

Prior Information Notice

Research on Transport, Industrial and Commercial Refrigeration

1. BEIS

Leading economy-wide transformation by backing enterprise and long-term growth, generating cheaper, cleaner, homegrown energy and unleashing the UK as a science superpower through innovation.

The Department for Business, Energy, and Industrial Strategy (BEIS) is responsible for:

- business
- industrial strategy
- science, research and innovation
- energy and clean growth
- climate change

From 2021 to 2022, our priorities will be to:

- fight coronavirus by helping businesses to bounce back from the impacts of COVID-19, supporting a safe return to the workplace and accelerating the development and manufacture of a vaccine
- tackle climate change: reduce UK greenhouse gas emissions to net zero by 2050
- unleash innovation and accelerate science and technology throughout the country to increase productivity and UK global influence
- back long-term growth: boost enterprise by making the UK the best place in the world to start and grow a business

Read our [Outcome Delivery Plan](#) to find out how we are performing against our priorities.

BEIS is a ministerial department, supported by 42 agencies and public bodies.

BEIS replaced the Department for Business, Innovation and Skills (BIS) and the Department of Energy and Climate Change (DECC) in July 2016. We employ around 5,000 staff who work in our offices in London, Aberdeen and around the UK.

For further information please visit: <http://www.beis.gov.uk>

2. Science and Innovation for Climate Energy (SICE)

As part of the Government's Net Zero Innovation Portfolio, BEIS are investigating new ways in which the UK can deliver its net zero targets. SICE lead the Net Zero Innovation Portfolio which includes programmes such as the Energy Entrepreneurs Fund, the Industrial Energy Efficiency Accelerator and Red Diesel replacement. The portfolio also includes a programme of underpinning technical research, past commissioned research projects have included the "Energy Follow Up Survey", "Cooling in the UK" and "Cost Optimal Domestic Electrification".

3. Description

BEIS is planning to procure a research project determining the emissions and decarbonisation pathways of Transport, Industrial and Commercial Refrigeration (TICR).

This potential procurement would seek a multidisciplinary team of experts to deliver the research outputs, using a range of methods from on-site surveys, energy modelling, and horizon scanning. The outcomes of this work will be used as evidence for various policy work in BEIS, Defra, and DfT. It will be used to update the assumptions in the National Atmospheric

Emissions Inventory (NAEI). A key part of this project is also to translate the research outputs to both policymakers and industry end-users, such as operators, installers, manufacturers, and estates managers.

We expect this project to run from September 2022 to August 2024.

Our preliminary budget for this work is up to £680,000 (excluding VAT).

4. Aims of the supplier day

BEIS would like to invite potential bidders to a supplier day at the 1 Victoria Street, London Conference Centre on 3rd May at 3pm. There will be an opportunity to learn more about the requirement, open floor questions, and network with other interested suppliers. To encourage networking, we will organise a workshop session to brainstorm innovations and issues around refrigeration.

This supplier day is aimed at raise awareness of the procurement opportunity and gathering feedback on the project proposal.

The bid and project timelines will also be discussed, to allow bidders the chance to plan ahead. This will be an opportunity to introduce attendees to the Crown Commercial Service Heat Networks and Electricity Generation Assets (HELGA) Dynamic Purchasing System (DPS) and ask questions to the Procurement Lead. This supplier day is also a networking opportunity for bidders to identify potential consortia partners.

However, by registering and attending you will be engaging in non-competitive dialogue which will enable BEIS to develop and assess the market's appetite, concerns and views on formulation of its requirements. BEIS may consider the information and responses received as part of the preliminary market consultant to help inform the specification and further decision making in relation to the planning and conduct of the proposed procurement, ensuring all valid options are considered.

Any information supplied as part of preliminary market consultation shall not place any supplier at an advantage in a potential procurement process.

Attendance is restricted to 3 individuals per supplier. We would request that attendance is restricted to key members of your organisation that would have a keen interest in this project and be able to add value to the discussions that will take place.

If you believe this will of interest to you and your organisation, please register your interest by providing the following information to fmprocurement@uksbs.co.uk, marking the email FTO Rhedyn Griffiths and reference our unique reference number FM21297.

- Attendee(s) Name
- Attendee(s) Email Address
- Organisation Name
- Confirm whether you are already a member of the HELGA DPS

5. Background

Existing data suggest TCR represents about 2% of total UK emissions, but there is large uncertainty in this estimate. As the UK is committed to reach net zero emissions by 2050, it is necessary for the UK Government to better understand all sources of emissions and tackle hard to abate areas. One such area is industrial decarbonisation, for which the Strategy was

published in March 2021. Refrigeration is a significant, and often overlooked, energy end-use in industry. Innovation in refrigeration has been limited in the past two decades, and the potential for emissions reduction needs to be better understood.

