



# Contents

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Introduction	2
Correction / Revision Record	3
Q1. What is the FuelEU Maritime ?	4
Q1-1. What company should have a responsibility for FuelEU Maritime?	6
Q1-2. What is the “port of call” under the FuelEU Maritime?	6
Q2. What is an overview of the GHG intensity provision ?	8
Q2-1. How will the energy used and GHG intensity be confirmed?	9
Q2-2. What is Banking, Borrowing, Pooling?	11
Q2-3. How to calculate GHG intensity when biofuels are used?	13
Q2-4. How is the penalty calculated for GHG intensity provisions?	14
Q2-5. What is the provision for ice-class ships?	14
Q2-6. Are there any benefits from the use of biofuels on international voyages (between EU and non-EU)?	15
Q3. What is an overview of the provisions of the use of on-shore power supply?	16
Q4. What is an overview of the provisions of the use of RFNBO?	18
Q5. What should I do for the FuelEU Maritime?	19
Q5-1. What is the FuelEU Monitoring Plan and the FuelEU Report ?	21
Q6. Who pays the penalties in FuelEU Maritime?	23
Q6-1. How are the revenues from the FuelEU Maritime used?	23
<b>[Relevant Information]</b>	
EU-MRV and EU-ETS for shipping	24
FuelEU Maritime and the IMO’ s candidate mid-term measures	24
Verification and management tools related to FuelEU Maritime	25
List of regulations related to FuelEU Maritime regulations	26

## Introduction

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The Paris Agreement adopted in 2015 sets a common goal for the global GHG emissions reduction, which is to keep the increase in global average temperature to at least well below 2°C above pre-industrial levels while aiming to limit it to 1.5°C.

International shipping is no exception; the International Maritime Organization (IMO) adopted the *2023 IMO Strategy on Reduction of GHG Emission from Ships* in July 2023, which includes a target for total annual GHG emissions from international shipping to be net-zero by or around 2050.

Meanwhile, in the European Union (EU), maritime transport to and from ports in the European Economic Area (EEA) accounts for approximately 11% of the EU's total transport CO<sub>2</sub> emissions and 3% to 4% of the EU's total CO<sub>2</sub> emissions, and unless further measures are taken, emissions from maritime transport are expected to increase. Therefore, EU has set a goal of reducing GHG emissions by at least 55% by 2030 compared to the 1990 levels, with the aim of achieving net zero emissions by 2050. In July 2021, a comprehensive climate policy package, "Fit for 55," was announced to achieve the 2030 target, including proposals of the extension of the **EU Emissions Trading System (EU-ETS)** to the shipping sector and **FuelEU Maritime** to promote the decarbonization of fuels used on board ships. Subsequently, the EU-ETS extended to the shipping sector from January 2024 and the FuelEU Maritime starts from January 2025.

In August 2023 and July 2024, ClassNK published the 1st Edition and 2nd Edition of the "FAQs on the FuelEU Maritime", respectively, which provide an overview of the FuelEU Maritime and the necessary preparations for it in a Q&A format to assist maritime stakeholders in their first efforts for the compliance with the FuelEU Maritime. Subsequently, at the end of July 2024, supporting regulations for FuelEU Maritime were issued.

In this "FAQs on the FuelEU Maritime (3rd Edition)", brief explanations of the aforementioned supporting regulations have been added, and the contents have also been updated based on the latest information. Readers of this document may wish to note that the information provided herein is solely based on as of the end of July 2024 and that many points are yet to be clarified about the practical implementation. The latest information will be provided to the stakeholders without delay once further details become available.

We hope that the "FAQs on the FuelEU Maritime (3rd Edition)" will help all the stakeholders in the shipping sector for their preparation for the FuelEU Maritime.

## Correction / Revision Record

Version	Date	Section	Details
1.0	Aug. 2023	–	–
2.0	Jun. 2024	Entire document	Updated with the latest information.
3.0	Aug. 2024	Q1, Q2, Q4	Amend “fuels used” to “energy used”, etc. for clarification.
		Q2-3	Updated with the latest information.
		Q2-6	Newly added.
		Q5, Q5-1	Updated information on the FuelEU Monitoring Plan and FuelEU Report.
		Relevant Information	<ul style="list-style-type: none"> <li>Updated information on ClassNK ZETA is added in the “Verification and management tools related to FuelEU Maritime”.</li> <li>“List of regulations related to FuelEU Maritime regulations” is added.</li> </ul>

## Q1. What is the FuelEU Maritime ?

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FuelEU Maritime is regulations to be introduced in EU/EEA Member States from 2025 with an aim of promoting the decarbonization of fuels used on board ships, and consists of:

- (1) provisions setting a limit of lifecycle GHG intensity of energy used on board a ship;
- (2) provisions requesting the use of on-shore power supply (OPS) or zero-emission technology in port (containerships and passenger ships only); and
- (3) provisions requesting the use of RFNBO (Renewable Fuels of Non-Biological Origin).

### ◆Countries to which FuelEU Maritime applies

FuelEU Maritime will be introduced in the 30 States (EEA States) consisting of 27 EU Member States and 3 States, namely, Norway, Iceland and Lichtenstein. In this document, the terms such as “EU/EEA Member States” or “EU/EEA ports” are used.

### ◆Responsibility for FuelEU Maritime

Shipping companies are responsible for the compliance with the FuelEU Maritime. (Refer also to Q1-1)

### ◆Monitoring, reporting, verification and DoC under FuelEU Maritime

Ships subject to the FuelEU Maritime are required to prepare a FuelEU Monitoring Plan, conduct monitoring of fuel consumption, etc., prepare a report for the calendar year and have it verified by a verifier. FuelEU Document of Compliance (DoC) is issued to each ship when compliance with the regulation is confirmed.

