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Tender

## **1NextGen Electrolysis - Blending Equipment**

Wales & West Utilities Ltd

F05: Contract notice – utilities

Notice identifier: 2024/S 000-035907

Procurement identifier (OCID): ocds-h6vhtk-04b447

Published 6 November 2024, 12:26pm

### **Section I: Contracting entity**

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

Wales & West Utilities Ltd

Wales & West House, Spooner Close, Coedkernew

NEWPORT

NP10 8FZ

#### **Email**

[nicci.birchall@wwutilities.co.uk](mailto:nicci.birchall@wwutilities.co.uk)

#### **Country**

United Kingdom

#### **Region code**

UK - United Kingdom

#### **Companies House**

05046791

**Internet address(es)**

Main address

<https://www.wwutilities.co.uk/>

**I.3) Communication**

Access to the procurement documents is restricted. Further information can be obtained at

<https://sourcing4wwu.bravosolution.co.uk>

Additional information can be obtained from the above-mentioned address

Tenders or requests to participate must be submitted electronically via

<https://sourcing4wwu.bravosolution.co.uk>

**I.6) Main activity**

Production, transport and distribution of gas and heat

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**Section II: Object**

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

**II.1.1) Title**

1NextGen Electrolysis - Blending Equipment

Reference number

WWU1440

**II.1.2) Main CPV code**

- 39340000 - Gas network equipment
  - KA06 - For the gas industry

**II.1.3) Type of contract**

## Supplies

### II.1.4) Short description

WWU require a supplier to design and install a hydrogen blending unit and associated equipment to blend up to a maximum of 20% hydrogen by volume into the customers' existing natural gas supply. The injection will take place downstream of the meter where the end use is combustion to provide heat to the customers existing process.

The customer process is non-interruptible and should the blend ratio go above the maximum allowable or if there is any failure of the hydrogen supply the blending infrastructure must be able to revert to 100% natural gas in order to maintain supply to the customer.

The blending infrastructure will need to be able to meet the requirements set out in the scope. These requirements are taken from the recently published FUNCTIONAL SPECIFICATION FOR HYDROGEN BLENDING INFRASTRUCTURE a copy of which can be found in Appendix 1 in the scope. WWU will own and operate the hydrogen blending unit and any associated equipment which will be located at the customers site in line with Model 2 in the functional blending spec.

### II.1.6) Information about lots

This contract is divided into lots: Yes

Tenders may be submitted for one lot only

Maximum number of lots that may be awarded to one tenderer: 1

## II.2) Description

### II.2.1) Title

Lot 1 Equipment Supply only

Lot No

1

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

- 31682210 - Instrumentation and control equipment
- 38420000 - Instruments for measuring flow, level and pressure of liquids and gases

- 38810000 - Industrial process control equipment
- 39341000 - Gas pressure equipment

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

NUTS codes

- UK - United Kingdom

Main site or place of performance

Wales & South West of England

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

Blending equipment

Natural gas inlet: Pressure: 75 mbar inlet, Temp: -5 to 40 C, Max consumption: Daily - 25384.11 kWh, Max consumption: ½ Hourly - 1191.88 kWh, Mean consumption: Daily - 20175.21 kWh, Mean consumption: ½ Hourly - 435.96 kWh

Hydrogen: Max H2 production: 45scmh (4.5kgH2/hr), Pressure: 2 to 7 bar from electrolyser but will be reduced to match the NG inlet, Temp: 60C from electrolyser but short run of pipe to blending tee so -5 to 60C

Blended outlet: Injection into existing 3" steel pipework at 75 mbar

The blending unit will be required to blend up to a maximum of 20% hydrogen by volume into the customers' existing natural gas supply. The injection will take place downstream of the meter where the end use is combustion to provide heat to the customers existing process. The customer process is non-interruptible and should the blend ratio go above the maximum allowable or if there is any failure of the hydrogen supply the blending infrastructure must be able to revert to 100% natural gas in order to maintain supply to the customer.

The blending infrastructure will need to be able to meet the requirements set out in the below Requirements section. These requirements are taken from the recently published FUNCTIONAL SPECIFICATION FOR HYDROGEN BLENDING INFRASTRUCTURE. WWU will own and operate the hydrogen blending unit and any associated equipment which will be located at the customers site in line with Model 2 in the functional blending spec.

## **FUNCTIONAL REQUIREMENTS**

**HYDROGEN PRESSURE REGULATION AND METERING** Hydrogen pressure regulation and control is required to ensure there is sufficient pressure at the point of injection into the customers system. Pressure regulation and control shall be to IGEM/TD/13 and or IGEM/TD/23. Hydrogen volume and energy flowrate are required and the metering system shall be appropriate for hydrogen that is compliant with Table 5 of IGEM/H/1 and Table 2 of PAS 4444.

**ACCURACY** The hydrogen metering system should meet the accuracy requirements of Table 2 of the Functional Blending Specification in Appendix 1.

