

# **Appendix 2 – Call-Off Procedure:**

for The Research, Development and Evidence Framework 1

**Tender Reference: RDE 436** 

**Landfill Greenhouse Gas Mitigation Project** 

Date: May 2024

## 1.0 Request for Proposal

1.1 The following document is to be used as a Call-Off template to be sent to all Contractors on a sublot by the Project Manager of the Contracting Authority for completion and return in accordance with the Call-Off procedures detailed in the Form of Agreement.

Research, Development and Evidence Framework						
	REQUEST	FO	R PROF	POSAL		
Project title:			Landfil	l Greenhous	se Gas Mitig	ation Project
Call off Reference:			RDE 4	36		
Atamis project ref (if applicable):			C2224	5		
Cost Centre Co (for admin pur	de poses only)		100040	062		
Date:			29/01/2	2024		
Contracting Authority (Defra and its arms-length bodies etc)	Environment Agency					
Project Manager:		Ph	one nui	nber:		
Authorized by:		Em	nail:			
Commercial Contact (if applicable):						
Project Start Da	ate	15/	07/2024	Ļ		
Project Completion Date 31 Ju sa		31 July sat	July 202 y 2026 s isfactory	25 (Maximu subject to bu / progress)	m end date v udget approv	vill be 31 <sup>st</sup> ⁄al and
For any projects over the direct award threshold, full competition is required (i.e. all contractors on the			)irect ward		Mini- comp	x

Sub-Lot are invited to quote).				
Call off from Sub-Lot number	3.1			
Proposal return date:	March 2024	4		

Evaluation criteria:					
<b>Contractors:</b> Scoring mechanism will be evaluated on 0-100 using the above scoring mechanism table to evaluate supplier responses. Minimum quality threshold is 50 for each technical question - If this score is not achieved for each technical question, your bid will be deemed non-compliant and will be rejected. Failure to meet any minimum score threshold stated will result in the bid being removed from the process with no further evaluation regardless of other quality or price scores. Responses must be in Arial 11pt.					
Quality	Weighting	70%			
Price	Weighting	30%			
Quality Sub-Criteria Weightings					
Approach & Methodology	<ul> <li>The contractor is required to provide details of how they will approach the study, including details of the methodology to be used, design of the case studies and analytical strategy.</li> <li>Responses must not exceed four sides of A4.</li> <li>Evaluation Criteria</li> <li>Your response must</li> <li>Demonstrate understanding of the objective of the study.</li> <li>Include clear explanations of the technology or technologies selected and reasons for selection. This must include evidence of successful application in a landfill setting.</li> <li>Provide a practical and cost-effective methodology which can be delivered inside the project program.</li> <li>Include examples of similar projects completed by the contractor.</li> </ul>	35%			
Proposed Staff (inc Pen Portraits) and Contractor's experience/accreditations.	Please provide details of the proposed project team and team structure that you intend to use to deliver this project, including any sub-contractors and/or associates.	30%			

	Mini CVs for key staff must be submitted to support the response and include a table showing the staff days expected to be spent on the project per task, this table must match the staff days in the cost proposal. Responses must not exceed four sides of A4. Mini CVs are included in the page count, please provide a paragraph for each key member of staff outlining skills and experience relevant to this requirement.	
	Evaluation Criteria	
	<ul> <li>Your response must:</li> <li>Identify all key staff (including sub- contractors), their grades aligned with the rate cards, and roles within this project, and demonstrate that the project team is well suited to achieving the projects objectives.</li> <li>Demonstrate that the project team provides value for money whilst retaining a good balance of expertise on the more challenging tasks.</li> <li>Demonstrate that the project team have suitable experience for the tasks required. Skills required include: <ul> <li>In-depth knowledge of chosen technology to measure methane emissions</li> <li>Experience of working on landfills</li> <li>Understanding of regulatory process of landfills</li> <li>Understanding of the role of landfill gas in climate change and contribution to net zero commitments.</li> </ul> </li> </ul>	
Project Management (including project plan)	Provide information on how you would plan, manage and deliver this project. Responses must not exceed two sides of A4 (charts and tables are permitted as an attachment).	25%
	The study is to take place on an operational landfill. The contractor will need to provide a H&S risk assessment and provide method statements for undertaking the proposed surveys at point of award.	
	Evaluation Criteria Your response must include: • A project plan and Gantt chart to show key	

