



# Supporting study for the implementation of Regulation (EU) 2015/757 on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport

Deliverable 1.1 – Final Report

Written by  
April 2022



## **EUROPEAN COMMISSION**

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PRINTED ON ELEMENTAL CHLORINE-FREE BLEACHED PAPER (ECF)

PRINTED ON TOTALLY CHLORINE-FREE BLEACHED PAPER (TCF)

PRINTED ON RECYCLED PAPER

PRINTED ON PROCESS CHLORINE-FREE RECYCLED PAPER (PCF)

Manuscript completed in 2022.

First edition

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Print	ISBN 978-92-68-07926-3	doi: 10.2834/402169	ML-05-23-370-EN-N
PDF	ISBN 978-92-68-07926-3	doi: 10.2834/402169	ML-05-23-370-EN-N
EPUB	ISBN 978-92-68-07926-3	doi: 10.2834/402169	ML-05-23-370-EN-N
HTML	ISBN 978-92-68-07926-3]	doi: 10.2834/402169	ML-05-23-370-EN-N

Luxembourg: Publications Office of the European Union, 2022

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## Table of Contents

<b>Executive summary .....</b>	<b>8</b>
<b>1    Introduction .....</b>	<b>14</b>
1.1    Background and aim of the study.....	14
1.2    General introduction to the EU MRV Regulation.....	15
1.3    Reading guide .....	20
<b>2    National accreditation bodies.....</b>	<b>21</b>
2.1    Introduction.....	21
2.2    The accreditation process .....	24
2.3    Managing the accreditation process .....	29
2.4    Communication and information exchange with the European Commission.....	31
2.5    The NABs views on the EU MRV system .....	32
2.6    Summary of the main findings.....	33
<b>3    Shipping companies.....</b>	<b>35</b>
3.1    Introduction.....	35
3.2    Monitoring plan.....	36
3.3    Emissions report.....	40
3.4    The shipping companies' views on the EU MRV system.....	42
3.5    Summary of the main findings.....	43
<b>4    Verifiers .....</b>	<b>45</b>
4.1    Introduction.....	45
4.2    The monitoring plan.....	46
4.3    The emissions report.....	49
4.4    Site visits .....	54
4.5    The verifier views on the EU MRV system.....	55
4.6    Summary of main findings.....	57
<b>5    Member States as flag States .....</b>	<b>59</b>
5.1    Introduction.....	59
5.2    Obligation to ensure that shipping companies submit the emissions report.....	60
5.3    Enforcement of the EU MRV Regulation.....	61
5.4    Communication and information exchange.....	66
5.5    The flag State authorities' views on the EU MRV system.....	67
5.6    Summary of the main findings.....	68
<b>6    Member States as port States.....</b>	<b>70</b>
6.1    Introduction.....	70

6.2 Inspections of vessels related to EU MRV Regulation.....	71
6.3 Enforcement of the EU MRV Regulation.....	75
6.4 The port State authorities' views on the EU MRV system .....	80
6.5 Summary of the main findings.....	81
<b>7 Overarching findings and recommendations .....</b>	<b>83</b>
7.1 Summary of key findings .....	83
7.2 Recommendations .....	85
<b>Annex I – Bibliography.....</b>	<b>87</b>
<b>Annex II – Methodology .....</b>	<b>89</b>
<b>Annex III – Background information on verification .....</b>	<b>94</b>
<b>Annex IV – Data collection sheet NABs.....</b>	<b>98</b>
<b>Annex V – Data collection sheet shipping companies.....</b>	<b>104</b>
<b>Annex VI – Data collection sheet verifiers .....</b>	<b>112</b>
<b>Annex VII – Data collection sheet flag States .....</b>	<b>120</b>
<b>Annex VIII – Data collection sheet port States.....</b>	<b>128</b>

## List of abbreviations

AIS	Automatic Identification System
BDN	Bunker Fuel Delivery Notes
BR	Better Regulation
CEEI	Cost-energy efficiency Index
CO <sub>2</sub>	Carbon Dioxide
COM	Commission
CV	Curriculum Vitae
DCS	Data Collection System
DoC	Document of Compliance
DWT	Dead weight tonnage
EA	European Accreditation
EA MLA	European Accreditation Multilateral Agreement
EC	European Commission
EEA	European Economic Area
EEA	European Environment Agency
EEDI	Energy Efficiency Index
EEOI	Energy Efficiency Operational Indicator
EEXI	Energy Efficiency Existing Ships Index
EMSA	European Maritime Safety Agency
EEOI	Energy Efficiency Operational Index
EU	European Union
EU ETS	European Union Emission Trading Scheme
FAQ	Frequently Asked Questions
GHG	Greenhouse Gas
GT	Gross Tonnage
IMO	International Maritime Organisation
ISM	International Safety Management
ISO	International Organization for Standardization
LOW	Letter of Warning
MRV	Monitoring, Reporting and Verification
NAB	National Accreditation Body
PdM	Product Data Management
PSC	Port State Control
SDR	Special Drawing Rights
SWD	Staff Working Document
ToR	Terms of Reference
XML	Extensible Markup Language

