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Contract

## **SBRI Competition: Fusions Industry Challenges Cycle 2 Phase 1**

United Kingdom Atomic Energy Authority

F03: Contract award notice

Notice identifier: 2022/S 000-026987

Procurement identifier (OCID): ocids-h6vhtk-036bab

Published 27 September 2022, 9:37am

### **Section I: Contracting authority**

#### **I.1) Name and addresses**

United Kingdom Atomic Energy Authority

Culham Science Centre

Abingdon

OX14 3DB

#### **Contact**

Ioanna Bampatsia

#### **Email**

[ioanna.bampatsia@ukaea.uk](mailto:ioanna.bampatsia@ukaea.uk)

#### **Telephone**

+44 0123546

#### **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.4) Type of the contracting authority**

Body governed by public law

**I.5) Main activity**

Other activity

Fusion Research

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**Section II: Object**

**II.1) Scope of the procurement**

**II.1.1) Title**

SBRI Competition: Fusions Industry Challenges Cycle 2 Phase 1

Reference number

T/VT073/22

**II.1.2) Main CPV code**

- 73110000 - Research services

### **II.1.3) Type of contract**

Services

### **II.1.4) Short description**

This is a Small Business Research Initiative (SBRI) competition funded by the UK Atomic Energy Authority (UKAEA). The aim of the competition is to develop solutions to fusion energy challenges in two themes for key priority areas.

1. Driving up fusion power plant performance with innovative heating and cooling systems.

2. Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

This is phase 1 of a potential 2 phase competition. The decision to proceed with phase 2 will depend on the outcomes from phase 1 and assessment of a separate application into a subsequent phase 2 competition.

Only the successful applicants from phase 1 will be invited to apply to take part in phase 2.

### **II.1.6) Information about lots**

This contract is divided into lots: Yes

### **II.1.7) Total value of the procurement (excluding VAT)**

Value excluding VAT: £3,105,982

## **II.2) Description**

### **II.2.1) Title**

Driving up fusion power plant performance with innovative heating and cooling systems.

Lot No

1

### **II.2.2) Additional CPV code(s)**

- 73110000 - Research services

### **II.2.3) Place of performance**

NUTS codes

- UKJ14 - Oxfordshire

### **II.2.4) Description of the procurement**

A Pre-Commercial Procurement Activity under SBRI

Driving up fusion power plant performance with innovative heating and cooling systems.

Projects can focus on one or more of the following under this theme:

Microwave heating challenges:

high power, long pulse microwave sources with high electrical efficiency (greater than or equal to 55%)

development of special waveguide components, for example, diamond window assemblies, power monitors, expansion units, vacuum pumping access

improvements on the high voltage power supplies (50kV) for reduced voltage ripple in a compact assembly while maintaining high electrical efficiency (greater than or equal to 98%)

development of optical mirrors for evacuation of high thermal loads (approximately 5MW/m<sup>2</sup>)

high precision optical alignment assemblies for the free space to waveguide coupling

Neutral particle beam heating challenges:

negative ion beam system with high electrical efficiency (greater than 60%)

improved beam neutralisation efficiency, for example, Plasma or Laser Neutralisers

development of residual ion energy recovery.

improved negative ion source efficiency with caesium free operation

reduction in scale; improved ion optics, source uniformity and power handling to reduce size of components

development of actively cooled high heat flux components (approximately 5-10 MW/m<sup>2</sup>) with reactor relevant materials

development of fault tolerant 1-2MV fast switching power supply systems with high electrical efficiency

development of vacuum pumping systems with pumping speeds of millions of litres per second which allow continuous operation

Reactor high heat flux components:

jet impingement cooling technology transfer

sCO<sub>2</sub> as coolant

diamond components for heat dispersion

novel discrete limiter designs, for example, vaporisation layers, speed of maintenance or increased heat flux performance

has context menu

## **II.2.5) Award criteria**

Quality criterion - Name: How well does the proposed idea/solution/technologies meet the challenge as detailed in the brief? / Weighting: 14.28571428571428571

Quality criterion - Name: How valid is the technical approach that will be adopted? / Weighting: 14.28571428571428571

