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IMO's ruleset and policies relevant for the use of ammonia as a marine fuel

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IMO Ship Fuel Oil Consumption reporting

- In the 2025 IMO DCS report (MEPC 85/6 – to be published soon), **0 ton of ammonia** fuel consumption reported
- Ammonia is expected to begin appearing in the IMO DCS as ammonia-fuelled ships enter in operation.
 - Several ammonia-fuelled and ammonia-ready ships are currently under construction or on order, including gas carriers, bulk carriers and containerships.
- Future DCS reporting will provide valuable information regarding:
 - ammonia fuel consumption;
 - uptake across ship types; and
 - the contribution of ammonia to shipping decarbonization
- As with other fuels, fuel consumption data collected under the DCS will support IMO policy development and regulatory review.

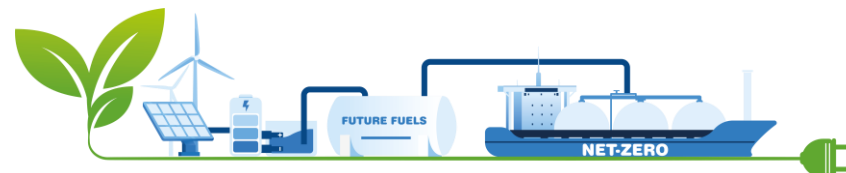
IMO regulations on air pollution relevant for ammonia

- Relevant MARPOL Annex VI requirements on air pollution apply to ammonia-fuelled ships:
 - **Reg.13:** NO_x emission limits for marine diesel engines above 130kW.
 - **Reg.14 (SO_x):** Ammonia = sulphur-free. Pilot fuel = subject to regulation 14 requirements
 - **Reg.18 (Fuel quality):** Bunker Delivery Note, fuel supplier's declaration, (no sampling), etc.



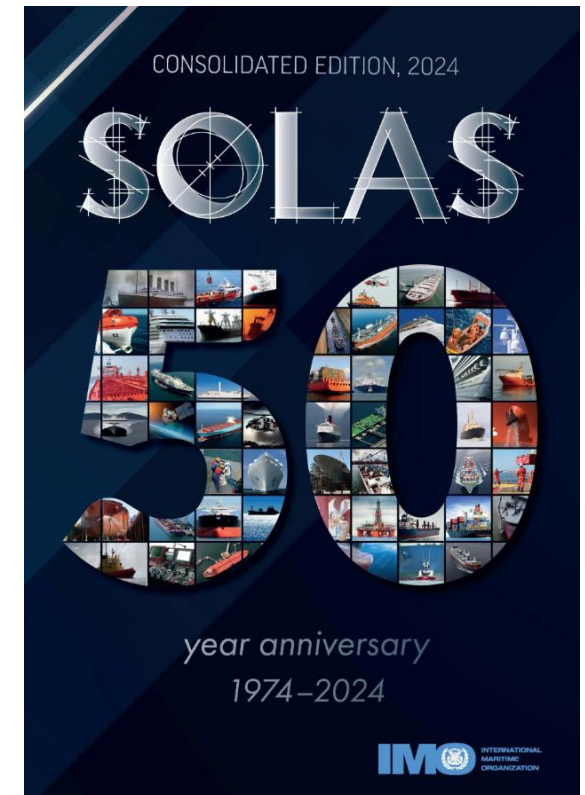
IMO framework for lifecycle GHG emissions assessment of ammonia

- Ammonia contains **no carbon atoms**, therefore no direct CO₂ emissions are generated during combustion
- However, emissions should in the future account for other GHGs (including N₂O), for both upstream and downstream emissions (2023 IMO GHG Strategy)
- **2024 LCA Guidelines** - general methodology for the assessment of GHG emissions of all marine fuels, including ammonia, on a well-to-wake (WtW) basis → supporting future GHG reduction measures
- WtT and TtW **default emission factors**: scientific review by **GESAMP-LCA WG**
 - Example: GESAMP-LCA WG 4 (MEPC 85/7/4) has reviewed several proposed WtT default emission factors for ammonia, representing different fuel production pathways (steam methane reforming, H₂ autothermal reforming with/without CCS, etc.)
 - Recommended values may then be used for identifying default emission factors (using representative and conservative assumptions)
- Ongoing development of draft guidelines on **sustainable fuel certification schemes (SFCS)** to allow the use of actual certified values + draft guidelines on the **fuel lifecycle label (FLL)**

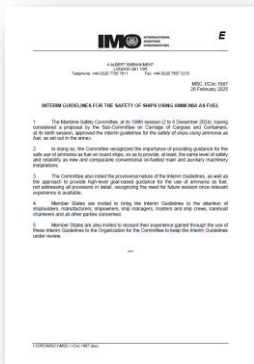


IMO safety regulations for ammonia

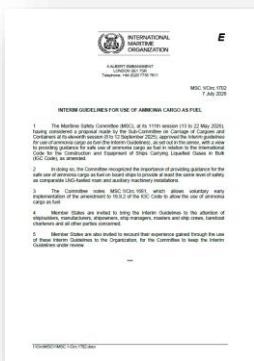
- MSC 111 (May 2026) approved amendments to SOLAS II-1 clarifying that the IGF Code applies to ships using gaseous fuels, whether low-flashpoint or not
 - Subject to adoption by MSC 112 (December 2026), these amendments are expected to enter into force in **July 2028**
- “*One ship, one code*” principle: MSC 111 clarified that the IGF Code does not apply to gas carriers using ammonia as fuel (they are subject to the IGC Code)