## Executive summary

In 2013, the European Commission (EC) set out its strategy to integrate maritime transport emissions in the EU greenhouse gas (GHG) reduction policies (COM(2013) 479), which is a three-step strategy:

1. The implementation of a system that requires large ships using EU ports to monitor, report and verify their CO<sub>2</sub> emissions;
2. The definition of greenhouse gas reduction targets for the maritime transport sector;
3. The implementation of further measures, including market-based measures.

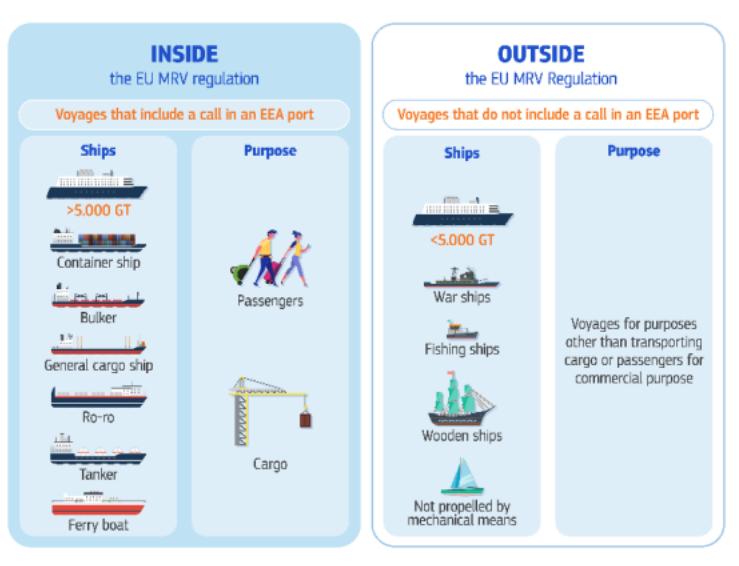
With the adoption of Regulation (EU) 2015/757 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport in April 2015 (in short: EU MRV Regulation), the first step of this strategy was accomplished.

### *Scope of the EU MRV Regulation*

According to Article 1 of the EU MRV Regulation, the Regulation aims to promote the reduction of CO<sub>2</sub> emissions from maritime transport in a cost-effective manner. To achieve this objective, the Regulation lays down rules for the accurate monitoring, reporting and verification of CO<sub>2</sub> emissions and other relevant information. The Regulation applies to vessels arriving at, within or leaving a port in an EEA Member State.

The Regulation does apply to a limited set of vessels active in Europe, as presented in Figure ES.1. The Regulation only applies to the larger vessels, more specifically to those above 5,000 GT. Vessels smaller than 5,000 GT, as well as specific vessels not transporting goods or passengers for commercial purposes, do not fall within the scope of the Regulation (Article 2(b)). In addition, also not all voyages of vessels above 5,000 GT fall within the scope. Only voyages that serve the purpose of transporting passengers or cargo for commercial purposes need to comply with the requirements of the EU MRV Regulation. For example, when a vessel larger than 5,000 GT does visit an EU port for bunkering purposes only, this particular voyage does not fall within the scope of the EU MRV Regulation.

**Figure ES.1 Scope of the EU MRV Regulation**



Source: SWD (2020) 82 final.

Several actors are involved in the EU MRV Regulation. The activities of the following actors were further explored during the study:<sup>1</sup>

- The shipping companies: the companies need to monitor and report on the emissions produced for all those voyages that fall under the scope of the EU MRV Regulation. The reports prepared by the shipping companies are verified by verifiers;
- The verifiers: the verifiers are responsible for verifying the reports prepared by the shipping companies. Verifiers could either be classification societies or environmental verification companies. To be an EU MRV verifier, the verifier needs to be accredited;
- The National Accreditation Bodies (NABs): The NABs are assigned the task to accredit the verifiers. Requirements on how accreditation can be obtained are laid down in Regulation 765/2008;<sup>2</sup>
- Member State authorities, in their capacity as flag and port States. The flag State authorities need to ensure that vessels flying their flag do comply with the requirements laid down in the EU MRV Regulation. If the vessel is non-compliant, the flag State authority can sanction the company. The port State authorities need to ensure that vessels entering their ports are compliant with the requirements laid down in the EU MRV Regulation. Port State authorities can inspect both EU-flagged vessels and non-EU flagged vessels.

