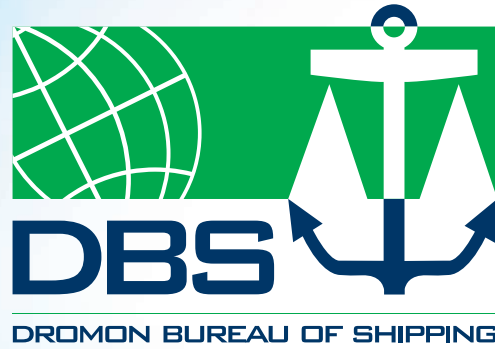




Maritime Emissions Compliance:

A Practical Guide to EU MRV, EU ETS, UK ETS, and FuelEU



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Introduction to the EU MRV Regulation

The EU MRV (Monitoring, Reporting, and Verification) Maritime Regulation ensures transparency in maritime greenhouse gas (GHG) emissions. It requires ship operators to monitor, report, and verify CO₂ (carbon dioxide), CH₄ (methane), and N₂O (nitrous oxide) emissions from voyages to, within, and from the European Economic Area (EEA).

Regulation (EU) 2023/957 amends the MRV Maritime Regulation to align with the EU Emissions Trading System (EU ETS) and introduces new monitoring requirements for additional ship types and emissions.

Since 1 January 2024:

- Monitoring expanded to include CH₄ and N₂O emissions in addition to CO₂.
- Companies must submit revised Monitoring Plans (MPs) to account for these additional gases.

From 1 January 2025:

- General cargo ships (400-5,000 GT) transporting cargo commercially must comply.
- Offshore ships (≥400 GT) operating within the EEA are also included.
- The MRV method ensures accurate tracking of GHG emissions by using standard procedures already integrated into normal ship operations.



Application

The Regulation applies to:

- All ships above 5,000 GT sailing in, out, and between EU ports.
- General cargo ships between 400 and 5,000 GT.
- Offshore ships of 400 GT and above.
- All Flag States.

The Regulation does not apply to:

- Warships.
- Naval auxiliaries.
- Fish-catching or fish-processing ships.
- Wooden ships of a primitive build, ships not propelled by mechanical means, and government ships used for non-commercial purposes.

The Regulation applies to commercial voyages only. This includes any ship that calls at an EU port to:

- Load / unload cargo.
- Embark / Disembark passengers.

Voyages related to bunkering, crew relief, supply stops, dry-docking, maintenance, safe harbour, etc., are excluded from monitoring and reporting requirements.



How the EU ETS Affects the Maritime Sector

As of January 2024, the EU Emissions Trading System (EU ETS) has been extended to maritime transport. Ships of 5,000 GT and above must account for their CO₂ emissions on voyages to, from, and between EU/EEA ports and while in port.

- 100% of emissions from voyages between EU/EEA ports and within ports.
- 50% of emissions from voyages between EU/EEA and non-EU/EEA ports.

From 2026, CH₄ and N₂O will also be included.

Shipping companies must purchase and surrender allowances for their emissions, with a phased implementation:

- 2025: 40% of 2024 emissions.
- 2026: 70% of 2025 emissions.
- 2027 onwards: 100% of emissions.

Compliance & Enforcement

Shipping companies must monitor and report their emissions under the EU MRV Maritime Regulation and submit verified reports annually.

Failure to comply results in:

- Public disclosure of non-compliant companies.
- Fines of €100 per excess tonne of CO₂.
- Potential expulsion from EU ports for repeated violations.

Navigating the EU ETS

To comply, companies must:

- Maintain an approved monitoring plan.
- Report verified annual emissions.
- Surrender allowances via the EU Union Registry.

Timeline for MRV Maritime Regulation & EU ETS Compliance

By 1 January 2024: Start of Monitoring

- Begin monitoring and reporting CH₄, N₂O, and CO₂ emissions for all ships.

