VERIFAVIA shipping

EU MRV Regulation

Overview, Update & Guidance

Verify. Comply. Navigate. ®

SVENSK SJÖFART
SWEDISH SHIPOWNERS' ASSOCIATION

Goteborg, 11 May 2017

www.verifavia-shipping.com

VERIFAVIA shipping

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aviation | airports | shipping

We are the V of MRV

Verifavia is a global independent accredited environmental verification, certification and auditing body for aviation, airports and maritime transport (shipping and ports).

- A – Introduction & Agenda
- B – EU MRV: Background & Regulatory Framework
- C – EU MRV Monitoring & Reporting: Basic Rules & Principles
- D – EU MRV Monitoring Plan: Content and Guidance
- E – Gearing up for the first legal deadline
- F – EU MRV & IMO Data Collection System: a comparison
- G – About Verifavia Shipping & Final note

Commission's 3-step strategy to cut GHG emissions from maritime transport announced in June 2013

Step 1
- Monitoring, reporting and verification of carbon emissions from ships + publication of data

Step 2
- Emissions reduction targets for the maritime transport sector

Step 3
- Further measures, including Market-Based Measures (MBM)

The Regulation 2015/757 came into force on 1 July 2015

M **Monitoring**

R **Reporting**

V **Verification**

…of fuel consumption, CO_2 emissions, and transport work of ships

The EU MRV regulatory framework includes the Regulation 2015/757 …

19.5.2015 EN Official Journal of the European Union L 123/55

REGULATION (EU) 2015/757 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 29 April 2015

on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC

(Text with EEA relevance)

Council of the European Union

EUROPEAN PARLIAMENT

… the Delegated & Implementing Acts, which were published in November 2016…

Delegated Regulation (EU) 2016/2071

Shipping Emissions Monitoring Methods

Implementing Regulation (EU) 2016/1928

Shipping Emissions Cargo Carried

Implementing Regulation (EU) 2016/1927

Shipping Emissions Templates

Delegated Regulation (EU) 2016/2072

Shipping Emissions Verification & Accreditation

… the Commission's online FAQ published in April 2017…

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23 legal questions and answers

Frequently Asked Questions on the implementation of the MRV shipping Regulation

These Frequently Asked Questions aim to assist MRV (monitoring, reporting and verification) companies, verifiers and other stakeholders to implement the European Union MRV shipping legislation. It requires ships carrying out maritime transport activities to or from EEA ports to monitor and report information including verified data on their CO2 emissions from 1st of January 2018.

The legal framework for these obligations is established under Regulation (EU) 2015/757 on monitoring, reporting and verification of carbon dioxide emissions from maritime transport, (the MRV Shipping Regulation) which has been amended by Delegated Regulation 2016/2072 and it is to be read in conjunction with Delegated Regulation (EU) 2016/2071 and Implementing Regulations (EU) 2016/1927 and 2016/1928.

This document was prepared by DG CLIMA and does not commit the European Commission. Only the Court of Justice of the European Union is competent to authoritatively interpret the Union law.

SECTION I ON SHIPS COVERED BY THE MRV SHIPPING REGULATION

1. 1. Which ships need to monitor and report their verified annual data, are some categories of ships exempted?

https://ec.europa.eu/clima/policies/transport/shipping_en#tab-0-3

… and guidance documents to be published in June 2017

Monitoring & Reporting	Verification & Accreditation
Guidance for fuel oil monitoring	Guidance on the use of ship's tracking data
Guidance for LNG-BoG monitoring	Guidance on recommendations for improvement
Guidance on EIV	Guidance on materiality and sampling
Guidance on Monitoring Plan preparation	Guidance on backward assessment
Guidance on monitoring voyages and in ports	Guidance on the verification of the emissions report
Guidance on Monitoring using the exemption from per-voyage monitoring	Guidance on assessment of verifiers
Guidance on the determination of distance travelled and time spent at sea	Guidance on suspension of accreditation
Guidance on Ro-Pax and Ro-Ro	Guidance on assessment of monitoring plans

Which ships are included in the EU MRV Regulation?

- Ships exceeding 5’000 GT
- Regardless of Flag or country of ownership
- Calling at an EU port from 1 January 2018
- And carrying cargo or passengers for commercial purposes

Which ships are exempted from MRV?

