

## **Written evidence submitted by Marine Zero (MAR0005)**

Response from Marine Zero Limited, a business established to support organisations aiming to develop a reduced or zero carbon solution for the maritime sector.

Maritime 2050, Navigating the Future, described how the UK should lead the way into a bright net-zero UK maritime future. This was a bold and inspiring ambition and great to see.

The approach to achieving this aim has been un-coordinated, with no clear cohesive strategy in place to achieve the lofty ambitions. There has been a funding opportunity with the Clean Maritime Demonstration Competition which had limited funds and was massively oversubscribed, even though many organisations decided not to apply due to the limited period of opportunity to exploit the funding.

To lead the way, we require a more integrated approach to support, there are many organisations who will be able to provide support to those who wish to be first movers and early adopters of new technologies. With no cohesive strategy in place, it is difficult to achieve this.

There is a desire to innovate which is currently hindered by a sluggish regulator, who blocks rather than enable. The formation of the Maritime Future Technologies team (MFT) within the Maritime and Coastguard Agency (MCA) was seen as a significant step forward and initially enabled us to access appropriate people to consult and agree on a way forward to enable new technology to be developed into real world commercial solutions.

Unfortunately, as the workload for the MFT has increased, their ability to support organisations has correspondingly decreased. This will deter investors and first movers from engaging in the UK market as it is now seen as high risk with the MCA being seen as a blocker and not an enabler.

To remedy this a closer relationship between the MCA, systems developers, ship builders and operators must be established. The industry itself is now creating these opportunities through the creation of working groups, e.g., UK Marine Hydrogen Working Group, which should now include the MCA as a standing member. A key role in the development of solutions to maximising the beneficial use of new technology is played by the Classification Societies. These have a more informed and positive approach to developing and using

new solutions. This is due to the trans-national approach which classification societies adopt. They develop a set of rules which are applied across boundaries. It is vital that the MCA and particularly MFT engage at a high level with Class to establish a clear and unambiguous route to the adoption of new tech solutions.

There is clearly a requirement to ensure that the new technologies are adopted in a manner which enables safe operation; the MCA have concerns around the use of hydrogen as a fuel and are seen as being obstructive and non-cooperative within this area particularly. This has a huge impact on projects where significant investment is required, as operators and developers are reluctant to take risks where the outcome is seen as unreliable.

The use of Hydrogen and hazardous voltage batteries and other new technologies in a marine environment is challenging, not just because of the technology, but also because there is little or no support network ashore or on-board vessels to fulfil the maintenance and repair requirements.

There needs to be significant increased clarity around the requirements for competence for operators, maintainers, shipyard and drydock staff. The Maritime Skills Alliance (MSA) could support the development of competence frameworks to build appropriate training and support around these. There will then need to be investment in people through training to increase capability, competence, and skill levels. This will raise the awareness of mariners and associated personnel and they should be perceived as highly skilled professionals.

To achieve this training centres will need to be developed to meet the needs of the maritime sector, they will need to have hydrogen fuel cells, hazardous voltage battery modules and systems and be able to be versatile enough to cope with new technologies as they are developed. Alongside this the MCA must be able to work with the MSA to define the requirements and develop a process for approval and recognition to ensure that the training standards meet the requirements. This will require a much more flexible approach than is currently being exhibited. In recent contacts with the MCA there has been almost no interest in developing solutions to training and/or the establishment of standards within this area. By contrast, class are interested, flexible and keen to engage, often at no cost as the outcomes of the development of training and approvals is mutually beneficial.

For new clean fuels, end-users are unwilling to commit to new technology retrofits or clean new builds without established fuel infrastructure. We still face the chicken and egg scenario.

Infrastructure developers are unable to secure investment funding without committed off takers. Commercial shore power remains impossible without either legislation or public funding. The impact of the demand for infrastructure for commercial vessel operation will be significant. The encouragement of investment in all aspects of novel propulsion and associated systems will potentially assist the funding challenge that many organisations currently face. Without infrastructure development it is difficult to see how large-scale decarbonisation of the maritime sector can flourish.

There needs to be more of a link between the IMO standards and what is happening within the UK. Looking around the world, particularly in parts of the far east and Scandinavia there is clearly both direct financial support and genuine encouragement to innovate. We see the outcomes of this with the number and variety of vessels that they now have compared to the smaller successes within the UK. The UK must be prepared to encourage early adoption of new systems to take some risks, not with safety but by enabling development to take place, being genuinely interested in the opportunities, and creating an atmosphere and market which enables the UK to lead the way. If the UK government through the Department for Transport are serious about the ambition to be seen as a leading country in this arena, significant changes to the approach need to be adopted. There is a need for much clearer signposting of the aims and objectives and how this is going to be supported and encouraged. There needs to be a more holistic view, looking at creating a supportive regulatory framework, financial opportunity, both through funding but also through stimulating commercial interest and linking this through to international opportunities that are beginning, but need much more encouragement; infrastructure, which provides the green energy that operators want and need, be it electricity or hydrogen or other new fuels.

The clusters have worked well and some of the partnerships between university and business have produced impressive results. There is much more that can be done, and the links need to be broader and stronger. One of the challenges for SME's is how to engage with the multiple clusters. It is time consuming and is usually cost prohibitive if membership fees apply. Make it easier, more appropriate for SME's and develop clusters which focus on

developing solutions with several SME's working together. This could be on complete projects or in areas such as infrastructure, legislation, or finance.

The London International Shipping Week and COP-26 were positive events, we need to showcase zero-emission autonomous vessels operating with people on-board to be at the leading edge of maritime technology. Fully automated ports servicing fully autonomous cargo vessels. The technology is available now. Are the regulations? How do we work internationally through the IMO to get UK regulations fit for purpose in autonomous vessel operation and with new technology for propulsion systems and capable of being agile enough to move rapidly as technology develops? Otherwise, we will always be in the chasing pack and never at the forefront of innovation and early adoption.

There needs to be a real focus on identifying the competencies and skills required with novel systems on vessels, the training systems and establishments will need to be developed to meet these needs. Work is underway independently to achieve this, on approaching the MCA, there was no interest in supporting this activity. Classification Societies are interested and engaged but the MCA repeatedly fails to assist in this area. The Maritime Skills Commission can engage with those of us working on this area and it is vital that frameworks are created that reflect the skills required. Agility will be key to success here as developments will happen quickly as differing fuels and systems are created to solve the challenges. SMEs are often at the forefront of developments but not given the opportunity to drive developments in training. If the support for projects is to be supplied from within the MCA local survey teams, as has been suggested; these teams will need bolstering to facilitate the level of support required. They will also require a greater understanding of their role in supporting the adoption of new technologies and a direct input into the MCA – MFT and an understanding of their approach to risk. The leading countries working in the maritime sector are maximising their opportunities through enabling new solutions and not being risk averse. It is vital that the MCA change their approach to regulatory approval and embrace risk and risk management rather than stifling development through their risk averse approaches. We just need to look at the Scandinavian countries and the lead they are taking by adopting a flexible and encouraging approach.

We hope that the points raised above are seen in the positive way in which they are intended. We are working hard within this sector and believe that there is a fantastic opportunity for the UK to be amongst the front runners and to enhance our reputation within the maritime sector. To do this we need a

more responsive regulator, a cohesive plan and action with supporting infrastructure, a broader, more flexible approach to financing investment in decarbonising maritime and a genuine interest from government.

Thank you for this opportunity.

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