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Society of Maritime Industries · UK

DECARBONISING SMALL VESSELS

General Questions

Q41: What, if any, do you think are the main barriers to accelerating the use of zero or near-zero technologies?

Regulatory Inertia

The regulatory framework for maritime innovation lacks the agility to keep pace with technological developments, particularly in areas like green fuels and maritime autonomous systems (MAS). While a vital partner for our industry, the Maritime and Coastguard Agency (MCA) is under-resourced and excessively averse to risk, both factors which hamper timely guidance and standard-setting. At the same time, the MCA's aptitude to regulate in order to avoid risk at any cost, rather than catalysing innovation and growth, is negatively affecting the competitiveness of maritime sector businesses on the global stage and – in some case – posing an immediate threat to their capacity to operate.

While SMI continues to believe that the MCA should change its regulatory profile from averting risk at any cost to catalysing growth and innovation, it needs the appropriate financial and human resources to start this process. To that end, SMI reiterates its suggestion – first expressed in our submission to HM Treasury's stakeholder consultation ahead of the Spending Review 2024 – to introduce a linkage between maritime innovation funding and the adjustments required to regulate new technological developments by the MCA. This arrangement already exists in aviation, where the Future Flight Challenge ensured that a share of £125 million of innovation funding went to the UK Civil Aviation Authority to enable it to respond effectively to any issues emerging from the regulation of innovative technology, and in road transport, where the Centre for Connected and Autonomous Vehicles has already ensured that the UK has a proven track record in leading connected and self-driving vehicle innovation, enabling joint public and private investment of £800 million through to 2030. Furthermore, it would finally reflect that the Government values the maritime sector's crucial role in making the UK a clean energy superpower and kickstarting economic growth.

Innovation Funding Uncertainty

The success of the schemes administered by the UK Shipping Office for Reducing Emissions (UK-SHORE) have demonstrated our industry's strong appetite for maritime decarbonisation.

However, the Maritime Decarbonisation Strategy (MDS) declines to immediately commit to further multi-year investment under UK SHORE beyond the Sixth Round of the Clean Maritime Demonstration Competition (CMDC), which closed in April 2025, while the Government managed to pledge £975 million of funding for aviation through the Aerospace Technology Institute (ATI) at the Spending Review 2024. Given the maritime sector's centrality in boosting the economy and protecting national security – carrying 95% of UK goods trade and enabling 99% of UK service transactions through subsea infrastructure – this lack of clarity over the future of maritime innovation funding poses a key barrier to further investment, particularly when it comes to accelerating the rollout of green fuels and technologies.

SMI urges the Government to put UK-SHORE on a permanent footing and double its funding to reflect its ambition to make the UK a clean energy superpower by giving our industry and the UK maritime sector the certainty to invest in the rollout of zero-emission vessels and infrastructure.

Skills Shortages

A strong pipeline of homegrown skilled workers throughout the country is an essential prerequisite to kickstarting economic growth, generating local prosperity and reinvigorating our domestic industrial base. The maritime sector faces significant skills shortages in areas that are critical to the delivery of decarbonisation, exacerbated by an ageing skilled workforce and limited pathways for younger talent to emerge.

SMI believes that industry and government should come together with a comprehensive strategy to attract, train and retain the next generation of maritime workers, along with upskilling and retraining existing professionals with the green and digital skills to bring about maritime decarbonisation. The provision of easily accessible pathways into maritime employment through apprenticeships and cadetships, supported by a sustainable funding mechanism, and lifelong learning opportunities are key cornerstones for a just transition.

High Capital Costs and Narrow Commercialisation Pathways

Zero-emission fuels and technologies often come with high upfront costs and, consequently, face huge barriers in accessing growth capital. Additionally, commercialisation is hindered by lack of adequate support for demonstration projects and risk-sharing mechanisms.

Besides putting UK-SHORE on a permanent footing, SMI thinks that the Government should tackle this hurdle by leveraging on the UK's position as a global financial hub to incentivise private sector investment and broaden commercialisation pathways for green fuels and technologies. The Financial Products Working Group, co-chaired by the Maritime and Coastguard Agency (MCA) and Maritime London paved the way for the UK Maritime Decarbonisation Report, which put forward proposals to unlock the £75 billion required to enable the UK's shipping energy transition.

Lack of Legislative Framework

There is currently no penalty for failing to adopt net zero technologies in the maritime sector, so there is limited regulatory or financial pressure to accelerate change. Nor is there a compelling commercial incentive — the potential to command a meaningful premium for early adoption remains uncertain, particularly for smaller vessels where investment decisions are constrained by the commercial realities of individual operators.

