Per- and polyfluoroalkyl substances (PFAS) in drinking water supplies: A review of source, pathway, and fate for selected compounds

Section 1: Call Down Overview

Introduction

The Centre of Expertise for Waters (CREW) intends to commission a **call down project** aligned with CREW's **Water Quality and Health** theme that synthesises evidence regarding potential sources, pathways, and fate of PFAS in public drinking water supplies in support of ongoing work around incorporating the revised EU Drinking Water Directive (2020/2184 Recast) (hereafter referred to as the recast **Drinking Water Directive**) into Scottish legislation.

Background & aim

In 2023, amendments to drinking water quality regulations required Scottish Water to begin a risk-based sampling programme across the country for a list of 20 named per- and polyfluoroalkyl substances (PFAS, often called 'forever chemicals'). The 20 PFAS listed in the regulations are those that are specified in the recast Drinking Water Directive. However, Scottish regulations contain a 'catch all' requirement for monitoring of substances which may present a risk to health, which would include other PFAS compounds that are not currently monitored for.

The recently published CREW Capacity Building project CRW2022_01 Developing risk assessment approaches for PFAS and watch list parameters under the recast Drinking Water Directive investigated the distribution of potential sources and conditions facilitating movement from potential source to water supplies for these 20 PFAS compounds in Scotland. However, there are an estimated four thousand known PFAS compounds, and the report highlighted further research is necessary around potential sources and pathways and the fate of PFAS compounds to better identify which compounds not currently named in the regulations may be in Scottish drinking water sources. The report further prompted the need to review available information for additional areas of risk.

This Call Down[1] will produce a short report that summarises available evidence on:

- PFAS substances currently and historically imported to, manufactured in, and used in Scotland and the UK, and the relative risks of their molecular structures (including branched and linear molecules) and chemical characteristics in drinking water sources.
- Risk from atmospheric deposition of PFAS, including the potential role of sea spray aerosols.
- Significance of distance from source risk factors to raw water intakes, including potential release radius of windfarms and electrical and telecommunication masts.
- Fate of PFAS molecules in different types of water bodies, i.e. rivers, reservoirs, groundwater, and recommendations for potential risk weighting, and consideration of pathway through the unsaturated zone.

The project deliverables (outlined below) will be used by i) SEPA to enhance understanding of the risks that PFAS pose to the water environment, ii) Scottish Water to better inform its risk assessment process and the targeting of costly sampling and analysis, and iii) the Drinking Water Quality Regulator to ensure that Scottish Water manages risk in a practical and pragmatic manner.

[1] Following discussion at a pre-contract meeting on available evidence/level of detail for each requested area.

Deliverables

- A final report of up to 15 pages addressing the focus areas identified, excluding annexes and the bibliography, and including:
  - A summary of findings
  - Cover image(s) with associated photo credits
- A plain English summary of aims and findings (up to 2 pages)
- Website summary (200 words)

Events/meetings

- Two Project Steering Group online meetings (throughout the project lifecycle[2])

Section 2: Further information for applicants

Project management

Day-to-day communication will be between the research/review team (the contractor) and a CREW Project Manager and is likely to involve short catchups as agreed.

Project steering group

A small group including representatives of Scottish Government and its delivery partners plus a CREW representative, will meet with the preferred bidder for a pre-contract meeting and provide feedback on the bidder's proposed approach.

Anticipated timescale

A precontract meeting will be held c. mid-late May 2024. Depending on contract processing and signature, the project will commence c. early June 2024, with the project outputs signed off by the CREW Director by c. end of August 2024.

Funding

The maximum amount of funding available **exclusive of VAT** (where applicable) is £40,000.

Submitting a proposal

Please complete a Call Down application form (using the version available with this specification on the Call Down project page and on the CREW Call for Proposal webpage) addressing the project requirements.

A copy of expectations and the award criteria are provided below for reference.

Proposals need to be submitted to Procurement@crew.ac.uk for evaluation **by 15:00 on 30th April 2024.** We aim to notify the successful bidder by **c.w.b. 13th May 2024**.

Please contact Procurement@crew.ac.uk by **15:00 on 23rd April 2024** if you would like any clarification on any of the above. You should highlight any potential conflicts of interest in your proposal. For queries about what may constitute a potential conflict of interest please contact the CREW Deputy Manager (Nikki.Dodd@hutton.ac.uk).

[2] Please note, CREW requests a brief written update c. two weeks prior to project steering group meetings.

Expectations

No.	Criteria	Descriptor
1	Duration	The proposed duration will align closely to the details provided in the anticipated timescales section of the specification.
2	Staff time and effort	The proposed allocation of staff time and effort is appropriate and includes all deliverables. The proposal provides a commitment that named staff members will be available to work on the contract if the bid is successful. For any unnamed staff, appropriate risk identification and mitigation measures are provided.
3	Project costs	The estimated breakdown of project costs is realistic and inclusive of all deliverables.

Award criteria

No.	Criteria	Descriptor
1	Understanding the project ask and policy background	The proposal should include an introduction which demonstrates a clear understanding of the project requirements. This should include an understanding of the policy background and the supporting role of this project; the need for this research; the project aim; and how the proposal will address this aim.
2	Proposed methodology	The proposal should demonstrate a high quality and workable methodology, including how the evidence will be identified, reviewed, and assessed; consulting relevant stakeholders and/or experts where appropriate to address the key questions and produce the deliverables in the timescales required. It should explain the suitability, robustness, and limitations of the proposed methodology.
3	Milestones	The project milestones are logical, practical and include all deliverables.
4	Project Management	The staff, resources and expertise are appropriate for conducting the proposed project. The proposal should name the project lead and outline their project management experience.
5	General and specific topic expertise and experience	The proposal should provide details of individual staff members who will work on this project and demonstrate how they will meet the project requirements, specifically: - general research experience and expertise; - specific experience and expertise on the topic of (PFAS source, pathway, and fate.
6	General communication and deliverables	The proposal should describe the approach to producing the deliverables, which will be published on the CREW website. It should detail who will take lead responsibility for report-writing and overall report quality. It should provide examples of previously published evidence reviews/policy brief in which they have been involved.
7	Quality assurance	The proposal should provide details of quality assurance procedures to demonstrate how the contract will be continuously delivered to a high standard. It should specifically address issues of quality control at different stages of the project, including evidence gathering, analysis and report writing. It should include a timetable for delivery of tasks, project milestones and allocation of staff and staff time against each task, covering the duration of the contract.
8	Risk	The proposal should provide a risk assessment matrix detailing any risks identified in relation to the delivery of this contract, and proposed mitigation measures to minimise their probability and impact, focused particularly on risk to completion on time.