






MARITIME

EU MRV REGULATION

Get the details on Monitoring, Reporting and Verifying in line with the new EU MRV regulation - the smart way to comply

February 2017

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INTRODUCTION

The European Commission (EC) is bringing emissions from shipping into its 2009 climate and energy package, taking the next step in trying to reduce greenhouse gas (GHG) emissions within the European Union (EU).

As a logical result, the EU MRV regulation entered into force on 1 July 2015. It lists the requirements on the monitoring, reporting and verification (MRV) of carbon dioxide emissions from maritime transport.

The regulation requires ship owners and operators to annually monitor, report and verify CO₂ emissions for vessels larger than 5,000 gross tonnage (GT) calling at any EU and EFTA (Norway and Iceland) port. Data collection takes place on a per voyage basis and starts 1 January 2018. The reported CO₂ emissions, together with additional data (e.g. cargo, energy

efficiency parameters), are to be verified by independent verifiers and sent to a central database, managed by the European Maritime Safety Agency (EMSA). The aggregated ship emission and efficiency data will be published by the EC by 30 June 2019 and then every consecutive year.

Additionally, further guidelines are necessary that will amend the MRV framework, and this work will continue in the ESSF (European Sustainable Shipping Forum) MRV subgroups until summer 2017. DNV GL will actively participate in these meetings, pushing for practical handling of the MRV framework.

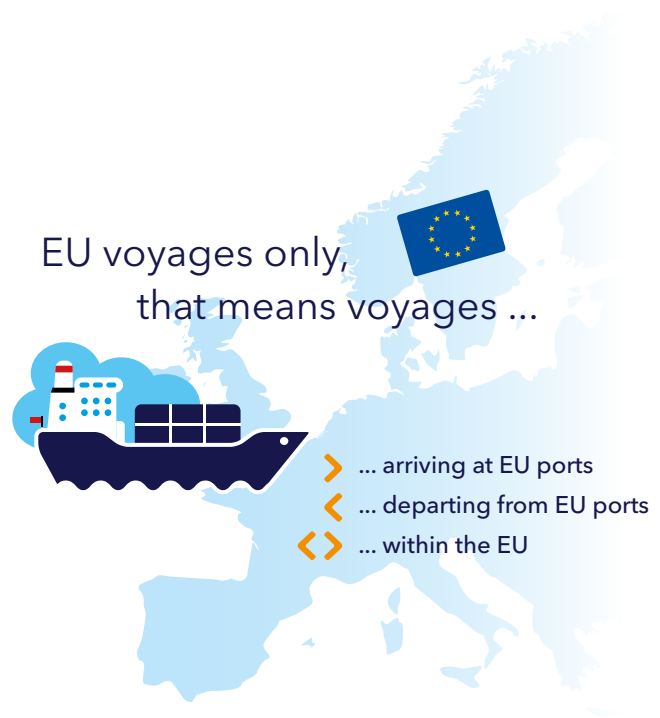
This brochure outlines the most important EU MRV requirements which you should be aware of. Plus it provides some practical recommendations on how to comply.



MRV APPLICABILITY

The EU MRV regulation applies to merchant ships larger than 5,000 GT. From 1 January 2018 on, ship owners and operators (defined as “companies”) shall monitor the CO₂ emissions of their vessels per voyage conducted into, between and out of EU (and EFTA) ports. A “voyage” is defined as any movement of a ship that originates from, or terminates in, a port of call (EU port) and that serves the purpose of transporting passengers or cargo for commercial purposes. In other words:

- A reportable voyage is a voyage where at least one port of call is in the EU
- A port of call is a port where a ship stops to load or unload cargo or to embark or disembark passengers
- A voyage is a journey between two ports of call



