

Subject

Adoption of the FuelEU Maritime Regulation

ClassNK

Technical Information

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To whom it may concern

The "Fuel EU Maritime" Regulation, an EU regulation aimed at promoting the decarbonization of fuels used on ships, has entered into force and will begin on 1 January 2025. This regulation requires ships with a gross tonnage above 5,000 GT calling at ports within the jurisdiction of EEA Member States¹ for transporting passengers or cargo for commercial purposes, regardless of their Flag state, to comply with the following provisions:

- (1) Provisions setting a limit on the GHG intensity for fuels used on ships
- (2) Provisions obligating the use of on-shore power supply (OPS) or zero-emission technologies in ports (Only container ships and passenger ships)

Summaries of the FuelEU Maritime Regulations are as follows:

1. Summary of the provisions setting a limit on the GHG intensity for fuels used on ships
 - (1) As from 1 January 2025, it shall apply to all ships of above 5,000 GT arriving at, staying within or departing from "ports of call"² under the jurisdiction of EEA Member States, regardless of their Flag for transporting passengers or cargo for commercial purposes.
 - (2) Applicable to fuel used on the following voyages and port stays:
 - 50% of fuel consumption (in energy basis) used on board by ships on voyages between an EEA port of call and a non-EEA port of call
 - 100% of fuel consumption used on board by ships on voyages between EEA ports of call (Except, 50% of the fuel consumption used on voyages arriving at or departing from an EEA port of call located in an outermost region)
 - 100% of fuel consumption used by ships within an EEA port of call

¹ EEA(European Economic Area) Member States: 30 States consist of 27 EU Member States and 3 EEA States, Norway, Iceland and Lichtenstein.

² "port of call" means the port where a ship stops to load or unload cargo or to embark or disembark passengers, or the port where an offshore ship stops to relieve the crew.

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NOTES:

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- (3) A limit is set on the "GHG intensity (GHG emissions per energy [gCO₂eq/MJ])" of the fuel covered in (2) above. "GHG" means three types of greenhouse gas emissions: CO₂, methane (CH₄), and nitrous oxide (N₂O), and "GHG intensity" means the amount of GHG emissions, expressed in grams of CO₂ equivalent established on a lifecycle (well-to-wake) basis, per MJ of energy used on board. The GHG intensity varies for each type of fuel. For ships using multiple fuels, the GHG intensity of the ship is calculated as the weighted average by energy based on the amount of the fuel consumption and the lower calorific value of the fuels.
- (4) To incentivize the use of renewable fuels of non-biological origin (RFNBO), such as ammonia produced using renewable energy, the GHG intensity of those fuels is calculated as half. This measure applies from 1 January 2025 to 31 December 2033.
- (5) In (2) above, stops of containerships in a particular neighbouring container transshipment port are not regarded as a port of call under the FuelEU Maritime, and the neighbouring container transshipment ports are "neighbouring container transshipment ports where the share of transshipment of containers, measured in twenty-foot equivalent unit, exceeds 65% of the total container traffic of that port during the most recent twelve-month period for which relevant data are available located outside the Union but less than 300 nautical miles of a port under the jurisdiction of a Member State." It means that the voyages preceding and following such ports are considered as consecutive voyages. By 31 December 2025, a list of such container transshipment ports will be established by the European Commission.
- (6) The limit of GHG intensity will be strengthened every 5 years from the start of 2025 as follows, based on the 2020 level of "91.16."

Year	Reduction value of upper limit of GHG intensity (Reduction value from 2020 level of 91.16)
2025 - 2029	-2%
2030 - 2034	-6%
2035 - 2039	-14.5%
2040 - 2044	-31%
2045 - 2049	-62%
2050 -	-80%

- (7) If the ship's GHG intensity exceeds the limit, compliance with this Regulation shall be considered by paying a penalty equivalent to the excess multiplied by the fuel consumption (energy basis) covered in (2) above and the emission factors.
- (8) For the same ship, if the ship has a compliance surplus in the GHG intensity, the surplus can be carried forward to the following year ("banking"), or if the ship has a compliance deficit, the ship can borrow an advance compliance surplus from the following year ("borrowing"). It is also possible to compensate for compliance deficits in the GHG intensity with surpluses for multiple ships in the same year ("pooling")
2. Outline of provisions obligating the use of on-shore power supply (OPS) or zero-emission technologies in ports (Only container ships and passenger ships)
- (1) As from 1 January 2030, it shall apply to container ships and passenger ships of above 5,000 GT, regardless of their Flag state.

