

Maritime Research and Innovation UK

Net Zero Carbon Workshop

3 November 2020

Professor Alex Duffy - Director

MarRI-UK

What

- Collaborative partnership between industry, academia and government to tackle innovation and technology challenges in the Maritime Sector.
- Provides coherence and leverage across the UK's Maritime Research & Innovation
- Focuses on mid-TRL (3-7).
- Seeks to amplify and develop rather than duplicate existing organisations.
- Core team hosted at the University of Strathclyde

Membership

Tier 1 Steer	Key industry leaders £50,000 pa
Tier 2 Influence	Industry support org £10,000 pa
Tier 3 Contribute	SMEs £1,000 pa

Members



Partners



Benefits

Engage in multi-disciplinary research to achieve effective solutions;
 Accelerate technological innovation, optimising impact across the sector;
 Strong integration between industry, representative organisations, and academia.

Priorities

4 theme priorities:
 Autonomy; Clean maritime; Design and build (including integration); and Support cost reduction.
2 cross-cutting themes:
 Data and decision support; and Socio-technical interaction.

Past funding opportunities

Clean maritime call



£1.5M to fund technology, process innovations or services that offer significant improvements to systems, timings, processes or technology for clean maritime services and operations.

£1.4M awarded to 10 projects from 55 submissions

Technology and innovation in UK Maritime Call



£1.5M to fund innovative solutions to demonstrate potential applications for innovative technology or for proof of concept of new ideas in the field.

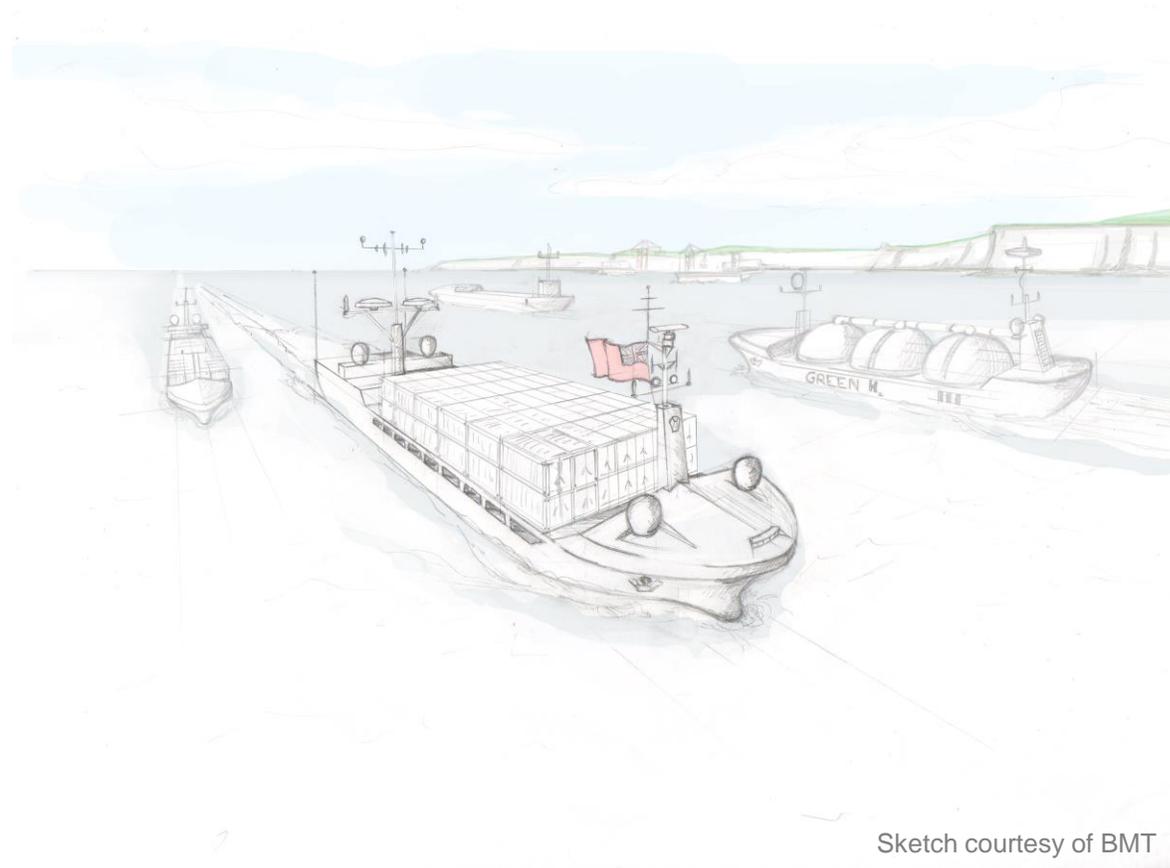
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MarRI-UK Current Activities

- Establish nodes and regional activity across the UK.
- Develop 5-year research roadmaps.
- Secure sustained funding.
- Submitted Flagship project proposal in Zero-carbon Coastal Highway (worth £530M) for Comprehensive Spending Review bid.
- Manage projects and programme:
 - Clean Maritime and Technology and Innovation in UK Maritime projects.
 - Smart Shipping Technology Market Research (£150K).
 - Smart Maritime Land Operations (SMLOs) Project (£1.35M funding from DfT to be matched by industry).