	<ul> <li>timelines, milestones, and any dependencies</li> <li>Details on the quality assurance processes in place to procedures to ensure that the final outputs are robust.</li> <li>Include sample Health and Safety Risk and Method Statements.</li> <li>Complete a risk register and identify project risk against the risk identified by the PM.</li> </ul>	
Sustainability – Mandatory	<ul> <li>The Authority has set itself challenging commitments and targets to improve the environmental economic and social impacts of its estate management, operation, and procurement. These support the Government's green commitments. The policies are included in the Authority's sustainable procurement policy statement published at: https://www.gov.uk/government/publications/defras-s-sustainable-procurement-policy-statement</li> <li>This project is closely aligned with Theme 3 – Fighting Climate change</li> <li>Using a maximum of two sides of A4 describe the commitment your organisation will make to ensure that opportunities under the contract deliver the Policy Outcome and Model Award Criteria.</li> <li>Please include: <ul> <li>Your 'Method Statement', stating how you will achieve this and how your commitment meets the Award Criteria, and</li> <li>A timed project plan and process, including how you will implement your commitment and by when. Also, how you will monitor, measure and report on your commitments/the impact of your proposals. You must include but not be limited to:     <ul> <li>Timed action plan</li> <li>Use of metrics</li> <li>Tools/processes used to gather data</li> <li>Reporting</li> <li>Feedback and improvement o transparency</li> </ul> </li> </ul></li></ul>	10%

## Specification

1. Description of work required – overall purpose & scope (including reporting requirements)

## Background

Landfills are the largest emitter of methane in the waste sector. In modern permitted sites for

biodegradable waste, landfill gas is collected and used, typically via gas engines, or flared. However, a proportion of the landfill gas escapes into the air through a variety of sources across a landfill.

It is anticipated that many sites could improve their gas collection efficiency, and therefore reduce their fugitive emissions, however currently there is no formal mechanism to directly regulate fugitive emissions.

It is considered that a collection efficiency of 85% should be possible on sites operating under current best practice standards, however this has not been formally tested. The aim of this project is to evaluate potential regulatory approaches to improving methane collection efficiency at operational sites.

The vision is a standard operating procedure which will detail effective methodology(s) for measuring fugitive emissions and calculating methane collection efficiency for regulatory purposes.

This will be achieved by:

- testing how quantification techniques could be used in the regulatory monitoring of methane emissions from permitted operational landfill sites.
- developing and testing a metric or metrics for the performance of landfill gas collection.
- developing regulatory approaches, potentially including permit conditions and guidance, to
  require the robust measurement of fugitive methane emissions and the assessment of these
  emissions against a metric for the collection of landfill gas at the site.

### Requirement

There have been a number of studies (references available on Annex A) whereby fugitive emissions have been measured at landfill sites using various technologies. There is also an ongoing study on a closed site to demonstrate possible seasonal variation in emission levels. This project is intended to build upon this existing body of work.

The requirement for this project is to test potential regulatory approaches using a set of case studies where methane emissions are measured during different operational conditions - such as pre and post capping, before and after infrastructure installation, differing size operational areas, large flanks, engine downtime etc.

Technology is obviously evolving at a fast rate; currently we consider the most practical measurement method currently is Tracer Gas Dispersion (TGD), however the Environment Agency are very interested in the rapidly emerging quantification techniques involving drones / Unmanned Aerial Vehicles (UAV). If the bidder has other proposals for whole site methane quantification approaches the Environment Agency would be willing to consider with appropriate evidence, experience and justification. It must be noted that the chosen measurement technique(s) for the research program are considered suitable for use across most operational landfill sites.

The Environment Agency are keen to progress technique(s) which will be rolled out for regulatory purposes in the near future and would welcome proposals for surveys using more than one technique in parallel (for example TGD and a UAV mass balance approach). It is accepted that exploring alternative techniques may require expertise from other organisations and remind bidders that the use of subcontractors is allowable within the framework.