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- (2) Containerships and passenger ships are required to use an on-shore power supply (OPS) for all electricity while moored in particular EU/EEA ports. Those ports will be identified in a separate EU regulation. In addition, from 1 January 2035, ships moored at the quayside which is not covered in the above-mentioned ports will also be required to connect to OPS, where the port is equipped with available OPS.
- (3) The obligation to use OPS shall not apply to ships that:
- are moored at the quayside for less than two hours
 - use zero-emission technologies, such as fuel cells, batteries, wind or solar power, for all their electrical power demand at berth, while moored at the quayside
 - have to make an unscheduled port call for reasons of safety or saving life at sea
 - are unable to connect to OPS due to the unavailability in a port
 - for a limited period of time, require the use of onboard energy generation, under emergency situations representing immediate risk to life, the ship or the environment or for other reasons of force majeure, etc.
- (4) Failure to comply with this provision is, by paying a penalty based on the amount of electric power, etc. during the mooring, deemed to be compliance. The formula for calculating the penalty is as follows:
- $$\text{Penalty [EUR]} = 1.5 \text{ [EUR]} \times \text{Total electrical power demand of the ship at berth [kW]} \times \text{Total number of hours (rounded up to the nearest whole hour) spent at berth by the ship in non-compliance with the requirements [hour]}$$

3. Obligations of shipping companies

(1) Preparation of FuelEU monitoring plan

- By 31 August 2024, a shipping company is requested to submit to the verifier a FuelEU Monitoring Plan (MP), which sets out the methods for monitoring and reporting the amount of energy (fuel type and consumption) used by ships during voyages and at berth. The MP shall be assessed for the conformity with the requirements before the monitoring period starts and then recorded in the FuelEU database by the verifier. For ships calling an EU/EEA port for the first time after 31 August 2024 are requested to submit a FuelEU MP to the verifier within 2 months of that port call.
- The FuelEU MP should include relevant information, such as:
 - Information on ship's identification, shipowners and shipping companies
 - Description of energy sources (fuel consumer) to be used on board while in navigation and at berth
 - Procedures for monitoring the fuel consumption of each fuel type
 - Procedures for monitoring the WtT and TtW emission factors of energy to be used
 - Standards and characteristics of OPS or a zero-emission technology
 - Value of the established total electrical power demand of the ship at berth
- The FuelEU MP is required to be updated and assessed by a verifier as appropriate when changing shipping companies or using new types of fuel, etc.
- Details of the MP, including templates, will be published in the future.

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- (2) Implementation of FuelEU monitoring
- From 1 January 2025, in line with the FuelEU MP assessed by a verifier, the following information will be required to be recorded on an annual basis for each vessel:
 - Departure ports and arrival ports (including the date and time of departure and arrival, and the time at berth)
 - Fuel consumption while at sea and at berth
 - Amount of electricity supplied to the ship through OPS and its connection time
- (3) Preparation of FuelEU report
- For the reporting period of the previous year, the FuelEU Maritime data collected is required to be submitted to the verifier as a "FuelEU report" for each ship by January 31 of each year. The FuelEU report will then be verified by the verifier by 31 March and recorded in the FuelEU database with the relevant information.
 - Based on the information submitted as the FuelEU report, the verifier makes necessary calculations, including:
 - Yearly average GHG intensity of the energy used on board by the ship concerned
 - Amount of the yearly fuel consumption (in energy basis), excluding energy from OPS
 - GHG emissions for which the GHG intensity limit was achieved or not achieved
 - Number of non-compliant port calls incl. the time spent moored at the quayside
 - In the event of a change in the ship's shipping company during a monitoring year, the previous shipping company should promptly submit the necessary data for the period under its control to the verifier. The verification is then completed by the verifier within one month after the change, and the data is recorded by the verifier in the FuelEU database.
 - The responsibility for compliance with FuelEU Maritime requirements for the entire monitoring period rests with the shipping company that manages the ship as of 31 December of the year.
- (4) Registration of banking, borrowing, and pooling
- Shipping companies can, after the approval by the verifier, record the use of banking, borrowing, and pooling in the FuelEU database by 30 April of each year. The outline of banking, borrowing, and pooling is as follows:

Banking:

 - If the ship's GHG intensity of a reporting year achieves the GHG intensity limit of that year (i.e. actual GHG intensity is below the limit), the compliance surplus can be carried forward to the same ship's penalty calculation for the following year.
 - Banking should be recorded in the FuelEU database by the shipping company after approval by the verifier. However, banking is not available after the issue of a FuelEU Document of Compliance.