- Exempted ships:
  - warships
  - naval auxiliaries
  - fish-catching or fish-processing ships
  - wooden ships of a primitive build
  - ships not propelled by mechanical means
  - government ships used for non-commercial purpose

- Ships used for…
  - dredging
  - ice-breaking
  - pipe laying
  - offshore installation activities.

  … are also exempted if not serving the purpose of transporting cargo or passengers for commercial purposes

Who is the accountable entity?

The accountable entity is the **Ship**

Every **Ship** must:

- ✓ Develop its own Monitoring Plan and have it assessed
- ✓ Monitor and report its emissions and activity data
- ✓ Have its Emissions Report independently verified
- ✓ Carry on-board a Document of Compliance (DoC)

Who is responsible for compliance?

The responsible entity is the **Company**

The **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’

>>> similar to the DoC holder in the ISM Code

EU MRV Road Map for shipping companies

Accreditation of Verifavia Shipping
1st Mar 2017

31st Aug. 2017
Deadline for Submission of **Monitoring Plan** to Verifier

Deadline for completion of **Monitoring Plan assessment**
31st Dec. 2017

1st Jan 2018
Start of Reporting Period 1

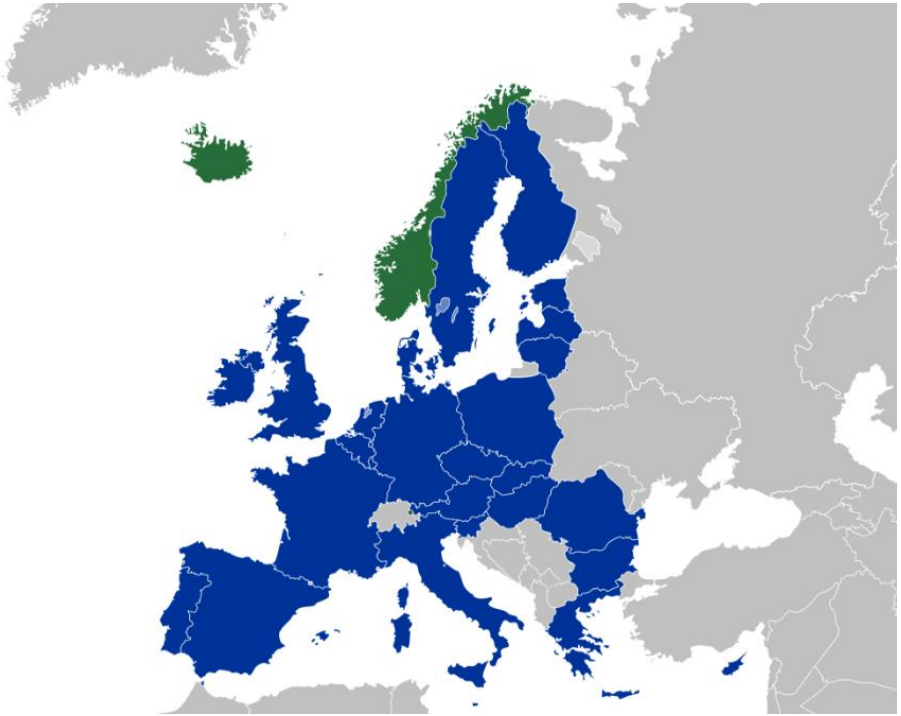
End of Reporting Period 1
31st Dec. 2018

30th April 2019
Deadline to **submit verified Emissions Report** to EC and Flag State

On-board EU MRV **Document of Compliance (DoC)**
30 June 2019

What is the geographical scope of EU MRV?

All voyages calling at an EEA port of call are subject to EU MRV



EU Member States: Belgium, Bulgaria, Croatia, Republic of Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Spain, Sweden and the UK.

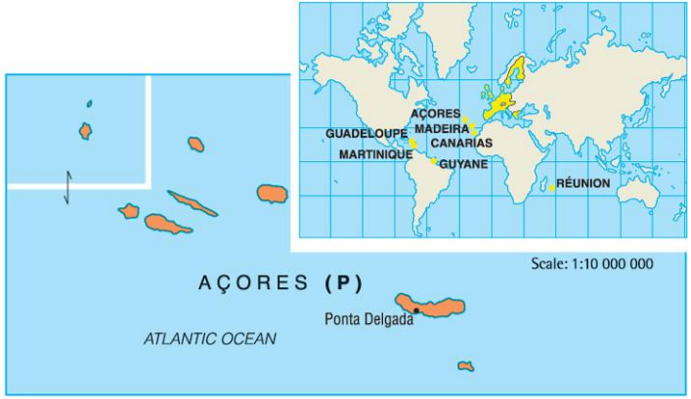
EEA Member States: EU Member States + Iceland + Norway

EEA outermost regions: see next slide

! *Gibraltar is considered to be an EU port*

What are the EEA outermost regions?