Zero-carbon Coastal Highway

A MarRI-UK Flagship initiative proposal



Sketch courtesy of BMT

Maritime Sector overview

Definition

- consists of shipping, ports, and maritime business service industries
- including but not limited to designing, constructing, manufacturing, acquiring, operating, supplying, repairing and/or maintaining vessels, in surface and subsea structures or component parts thereof.

Importance

- Shipping accounts for around 95% of the UK's imports and exports¹
- Supports a total of £46.1 billion to GVA, direct GVA contribution of £17 billion²
- Directly supports 220,100 jobs²
- Larger than other comparable transport industries, including, Rail and Aerospace, is only marginally smaller than the road transport industry²

1. UK Port Freight Statistics: 2018. Department for Transport. August 2020

2. State of the Maritime Nation. Maritime UK. 2019.

Market opportunities



Global market

Maritime **emission reduction** technologies could reach **£11Bn/year by 2050**, potentially resulting in economic benefits to the **UK of £510M/year³**

Ship technology market is estimated to grow by over 160% to **£226Bn by 2030**



UK market

The UK's shipping **technology** sector is a **£4Bn industry**, estimated to be worth **£13 billion/year** by 2030.



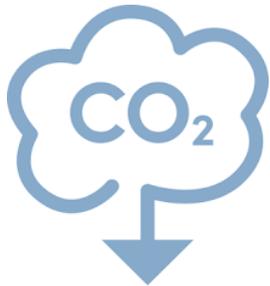
Smart shipping and autonomy are estimated to **save 3-4% of costs**, giving a direct cost reduction potential of more than **£6Bn**.

The challenges



Leading to

Relies predominately on road freight to distribute goods
Majority carried by Heavy Good Vehicles



High levels of CO₂ emissions, significant contribution to harmful levels of air pollution close to populated areas.

Highly congested Strategic Road Network and increased risk of road accidents.

Poor health and well-being of local populations.

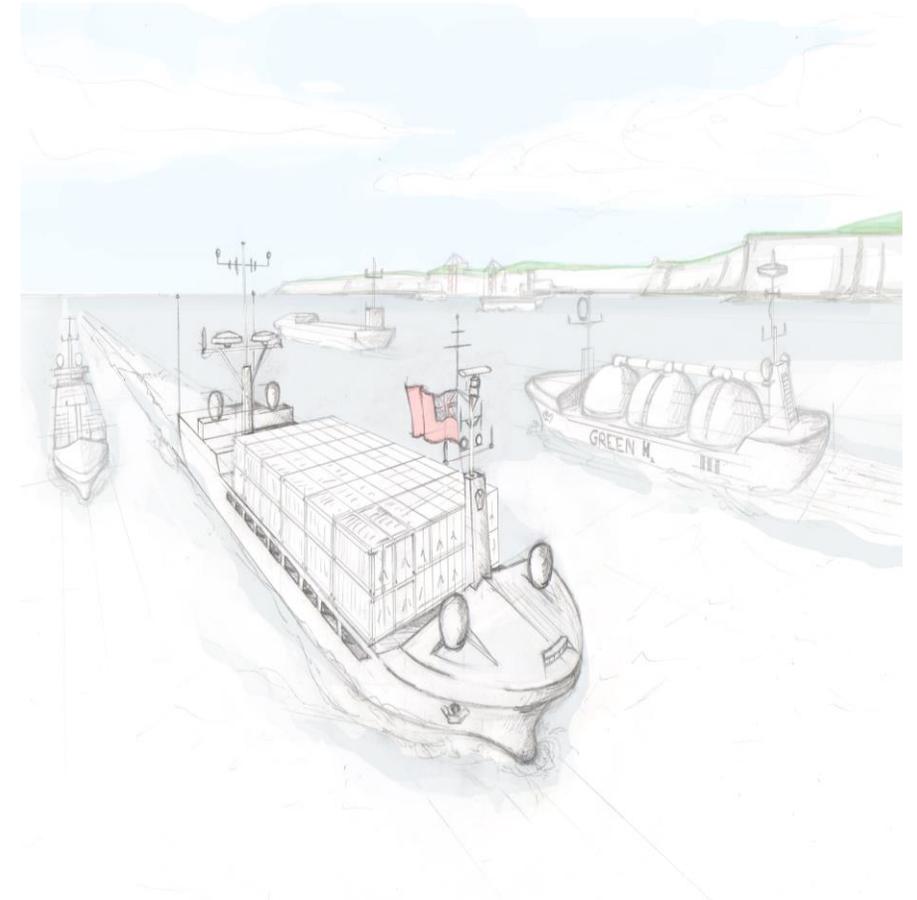
A need to enhance UK resilience to major incidents, such as the on-going Covid-19 pandemic.