TIMELINE

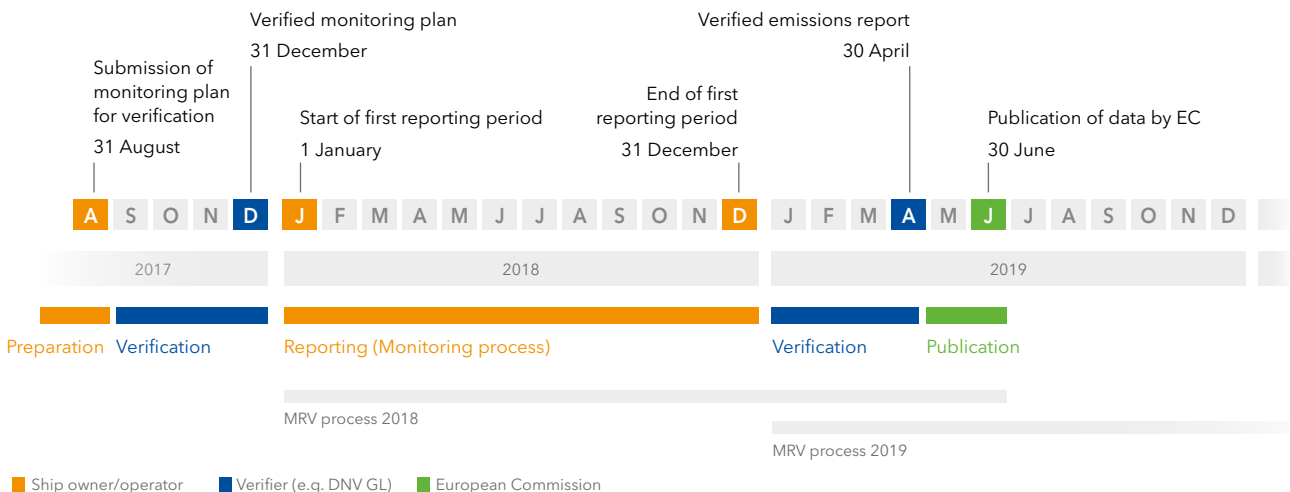
A first step for ship owners and operators in complying with the EU MRV regulation is to prepare a monitoring plan for each of their ships that falls under the scope of the regulation. The monitoring plan is subject to verification by an independent verifier and should therefore be submitted by 31 August 2017 at the latest.

Based on the verified monitoring plan, emissions reporting commences 1 January 2018. The reporting period reoccurs annually, from 1 January to 31 December each year. Upon completion of the individual reporting period, the company shall prepare an emissions report which should be submitted to the central database (EMSA) by 30 April at the latest every year. The report should also include any verification activities performed by an independent verifier.

Subsequently, the reported and verified emissions, as well as related data on energy efficiency, will be made publicly available by the European Commission for the first reporting period on 30 June 2019 and likewise each subsequent year. The timeline for implementing the EU MRV regulation is shown summarized and visualized below.

Further details for the individual requirements are set out on the following pages. Please find the respective regulation available for downloading from our MRV resource webpage at www.dnvgl.com/mrv.

EU MRV regulation timeline



“CARGO” IN THE CONTEXT OF THE MRV REGULATION

On the question of what the parameter is for “cargo carried”, unfortunately there is not a simple (or single) answer. Cargo carried depends on the ship type and the definitions of ship type as attained from the IMO EEDI framework.

The definition of cargo carried for passenger, ro-ro, and container ships is described in the regulation (EU) 2015/757, while the regulation (EU) 2016/1928 contains a definition for other vessel types (see also dnvgl.com/mrv where the EU regulations can be found). These definitions are summarized in the following simplified table:

SHIP TYPE	DEFINITION	CARGO PARAMETER
Passenger ship	“Passenger ship” means a ship that carries more than twelve passengers but not cargo.	No. of passengers (as defined in MRV Reg. 2016/757, Annex II, § A.1.[d])
Container ship	“Container ship” means a ship designed exclusively for the carriage of containers in holds and on deck.	Mass (as defined in MRV Reg. 2016/757, Annex II, § A.1.[f])
Oil tanker	“Oil tanker” means a ship constructed or adapted primarily to carry oil in bulk in its cargo spaces. Note that this definition does not include combination carriers, NLS tankers or gas tankers.	Mass
Chemical tanker	“Chemical tanker” means a ship constructed or adapted for the carriage in bulk of any liquid product listed in chapter 17 of the International Bulk Chemical Code (a chemical tanker) or a ship constructed or adapted to carry a cargo of noxious liquid substances in bulk (an NLS tanker).	Mass
LNG carrier	“LNG carrier” means a tanker for the bulk carriage of liquefied natural gas (LNG) (primarily methane) in independently insulated tanks. Liquefaction is achieved at temperatures down to -163°C.	Volume (and its aggregation of part loads)
Gas carrier	“Gas carrier” means a tanker for the bulk carriage of liquefied gases other than LNG.	Mass
Bulk carrier	“Bulk carrier” means a ship which is intended primarily to carry dry cargo in bulk, including such types as ore carriers as defined in SOLAS chapter XII, regulation 1, but excluding combination carriers.	Mass
Combination carrier	“Combination carrier” means a ship designed to load 100% dead weight with both liquid and dry cargo in bulk.	Mass
General cargo ship	“General cargo ship” means a ship with a multi-deck or single-deck hull designed primarily for the carriage of general cargo.	DWT carried (as defined in MRV implementing act, without fuel on board)
Refrigerated cargo ship	“Refrigerated cargo carrier” means a ship designed exclusively for the carriage of refrigerated cargoes in holds.	Mass
Vehicle carrier	“Vehicle carrier” means a multi-deck, roll-on roll-off cargo ship designed for the carriage of empty cars and trucks.	Mass (actual mass or as units occupied multiplied by default values for their weight)
Ro-ro ship	“Ro-ro ship” means a ship designed for the carriage of roll-on roll-off cargo transportation units or with roll-on roll-off cargo spaces.	In essence: Mass no. of cargo units (trucks, cars, etc.) or lane-metres multiplied by default values for their weight (Annex B, EN 16258 [2012])
Ro-pax ship	“Ro-pax ship” means a passenger ship with roll-on roll-off cargo space.	1. No. of passengers and 2. Mass
Container / ro-ro cargo ship	“Container/ro-ro cargo ship” means a hybrid of a container ship and a ro-ro cargo ship in independent sections.	Volume (occupied deck area multiplied by deck height and added by container volume)
Other ship types	“Other ship types” mean ships not covered by any of the above definitions which fall under the scope of the regulation.	Mass or DWT carried

MONITORING PLAN



In accordance with the EU MRV regulation, a vessel's monitoring plan must be verified by an independent and accredited verifier. Shipping companies are requested to submit the monitoring plan to the corresponding verifier for each of their ships by 31 August 2017 at the latest.

For vessels which fall under the scope of the regulation the first time after 31 August 2017, the company shall submit the respective monitoring plan to the verifier without undue delay and no later than two months after the respective vessel called at an EU port for the first time.

The content of the monitoring plan is predefined by the EU MRV regulation, and the respective electronic template was released at the end of 2016 by the European Commission. To read more about the regulation (EU) 2016/1927, please download the document from our MRV resource webpage at www.dnvgl.com/mrv.

EU MRV MONITORING PLAN APP FOR SMOOTH MONITORING

To facilitate the work of our customers and to ensure a high level of quality, DNV GL has developed an EU MRV Monitoring Plan App which is available from early March 2017. For DNV GL-classed vessels, the app has some fields already filled in, and for the remaining needed information there is a wizard that leads you through the process. The app will greatly facilitate your work to generate the monitoring plan, and is recommended as the ideal format for the monitoring plan.

COMPANY-SPECIFIC VS. SHIP-SPECIFIC MONITORING PLAN

In general, the EU MRV regulation (2016/1927) requires the monitoring plan to be submitted per ship for verification. For companies operating several vessels, however, Art.2 of the implementing regulation (EU) 2016/1927 offers the option to split the monitoring plan into a company-specific section and a vessel-specific section, provided the respective company descriptions are applicable to all vessels of the fleet and all requirements are covered as per the template for the monitoring plan.

The DNV GL EU MRV Monitoring Plan App has a built-in copy function which ensures that the company-specific part of the monitoring plan is automatically embedded in the ship-specific monitoring plans.

DNV·GL

EU MRVMP

EU MRV Monitoring Plan Generator

- MRV stands for Monitoring, Reporting and Verification
- It is a new regulation of the European Union
- Enforced July 2015
- Companies will have to monitor the CO₂ emissions of their ships calling ports of the EU
- CO₂ emissions will have to be reported to the European Commission
- Monitoring systems and monitored emissions will have to be verified by third-party independent bodies
- Applies for ships with > 5000 GT

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CONTENT OF THE MONITORING PLAN

The monitoring plan shall describe at first the respective vessel and its installed combustion machinery, and provide information in a complete and transparent manner. What kind of fuel will be used and which of the provided methods for the determination of fuel oil consumption for monitoring and reporting CO₂ emissions or other relevant information is chosen. A few additional clarifying comments to the monitoring plan:

- **Emission sources:** The following emission sources shall be included in the monitoring, reporting and verification procedures:

 - Main engines
 - Auxiliary engines
 - Gas turbines
 - Boilers
 - Inert gas generators
- **Responsibilities and procedures:** The monitoring plan shall not only describe technical parameters but also provide descriptions, associated responsibilities and management procedures to monitor aspects such as "completeness of voyages", "measuring or metering equipment", "activity data", "recording cargo carried" and even "how to determine surrogate data for closing data gaps".