Based on the Regulation, the shipping company is required to prepare two documents: (1) a monitoring plan and (2) an emissions report. Both the monitoring plan and emissions report need to be verified by the verifier. In case the emissions report is in line with the requirements, the verifier issues a Document of Compliance (DoC). This document states that for the past reporting year, the vessel fulfilled the requirements on monitoring and reporting emissions. The DoC is proof that a vessel is compliant with the EU MRV requirements and needs to be onboard the vessel.

### *Aim of the study*

This study aims to assess the status of implementation of Regulation (EU) 2015/757 and, where relevant, of the related implementing legislation in all 27 EU Member States as well as relevant EEA countries<sup>3</sup> (i.e. Norway and Iceland). Besides providing the Commission with an overview on how Regulation (EU) 2015/757 is implemented, the report collected information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation.

To assess how the different actors have implemented the EU MRV Regulation, a set of dedicated research questions per stakeholder group were formulated. The research questions strongly focus on the procedures put in place by the different stakeholders which were extensively consulted to this end. Where possible, the collected information was then triangulated with information from other sources, such as the yearly EU MRV reports and information available on the EMSA website.

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<sup>1</sup> In addition to the stakeholders mentioned also the European Commission and the European Maritime Safety Agency are involved in the MRV process. However, the activities of these two actors was not further analysed during the study.

<sup>2</sup> Regulation (EC) No 765/2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products.

<sup>3</sup> EEA = European Economic Area.

## *Key findings of the study*

The main advantage of the EU MRV Regulation mentioned by all stakeholders is the insights gained in the environmental performance of the largest vessels entering or leaving EU ports. The EU MRV system allows for the systematic collection of vessel performance data. This enables shipping companies themselves, but also other stakeholders, like Member State authorities, to identify trends in the overall performance of an individual vessel and/or the entire fleet. It also enables them to use this information as a basis for their policy decisions.<sup>4</sup> The available data show that the number of vessels falling within the scope of the EU MRV Regulation for the years 2018 and 2019 is more or less constant. Based on this it could be concluded that shipping companies were aware from the start that new obligations were introduced, and made sure to have monitoring plans in place and submit emissions reports.

Different stakeholders indicated that fulfilling the requirements, especially in the first year was rather challenging, as not all shipping companies were able to collect the relevant data, submit it in the right format and deliver results on time. As a consequence, verifiers received the emissions reports late, and the reports contained mistakes, which had to be corrected. This caused further delays in the process. The start-up issues were also identified in the first EU MRV report from the European Commission.<sup>5</sup> One of the recommendations made in that report was to improve the coordination and cooperation between the different stakeholders to facilitate the implementation of the Regulation. The current study found that especially the interaction between shipping companies and verifiers has improved since the first reporting period. Verifiers indicated that shipping companies have improved their internal procedures and are now able to submit good quality reports in less time. Verifiers do see a positive learning curve within the companies. This is confirmed by the flag State authorities, who do see that vessels flying their flag are fulfilling the requirements.

Although the vast majority of shipping companies are currently submitting their reports on time, verifiers highlighted that some delays still persist. They indicated that the companies currently not fulfilling their obligations are often newly established ones or companies complying with the EU MRV requirements for the first time. These companies are new to the process and face start-up difficulties. However, the verifiers see a consistent process of improvement as companies familiarise themselves with the requirements.

Article 30 of Delegated Regulation 2016/2072 states the impartiality and independence requirements applicable to verifiers performing verifications under the EU MRV Regulation. According to the Regulation the verifier needs to be independent to and impartial of the vessel it is verifying. NABs highlighted that for them it is difficult to fully assess the independence and impartiality during the accreditation process, because some verifiers provide other vessels class related services in their capacity as a classification society as well. Based on the data collected, shipping companies usually choose their classification society as their verifier. Verifiers themselves claim that the fact that they are also the vessel's classification society does not lead to problems with regard to their independence and impartiality and it is actually permitted by current rules. They state that the activities are performed by two different teams that do not interact. For the study team, it was difficult to assess the impartiality and independence of these verifiers.

NABs are tasked with the accreditation of the verifiers as well as regular checks of their performance. In case a verifier complies with all the requirements laid down in the relevant legislation, the NAB grants or renews the accreditation. In case the verifier does not (fully) comply with the requirements, the NAB can refuse or withdraw the accreditation. Withdrawal

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<sup>4</sup> This study builds upon data from 2018, 2019 and 2020. These were the data available at the start of this study (January 2021).

<sup>5</sup> SWD (2020) 82 final Commission Staff Working Document Full-length report *Accompanying the document Report from the Commission 2019 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport*.

or refusal of an accreditation has far-reaching consequences and is a sanction that in some cases of non-compliance, is considered disproportionate. NABs therefore indicated that, if they had a wider range of sanctions at their disposal, the EU MRV system could be further strengthened.