By 31 March 2024: Monitoring Plan Revision & Submission

- **Revise Monitoring Plan:** Ensure each ship's monitoring plan conforms with the MRV Maritime Regulation and have it assessed by an independent verifier.
- **Submit Monitoring Plan:** Submit the verified monitoring plan to the administering authority for ships under the scope of the ETS Directive.

By 31 December 2024: Monitoring Plan Approval

- **Monitoring Plan Preparation and Approval:** Prepare the revised Monitoring Plan (as applicable), ensure its approval by 31 December 2024, and place it on board ships by 1 January 2025.

By 31 March 2025 (and annually thereafter): Verification of Vessel and Company-Level Emissions Data

- **Verify Vessel Emissions Data:** Ensure that emissions data for the calendar year 2024 for each vessel is verified.
- **Verify Company-Level Emissions Data:** Verify aggregated emissions data for all vessels under your responsibility.
- **Prepare and Submit Emissions Reports:** Ensure both the vessel and company-level emissions reports (Emissions Report - ER and Company Emissions Report - CER) are verified and submitted to the designated Administering Authority. Both reports must be available on the THETIS MRV platform.

By 30 June of Each Year: Document of Compliance

- An accredited verifier must issue a DoC relating to the relevant reporting period.
- Companies must ensure that all their ships, which have performed activities in the previous reporting period and are visiting ports in the European Economic Area (EEA), carry a valid Document of Compliance (DOC) on board.
- Subject to port state inspections.

Dromon Bureau of Shipping EU MRV and EU ETS

By 30 September 2025 (and annually thereafter):

Surrender EU Allowances (EUAs)

- Companies or an accredited verifier (as applicable per Administering Authority) need to report their verified CERs through their MOHAs on the Union Registry.
- An accredited verifier or the Administering Authority (as applicable per Administering Authority) need to verify the reported emissions for each MOHA on the Union Registry.
- Companies can surrender their resulting EUAs in installments, and the full amount needs to be surrendered in full by 30 September. Failure to do so will result in penalties of EUR 100 per tonne of CO₂ equivalent, and, after two or more consecutive years of non-compliance, possible detention by the flag State or an expulsion order (refusal of entry) from EU ports.

In an era where carbon has a cost
and cleaner fuels chart the future,
maritime compliance

isn't just regulation,
it's navigation toward
sustainability.

Monitoring, Reporting & Verification (MRV) under the EU MRV scheme

Dromon Bureau of Shipping
EU MRV

Monitoring Methods

- Bunker fuel delivery notes.
- Fuel tank sounding.
- Flow meters.
- Direct emission measurement.

Monitoring Plan

Each company must develop a monitoring plan which will be used to monitor data on a per-voyage basis. This data will be aggregated annually and reported for all voyages conducted into, out of, and between EU Ports.

The monitoring plan should contain the following information:

- Identification of vessel and shipping company and/or owner.
- Description of procedures for monitoring voyages, fuel consumption and activity date.
- Identification of emissions sources.
- Methodology for data gaps.
- Procedures for quality control.
- Description of data flows.
- Identification of responsibilities.

