



Innovate UK
KTN

Invitation to Tender

Innovation Landscape Reports

Supporting the development of secure and resilient UK based supply chains around rare earth elements and high-performance magnet manufacture.



Date of Issue	14 th February 2024
Version Number	V0.2
Prepared By	Darren Hill
Approved By 1	Peter Clark
Approved By 2	Colin Tattam

1. BACKGROUND

Many critical materials are vital for decarbonising transport, energy, and industry towards the UK's Net Zero goals. Electric vehicles, for instance, rely on Cobalt, Lithium, Graphite, Rare Earth Elements and others identified as critical in the recent report, 'Resilience for the Future: The United Kingdom's Critical Minerals Strategy.' **The United Kingdom's Critical Minerals Strategy report.**

The CLIMATES programme aligns with the UK's Critical Minerals Strategy, specifically focusing on building and developing resilient supply chains for rare earth elements. These elements are pivotal in electric vehicles, electronics, and wind turbines due to their essential role in making permanent magnets for Net Zero innovations. (<https://iuk.ktn-uk.org/programme/circular-critical-materials-supply-chains/>)

CLIMATES covers the entire rare earth supply chain, from extraction to circular economy practices and alternative materials. This study aims to identify the UK's innovation landscape, technology ready for commercialisation, key players, and recommend actions to speed up rare earth supply chain technology for deployment. This analysis will guide interventions to accelerate the UK's rare earth and permanent magnet supply chain.

We are looking for service provider(s) to deliver innovation landscape report(s)

2. PROJECT PURPOSE & OBJECTIVES

Innovate UK KTN (via the **CLIMATES programme**) is looking for expert organisations ('the service provider') to deliver Innovation Landscape reports that:

- Explore the current state of the art technology across the rare earth magnets value chain, circular economy and alternatives.
- Considering Global and UK technology to provide some level of international benchmarking.
- Identify the UK academics, Research Technology Organisations (RTOs) and businesses developing technology and innovation across the rare earth magnets value chain, circular economy and alternatives.
- Highlight the innovation opportunities for the UK in relation to the emerging technologies.
- Assess and 'map' UK capability to develop and deploy the emerging technologies.
- Highlight the innovation that needs to be developed and deployed for the UK to have a competitive advantage in the rare earth and permanent magnet supply chain.

There are three landscape reports under the scope of this ITT, covering the following areas:

1. ALTERNATIVES

2. EXTRACTION

3. MAGNET MANUFACTURING

N.B. We are agnostic to how these reports will be delivered – i.e. a service provider may bid to deliver one report, a combination of reports, or all three reports. The important aspects we are seeking are expertise, consistency of content and ability to deliver to a timescale.

3. SCOPE AND REQUIREMENTS

Collate and highlight	<ul style="list-style-type: none"> Technologies that are being developed in the UK across the innovation landscape. Opportunities and challenges across the rare earth supply chain. UK organisations that are actively developing technologies and innovations for the rare earth supply chain. UK organisations with knowledge or innovations that could be applied to the rare earth supply chain.
Benchmark	<ul style="list-style-type: none"> UK technologies being developed against global innovation being commercialised
Connect and convene	<ul style="list-style-type: none"> Engage with stakeholders across the innovation landscape including consultants, SMEs, multinationals, academics and RTOs. Relevant stakeholders from the innovation communities related to Extraction, Magnet Manufacture, and Alternatives To validate the opportunities and challenges identified with stakeholders to ensure accuracy To develop recommendations which would provide the UK with a competitive advantage in the rare earth and permanent magnet supply chain.
Articulate	<ul style="list-style-type: none"> The reports should explain the opportunities and challenges to a wide audience including industry, government and academia. Recommendations and interventions which would give the UK with a competitive advantage in the rare earth and permanent magnet supply chain.