### ◆Overview of the three provisions that consist of FuelEU Maritime

An overview of the three provisions that consist of FuelEU Maritime is as follows.

#### (1) An overview of provisions setting a limit of lifecycle GHG intensity of energy used on board a ship

- Starts from 1 January 2025.
- Energy used on board ships of over 5,000 GT, arriving at or departing from EU/EEA ports are in the scope of this provision.
- For the energy covered, a limit is set for the annual average of “GHG emissions per energy [gCO<sub>2</sub>eq/MJ]”, called as “GHG intensity”. This GHG intensity limit will be strengthened every five years. The GHG intensity is assessed on a lifecycle (Well-to-Wake) basis.
- For the same ship, the GHG intensity can be carried forward to the following year (banking), or used in advance from the following year (borrowing). It is also possible

to compensate the GHG intensity for multiple ships in the same year (pooling).

- In the case where the GHG intensity of a shipping company exceeds the limit, by paying a penalty for the excess, the shipping company is deemed to comply with the regulation.

**(2) An overview of provisions requesting the use of on-shore power supply (OPS) or zero-emission technology in port (containerships and passenger ships only)**

- Starts from 1 January 2030. (For some ports, starts from 1 January 2035.)
- Containerships and passenger ships over 5,000 GT should use an on-shore power supply (OPS), etc., when being moored in designated ports of EU/EEA Member States.
- There are exemptions, e.g., mooring for less than 2 hours is not applicable.
- Failure to comply with this provision is, by paying a penalty based on the amount of power, etc. during the mooring, deemed to be compliance.

**(3) An overview of provisions requesting the use of RFNBO (Renewable Fuels of Non-Biological Origin)**

- Starts from 1 January 2034, if the share of RFNBO use in 2031 of the total energy used on board ships covered by FuelEU Maritime is less than 1%.
  - ✓ RFNBO refers to Renewable Fuels of Non-Biological Origin (“e-fuels”), such as ammonia produced using hydrogen from renewable energy sources.
- Energy used on board ships of over 5,000 GT, arriving at or departing from EU/EEA ports are in the scope of this provision.
- Requires each ship to use RFNBO as 2% of the total energy used in a year.
- As with the GHG intensity provision (1) above, banking, borrowing and pooling can also be used to comply with this provision.
- Failure to comply with this provision is, by paying a penalty based on the energy used, etc., deemed to be in compliance with the requirement.

**◆Enforcement of FuelEU Maritime**

If a ship does not comply with the provisions of (1), (2) or (3) above, FuelEU Document of Compliance will not be issued. Where a ship fails to comply with the regulation to have a FuelEU 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.

## Q1-1. What company should have a responsibility for FuelEU Maritime?

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Under the FuelEU Maritime, a shipping company is responsible for the compliance with regulations and is defined as follows:

*‘company’ means the shipowner or any other organisation or person such as the manager or the bareboat charterer, which has assumed the responsibility for the operation of the ship from the shipowner and has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention;*

This definition is similar to that of a shipping company under EU-MRV Regulation and EU-ETS Directive, but unlike the EU-MRV and EU-ETS, an ISM company (DOC holder) should have a responsibility for FuelEU Maritime.

A shipping company covered by FuelEU Maritime will be registered with one of the EU/EEA Member States (= Administering State). This Administering State is the same Member State with which the shipping company is registered under EU-ETS.

## Q1-2. What is the “port of call” under the FuelEU Maritime?

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Port of call under the FuelEU Maritime is defined as follows:

*‘port of call’ means a port where ships stop to load or unload cargo or to embark or disembark passengers with the exclusion of stops for the sole purposes of refuelling, obtaining supplies, relieving the crew, going into dry-dock or making repairs to the ship, its equipment or both; stops in port because the ship is in need of assistance or in distress; ship-to-ship transfers carried out outside ports; stops for the sole purpose of taking shelter from adverse weather or rendered necessary by search and rescue activities; and stops of containerships in a neighbouring container transshipment port listed in the implementing act adopted pursuant to Article 2(2);*

As such, “stops of containerships in a neighbouring container transshipment port” are excluded from the *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.

Meanwhile, EU-ETS contains the same provision, and at present, two ports have been designated, TANGER MED in Morocco and EAST PORT SAID in Egypt.

## Q2. What is an overview of the GHG intensity provision ?

### ◆Overview of the GHG intensity provision

This provision is to set a limit for the annual average of “GHG emissions per energy [gCO<sub>2</sub>eq/MJ]”, called as “GHG intensity”, for energy used on board ships.

### ◆Ship to be covered

Ships over 5,000 GT arriving at or departing from ports under the jurisdiction of EU/EEA Member States are covered.

### ◆Greenhouse gases (GHGs) to be covered and the GHG intensity

- The greenhouse gases (GHGs) covered are CO<sub>2</sub>, methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O).
- In calculating GHG intensity, not only GHG emissions on board ships (Tank-to-Wake), but also GHG emissions during production, distribution and storage of the fuel (Well-to-Tank) are included, i.e., on a life-cycle (Well-to-Wake) basis. The GHG emissions are assessed for each type of fuels.
- The GHG intensity is calculated by converting CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O emissions into CO<sub>2</sub> equivalent emissions in the unit “CO<sub>2</sub> equivalent emissions per energy [gCO<sub>2</sub>eq/MJ]”.
- This energy is calculated on the basis of the fuel consumption on board ships as identified below.

