



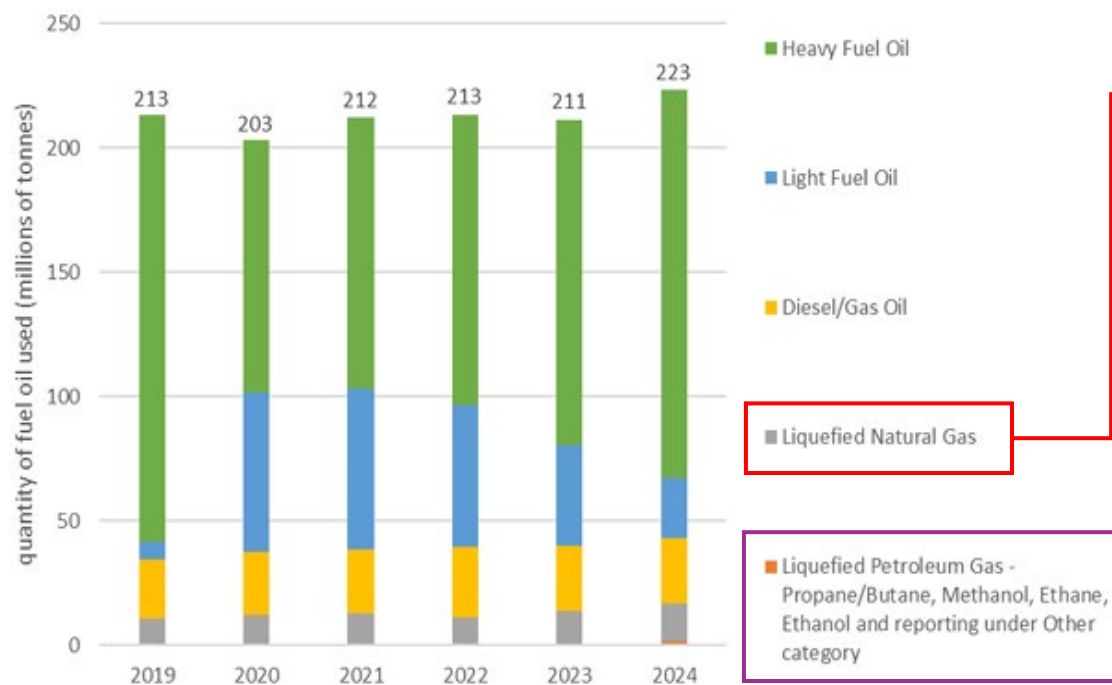
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IMO's ruleset and policies relevant for the use of methane-based fuels

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Technical Officer - Climate Action and Clean Air

IMO Ship Fuel Oil Consumption reporting

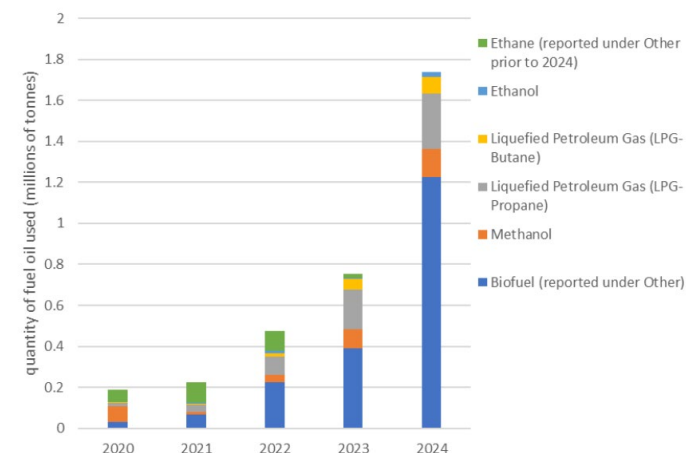


14.9 million tonnes of **LNG** used in 2024 (12.9 million tonnes in 2023)

- 6.7% of the reported fuel oil in 2024
- +16% year-on-year increase

In the "other" category: 1.2 million tonnes of **biofuels** used in 2024 (390,846 tonnes in 2023)

- 0.5% of the reported fuel oil in 2024
- +214% year-on-year increase
- Reporting of bio-methane in upcoming years?



IMO regulations on air pollution relevant for methane-based fuels

- For methane-based fuels, relevant MARPOL Annex VI requirements apply
 - **Reg.13 (NO_x):** Tier I, II, III emission limits for marine diesel engines above 130KW, including gas-fuelled engines. For dual-fuel engines: Tier II (liquid fuel only) and Tier III (gas fuel with pilot fuel) (detailed guidance in MEPC.1/Circ.854)
 - **Reg.14 (SO_x):** LNG = sulphur-free
 - **Reg.18 (Fuel quality):** Bunker Delivery Note (incl. flash point since 2024), fuel oil sampling, recording, etc. apply



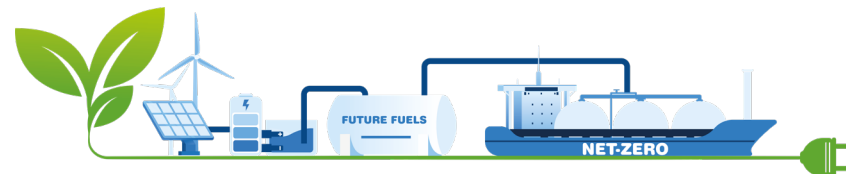
Use of methane-based fuels under EEDI and CII regulations