Legislative action is essential to drive maritime decarbonisation in line with the UK's commitments under COP26. A balanced approach combining both incentives and regulation is required. Despite the emergence of several promising solutions over the past four years, none have achieved commercial uptake. Meanwhile, the UK continues to curtail around £1 billion worth of electricity annually from existing offshore wind installations due to legislative barriers preventing its use. To unlock progress, the Government should implement a clear, legislatively driven framework to guide and accelerate decarbonisation efforts.

Q42: Are there any specific vessels and/or subsectors that should be exempt from potential future policy which may aim to accelerate the adoption of zero, or near-zero, emission propulsion systems?

Exemptions may be warranted for:

- Historic vessels, where retrofitting zero-emission systems would compromise integrity or safety.
- Remote island ferries and lifeline services, where fuel logistics make transition unfeasible in the short term.
- Specialist vessels (e.g. offshore support, survey craft) operating in areas with no infrastructure for alternative fuels, unless accompanied by parallel investment in remote energy supply.
- Search & rescue vessels operating in rough weather conditions where quick response times are required to save people's lives.

Any exemptions should be regularly reviewed and tightly defined to avoid undermining the overall ambition.

Q43: What, if any, are the 3 environmental impacts that you are most concerned about in the transition to zero emission fuels?

Full Lifecycle Emissions: Including embedded carbon in vessel and battery manufacture, and upstream emissions in synthetic fuel production.

Toxicity of Alternative Fuels: Improper handling of ammonia or methanol could introduce new environmental and safety risks.

Infrastructure Footprint: The impact of port upgrades, including construction and habitat disruption, would need to be mitigated through sustainable planning.

The Government should also take into account the ethical implications of sourcing alternative fuels. While hydrotreated vegetable oil (HVO) offers the potential for immediate substitution in diesel engines and could significantly reduce net carbon emissions for smaller vessels, its use must not come at the expense of responsible production. If growing demand for HVO leads to unethical practices or harms local communities along the supply chain, we risk addressing one environmental issue by creating another.

Q44: Do you agree or disagree with our identified subsectors having a clear technological pathway for decarbonisation?

SMI broadly agrees. Sectors such as passenger ferries, inland waterway craft, and short-sea cargo are well-suited to electrification or use of hydrogen/methanol, particularly where operating patterns are predictable and infrastructure can be centralised.

Q45: Do you agree or disagree with our identified subsectors having an unclear technological pathway for decarbonisation?

SMI broadly agrees. Offshore support vessels, emergency services craft, and workboats face distinct challenges in fuel availability, endurance, and payload limitations. Targeted R&D funding and testbeds are needed to accelerate solution development in these areas.

Q46: What, if any, other sub-sectors do you think should be included as having a clear or unclear technological pathway for decarbonisation?

Fishing Vessels: Presently under-supported despite emissions and economic importance. Transition pathways remain unclear due to vessel diversity, rural port locations and regulatory oversight.

Port Service Craft (e.g. tugs, pilot boats)**:** Technological options are emerging, but integration into wider port energy planning is critical and not yet resolved.

Q47: Do you have any other comments?

SMI urges the Government to:

- Reform planning processes and expand permitted development rights for zero-emission port infrastructure.
- Clarify fuel preferences in the Government's vessel building procurement pipeline with a view to guiding the market.
- Introduce green tax credits and similar fiscal incentives to de-risk early investment in near-zero technologies.
- Ensure MCA readiness to regulate innovative propulsion systems at pace, through aligned investment and mandate reform.

Technology

Q1: What type of technological solutions for reducing emissions do you anticipate will be available in the next 5 to 10 years within your sector?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q2: Is the technology already available to purchase/use/adopt?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q3: What technological and operational solutions are you considering to reduce your emissions? What factors have influenced this?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q4: Do you agree or disagree with the identified subsectors that have a clear technological pathway for decarbonisation? Explain the reasons for your answer.

Please see response to Question 45.

Q5: Do you agree or disagree with the identified subsectors have an unclear technological pathway for decarbonisation? Explain the reasons for your answer.

Please see response to Question 46.