### ◆Energy used on board ships to be covered

The energy used in the geographical scope of the FuelEU Maritime are as follows:

- Voyages between EU/EEA and non-EU/EEA ports (Route ①) :50% of energy used
- Voyages within EU/EEA ports (Route ②) :100% of energy used
- Berthing in EU/EEA ports :100% of energy used

Voyages and berthing in the scope of FuelEU Maritime



Note: For the route② above, for voyages departing from/arriving at ports in the outermost regions of EU/EEA Member States, 50% of energy used is covered instead of 100%.

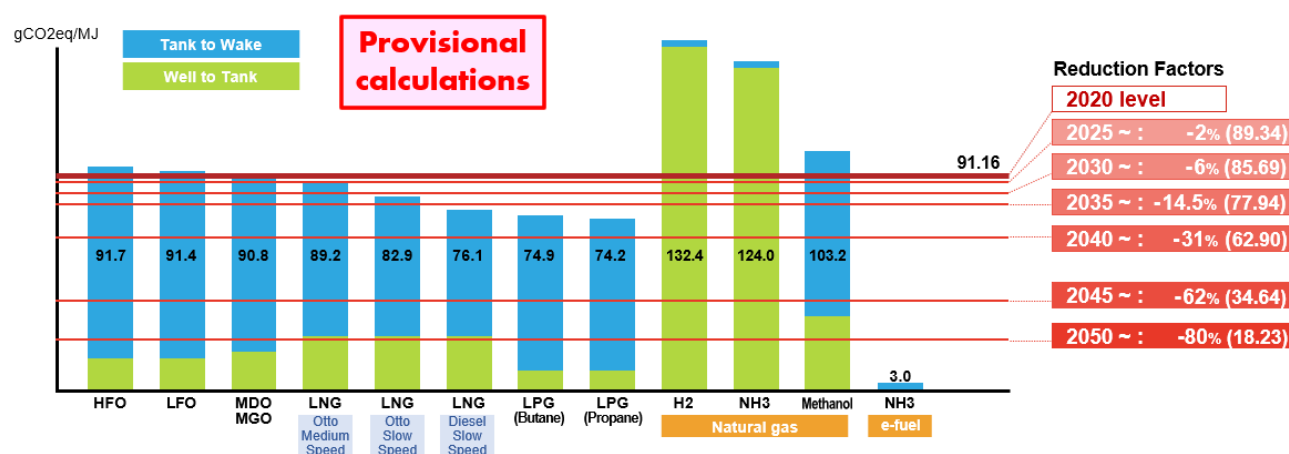
## Q2-1. How will the energy used and GHG intensity be confirmed?

In the FuelEU Maritime regulations, the energy used by a ship and GHG intensity of the ship are confirmed based on the data collected under the FuelEU Monitoring Plan (see Q5-1).

In the FuelEU Maritime, GHG intensity is calculated on a life cycle (Well-to-Wake) basis. The GHG intensity of each fuel is calculated based on the emission factors determined for the Well-to-Tank and Tank-to-Wake parts, respectively, and the sum of those values is the GHG intensity of the fuel. For example, in the case of marine diesel oil (MDO), the GHG intensity of the Well-to-Tank part is 14.4 [gCO<sub>2</sub>eq/MJ] and that of the Tank-to-Wake part is 76.4 [gCO<sub>2</sub>eq/MJ], resulting in a total of 90.8 [gCO<sub>2</sub>eq/MJ] as the GHG intensity of the fuel.

The GHG intensity limit is strengthened every five years based on the 2020 level of 91.16. For instance, the limit value for 2025, the starting year of the provision, would be “89.34”, with a reduction of 2% from the reference value. The GHG intensity values for each fuel and the limit values are outlined in the diagram below.

Overview of GHG intensity of each fuel and limits



If more than one type of fuels is used, the GHG intensity of the ship is calculated as the weighted average of the GHG intensity of those fuels by energy used.

To incentivize the use of renewable fuels of non-biological origin (RFNBO), such as ammonia produced using renewable energy, the amount of GHG emissions from those fuels is calculated as half in the GHG intensity calculation. This measure applies from 1 January 2025 to 31 December 2033.

In addition, the data collected under the EU-MRV Regulations will be used as necessary when carrying out FuelEU Maritime monitoring and reporting. Details are expected to be announced by EC in due course.

## Q2-2. What is Banking, Borrowing, Pooling?

The GHG intensity provision allows a ship to bank a surplus of the achievement of the GHG emissions to the following year (“banking”), or to borrow advance achievement of GHG emissions from the following year (“borrowing”). A shipping company can compensate the “achieved” and “failed to achieve” GHG emissions against the limits among multiple ships in a fleet in the same reporting period (“pooling”).

### Compliance Balance

Banking, borrowing and pooling are calculated based on a surplus or deficit of GHG emissions, called the “compliance balance”. It is expressed in [gCO<sub>2</sub>eq].

If the GHG intensity limit is achieved, a “compliance surplus (resulting in a positive value)” occurs, and if it is not achieved, a “compliance deficit (resulting in a minus value)” occurs.

$$\text{Compliance Balance} = \left( \text{GHG intensity limit of the year [gCO}_2\text{eq/MJ]} - \text{GHG intensity of the ship [gCO}_2\text{eq/MJ]} \right) \times \text{Energy used on board [MJ]}$$

(Note) If OPS is used, then a separate calculation is required.

An overview of Banking, Borrowing, Pooling is outlined below.

#### ◆Banking (for the same ship only)

If the ship’s GHG intensity of a reporting year achieves the GHG intensity limit for that year, the compliance surplus can be carried forward to the following year. Banking should be recorded in the FuelEU database by the shipping company after approval by the verifier. However, the banking is not available after the issue of a FuelEU Document of Compliance.