Additionally



Zero-carbon Coastal Highway

- A clean, digitally enabled coastal highway,
- links the UK's existing coastal infrastructure,
- fit for purpose rapid logistics port interchanges to green autonomous ships, and
- benefit from the latest advances in autonomy, design and manufacture,
- move 25% of UK's land haulage tonne km by 2030,
- requires partnership investment of £530M over 10 years.



Sketch courtesy of BMT

Zero-carbon Coastal Highway

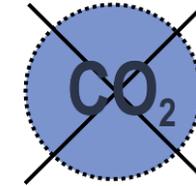


Impacts

	39,000 Jobs 
	£1.8Bn Revenue 
	30-40% Emission 
	25% Congestion 



Distribute **wealth** to regional UK coastal communities



Contribute to the **Zero Carbon Maritime Plan**



Increase **export opportunities**



Enhance **port infrastructure** whilst reducing their carbon footprint

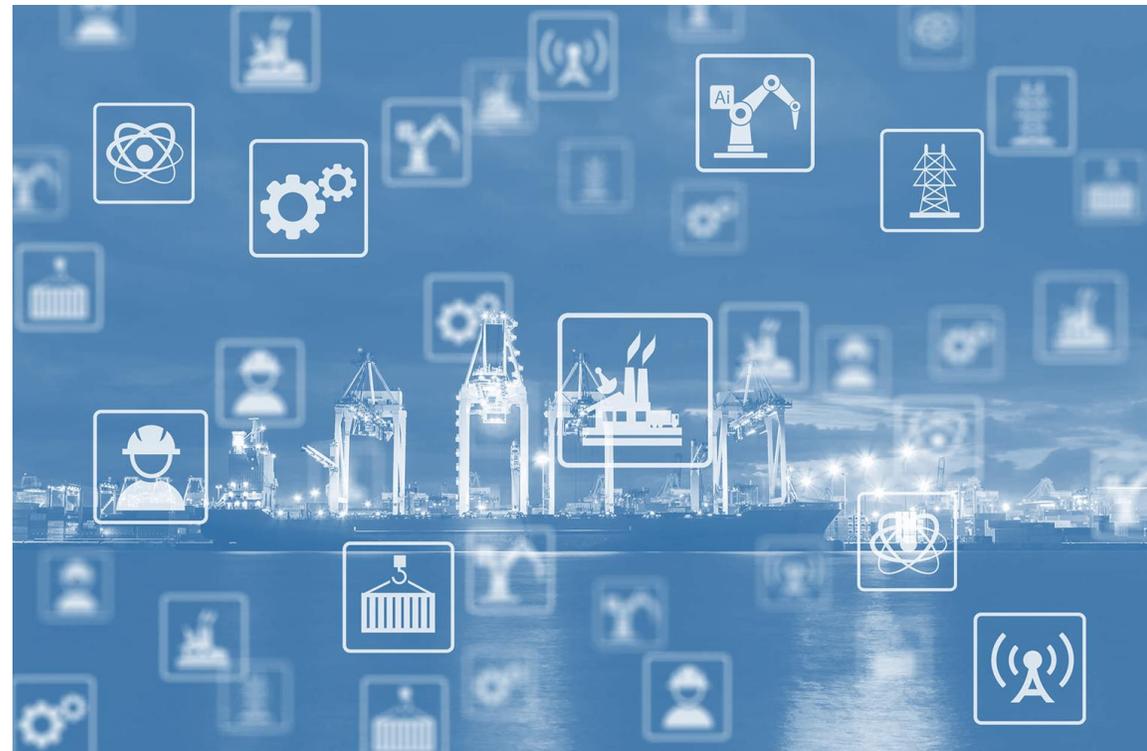


Improve British **shipbuilding productivity** and competitiveness



Improve **safety** and reduce loss of life

Smart Maritime Land Operations (SMLOs)



Smart Maritime Land Operations (SMLOs)

