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Award

Aeroflow Sustainable Active Treatment (SAT) Phase 2

Natural Resources Wales

F15: Voluntary ex ante transparency notice

Notice identifier: 2023/S 000-035154

Procurement identifier (OCID): ocds-h6vhtk-03407b

Published 29 November 2023, 10:41am

Section I: Contracting authority/entity

I.1) Name and addresses

Natural Resources Wales

Ty Cambria House, 29 Newport Road

Cardiff

CF24 0TP

Contact

Christian Clee

Email

christian.clee@cyfoethnaturiolcymru.gov.uk

Telephone

+44 3000653000

Country

United Kingdom

NUTS code

UKL - Wales

Internet address(es)

Main address

<http://naturalresourceswales.gov.uk>

Buyer's address

https://www.sell2wales.gov.wales/search/Search_AuthProfile.aspx?ID=AA0110

I.4) Type of the contracting authority

Body governed by public law

I.5) Main activity

Environment

Section II: Object

II.1) Scope of the procurement

II.1.1) Title

Aeroflow Sustainable Active Treatment (SAT) Phase 2

II.1.2) Main CPV code

- 71241000 - Feasibility study, advisory service, analysis

II.1.3) Type of contract

Services

II.1.4) Short description

Abandoned Metal Mines cause multiple failures of the Water Framework Directive (WFD) standards in Wales, with c.1,300 mines impacting over 700 km of rivers. 11% of our rivers

fail their required quality objectives. In the Western Wales River Basin District mine waters cause 23% of water body failures. Nine of the ten catchments most polluted by abandoned mines in the UK are in Wales.

Cambrian Environmental Technologies (CET) has presented a potential alternative solution for treating neutral pH mine water. The CET Aeroflow SAT (Sustainable Active Treatment) system has been developed based on the need for a flexible and adaptive modular system to account for the complexity and site-specific nature of water treatment requirements in a mining context. This purchase is to undertake lab and pilot trials to enable NRW to determine whether Aeroflow SAT is a suitable, alternative treatment method, which could potentially provide resource, energy and waste saving, generating a cost-effective remediation solution.

Following the completion of Phase 1 (lab trials), this VEAT notice is being published to cover the additional costs for Phase 2 (field trials).

II.1.6) Information about lots

This contract is divided into lots: No

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

Value excluding VAT: £225,920

II.2) Description

II.2.2) Additional CPV code(s)

- 71241000 - Feasibility study, advisory service, analysis
- 24962000 - Water-treatment chemicals

II.2.3) Place of performance

NUTS codes

- UKL - Wales

II.2.4) Description of the procurement

Abandoned metal mines cause multiple failures of WFD standards in Wales, with c.1,300 mines impacting over 700 km of rivers. The Failing Waterbodies Report (Coal Authority, 2020) commissioned by NRW identified that remedial works at the 129 highest priority sites would be circa 278 million GBP. The Metal Mine Programme is therefore committed to identifying new treatment technologies that could reduce on-going operation and maintenance costs.

Typical categorisation of active or passive treatment systems does not account for recent technological advancement. Passive systems typically require maintenance/refurbishment during their whole life (40 years) to ensure that performance remains effective, enabling metal removal. Fully active systems, such as High Density Sludge (HDS), often have high CAPEX and OPEX costs, and a large constituent of OPEX are energy and reagent costs as well as sludge disposal. Spent media in passive systems and sludge possess high metal content and current advice is that this must be disposed of as hazardous waste to landfill in England. Metal recovery from sludge is also difficult, warranting separate research and development. At higher mine water flow rates, greater energy or treatment media is required, increasing costs.

CET has presented a potential alternative solution for treating circum-neutral pH mine water. CET is a newly formed 50/50 joint venture research company owned and managed by Mine Environment Management Ltd (MEM) and Maelgwyn Mineral Services Ltd (MMS). CET has created a technical team from MMS and MEM that has identified degassing circum-neutral mine water using the MMS-patented Aachen™ reactor and oxidation using patented slot aerator can increase the pH sufficiently enabling sorption to remove metals.

The CET Aeroflow SAT system has been developed based on the need for a flexible and adaptive modular system to account for the complexity and site-specific nature of water treatment requirements in a mining context. Degassing and oxidation as options have the potential to be less expensive in material, energy and carbon than traditional HDS systems. Metal removal by sorption can be achieved by adding media, with the process eliminating or vastly reducing sludge production, improving potential metal recovery and reducing residual waste costs.

The Aeroflow SAT provides an opportunity to develop a flexible, cost-effective and more sustainable remediation solution for our treatment toolbox with lower energy and waste disposal costs.

Following the completion of Phase 1 (lab trials), this VEAT notice is being published to cover the additional costs for Phase 2 (field trials).

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

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 arrangement is in accordance with Regulation 32(b)(ii) & (iii) of the Public Contract Regulations (2015) which allows for the negotiated procedure without prior publication to be used for public works contracts, public supply contracts and public service contracts where (b) the works, supplies or services can be supplied only by a particular economic operator due to (ii) competition being absent for technical reasons or (iii) the protection of exclusive rights, including intellectual property rights.

MMS has registered exclusive patented Intellectual Property rights which are required for the Aeroflow SAT system. The first is the Aachen™ reactor system (Patent No: EP 1831411) used originally when capturing gold pulp of a defined fraction. The patent application was submitted in 2006 and is valid for a period of 20 years.

The second is the slot aerator system (Patent No: EP 2054143) a device for dispersing a gas into a liquid. The patent application was submitted in 2007 and is valid for a period of 20 years.

These patents will be combined in the trials to enable effective degassing and safe removal of metals.

Addressing the caveat that no reasonable alternatives or substitutes need to exist in order for regulations (ii) & (iii) to be used; whilst other active or passive metal mine water treatment systems exist, they either produce hazardous sludge or spent media. Whilst each mine site has its own demands typical to the constraints present, no treatment methodology known has the potential to be considered as an alternative to the Aeroflow SAT solution in this instance. The Aeroflow SAT offers an opportunity to future-proof the Metal (Non-Coal) Mine Programme, providing an alternative treatment solution that is both cost-effective and sustainable with significantly lower energy and waste disposal costs. The two patented technologies to degas and oxidise the mine water aiding subsequent treatment, capture and removal of metals, offer long-term savings to the public purse.

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.2.1) Previous publication concerning this procedure

Notice number: [2022/S 000-014805](#)

Section V. Award of contract/concession

A contract/lot is awarded: Yes

V.2) Award of contract/concession

V.2.1) Date of conclusion of the contract

19 June 2020

V.2.2) Information about tenders

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

V.2.3) Name and address of the contractor/concessionaire

Cambrian Environmental Technologies Ltd

Innovation Centre Festival Drive, Victoria Business Park

Ebbw Vale

NP238XA

Telephone

+44 7407062175

Country

United Kingdom

NUTS code

- UKL16 - Gwent Valleys

The contractor/concessionaire is an SME

Yes

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

Total value of the contract/lot/concession: £215,731

Section VI. Complementary information

VI.3) Additional information

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NOTE: To register your interest in this notice and obtain any additional information please visit the Sell2Wales Web Site at

https://www.sell2wales.gov.wales/Search/Search_Switch.aspx?ID=136873.

(WA Ref:136873)

VI.4) Procedures for review

VI.4.1) Review body

High Court

Royal Courts of Justice, The Strand

London

WC2A 2LL

Telephone

+44 2079477501

Country

United Kingdom