#### ◆Borrowing (for the same ship only)

If the ship’s GHG intensity of a reporting year exceeds the GHG intensity limit for that year, the corresponding amount of the compliance surplus can be borrowed from the following year. Borrowing amount can be counted to the GHG intensity calculation for the reporting year for the ship in question, but 1.1 times of the borrowed amount will be subtracted from the following year. Borrowing cannot be used for two consecutive reporting years. Also, the maximum amount that can be borrowed is also set as follows:

Borrowing limit [gCO<sub>2</sub>eq]: 2% of the GHG intensity limit for the year [gCO<sub>2</sub>eq/MJ] × energy consumption for the year [MJ].

**◆ Pooling (in the same reporting period)**

A shipping company can compensate the “achieved” and “failed to achieve” GHG emissions against the limits among multiple ships in a fleet in the same reporting period, by allocating a compliance surplus of a ship to a compliance deficit to another ship, which is called “pooling”. Pooling can also be set up by two or more shipping companies. The remaining compliance surplus after the pooling can be banked.

To use the pooling, the following should also be noted:

- A ship cannot be included in more than one pool.
- The sum of the compliance balance of all ships in a pool is configured to be positive(= total surpluses > total deficits).
- A ship that uses “borrowing” cannot be included in a pooling.

When pooling is used, shipping companies must register relevant information in the FuelEU database, including:

- Compliance balance of each ship in the pool.
- Allocation of the compliance balance for all ships in the pool.
- Information of the verifiers assessing that allocation.

## Q2-3. How to calculate GHG intensity when biofuels are used?

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In FuelEU Maritime, “biofuels” means “liquid fuel for transport produced from biomass.” Also, “biomass” means the biodegradable fraction of products, waste and residues from biological origin from agriculture, forestry, fisheries, aquaculture and related industries.

In case where biofuels certified under the scheme recognised by the European Commission (Directive (EU) 2018/2001, RED II) are used, based on the GHG intensity identified in the relevant document certifying it (Proof of Sustainability certificate or similar documents), GHG intensity under FuelEU Maritime can be calculated.

Specifically, under RED II, as lifecycle (well-to-wake) GHG intensity does not include Tank-to-Wake CH<sub>4</sub> and N<sub>2</sub>O, the GHG intensity under FuelEU Maritime should therefore be newly calculated by adding the Tank-to-Wake CH<sub>4</sub> and N<sub>2</sub>O emissions.

As an example, if the lifecycle GHG intensity identified in the Proof of Sustainability certificate for a biofuel (biodiesel) certified under RED II is 14.9 [gCO<sub>2</sub>eq/MJ], the GHG intensity for the fuel under the FuelEU Maritime is approximately 16.4 [gCO<sub>2</sub>eq/MJ].

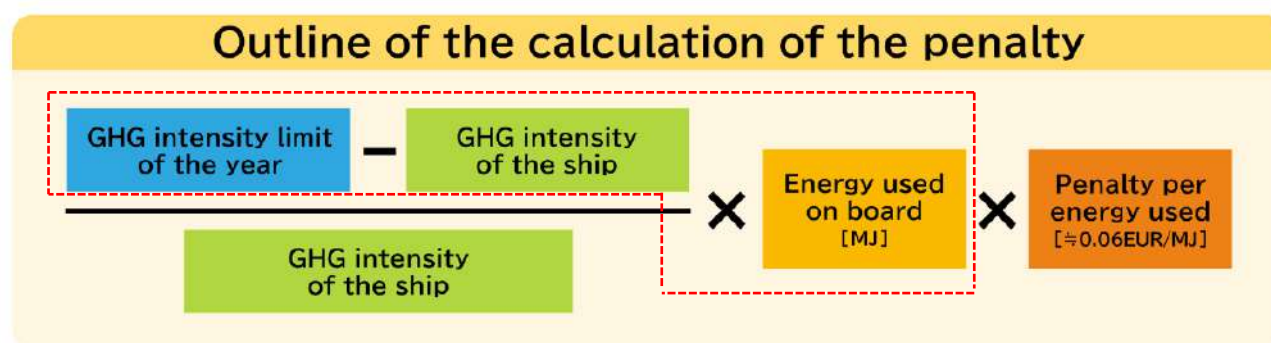
The above is an example of 100% biofuel (B100). In the case of blended oils such as B24, the GHG intensity of the blended oil is the weighted average of the biofuel part and the blended fuel part by their respective energy content.

In case where the biofuels are not certified under RED II certification scheme or if they are produced from food and feed crops, these biofuels shall be considered to have the same emission factors as the least favourable fossil fuel pathway for that type of fuel.

## Q2-4. How is the penalty calculated for GHG intensity provisions?

Under GHG intensity provision, if the GHG intensity of the fuel used on board exceeds the GHG intensity limit for the year in question, a penalty should be paid. The amount of the penalty is calculated according to the type of fuel and the amount of the fuel used, etc.

The formula for calculating the penalty for a ship is outlined below.



The part surround in red means a compliance balance. If the calculation result of the formula is negative, the penalty will be incurred being converted to the absolute value of it. If multiple fuels are used, the "GHG intensity of the ship" in this calculation formula is the weighted average GHG intensity of the fuels used. (Refer also to Q2-6.)

For ships that have failed to achieve the GHG intensity limit for two or more consecutive years, the amount of the penalty is multiplied by  $1 + (n - 1)/10$ , where  $n$  is the number of years to which the penalty applies. For example, a ship that needs to pay the penalty for two consecutive years, the amount of the penalty for the second year will be 1.1 times of the amount calculated using the formula above.