Quality criterion - Name: How innovative is this project? To what extent does the project develop or employ novel concepts, approaches, methodologies, tools or technologies for this area? / Weighting: 14.28571428571428571

Quality criterion - Name: To what extent does the proposal show a clear plan for establishing technical and commercial feasibility and the development of a working prototype? / Weighting: 14.28571428571428571

Quality criterion - Name: To what extent does the applicant appear to have the right skills, capabilities and experience to deliver the intended benefits? / Weighting: 14.28571428571428571

Quality criterion - Name: Is there a clear commercial potential to lead to a marketable product, process or service and a clear plan to deliver that and route to market? /

Weighting: 14.28571428571428571

Cost criterion - Name: How appropriate is the proposal financially? Is the overall budget realistic and justified in terms of the aims and methods proposed? Are the costs appropriate and justified? / Weighting: 14.28571428571428571

### **II.2.11) Information about options**

Options: No

### **II.2.13) Information about European Union Funds**

The procurement is related to a project and/or programme financed by European Union funds: No

### **II.2.14) Additional information**

<https://apply-for-innovation-funding.service.gov.uk/competition/1156/overview#summary>

## **II.2) Description**

### **II.2.1) Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

Lot No

2

### **II.2.2) Additional CPV code(s)**

- 73110000 - Research services

### **II.2.3) Place of performance**

NUTS codes

- UKJ14 - Oxfordshire

### **II.2.4) Description of the procurement**

A Pre-Commercial Procurement Activity under SBRI

Improving fusion power plant availability with novel fusion materials, technology, and manufacture

Projects can focus on one or more of the following under this theme:

fusion grade steels, for example, reduced activation Ferritic or Martensitic (RAFM) development, including, Castable Nanostructured Alloys (CNAs), and Oxide Dispersion Strengthened (ODS) steels

liquid Metal testing, for example Li, PbLi and Pb

scalable or large volume manufacture of tritium breeder materials

irradiation resilient joining materials and processes, for example, Tungsten based armour materials, CuCrZr or vacuum vessel ports including fused silica, Mo, MgAl<sub>2</sub>O<sub>4</sub>, ZnS, ZnSe

novel manufacture of multi-metre complex structures and components for fusion environments testing and evaluation

scalable or large volume manufacture of neutron shielding materials

manufacture of complex geometry components in refractory metals

additive manufacture for non-water coolant components

anti-corrosion coatings or novel application methods of corrosion and tritium barrier coatings for complex geometry components

development of on-line activation measurements

in situ health monitoring of fusion reactor components

novel inspection of interfaces in complex multi-material fusion components

radiation hard improvements for fusion equipment and plant

novel energy conversion technology

high temperature superconductors

composite materials such as silicon carbide fibre, reinforced silicon carbide

novel materials for radiation hard electronic components

#### **II.2.5) Award criteria**

Quality criterion - Name: How well does the proposed idea/solution/technologies meet the challenge as detailed in the brief? / Weighting: 14.28571428571428571

Quality criterion - Name: How valid is the technical approach that will be adopted? / Weighting: 14.28571428571428571

Quality criterion - Name: How innovative is this project? To what extent does the project develop or employ novel concepts, approaches, methodologies, tools or technologies for this area? / Weighting: 14.28571428571428571

Quality criterion - Name: To what extent does the proposal show a clear plan for establishing technical and commercial feasibility and the development of a working prototype? / Weighting: 14.28571428571428571

Quality criterion - Name: To what extent does the applicant appear to have the right skills, capabilities and experience to deliver the intended benefits? / Weighting: 14.28571428571428571

Quality criterion - Name: Is there a clear commercial potential to lead to a marketable product, process or service and a clear plan to deliver that and route to market? / Weighting: 14.28571428571428571

Cost criterion - Name: How appropriate is the proposal financially? Is the overall budget realistic and justified in terms of the aims and methods proposed? Are the costs appropriate and justified? / Weighting: 14.28571428571428571

#### **II.2.11) Information about options**

Options: No

#### **II.2.13) Information about European Union Funds**

The procurement is related to a project and/or programme financed by European Union funds: No

