to be provided	
4	Open Frame Weld Head (OHW)	
4.a	Tube size range	OD 20 - 114.3 mm
4.b	It should be equipped with AVC and OSC and must be easily centred on the tube and clamped by gripping lever with Continuously variable grip mechanism and integrated start/stop sensor and 90° tilting torch bracket option .The AVC unit must be with support of 25 mm for arc voltage control and the OSC unit must be with support of 25 mm for oscillation for multi-pass welding of medium and thick-walled pipes. The OSC unit must be with support of 25 mm for oscillation for multi-pass welding of medium and thick-walled pipes	
4.1	Open Frame Weld Head Accessories	
4.1a	Weld head holder for OHW types with Interconnection cable of min 8 m length for open weld head frame having Water-cooled TIG-torch of min 8.5 m length for open weld head frame, Water-cooled version Handle and cable of min 8 m length for open weld head frame along with Wire holder for OHW with Interconnection cable for open weld head frame and Water-cooled Handle and cable for open weld head frame	
5	Wirefeed Unit	
5.a	Wirefeed unit capable of holding up to 15 kg spool and must support wire diameter of 0.8/1.00 mm with integrated Roller drive mechanism and Interconnection cable of min 8 m length	
5.1	Wirefeed Unit Accessories	
5.1a	Welding filler Unalloyed solid wire electrode of min 5 kg to be supplied. Welding filler High-alloyed solid wire electrode of min 5 kg to be supplied with Centring adapter with brake ring and 3 distance rings. Holder Trolley for wire feed unit to be provided	
6	Closed Weld Head -1 (CHW)	
6.a	Tube size range	OD 6.0 - 114.3 mm
6.b	Must have quick Change System for weld heads and collets with Durable clamping connection	
6.1	Closed Weld Head Accessories	
6.1a	Weld head holder for CHW types with Gas/Water cooled handle and cable. Must supply 1 Set (4 Collets) for tube OD 19 mm (3/4"), 38.10 mm (1-1/2"), 50 mm (2") and 63.50 mm (2-1/2") with Protection/Travel Case for weld head and collets	
7	Closed Weld Head -2 (CHW)	
7.a	Tube size range	OD 3.17 - 38.1 mm
7.b	Must have quick Change System for weld heads and collets with Durable clamping connection	
7.1	Closed Weld Head Accessories	
7.1a	Weld head holder for CHW types with Gas/Water cooled handle and cable. Along with this must supply 1 Set (4 Collets) for tube OD 15.88 mm (5/8"), 19.05 mm (3/4"), and 25.40 mm (1") also provide Protection/Travel Case for weld head and collets	
8	Micro Weld Head	
8.a	Tube size range	OD 3.17 mm - 12.7 mm
8.b	To be compatible with cassettes with electrode size of up to Ø1 mm	
8.1	Micro Weld Head Accessories	
8.1a	Micro weld head holder with welding Cassette set for tube OD 3.17 mm, 6.35 mm, 9.53 mm, 12.7 mm with Protection/Travel Case for weld head and collets	
9	Oxygen Analyser	

