



Competition Scope



Innovate
UK

Clean Maritime Demonstration Competition – Round 4

Scope

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Competition aims

The aim of this competition is to fund real world demonstrations, pre-deployment trials and feasibility studies into clean maritime technologies that reduce greenhouse gas emissions.

Your proposal must focus on clean maritime technology. Your project must do one of the following:

- design, develop, test and deploy technology
- conduct a technical and economic feasibility study

Please see the online competition pages for full details

Strands

CMDC Round 4 has three strands.

Strand 1 – Vessel or Infrastructure Demonstrations

Strand 2 – Vessel and Infrastructure Combined Demonstrations

Strand 3 – Feasibility Studies and Pre-Deployment Trials

It is the applicant's responsibility to ensure their application is submitted into the correct strand.

If you submit your application into the wrong strand, it will be marked as ineligible and not sent for assessment.

If you are in any doubt about which strand to apply into, you must check by email to support@iuk.ukri.org at least 10 working days before the competition closes.

Strand 1 aim

The aim of this strand is to fund **real world demonstrations** of clean maritime technologies in an operational setting.

Your project must develop, test and deploy novel clean maritime technologies focused on:

on-vessel technologies

or

shoreside or offshore infrastructure, including at ports, harbours and wind farms

Projects that aim to simultaneously demonstrate vessels and infrastructure together must apply into Strand 2 of the competition.

Strand 2 aim

The aim of this strand is to fund real world demonstrations of clean maritime technologies in an operational setting.

Your project must develop, test and deploy novel clean maritime technologies focused on:

on-vessel technologies

and

shoreside or offshore infrastructure, including at ports, harbours and wind farms.

Projects that will demonstrate on either vessels or infrastructure separately must apply into Strand 1 of the competition.

Strand 3 aim

The aim of strand 3 is to fund detailed feasibility studies and plans for innovative technology demonstrations of scalable clean maritime solutions.

- For a feasibility study proposal, your project must undertake a technical and economic feasibility study associated with the development and real world demonstration of on-vessel technologies, infrastructure technologies or both.
- For pre-deployment trials, your proposal must design, develop and test novel clean maritime technologies focused for on-vessel technologies or infrastructure technologies or both.

Projects that aim to deploy vessels and infrastructure in real world conditions must apply into Strand 1 (vessel or infrastructure demonstrations) or Strand 2 (combined demonstrations) of this competition.

Types of vessel (all strands)

Technologies for all sizes and categories of maritime vessel subject to the Merchant Shipping Act 1995 are in scope. Solutions can be suitable for one target size of vessel or multiple. Pleasure and commercial vessels are in scope.

Where your project intends to utilise a vessel, the vessel is expected to be a United Kingdom Ship, otherwise you must provide justification for use of a non-United Kingdom Ship in your application. United Kingdom Ship is defined in 85(2) of the [Merchant Shipping Act 1995](#).

Please note that we have priority themes in CMD4 that have specific vessel types:

- International ferries
- Vessels greater than 24 metres in length

Types of infrastructure (all strands)

All ports and harbours are in scope, including infrastructure for freight, passenger, pleasure and commercial vessels. Offshore infrastructure is also in scope, such as wind farms.

Priority Themes (all strands)

Your project can focus on one or more of the following:

Prioritised themes:

- domestic green corridors
- international ferries
- vessels greater than 24 metres in length
- ammonia solutions

Other Vessel Themes (all strands)

Your project can focus on one or more of the following:

Vessel low and zero emission technologies:

- vessel propulsion and auxiliary engines, for example, batteries, fuel cells, and internal combustion engines using low or zero carbon alternative fuels such as hydrogen, methanol, ammonia or multi-fuel combinations
- wind propulsion, including soft-sail, fixed-sail, rotor, kite and turbine technologies, targeting a range of ship types from small vessels to large cargo carriers, both as primary and auxiliary propulsion
- low carbon energy storage and management
- physical connections to shoreside power or alternative fuels, including fuelling lines
- enabling technologies such as motors, drives, sensor and power electronics
- energy efficiency technologies, where they significantly enhance the vessel range or lower alternative fuel usage to enable the fuel's viability

Projects developing 100% battery electric solutions for vessels less than 24 metres need to show clearly how their project is novel and how it addresses limitations with existing electric vessel solutions.