All voyages calling at a port of call located in an EEA outermost region are also subject to EU MRV



EEA outermost regions: Açores, Canary Islands, French Guiana, Guadeloupe, Madeira, Martinique, Mayotte, Reunion and Saint Martin

What is an EU MRV voyage?

- A **port of call** is a port where a ship stops to load or unload cargo or to embark or disembark passengers
  - Consequently, stops for the sole purposes of refuelling, obtaining supplies, relieving the crew, going into dry-dock or making repairs to the ship and/or its equipment, stops in port because the ship is in need of assistance or in distress, 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 not ports of call
- A **voyage** is a journey between two consecutive ports of call
- An **EU MRV voyage** is when at least one of the two ports of call is in the EEA
- **Ballast voyages** shall be considered same as **laden voyages**

Illustration - Which voyages must be reported?

- 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
- A reportable voyage is a voyage where at least one Port of Call is in the EU

Which parameters must be monitored per voyage?

Fuel Consumption at Sea

Fuel Consumption at berth

Time at Sea

Distance Sailed

Cargo On-board

Transport work

Energy Efficiency parameters

! *Fuel consumption, time at sea and distance sailed shall be monitored from berth to berth*

! *Fuel consumption within ports at berth shall be monitored separately*

! *Ships performing more than 300 voyages per year all subject to the EU MRV are exempt from per-voyage monitoring*

Transport work = Cargo on-board * Distance sailed

Which emissions sources must be considered?

- Main engines
- Auxiliary engines
- Boilers
- Gas turbines
- Inert gas generators

! *Incinerators do not have to be considered*

Four available monitoring methodologies available

- Method A
  Bunker Fuel Delivery Note (BDN) and periodic stocktakes of fuel tanks
- Method B
  Bunker fuel tank monitoring on board
- Method C
  Flow meters for applicable combustion processes
- Method D
  Direct CO_2 emission measurements.

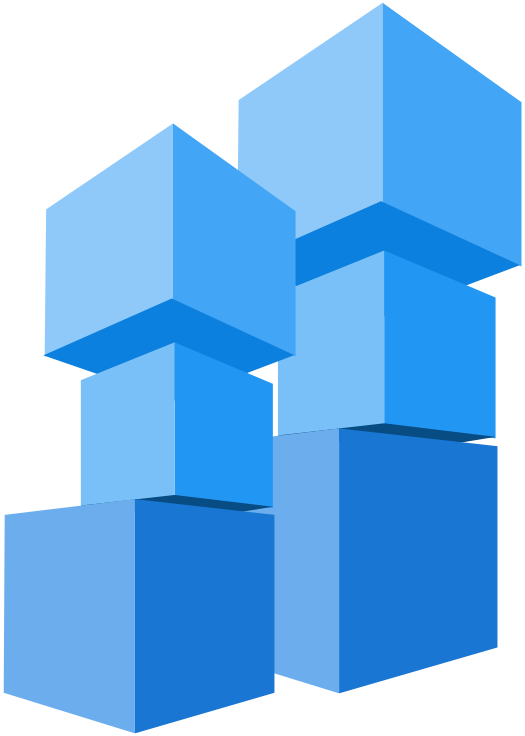
CO_2 Emissions = Fuel consumption * Emission factor

! *It is possible to choose a different methodology for each emission source*

Which emission factors shall be used?

Type of Fuel	IMO Values 2012/63 (t CO2 / t fuel)
Heavy Fuel Oil	3.1144
Light Fuel Oil	3.1510
Diesel/Gas Oil	3.2060
Liquefied Petroleum Gas (Propane)	3.0000
Liquefied Petroleum Gas (Butane)	3.0300
Liquefied Natural Gas	2.7500

How shall cargo be monitored?