9.a	Battery powered oxygen analyser with min. 6 hrs backup. LED display for displaying all the parameters with USB interface for storage. Must include documentation of residual oxygen value and Freely adjustable operating range and should have Temperature-controlled zirconium sensor with measuring range <10 to >990 ppm O2	
9.1	Oxygen Analyser Accessories	
9.1a	Com-cable for Oxygen analyser with Protection/Travel Case for oxygen analyser	
10	Tube Squaring System	
10.a	Tube Squaring System for pipes/tubes of OD 3 mm - 38 mm. Must Include tool holder with special HSS insert and Built-in electronic variable speed	
10.1	Tube Squaring Accessories	
10.1a	Collets (1 Set = 2 collets) for Tube OD 3.17mm (1/8"), 6.35mm (1/4"), 9.53mm (3/8"), 12.70mm (1/2"), 15.88mm (5/8"), 19.05mm (3/4") and 25.40mm (1").	
11	Cutting Saw	
11.a	Cutting Saw for tube size of 4 - 130 mm with stainless steel jaws <OD 30 to >125 mm and Additional jaws <OD 5 to >100 mm. Must have Right angle cutting accuracy and Double shaft drive motor with 2 saw blade positions for elbows and Electric motor drive unit, of 230 V with >1000 W, >250/min	
11.1	Cutting Saw Accessories	
11.1a	Support table and Saw blade of Ø 68 mm and Ø 80 mm	
12	Spot Welding	
12.a	Spot Welding Attachment to be provided	
13	Additional Accessories	
13.a	Tool Kit (Allen Key set, Feeler Gauge). Trolley for mounting inverter, cooling module and Orbital controller	
13.b	V Block with mounting bracket OD 20 mm - 115 mm and OD 3 mm - 38 mm of qty 1 no each	OD 20 mm - 115 mm

3) Vendors scope of supply for the above Orbital Welding Machine:

- a) Pre-dispatch inspection and testing report.
- b) Installing commissioning and demonstration of the complete system must be done at IISc, Bengaluru
- c) Training on operation and troubleshooting of the product must be provided at IISc, Bengaluru

4) Mandatory non-technical requirements:

- a) The bidders must enclose a client list, contact details, relevant brochures and compliance certificate (Annexure I) with the tender.
- b) The bidders should be well established firm preferably leaders in the application stated above and must have a proven track record.
- c) Authorization from the OEM/ Principals as in Annexure II
- d) The order should be completed within 16-24 weeks from the date of release of the Purchase Order.

5) Optional requirements

- a) Extended Warranty: 2 years additional Warranty (Standard: 1 year, Additional: 2 years, Total- 3 years) to be provided from the date of delivery at IISc, Bangalore.
- b) AMC for 5 Years

TERMS AND CONDITIONS FOR SUBMISSION OF BIDS

Both the Technical and Commercial bid should be put in separate sealed envelopes and both the envelopes should be put in another cover subscribing “**Orbital Welding Machine**” and should reach “*The Chair, Interdisciplinary centre for Energy Research, IISc, Bangalore-560012* on or before **Friday, 13th December 2024**.”

Tender Summary

1.	Tender Number	ICER/ENQ/TNDR/PK/24-25/XX
2.	Tender Date	21 November 2024
3.	Item Description	Orbital Welding Machine
4.	Tender Type	Two bid system: (a) Technical Bid (Part A) (b) Commercial Bid (Part B)
5.	Place of tender submission	Prof. Pramod Kumar Interdisciplinary Centre for Energy Research, Indian Institute of Sciences, Bengaluru 560012
6.	Last Date & Time for submission of tender	13 th December 2024, 5:00 PM

To whom it may concern

This is a **Request for quote (RFQ)** from **Indian Agencies** for supply and installation of “**Orbital Welding Machine**” at the “**Interdisciplinary Centre of Energy Research (ICER), Indian Institute of Science, Bangalore.**”

This Invitation for Bids is open to only domestic (India based) manufacturers, Indian OEM or its authorized Indian distributors. All interested vendors shall submit a response demonstrating their capabilities to produce the requested equipment to the primary point of contact listed below.

With respect to this tender, the rules laid out by the Government of India in order No. P45021/2/2017-pp-BE-II issued by the Public Procurement Section, Department or Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, dated 4th June 2020 will be followed. As per the order the government has defined a ‘Class-I local supplier’ as “a

supplier or service provider whose goods, services or work offered for procurement, has local content equal to or more than 50%". A 'Class-II local supplier' is "a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%". **Only Class-I and Class-II local suppliers are eligible to participate** in this open domestic tender. Any "Non-local supplier" i.e. "a supplier or service provider, whose goods, services or works offered for procurement, has local content less than 20%" is ineligible to participate in this tender.