Other Infrastructure Themes (all strands)

Your project can focus on one or more of the following:

Infrastructure technologies including offshore solutions:

- Shoreside storage and bunkering of low and zero carbon fuel
- charging infrastructure and management for electric vessels
- shore power solutions, such as enabling docked vessels to turn off their conventional power supply for ancillary systems
- physical connections to shoreside power or alternative fuels, including fuelling lines
- shoreside renewable energy generation at the port to supply vessels
- low carbon fuel production, such as hydrogen, methanol, ammonia
- zero emission infrastructure, including stationary assets for freight handling and port operations within a port or harbour site.
- zero emission offshore infrastructure for wind, oil and gas farms that support zero or low emission vessels

Projects focused on shore power technology need to show clearly how their project is novel and how it addresses limitations with existing shore power solutions

Demonstration period (Strand 1 and Strand 2 only)

Your demonstration must include the technology and vessel being used in a representative real world operational environment for a period of at least **two weeks**.

There is no fixed definition of how projects must undertake their demonstration and use this minimum two week period. The demonstration will depend on your project, technology and what is required to prove its performance. We strongly encourage projects to utilise this minimum two week period fully and to gather as much performance data as possible.

Your application must clearly state how you plan to undertake the demonstration, including how much time in operational use you currently expect and why this is appropriate for your project. During the demonstration you must validate the technology or vessel's operation for the use case or target market and capture data on the performance.

Projects which include a vessel intended to operate at sea must include appropriate demonstrations for a minimum of two weeks at sea. Projects may undertake initial tests in categorised waters before progressing to sea, subject to compliance with relevant regulations, but this will not count towards the two week minimum demonstration period.

Demonstration (Strand 3 pre-deployment trials)

If your pre-deployment trial project is focused on on-vessel technologies, you must only involve factory or dry dock testing. Your project must not plan to test technologies in the water as part of this project.

You must plan for the real world demonstration or deployment developed in your project to be operational in water by the end of 2027.

Regulation

Projects must detail their plan for compliance with regulation and how they will work with relevant regulatory bodies for novel technologies.

Projects involving a vessel must engage with the Maritime and Coastguard Agency (MCA) during the project. The MCA may also contact successful projects shortly after winners are notified to discuss the details of your project. Failure to engage with the MCA when requested could result in your project being suspended or funding withdrawn.

Value for the UK

We strongly encourage projects from around the UK to support boosting jobs and economic growth, including from ports, vessel operators, vessel manufacturers and their supply chain. We welcome projects from areas with existing clean maritime expertise or co-located in clusters of renewable energy production and usage including hydrogen.

You must clearly demonstrate how you will anchor IP generated by the project in the UK. You must also show how this IP will be exploited for the benefit of the UK supply chain in the future.

Portfolio Approach

We want to fund a variety of projects across different technologies, strands, markets, technological maturities, theme, location, and research categories. We call this a [portfolio approach](#).

Previous applications and projects

We encourage new projects and consortia that have not been part of previous rounds of the Clean Maritime Demonstration Competition (CMDC). You are not required to have been successful in a previous round of the CMDCs to apply with an eligible project to Round 4.

If funded for a project in the recent Round 3 of the CMDC, you are ineligible for funding to demonstrate the same project or technology concept in Round 4.

Once your project is completed, you are expected to be at the point that you are investment and construction ready to fully scale the solution and take it to market.

Research Categories

(Strand 1 and 2 only)

We will fund **industrial research** projects and **experimental development** projects

(Strand 3 only)

We will fund **industrial research** projects and **feasibility studies**

Research categories are defined in the guidance on categories of research on the Innovate UK website.