Ship Type	Cargo to be monitored per ship type
Oil tankers, chemical tankers, gas carriers, bulk carriers, refrigerated cargo ships and combination carriers	Actual mass of the cargo on-board
LNG carriers	Volume of cargo on discharge
Pax ships	Number of passengers
Ro-ro ships	Occupied lane-meters * default weight OR, nb of cargo units * default weight OR, actual mass of the cargo on-board
Container ships	Actual mass of the cargo OR, nb of TEU * default weight
Ro-pax	Passengers: number of pax Freight: same Ro-ro ships
Con-ro ships	Volume of cargo on-board
Vehicle carriers and general cargo ships	Mass of cargo and / or deadweight carried

Which data shall be reported in the emissions report?

Only aggregated data shall be reported in the emissions report

Annual reporting data:

- Amount and emissions factor for each type of fuel consumed in total
- Aggregated emissions from all reportable voyages (domestic / outbound / inbound / total)
- Emissions within ports at berth
- Total distance travelled
- Total time spent at sea
- Total transport work

Energy efficiency parameters:

- Fuel consumption per distance = total annual fuel consumption/total distance travelled
- Fuel consumption per transport work = total annual fuel consumption/total transport work
- CO_2 emissions per distance = total annual CO_2 emissions/total distance travelled
- CO_2 emissions per transport work = total annual CO_2 emissions/total transport work

! *Cargo on-board shall not be reported in the emissions report*

What are the roles of the verifier?

Administrative Role:

- Communication with ship operator
- Delivery of the Document of Compliance (DoC)

! *Verifiers have to be accredited to ISO 14065 for EU MRV by an EU National Accreditation Body*

Auditing Role:

- Assessment of Monitoring Plan
- Verification of Emissions Report

What happens in case of non-compliance?

Non-compliance penalties:

- Defined by each Member State
- Must be effective, proportionate and dissuasive

In case of non-compliance for two or more consecutive years:

- Expulsion order issued by the Member State of the port of entry
- Ban from entering any EU port

! *The UK is the first EU country to disclose its draft national Regulation on penalties*

The Monitoring Plan – a fundamental document of MRV

- A mandatory **requirement of the EU MRV Regulation** Article 6
- Must be submitted **to an independent accredited verifier before 31st August 2017** for assessment
- Assessment must be **successfully completed before 31 December 2017**
- 31st August and 31st December are only deadlines, **process can be completed earlier**
- Important to note the difference between ***assessment*** and ***verification***

The Monitoring Plan - can be designed based on existing infrastructure and statutory documents

- Outlines the procedures in place to **monitor**, **collect**, **control**, and **report** data for the EU MRV
- Demonstrates how the ship's MRV system is **compliant with the EU MRV Regulation**
- Compiles all **information** on how the ship's MRV system works, and must be **complete**, **accurate**, **relevant** and **compliant**
- Where relevant, references should be made to compatible monitoring elements **from existing management systems** (e.g. SMS, SEEMP, EMS, etc.)
- Can be divided into **company specific sections** and **ship specific sections**

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on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport, and amending Directive 2009/16/EC

(Text with EEA relevance)

Implementing Regulation (EU) 2016/1927

Shipping Emissions Templates

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MRV Monitoring Plan Template (Implementing Regulation 2016/1927)

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Part A – versions

Date, status, version #

Part B - Basic data

IMO, name, operator / owner, GT,…
Emissions sources & fuel types

Part C - Activity data

Fuel consumption method (A, B, C, D)
Determination of density
Measurement instruments & uncertainty
Procedures for :

- Completeness of on-board sources
- Fuel bunkered, fuel in tanks
- BDN cross-checks
- Data collection & transmission
- Quality of measuring equipment
- Completeness of voyages
- Cargo, distance and time

Part D - Data gaps

Complete potential (if "main" method documented in MP Part C failed)

- fuel consumption
- distance travelled
- time spent at sea
- cargo carried

Part E – Management

Regular check of the adequacy of the MP
Control activities:

- Quality assurance and reliability of IT systems
- Internal reviews and validation of data
- Corrections and corrective actions
- Outsourced activities (if applicable)

