

Research and analysis: Marine species migration pathways

Requirement R014

Requirement detail:

Improved information on the migratory pathways, timings and relative conservation importance of marine species is required to inform balanced evaluation of the cost and benefits of protecting those pathways.

Though information on all migratory species would be useful, early work will be to identify the species that are of most interest (including migratory fish), particularly species that are subject to statutory conservation measures.

This requirement focuses on migration (predictable large-scale movement in space and time) rather than just mobility e.g. dispersal.

MMO use

Marine Planning:

This will improve identification of intensively used sites or times of year when a species uses an area to migrate. This will help Marine Planning to better understand compatibility with human pressures and to consider addressing current or potential impacts in the marine plans, therefore improving delivery of marine planning.

Marine Licensing:

This will improve the consideration of migratory species in licence applications and could influence the need for, or nature of, conditions reflecting the importance of that area for migratory species. Information on timings will be of particular importance to increase the accuracy of time based conditions applied to licences, potentially increasing the effectiveness of advice given to the MMO but also ensuring any burden placed on activities is proportionate to the risk identified.

External interest

Natural England, JNCC, Cefas, Scottish Natural Heritage

Delivery target

Q3, 2018

News story: Cleantech startups set sights on US market

The businesses, which all have an innovation that can benefit the environment, went on an [Clean + Cool Mission](#) this week (10 to 17 June 2017).

The mission is backed by Innovate UK and [Long Run Works](#). It supports early-stage, high-potential companies to connect with opportunities through being part of an organised programme. This means they are able to explore cross-border opportunities and find faster routes to their target market.

Innovative UK SMEs

All of the businesses were selected to take part by a panel of judges. The panel was made up of representatives from Clean + Cool, Innovate UK, Department for International Trade, Knowledge Transfer Network, Greenhouse PR, PwC, Silicon Valley Bank, Volans, Whitefox Technologies and Women in Cleantech & Sustainability.

Businesses on the mission include:

- [Aceleron](#), which produces low-cost remanufactured battery packs from used lithium ion batteries
- [Arborea](#), whose carbon bio-converter 'bionic leaf' tiles enable photosynthesis to happen in the built environment
- [Bowman Power Group](#), a provider of electric turbo compounding technology, that improves the efficiency of gas and diesel-fueled engines in industrial stationary power generation
- [BuffaloGrid](#), which gives people in off-grid locations the ability to charge their phones and access internet services through remote solar-powered hubs
- Cellular Agriculture, a company looking to change how protein is produced for food consumption through tissue engineering technology
- [CCell](#), which has pioneered a wave energy, delivering more power while weighing less. Potential users include sea-water desalination plants and remote inhabited islands dependent on diesel generated electricity.
- [Gravitricity](#), which is developing grid-scale energy storage system that uses gravitational potential to store electricity
- [Green Fuels](#), the biodiesel equipment manufacturer that converts waste oils and fats into biofuels, such as jet fuel
- [H2GO Power](#), a University of Cambridge spin-out that uses solid-state, controllable hydrogen storage and generation for fuel cells
- Hexigone Inhibitors, which is developing environmentally-responsive organic and metallic coatings that are protected from degradation
- [Kelda Technology](#), whose digital shower system improves water efficiency to use 50% less water

- [Meteor Power](#), which is developing a new electric, high-performance motorcycle
- [Perpetual V2G Systems](#), producing power systems that harvest energy from vehicles that would be otherwise lost and store it onboard to be used later
- Rotaheat, which has pioneered compact technology that converts mechanical rotational energy to heat fluids at over 120C
- [SEaB Energy](#), whose patented anaerobic digestion systems in shipping containers generate clean energy from organic waste
- Senergy, which designs and manufactures integrated polymer solar thermal panels. It is now part of [Lloyd's Register](#)
- [SOMI Trailers](#), using a novel truck trailer design to utilise the space underneath and carry 31% extra pallets
- [Stickyworld](#), a Software as a Service (SaaS) platform to collect and sort ideas, consult on proposals or engage and educate different stakeholder groups
- [Tevva Motors](#), which has developed electric range-extended vehicles that lower emissions and operational costs
- [Topolytics](#), which combines mapping, machine learning and geospatial analytics to make industrial waste visible, verifiable and valuable

Connecting innovators

Ian Meikle, Director – Infrastructure Systems, Innovate UK says:

Clean + Cool is a great example of the role Innovate UK plays in connecting innovators with the right partners they need to succeed. The Mission tackles the human challenges to innovation, helping early stage CEOs grow their ambition, profile and network, while improving their pitch and insight.