#### **II.2.14) Additional information**

<https://apply-for-innovation-funding.service.gov.uk/competition/1156/overview#summary>



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## Section IV. Procedure

### IV.1) Description

#### IV.1.1) Type of procedure

Award of a contract without prior publication of a call for competition in the cases listed below

- The procurement falls outside the scope of application of the regulations

Explanation:

This was a pre-commercial procurement activity lead by Innovate UK. All information relating to the tender can be found here : Competition overview - SBRI: Fusion Industry Challenges - phase 1 - Innovation Funding Service ([apply-for-innovation-funding.service.gov.uk](https://apply-for-innovation-funding.service.gov.uk)) . An open, transparent and fair procurement process was still adhered to despite this RTM falling outside of PCR15.

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

The procurement is covered by the Government Procurement Agreement: Yes

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## Section V. Award of contract

### Lot No

1

### Title

Driving up fusion power plant performance with innovative heating and cooling systems.

A contract/lot is awarded: Yes

### V.2) Award of contract

#### V.2.1) Date of conclusion of the contract

26 August 2022

#### V.2.2) Information about tenders

Number of tenders received: 7

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

CAL GAVIN LIMITED

Alcester

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £88,150

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**Section V. Award of contract**

**Lot No**

1

**Title**

Driving up fusion power plant performance with innovative heating and cooling systems.

A contract/lot is awarded: Yes

**V.2) Award of contract**

**V.2.1) Date of conclusion of the contract**

26 August 2022

### **V.2.2) Information about tenders**

Number of tenders received: 7

The contract has been awarded to a group of economic operators: No

### **V.2.3) Name and address of the contractor**

TWI LIMITED

Cambridge

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £195,989

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## **Section V. Award of contract**

### **Lot No**

1

### **Title**

Driving up fusion power plant performance with innovative heating and cooling systems.

A contract/lot is awarded: Yes

## **V.2) Award of contract**

### **V.2.1) Date of conclusion of the contract**

26 August 2022

**V.2.2) Information about tenders**

Number of tenders received: 7

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

IDOM (UK) LIMITED

London

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £137,654

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**Section V. Award of contract**

**Lot No**

1

**Title**

Driving up fusion power plant performance with innovative heating and cooling systems.

A contract/lot is awarded: Yes

**V.2) Award of contract**

**V.2.1) Date of conclusion of the contract**

26 August 2022

**V.2.2) Information about tenders**

Number of tenders received: 7

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

The University of Manchester

Manchester

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £137,556

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**Section V. Award of contract**

**Lot No**

2

**Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

## **V.2) Award of contract**

### **V.2.1) Date of conclusion of the contract**

26 August 2022

### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

### **V.2.3) Name and address of the contractor**

University of Birmingham

Birmingham

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £184,392

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## **Section V. Award of contract**

### **Lot No**

2

### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

## **V.2) Award of contract**

### **V.2.1) Date of conclusion of the contract**

26 August 2022

### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

### **V.2.3) Name and address of the contractor**

FULL MATRIX LTD

Cambridge

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £116,402

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## **Section V. Award of contract**

**Lot No**

2

**Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

**V.2) Award of contract****V.2.1) Date of conclusion of the contract**

26 August 2022

**V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

ALLOYED LIMITED

Yarnton

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £195,568

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**Section V. Award of contract**



## **Lot No**

2

## **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

### **V.2) Award of contract**

#### **V.2.1) Date of conclusion of the contract**

26 August 2022

#### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

#### **V.2.3) Name and address of the contractor**

QDOT TECHNOLOGY LTD

Thame

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £105,048

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## **Section V. Award of contract**

### **Lot No**

2

### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

### **V.2) Award of contract**

#### **V.2.1) Date of conclusion of the contract**

26 August 2022

#### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

#### **V.2.3) Name and address of the contractor**

ASTRAL NEUTRONICS LTD

London

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £199,038

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## **Section V. Award of contract**

### **Lot No**

2

### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

### **V.2) Award of contract**

#### **V.2.1) Date of conclusion of the contract**

26 August 2022

#### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

#### **V.2.3) Name and address of the contractor**

LASER ADDITIVE SOLUTIONS LTD

Doncaster

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £199,595

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**Section V. Award of contract**