Part F – Further information

Free text, optional

B.1 Identification of the ship

(a)	Name of the ship	
(b)	IMO identification number	
(c)	Port of registry	
(d)	Home port (if not identifical with port of registry)	
(e)	Name of the shipowner	
(f)	IMO unique company and registered owner identification number	
(g)	Type of the ship	Please select
(h)	Deadweight (in metric tonnes)	
(i)	Gross tonnage	
(j)	Classification Society (voluntary)	
(k)	Ice class (voluntary)	

B.2 Company information

(a) Please enter the name and address of the company, including postcode and country:

Name of the company	
Address Line 1	
Address Line 2	
City	
State/Province/Region	
Postcode/ZIP	
Country	Please select
Contact person	
Telephone number	
Email address	

B.3 Emission sources and fuel types used

Emission source reference no.	Emission source (name, type)	Technical description of emission source (performance/power, specific fuel oil consumption (SFOC), year of installation, identification number in case of multiple identical emission sources, etc.)	(Potential) Fuel types used
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select
			Please select

B.4 Emission factors

Fuel type	IMO emission factors (in tonnes of CO2/ tonne fuel)
Heavy Fuel Oil (Reference: ISO 8217 Grades RME through RMK)	3.114
Light Fuel Oil (Reference: ISO 8217 Grades RMA through RMD)	3.151
Diesel/Gas Oil (Reference: ISO 8217 Grades DMX through DMB)	3.206
Liquefied Petroleum Gas (Propane)	3.000
Liquefied Petroleum Gas (Butane)	3.030
Liquefied Natural Gas	2.750
Methanol	1.375
Ethanol	1.913
Other fuel with non-standard emission factor	

In case of use of non-standard emission factors:

Non-standard fuel	Emission factor	Methodologies for determining the emission factor (methodology for sampling, methods of analysis and a description of the laboratories used, if any)

C.2.1 Methods used to determine fuel consumption of each emission source:

Emission source	Chosen method for fuel consumption
Please select	Please select
Please select	Please select
Please select	Please select

C.2.6 Method for determination of density:

Fuel type/tank	Method to determine actual density values of fuel bunkered	Method to determine actual density values of fuel in tanks
	Please select	Please select
	Please select	Please select
	Please select	Please select
	Please select	Please select
	Please select	Please select

C.2.4 Description of the measurement instruments involved:

Measurement equipment (name)	Elements applied to (e.g. emission sources, tanks)	Technical description (specification, age, maintenance intervals)

C.2.7 Level of uncertainty associated with fuel monitoring:

Monitoring method	Approach used	Value
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	
Please select	Please select	

Presentation of generic procedure

Title of procedure	
Reference to existing procedure	
Version of existing procedure	
Description of EU MRV procedures if not already existing outside the MP	
Name of person or position responsible for this procedure	
Location where records are kept	
Name of IT system used (where applicable)	

Procedures related to emission sources, measuring equipment, and fuel measurements

- Procedures, systems and responsibilities used to update the completeness of emission sources
  - E.g. change of emission sources following retrofitting
- Procedures for determining fuel bunkered and fuel in tanks
  - E.g. fuel tank sounding, fuel tank monitoring, BDNs, etc.
- Regular cross-checks between bunkering quantity as provided by BDN and bunkering quantity indicated by on-board measurement:
  - E.g. cross-check between BDNs and fuel tank readings before / after bunkering
- **Procedures for recording, retrieving, transmitting, and storing information regarding measurements**
  - **E.g. description of successive steps from collection of primary source data on-board to storage of data in on-shore database (fuel tank readings, fuel flow data, etc.)**
- Procedures for ensuring quality assurance of measuring equipment
  - E.g. maintenance procedures

Procedures related to the monitoring of voyages, cargo, distance, and time

- **Recording and safeguarding completeness of voyages**
  - **E.g. how ports of call are defined according to the Regulation, how voyages are constructed, and how reportable voyages are identified**
- Recording and determining the distance per voyage made
  - E.g. actual distance sailed, or distance on the most direct route + correction factor
- Recording and determining the amount of cargo carried and/ or the number of passengers
  - E.g. how information from bills of lading, cargo manifest, etc. are collected and transferred into the IT system or database
- Determining and recording the time spent at sea from berth of port of departure to berth of the port of arrival
  - E.g. how time of departure and time of arrival are collected and transferred into the IT system or database

