A legal academic with a primary research focus within Maritime Law, especially in relation to liability rules, the safety of passengers at sea, and the development of remote-controlled and autonomous ships. This evidence is being submitted due to these research interests, and to emphasise some of the wider legal considerations in furthering safety at sea.

**Evidence**

**Whether and how the ambitions and objectives described in Maritime 2050 support the maritime sector.**

1. Technology is rightly at the heart of this strategy. The development of remote-controlled and autonomous systems for ships means that shipping is currently undergoing one of its most significant periods of change, akin to no longer being dependent on wooden ships and the development of shipping containers. These systems will change the act of shipping, the laws that surround it, the humans at sea and on shore, and the ships themselves. Therefore, in order to have a maritime plan for the future that is fit for purpose it must be focused on this change.

2. There are some academics who may consider the clear and unambiguous support for smart shipping, especially autonomous shipping, to be a way undermining the maritime sector by devaluing the human element of shipping. However, the ambitions and objectives described in Maritime 2050 do not do this due to the recognition of the potential negative impacts for some individuals that the technological advancements could cause. The focus not on just retraining but making that retraining part of a lifetime of training and development shows a commitment to supporting the engineering and technological aspects of the maritime sector along with supporting the development of crews.

3. The development of smart shipping, whether it be remote-control or autonomous systems, has an important role in developing the safety of shipping. Some academics consider the development of these systems to be actively taking a risk and decreasing safety at sea. However, I do not consider this to be an accurate reflection of the potential of the technology and I am pleased to see that the Government is embracing its potential. The concerns are understandable, but it is important to recognise that this technology can actually help improve the safety of

shipping. Additionally, some of these concerns can be addressed by recognising that ships that utilise these systems do not have to be uncrewed.

4. The other primary consideration within Maritime 2050 is the importance of safety, and its intrinsic value to shipping. However, there are a couple of areas of concern that I have due to them being overlooked in Maritime 2050. The first of these is the role of liability rules in contributing to the safety of shipping, and especially in relation to the safety of passengers. Maritime 2050 understandably includes a focus on the advantages of the technology and the regulatory concerns that must be addressed. Yet there is no recognition of the more holistic nature of safety in shipping, and how law facilitates safety more widely than through regulation. Shipping has not always been the safest of industries, and there have been numerous notorious maritime disasters (especially those that involve passengers), but the law has developed to effectively reduce accidents. Yet, this not been solely achieved through regulatory strength. Regulations set a minimum standard and are then supplemented through the governance provided by the insurance industry (which law has supported, especially when compulsory insurance is provided for) and liability rules. Therefore, Maritime 2050 needs consider the role of liability in the future of shipping and any potential reforms which will be needed (e.g. the raising of limits of liability).

5. It is also important that law not act as a barrier to the introduction of technology, especially when that technology can facilitate further reductions in accidents. If an approach is taken to regulation, which is too burdensome, then that will act as a barrier to the development of smart shipping both nationally and internationally. Thus, it is important to consider the very useful role of liability rules in preventing and compensating incidents while allowing the technology to be implemented and developed. There should be a greater awareness of this role within Maritime 2050.

6. Although Maritime 2050 emphasises the safety of the UK and the marketability of that for flagging, greater consideration needs to be taken of the need for greater international action in relation to flags of convenience. Safety while significant, and one would hope to be a fundamental consideration of business, will often follow financial

considerations. Therefore, without action to improve the safety of other flags and the ability of companies to use flags of convenience instead of a safer flag the UK flag will be weaker. Therefore, there needs to be a greater emphasis on the role of the UK in promoting the safety of shipping internationally, especially for flags of convenience. This does not then prevent an even higher standard of safety within the UK flag, but the first consideration needs to be getting the world of shipping to a sufficient international minimum.

7. The ambitions and focuses of the Maritime 2050 are commendable and desirable, yet a more holistic consideration of safety is needed.

**Progress towards the ambitions and targets in Maritime 2050, including the effectiveness, pace and priority of the strategy's implementation.**

8. Progress towards the aims within Maritime 2050 is not evident, despite the ambitious plans. The aspirational nature of the strategy means that some shortcomings are not recognised. There should be a greater recognition of the fact that the UK is currently behind some other nations domestically in how well it has embraced smart shipping. While the international strength of the UK has also suffered some disadvantages as well as advantages through Brexit. Recognition of these challenges does not detract from the ambition of Maritime 2050, but it is important to recognise the challenges to be addressed when developing such an aspirational plan. Therefore, it is submitted that although it is important to recognise the important steps that have been taken and are being aimed to be taken by the UK, that there is an aspect of catching up and re-establishing that are also needed.

9. The progress of Maritime 2050 will also be impacted by world events. Humanity has suffered two significant events with Covid and with the situation in Ukraine. It will be important when considering any updates to Maritime 2050 or in its implementation, how such events will affect it. For instance, although there is consideration of cyber risk and security within Maritime 2050 that is an aspect that is likely to become more important. The impact on trade routes in the last few years means that will be likely to become more significant. Additionally, greater consideration is likely to now be given to how Maritime 2050 aligns with

military considerations (especially as both the military and commercial industries will be developing and using these more advanced systems).

**The effect of Maritime 2050 on Government policies and regulation, maritime decision making and economic and environmental outcomes, including the Clydebank declaration agreed at COP26.**

10. Maritime 2050 does promote an emphasis on shipping and its importance, which has been overlooked in recent years. Within this it should address a need to understand and appreciate the need of the shipping industry within the UK. I consider Maritime 2050 to be ambitious and a commendable start to this. Yet, it will be irrelevant if this does not then receive the support, investment and prioritisation promised by such an ambitious plan.

11. The Government policy will need to be rapid and effective at encouraging the uptake and use of smart shipping, and this is needed urgently as it must be recognised that the Government has been slow to act before now on this matter. There has been interest, and important research carried out within the UK, but the Government has missed an opportunity in not being at the forefront of the industry sooner. We should ideally already have a clear domestic framework for these systems and be further ahead in leading the development of an international framework. This framework should include greater consideration of wider legal factors in safety, such as liability rules, as the UK has an obligation to emphasise all aspects of safety in shipping (not just regulation).

12. Another important emphasis within Maritime 2050 is diversity in shipping. This is again commendable, and it is worth noting that the development of smart shipping may be able to facilitate greater diversity in shipping. However, the emphasis on seafarers who can easily transition from ship to shore and back, which may encourage some into shipping may also discourage others. Therefore, it is important that policies and actions to encourage a more diverse range of individuals into shipping allow for the possibility that due to the needs of some groups there will be some who will retain mainly ship or shore roles. A

policy that allows for those who specialise in one environment and those who transition between them will allow for a wider range of opportunities when encouraging the diversification of shipping. This could also be supported by the strengthening of the role of the UK in the IMO, but also of the role of the IMO within the UK (especially through the encouragement of greater connections between the IMO and UK universities).

## Conclusion

13. The area that I consider to be most important to address, within the issues I have raised in this evidence, is giving greater consideration to the liability rules as this will contribute to the safety of shipping generally but particularly for smart ships.

March 2022