## Q2-5. What is the provision for ice-class ships?

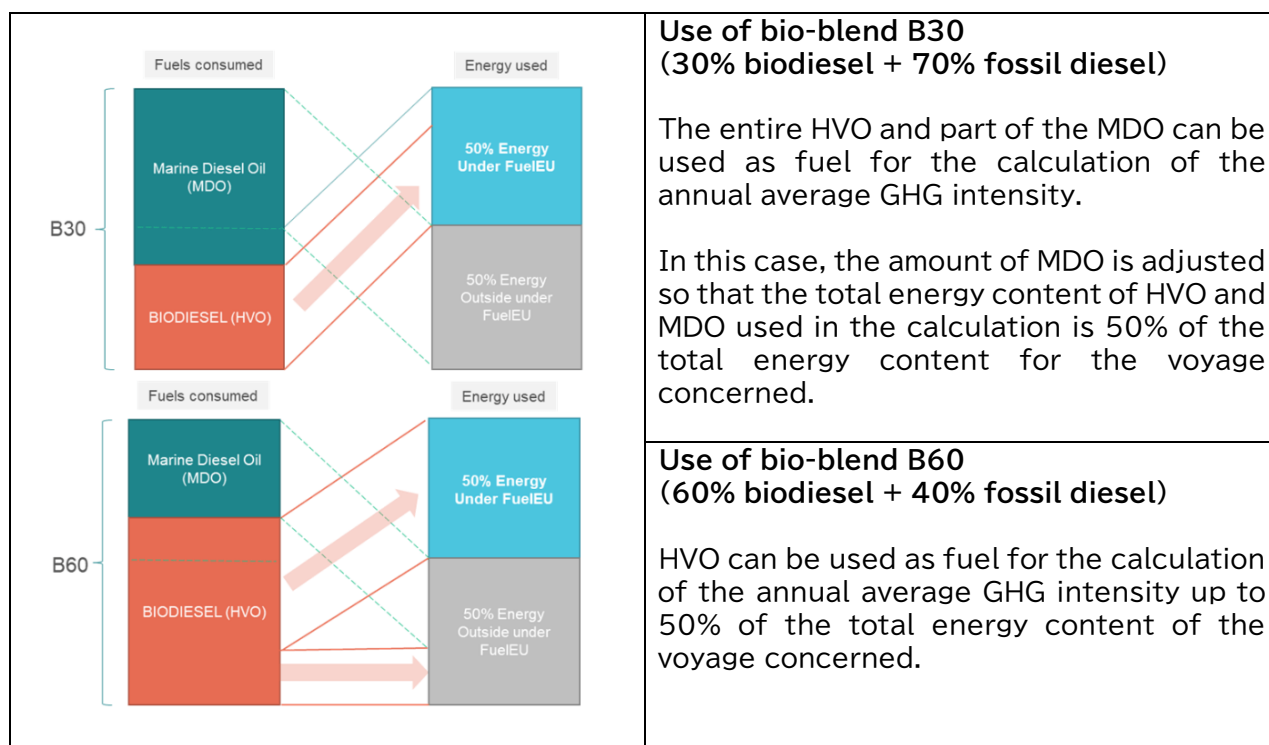
The FuelEU Maritime allows ships having the ice class IC, IB, IA or IA Super or an equivalent ice class to exclude the additional energy consumption, due to sailing in ice conditions until 31 December 2034. In addition, it also allows ships having the ice class IA or IA Super or an equivalent ice class to exclude the additional energy consumption, due to the technical characteristics of the ship.

## Q2-6. Are there any benefits from the use of biofuels on international voyages (between EU and non-EU)?

The GHG intensity requirements under Fuel EU Maritime Regulation apply to the energy used on board ships during the following voyages and port stays (Refer also to Q2.):

- ① 100% of the energy used on board during voyages between EEA ports;
- ② 100% of the energy used on board at EEA ports;
- ③ 50% of the energy used on board during voyages between an EEA port and a non-EEA port; and
- ④ 50% of the energy used on board during voyages arriving at or departing from an EEA port located in an outermost region.

In the [Q&A on the FuelEU Maritime Regulation issued by the European Commission](#), renewable and low-carbon fuels used during voyages specified in ③ and ④ above can be counted as contributing to the GHG intensity, up to 50% of the energy used during the voyage. In the Q&A, the following examples are given for the use of marine diesel oil (MDO) and biodiesel (HVO) blend fuels, B30 and B60 respectively.



Example of GHG intensity calculations for the use of biofuels during a voyage between ports in EEA Member States and non-EEA Member States

(Source: Questions and Answers on Regulation (EU) 2023/1805 on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC)

### Q3. What is an overview of the provisions of the use of on-shore power supply?

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#### ◆ Overview of provisions requesting the use of on-shore power supply (OPS) or zero-emission technology in port (containerships and passenger ships only)

From 1 January 2030, containerships and passenger ships are required to use an on-shore power supply (OPS) for all electricity while moored in designated EU/EEA ports.

The ports covered by this provision are defined as TEN-T maritime ports under the EU Alternative Fuels Infrastructure Regulation (AFIR) (Regulation(EU)2023/1804). These TEN-T maritime ports are specified in Annex II of the Trans-European Transport Network and repealing Decision (Regulation(EU)1315/2013).

In addition, from 1 January 2035, ships moored at the quayside which is not covered by the above-mentioned ports will also be required to connect to OPS, where the port is equipped with available OPS. Further, EU/EEA Member States may also apply this provision in ports under their jurisdiction from January 2030 to December 2034, other than the aforementioned ports, by notifying the European Commission one year in advance.