The deadline for submission of proposals is **13th December 2024, 5:00 PM**. Proposals should arrive at the office of **The Chair, Interdisciplinary Centre of Energy Research (ICER), Indian Institute of Science, Bangalore, Karnataka 560012, India**.

Direct all questions concerning the acquisition to addresses to **Prof. Pramod Kumar** at: pramod@iisc.ac.in

General Terms and Conditions

1. The bid should be submitted in the two-cover system, i.e. technical bid and commercial bid separately in sealed covers. The technical bid should contain all commercial terms and conditions, except the price.
2. The technical bid must contain a point-by-point technical compliance document. The technical proposal should contain a compliance table that should describe your compliance in a "yes" or "no" response against each of the items in the table listed in this RFQ. If "no" the second column should state, the extent of deviation. The third column should state the reason for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirement table below.
3. In the commercial bid, the price should be inclusive of all discounts.
4. The quotations should be on FOR-IISc Bangalore basis in INR only.
5. The vendor should have qualified technical service personnel for the equipment based in India (preferably in Bangalore).
6. The covering letter should clearly state that whether the vendor is a Class-I or Class-II local supplier. Failing this the bid will be automatically rejected.
7. The vendor to state the percentage of the local content and provide self-certification that the item offered meets the minimum local content requirement. They should also give details of the location(s) at which the local value addition is made.
8. The lead time for the delivery of the equipment should not be more than 3 months from the date of receipt of our purchase order. It should be clearly mentioned in the technical and commercial bids.
9. All the quotations must be valid for at least 90 days at the time of submission.
10. List of customers and references: **The Bidder should have supplied similar equipment in Central Universities, preferably in centrally Funded Technical Institutes (IITs, IISc, IISER, NIT). Please provide the details and contact information.**
11. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect should be provided.

12. Items in addition to that listed in the technical table that you would like to bring to the attention of the committee, such as data sheets, technical plots etc. can be listed at the end of the compliance table.
13. The Bidder should belong to either Class-1 or Class-2 suppliers distinguished by their “local content” as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter. a) Class-1 supplier: Goods and services should have local content of equal to or more than 50%. b) Class-2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
14. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.
15. Purchase preference as defined by the recent edits to GFR (within the “margin of purchase preference”) will be given to the Class-1 supplier.
16. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.
17. Vendors are encouraged to highlight the advantage of their systems over comparable systems from the competitors.
18. If needed, a meeting for any technical clarifications can be scheduled with the undersigned by sending an email.
19. The Institute reserves the right to accept or reject any bid, or to annul the bidding process and reject all bids, at any time prior to the award of contract without thereby incurring any liability of the affected bidder or bidders.
20. Warranty terms and additional warranty options is a must for all the components. Please specify the service plan like whether the local distributor will address the issue or the parent company.
21. Terms and conditions for the annual maintenance contract beyond the warranty period should be mentioned.
22. After the award of purchase order, the vendor must provide an Order Acknowledgement within 30 days from the receipt of the Purchase Order.
23. Please quote the price of each optional line item, separately.

Technical requirements: Please note that the requirements listed below are only guidelines. It does not disbar bids that do not meet the criteria listed. Vendors are requested to quote for equipment that meet the criteria to the best extent possible and list deviations. Deviations are NOT an automatic reason for disqualification. They will be discussed by the technical committee prior to making an informed decision.

