



# GUIDANCE ON EU MRV REGULATION FOR SHIOWNERS AND OPERATORS

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**IRCLASS**  
Indian Register of Shipping

### EU MRV Regulation at a glance

**Introduction:** The EU MRV Regulation (EU) 2015/757 on “*monitoring, reporting and verification of carbon dioxide emissions from maritime transport*” was adopted by European Council (EC) and Parliament and entered into force on 1 July, 2015. It stands for the European Union Regulation on Monitoring, Reporting and Verification of CO<sub>2</sub> emissions from ships. In this first step of a staged approach for reducing CO<sub>2</sub> emissions from maritime transport, EU requires ships of above 5,000 GT to monitor and report their carbon emissions, fuel consumption and transport work on all voyages to, from and between EU ports.

This guidance note provides an overview of the requirements of EU MRV regulation for better understanding of the stakeholders towards compliance..

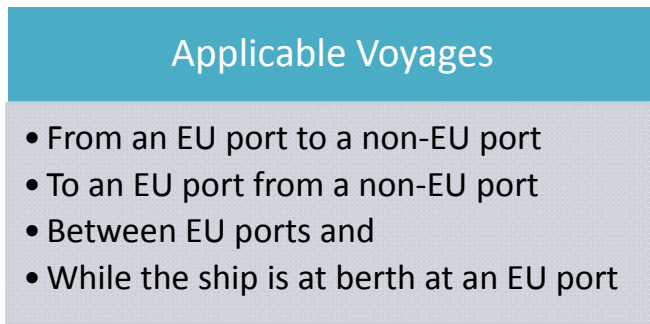
**EU MRV Regulation:** The EU MRV regulation focuses on CO<sub>2</sub>, recognizing that, despite estimates, the accurate amount of CO<sub>2</sub> from shipping is unknown. It provides a standard framework to produce reliable information on CO<sub>2</sub> emissions from maritime transport as an initial endeavour which can form the basis for setting reduction targets before defining the measures to achieve the same.

**Table 1. Core Components of EU MRV**

<b>Applicability</b>	1. Ships above 5000 GT 2. Voyages to/from EU ports of calls
<b>Enters into force</b>	July 2015
<b>First monitoring period</b>	January to December 2018
<b>Format of Monitoring and reporting</b>	Standardised template – EU Regulation 2016/1927
<b>Parameters to monitor</b>	1. Fuel consumption 2. CO <sub>2</sub> emission 3. Actual cargo carried 4. Distance travelled 5. Time spent at sea and 6. Time spent at port
<b>Reporting to</b>	European Commission
<b>Verification by</b>	Third party independent accredited verifier
<b>Compliance certificate</b>	Document of Compliance (DoC)
<b>Information disclosure</b>	Public
<b>Penalty</b>	Detention / prohibited entry to EU ports of calls
<b>Exemptions</b>	Warships, naval auxiliaries, fishing or processing ships, wooden ships of a primitive build, ships not propelled by mechanical means and government ships used for non-commercial purposes.

## Application

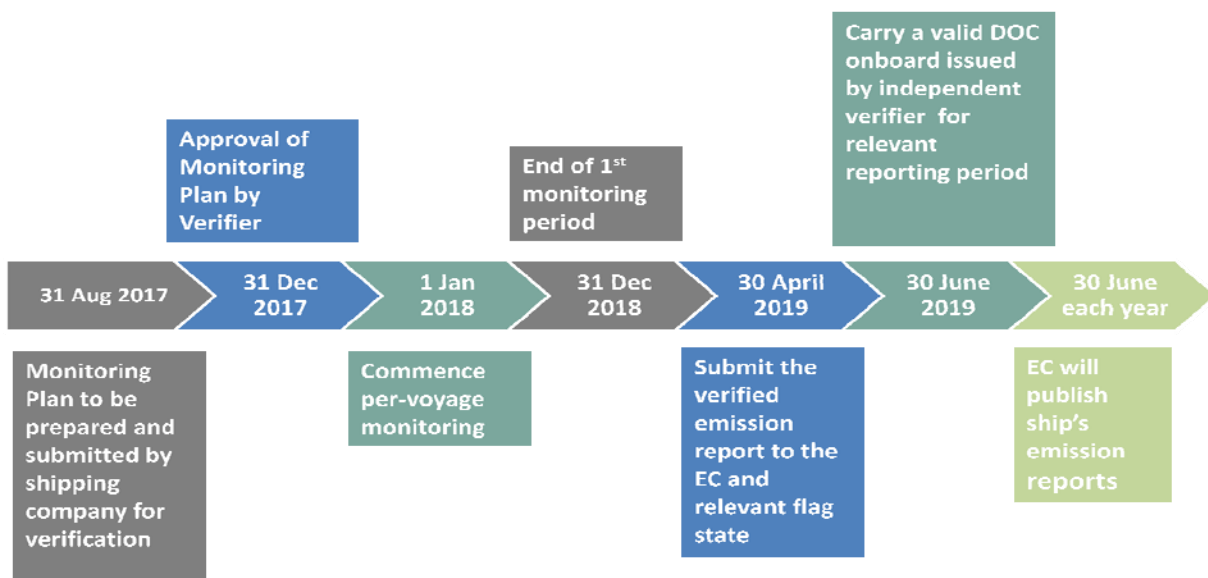
The EU regulation applies to ships greater than 5000 Gross Tonnage, irrespective of their flag, undertaking following voyages