Capital Costs

Q6: What are the actual or estimated costs to:

- **buy a zero, or near-zero emission vessel and a new, traditionally fuelled vessel?**
- **buy a second-hand zero, or near-zero, emission vessel and a second-hand traditionally fuelled vessel?**
- **retrofit a traditionally fuelled vessel to reduce or eliminate emissions?**

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Operating Costs

Q7: What are the actual or estimated operating costs of a zero, or near-zero, emission vessel and traditionally fuelled vessel? Provide data from 2023 if available. If unavailable, state the year you are referencing.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q8: What are the top 3 factors that contribute most to overall operational costs? Include answers for both zero or near-zero emission vessels and traditionally fuelled vessels.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Emission and Fuel Consumption

Q9: If known, what are the average emissions, both GHG and air pollutants, created by each of your different vessel types across a year?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q10: How, if at all, does the ageing of a vessel impact the GHG emissions and air pollutants created, and have you ever retrofitted your vessel to mitigate the GHG emissions and air pollutants created? Provide specific examples.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q11: If known, what is your average fuel consumption per year? Include your responses as tonnes and the specific type of fuel you are referring to.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q12: If you do not monitor your GHG emissions and air pollutants, tell us why and if you intend to start monitoring them? What would make you start monitoring your GHG emissions and air pollutants and are there any barriers preventing this? Do you expect the transition to zero, or near-zero, emission propulsion systems to have any negative wider environmental impacts?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Purchasing and Building Vessels

Q13: Do you tend to buy vessels new or second hand? What factors do you consider when making this decision?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question.

Q14: State which countries your vessels were built in.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question.

Q15: What percentage of your fleet will you be able to retrofit with zero or near-zero emission capability?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question.

Q16: When reaching the end of its useful life, how do you dispose of a vessel? Explain whether this is through scrappage or selling and whether this scrappage or selling occurs within or outside the UK.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question.

Q17: What zero, or near-zero, emission vessels do you have experience in designing and building?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q18: How many zero, or near-zero, emission vessels do you currently have on order to build and have built to date? Use data from 2023, or state otherwise.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q19: What are the typical timeframes for:

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q20: How much additional time, if any, would it take to build comparable vessels with zero, or near-zero, emission propulsion technologies compared to vessels with traditional propulsion systems?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q21: What are the barriers you face in building zero, or near-zero, emission vessels?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q22: What changes, if any, are needed at your shipyard to build a greater number of zero, or near-zero, emission vessels? What type of investment is needed?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q23: If you are already building zero, or near-zero, emission vessels, where is the majority of your clean technology supply chain located? Are you aware of what shipyards are doing outside the UK to maximise their retrofitting capabilities?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Infrastructure

Q24: How much fuel or electricity would you require to bunker or charge a zero, or near-zero, emission vessel?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q25: Do you tend to charge/bunker at the same location?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q26: How much choice do you have over where you refuel?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q27: What factors influence where you refuel? How do infrastructure considerations influence investment decisions in reducing emissions?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q28: What is the electricity capacity of your operating site currently?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q29: What is the capacity for producing and storing zero or near-zero emission fuels at your operating site currently?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q30: What is the additional cost of upgrading your existing infrastructure to support zero, or near-zero emission fuels/energy carriers?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q31: Are you planning to upgrade your capabilities in these areas in the next 5 to 10 years?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Barriers to switching to zero, or near-zero, emission vessels

Q32: What are the barriers to switching to zero, or near-zero, emission propulsion systems for specific vessel types?

SMI members believe the Government should move beyond aspirational targets and focus on enabling practical, scalable solutions. Technologies capable of decarbonising up to 80% of emissions from small vessels already exist. However, market uptake remains limited due to the absence of a robust legislative framework that incentivises or mandates their adoption. Without clear requirements—such as conditions that restrict access to offshore wind farms to zero-emission vessels or impose penalties for non-compliance—progress will continue to stall.

Q33: Have you faced difficulties accessing finance when switching to zero, or near-zero, emission vessels?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q34: What would reduce those barriers (for each vessel type)?

Please see response to Questions 32 and 41.

Q35: Are your voyages reported and/or subject to any regulations? If yes, state which regulations.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q36: Do you currently report your GHG emissions and air pollutants and to where do you report them?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q37: Detail how you currently calculate your emissions. For some users, this may be calculated through fuel purchase and use.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q38: If you do not report your emissions, estimate the benefits and costs of having to do this in the next 5 to 10 years.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Q39: Would you support the introduction of a registration system for sub-sectors that do not currently have one, such as inland waterways or recreational vessels, for supporting decarbonisation goals?

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.

Exemptions

Q40: Are there any specific vessels and/or subsectors that should be exempt from potential future policy which may aim to accelerate the adoption of zero, or near-zero, emission propulsion systems? State your reasons why.

Not applicable – As the trade association for the maritime engineering, science and technology industry, SMI is unable to provide a direct response to this question, but it has encouraged individual member organisations to contribute to the call-for-evidence.