Annexure-I

Note: Compliance Certificate to be enclosed with the Technical Bid

Sr. no	Specification	Values	Comply	Non-Comply	Deviation	Remarks
1	Power Supply Inverter					
1.a	Mains Voltage	3Φ, 400 V (-25% -+ 20%)				
1.b	Mains Fuses	3 x 16 A				
1.c	Open Circuit Voltage	>60 V				
1.d	Setting range for welding current	<10 A upto >280 A				
1.e	Efficiency	>0.95				
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	Protection/Travel Case for the controller and all accessories to be provided				
4	Open Frame Weld Head (OHW)				
4.a	Tube size range	OD 20 - 114.3 mm			
4.b	It should be equipped with AVC and OSC and must be easily centred on the tube and clamped by gripping lever with Continuously variable grip mechanism and integrated start/stop sensor and 90° tilting torch bracket option .The AVC unit must be with support of 25 mm for arc voltage control and the OSC unit must be with support of 25 mm for oscillation for multi-pass welding of medium and thick-walled pipes. The OSC unit must be with support of 25 mm for oscillation for multi-pass welding of medium and thick-walled pipes				
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6	Closed Weld Head -1 (CHW)				
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7	Closed Weld Head -2 (CHW)				

7.a	Tube size range	OD 3.17 - 38.1 mm			
7.b	Must have quick Change System for weld heads and collets with Durable clamping connection				
7.1	Closed Weld Head Accessories				
7.1a	Weld head holder for CHW types with Gas/Water cooled handle and cable. Along with this must supply 1 Set (4 Collets) for tube OD 15.88 mm (5/8"), 19.05 mm (3/4"), and 25.40 mm (1") also provide Protection/Travel Case for weld head and collets				
8	Micro Weld Head				
8.a	Tube size range	OD 3.17 mm - 12.7 mm			
8.b	To be compatible with cassettes with electrode size of up to Ø1 mm				
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8.1a	Micro weld head holder with welding Cassette set for tube OD 3.17 mm, 6.35 mm, 9.53 mm, 12.7 mm with Protection/Travel Case for weld head and collets				
9	Oxygen Analyser				
9.a	Battery powered oxygen analyser with min. 6 hrs backup. LED display for displaying all the parameters with USB interface for storage. Must include documentation of residual oxygen value and Freely adjustable operating range and should have Temperature-controlled zirconium sensor with measuring range <10 to >990 ppm O2				
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10.a	Tube Squaring System for pipes/tubes of OD 3 mm - 38 mm. Must Include tool holder with special HSS insert and Built-in electronic variable speed				
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11	Cutting Saw				
11.a	Cutting Saw for tube size of 4 - 130 mm with stainless steel jaws <OD 30 to >125 mm and Additional jaws <OD 5 to >100 mm. Must have Right angle cutting accuracy and Double shaft drive motor with 2 saw blade positions for elbows and Electric motor drive unit, of 230 V with >1000 W, >250/min				
11.1	Cutting Saw Accessories				
11.1a	Support table and Saw blade of Ø 68 mm and Ø 80 mm				

12	Spot Welding					
12.a	Spot Welding Attachment to be provided					
13	Additional Accessories					
13.a	Tool Kit (Allen Key set, Feeler Gauge). Trolley for mounting inverter, cooling module and Orbital controller					
13.b	V Block with mounting bracket OD 20 mm - 115 mm and OD 3 mm - 38 mm of qty 1 nos each	OD 20 mm - 115 mm				

Annexure-II

MANUFACTURERS' AUTHORIZATION FORM

[The bidder shall require the manufacturer to fill in this form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the Manufacturer.]

Date: [insert date (as day, month and year) of Bid Submission]

Tender No.: [insert number from Invitation for Bids]

To: **The Chair, Interdisciplinary Centre for Energy Research, IISc, Bangalore-560012.**

WHEREAS

We [insert complete name of Manufacturer], who are official manufacturers of [insert full address of Manufacture's factories], do hereby authorize [insert complete name of Bidder] to submit a bid the purpose of which is to provide the following Goods, manufactured by us [insert name and or brief description of the Goods], and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty with respect to the Goods offered by the above firm.

Signed: [insert signature(s) of authorized representative(s) of the Manufacturer]

Name: [insert complete name(s) of authorized representative(s) of the Manufacturer]

Title: [insert title]

Duly authorized to sign this authorization on behalf of: [insert complete name of Bidder]