Verification

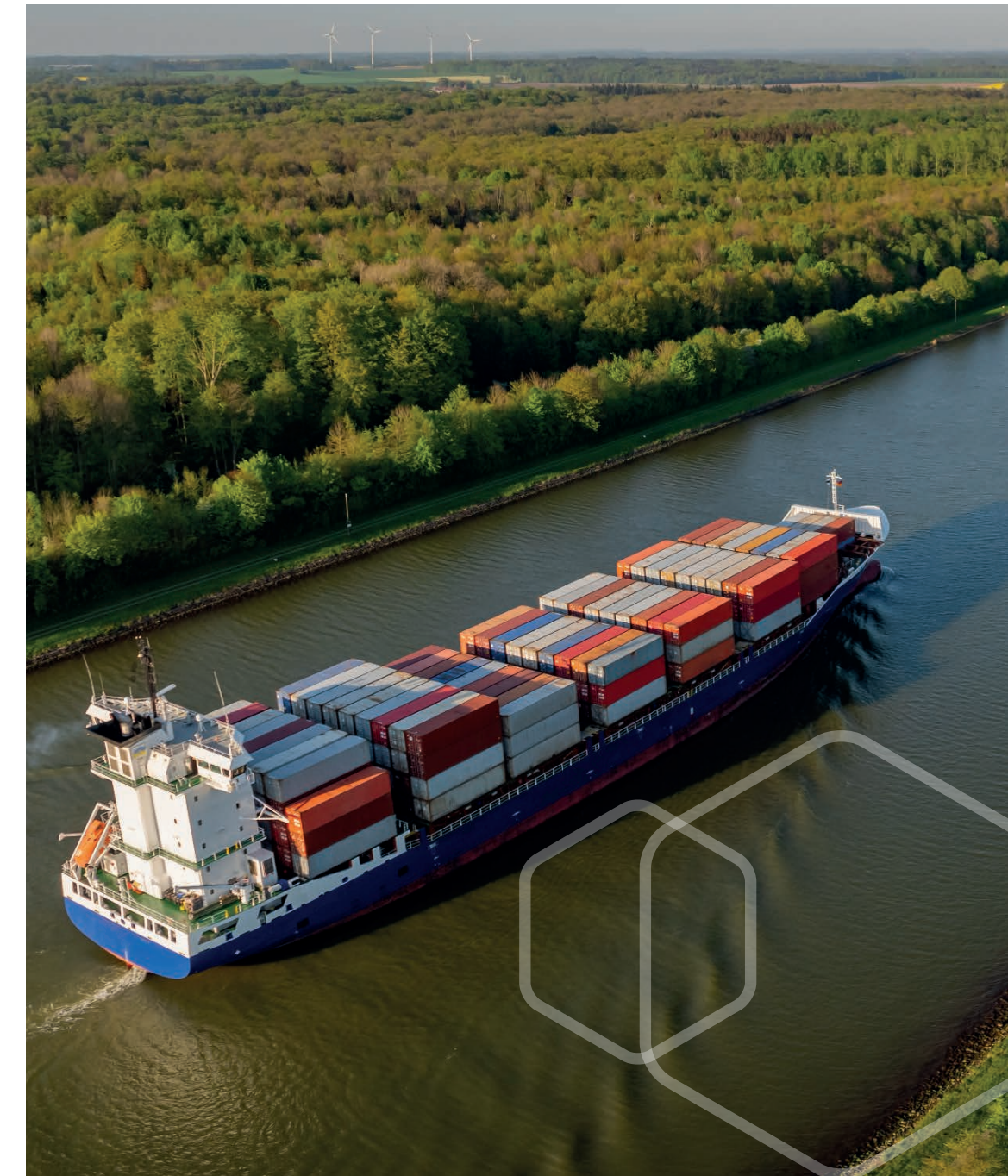
Dromon can assess the conformity of the monitoring plan, verify emission reports, and issue the Document of Compliance (DoC) to vessels.

Specifically, Dromon can verify:

- Compliance of the monitoring plan with the relevant regulations.
- Conformity of the emission report with regulatory requirements, issuing a verification report.
- Alignment of emissions and climate-related data with the monitoring plan.
- Provide recommendations for improvements to the monitoring plan.

Parameters to be taken into account:

- Fuel consumption at sea.
- Time at sea.
- Fuel consumption at berth.
- Distance travelled.
- Cargo Carried.
- Transport Work.
- Energy Efficiency parameters.



UK ETS Regulation

Application

From 1 July 2026, the UK ETS applies to ships of a gross tonnage (GT) of 5000 or more, with plans to review this by 2028. From that date on, maritime activities are regulated under the UK ETS.

From 1 January 2027, the application of the UK ETS will extend to offshore ships of 5000 gross tonnage (GT) and above, which include offshore construction vessels, offshore supply ships and offshore support vessels.

These ships must report their air emissions. The emissions of ships falling under the scope of the UK ETS include greenhouse gas emissions from combustion and slippage of carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), calculated on a tank-to-wake basis.