Borrowing:

 - If the ship's GHG intensity of a reporting year exceeds the GHG intensity limit of that year (i.e., the ship has a compliance deficit), the ship can borrow an advance compliance surplus from the following year.

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- The amount borrowed may be applied to the calculation of the penalty of the vessel, but 1.1 times the amount borrowed will be subtracted from the same ship's compliance surplus in the following year. It is not possible to borrow for 2 consecutive years, and the amount that can be borrowed is up to 2% the limit of GHG intensity for the year multiplied by the energy consumption of the year.

Pooling:

- The GHG emissions of the respective "achieved" and "non-achieved" against the limit of GHG intensity of multiple vessels can be pooled within a fleet and they can be allocated to one another in the pool (pooling). In other words, a compliance surplus of the GHG emissions of a ship can be moved to another ship that has a compliance deficit to offset the penalty amount.
 - Pooling can also be set up by two or more shipping companies.
 - When pooling is used, the following points should also be noted:
 - Up to two pools can be set up, but a ship cannot be included in more than one pool.
 - The composition of vessels in the pool must be such that the sum of the compliance surpluses of GHG intensity exceeds the sum of the compliance deficits.
 - Borrowing is not applicable to vessels participating in pooling.
 - When setting up pooling, shipping companies must register their intention to use pooling in the FuelEU database with the following information. A verifier selected by the shipping company will also verify the validity of the pooling by 30 April.
 - Amount of achieved/not achieved GHG intensity limit for each ship.
 - Allocation of the total GHG intensity limit achieved/not achieved of all ships in the pool.
 - Information of the verifier verifying the allocation (if ships in the pool are managed by more than one shipping company.)
- (5) Payment of penalties
- By 30 June, shipping companies are required to pay a penalty equivalent to the value calculated in 1. (7) and 2. (4) above for exceeding the GHG intensity limit for each ship.
- (6) Receipt of a FuelEU Document of Compliance
- A shipping company shall receive and retain a "FuelEU Document of Compliance" issued by the verifier by 30 June of each year if the shipping company meets both the provisions of the GHG intensity and the use of OPS. (i.e., the case there is no obligation to pay a penalty.) On the other hand, if a shipping company did not meet the GHG intensity limit or there was a non-compliance with the use of OPS, necessary amount of the penalty should be paid by 30 June. Upon the confirmation that the penalty has been paid, the shipping company will receive a FuelEU Document of Compliance issued by the competent authority.

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4. Where there is failure to pay a penalty

Where a ship fails to comply with the regulation to have a FuelEU Maritime Document of Compliance for two or more consecutive reporting years, the competent authority of EU/EEA Member State of the port of call may issue an expulsion order. Every Member State shall refuse entry of the ship which is subject to the expulsion order into any of its ports until the company fulfils its obligations.

5. ClassNK's support services

ClassNK published the "FAQs on the FuelEU Maritime (1st Edition)", which provide an overview of the regulations in Q&A manner. We hope that the document will help maritime stakeholders in their preparations for FuelEU Maritime.

https://www.classnk.or.jp/hp/pdf/authentication/eumrv/fueleumaritime_faq_e.pdf

We will update the FAQs once new information becomes available.

We will also upgrade the ClassNK MRV Portal system for EU-MRV certification so that shipping companies can smoothly prepare FuelEU monitoring plans and FuelEU reports for each ship. We will announce the details of the Portal upgrade as soon as it is ready.

Please refer to our website for an overview of the relevant treaties.

Location: Top > Authentication Services > EU-MRV/UK-MRV Regulation/EU-ETS/FuelEU Maritime

URL: <https://www.classnk.or.jp/hp/en/authentication/eumrv/index.html>

For any questions about the above, please contact:

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Reference URL:

1. [REGULATION \(EU\) 2023/1805 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 September 2023 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC](#)