➤ **Reference to management systems:** Where management procedures are already in place and effectively implemented as part of the company's existing management systems, a reference can be applied in the monitoring plan.

➤ **Uncertainty factors:** As part of the monitoring plan, it is required to describe the level of uncertainty associated with fuel monitoring methods. This is naturally a bit challenging; nevertheless, please note that the corresponding default values are still under discussion and development by the MRV working groups under the umbrella of the ESSF and are expected to be published in spring 2017. Therefore, clarity on this issue should be expected soon.

➤ **Voluntary monitoring:** A crucial aspect of MRV is the reporting of consumption and the calculation of related indicators. When cargo heating is switched on or vessels navigate in ice, consumption increases due to higher power demand, which could lead to disadvantages when it comes to publishing data. Thus, owner and manager of such assets may have an interest in reporting this voluntary information - giving a more precise picture of what the vessel consumes and to which extent this consumption is related to cargo heating, etc. Differentiated is the word as used in the regulation.

It should be emphasized that this differentiation is voluntary and does not lead to an exclusion on the emissions reported in related to above, but only enhances the understanding of the reported energy efficiency. Any voluntarily reported information shall be verified with respect to a consistent level of quality for the entire emissions report. Tables C.2.10-12 and C.4 and C.5 of regulation 2016/1927 is about voluntary reporting fields.



The monitoring and reporting system needs to be sufficiently detailed to capture all the data required by the regulation. Monitoring and reporting shall be complete and cover CO₂ emissions from the combustion of all fuels while ships are at sea and at berth, and they shall be separately reported. Appropriate measures shall be applied to avoid any data gaps within the reporting period, which is defined as one calendar year, and it shall be ensured that any sources of inaccuracies are reduced.

Further, reporting data includes the transport work and energy efficiency of ships.

METHODS FOR REPORTING FUEL CONSUMPTION

The actual fuel consumption for each voyage shall be determined and calculated using one of the following methods:

- Bunker fuel delivery note (BDN) and periodic stocktakes of fuel tanks
- Bunker fuel tank monitoring on board
- Flow meters for applicable combustion processes
- Direct CO₂ emission measurements

Any combination of these methods, once assessed by the verifier, may be used if it enhances the overall accuracy of the measurement.

REPORTING ON A PER-VOYAGE BASIS

From 1 January 2018, companies shall monitor emissions for each ship, falling under the scope of the MRV regulation, on a per-voyage basis and aggregate the voyage data in an annual report. The monitoring on a per-voyage basis shall cover the following parameters:

- Port of departure and port of arrival, including the date and hour of departure and arrival
- Amount and emissions factor for each type of fuel consumed in total
- CO₂ emitted
- Distance travelled
- Time spent at sea
- Cargo carried
- Transport work, which is defined as: distance travelled x cargo carried

As mentioned before, companies may also monitor information relating to the ship's ice class and to navigation through ice, where applicable. Such data is classified as "additional voluntary data".

EXEMPTION FROM PER-VOYAGE REPORTING

The regulation includes an addition which allows for exemption from the per-voyage monitoring in the following case:

- All ship's voyages during the reporting period either start from or end at a port under the jurisdiction of a member state ("domestic trade" only)
- The ship, per its schedule, performs more than 300 voyages during the reporting period

The company needs to demonstrate applicability for this exemption within the monitoring plan. However, this exemption does not exclude companies from the monitoring of aggregated data on an annual basis.

MONITORING ON AN ANNUAL BASIS

In addition to per-voyage reporting as outlined in Sec.6.2, the MRV regulation further requires monitoring on an annual basis ((Art.10 of the regulation (EU) 2015/757). As a consequence, the following parameters shall also be monitored:

- Amount and emissions factor for each type of fuel consumed in total
- Total aggregated CO₂ emitted within the scope of this regulation
- Aggregated CO₂ emissions from all voyages between ports under a member state's jurisdiction
- Aggregated CO₂ emissions from all voyages which departed from ports under a member state's jurisdiction
- Aggregated CO₂ emissions from all voyages to ports under a member state's jurisdiction
- CO₂ emissions which occurred within ports under a member state's jurisdiction at berth
- Total distance travelled
- Total time spent at sea
- Total transport work
- Average energy efficiency

As the MRV gains traction, DNV GL will provide more guidance on the content of the emissions report (otherwise see Annex II of regulation [EU] 2016/1927).

