Policy Paper
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OUR VIEW

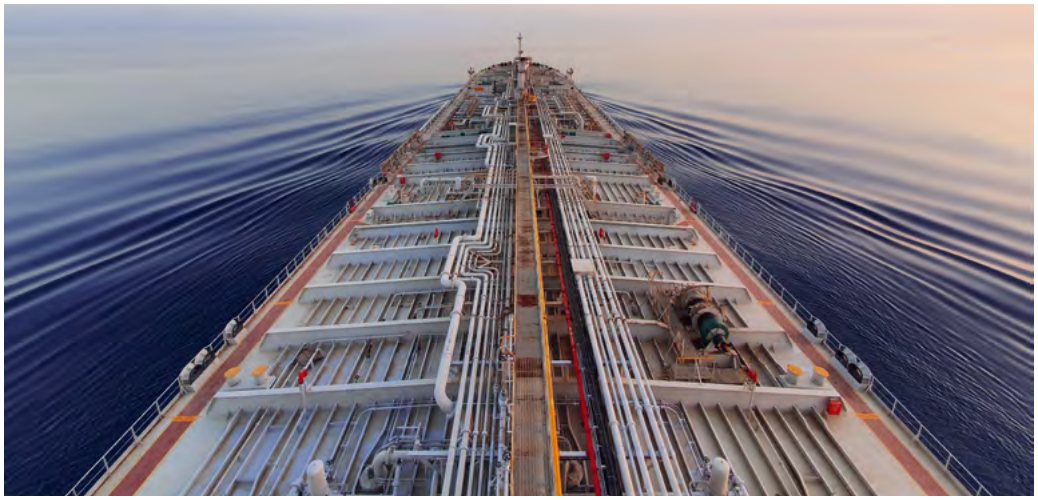
The overall safety level must match existing fuels: The safety level for ships using alternative fuels must be equal to the safety level for conventional fuels such as HFO and MGO.

Safety regulations for shipping should be developed internationally within the IMO, as shipping is a global industry that requires consistent rules across borders. It must be clear that IMO legislation is the only option for international industry.

The IGF Code is a strong foundation: The principles of the IGF Code should form the basis for future global safety regulation, ensuring a common, risk-based approach across all fuel types.

Training must follow fuel choices: Mandatory fuel-specific training and certification must be introduced into the STCW Convention, ensuring that seafarers have the necessary competencies for every fuel type they handle.

Ensuring safety in maritime shipping with alternative fuels



The transition to GHG reducing alternate fuels is critical to decarbonizing the maritime industry. However, these fuels introduce new safety challenges that must be addressed through both ship design and operational procedures. A comprehensive safety and regulatory framework is needed to protect seafarers, ships, and the environment.

The International Code of Safety for Ships using Gases or other Low-flashpoint Fuels (IGF Code) provides the most relevant starting point. Although developed for LNG, the IGF Code's principles – particularly its focus on risk-based design, construction, and operational controls – offer a strong foundation for future regulation covering a wider range of fuels.

To ensure safety, new fuels will require ships to be designed and built with enhanced technical measures. This includes dedicated fuel containment systems, leak detection ventilation, and emergency shutdown systems tailored to the properties of each fuel type. Specific protective measures based on fuel properties such as cryogenic for hydrogen, high toxicity for ammonia, or high flammability for hydrogen or methanol will need to be integrated into the ship design.

Operational safety procedures must also be adapted including inter-alia risk assessments on operational issues such as onboard maintenance, the bunkering processes, and emergency procedures. Port authorities, ship operators, and classification societies must work together to align standards and ensure both ships and ports are prepared to safely handle new fuels.

Adequate training of the ship officers and crew is equally essential. Seafarers must gain new competencies related to the handling and use of the fuels, requiring updates to STCW training and certification standards. Practical and simulator-based training will be key to ensuring crews are prepared for both routine operations and emergencies involving these fuels. Continuous upskilling on board and on shore will also be necessary to keep up with evolving technologies and regulations.

Future regulatory development should be built upon the IGF Code and expand its application to all relevant low- and zero-carbon fuels. Alongside this, mandatory fuel-specific training should be incorporated into STCW, ensuring crews have the necessary knowledge and skills. Industry collaboration, research into new safety technologies, and knowledge-sharing platforms should also be supported to improve risk management across the sector.

As shipping adopts new fuels, safety and environment must remain a priority. By integrating smart design, updated procedures, and enhanced training, the industry can safely transition to alternative fuels while maintaining high safety standards.

Continued

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FACTS

- Lower energy density: Methanol's energy density is around half that of HFO, meaning ships need approximately twice the fuel volume to achieve the same range. This has direct implications for fuel storage design, cargo capacity, and voyage planning.
- Toxicity risks: Fuels like ammonia are toxic to humans and the environment, requiring special handling procedures and safety barriers on board.
- Cryogenic challenges: Fuels such as liquid hydrogen require storage at extremely low temperatures (-253°C at atmospheric pressure), posing unique insulation and material challenges compared to conventional fuels.
- Bunkering infrastructure: Existing bunkering infrastructure is primarily built for HFO and MGO and will require significant upgrades to safely handle new fuels with different physical and chemical properties.

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