**Fig.1 Applicable Voyages**

The regulation requires per-voyage and yearly monitoring of CO<sub>2</sub> emissions, as well as other parameters including energy efficiency, quantities of cargo carried and distance travelled. A ship-specific monitoring plan is to be prepared which mentions the selected method for monitoring and reporting the required CO<sub>2</sub> emissions and other required data, including fuel, cargo and distance travelled. Ships are exempted from the obligation of per-voyage monitoring if they undertake more than 300 voyages within the reporting period and if all their voyages during the period either start or end at a port under the jurisdiction of an EU member state. After end of each calendar year, shipping companies must provide an emissions report.

## Implementation



**Figure 2. MRV implementation schedule**

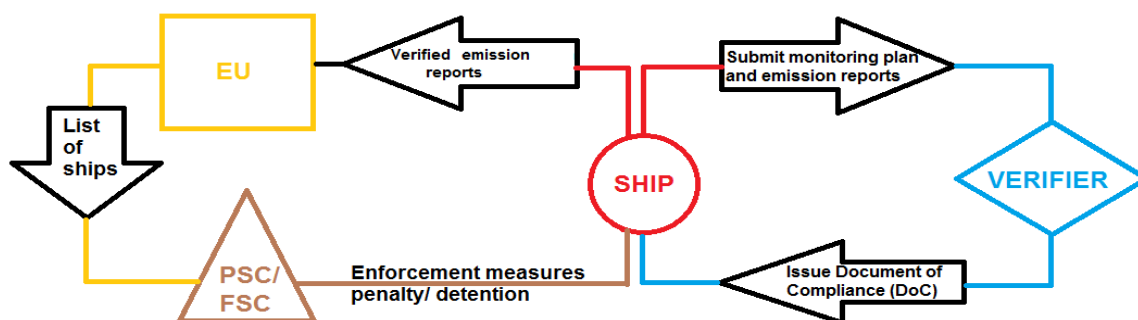
EU scheme defines the reporting periods as a calendar year. For voyages starting and ending in two different calendar years, the monitoring and reporting data is to be accounted under the first calendar year.

By 31<sup>st</sup> August 2017 monitoring plan is to be prepared and submitted for approval to an accredited independent verifier. Monitoring of the data will commence from 1<sup>st</sup> January 2018. At the end of the each annual reporting period (calendar year), a ship-specific emissions report must be prepared and submitted to an accredited independent verifier for verification by 30<sup>th</sup> April every year. On satisfactory compliance, verifier will issue a document of compliance (DoC) for each ship. DoC is valid for a period of 18 months after the end of the reporting period.

By 30<sup>th</sup> April 2019 and each year thereafter a verified emission report is to be submitted to the EC and relevant Flag state. From 30 June 2019 onwards, ships arriving at or departing from an EU port are to carry on board a valid DoC.

The regulation will be enforced through port state control (PSC) within European ports.

The EU MRV regulation compliance cycle is described in Figure 3 and the responsibility for relevant task is shown in Table 2.