- The use of methane-based fuels improves ships performance under both the Energy Efficiency Design Index (EEDI) for new ships and the operational carbon intensity indicator (CII) rating system
 - C_F factor for LNG set out in the EEDI calculation guidelines = 2.750 t-CO₂/t-Fuel
 - Tank-to-Wake only
- For **gas carriers**, boil-off gas consumed on board can be used to provide fuel consumption values for CII calculation



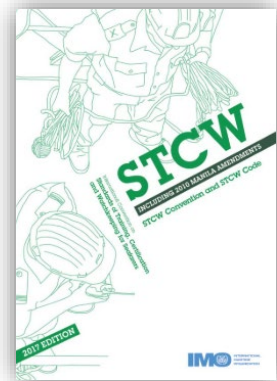
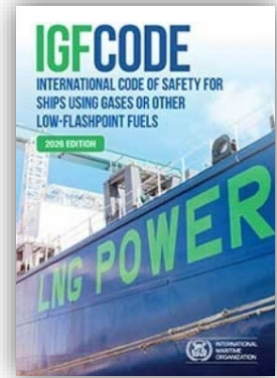
IMO framework for lifecycle GHG emissions assessment of methane-based fuels

- **LCA Guidelines** - provide a general methodology for the assessment of GHG emissions of all marine fuels, including methane-based fuels, on a well-to-wake (WtW) basis, supporting future GHG reduction measures
- WtT and TtW **default emission factors**: scientific review by **GESAMP-LCA WG** (including using statistical approaches to determine global default WtT emission factors for relevant fossil fuel pathways such as LNG)
- Ongoing development of draft guidelines on **sustainable fuel certification schemes (SFCS)** and draft guidelines on the **fuel lifecycle label (FLL)**
- Ongoing discussions on **avoided emissions** => compatibility with attributional approach in the LCA Guidelines?
- Measurement and verification of **methane emissions**, incl. methane slip. Guidelines adopted by MEPC 84:
 - **2026 Guidelines for test-bed and onboard measurements** of methane (CH₄) and/or nitrous oxide (N₂O) emissions from marine diesel engines => building upon NTC 2008 practices
 - Guidelines for **engine load monitoring (ELM)** and calculation of emission values (ELM Guidelines)
 - Guidelines for **continuous emission monitoring systems (CEMS)**



IMO safety requirements for methane-based fuels

- IGF Code: International Code of Safety for Ships using Gases or other Low-flashpoint Fuels
 - Applies to all low-flashpoint fuels, including LNG and bio-methane
 - Well-established requirements for arrangement, installation, control and monitoring of machinery, equipment and systems using low-flashpoint fuels => minimize risks to ships, crew and the environment
 - Latest amendments (entered into force on 1 January 2026) strengthen requirements on, e.g. bunkering manifold connections, pressure relief valve design, and structural fire protection
- STCW Convention and Code related to low-flashpoint fuels
 - Regulation V/3 and Section A-V/3: **Mandatory minimum requirements** for the training and qualifications of master, officers, ratings and other personnel on ships subject to the IGF Code
 - Basic and advanced training requirements cover the characteristics and physical properties of fuels, operation of fuel systems, bunkering, firefighting, emergency response, etc.
 - Ongoing **comprehensive review of the STCW Convention and Code**
 - **IMO model courses 7.13 and 7.14** on the Basic and Advanced training for masters, officers, ratings and other personnel on ships subject to the IGF Code

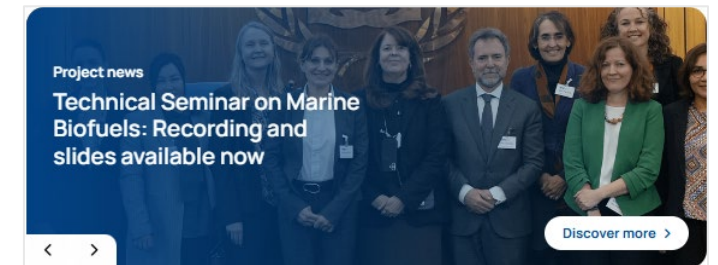


IMO liability and compensation regimes with respect to alternative fuels

- LEG 113 (April 2026) agreed that a regulatory gap exists regarding liability and compensation for incidents involving alternative fuels used for ship propulsion/operation
- CLC and Bunkers Convention cover spills of persistent oil. HNS Convention may apply => but would cover LNG as cargo only
- Initiation of work 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: Tentative Topic - Ammonia (Sep 2026)
- 6th, 7th Seminar: To be continued



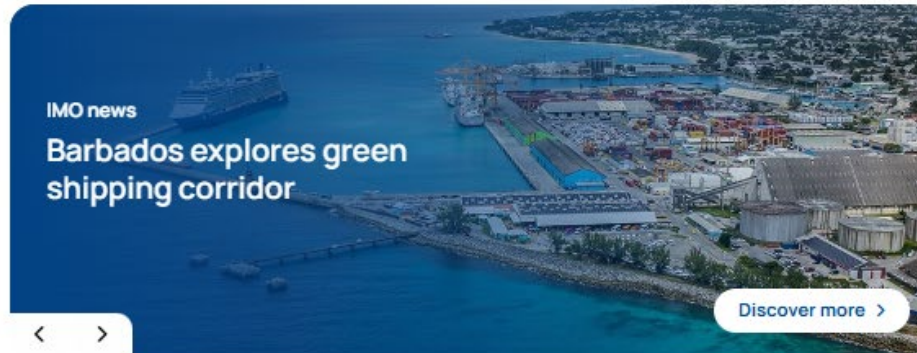
IMO Future Fuels and Technology Project (FFT)



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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.



<https://futurefuels.imo.org/>

Contact us:
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Thank you.



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