



The Coal
Authority

Mine Water Treatment Scheme Operational and Maintenance Contract

Description

In partnership with the Department for Business, Energy and Industrial Strategy (BEIS), the Department for Environment, Food and Rural Affairs (DEFRA), the Environment Agency (EA), Scottish Environment Protection Agency (SEPA) and Natural Resources Wales (NRW), the Coal Authority delivers a program of Water Treatment facilities covering 70+ mine water treatment schemes across England, Scotland and Wales, ensuring that any accumulated mine water is responsibly treated before entering natural watercourses.

The Coal Authority's work to treat mine water has directly protected and improved over 400km of rivers, protected several important regional aquifers that provide drinking water for 600,000 people, enhanced biodiversity and provided local amenity land.

The Coal Authority seeks to let an Operational and Maintenance contract for the management of these sites, additional assets and over 700 data sampling points across England, Scotland and Wales. The existing contract ends on 31st December 2024 after a 10 year duration.

The Operational and Maintenance contract will be let under a NEC 4 Term Service Contract. The option choice is still to be determined and may involve more than one option from A, C and E. The duration of the contract is expected to be 10 years, potentially with break clauses during that time.

Mine water treatment schemes vary in design depending on the composition of the mine water, the land available, planning constraints and latest technology.

The Coal Authority use standard designs where appropriate, however each site is individually customised to meet local requirements and constraints.

It is expected the contract will require the operation and maintenance of, including but not limited to:

24 passive schemes – typically mine water is brought to the top of a cascade structure. Water flows down these steps, which entrains oxygen. The oxygen encourages the dissolved iron in the water to become iron particles. The water then flows into lagoons where the iron has time to settle at the bottom for removal. The remaining finer iron particles are filtered out when the water passes through a series of reed beds.

34 pumped passive schemes – usually, mine water is pumped from below ground rather than gravity fed and then follows the passive process.

6 active schemes – this is a pumped or passive treatment scheme that requires chemicals to be added to the mine water in order to correct pH and/or facilitate the iron particles to drop out into the lagoon faster.

2 high density sludge active schemes – mine water is pumped from its source into a series of mixing tanks, the first is where carbon dioxide is removed (de-gassing) it's then transferred to the next, where a small proportion of re-cycled sludge is added, it's then transferred to the final mixing tank where lime is added. From here the water is dosed with a flocculant before being treated in lamella clarifiers where the sludge is removed from the mine water. The sludge is then transferred to either a filter press or centrifuge for de-watering. Regular collections of the sludge are required which transports it to a waste management facility.

8 Pump stations / intervention schemes – mine water is transferred (pumped or gravity fed) from its source into a water course without any treatment. The diversion of the mine water is the intervention and the dilution and dispersion of the mine water to the water course is all that's required on these sites currently.

7 Subsidence Pumping Stations – The Coal Authority manages 7 Subsidence Pumping stations directly and supports Internal Drainage Boards in managing a further 70+ sites.

The majority of schemes are subject to discharge consents and/or abstraction licences.

700+ monitoring points – The Coal Authority has hundreds of locations where data is gathered including mine water levels and chemistry analysis is required to provide data to

make decisions on potential impacts of the mine water block in that area, this data feeds decision making on where new sites should be built and potential risks to the environment. There is schedule where each location is detailed along with the regularity of the inspection, this ranges from weekly to annually. Similar data is also gathered on mine gas emissions.

Assets including gas fan stations, flood defence reservoirs, tips and other equipment maintenance will also potentially be included in the contract.

In excess of 30 new schemes are expected to be designed and built by the Coal Authority over the contract period, the design and build is excluded from the contract but expertise from the contractor may be sought to support and review the design for suitability from an operational viewpoint.

In a typical year the facilities treat over 128 billion litres of mine water and to ensure water quality is compliant with consents they consume over 150t of hydrated lime and over 50t of Limesol liquid lime, 3t of polymer, over 1000t of Sodium Hydroxide (47% mainly with some 20% concentration) and over 250t of Hydrogen Peroxide.

In addition to the operational plant there is a mixture of buildings and infrastructure, storage facilities and satellite offices to be managed. The sites are operational 24hrs a day, there is the requirement for stand-by support over evenings and weekends, including response times.