VERIFICATION OF CO₂ EMISSIONS



Chapter III of the regulation (EU) 2016/2072 contains the scope of verification activities and the general obligations and principles for verifiers.

Verifiers' responsibilities include ensuring that monitoring plans (one-off, before end of August 2017) and emissions reports (annual verifications, starting early 2019) are "correct and in compliance with the requirements". Assurance is to be provided by assessing the reliability, credibility and accuracy of the monitoring systems and of the reported data.



DNV GL has applied for accreditation for the full scope of verification services under the EU MRV regulation. The accreditations process is on-going and the accreditation is expected to be received by April 2017 when the final and detailed guidelines from the EU will be published.

DNV GL will design the verification process as digital as possible to avoid any additional work for its customers. Our experts will check your emissions report with your voyage log abstract and available external data.

EU MRV VS. IMO DCS – OUT OF THE CORNER OF YOUR EYE

At IMO level, market-based measures (MBM) have been debated for many years, but the discussions have stalled. To investigate and improve energy efficiency in maritime shipping in general, MEPC announced at their 68th session (October 2015) that they envisage the establishment of a global fuel consumption database.

Then, MEPC 70 (October 2016) adopted a data collection system commencing in January 2019, the IMO DCS (Data Collection System for fuel oil consumption), only one year after the EU MRV system. Please find below a condensed comparison of the two schemes (practical details are still to be finalized in both schemes):

	EU MRV (MONITORING, REPORTING AND VERIFICATION) 	IMO DCS (DATA CAPTURING SCHEME) 
Applicability	Ships >5,000 gross tonnage (GT) calling at any EU port will be covered	All ships ≥5,000 gross tonnage (GT) will be covered
First reporting period	January 2018	January 2019
Monitoring plan	Separate document, predefined format published by European Commission (EC)	Integrated as part of the Ship Energy Efficiency Management Plan (SEEMP, Part II). The data collection and reporting methodology shall be described in Part II and be subject to confirmation of compliance.
Reporting needs	<ul style="list-style-type: none"> ■ Amount and emission factor for each type of fuel consumed in total [...] ■ Total CO₂ emitted and differentiated to aggregated CO₂ emitted: <ul style="list-style-type: none"> - between EU ports, - EU out-bound voyages, - EU in-bound voyages and - at berth ■ Total distance travelled ■ Total time spent at sea ■ Total transport work ■ Average energy efficiency 	<ul style="list-style-type: none"> ■ Distance travelled ■ Amount and emissions factor for each type of fuel consumed in total [...] ■ Hours underway ■ DWT (as cargo proxy)
Verification	Independent accredited verifier	Flag states or recognized organizations
Reports to	Company reports to EMSA database (THETIS MRV); European Commission makes data publicly available	Flag state (or recognized organization) reports to IMO database; individual ship data is kept confidential

Unfortunately, the maritime shipping community has ended up with two similar systems, which are likely, for a certain amount of time, to run in parallel. However, as DNV GL will be an accredited verifier for MRV and is recognized by all major flag states, we will be able to assist you with both systems and with taking advantage of the synergies.

HOW TO PREPARE FOR COMPLIANCE

The upcoming EU MRV regulation requires careful attention. As a very first step, companies should assess whether tools already in place today will suffice for the MRV regulation and its reporting needs, or whether they need to be extended or maybe even replaced by a new solution. Important questions to ask include:

- Is my system capturing all the required data? Is it also capable of differentiating between EU ports and non-EU ports, while reflecting on the different fuels and emissions at berth, as well as many additional details like anchoring time? Does it allow for repair calls in ports not subject to reporting requirements and so forth?



YOUR FOCUS/ CHALLENGES



Study the EU MRV regulation – familiarize yourself with the “M” (Monitoring) and “R” (Reporting) in particular. Identify challenges such as how to monitor cargo for particular vessels, etc.