Projects we will not fund (all strands)

We are not funding projects that are:

- focusing only on increasing the efficiency of current conventional fossil fuels and fossil fuel powertrains of maritime vessels
- focusing on marine conservation and ecology, such as mapping the sea floor
- focusing on autonomy and smart shipping
- focusing on on-vessel power generation and fuel production to reduce greenhouse gases (GHGs), for example, wind turbines, solar panels, synthetic fuel production
- for capital investment only
- focusing on non-methanol biofuels, except for projects strictly focused on inland waterway vessels and Non-Road Mobile Machinery (NRMM), which includes port-side machinery
- focusing on nuclear technologies

Projects we will not fund (all strands)

We are not funding projects that are:

- focusing on Personal Watercraft (PWC)
- focusing on the creation of open access research facilities in clean maritime
- focusing on the use of synthetic fuels, note: this exclusion does not apply to methanol, ammonia and hydrogen fuels
- focusing on submarines and submersible vessels
- are covered by existing commercial agreements to deliver the proposed solutions
- a duplicate of existing innovation

We cannot fund projects that are:

- dependent on export performance, for example giving a subsidy to a vessel manufacturer on the condition that it uses 50% UK sourced components in their product
- dependent on domestic inputs usage, for example giving a subsidy to a vessel manufacturer on the condition that it uses 50% UK sourced components in their product

Projects we will not fund

(Strand 1 and 2 only) We are not funding projects that are:

- feasibility studies

(Strand 3 only) We are not funding projects that are:

- feasibility studies for an international green corridor

Project requirements (Strand 1 and 2)

Your project must:

- underpin a full commercial and operational technology deployment after March 2025, by delivering a meaningful operational demonstration in real world conditions for at least two weeks before April 2025
- achieve market potential through a clear strategy for commercialising the technology and the products, demonstrating the potential for significant value to the UK
- deliver emissions reduction by demonstrating a significant greenhouse gas reduction
- bring together a team with the necessary expertise and experience to successfully deliver the project objectives, and include a representative end user such as vessel operators, ports or harbour authorities

Project requirements (Strand 1 and 2)

At the end of your real-world operational demonstration project, you must:

- produce a clear, detailed and costed plan to fully scale and enter the solution into UK and global markets over the next 3 years, including your technical approach, objectives and business case
- detail your plan for compliance with regulation and how you will work with relevant regulatory bodies for novel technologies
- quantify the reduction of lifecycle emissions and positive economic impacts in the future, including citing usage data from the demonstration
- explain your understanding of any remaining barriers to full market adoption
- detail the expected commercial applications and exploitation to target customers and potential market segments for your outcomes
- share your findings with The Department for Transport (DfT), Maritime and Coastguard agency (MCA) and Innovate UK in your end of project report
- produce a detailed plan for disseminating the results of your demonstration project and knowledge sharing with clean maritime stakeholders and industry

Successful projects will be required to engage with the Department for Transport (DfT), Innovate UK and any third party contractors appointed by them related to CMDC projects.

Project requirements (Strand 3)

Your project must:

- underpin a future demonstration by delivering a meaningful technology, route to market, or supply chain innovation
- achieve market potential through a clear strategy for commercialising the technology and the products, demonstrating the potential for significant value to the UK
- illustrate emissions reduction by demonstrating a significant greenhouse gas reduction
- bring together a team with the necessary expertise and experience to successfully deliver the project objectives, and include a representative end user such as vessel operators, ports or harbour authorities

Project requirements (Strand 3)

At the end of your project, you must:

- produce a clear, detailed and costed plan for how your technology will be demonstrated in an operational setting in or between ports or on vessels, including your technical approach, objectives and business case
- quantify the potential reduction of lifecycle emissions and positive economic impacts in the future
- outline expected commercial applications and exploitation, and potential market segments
- share your findings with DfT, Maritime and Coastguard agency (MCA) and Innovate UK.
- produce a clear plan for disseminating the results of your project and knowledge sharing
- explain your understanding of any barriers to market adoption
- detail the barriers to adoption that the future demonstration will overcome and the innovation that will be delivered
- detail the resources needed to carry out your real world demonstration, including funding requirements, timescales for delivery, planning permissions, implications of current and future regulation, new partners and information for a clear business case

Successful projects will be required to engage with the Department for Transport (DfT), Innovate UK and any third party contractors appointed by them related to CMDC projects.