There is a remote telemetry monitoring system on 49 sites.

The potential service required under this contract is the operational, planned and preventative maintenance to the mine water treatment schemes, including but not limited to:

- Ensuring compliance with regulatory consents, licenses, and permits to operate, as well as liaising with the appropriate regulatory bodies
- Adhering to health, safety and environmental standards
- Carrying out checks on the treatment schemes, adjusting water levels to ensure optimum performance
- 24hr reactive response to incidents involving site failures impacting people or the environment

- Performing maintenance activities including grounds maintenance, reed bed remediation (cutting reeds using a truxor) and sludge disposal which involves transferring sludge to a drying bay and/or to a waste disposal facility
- Pump lifts and ancillary equipment replacement
- Making educated adjustments to the treatment process to ensure efficient use of chemicals and power
- Procuring chemicals and supervising delivery and storage of chemicals.
- Water sampling and flow measuring data gathering/capture, submitting and reporting via the Coal Authority Data Management System
- Reporting on operational costs, safety statistics, risks and performance trends.

Additional services that could be instructed as required may include:

- Project management of capital projects including reed bed refurbishments, pump and pipe work repairs and replacement, equipment purchases, health and safety improvements on sites
- Managing, supervising and assisting in research and development projects
- Managing, supervising and operating pumping tests.

The Coal Authority are committed to becoming a more sustainable organisation (environmental and social) and want to use our work to help deliver positive change in the communities we support. We have an ambition to be a net zero organisation by 2030 and we will continue to decarbonise our activities. The delivery of the services will be a critical element to achieve these ambitions and our sustainable targets.

The Coal Authority also wish to explore the option of a design build and operate model. As indicated above there is the potential for the construction of 30 new schemes over this period and the refurbishment of current schemes that require civil engineering activities.

The anticipated time line for the issue of tender documents is mid-June 2023.

This will allow for a period of site visits and early contractor involvement.

Tender submissions are expected to be returned within 3 months by mid-September 2023.

Following award in March 2024, a six month mobilisation period will commence in June 2024, allowing for a seamless handover and full operational control will start on 1st January 2025.

The funding for this contract is dependent on government spending review cycles and approval.

The operational and maintenance of the sites is the core of the contract and additional works will be instructed via task orders.

The contract value is dependent on funding and site requirements and is therefore variable year on year.

Below is an estimate of potential value, but it is not guaranteed:

Spend profile excluding inflation based on today's prices in GBP

Financial Year	Core O&M Spend Potential	Additional Task Order Spend Potential
2025/2026	5,000,000	5,000,000
2026/2027	5,000,000	5,000,000
2027/2028	5,000,000	5,000,000
2028/2029	5,000,000	5,000,000
2029/2030	5,000,000	5,000,000
2030/2031	5,000,000	5,000,000
2031/2032	5,000,000	5,000,000
2032/2033	5,000,000	5,000,000
2033/2034	5,000,000	5,000,000

The Coal Authority's head office is located at 200 Lichfield Lane, Mansfield, Nottingham. The option for the supplier to co-locate at this office and work closely with the Service Managers and Environment Department at the Coal Authority who manage the contract is available, there are 12 desks available to enable a collaborative working approach.

Indicative Timeline

Task Name	Commencement
PIN Publication	July 2022
Early Market Engagement	August 2022
Tender Publication	June 2023
Contractor Site Visits	June 2023
Tender Submission Deadline	September 2023
evaluation of Bids	September 2023
Notification of Award	December 2023
Mobilisation	June 2024
Contract start on site	Jan 2025

Market Engagement

The Coal Authority would like to invite interested companies to discuss the proposal of the contract and understand better our requirements for this tender.

We would welcome you to join us from week commencing 29th August via video conference or at our offices in Mansfield to discuss our requirements and seek input and feedback, understand any concerns and learn from any other successful arrangements.

Please express your interest in attending by contacting Gareth Billings, Procurement Business Partner: garethbillings@coal.gov.uk

Any costs incurred by participating in this exercise will be borne by the participating organisations.

Please note that this is not a call for competition.

Any future procurement will be subject to a separate advertisement.