However, 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;
- are unable to connect to OPS because exceptionally the electrical grid stability is at risk;
- are unable to connect to OPS because the shore installation at the port is not compatible with the onboard on-shore power equipment;
- 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; or
- while remaining connected to OPS, for a period of time limited to what is strictly necessary, require the use of onboard energy generation for maintenance tests or for functional tests carried out at the request of an officer of a competent authority or the representative of a recognised organization undertaking a survey or inspection.

**◆Penalties for the failure to comply with provisions requesting the use of OPS**

Failure to comply with this provision is, by paying a penalty based on the amount of power, etc. during the mooring, deemed to be in compliance with the requirement.

The formula for calculating the penalty is as follows:

**Outline of the calculation of the penalty under OPS requirements**

Total electrical power  
demand of the ship at berth  
[kW]

×

Hours of mooring  
at the quayside  
[hours]

×

Penalty per kWh for  
non-compliant port calls  
[1.5EUR/kWh]

([hours] should be rounded up to the nearest whole hour)

## Q4. What is an overview of the provisions of the use of RFNBO?

### ◆Overview of provisions requesting the use of RFNBO

This provision will be introduced from 1 January 2024, if the share of RFNBO use in 2021 of the total energy used on board ships covered by FuelEU Maritime is less than 1%. RFNBO refers to Renewable Fuels of Non-Biological Origin, such as ammonia produced using hydrogen from renewable energy sources.

This provision requires each ship to use RFNBO as 2% of the total energy used in a year. As with the GHG intensity provision, banking, borrowing and pooling can also be used to comply with this provision.

### ◆Ship to be covered

Ships over 5,000 GT arriving at or departing from ports under the jurisdiction of EU/EEA Member States are covered.

### ◆Energy used on board ships to be covered

The energy used in the scope is same as GHG intensity provision and are as follows:

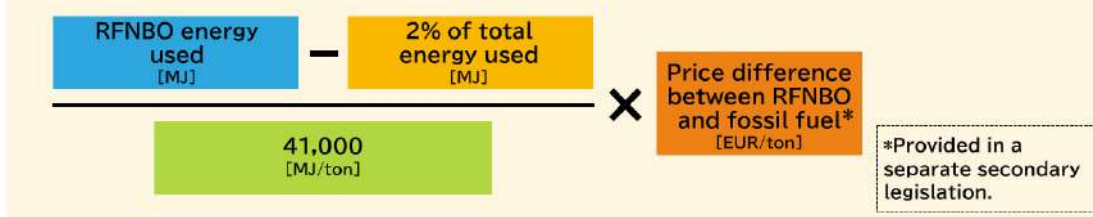
- Voyages between EU/EEA and non-EU/EEA ports :50% of energy used
- Voyages within EU/EEA ports :100% of energy used
- Berthing in EU/EEA ports :100% of energy used

### ◆Penalties for the failure to comply with provisions requesting the use of RFNBO

Failure to comply with this provision is, by paying a penalty based on the energy used, etc., deemed to be in compliance with the requirement.

The formula for calculating the penalty for a ship is outlined below.

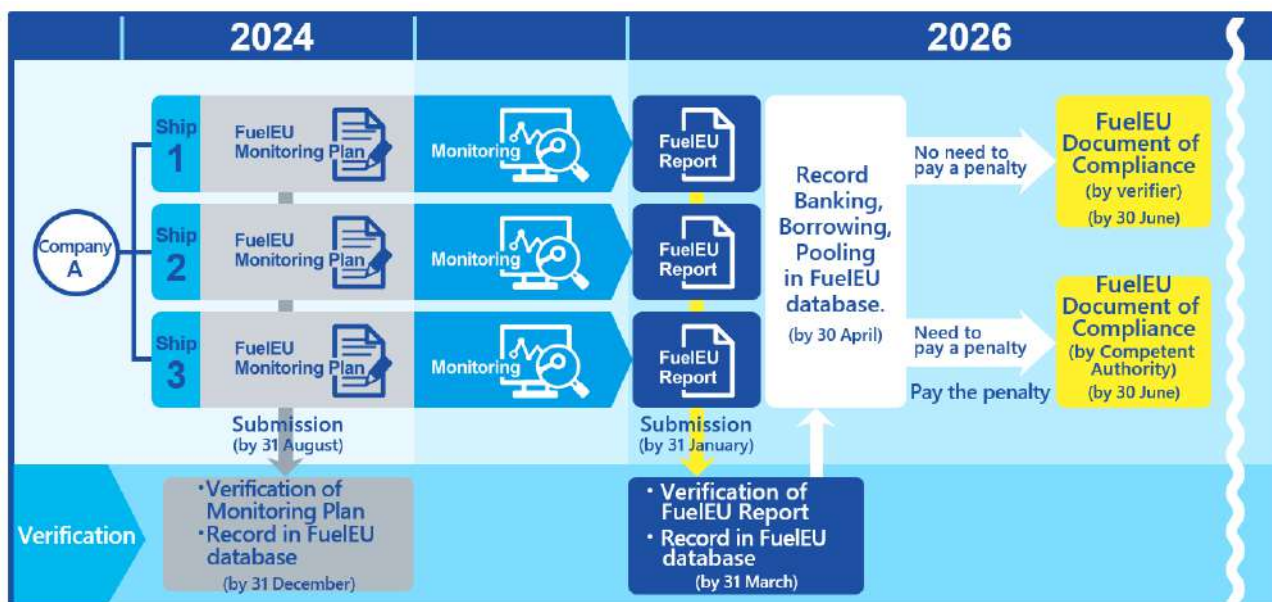
#### Outline of the calculation of the penalty under RFNBO requirements



## Q5. What should I do for the FuelEU Maritime?

The specific preparations and their timelines required for shipping companies are as follows.