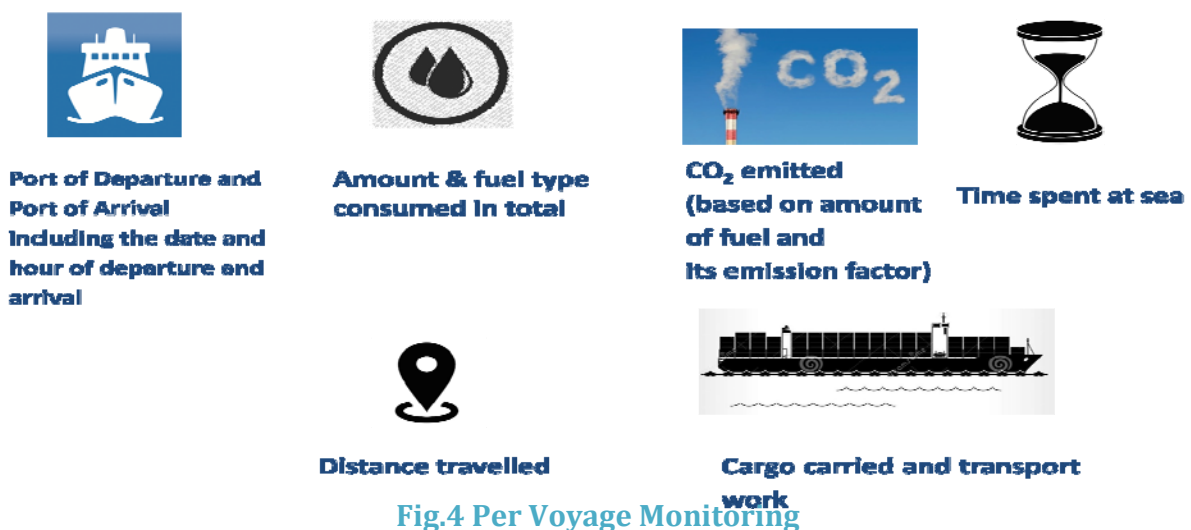
**Figure 3. EU MRV compliance cycle**

**Table 2. Tasks and responsible entity**

Task	Responsibility
Prepare Monitoring Plan and submit to Verifier	Company
Assessment of Monitoring Plan	Verifier
Monitoring of Parameters	Company
Prepare Annual Emission Report and submit to Verifier	Company
Verify Annual Emission Report	Verifier
Submit verified Annual Emission Report to EC and Flag State	Company
Issuance of DoC	Verifier
Inform issuance of DoC to EC	Verifier

## Monitoring of CO<sub>2</sub> emission

Prior to commencement of monitoring, a shipping company is to establish a monitoring plan to monitor data on a per-voyage basis and yearly basis for all voyages conducted into, out of and between EU ports. The monitoring plan describes the design of the management system developed to monitor the required parameters and the ship-specific details. This monitoring plan is to be approved by an accredited verifier and monitoring is to be carried out in accordance with the approved monitoring plan. Ship-specific fuel consumption and CO<sub>2</sub> emissions from combustion sources such as main engines, auxiliary engines, gas turbines, boilers and inert gas generators on board will need to be monitored.



**Fig.4 Per Voyage Monitoring**

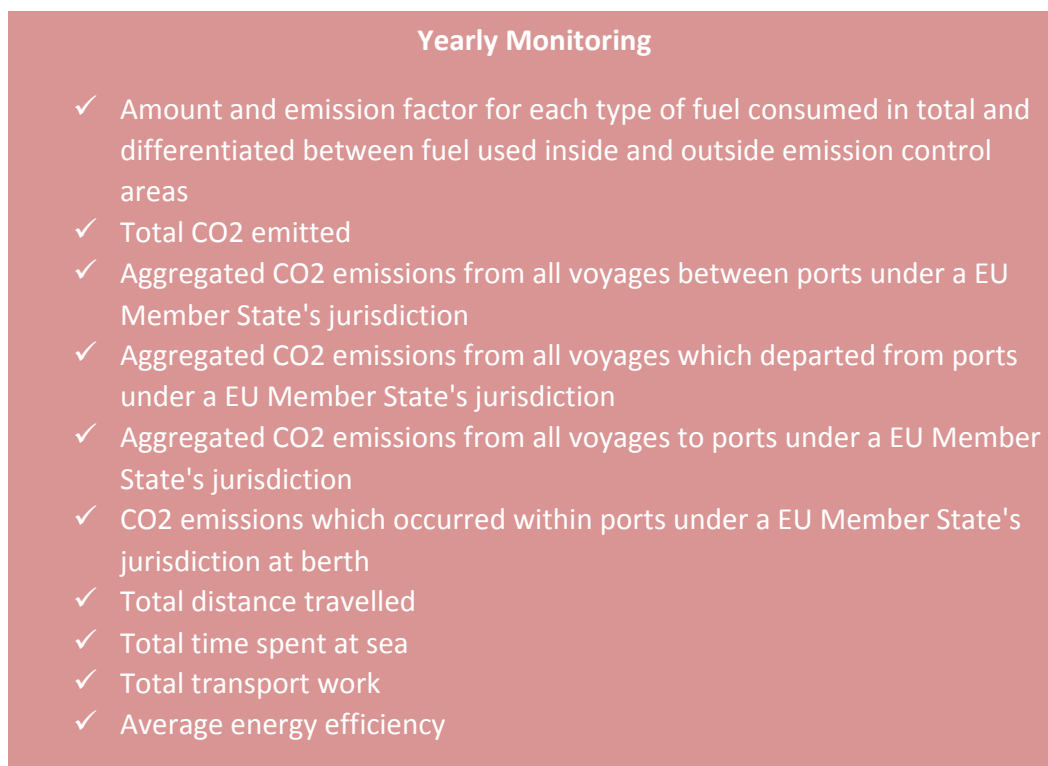
The monitoring plan has to describe the fuel consumption monitoring method (see fig.5) adopted and use of appropriate emission factors for the fuel type being consumed for calculation of CO<sub>2</sub> emissions. Monitoring is to be done for each voyage arriving to and departing from an EU port, separated to the period at-sea and in-port and separated to the period inside and outside emission control areas.