Categorised as “a traditional blind spot in climate and development policy” by the IEA in 2020, several international reports on cooling were recently produced, inviting further innovation and attention to the sector. However, these reports were mostly focused on domestic cooling and mobile air conditioning, which represent over half of cooling emissions. A recent study published by BEIS, “Cooling in the UK” (2021), and their 2019 “Energy Innovations Impact Assessment” produced useful evidence behind the existing cooling innovations and measures to abate emissions, but these were also mostly focused on the domestic sector. BEIS has reviewed existing data sources and literature and found that there was a lack of evidence behind the size of cooling emissions in TICS sectors, and how existing efficient technologies or innovations could abate these.

6. Deliverables

The research questions underpinning the research requirement are the following:

- What are the current refrigeration energy demand/ emissions across end-use sectors?
- How will TICS demand/ emissions increase? No study has yet investigated this, despite market drivers increasing demand for dispersed cold storage, warmer temperatures requiring higher cooling loads, and more frequent heat waves.
- What are the most promising innovations to reduce energy demand in refrigeration, and how do they vary by sector? What is the abatement potential and costs of different types of innovation, such as technological (immersive cooling,
- What tools do end users and practitioners need to deliver net zero in TICS?
- How could policy and innovation be part of the solution to decarbonising TICS?

Through an internal study BEIS have categorised TICS and identified six end-use cases with large cooling demands (representing 15-70% of consumption): transport refrigeration units, chemical & pharmaceutical manufacturing, food and drink manufacturing, data centres, retail and cold stores.

The final deliverables will be a set of reports, data and models on TICS.

More information about envisaged methods will be provided at the engagement event. All details are subject to change before the release of the invitation to tender.

7. Supplier attributes

We are keen to work with suppliers who can offer expertise across:

- Innovations in industrial, commercial and transport refrigeration systems
- Energy site surveys, with a focus on ventilation, infiltration and Refrigeration/Air condition/Heat pumps
- Decarbonisation roadmaps
- Energy modelling of non-domestic buildings or archetypes
- Development of user guides, including benchmarking, and learning materials on technical topics
- Authoring technical papers and summary documents for non-specialist audiences
- Experience with national datasets such as NAEI, CCAs, DUKES, etc.
- Technical experts on cooling systems

8. Route to Market

For the avoidance of doubt, this notice is not a Call for Competition. BEIS will be utilising the CCS RM3824 Heat Networks and Electricity Generation Assets (HELGA) DPS for the purposes of this competition, if you wish to be invited to this tender opportunity you will need to ensure you are registered against the HELGA DPS under the following Service and Filters before Wednesday 4th May 2022.

Service 1: Energy Advisory, Design and Technical Services. The filters selected are as follows:

Energy Advisory Services:

- Energy Data Management Software & Systems
- Energy Efficiency in Buildings
- Energy Storage & Demand Side Response (DSR)
- Environmental Services
- Heat Networks, Space Heating and Domestic Heating (including Heat Pumps)
- Industrial Energy Efficiency
- Technology, Science and Energy Modelling

Energy Design Services

- Industrial Energy Efficiency
- Technology, Science and Energy Modelling

Energy Technical Services:

- Energy Data Management Software & Systems
- Energy Efficiency in Buildings
- Energy Storage & Demand Side Response (DSR)
- Environmental Services
- Heat Networks, Space Heating and Domestic Heating (including Heat Pumps)
- Industrial Energy Efficiency
- Technology, Science and Energy Modelling

New Supplier on HELGA

If you are a new supplier looking to register against HELGA please follow the below instructions.

1. Follow this link <https://supplierregistration.cabinetoffice.gov.uk/dps#utilitiesandfuels> and select 'Access as a Supplier'
2. Complete the selection questionnaire in full
3. Submit application, once submitted the CCS DPS team will review your application and either request further information or approve your application.

If you have any issues with regards to locating your details and/or with the process and require assistance, the platform providers, NQC, will be best placed to assist you and can be contacted via the following details:

- Phone: 0161 413 7982 (General service desk)
- Email: Support@nqc.com

Existing Supplier on HELGA

If you are an existing supplier against HELGA and you need to amend the filters your organisation has access to please follow the below instructions.

1. Sign into dashboard and locate 'Appointed' assessment.
2. Select 'Update DPSQ' from the hyperlink options on the application.
3. Navigate through already pre-populated assessment up to where you need to make updates whereby fields can be edited to add/change information.
4. Submit application and return to Assessing whereby the CCS DPS team will update the application status back to appointed.

If you have any issues with regards to locating your details and/or with the process and require assistance, the platform providers, NQC, will be best placed to assist you and can be contacted via the following details:

- Phone: 0161 413 7982 (General service desk)
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