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Environmental Monitoring Innovation

Myriam Pacho (Innovate UK)



Scope

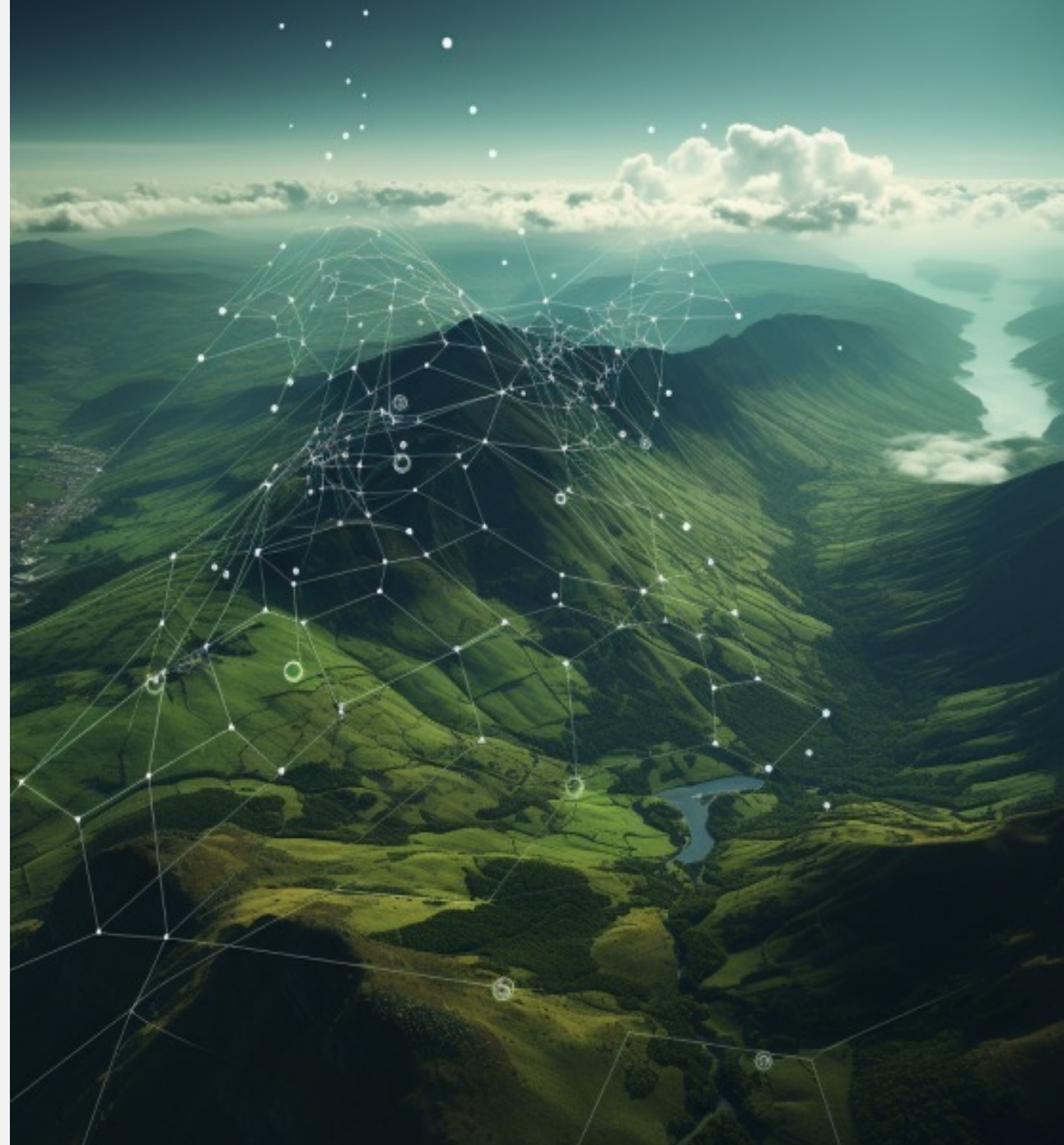
Myriam Pacho
Innovate UK



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What are we looking for...?