Timeline for the introduction of the FuelEU Maritime



### ◆By 31 August 2024

A shipping company is requested to submit a FuelEU Monitoring Plan to the verifier via “THETIS-MRV” operated by the European Maritime Safety Agency (EMSA), 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. (Refer also Q5-1)

For ships calling an EU/EEA port for the first time after 31 August 2024 are requested to submit a FuelEU Monitoring Plan to the verifier within 2 months of that port call.

The FuelEU Monitoring Plan is assessed for the conformity with the requirements and then recorded in the FuelEU database by the verifier, by 31 December 2024, before the monitoring period starts. The FuelEU database is currently under development in “THETIS-MRV” by EMSA.

### ◆On or after 1 January 2025

For each ship, the data and information identified in the FuelEU Monitoring plan should be monitored and recorded.

**◆By 31 January 2026 (thereafter, by 31 January every year)**

The data and information that are monitored and recorded for the previous reporting year should be submitted to the verifier as a FuelEU Report for each ship. Subsequently, the report submitted will be assessed by the verifier, and the GHG intensity and compliance balance of ships concerned calculated by the verifier are recorded in the FuelEU database by 31 March.

**◆By 30 April 2026 (thereafter, by 30 April every year)**

A shipping company can record banking, borrowing, and pooling, as necessary, on the FuelEU database after the FuelEU Report is verified and recorded in the FuelEU database by the verifier, no later than 30 April. In addition, a shipping company/companies using pooling, the shipping company/companies should select a verifier that verifies the composition of the pool and allocation of the total pool compliance balance to each individual ship by 30 April.

**◆By 30 June 2026 (thereafter, by 30 June every year)**

Based on the information recorded in the FuelEU database, the shipping company receives a FuelEU Document of Compliance of the ship, issued by the verifier, if the shipping company meets both the provisions of the GHG intensity and the use of OPS, i.e., in case no need 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 this date. Upon the confirmation that the penalty has been paid, the shipping company will receive a FuelEU Document of Compliance issued by the competent authority.

## Q5-1. What is the FuelEU Monitoring Plan and the FuelEU Report?

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In accordance with the timeline identified in Q5, shipping companies should prepare a FuelEU Monitoring Plan and have it assessed by a verifier before the start of the monitoring year. Once the monitoring year ends, a FuelEU Report should be prepared for submission to the verifier. The FuelEU Monitoring Plan and FuelEU Report should include the following info.

### ◆FuelEU Monitoring Plan

The FuelEU Monitoring Plan should include relevant information, such as:

- Ship's type/name/IMO number/shipowner and information of the shipping company (ISM company);
- Sources of Energy 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 (only for containerships and passenger ships); and
- Value of the established total electrical power demand of the ship at berth (only for containerships and passenger ships); and
- Information on the ship's ice class (if applicable).

At the end of July 2024, implementing regulations setting out the template for the FuelEU Monitoring Plan was published. The FuelEU Monitoring Plan should be submitted to a verifier (ClassNK) electronically on TEHTIS-MRV in accordance with the specified format.

In this connection, a modification was made to allow the submission of FuelEU Monitoring Plans on THETIS-MRV. Videos on how to submit the FuelEU Monitoring Plan and its workflow, and the comparison table between EU-MRV Monitoring Plan and FuelEU Monitoring Plan are available on the following website of EMSA:

<https://emsa.europa.eu/reducing-emissions/news-activities/item/5281-emsa-releases-the-first-building-block-of-the-fueeu-maritime-in-thetis-mrv.html>

Please pay a special attention to that the responsible entity for the FuelEU Maritime Regulation is always the ISM company of the ships concerned. Therefore, FuelEU Monitoring Plan should also be submitted by the ISM company. This is different from the EU-ETS, where either the registered owner or the ISM company is the responsible entity. (The mandate document required under the EU-ETS is not required under the FuelEU Maritime Regulation.)

Please also note that the verifier shall carry out site visits in order to gain sufficient understanding of the ISM company and the FuelEU Monitoring Plan and reporting system as described in the plan.

The FuelEU Monitoring Plan is required to be updated and assessed by a verifier as appropriate when changing shipping companies or using new types of fuel, etc.

#### ◆FuelEU Report

The FuelEU Report should include relevant information, such as:

- Departure and arrival ports (including date and time);
- For each type of fuel used while at berth and at sea, the Well-to-Tank, Tank-to-Wake, Well-to-Wake emission factors;
- Amount of fuels used while at berth and at sea;
- Amount of electricity supplied to the ship through the OPS;
- The ship's ice class, the date, time and position when entering and leaving the ice condition, the amount of each type of fuel used, the distance travelled when sailing in ice conditions (if applicable).

Based on the information provided in 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 energy from the RFNBO used on board by the ship;
- GHG emissions for which the GHG intensity limit was achieved or not achieved;
- Number of non-compliant port calls for the use of OPS.

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. In addition, 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.

## Q6. Who pays the penalties in FuelEU Maritime?

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In the FuelEU Maritime, a “company” which is defined as follows, should comply with regulations:

*‘company’ means the shipowner or any other organization or person such as the manager or the bareboat charterer, which has assumed the responsibility for the operation of the ship from the shipowner and has agreed to take over all the duties and responsibilities imposed by the International Management Code for the Safe Operation of Ships and for Pollution Prevention.*

In addition, the following provisions are also included in the FuelEU Maritime.