Procedures related to data gaps

- **Methods to be used to estimate fuel consumption**
  - **E.g. use of historic fuel data, use of alternative fuel consumption monitoring methodology, or use of modelled fuel consumption**
- Methods to be used to treat data gaps regarding distance travelled
  - E.g. use of online calculator to get distance on the shortest route
- Methods to be used to treat data gaps regarding time spent at sea
  - E.g. use of average time for similar voyages, or average time per NM
- Methods to be used to treat data gaps regarding cargo carried
  - E.g. use of historic loads or estimated loads based on draught measurements or alternative source of information

Procedures related to management and quality

- Regular check of the adequacy of the monitoring plan
  - E.g. check that all procedures are still adequate
- Control activities: Quality assurance and reliability of information technology
  - E.g. contractual arrangement with ICT providers
- **Control activities: Internal reviews and validation of EU MRV relevant data**
  - **E.g. plausibility checks on the data, check by another person (four-eye principle), comparison with independent data sources, etc.**
- Control activities: Corrections and corrective actions
  - E.g. procedure to ensure that issues are corrected in a timely manner
- Control activities: Outsourced activities (if applicable)
  - E.g. if a third-party organisation is used for any EU MRV task

STEP 1 - IDENTIFY YOUR FLEET SUBJECT TO EU MRV

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1 2 3 4 5 6

- List all vessels for which your are the '**Company**':
  - *'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'*
  - Nb: same definition as DOC holder under ISM Code
- Remove vessels that are below 5000 GT
- Remove vessels that do not operate for commercial purposes
- Remove vessels that never call EU ports and are not expected do so in 2018
- Option: Identify ship families and groups of sister-ships

STEP 2 - GET FAMILIAR WITH THE REGULATORY REQUIREMENTS

1 2 3 4 5 6

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Implementing Regulation (EU) 2016/1928

Shipping Emissions Cargo Carried

Commission's FAQ

Guidance documents *[To be published]*

STEP 3 - CATEGORIZE PROCEDURES

1 2 3 4 5 6

Company information

Data gaps

Management

Ship family specific procedures

All other procedures

Lead ship specific information

List of emissions sources

Description of measuring equipment

STEP 4 - COLLECT RELEVANT DOCUMENTS

1 2 3 4 5 6

- SEEMP
- General arrangement plan
- Bunkering procedure
- Piping diagrams
- Fuel management procedure
- Fuel measurement equipment description
- Other relevant manuals / procedures

STEP 5 - PREPARE A MONITORING PLAN FOR A FIRST LEAD SHIP

1 2 3 4 5 6

- Part A - Versions
- Part B - Basic data
- Part C - Activity data
- Part D - Data gaps
- Part E - Management
- Part F - Further information

Possible formats:

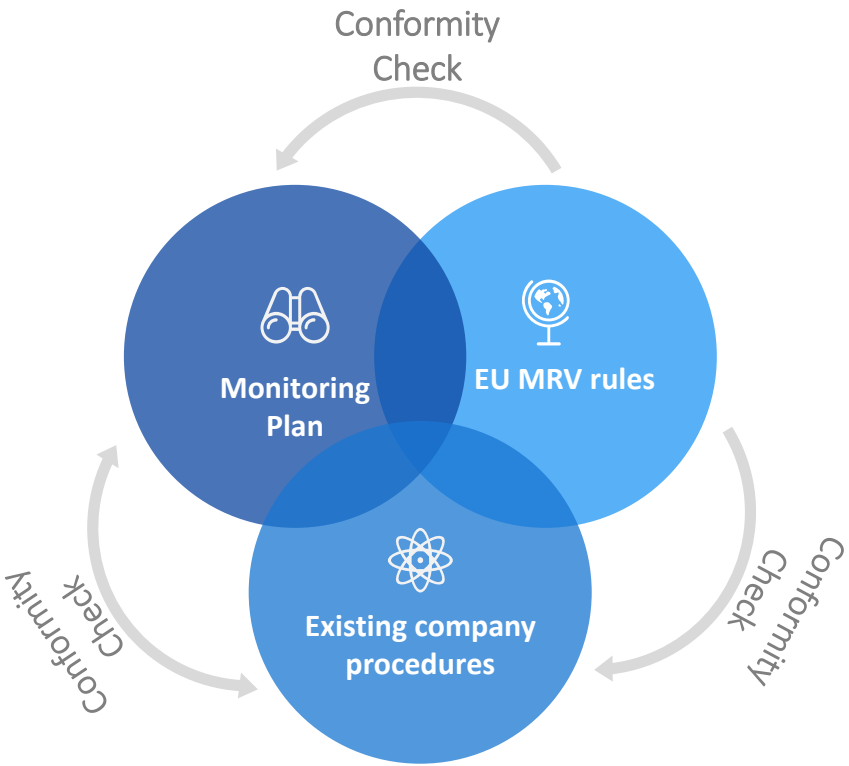
- Word document
- Excel document
- Online / offline form
- IT system
- Etc.

