

## **£500,000 project to help Shetland Islands' maritime industry achieve Net Zero**

15 September 2021

A £500,000 project to support the transition to zero-carbon fuels for the Shetland Islands' maritime industry has received support from the UK Government's [Clean Maritime Demonstration Competition](#) (CMDC).

The NEPTUNE project, funded by the Department for Transport and delivered in partnership with Innovate UK, will develop a desk-based decision modelling and support system (DEMOSS) tool that will help to analyse, scope and develop plans for supporting the transition.

It is being led by the University of Strathclyde in partnership with Ricardo UK, Babcock International and Shetland Islands Council and aligns with the archipelago's 2030 net zero target.

The first phase of the project will involve gathering data on the types of marine vessels operating from Shetland and their unique characteristics to create highly-accurate 'digital twin models' – or virtual representations – of them and their supporting onshore infrastructure.

Researchers will then determine which zero-carbon technologies the different vessels could switch to and input the twin models into a digital dashboard which will monitor the flow of renewable fuels from 'well to wake'. The Shetland Islands' maritime industry's 'well to wake' carbon dioxide emissions currently total around 300 kilotonnes per year.

The results of the study will help researchers to assess the impact of zero-carbon fuel supply in terms of storage space needed, the annual amount of renewable electricity required and the other factors, such as land and water, required to match the digital model.

Professor Evangelos Boulougouris, of the Department of Naval Architecture, Ocean and Marine Engineering at Strathclyde, said: "The ambitions for transition to a Net-Zero economy creates different challenges across the UK. The Shetland Islands has a unique maritime ecosystem and requires significant investment to reach Net-Zero status.

"The modelling for this project needs to be highly-accurate to capture the requirements for a large and diverse fleet of vessels and their unique operating characteristics, and this will be a particularly innovative aspect to this project.

"The model will help to reduce the cost of planning and implementing a zero-carbon energy system for Shetland and could be used for other islands or ports too.

"DEMOSS will provide virtual testing of solutions before implementing zero carbon solutions on vessels, which gives owners the confidence they need before transitioning to cleaner maritime solutions."

James Mullineux, Head of Digital at Ricardo, said: "Ricardo is a trusted engineering services provider, supporting the decarbonisation of the global transport and energy sectors. We are proud that our expertise in digital engineering, including digital twin, and hydrogen technology can reduce time, cost and risk for Shetland in achieving Net-Zero status."

Councillor Steven Coutts, Leader of Shetland Islands Council, said: “The NEPTUNE project will help to facilitate the transformation of Shetland’s current dependency on fossil fuels to affordable, renewable energy for marine vessels and the associated support infrastructure, industries and communities.”

Neil Young, Engineering & Technology Director at Babcock International, said: “Babcock is thrilled to be working alongside our partners on this new project. It will allow us to share our global expertise in ship design, future fuels and technologies to ensure that vessel owners and operators in the marine sector select the optimum solution.”

Simon Edmonds, Deputy Executive Chair and Chief Business Officer for Innovate UK, said: “As the UK prepares to host COP26 in the maritime city of Glasgow, it is great that we can announce funding for these fantastic projects in the maritime sector that will help the UK meet its net zero goals. From this competition we saw a very high level of demand, we have seen the very best of British ideas from all over the country. It is clear that not only does the UK have a great maritime history, but also a bright and greener future too.”

The NEPTUNE Project aligns with [Project ORION](#), set up in April 2020, which aims to help turn Shetland into an international clean energy hub under ambitious plans that will see major oil and gas fields become net zero by 2030.

Strathclyde is a partner in Project ORION, which will see onshore and offshore wind energy harnessed to power platforms, homes and businesses and produce green hydrogen at scale, replacing fossil fuels by providing affordable renewable energy.

ORION will also see port facilities, including Sullom Voe, powered by wind energy and redeveloped to support the offshore wind sector and for the export of green hydrogen to the UK mainland and Europe.

**ENDS**

#### **Further information**

Project NEPTUNE is part of the Clean Maritime Demonstration Competition, funded by the Department for Transport and delivered in partnership with Innovate UK.

Announced in March 2020, and part of the Prime Minister’s Ten Point Plan to position the UK at the forefront of green shipbuilding and maritime technology, the Clean Maritime Demonstration Competition is a £20m investment from government alongside a further c.£10m from industry to reduce emissions from the maritime sector. *The programme is supporting 55 projects across the UK, including projects in Scotland, Northern Ireland and from the South West to the North East of England.* As set out in the Clean Maritime Plan (2019), Government funding has been used to support early stage research relating to clean maritime. The programme will be used to support the research, design and development of zero emission technology and infrastructure solutions for maritime and to accelerate decarbonisation in the sector.