- **£1.35M funding from DfT to be matched by industry, through competition**
- Could be awarded as a single or multiple project
- Where similar or complimentary proposals are submitted, MarRI-UK will facilitate collaboration to promote greater impact

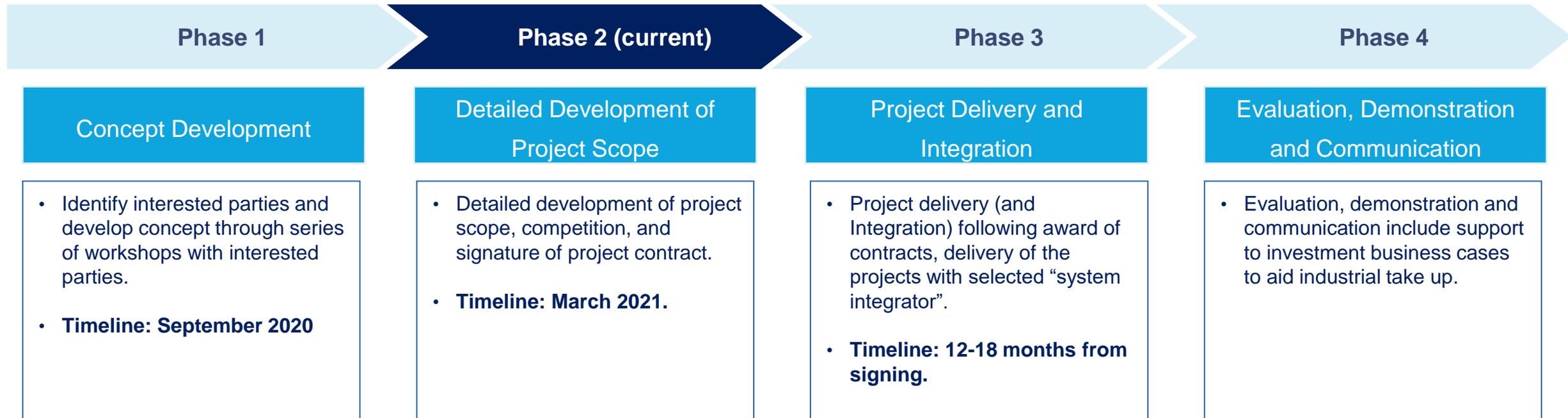
A single collaborative programme that:

- Supports automation and measurement and development of clean technologies in ports, waterfronts, docksides, harbors, etc.
- Could cover both commercial and naval ships as well as potentially large and small facilities;
- Would not be focused on ports alone.

Advantages:

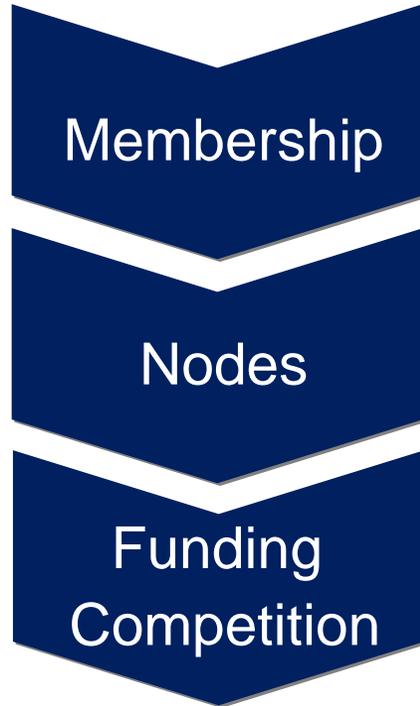
- Engage in regional development
- Link with existing or potential innovation hub(s)
- Potentially support infrastructure development, and
- Consolidate some of the Clean Maritime Call Eols into a single project to move forward the CMP and Maritime 2050 agenda

Smart Maritime Land Operations (SMLOs)



Competition will be announced through MarRI-UK Website and social media

Participation



- Three types of membership: industry, university, associate.
- Inclusive, open for all.
- Get in touch for further information.
- Support regional growth.
- Collaborate on needs basis
- Future funding opportunity: SMLOs
- Follow MarRI-UK Social Media
- Join MarRI-UK mailing list.

“Targeting a reduction in land-based transportation requirements underpins global environmental emissions ambitions and supports local communities however, is not without its challenges. We must continue to join forces wherever we can to provide a futureproof trade option.”

John Howie MBE, Chief Executive – Marine, Babcock International Group and Chair of MarRI-UK

Further information



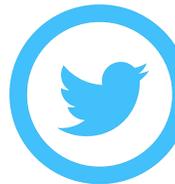
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Thank you