The study must include 3 landfills with a total of at least 18 measurement surveys. The Environment Agency would expect each landfill to be surveyed to monitor emission changes during periods that reflect operational procedures (for example before and after capping, filling against flanks etc.), obviously the timing of these will be dictated by the landfill operator and as such the number of surveys at each site over the 12 month period may slightly differ (for example, out of the 18 surveys, one site may have 8 surveys and the other two 5 each).

Site selection will be based on a shortlist produced by the Environment Agency in conjunction with operators who have volunteered to assist with the project. The sites will be located throughout the country (England) and the bidder will be expected to travel accordingly. The potential site locations

are listed below:

Buckinghamshire, Lancashire, Kent, Rugby, Staffordshire, Lincolnshire, Cambridgeshire, Wiltshire, Somerset, Suffolk, Oxfordshire, Yorkshire

The bidder will design a program of research in order to:

- Quantify the whole-site fugitive emissions of methane from three operational permitted landfill sites for non-hazardous biodegradable waste using TGD and/or an agreed alternative survey technique(s).
- Understand the uncertainties associated with the survey technique(s).
- Investigate causes of variation in methane emissions and possible influences of site operations at the time of, and leading up to, the quantification exercises. Additional data collected will include (but not be limited to),
  - Detailed meteorological data
  - Gas collection data
  - Gas field balancing data
  - Leachate head data
  - Operational plans / site topography plans
- Develop and test appropriate calculation techniques to use measurements of fugitive emissions as a metric for efficiency of gas collection.

The project will last approximately 15 months from July 2024 to July 2025. Final reporting should be completed before July 2025.

## Tasks

The requirement will be delivered in the following tasks. A number of these would be expected to run concurrently and other approaches to delivering the project requirement would be considered.

## Task 1

The contractor will produce an overall plan for the monitoring program which will set out the site selection criteria, measurement approaches and supporting data collection. The contractor will secure the agreement of the Environment Agency for the plan.

## Task 2

The contractor will select three case study landfills from the supplied short list with the expectation that two will be large sites (with respect to waste inputs and waste already deposited) and one a smaller site. The contractor will liaise with the operators to gain agreement for the planned measurement program. The contractor will secure the agreement of the Environment Agency for the three selected sites.

## Task 3

The contractor will develop the metrics that will be used to provide a measure of how effectively fugitive emissions are being managed. This will include different approaches to calculating collection efficiency, for example, including and excluding methane oxidation from the methane balance equation. Approaches such as emissions per unit area or per tonne of waste deposited may be considered.

## Task 4

The contractor will:

- produce detailed monitoring plans for each of the three case study landfills including a schedule of measurement surveys which would be designed to capture emission measurements in different operational conditions, for example, prior to and after a capping exercise.
- detail the method for conducting the surveys
- detail the site specific operational and meteorological data that will be collected in tandem with the methane emission measurement surveys.
- secure the agreement of the Environment Agency for the monitoring plans.

## Task 5

The contractor will conduct the surveys in accordance with the agreed plans. After each survey exercise, the contractor will consider whether amendments to the monitoring plans are required. The full set of measurements and collected data will be provided to the Environment Agency within an agreed timescale.

## Task 6

After each survey, the contractor will use the measured methane emissions and the proposed metrics to provide a measure of the site's performance in managing fugitive emissions at the time of the survey. These will be used to consider whether any changes are needed to the conduct of the surveys or the data collected.

## Task 7

The contractor will analyse the methane measurement data, collected supporting data and metric calculations for the three case studies and provide a statistical assessment of the potential influences of different factors on methane emissions and performance against metrics. The assessment will also consider issues such as the level of certainty that a methane emission quantification technique would need to achieve to provide a meaningful metric of performance.

## Task 8

The contractor will produce a report (in a template supplied by the Environment Agency) providing the results of the surveys and the analysis. Recommendations will be provided on the possible options for metrics of performance, what data would be required and how the metrics should be interpreted.

The completed Annex B Cost Sheet will form part of the contract, fixed costs are fixed and will be paid relating to project completion. Rate cards will be paid as a maximum price in accordance with the RDE framework's agreed rates. Mileage will be paid according to the contractor's mileage rates.