Ship operators are required to monitor and report emissions occurring in UK ports and on domestic UK voyages. As a result, emissions from ports of call on international routes are also captured under the UK ETS.

UK ETS Regulators

The UK ETS regulators are:

- The Environment Agency (EA) – for operators based in England, and for operators registered outside the UK;
- The Scottish Environment Protection Agency (SEPA) – for operators located in Scotland;
- The Natural Resources Wales (NRW) – for operators based in Wales; and
- Northern Ireland Environment Agency (NIEA) – for operators registered in Northern Ireland.

These UK ETS regulators are functionally equivalent to the EU ETS Administering Authority concept of the EU ETS.

Timeline for UK ETS Compliance

- **31 March 2027: Reporting deadline for the 2026 scheme period**
- **31 March 2028: Reporting deadline for the 2027 scheme period**
- **30 April 2028: First surrender deadline for the 2026 and 2027 scheme periods**

UK ETS Regulation

Port Emissions

The UK ETS covers a ship's greenhouse gas emissions during in-port activities — while docked or at berth in a UK port. It applies to the UK only, so UK Overseas Territories like Gibraltar are not included.

Emissions from international voyages that originate or end at UK ports is not yet part of the UK ETS scope.

Operators report emissions from all UK ETS activities (including Northern Ireland where relevant) plus their total combined emissions. The monitoring and reporting rules sit in Schedule 2A of the UK ETS Order 2020.

For maritime activities within Great Britain, the following count of GHG emissions applies:

- 100% of emissions released during voyages between UK ports (domestic voyages); and
- 100% of emissions generated while vessels are in UK ports, including at berth and anchorage.

For maritime activities between ports of Great Britain and Northern Ireland, the following count of GHG emissions applies:

- 50% of emissions released during voyages that originate or end in a Great Britain port and that end or originate in a port in Northern Ireland[10]; and
- 100% of emissions generated, including at berth and anchorage while vessels are in UK ports, this includes any ports within the territory of Great Britain and Northern Ireland.

Manage your UK ETS (METS) Reporting

The Maritime Operator must register a METS account with their UK ETS regulator and must submit, amongst other things:

- An Emissions Monitoring Plan (EMP) for approval by the regulator, within 42 days of commencing the performance of a maritime activity
- An Annual Emissions Report (AER) for verification by the appointed Verifier
- Any other required improvement reports or notification under the UK ETS rules

FuelEU Maritime Regulation

Introduction to the FuelEU Maritime Regulation

The FuelEU Maritime Regulation, established under Regulation (EU) 2023/1805, is a key component of the European Green Deal's Fit for 55 package. It aims to promote the use of renewable and low-carbon fuels in maritime transport, reducing GHG emissions and supporting the EU's goal of full decarbonization of the transport sector by 2050. It sets well-to-wake GHG emission intensity requirements on energy used on board ships trading in the EU from 2025.

The baseline for the calculation is the average well-to-wake GHG intensity of the fleet in 2020: 91.16 gCO₂e/MJ. This will start at a 2% reduction in 2025, increasing to 6% in 2030, and accelerating from 2035 to reach an 80% reduction by 2050.

Application

The Regulation applies to:

- All ships above 5,000 GT sailing in, out, and between EU ports.
- All Flag States.

The Regulation does not apply to:

- Warships.
- Naval auxiliaries.
- Fish catching or fish processing ships.
- Wooden ships of a primitive build, ships not propelled by mechanical means and government ships used for non-commercial purposes.

The Regulation applies to commercial voyages only.

This includes any ship that calls at an EU port to:

- Load/unload cargo.
- Embark/disembark passengers.

The requirements apply to 100% of energy used on voyages and port calls within the EU/ EEA, and 50% of energy used on voyages into or out of the EU/EEA.

Compliance Mechanisms Under FuelEU Maritime

- Pooling.
- Banking of Compliance Surplus.
- Borrowing for Compliance Deficit.
- Penalties for Non-Compliance.