**HYDROGEN/GCV CONTROL** Hydrogen injection rate shall be controlled so as to achieve:

a minimum gross calorific value of gas at the comingled point

a hydrogen content of the blend that is no greater than a maximum of 20% by volume

a Wobbe index of the blend that is no less than the lower Wobbe limit permitted by Schedule 3 of the GSMR.

**GAS SAMPLING AND ANALYSIS**

**HYDROGEN SUPPLY** Gas sampling and analysis shall continuously or continually monitor the hydrogen supplied to the hydrogen blending unit .

**COMINGLED POINT** Gas sampling and analysis shall continuously or continually monitor the blend at the comingled point and provide confirmation that it is compliant the minimum requirements agreed with WWU. A schedule of parameters that shall be monitored is given in Table 1 of the Functional Blending Specification.

Calorific value shall be determined using an instrument approved by Ofgem for determination of calorific values for the purposes of determining the reference point against which flow weighted average calorific value (FWACV) capping shall apply. The instrument shall comply with the requirements listed in an appropriate Letter of Approval from Ofgem.

**ACCURACY** The gas analysis system(s) shall meet the accuracy requirements of Table 3 of the Functional Blending Specification in Appendix 1.

**REMOTELY OPERATED VALVE** A Remotely Operated Valve (ROV) shall be supplied, which shall be capable of manual remote or automatic closure in the event of variation in blend outside of the agreed conditions or inability to provide sufficient blending where this is practiced. A more detailed description of trip and reset philosophy is given in the Gas Quality and Supervisory system functional block. The means of actuation of the ROV shall be the choice of WWU.

**FWACV FUNCTIONALITY** The system shall deliver the functionality required for the FWACV regime, namely requirements set out in the Gas (COTE) Regulations. Conditions currently specified include the following:

Acquisition and storage of gross CV of the supplied hydrogen from the approved CV determination device, together with a flag indicating its quality/suitability for use. For non-continual CV determination devices, the System - CV determination device interface shall be such that only one value of each CV determination is acquired.

Acquisition and storage of instantaneous volumetric flowrate of hydrogen at the time of acquisition of gross CV.

Initiation of daily calibration of CV determination device.

Automated tests of apparatus and equipment at periods not exceeding 35 days in accordance with Regulation 6(e) of the Gas (COTE) Regulations. The facility to manually initiate tests of apparatus and equipment either by, or at the request of, the Gas Examiner. Provision of a report of results of automated or manual tests in accordance with Regulation 6(e) of the Gas (COTE) Regulations.

Calculation of the daily average CV of the hydrogen at the end of each Gas Day in the manner specified by the Letter of Direction or by WWU depending on site specific conditions. This will require confirmation of the quality of individual records (records are Good if the CV determination device is operating within agreed limits) and averaging of only those records that are Good and for which gas is flowing past the sample point. In addition, a flag shall be stored indicating whether the resulting daily average CV is Valid (i.e., the maximum time between Good records is less than 8 hours). Gross CV values during calibration or tests of apparatus and equipment shall not be included for averaging.

Acquisition and storage of integrated daily volume at the end of the Gas Day.

In addition to local storage of individual data acquired, appropriate means of secure transfer of data to WWU

Any software and hardware solutions are acceptable provided they deliver the required FWACV functionality, but WWU will require demonstration that the required functionality has been delivered.

**GAS QUALITY AND SUPERVISORY SYSTEM** The Gas Quality and Supervisory system shall monitor hydrogen and blend quality signals from the hydrogen blending unit instrumentation, the remote monitoring unit instrumentation and the delivery facility instrumentation. Monitoring shall be continuous or continual and provide confirmation that the blend at the comingled point is compliant with the requirements set out by Table 1 of the functional blending specification.

In the event of an excursion in any of the parameters or any other parameters agreed by risk assessment (see 6.2 in the full blending specification document) the trip system shall initiate closure of the ROV on the hydrogen feed and prevent further injection of hydrogen into the customer process. The system should revert to a pure natural gas feed to ensure that customer operations are not interrupted.

The limit values in the parameters of Table 1 are indicative and site-specific values shall be agreed during design approval and may be subject to review if risk assessment confirms such a requirement (see 6.2 in the full blending specification document). All alarms and trips shall therefore be configurable.

If closure of the ROV has been initiated because of non-compliance with the parameters in Table 1 or any other parameters agreed by risk assessment (see 6.2 in the full blending specification document ), then its subsequent opening shall be under the sole control of WWU.

## DESIGN APPROVAL ASSETS OWNED BY WWU

Design approval for all assets owned by WWU shall be managed in accordance with IGEM/GL/5 and T/PM/GL/5.

## TESTING ASSETS OWNED BY WWU

Pressure testing of all pressure containing components and systems shall be carried out in accordance with Management/Work Procedure PT/1 pertaining to WWU. Testing of electrical and instrument systems and equipment shall be carried out in accordance with BS 7671 and BS EN 60079-14.

## COMMISSIONING AND INITIAL VALIDATION

### GENERAL REQUIREMENTS

All personnel carrying out commissioning and initial validation shall be competent and adequately trained to do so.

A written commissioning procedure shall be agreed and shall take into account relevant Permit to Work procedures.