The *company* shall remain responsible for the payment of the FuelEU penalties, without prejudice to the possibility for the company to conclude contractual agreements with the commercial operators of the ship that provide for the liability of the commercial operators to reimburse the company for the payment of the FuelEU penalties, when the responsibility for the purchase of the fuel or the *operation of the ship* is assumed by the commercial operator. For the purposes of this provision, *operation of the ship* shall mean determining the cargo carried, the route and the speed of the ship.

Penalties for failure to meet the respective provisions should be paid to the Administering State of the shipping company to which FuelEU Maritime applies.

### Q6-1. How are the revenues from the FuelEU Maritime used?

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Revenues from the penalty of the FuelEU Maritime will be used to support the introduction and promote the use of renewable and low-carbon fuels in the maritime sector. It is envisaged to encourage the production of more renewable low-carbon fuels in the maritime sector, facilitate the construction of on-shore power supply facilities in ports and support the development, testing and implementation of innovative technologies to achieve significant GHG emission reductions.

## [Relevant Information]

### | EU-MRV and EU-ETS for shipping

EU-MRV regulations require the monitoring, reporting and verification of fuel consumptions used onboard ships etc. during EU-related voyages which have been implemented since 2018. Ships of 5,000 GTs and above calling at EU ports are required to prepare a monitoring plan for their fuel consumptions and an emission report containing the records of their CO<sub>2</sub> emissions for verification by an EU-accredited verifier.

ClassNK provides verification services as an accredited verification body under EU-MRV regulations.

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



ClassNK also published "FAQs on the EU-ETS for Shipping", which outlines the content of the EU-ETS and detailed regulations of EU-ETS for shipping, to provide support to maritime stakeholders.

The FAQs can be downloaded from the following:



### | FuelEU Maritime and the IMO's candidate mid-term measures

IMO, at MEPC 80 in July 2023, adopted the 2023 IMO Strategy on Reduction of GHG Emissions from Ships, having the levels of ambition to reach net-zero GHG emissions by or around, i.e., close to 2050. As mid-term measure, economic measures such as carbon pricing mechanism and technical measures such as phased reduction of fuels' life-cycle-based GHG intensity, like the FuelEU Maritime, will be considered.

On the other hand, EU will consider states that, if IMO adopts a global measure on energy used by ships, the ambition and overall environmental integrity of the measure in the context of the goals of the Paris Agreement. EU will also consider possibilities, including the alignment of FuelEU Maritime with such global measures, the need to avoid duplication of regulations on GHG emissions from maritime transport at EU and international level.

## Verification and management tools related to FuelEU Maritime

ClassNK offers a system “ClassNK MRV Portal” for monitoring and verification of data required under EU-MRV and IMO-DCS regulations. For FuelEU Maritime, preparations of FuelEU report are needed, so ClassNK will update the system to deal with the relevant FuelEU requirements. ClassNK will inform shipping companies once the update is completed. Regarding FuelEU Monitoring Plan, it should be created and submitted in the FuelEU database, which is THETIS-MRV operated by EMSA(European Maritime Safety Agency). ClassNK will inform shipping companies for how to prepare FuelEU Monitoring Plans in THETIS-MRV once it is ready in THETIS-MRV.

In addition, ClassNK released ClassNK ZETA (Zero Emission Transition Accelerator) in 2022 to efficiently manage GHG emissions from ships and CII ratings.

ClassNK ZETA, linked to the ClassNK MRV Portal storing various data provided by ships, is equipped with the functions to enable the constant monitoring of CO2 emissions and CII ratings for individual ships as well as for the entire fleet, and to simulate how CO2 emissions and CII ratings are changed with slow steaming, etc. Currently, ClassNK ZETA is serving more than 5,000 ships.



In relation to the introduction of the FuelEU Maritime regulation from 2025, ClassNK ZETA deployed FuelEU Maritime function that calculates the GHG intensity and compliance balance, etc., required under FuelEU Maritime for effective management of banking, borrowing and pooling. Please utilize ClassNK ZETA for the compliance with the EU-ETS for shipping.

ClassNK ZETA as a cloud service is accessible immediately with only a simple application. Please place the application from “ClassNK ZETA application form” in the following website:  
[https://www.classnk.or.jp/hp/en/info\\_service/ghg/nk-zeta.html](https://www.classnk.or.jp/hp/en/info_service/ghg/nk-zeta.html)

## List of regulations related to FuelEU Maritime regulations

### ◆FuelEU Maritime regulation

- FuelEU Maritime regulation: [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 \(Text with EEA relevance\)](#)

### ◆Supporting regulations related to FuelEU Maritime

- Implementing Regulation on the template of the FuelEU Monitoring Plan: [Commission Implementation Regulation \(EU\) 2024/2031 of 26 July 2024 on the template for monitoring plans pursuant to Regulation \(EU\) 2023/1805 of the European Parliament and of the Council on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC](#)
- Implementing Regulation on verification activities of FuelEU Maritime : [Commission Implementation Regulation \(EU\) 2024-2027 of 26 July 2024 on verification activities pursuant to Regulation \(EU\) 2023/1805 of the European Parliament and of the Council on the use of renewable and low-carbon fuels in maritime transport, and amending Directive 2009/16/EC](#)

**NIPPON KAIJI KYOKAI**

Business Assurance Division  
Green Certification Department

4-7 Kioi-cho, Chiyoda-ku, Tokyo 102-8567, JAPAN  
Tel : +81-3-5226-3025  
E-mail : [dcs@classnk.or.jp](mailto:dcs@classnk.or.jp)

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[www.classnk.com](http://www.classnk.com)