The contractor is responsible for proper planning and organisation of all surveys. This includes (but not restricted to), weather conditions, Health and Safety, operator/site management liaison.

In the event that a survey has to be cancelled after mobilisation due to circumstances beyond the contractors control, the Authority will pay travel costs and up to 20% of the survey fee.

Reasonable additional subsistence fees will be paid in the event circumstances beyond the contractors control mean surveys take longer than anticipated.

\*circumstances might include an unexpected site closure or Health and Safety incident. We would expect weather events to be planned for.

**2. Required skills / experience from the contractor and staff.** Include any essential qualifications or accreditations required to undertake the work.

Contractors will have experience of utilising their chosen technology to quantify methane emissions. Contractors must have experience in a landfill setting.

- In-depth knowledge of chosen technology to measure methane emissions
- Experience of working on landfills
- Understanding of regulatory process of landfills
- Understanding of the role of landfill gas in climate change and contribution to net zero commitments.

## This will be evaluated in Q2 – Proposed Staff.

3. Proposed program of work and payment table (Detailing specific tasks, key milestones,	l
deliverables & completion date where appropriate)	

Task no.	Task and deliverables per site	Completion date	Payment schedule
1-4	<b>Project Set up</b> including - Site selection inception meeting, program agreement etc.	31/8/24	10%
5-6	Site survey and monitoring Review – ongoing and reported at monthly progress meetings *invoice amount to depend on surveys completed. Invoices to be submitted no more than bi-monthly	31/3/25	75%
7&8	Analysis and reporting	31/7/25	15%

Where the authority has mentioned maximum price, this is the maximum the supplier can invoice for against each cost line.

Where the authority has mentioned fixed price, this is the actual cost the supplier can invoice for against each cost line.

Rate cards in line with the agreed RDE framework rates will be provided for named individuals and the number of days they will be contributing to each task.

## 4. Risk

**Note:** This section is to be used to detail any risks or key elements relevant to the project i.e. Programme deliverable dates, workshops or external requirements, data, consultees, stakeholders etc that could impact the success of the project if they are not managed.

- Site selection and location this will require cooperation of the operator and landowner. It will also be reliant on plans of operation which may change at short notice.
- Weather will have an impact on technology and site operations
- Time the project is funded for a limited period of time therefore has to be completed within given time constraints.
- H&S working on landfill and with landfill gas carries H&S risk which at times may mean site work is not possible.

## 5. Health and Safety Requirements

**Note**: Only include if high risk activities being undertaken e.g. working at height, near or over water). Do not request RAMS or similar risk assessments are returned with submissions. These should only be requested at contract award.

Due to the hazardous nature of working on landfill we remind contractors that they will need to comply with the operators policies and procedures.

## 2.0 Proposal

2.1 The following document is to be used as a Call-Off template to be sent to all Contractors on a sublot for completion and return in accordance with the Call-Off procedures detailed in the Form of Agreement.

Descende Development and Evidence Fremework 2
Research, Development and Evidence Framework 2
PROPOSAL
To be completed by the Contractor
Contractor's Name: Ricardo-AEA Limited
Call off Reference: RDE 436
Sub-Lot Number: 3.1
Date: 30 May 2024
Note: Your proposal must not exceed 12 sides of A4 using font Arial 11pt plus the Costs Proposal attachment in Section 4 (unless otherwise indicated in project client's specification above). Attachments must not be included unless requested except for a programme diagram and full cost schedule if you consider these would support your proposal.
Do not make or append Caveats and Assumptions in your proposal – any points of uncertainty must be raised as a clarification point prior to submitting the proposal. Where assumptions are to be made, these will be stated by the Authority's Project Manager.
1. Approach & Methodology
The tenderer's response for E01 Approach and Methodology can be found below
2. Project Management (inc Project plan). A project plan may be provided as an attachment with your reply (delete if not required)
The tenderer's response for E02 Project Management can be found below
3. Proposed Staff who will do the work and briefly state previous relevant qualification/experience. Contractors experience of undertaking similar projects and accreditations (if requested).

4. Risk

**Note:** This section is to be used to detail any risks relevant to the project i.e. Programme deliverable dates, data, consultees etc.

