Planning

Ultra-High Temperature Materials Testing Equipment

United Kingdom Atomic Energy Authority

F01: Prior information notice
Prior information only
Notice identifier: 2023/S 000-033837
Procurement identifier (OCID): ocds-h6vhtk-041a32
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Section I: Contracting authority

I.1) Name and addresses

United Kingdom Atomic Energy Authority

Culham Science Centre

Abingdon

OX14 3DB

Contact

Charlotte Byrne

Email

charlotte.byrne@ukaea.uk

Country

United Kingdom

Region code

UKJ14 - Oxfordshire

National registration number

N/A

Internet address(es)

Main address

http://www.gov.uk/government/organisations/uk-atomic-energy-authority

Buyer's address

https://uk.eu-supply.com/ctm/Company/CompanyInformation/Index/72814

I.3) Communication

The procurement documents are available for unrestricted and full direct access, free of charge, at

https://uk.eu-supply.com/app/rfq/rwlentrance_s.asp?PID=75080&B=UKAEA

Additional information can be obtained from the above-mentioned address

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Other activity

Fusion Research

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

Ultra-High Temperature Materials Testing Equipment

Reference number

T/CB135/23

II.1.2) Main CPV code

- 31720000 - Electromechanical equipment

II.1.3) Type of contract

Supplies

II.1.4) Short description

UKAEA wishes to engage with potential lead contractors, SME’s, manufacturers for the procurement and supply of Ultra-High Temperature Materials Testing equipment for the UKAEA.

The goal of this procurement activity is to establish UK-unique Ultra-High Temperature Materials Testing equipment (UHT-MaT) for complex, representative mechanical testing under vacuum at ultra-high temperatures, 2,500+ °C for the following material families of interest: refractory metallic alloys, ceramics, and ceramic-matrix composites.

UHT-MaT will be housed at UKAEA’s premises in Culham, Oxfordshire, UK by October 2027 at the latest.

After the engagement exercise, and dependent on securing funding, UKAEA intend to issue an Invitation to Tender through the EU Supply and Find a Tender portals (replacement to Tenders Electronic Daily) to procure services for design and provision of equipment through competitively tendered contracts.

II.1.5) Estimated total value

Value excluding VAT: £1,300,000

II.1.6) Information about lots

This contract is divided into lots: No

II.2) Description

II.2.2) Additional CPV code(s)

- 34950000 - Loadbearing equipment
- 39715200 - Heating equipment

II.2.3) Place of performance

NUTS codes

- UKJ14 - Oxfordshire
- UKJ - South East (England)

Main site or place of performance

OX14 3DB

II.2.4) Description of the procurement

The following main pieces of equipment are requested:

• Mechanical load frame(s) (up to 3 frames) for static, quasi static and cyclic mechanical loading. The load frame and/or load frames will have the mechanical infrastructure, control systems, and software capable of supporting numerous standard mechanical tests, specifically: tensile, compression, low cycle fatigue, ratchetting, creep, creep fatigue, crack growth in fatigue , and crack growth in creep. The load frame(s) should include several load cells with a maximum capacity of 100 kN (unless justified otherwise), fixtures and gripping solutions for standard geometry specimens of the material families of interest at ultra high temperatures: refractory metallic alloys, ceramics, and ceramic-matrix composites. The load string must be capable of operating up to the required temperature for at least one test, with the understanding that fixtures are consumable when operating at these temperatures. The load frame(s) should have appropriate test control systems (e.g. to control for strain on the sample at temperature) and sufficient working space to permit the insertion of vacuum and heating systems.

• A vacuum system compatible with mechanical testing at ultra high temperature. If there are multiple load frames then the single vacuum system (or the load frames) must be mobile to allow the vacuum system to be used by different load frames at different times. There must be ports for test control, optical ports for the data-rich diagnostics and their calibration and additional ports to allow future flexibility in diagnostics.

• A gas introduction system to allow alternative atmosphere testing.

• A heating system to allow sample test temperatures up to 2,500 °C and above for the material families of interest. The heating system must not limit the line of sight for the data-rich diagnostics.

• An appropriate cooling system to protect the load cell and fixtures, where required.

• A high spatial resolution IR camera and/or bolometer for spatially-resolved temperature measurement.

II.3) Estimated date of publication of contract notice

31 August 2025

Section IV. Procedure

IV.1) Description

IV.1.8) Information about the Government Procurement Agreement (GPA)

The procurement is covered by the Government Procurement Agreement: Yes