**Lot No**

2

**Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

**V.2) Award of contract**

**V.2.1) Date of conclusion of the contract**

26 August 2022

**V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

ARCHER TECHNICOAT LIMITED

High Wycombe

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £176,443

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## **Section V. Award of contract**

### **Lot No**

2

### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

### **V.2) Award of contract**

#### **V.2.1) Date of conclusion of the contract**

26 August 2022

#### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

#### **V.2.3) Name and address of the contractor**

OXFORD SIGMA

Didcot

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £194,092

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### **Section V. Award of contract**

#### **Lot No**

2

#### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

#### **V.2) Award of contract**

##### **V.2.1) Date of conclusion of the contract**

26 August 2022

##### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

##### **V.2.3) Name and address of the contractor**

3-SCI LTD

Farnborough

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £154,367

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### **Section V. Award of contract**

#### **Lot No**

2

#### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

#### **V.2) Award of contract**

##### **V.2.1) Date of conclusion of the contract**

26 August 2022

##### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

##### **V.2.3) Name and address of the contractor**

FRAZER-NASH CONSULTANCY LIMITED

Leatherhead

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £70,182

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## **Section V. Award of contract**

### **Lot No**

2

### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

### **V.2) Award of contract**

#### **V.2.1) Date of conclusion of the contract**

26 August 2022

#### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

#### **V.2.3) Name and address of the contractor**



DUALITY QUANTUM PHOTONICS LTD

Bristol

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

#### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £190,213

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## **Section V. Award of contract**

### **Lot No**

2

### **Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

### **V.2) Award of contract**

#### **V.2.1) Date of conclusion of the contract**

26 August 2022

#### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

Swansea University

Swansea

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £168,601

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**Section V. Award of contract**

**Lot No**

2

**Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

**V.2) Award of contract**

**V.2.1) Date of conclusion of the contract**

26 August 2022

**V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

TWI LIMITED

Cambridge

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £197,627

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**Section V. Award of contract**

**Lot No**

2

**Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

**V.2) Award of contract**

**V.2.1) Date of conclusion of the contract**

26 August 2022

**V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

**V.2.3) Name and address of the contractor**

JACOBS U.K. LIMITED

London

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

No

**V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £195,067

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**Section V. Award of contract**

**Lot No**

2

**Title**

Improving fusion power plant availability with novel fusion materials, technology, and manufacture.

A contract/lot is awarded: Yes

## **V.2) Award of contract**

### **V.2.1) Date of conclusion of the contract**

26 August 2022

### **V.2.2) Information about tenders**

Number of tenders received: 43

The contract has been awarded to a group of economic operators: No

### **V.2.3) Name and address of the contractor**

CASTINGS TECHNOLOGY INTERNATIONAL LIMITED

Rotherham

Country

United Kingdom

NUTS code

- UK - United Kingdom

The contractor is an SME

Yes

### **V.2.4) Information on value of contract/lot (excluding VAT)**

Total value of the contract/lot: £199,999

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## **Section VI. Complementary information**

### **VI.4) Procedures for review**

#### **VI.4.1) Review body**

UK Atomic Energy Authority

Culham Science Centre

Abingdon

OX14 3DB

Country

United Kingdom

Internet address

<https://www.gov.uk/government/organisations/uk-atomic-energy-authority>

#### **VI.4.2) Body responsible for mediation procedures**

UK Atomic Energy Authority

Culham Science Centre

Abingdon

OX14 3DB

Country

United Kingdom

Internet address

<https://www.gov.uk/government/organisations/uk-atomic-energy-authority>

#### **VI.4.3) Review procedure**

Precise information on deadline(s) for review procedures

VI.4.2)Body responsible for mediation procedures

#### VI.4.3) Review procedure

Precise information on deadline(s) for review procedures:

Pre-Commercial Procurement Activity. Not subject to Public Contract Regulation 2015.

#### **VI.4.4) Service from which information about the review procedure may be obtained**

UK Atomic Energy Authority

Culham Science Centre

Abingdon

OX14 3DB

Country

United Kingdom

Internet address

<https://www.gov.uk/government/organisations/uk-atomic-energy-authority>