Initial validation shall be carried out in order to demonstrate the accuracy of the measurement system complies with the requirements of Table 2. Suitable systems, software or procedures shall be provided or agreed to ensure that compliance can be demonstrated.

## ASSETS OWNED BY WWU

Following satisfactory commissioning, validation of the flow and gas quality measurement system shall be carried out in accordance with the relevant parts of T/PR/ME/2 or an alternative documented procedure if appropriate.

## OPERATION

### CONTROL AND MONITORING OF CALORIFIC VALUE

The requirements for control and monitoring of calorific value shall be agreed in the with WWU.

WWU shall at appropriate intervals calculate an appropriate target CV so as to minimise the risk of FWACV capping and communicate its value to the DFO and the hydrogen blending unit.

The hydrogen injection flowrate shall be controlled so as to ensure that instantaneous CV at the comingled point does not fall below the prevailing target CV, subject to:

hydrogen content of the gas at the comingled point shall not be greater than that permitted by WWU

Wobbe index of the gas at the comingled point shall not be less than that permitted by the WWU.

### CONTROL AND MONITORING OF GAS QUALITY

Gas Quality of the gas at the comingled point shall be monitored so as to ensure compliance with the requirements set out by WWU. The frequency of monitoring shall be determined though measurement risk assessment.

The supplier will also need to consider :

- Carry out a full Hazid/Hazop for integration into the whole system.
- Identify the impact on the downstream process
- Any potential storage needed to require a consistent blend

Not required

- Odorant injection

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



Price is not the only award criterion and all criteria are stated only in the procurement documents

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

Start date

1 January 2025

This contract is subject to renewal

No

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

Variants will be accepted: Yes

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

Options: Yes

Description of options

The contract term may be extended to accommodate delivery of the project.

## **II.2) Description**

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

Equipment Supply & Install Complete

Lot No

2

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

- 45333100 - Gas regulation equipment installation work

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

NUTS codes

- UK - United Kingdom

Main site or place of performance

Wales & The South West of England

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

Connect electrolyser to inlet of blending equipment via designed pipework.

Connect existing natural gas pipework into blending equipment inlet.

Connect blending equipment outlet to the customers' existing gas service , downstream of the meter

Carry out all civils for the Hydrogen blending equipment and pipework.

Note : WWU reserve the right to carry out Work package 2 to inform future learnings of the gas networks activities.

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

Price is not the only award criterion and all criteria are stated only in the procurement documents

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

Start date

1 January 2025

This contract is subject to renewal

No

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

Variants will be accepted: Yes

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

Options: Yes

Description of options

The contract term may be extended to accommodate the delivery of the project.

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## **Section III. Legal, economic, financial and technical information**

### **III.1) Conditions for participation**

#### **III.1.1) Suitability to pursue the professional activity, including requirements relating to enrolment on professional or trade registers**

List and brief description of conditions

To be identified in the Invitation to Tender if required.

#### **III.1.2) Economic and financial standing**

Selection criteria as stated in the procurement documents

#### **III.1.3) Technical and professional ability**

Selection criteria as stated in the procurement documents

#### **III.1.4) Objective rules and criteria for participation**

List and brief description of rules and criteria

To be identified in the Invitation to Tender if required.

#### **III.1.6) Deposits and guarantees required**

To be identified in the Invitation to Tender if required.

#### **III.1.7) Main financing conditions and payment arrangements and/or reference to the relevant provisions governing them**

To be identified in the Invitation to Tender if required.

#### **III.1.8) Legal form to be taken by the group of economic operators to whom the contract is to be awarded**

In the event that Contractors form a joint venture, partnership or other form of consortia, joint and several liability of each participant will be required by the Contracting Entity.

### **III.2) Conditions related to the contract**

#### **III.2.3) Information about staff responsible for the performance of the contract**

Obligation to indicate the names and professional qualifications of the staff assigned to performing the contract

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## **Section IV. Procedure**

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

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

Restricted procedure

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

The procurement is covered by the Government Procurement Agreement: No

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

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

Date

6 December 2024

Local time

12:00pm

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

English

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## **Section VI. Complementary information**

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

This is a recurrent procurement: No

### **VI.3) Additional information**

Applicants must respond to this notice via e-mail and must be registered on WWU's BravoSolution platform to be invited to participate in future rounds of this sourcing event by the deadline of this notice.

If you are not registered or are registered but have not advised us of your registration we cannot add you to the sourcing project and you cannot participate in this sourcing project.

Please proceed to [www.sourcing4www.bravosolution.co.uk](http://www.sourcing4www.bravosolution.co.uk) and click on 'Register Now'.

If you have previously registered on

[www.sourcing4www.bravosolution.co.uk](http://www.sourcing4www.bravosolution.co.uk) please check

all the details are correct (do not re-register if you have done so previously).

Once you have registered/checked your details are correct please e-mail [wwuprocurement@wwutilities.co.uk](mailto:wwuprocurement@wwutilities.co.uk) confirming your registration and expressing your interest to participate.

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

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

Wales & West Utilities Limited

Newport

Country

United Kingdom