- Demonstrate an understanding of **UK monitoring capability needs** and highlight the **route to commercialisation**.
- Develop solutions which can be **applied widely in the real world** by end users e.g. public sector and/or UK private sector
- Be clear about which part(s) of the end-to-end monitoring system you are focusing on and why (for example, **data collection, processing, analysis or visualisation**)
- Be **collaborative and multi-disciplinary** across the environmental science, environment-focused informatics and wider data science communities



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Summary

Total budget



£5
Million

Total project costs

**£150k-
450k**

Project Duration

**3-18
months**



Must focus on one or more of the following challenge areas:

- **biodiversity and natural capital**
- **soil health**
- **water quality**
- **greenhouse gas (GHG) and ammonia emissions**



For **UK registered businesses** collaborating with other UK organisations



This competition is limited to terrestrial geographies, including near shore regions in [transitional and some coastal waters](#), such as estuaries and salt marshes, provided they can be accessed from land.

Competition deadline 6 March 2024

Projects to start by 1 August 2024



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Your proposal **must**:

Develop new, or repurpose existing sensor systems and capabilities, such as:

- observation systems, in-situ sensors or samplers, sensor or sampler carrying platforms
- data processing, analysis, modelling or visualisation systems
- post-acquisition sample or data processing or analysis and reporting

- provide a strong case for **why** your proposed solution **will be** in **demand** from end users
- provide a plan for **how** to **engage end users** in its **development**.
- explain **how** the solution is **closely aligned** with industry and government policy priorities, such as Defra's:
 - ❖ [Outcome Indicator Framework](#)
 - ❖ [Biodiversity Net Gain](#)
 - ❖ [Environmental Improvement Plan](#)
 - ❖ [Environmental Land Management schemes](#)
 - ❖ [Green Finance Strategy](#)
 - ❖ [Net Zero Strategy](#)
 - ❖ [England Peat Action Plan](#)
 - ❖ [Nature markets Framework](#)
 - ❖ [Plan for Water](#)



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Biodiversity and Natural Capital

- **Improve** the collection of balanced **biodiversity data** on the distribution and abundance of species.
- **Monitor** the short- and medium-term **trends in species and habitats** following interventions that aim to improve biodiversity
- Improve the **ability to measure habitat connectivity** and **species mobility** at a landscape and national scale
- Develop of **new approaches** to verify [biodiversity credits](#)

Soil carbon and Soil Health

(Including organic and peat soils)



- **Improve methods of monitoring, reporting and verification** to carbon markets and other users, which can include the sequestration and flux of carbon in soils in suitable frequencies and scales
- New approaches toward the **measurement** of the **biological, chemical, and physical properties** of soil
- **Integrate individual data flows** to better understand soil interactions and properties
- Improve current **approaches or methodologies for assessing soil health and biodiversity** for use in policy making and environmental or natural capital markets

Water quality

- Deliver **low-cost, real-time measurement** of key parameters in association with water quality and quantity
- Improve the **accuracy and precision** of field-based sensors, their maintenance and calibration
- **Combine sensor networks** and citizen science outputs to monitor and report multiple water quality parameters and **optimise current monitoring** regimes
- Improve **monitoring of organic and inorganic pollution** in riverine and groundwaters, lakes and estuaries, with reference to diffuse sources, industry discharges, wastewater treatment facilities and combined sewer outfalls



Greenhouse gases (GHG) and ammonia emissions from Defra sectors



- **Improve the quality of contributions to the UK's GHG inventory** from landfill, agriculture, agroforestry, forestry, anaerobic digestion plants, wastewater treatment, estuarine and freshwater bodies
- Develop **new approaches to monitor** ozone depleting substances and fluorinated gases
- Develop innovative approaches to **improving the frequency of monitoring, compiling and quality-assessing** agricultural emissions
- Develop **new methodologies to fill data and information gaps** of the emissions inventory on farming practices
- Develop **measurement technology and techniques** for long- and short-term measurement of **nitrogen-related pollutant concentrations**, and fluxes under a range of environmental conditions and spatial scales

Out of Scope

We **will not fund** projects that:

- × include marine monitoring
- × develop new sensing systems and capabilities that are unlikely to generate a viable business proposition
- × focus on the collection of new research or commercial data
- × If you are addressing GHGs, the scope is limited to **nitrogen-related pollutants** that deposit and impact biodiversity and ecosystem function.