Timeline for FuelEU Compliance

By 31 August 2024: Monitoring Plan Submission

- Shipping companies must submit a FuelEU Monitoring Plan to an independent verifier, outlining the methods for tracking fuel consumption and emissions.
- The verifier will assess compliance before recording the monitoring plan in the FuelEU database.

From 1 January 2025: Monitoring & Reporting Requirements

- Ships must begin recording data and information in accordance with their FuelEU Monitoring Plan.

By 31 January 2026 (and annually thereafter): Annual Reporting

- Submit a verified FuelEU report containing the previous year's emissions and operational data.

By 31 March 2026 (and annually thereafter): Verification

- The verifier will assess the report and record it in the FuelEU database.

By 30 April 2026 (and annually thereafter): Compliance Balance Approval

- Shipping companies can manage banking, borrowing, and pooling of compliance credits within the FuelEU database after verification and recording of the FuelEU Report.

By 30 June 2026 Document of Compliance

- Shipping companies receive a FuelEU Document of Compliance if they meet GHG intensity and onshore power supply (OPS) requirements.
- If a ship does not meet the GHG intensity limit or fails to comply with OPS requirements, a penalty must be paid by this date. The competent authority will then issue the FuelEU Document of Compliance.

From 1 January 2030 Zero-Emission Requirements at Berth

- Container ships and passenger ships above 5,000 GT must use zero-emission technology at berth in AFIR-covered EU ports.

From 1 January 2035 Zero-Emission Requirements at Berth

- This requirement extends to all EU ports with OPS, or earlier at the discretion of Member States.

Monitoring, Reporting & Verification under the FuelEU scheme

Monitoring Plan

Each company must develop a monitoring plan which will be used to monitor and report data. This data will be aggregated annually and reported for all voyages conducted into, out of, and between EU Ports.

The monitoring plan should contain the following information:

- Ship's type / name / IMO number / shipowner and information on the shipping company.
- Sources of energy to be used onboard while navigating and alongside.
- Procedures for monitoring the fuel consumption of each fuel type.
- Procedures for monitoring the full fuel life cycle emission factors of energy to be used.
- Standards and characteristics of OPS or zero-emission technology.
- Value of the established total electrical power demand of the ship whilst alongside.

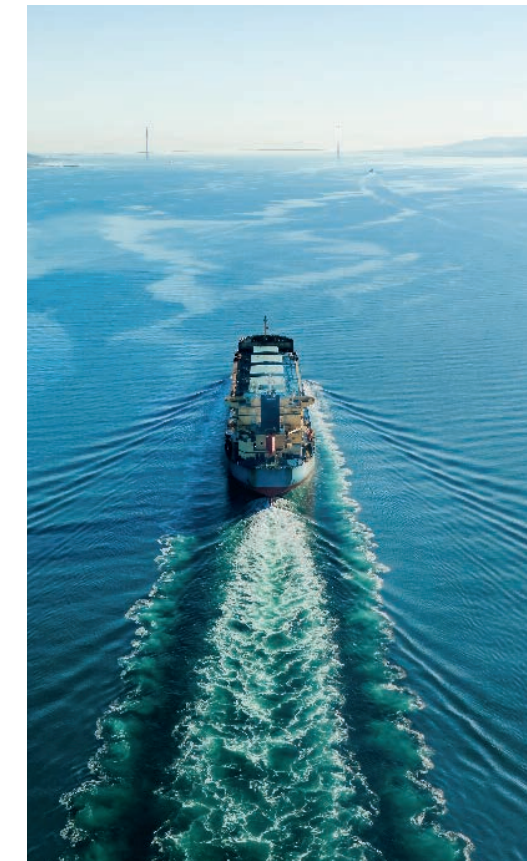
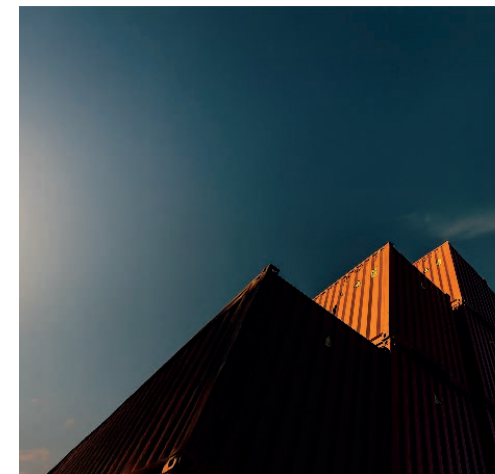
Verification