[Find out more about our work in this sector](#).

Engineering success

This is the sixth Clean + Cool mission. Previous missions have resulted in success, including UK engineering company Whitefox Technologies.

Through 2 missions to San Francisco and Brazil, they were able to make connections and gain knowledge of the biofuels industry and legislation in the US. This led to them pitching their solutions to US biofuel producer Pacific Ethanol. They now have a commercial deal, and are receiving interest from other companies in North America and Europe.

[See the Whitefox Technologies success story](#).

Notice: B46 1AQ, Forterra Building Products Limited: environmental permit issued

The Environment Agency publish permits that they issue under the Industrial Emissions Directive (IED).

This decision includes the permit and decision document for:

- Operator name: Forterra Building Products Limited
- Installation name: Forterra Building Products Limited
- Permit number: EPR/QP3435DY/A001

Notice: LE4 1WX, Samworth Brothers Limited: environmental permit issued

The Environment Agency publish permits that they issue under the Industrial Emissions Directive (IED).

This decision includes the permit and decision document for:

- Operator name: Samworth Brothers Limited
- Installation name: Bradgate Bakery
- Permit number: EPR/CP3430WV/A001

News story: Infrastructure systems for a better world: apply for funding

Updated: 13 September is the deadline for application – not for registration as stated previously.

Innovate UK will invest in projects that stimulate innovation in infrastructure systems that provide critical services for the economy,

environment and society, and create growth for UK businesses.

There is up to £5 million for projects that last between 3 and 12 months. Up to £10 million is available for projects that last up to 3 years, with costs between £100,000 and £5 million inclusive.

You can also apply into a [Knowledge Transfer Partnership](#) in infrastructure systems if you'd like to work with a recent graduate.

The opportunity

Infrastructure systems are the backbone of:

- economic stability
- growth
- competitiveness
- productivity

They are vital for social wellbeing and environmental sustainability; especially so when you consider the growing number of people, particularly in urban areas, who rely on these systems.

There is £425 billion of planned public and private infrastructure investment in the UK to meet the challenges and make the most of our world-leading capabilities in this area.

This includes infrastructure solutions in:

- planning
- engineering
- architecture
- energy
- the intelligent mobility of people and freight
- communications

We also have a strong base of creative start-ups in the digital economy and excellent academic research to support this aim.

[Read about the opportunities in government's National Infrastructure Delivery Plan 2016–2021.](#)

Our priority areas

We're particularly interested in projects in our priority areas for infrastructure systems. These are:

- smart infrastructure that improves whole-life performance and/or cost and resilience
- energy, including:
 - energy systems that flexibly match changing energy supply and

- demand profiles at local, regional or national scale
- nuclear fission innovations that lead to major cost reductions, improved asset integrity and develop the supply chain
- offshore wind innovations that result in significant reductions in the cost of energy
- connected transport that encourages more efficient transportation of goods and people across more than one mode
- urban living, addressing the challenges people face in urban areas

[Read more about our work in the infrastructure systems sector.](#)

Competition information

- the competition opens on 10 July 2017, and the deadline for applications is 13 September 2017
- projects must be led by a UK business or research and technology organisation
- you may work alone if you are an SME and your project is under one year with costs of less than £100,000. Otherwise, you must work with partners, including at least one SME
- total project costs can range between £25,000 and £5 million, and last up to 3 years
- businesses can attract up to 70% of their eligible costs, depending on their size and the project type

[Apply for the infrastructure systems competition.](#)