STEP 6 - ENGAGE AN INDEPENDENT ACCREDITED VERIFIER AND HAVE YOUR MP ASSESSED

1 2 3 4 5 6

Drafting of MP for First Lead Ship	Initial Assessment of First Lead Ship MP	Closing of Findings of First Lead Ship MP / Drafting of MP for other Lead Ships	Assessment of individual MP per Lead Ship	Closing of Findings	Assessment Reports per Ship
Shipping company	VERIFAVIA shipping	*Shipping company*	VERIFAVIA shipping	*Shipping company*	VERIFAVIA shipping

Aim of MP assessment is to check consistency between EU MRV rules, Monitoring Plan, and existing company procedures



- Completeness
- Accuracy
- Relevance
- Conformity

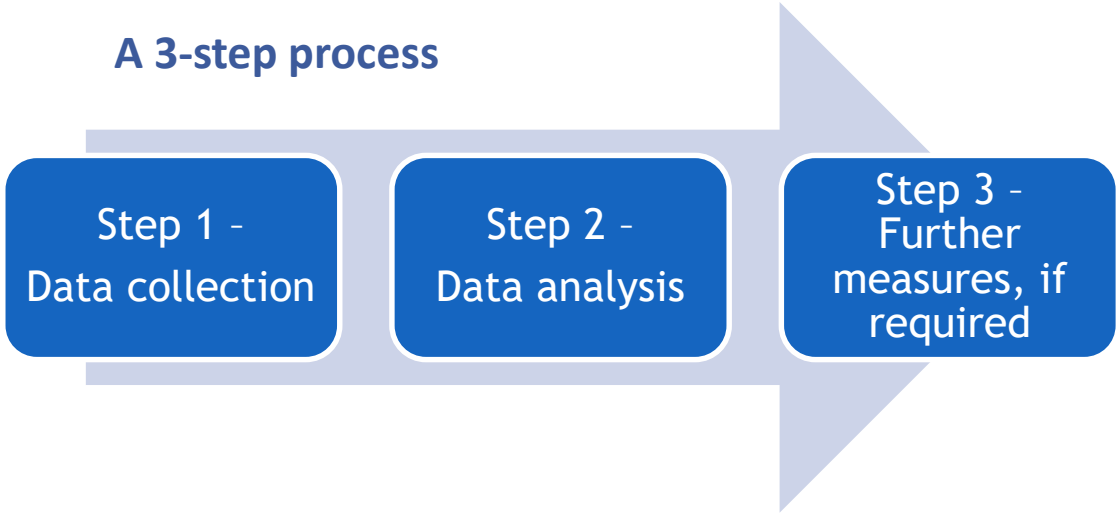
EU MRV challenges for shipowners

- Definition of a port of call and a voyage
- Geographical scope
- Berth-to-berth
- Time at sea
- Fuel consumption at port
- Actual cargo carried
- IT system alignment
- Control activities
- Data gaps

IMO fuel oil consumption data collection system

- Amendments to MARPOL Annex VI Chapter 4 adopted at MEPC70
  - Entry into force : 1 March 2018
  - First reporting period : 2019 calendar year

A 3-step process



EU MRV and IMO fuel data system compared

	EU MRV	IMO DCS
Scope	Ships above 5’000 GT Voyages to / from EEA port of calls	Ships at 5’000 GT or above All voyages
Starting year	2018	2019
Monitoring	EU MRV Monitoring Plan	Updated SEEMP
Reporting	Fuel consumption (port / sea) Transport work (actual cargo carried) Distance Time	Fuel consumption Distance Time
Verification	Independent accredited verifiers	Flags administration (work in progress)

Further down the line…

Compliance	Document of Compliance (June 2019)	Statement of Compliance
Publication	Distinctive public database	Anonymous public database

Verifavia Shipping is the first and only global accredited EU MRV verification body with double accreditation!