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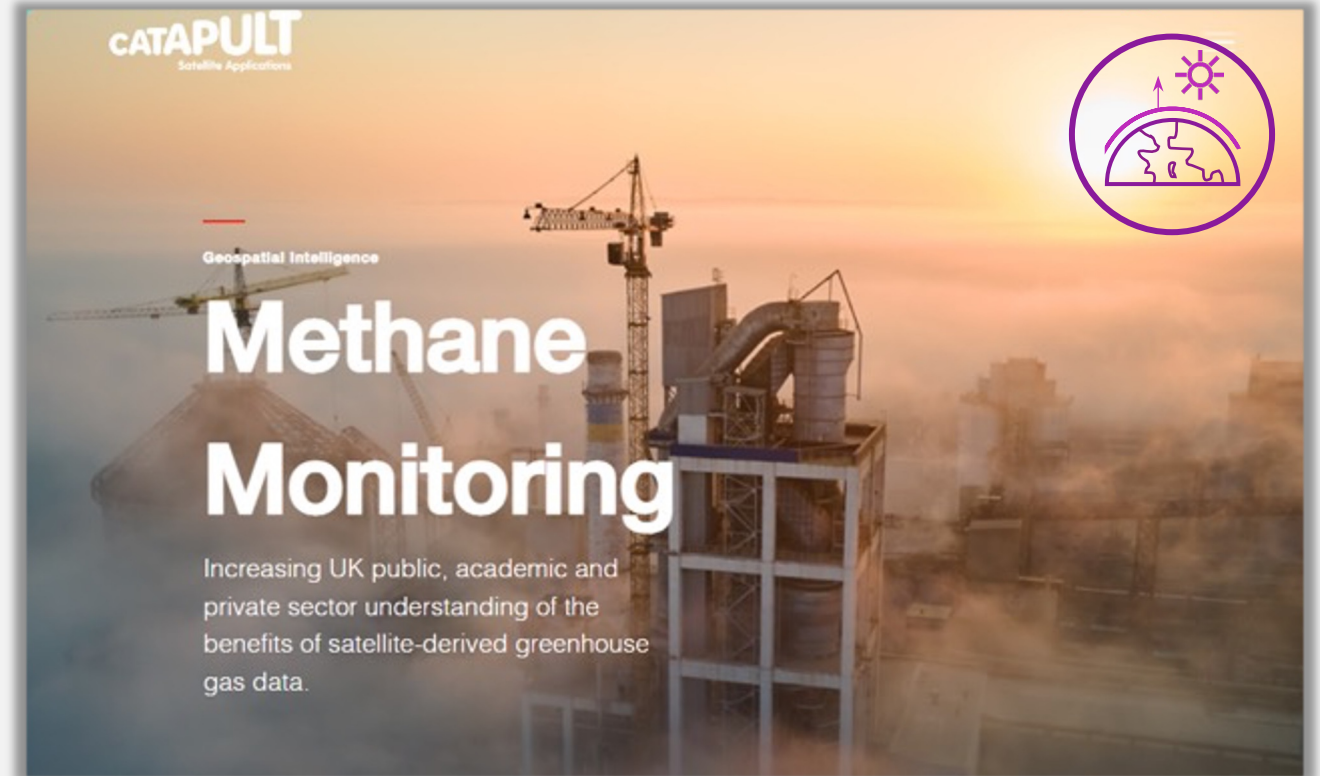
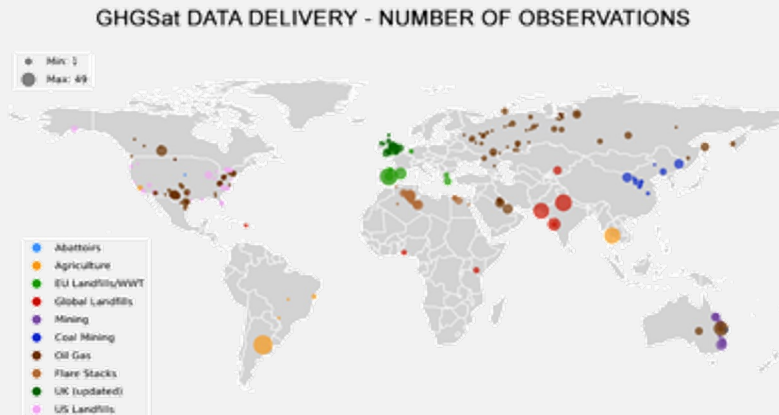
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INDUSTRY SECTORS

The 1,337 observations have been selected to cover a range of industries, including:

- Agriculture
 - Livestock farming
 - Abattoirs
- Extractive industries
 - Coal and mineral Mining,
 - Oil and Gas drilling and pipelines
 - Flare stack, excess gas burning
- Landfills
 - Known large landfill sites designated by region (EU, USA, Global)

European sites also include Waste Water Treatment facilities.



[Methane Monitoring - Satellite Applications Catapult](#)



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