Assess your **reporting system** and decide whether it suffices for MRV. In case the system needs an extension or replacement, allocate resources to decide on the right system, its distribution and implementation on board your vessels.

Gain confidence in data reported by your crew by assessing the related data quality. This enables you to take corrective measures before reporting commences in 2018.

DNV GL SUPPORT

DNV GL has published an MRV guideline and offers webinars, regional meetings and seminars throughout 2017.

Should you have specific questions or need clarification on the regulation, please see the FAQs on our webpage at www.dnvgl.com/mrv or contact your local DNV GL office directly.

The DNV GL **MRV Readiness Check App** provides a first assessment of whether you are EU MRV ready or not. It guides you through a condensed checklist covering all aspects of the respective regulation. It gives a clear picture of your present preparation status and leaves you with a to-do list to plan your next steps. The app is available to our customers free of charge from early March 2017 through *My DNV GL*.

Should more detailed support be required, DNV GL offers a tailored **MRV Ready service** through our Advisory department. The support ranges from a quick check of operational data sets to a detailed assessment, also considering the corresponding reporting tools capabilities, management procedures and implementation status, among others.

Navigator Insight is the DNV GL solution for ship-to-shore reporting. It comes with an onboard reporting tool for manual input covering all the required parameters as per the MRV regulation, but can be extended to cover all aspects of daily ship operations. More than 450 plausibility checks promise enhancement of data quality even before sent ashore. More information can be found at www.dnvgl.com/navigator-insight.



- Will I be able to efficiently extract and aggregate all the required data as necessary for the emissions report and corresponding verification?
- Is the system sufficiently implemented within the company to ensure a certain data quality which matters for MRV reporting, as data will be made publically available?

Once assessed and decided, companies will need to establish management procedures to ensure the successful implementation of their monitoring systems and their proper usage by the personnel on board their vessel. On the way towards compliance, we propose the following actions:

Summer 2017

Companies have until 31 August 2017 to create and submit a ship-specific **monitoring plan** to the contracted verifiers indicating the method chosen to monitor and report emissions and other relevant information for each vessel over 5,000 GT that calls at EU ports.

The monitoring plan can be a time-consuming task, as the EU MRV regulation stipulates in detail the requirements for the content of the monitoring plan. These refer to ship-specific data, for example of emission sources, as well as to the development and implementation of additional management procedures.

The **DNV GL EU Monitoring Plan App** supports you in preparing your monitoring plans for your entire fleet – semi-automatically and in an efficient manner. The app fills in technical input fields in advance where data is already available from external data sources such as vessel particulars, it supports the definition of management procedures by offering predefined text blocks, and it compiles upon completion all gathered information in the correct format. It is scheduled to be available to our customers free of charge in early March 2017 through *My DNV GL*.

DNV GL Monitoring Plan Verification

We will verify whether your company has compliant monitoring plans and is ready to submit plausible emissions reports. DNV GL will design the verification process as digital as possible to reduce the additional work for you.

Beginning 2018

The first **reporting** period commences at the start of 2018. Based on your individual monitoring plans, your vessels will collect and transfer all the necessary data ashore.

We propose you initiate the processing of data already in 2017 so as to give you the chance to take corrective actions if insufficiencies occur in the system or process.

Navigator Insight (see above) is our suggested tool for ship-to-shore data collection and reporting.

Beginning 2019

Prepare emissions report and submit it to the contracted verifier. DNV GL has incorporated the guideline on verification for its verification activities.

DNV GL Emissions Report Verification

Verification of your emissions report(s) starts in January 2019. DNV GL will design the verification process as digital as possible to reduce the additional work for you. For the emissions report, we will check your emissions report with your voyage log abstract and the external data we require.



FAQs

ABOUT THE EU MRV REGULATION

What main requirements are included in the EU MRV regulation?

All ship owners and operators will have to monitor and report the verified amount of CO₂ emitted by their vessels (>5,000 GT) on voyages to, from and between EU ports. Information such as fuel consumption, cargo loads and energy efficiency parameters will also need to be provided. The main requirements are:

- Develop a ship-specific monitoring plan and have it assessed by an accredited verifier (this is a one-off assessment).
- Monitor and report ship emission data for annual reporting periods, and at the end issue a ship-specific emissions report.
- Then, on an annual basis, have the emissions report independently verified.
- From 2019, the vessel shall continuously carry a Document of Compliance (DOC) on board.