### Monitoring Methods

- Method A - Using Bunker Fuel Delivery Notes and periodic stocktakes of fuel tanks (except for those vessels where cargo is used as fuel)
- Method B - Bunker fuel tank monitoring
- Method C - Flow meters for applicable combustion processes
- Method D - Direct emission measurements

**Fig.5: Monitoring Methods**

The details of the monitoring requirements on a per-voyage basis are shown in figure 4 and annual monitoring parameters are shown in fig.6.



**Fig.6: Annual Monitoring parameters**

Average energy efficiency, is expressed by using at least four indicators:

- (i) fuel consumption per distance travelled,
- (ii) the fuel consumption per transport work,
- (iii) the CO<sub>2</sub> emissions per distance travelled and
- (iv) the CO<sub>2</sub> emissions per transport work.

A site visit at the company (location of mass data) or onboard to gather sufficient understanding of the company and ship's monitoring & reporting system may be required based on complexity and other considerations, which will be decided on case to case basis.

Upon receipt of request from a company, IRS would assign a verification team and communicate its details to the company. Objections if any on the constitution of the team, may be submitted to IRS within 7 days for consideration. Conclusions on the assessment of the monitoring plan are communicated to the company through Plan Appraisal Advice (PAA) upon completion of the assessment.

### **Addressing non-conformities in the monitoring plan**

Non-conformity in the monitoring plan means that the plan does not fulfill requirements of Regulation (EU) 2015/757 and its implementing regulations. The identified NCs are informed to the company for taking corrective actions. The company has to revise the monitoring plan taking appropriate corrective actions against each identified non-conformities and submit the revised monitoring plan.

### **Revisions to Monitoring Plan**

Revised monitoring plan is to be submitted by the company, in case of significant changes made to the monitoring plan, in instances mentioned below under intimation to IRS

- a. where a change of company occurs;
- b. where new CO<sub>2</sub> emissions occur due to new emission sources or due to the use of new fuels not yet contained in the monitoring plan;
- c. where a change in availability of data, due to the use of new types of measuring equipment, new sampling methods or analysis methods, or for other reasons, may affect the accuracy of the determination of CO<sub>2</sub> emissions;
- d. where data resulting from the monitoring method applied has been found to be incorrect;
- e. where any part of the monitoring plan is identified as not being in conformity with the requirements of EU Regulation

For modifications under points (b), (c) and (d) above, revised monitoring plan is to be submitted to IRS for assessment.

### **Reporting**

At the end of the annual reporting period, a ship-specific emissions report must be prepared and submitted to a independent accredited verifier for verification of accuracy. If it is found that with reasonable assurance that the annual emission reports is free from material misstatements, the emissions report is endorsed and verification report stating that the annual emission report is satisfactory will be issued. Upon satisfactory verification, a Document of Compliance is issued and the European Commission (EC) is informed accordingly by the verifier. Document of compliance is valid for a period of 18 months after the end of the reporting period. The verified emissions report is to be submitted to the European Commission and to the ship's Flag State by the shipping company, for each ship under its responsibility.

