Tender

Tender for the Supply and Installation an Ammonia Storage & Vaporisation Unit to the University of Birmingham

THE UNIVERSITY OF BIRMINGHAM

F02: Contract notice
Notice identifier: 2022/S 000-023937
Procurement identifier (OCID): ocds-h6vhtk-036355
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Section I: Contracting authority

I.1) Name and addresses

THE UNIVERSITY OF BIRMINGHAM

Chancellors Close

BIRMINGHAM

B152TT

Contact

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Email

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Country

United Kingdom

Region code

UKG31 - Birmingham

Charity Commission (England and Wales)

X7237

Internet address(es)

Main address

www.birmingham.ac.uk/index.aspx

I.3) Communication

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

www.in-tendhost.co.uk/universityofbirmingham/aspx/Home

Additional information can be obtained from the above-mentioned address

Tenders or requests to participate must be submitted electronically via

www.in-tendhost.co.uk/universityofbirmingham/aspx/Home

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Education

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

Tender for the Supply and Installation an Ammonia Storage & Vaporisation Unit to the University of Birmingham

Reference number

SC11053/22

II.1.2) Main CPV code

- 24110000 - Industrial gases

II.1.3) Type of contract

Supplies

II.1.4) Short description

The University of Birmingham invites tenders for the supply of an ammonia storage and vaporisation unit capable of supplying ammonia at:

• 70kg/hr

• 8.0 Barg

• ?25oC

The unit is part of a BEIS funded programme to construct an ammonia cracking plant to produce green hydrogen. The Tyseley Ammonia Project will design, build, commission, and operate the world's largest and most efficient ammonia to hydrogen conversion unit, demonstrating 200kg/day production of transport-grade hydrogen. It will be located at Tyseley Energy Park and co-located alongside an existing refuelling station. The hydrogen will be used to refuel local vehicles including 20 fuel cell buses that have been ordered by Birmingham City Council. The ammonia cracker combines decomposition and purification stages into a single, compact unit, with lower operational temperatures due to recent innovations in membrane technology. The project aims to dramatically improve the efficiency and economics of ammonia cracking, accelerate the development of hydrogen solutions in the UK and position the country at the forefront of an emerging global market.

The project is led by Gemserv, with partners EQUANS, H2SITE, Storengy, Yara,

University of Birmingham and Tyseley Energy Park.

The ammonia unit will be integrated into ammonia cracking plant, being provided by other partners with operations being the responsibility of EQUANS.

This project may be funded by the European Regional Development Fund (ERDF) or;

- European Structural and Investment Fund (ESIF) or;

- Research Councils UK (RCUK), the strategic partnership of the UK's seven Research Councils.

II.1.6) Information about lots

This contract is divided into lots: No

II.2) Description

II.2.2) Additional CPV code(s)

- 24413000 - Ammonia

II.2.3) Place of performance

NUTS codes

- UKG31 - Birmingham

II.2.4) Description of the procurement

An initial FEED study for the ammonia storage and vaporisation unit has been commissioned from STAR technical solutions and the design is set out in the series of accompanying documents:

• 136800-001B.Ammonia P&ID.pdf [Ammonia plant P&ID document]

• 136800-002A.Equipment Layout.pdf [pdf of Equipment layout]

• 136800-002A.Equipment Layout.dwg [drawing file of Equipment layout]

• 136800-003A.Calulations.pdf [Calculations used in the plant design]

• 136800-004B.Principles of Operation.pdf [Description of how plant should operate]

• 136800-005A.Concept Design Ammonia Hazard Assessment.pdf

• 136800-006A.Hazard and Operability Study.pdf

• HAZOP Drawing.pdf

• HAZOP Keywords.pdf

• Hsg71 - Chemical Warehousing.pdf

The tender should comply with the specification as set out in these documents. All documents should be considered in detail as part of the tendering process.

The design of the ammonia storage and vaporisation unit base is to deliver ammonia at:

• 70kg/hr

• 8.0 Barg

• ?25oC

Further requirements/considerations include (see documents for details):

• Small quantities of water are contained in ammonia when supplied by BOC. When transferring ammonia liquid from the drum tanks, water is also transferred. This added water must not affect the operation of the vaporiser. A system to separate the water from liquid ammonia must be included. The separated water must have a system to allow it to be decanted safely.

• The facility may require the ammonia delivery pressure to be reduced or increased. The design must be capable of supplying ammonia vapour at stable pressures between 6 to 10 Barg.

• The drum tank weight must be measured in position to know if the drum tanks are ready to be swapped out.

• Under no circumstance, the equipment operation will result in any back filling of the BOC drum tanks with liquid ammonia resulting in overcharging the drum tanks.

• The safety systems that must be included are those detailed in BS EN378 Part 1 to 4 and any standards referenced. Ammonia is used in refrigeration systems and all the safety requirements within these standards apply to this project.

• The adding of ammonia to the system must be simple; no venting of liquid when removing hoses and any vapour must be vented through water in a controlled manner

II.2.5) Award criteria

Quality criterion - Name: Compliance to the Specifications / Weighting: 40

Quality criterion - Name: After Sales and Technical back up / Weighting: 10

Quality criterion - Name: Delivery and Training / Weighting: 10

Quality criterion - Name: Sustainability and Environmental / Weighting: 5

Quality criterion - Name: Standard Supplier Questionnaire (SQ) / Weighting: 10

Price - Weighting: 25

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

End date

1 May 2023

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

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

26 September 2022

Local time

11:59am

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

English

IV.2.7) Conditions for opening of tenders

Date

26 September 2022

Local time

12:00pm

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

University of Birmingham

Birmingham

B15 2TT

Country

United Kingdom