We are open to suggestions from the service provider around different ways to meet the deliverables but suggest they will include the following activities as a minimum:

- **Desktop research** to:
 - pull together and document latest technology and innovation and provide further analysis to detail and describe the relevant technology and innovation
 - identify UK organisations active in within the innovation theme. ^[OBJ]

- **Interviews** with
 - industrial and academic experts from within the current rare earth supply chain
 - industrial and academic experts who are developing technology that could be applied to the rare earth supply chain. ^[OBJ]
- **Workshops** to convene key stakeholder groups and validate findings and develop recommendations.
- **A final report** detailing the opportunities, innovation, challenges, UK landscape and recommendations, with specific focal points as summarised below:

	Report 1	Report 2	Report 3
Title	‘Alternatives’	‘Extraction’	‘Magnet Manufacture’
Expected focal points	<ul style="list-style-type: none"> • Material formulation to reduce REE content whilst maintaining performance • Material substitution • New magnetic materials 	<ul style="list-style-type: none"> • Exploration • Mining • Beneficiation • Initial leaching and concentration 	<ul style="list-style-type: none"> • Metallisation and alloying • Magnet manufacturing methods (sintered and bonded) • Automation techniques for magnet manufacturing

Requirements

- The reports will require a service provider with expertise and experience of working within the materials sector. The supplier must be adept at communicating with Government and industry.
- The bidder is expected to propose methodologies and plans of how they are going to progress and deliver this study addressing the challenges. The bidder must consider the challenges and limitations for the study and propose measures to address these where it is feasible.
- Bidders are encouraged to think innovatively in terms of how they propose to address the study aims. The successful bidder will be required, at any stage (as necessary) and/or at the end of the project, to provide Innovate UK with their methodology and any other associated methods / approaches, as well as providing a copy of all raw data including information on all organisations identified.
- Prioritised (with a timeline) key recommendations on where investment in academic led research, business led innovation and deployment support is required.

Exclusions

The service provider(s) will not be required to undertake any report design or branding activity – this is a separate requirement that will be undertaken by a selected design agency.

4. ACTIVITY TIMINGS & OUTPUTS

Delivery is anticipated to commence in **late March 2024**, with final outputs to be completed by **14th July 2024**.

The supplier is expected to provide the following deliverables:

- An Interim report detailing desk-based research and interview insights to date.
- A Final report for external publication and public dissemination
- A Final report for internal (UKRI) dissemination
- A summary slide deck of no more than 10 slides

We expect the service provider to deliver the following activities within the stated timelines.

Late March 2024	Kick off meeting (online).
To end of June 24	Regular update meetings (online). Frequency TBC.
May 24	Mid-term review (online).
31 st May 2024	Interim Report.
15th July 2024	Final Report & summary slide deck.

5. PRICING

The total costs for the delivery of all three reports will not **exceed £75,000 (exc VAT) AND** should not exceed **£25,000 (exc.VAT)** per individual report.

The Contract will be awarded in accordance with a pricing proposal for the successful service provider.

Payment will be dependent upon successful delivery and approval of outputs by Innovate UK KTN as below:

- 50% be paid after the scheduled project review.
- 50% will be paid after all outputs received and approved by Innovate UK KTN.



6. SUBMISSION AND EVALUATION

To respond to this invitation to tender, please supply the following information:

- A brief overview of relevant expertise, experience and knowledge of the subject matter and ecosystem.
- A proposed plan of work and summary of the proposed team.
- Examples of previous relevant work within this subject matter.
- A main point of contact.
- Any additional service(s) you could provide that would enhance the outputs.
- Itemised costs and day rates.
- Confirmation of availability to deliver services within the stated timelines.
- Details of any Cyber Essentials accreditation held.

The following evaluation criteria will be used to assess the proposals:

- Relevant experience and capability.
- Proposed plan of work.
- Proposed delivery team.
- Value for money.

Proposals must be submitted by **5pm, Friday 15th March 2024**.

7. TERMS AND CONDITIONS

This invitation to Tender is subject to “KTN’s Terms and Conditions of Contractor Engagement – Company Edition”, which are provided separately.

***For further information and / or to submit your proposal, please contact:
darren.hill@iuk.ktn-uk.org***