Which ships are in the scope of the EU MRV regulation?

The EU MRV regulation is applicable for ships >5,000 GT and for each voyage to, within and from EU (and EFTA) ports. Exempted are 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. Furthermore, it is not applicable for ship movements and activities not serving the purpose of transporting cargo or passengers for commercial purposes, such as dredging, ice breaking, pipe laying or offshore installation activities.

What is the definition of “cargo carried” for the different ship types?

See the table on page 5.

Is the EU MRV only focusing on CO₂ or also other emissions like NO_x or SO_x?

The EU MRV regulation only focuses on CO₂ emissions.

Does the EU MRV also cover CO₂ emissions from a ship in port or at berth?

Yes, CO₂ emissions in EU ports, including emissions arising from ships at berth or moving within a port, should also be covered and need to be reported separately.

What is a “voyage”? What is the exact starting and ending point of voyages?

The EU MRV regulation applies a berth-to-berth concept for voyages. Hence, a voyage starts at berth and ends at berth. Sailing with a pilot and/or anchoring while waiting for port entrance are considered to be part of the voyage. However, the time spent at sea shall be calculated based on port departure and arrival information and shall exclude anchoring.

Is a port call for bunkering considered the last port of call before calling at an EU port or the first port of call after leaving an EU port?

No, only port calls where either cargo is loaded or unloaded, or where passengers embark or disembark, are considered a port of call. Consequently, stops for the sole purpose of refuelling, obtaining supplies, relieving the crew, going into dry dock or making repairs to the ship and/or its equipment, as well as stops in port because the ship is in need of assistance or in distress, stops for ship-to-ship transfers carried out outside ports and stops for the sole purpose of taking shelter from adverse weather or rendered necessary by search and rescue activities are excluded.

What does the expression “port of call under the jurisdiction of a member state” mean pursuant to the MRV shipping regulation? What is an EU port in this context?

The EU MRV regulation has been included in the EEA agreement pending constitutional requirements by Iceland. Therefore, this implies that all references in the MRV shipping regulation to member states should be interpreted as including EEA states (EU member states, Iceland and Norway).

Some territories belonging to EU member states are not considered EU territories according to the treaty of accession of the respective member state. As a consequence, ports located in these territories are considered non-EU ports in terms of the MRV shipping regulation. Territories which are not considered EU territories, and thus non-EU ports, are Greenland and the Faroe Islands, French Polynesia, Mayotte, New Caledonia, Saint-Barthélemy, Saint Pierre and Miquelon, Wallis and Futuna, Aruba, Bonaire, Saba, Sint Eustatius, Curaçao, Sint Maarten, Anguilla, Bermuda, British Antarctic Territory, British Indian Ocean Territory, British Virgin Islands, Cayman Islands, Falkland Islands, Bailiwick of Guernsey, Isle of Man, Jersey, Montserrat, Pitcairn, Henderson, Ducie and Oeno Islands, Saint Helena, Ascension and Tristan da Cunha, South Georgia and the South Sandwich Islands, Turks and Caico Islands, Akrotiri and Dhekelia.

Data only need to be collected annually, is that correct?!

No, relevant data need to be recorded and aggregated on a voyage basis and, subsequently, also aggregated annually. An exemption is applied to vessels which conduct more than 300 voyages per year and all voyages during this year either start from or end at an EU port. These vessels are excluded from reporting on a per-voyage basis and only have to record and report annual data sets.

MRV COMPLIANCE

What happens if my ship changes class or flag?

The EU MRV regulation is neither class nor flag related, so this will have no effect on the EU MRV reporting.

Is the EU MRV verification related to class?

No, DNV GL can also perform the verification for ships not classed with DNV GL.

What is the process if a ship operator decides to call at an EU port for the first time after 31 August 2017?

The company shall submit a monitoring plan to the verifier (DNV GL) without undue delay and no later than two months after each ship's first call at a port under the jurisdiction of an EU member state.

What should/could I do now to prepare for the IMO DCS (and not only the EU MRV)?

As the details on the IMO DCS scheme are still pending, it is difficult to present a clear picture. We expect the amendment of the SEEMP, which will then also require approval by the flag state or a recognized organization, to require some effort, but without any major difficulties. However, we certainly recommend our customers to take a look at the IMO DCS requirements as drafted per today when choosing and implementing a monitoring and reporting solution. This will help to make sure that the required data are already captured. DNV GL will inform its customers once further information on the IMO DCS is available.