Our ISO 14065 accreditation allows us to assess and verify **any ship anywhere in the world regardless of country, Flag State or class.**

We requested accreditation from the French National Accreditation Body (COFRAC) to anticipate the Brexit.

4599

Accreditation n° 4-0596

Scope available on www.cofrac.fr

Timeline of the accreditation process

- **First Meeting** *January 2016*
- **Application** *March 2016*
- **Application Review** *Q4 2016*
- **Assessment** *January 2017*
- **Accreditation** *1st March 2017*

Verifavia Shipping is the task leader of the Commission's task force on the verification of the emissions report

Objective of the working group is to draft the guidance document addressed to verifiers on how to verify an emission report

Representatives from major classification societies are part of the working group which is led by Verifavia Shipping CEO.

- 1st round of meetings Jul 2015 – May 2016
- Draft Acts & Consultation Aug 2016
- Coming into force of Acts Nov 2016
- 2nd round of meetings Nov 2016 – May 2017
- Task Force status meeting Feb 2017
- Task Force final meeting April 2017
- Coming into force June 2017 ?

European Commission

EU MRV references – GAP-Analysis audits

Verifavia Shipping is one of the first independent verifiers to conduct GAP-Analysis audits against the requirements of the EU MRV Regulation

EU MRV references – Legal Assessments of Monitoring Plans and Verification of Emissions Reports

Verifavia Shipping is one of the first independent verifiers to conduct legal monitoring plan assessment audits against the requirements of the EU MRV Regulation

EU MRV references - EU MRV IT system certification audits

Verifavia Shipping is the world's market leader working with global ICT providers in the independent certification of EU MRV IT systems

Certified EU MRV IT systems

DYNAMARINE

KROHNE

Setel Hellas
Your Global ICT Partner

VISWA LAB

EU MRV IT systems under certification

StormGeo

ABB

MARORKA

danaos

KYMA

VESON NAUTICAL

we4sea
efficiency solutions for ships

MeteoGroup

Verifavia Shipping EU MRV Auditor Team

Julien Dufour, CEO

Nicolas Duchene, Technical Director

Nikolas Theodorou, Managing Director

Stylianos Smyrlakis, Naval architect, Marine Engineer

Yuvraj Thakur, Marine Engineer & Commercial Head Asia – Pacific

Islam Abdelazim, Marine Engineer

Steffen Kotergaard, Marine Engineer & Commercial Manager Denmark

Vikas Sharma, Marketing analyst

Alonso Benito, Naval architect, Marine Engineer

Beata Kusova, Auditor

Gary Cleven, Auditor

Press – Verifavia is frequently quoted in the shipping media on EU MRV and also regularly publishes its own articles

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Verifavia Shipping in the press

The Motorship

Handy Shipping Guide
Your Complete Global Freight and Shipping Directory

HELLENIC SHIPPING NEWS WORLDWIDE
Online Daily Newspaper on Hellenic and International Shipping
Leaders in global shipping news for over 10 years

Lloyd's List

BLUE INSIGHT

GREEN4SEA

The Maritime Executive
INTELLECTUAL CAPITAL FOR EXECUTIVES

PortNews
STEERING IN INFORMATION WAVES!

ship-technology.com

sustainableshipping

bunkerworld

ctech. CLEAN TECHNOLOGY INTELLIGENCE FOR THE MARITIME SECTOR

Breakbulk
PROJECT CARGO, HEAVY-LIFT & RO-RO LOGISTICS

SHIP EFFICIENCY REVIEW

canalenergia

HANSA
INTERNATIONAL MARITIME JOURNAL

Ship&Bunker

MARINE ELECTRONICS & COMMUNICATIONS

Events - Verifavia is regularly invited to speak on EU MRV at international conferences, workshops and seminars – UPCOMING EVENTS

Verifavia Shipping is the leading expert on EU MRV, speaking at

EU MRV Seminar, Royal Association of Netherlands Shipowners, Rotterdam, *10 March 2017*

EU MRV Seminar, Danish Shipowners' Assocations, Copenhagen, *15 March 2017*

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EU MRV Panel, Expomaritt, Istanbul, *22 March 2017*

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Q&A

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