UK Domestic Green Shipping Corridors (Strand 1 and 2)

If your proposal focusses on a demonstration of a domestic green shipping corridor, you must demonstrate a vessel navigating between both ends of the corridor in real-world operational setting. To qualify as a corridor, at least one zero-emission (well-to-wake) vessel must be transiting the route during the minimum two week demonstration period.

If your domestic green shipping corridor project does not require investment in both a vessel and infrastructure at either end of the corridor then you should apply into Strand 1.

If your domestic green shipping corridor project requires investment in both vessel and infrastructure at either end of the corridor then you should apply into Strand 2.

UK Domestic Green Shipping Corridors (Strand 1 and 2)

At the end of your domestic green corridor project you must also:

- provide annual additional costs of delivering the corridor, considering various market participants, for example: ship owners, ports, fuel suppliers, with clear plans to meet costs, covering both private and public funding sources
- prove the direct and indirect environmental impacts from delivering the corridors, including impacts on greenhouse gas and air pollutant emissions
- produce a clear plan for scaling up the number of zero-emission vessels and corresponding landside infrastructure, replicating the corridor elsewhere, and potential additional benefits to other routes and the wider fleet
- demonstrate potential scalable zero emission energy source options for the corridor
- quantify the energy requirements each year, with a clear plan for how this would be produced, imported, distributed, stored and bunkered, and the conditions to mobilise and meet demand
- prove the design of the zero-emission vessels that are being used on the corridor, for example, newbuild or retrofit vessels, with a clear plan for how more vessels would be delivered after the demonstration project
- prove how the fuel will be safely and effectively supplied and bunkered, and stored onboard vessels
- include a clear plan for how the corridor would comply with all relevant regulations, for example safety regulations
- develop a clear plan for disseminating learnings and data from the corridor across the industry

UK Domestic Green Shipping Corridors (Strand 3 – feasibility studies)

If your proposal focusses on a green shipping corridor, you must assess and develop a clear implementation plan for the real-world establishment of the corridor. To qualify as a corridor, plan for at least one zero-emission (well-to-wake) vessel to be transiting the route.

UK Domestic Green Shipping Corridors (Strand 3 – feasibility studies)

At the end of your domestic green corridor feasibility study you must also:

- estimate the annual additional costs of delivering the corridor, considering various market participants, for example: ship owners, ports, fuel suppliers, with clear plans to meet costs, covering both private and public funding sources
- estimate the direct and indirect environmental impacts from delivering the corridor, including impacts on greenhouse gas and air pollutant emissions,
- estimate the scope for scaling up the number of zero-emission vessels and corresponding landside infrastructure, replicating the corridor elsewhere, and potential additional benefits to other routes and the wider fleet
- investigate potential scalable zero emission energy source options for the corridor, estimate the quantity of energy required each year, with a clear plan for how this would be produced, imported, distributed, stored and bunkered, and the conditions to mobilise and meet demand
- consider the design of the zero-emission vessels that would be used on the corridor, for example, newbuild or retrofit vessels, with a clear plan for how these vessels would be delivered
- determine how the fuel will be safely and effectively supplied and bunkered, and stored on board vessels
- include a clear plan for how the corridor would comply with all relevant regulations, for example safety regulations
- develop a clear plan for disseminating learnings and data from the corridor across the industry



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Thank you for listening

For any questions on scope, please contact support@iuk.ukri.org

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