Who is responsible for EU MRV compliance?

The company is responsible for EU MRV reporting and is defined as follows: "company" means the ship owner or any other organization or person, such as the manager or the bareboat charterer, who has assumed responsibility for the operation of the ship from the ship owner. So, in most cases, it will be the DoC holder.

Which companies are accredited for EU MRV verification?

As the final regulation on accreditation was recently published, there are no companies that have yet been accredited as of January 2017. DNV GL and other companies are currently in the accreditation process. The official accreditation statement will most probably be available in the first quarter of 2017.

If a ship is calling at an EU port for dry docking or repair only, is this voyage MRV-relevant?

No, stops for the sole purpose of refuelling, obtaining supplies, relieving the crew, going into dry dock or making repairs to the ship and/or its equipment, as well as stops in port because the ship is in need of assistance or in distress, stops for ship-to-ship transfers carried out outside ports and stops for the sole purpose of taking shelter from adverse weather or rendered necessary by search and rescue activities are excluded.

THE MONITORING PLAN

What is the monitoring plan and where do I find the template for this?

The monitoring plan is a plan for monitoring fuel consumption and CO₂ emissions. Templates for the monitoring plan and emissions report are defined in the regulation (EU) 2016/1927. DNV GL has also developed an app for the monitoring plan which will make it easier for you to create your monitoring plans according to this template. The DNV GL Monitoring Plan App will be available from early March 2017.

Does the MRV verifier (such as DNV GL) need to go on board the vessel to verify the Monitoring Plan or is an office visit sufficient?

DNV GL will design the verification process to be as digital as possible to avoid additional work for our customers. The detailed guidelines for verification are currently under development by the EU; the issue of an office or on-board visit will then also be decided.

Do I need to prepare a monitoring plan for every ship or one for the whole fleet?

The monitoring plan needs to be prepared for each individual ship falling under the scope of the regulation. It should be mentioned that some parts of the monitoring plan can contain procedures applicable to the entire fleet, whereas other parts require ship-specific input.

When do I need to submit my monitoring plan?

The deadline for the monitoring plan is 31 August 2017. By this date, the monitoring plan must be sent to an accredited verifier for verification.

The monitoring plan template requires a contact person. Does this person need to have a special qualification? Or can it be any person in the company?

Basically, it can be any person in the company; special qualification or certification is not required. Typically, we expect the contact person to be an HSQE Manager, Environmental Compliance Officer, Energy Efficiency Officer or similar.

Where do I send my monitoring plan?

The monitoring plan should be sent via *My DNV GL* after the contract has been signed.

THE EMISSIONS REPORT

And what is the emissions report?

The emissions report documents the results from your annual reporting and monitoring of CO₂ emissions for the individual ship. Collected data sets are aggregated and enriched with further energy-efficiency-related data. The template for this is also included in the above-mentioned EU document.

EU MRV VS. IMO DCS

What is the main difference between the EU MRV and the IMO DCS (Data Capturing Scheme)?

1. The EU MRV regulation requires reporting of actual cargo carried, whereas the IMO DCS only requires reporting of DWT (as cargo proxy). The EU MRV regulation entered into force on 1 July 2015, while the IMO DCS will enter into force in 2019.
2. The EU MRV regime requires verification by an accredited body (class societies or other accredited bodies), whereas the IMO DCS will be a statutory requirement and require verification by a recognized organization (class societies only).
3. The EU MRV only applies to voyages to, within and from an EU port, while the IMO DCS will be for all voyages.
4. The EU MRV requires a distinct monitoring plan in a special format, while the IMO DCS requests an amendment to the SEEMP.

Will there be two systems running at the same time (EU/IMO) with different standards?

We expect that there will be two schemes running in parallel at least for some limited time.

DNV GL SUPPORT

Where can I find the MRV Readiness Check App?

Please log in to *My DNV GL*. If you are not yet a registered user, please fill in the registration form. After your login, please click "Add service" and select the MRV Readiness Check App in the list. Now you can add this service to your account and start the MRV Ready Assessment.



CONTACT

DNV GL has set up a resource webpage at www.dnvgl.com/mrv. This webpage is continuously being updated with new information. To personally get in touch with an expert, please contact your local DNV GL office or use the DATE (Direct Access to Technical Expert) service.



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