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Tender

## **DLSITT1014 - Diamond-II Booster BF and Quadrupole Power Converters**

Diamond Light Source Ltd

F02: Contract notice

Notice identifier: 2024/S 000-006974

Procurement identifier (OCID): ocds-h6vhtk-044579

Published 5 March 2024, 10:54am

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

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

Diamond Light Source Ltd

Harwell Science and Innovation Campus

Didcot

OX11 0DE

#### **Contact**

Debbie Pryor

#### **Email**

[procurement@diamond.ac.uk](mailto:procurement@diamond.ac.uk)

#### **Telephone**

+44 1235567575

#### **Country**

United Kingdom

**Region code**

UKJ14 - Oxfordshire

**Companies House**

4375679

**Internet address(es)**

Main address

<https://www.diamond.ac.uk>

**I.3) Communication**

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

<https://www.diamondtenders@diamond.ac.uk/Home.aspx>

Additional information can be obtained from the above-mentioned address

Tenders or requests to participate must be submitted electronically via

<https://www.diamondtenders@diamond.ac.uk>

Tenders or requests to participate must be submitted to the above-mentioned address

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

Body governed by public law

**I.5) Main activity**

Other activity

Scientific Research

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## **Section II: Object**

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

#### **II.1.1) Title**

DLSITT1014 - Diamond-II Booster BF and Quadrupole Power Converters

Reference number

DLSITT1014

#### **II.1.2) Main CPV code**

- 31121110 - Power converters

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

Supplies

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

Located on the Harwell Science and Innovation Campus in Oxfordshire, Diamond Light Source (DLS) is a leading-edge facility for science, engineering and innovation. Diamond allows researchers from academia and industry to investigate the structure and behaviour of the world around us at the atomic and molecular level.

To continue delivering the world-changing science that Diamond enables, the facility is being upgraded to Diamond-II, a co-ordinated programme of development that combines a major machine upgrade with new instruments and complementary improvements to optics, detectors, sample environment and delivery capabilities, and computing, as well as integrated and correlative methods. This will be transformative in speed and spatial resolution and will offer users streamlined access to enhanced instruments for life and physical sciences.

The subject of this call for tender are the power converters for the Booster BF and quadrupole magnets as indicated below.

BF

Number of Magnets: 36

Connection Arrangement: Series

Number of Power Converters: 1

Quadrupole

Number of Magnets: 4 per converter

Connection Arrangement: Series

Number of Power Converters: 5

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

This contract is divided into lots: No

## **II.2) Description**

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

NUTS codes

- UKJ14 - Oxfordshire

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

Located on the Harwell Science and Innovation Campus in Oxfordshire, Diamond Light Source (DLS) is a leading-edge facility for science, engineering and innovation. Diamond allows researchers from academia and industry to investigate the structure and behaviour of the world around us at the atomic and molecular level.

To continue delivering the world-changing science that Diamond enables, the facility is being upgraded to Diamond-II, a co-ordinated programme of development that combines a major machine upgrade with new instruments and complementary improvements to optics, detectors, sample environment and delivery capabilities, and computing, as well as integrated and correlative methods. This will be transformative in speed and spatial resolution and will offer users streamlined access to enhanced instruments for life and physical sciences.

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Number of Magnets: 4 per converter

Connection Arrangement: Series

Number of Power Converters: 5

The solution foreseen for both types of power converters is two quadrant H-Bridges fed from a DC bus/capacitor. The voltage on the capacitor is controlled by a boost regulator fed from an AC/DC SMPS, as shown in Diagrams 1 and 2. This has the advantage of presenting a fairly constant load to the ac distribution system, with energy circulating between the DC bus capacitor bank and magnets. The Booster Quadrupole power converters could have a common DC bus/capacitor and AC/DC SMPS. The contractor may propose an alternative arrangement. There will be three variants of the Booster Quadrupole power converters. They will all have the same power circuit, but two variants will have reduced current control ranges to achieve greater repeatability, resolution, and stability. This will be achieved by fitting different DCCTs and/or current sense resistors.

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

Quality criterion - Name: Technical Solution & Quality / Weighting: 50

Quality criterion - Name: Experience of modifying standard items to meet customer requirements / Weighting: 5

Quality criterion - Name: Commercial / Weighting: 5

Quality criterion - Name: Delivery / Weighting: 5

Price - Weighting: 35

#### **II.2.7) Duration of the contract, framework agreement or dynamic purchasing system**

Duration in months

21

This contract is subject to renewal

No

#### **II.2.10) Information about variants**

Variants will be accepted: No

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

Options: No

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## **Section IV. Procedure**

### **IV.1) Description**

#### **IV.1.1) Type of procedure**

Open procedure

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

The procurement is covered by the Government Procurement Agreement: Yes

### **IV.2) Administrative information**

#### **IV.2.2) Time limit for receipt of tenders or requests to participate**

Date

8 April 2024

Local time

12:00pm

#### **IV.2.4) Languages in which tenders or requests to participate may be submitted**

English

#### **IV.2.6) Minimum time frame during which the tenderer must maintain the tender**

Duration in months: 3 (from the date stated for receipt of tender)

#### **IV.2.7) Conditions for opening of tenders**

Date

8 April 2024

Local time

1:00pm

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## **Section VI. Complementary information**

### **VI.1) Information about recurrence**

This is a recurrent procurement: No

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

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

Diamond Light Source

Harwell Science and Innovation Campus

Didcot

OX11 0ED

Country

United Kingdom