### **Addressing misstatements and non-conformities in emissions report**

If it is found that the emissions report contains nonconformities and/or misstatements and, the company is asked to explain the main causes of the identified non-conformities and/or misstatements. Companies will need to submit a revised annual emissions report, which will be

reassessed and reviewed to check whether the identified non-conformities and/or misstatements have been appropriately addressed.

### Templates

The templates for monitoring plans, emissions report and Document of Compliance are prescribed in EU Regulation 2016/1927.

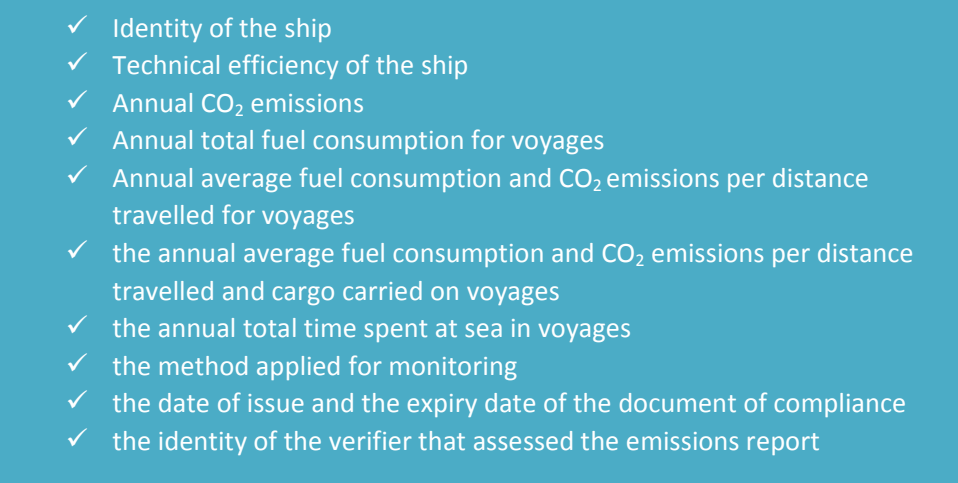
### Verification

The accredited third party independent verifier has the responsibility to check the compliance of monitoring plans, emission reports, communication with ship owners and operators and issuance of the DoC. In general the verifier's tasks are:

- To verify conformity of the monitoring plan against the requirements laid out in the regulations;
- To verify conformity of the emission report with the requirements laid out in the regulation and issuance of the verification report;
- To ensure that emissions and other related data have been determined in accordance with the monitoring plan;
- To identify discrepancy, if any and providing opportunity for corrective action;
- To issue DoC on conformity of the monitoring plan and emission report;
- To inform EC that DoC has been issued.

### Publication of information

By 30 June each year, the European Commission will be publishing the information on CO<sub>2</sub> emissions reported.

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- ✓ Identity of the ship
  - ✓ Technical efficiency of the ship
  - ✓ Annual CO<sub>2</sub> emissions
  - ✓ Annual total fuel consumption for voyages
  - ✓ Annual average fuel consumption and CO<sub>2</sub> emissions per distance travelled for voyages
  - ✓ the annual average fuel consumption and CO<sub>2</sub> emissions per distance travelled and cargo carried on voyages
  - ✓ the annual total time spent at sea in voyages
  - ✓ the method applied for monitoring
  - ✓ the date of issue and the expiry date of the document of compliance
  - ✓ the identity of the verifier that assessed the emissions report

**Fig.7: Publicly Available Information**



## Complaints and Appeals

Any complaints/appeals/feedback related to MRV services can be submitted through our website <http://www.irclass.org/feedback/> . A Customer Complaint form has been provided on the Web Site for the same.

## How IRClass can help you

IRClass would extend its expertise to serve as independent verifier for EU MRV Regulation and offer following services:

- Assessment of Monitoring Plan
- Verification of Emissions Report

The service request forms for the above services alongwith the list of supporting documents to be submitted will be available on our website [www.irclass.org](http://www.irclass.org). IRClass is preparing an electronic tool to assist ship owners in submitting the monitoring plan and verification report in the format prescribed by EU regulation.

Additionally, IRClass can offer customized training and awareness workshops for its clients to understand the regulatory requirements for preparation towards compliance.



Assessment of Monitoring Plan



Verification of Emissions Report



Training and Workshops

With a good understanding of the shipping industry and applicable regulatory requirements and having team of qualified technical expertise in fuel and maritime emissions, IRClass is well equipped to perform the duties of the verifier's tasks for EU MRV verification.

## GET IN TOUCH

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