In the meantime: IMO safety guidelines for ammonia

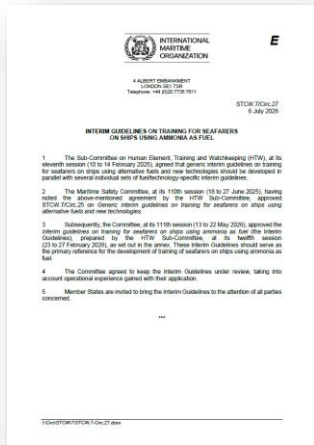


- MSC.1/Circ.1687 - Interim Guidelines for the Safety of Ships Using Ammonia as Fuel approved by MSC 109 (December 2024)
 - Apply to ships using ammonia as fuel **other than gas carriers**.
 - Goal-based approach providing functional requirements covering:
 - fuel containment, fuel preparation systems, bunkering;
 - machinery spaces, ventilation, gas detection;
 - emergency shutdown systems, control, monitoring and safety functions.
 - **Objective:** “Provide, at least, the same level of safety and reliability as new and comparable conventional oil-fuelled main and auxiliary machinery installations”.



- MSC.1/Circ.1702 - Interim guidelines for use of ammonia cargo as fuel approved by MSC 111 (May 2026)
 - Apply to **gas carriers**
 - Provide specific requirements for gas carriers carrying ammonia cargo, use of cargo boil-off as fuel, etc.
 - **Objective:** “Provide at least the same level of safety as comparable LNG-fuelled main and auxiliary machinery installations”.

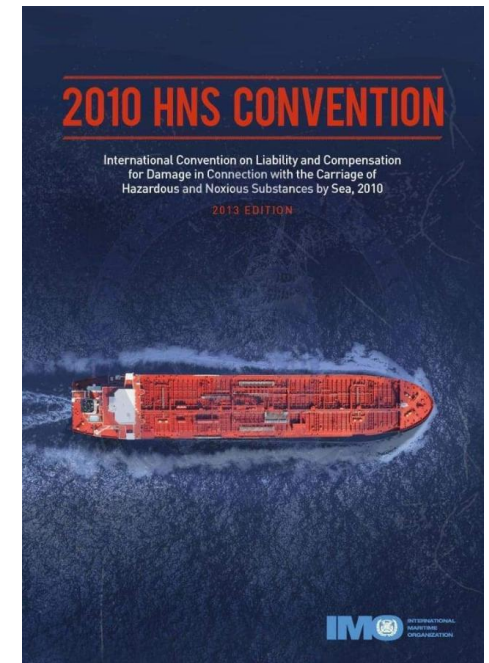
IMO seafarers training guidelines for the use of ammonia as fuel



- STCW.7/Circ.27 - Interim guidelines on training for seafarers on ships using ammonia as fuel approved by MSC 111 (May 2026)
 - Non-mandatory training requirements before relevant STCW Code amendments enter into force
 - Builds on the *Generic interim guidelines on training for seafarers on ships using alternative fuels and new technologies* (STCW.7/Circ.25) also adopted by MSC 110
 - **Specificity of ammonia:** primary hazard is toxicity (not just flammability) which justifies a different approach from fire-focused training (e.g.: LNG or methanol)
 - Two-tier training structure:
 - Basic training for any crew member with a designated safety duty involving ammonia;
 - Advanced training for masters, engineer officers, and those directly responsible for ammonia fuel systems.
 - **Competence-based framework:** standard competence requirements defined under various knowledge, understanding and proficiency (KUPs)

IMO liability and compensation regimes with respect to alternative fuels

- LEG 113 (April 2026) agreed that a regulatory gap exists regarding liability and compensation for incidents involving alternative fuels used for ship propulsion/operation
 - Civil Liability Convention (CLC) and Bunkers Convention cover spills of hydrocarbon mineral oil → not applicable to ammonia
 - HNS Convention will apply (following entry into force on November 2027) → for ammonia as cargo only
- Initiation of work at LEG to ensure that **liability and compensation regimes** adequately address certain risks associated with alternative fuels, including LNG, ammonia, hydrogen, or biofuels
- Intersessional correspondence group established => reporting to LEG 114 (Spring 2027)



IMO FFT project technical seminars

- 1st Seminar: Onboard Carbon Capture and Storage (Sep 2025)
- 2nd Seminar: Energy Transition of Shipping
at Hong Kong Maritime Week (Nov 2025)
- 3rd Seminar: Biofuels (Feb 2026)
- 4th Seminar: Methane-based Fuels (May 2026)
- 5th Seminar: Ammonia (Sep 2026)
- 6th Seminar: Tentative Topic – Ethanol and Methanol (early 2027)
- 7th Seminar: To be continued
- ...



IMO Future Fuels and Technology Project (FFT)



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A gateway to the latest information on future fuels and technology promoting a just and equitable transition

The website has been developed by Future Fuels and Technology Project (FFT Project) supporting the implementation of the 2023 IMO GHG Strategy by facilitating relevant information sharing.

IMO news

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Project news

Upcoming: Technical Seminar on the use of ammonia as marine fuel



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Thank you.



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