Dromon can assess the conformity of the monitoring plan, verify FuelEU reports, and issue the Document of Compliance (DoC) to vessels. Specifically, Dromon can:

- Verify compliance of FuelEU Monitoring Plans.
- Verify conformity of FuelEU Reports submitted by shipping companies.
- Verify the accuracy and completeness of data related to fuel consumption and greenhouse gas emissions.
- Issue verification opinions that demonstrate compliance with the FuelEU.

Maritime Regulation

- Provide recommendations for improvements to the monitoring plan.



FuelEU Maritime & EU ETS: How They Work Together

The FuelEU Maritime Regulation and the EU Emissions Trading System (ETS) for shipping both aim to reduce GHG emissions, but they do so in different ways:

EU ETS – Pricing Carbon Emissions

- Requires shipping companies to buy emission allowances for each tonne of CO₂ emitted (or CO₂ equivalent from 2026).
- Puts a cap on total emissions, encouraging ships to improve efficiency and reduce fuel consumption.

FuelEU Maritime – Cleaner Fuel Standards

- Sets limits on GHG intensity for fuels used onboard ships, promoting low-carbon energy.
- Allows ships to choose different fuels and technologies to meet targets.
- Requires container and passenger ships to use OPS or zero-emission technology at EU ports.

Together, these rules push the shipping industry towards cleaner operations, using both financial incentives (ETS) and fuel performance standards (FuelEU Maritime) to drive decarbonization.

DBS Environmental Services

- Review of the EU MRV Monitoring Plan to ensure it meets requirements.
- Verification of EU MRV emissions reports to confirm accuracy and compliance and Issuance of a EU Document of Compliance (DoC) as proof of conformity.
- Verification of EU ETS aggregated emissions at Company Level as required for MOHA.
- Review of the UK MRV Monitoring Plan under UK regulations.
- Verification of UK emissions reports for compliance and accuracy and Issuance of a UK Document of Compliance (DoC) to demonstrate adherence.
- Review of the FuelEU Monitoring Plan to confirm compliance with requirements.
- Verification of FuelEU reports to ensure accuracy and compliance and Issuance of a FuelEU Document of Compliance (DoC) for regulatory confirmation.

About DBS

As a worldwide Organization we provide on-time and independent services to our clients. Our extensive experience in assessing the design and construction of ships and other marine related structures has established Dromon as one of the leading independent classification societies.

The efficiency and performance of Dromon is based on the skills and competency of our people. Through our research and development we ensure continual technical knowledge and updating that focus on our mission to be meet the needs of our clients and at the same time be beneficial to the community.

We maintain a Quality Management System that meets the requirements of key international standards, including ISO 9001, ISO 45001, ISO 14065, ISO 17020, and ISO 17029, as well as the requirements of the RO Code. These standards support our certification, accreditation, and verification activities under both EU and UK MRV schemes. Our system covers the Classification and Statutory Certification of ships on behalf of flag Administrations, as well as the validation and verification of greenhouse gas emissions in maritime transport.



DBS mission

The Mission of Dromon Bureau of Shipping is to satisfy the needs of its clients within the wider spectrum of enhancing safety of life and property, as well as environmental protection, through the provision of classification, statutory and greenhouse gas emissions quality-oriented services, and the application of recognized standards with sound technical judgment.

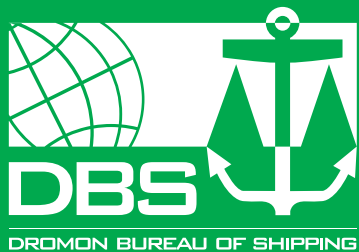




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