

From methane measurement to a Statement of emission values

Relevant for ship owners, managers, engine designers and engine builders of LNG and dual-fuel ships.

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A methane measurement is only the first step. Under MEPC.414(84) the results go into a file, the Administration verifies it, and a Statement of emission values is issued. The same file is what FuelEU Maritime asks for when actual values are used.

What the measurement leads to

MEPC.414(84) does not stop at the measurement. The applicant prepares a CH₄ and/or N₂O file, and the file is submitted to the Administration for verification. After satisfactory verification, the Administration issues a Statement of emission values for CH₄ and/or N₂O.

The measurement is therefore planned from the start with the file in mind. Data that was not recorded during the test is hard to add afterwards.

Appendix 3

MEPC.414(84) sets out the form of the Statement of emission values for CH₄ and/or N₂O.

What goes into the file

The guidelines list what the file should contain: the details of the engine as tested, including model, rated power and speed, the components and settings that affect CH₄ and N₂O, and for methane the maximum liquid-to-gas fuel ratios across the load range. It also holds drawings of the exhaust system showing the sampling positions, and a copy of the engine test data with the data needed to calculate the emissions.

Where methane slip is reported, crankcase emissions are included only for trunk piston engines without closed crankcase ventilation. If a methane reducing device is fitted, the file also documents its purpose, how it works, its critical components, settings and consumables.



Reading measurement data in the engine control room.

One file, also for the EU

The European Commission has published guidelines for reporting and verifying actual methane slip under FuelEU Maritime. They are not legally binding. They ask the company to prepare the Methane File as required by the earlier IMO guidelines, MEPC.402(83), which MEPC.414(84) replaces, complemented with some additional information, such as allowable ranges for settings and the influence of ambient conditions.

The Methane File is approved by the flag administration or an organisation recognised by it. It is then referenced in the FuelEU Monitoring

Plan, and the FuelEU verifier checks it together with Engine Load Monitoring of how the engine is loaded in service. The verifier verifies the shipping company, not ME-Tech. Use in EU MRV and ETS reporting should be agreed with your verifier.

The route in short

One measurement and one file can serve both the IMO guidelines and FuelEU Maritime, if the measurement is planned for both. The steps below show the route.

The route in five steps

- 1 **Measurement onboard, to MEPC.414(84)**
- 2 **CH₄ and/or N₂O file prepared (the Methane File in the EU)**
- 3 **File verified by the Administration**
- 4 **Statement of emission values issued**
- 5 **Approved file used in the FuelEU Monitoring Plan**

At a glance

Question	Answer
Guidelines	MEPC.414(84), the 2026 guidelines, which replace MEPC.402(83)
Document	A CH ₄ and/or N ₂ O file
Verified by	The Administration
Result	A Statement of emission values, in the form of appendix 3
Use in the EU	The approved file is the Methane File of the Commission guidelines

Where we come in

We plan and carry out the measurement and prepare the measurement data and documentation for the file, in close collaboration with the engine designer, the owner and class. Other steps, such as load logging, are separate tasks that can be added as an extra.

What we recommend

Agree with the Administration what the file must contain before the measurement, so the data is recorded during the test. Agree the use of the file with your FuelEU verifier before you rely on it.

Sources: IMO resolution MEPC.414(84), sections 2 and 4 and appendix 3; European Commission, guidelines for reporting and verification of actual methane slip (October 2025); Regulation (EU) 2023/1805 (FuelEU Maritime).

This note is general information and not legal advice. Check the current regulation text before you rely on it.

Contact

Talk to us before the scope is fixed. It is the cheapest point to get it right.

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