The tenderer's risk register can be found below

5. Health & Safety (only complete if requested in defined evaluation criteria)

The tenderer's risk register can be found below

6. Sustainability (only complete if requested in defined evaluation criteria)

The tenderer's response for E04 Sustainability can be found below

### 7. Cost Proposal

Please use day rates, including any applicable discounts, as agreed under the framework contract. A full cost schedule may be attached to support the costs summarised below.

Please complete the cost schedule Excel Spreadsheet labelled Annex B.

Instructions:

Green cells are to be completed by tenderers; these can be found within the green sheets which are labelled as follows:

**<u>1. Fixed Costs</u>** (Green Cells F3, F4, E7-E16, F7-F16, E19-E28, F19-F28, E31-E40, F31-F40, E43-E53, F43-F52, E55, F55)

To Include: Please provide the maximum price for all fixed costs listed.

<u>2. Rate Cards</u> (Green Cells: F3-F7, G3-G7, H3-H7, F11-F15, G11-G15, H11-H15, F19-F23, G19-G23, H19-H23, F27-F31, G27-G31, H27-H31, F35-F39, G35-G39, H35-H39, F43-F47, G43-G47, H43-H47)

**To Include:** Rate cards must not exceed the agreed RDE framework rates, grade definitions can be found within the grade definitions tab on the excel sheet.

3. Accommodation (Green Cells: E3, F3)

**To Include:** Some site visits may require overnight stays, please provide the maximum number of people per night and the maximum nights per visit. This will be multiplied by Defra's Travel and Subsistence policy accommodation rates (£120).

4. Mileage Rates (White Cells: B5)

To Include: Contractor's mileage rate, this will account for 5% of the 30% commercial weighting.

Blue Squares contain formulas or key information and are not to be amended, the totals for each section can be found within the Cost Summary sheet.				
By signing this form Ricardo-AEA Limited agree to provide the services stated above for the cost set out in your Cost Proposal and in accordance with the Research, Development & Evidence Framework 1Conditions of Contract.				
Contractor Project Manager:				
Signature:				
Date:				

## 3.0 Order Form

3.1 The following document is to be completed by the Contracting Authority and sent to the Contractor for counter signature to form a Call-Off contract.

Research, Development and Evidence Framework 2 ORDER FORM
To be completed by Contracting Authority Project Manager and sent to Contractor for countersignature.
Project title: Landfill Greenhouse Gas Mitigation Project
Call off Reference: RDE436
Atamis project ref (if applicable): C22245
Date: 30 May 2024

THE Contracting Authority: The Department for Environment Food and Rural Affairs (Defra) 2 Marsham Street, London SW1P 4DF

THE CONTRACTOR:

Ricardo-AEA Limited

APPLICABLE FRAMEWORK CONTRACT

This Order Form is for the provision of the Call-Off Deliverables and dated 30 May 2024. It's issued under the Research Development & Evidence Framework Agreement reference 30210 for the provision of Landfill Greenhouse Gas Mitigation Project.

CALL-OFF SUB-LOT: 3.1

CALL-OFF INCORPORATED TERMS The following documents are incorporated into this Call-Off Contract. Where numbers are missing we are not using those schedules. If the documents conflict, the following order of precedence applies:

- 1. Defra Framework Terms and Conditions;
- 2. Request for Proposal;
- 3. Proposal;

No other Supplier terms are part of the Call-Off Contract. That includes any terms written on the back of, added to this Order Form, or presented at the time of delivery.

CALL-OFF CONTRACT START DATE: 15 July 2024

CALL-OFF CONTRACT EXPIRY DATE: 31 July 2025

CALL-OFF PERIOD: 12 months

Signature on behalf of the Contractor:

Signature on behalf of the Authority:



## Annex A – References

Jacob Mønster, Peter Kjeldsen, Charlotte Scheutz, , Methodologies for measuring fugitive methane emissions from landfills – A review, Waste Management March 2019

# Tender Proposal

# EO1 – Approach & Methodology























# EO2 - Proposed Staff















# EO3 - Project Management







# EO4 – Sustainability







# Risk Register

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# **Cost Proposal**

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