The study team tried to obtain insight in the way the verification is done by the verifiers. However, they indicated to follow their own procedures, which seem to differ substantially from one another. How the different methods used could impact the outcome of the verification process remains unclear. In other words, it is not possible to draw conclusions on the quality of the verification done as assessing what the most appropriate method is, was not possible within the scope of the study. Nor is it possible to conclude whether the differences in verification methods might hamper the reliability of the information included in the emissions reports.

Flag State authorities need to ensure that vessels flying their flag and falling within the scope of the EU MRV Regulation do comply with the requirements as laid down in the Regulation. In case of non-compliance, Member State have to impose sanctions. Our survey showed that, so far, Member States in their capacity as flag State, issued only a few warnings to vessels not complying with the requirements. This could represent an indication for a high compliance rate for EU-flagged ships. However, as the study team did not receive information from all Member States (including several Member States with a large fleet flying their flag), a conclusion for the compliance rate of the total EU-flagged fleet can only be drawn with caution as compliance rates in the missing Member States might be lower.

Another element to consider is the fact that only one-third of the vessels falling within the scope of the EU MRV Regulation is EU-flagged. This means that for two-thirds of the vessels falling within the scope of the EU MRV Regulation no checks on compliance are performed by flag State authorities as there is no obligation for non-EU flag State authorities to perform those checks. To check whether non-EU flagged vessels fulfil their requirements, port State control inspections play a crucial role: Port State control can check whether vessels entering an EU port have an EU MRV DoC on board and can impose sanctions in case of non-compliance. According to the studies' survey, not many sanctions have been imposed so far, but an assessment of the compliance rate of non-EU flagged vessels highly depends on the control activities/frequency of inspections of EU port State authorities. Member States in their capacity as port States do not often perform inspections for EU MRV purposes only. The selection of vessels for a port State control inspection is rather based on other grounds (i.e. on selection criteria laid down in Directive 2009/16/EC which focuses on general safety levels).

THETIS-MRV is used to share information regarding the EU MRV system. As such, almost all stakeholders, except for the NABs, use this system to share relevant information. Although the system has many features to support information sharing, stakeholders still find it difficult to use. Both the Commission and EMSA have invested in improving the functionalities of THETIS-MRV. Whether these improvements sufficiently address the issues raised by the stakeholders could not be assessed by the study as many of the changes came into effect after the closure of the data collection by the study team.

Regarding EU MRV data available via THETIS-MRV, in an ideal situation, the verifier should notice the unrealistic inputs and make sure that these are corrected. From the publicly available data, one can observe that the data is, however not fully free of outliers, i.e. data that is obviously incorrect, such as a deadweight tonnage of 0 or extremely high quantities of fuel consumed. This indicates that the verification process could further be improved. Even though EMSA or the European Commission could detect these outliers their task is to make the verified data publicly available and not to control the verified data. As a result, a few outliers remain in the system.

Based on our analysis, the quality of the implementation of the EU MRV system could not be fully assessed for all elements, but overall, the EU MRV system seems to a large extent

to be working as intended. Information on the environmental performance of the largest seagoing vessels is monitored systematically and the information is reported and verified on an annual basis by accredited verifiers. For those elements, which the study could assess, we see some room for a further strengthening of the system, especially in the light of the role that the system might play in potentially upcoming environmental regulation. The next section presents corresponding recommendations in this respect.

### *Key recommendations*

Based on the study results, several recommendations can be made. The following elements could be considered:

During the consultation, several stakeholder groups indicated that some of the requirements are still not entirely clear for them. They asked whether more guidance, either orally or in written form, could be provided. They suggested either having an (online) meeting with the Commission in which such items could be discussed or some written guidance to support them. The following elements were specifically expressed during the consultation:

- NABs would like to have one or two annual meetings with the Commission to discuss EU MRV related elements. The most pressing topic at the moment is the upcoming reassessment of accreditations. Nevertheless, other topics might emerge as well;
- Verifiers would like additional guidance, preferably in writing, on how they should deal with vessels (partially) using biofuels and alternative fuels.
- The Member States, in their capacity as flag State, indicated that Article 19(1) on compliance with monitoring and reporting requirements and inspections is not always clear to them. A meeting with the Commission to obtain guidance on this would be welcomed.

A second set of recommendations stems from problems highlighted by stakeholders when using the THETIS MRV system. Despite the many attempts of EMSA and the Commission to ensure that stakeholders become familiar with the tool, some elements remain problematic to them. Stakeholders indicate that they would like to add some elements which are in fact already in the system. Many of the requests made by the stakeholders could therefore be easily addressed by bringing them to their attention. In other words, EMSA and the Commission could further explain and elaborate on the functionalities of the THETIS MRV system. This could entail the following actions:

- Actively promote the existing tutorials. The tutorials do address many of the topics raised, however, it seems that stakeholders cannot find them easily. By promoting their location, stakeholders could use them;
- Several stakeholders (e.g. verifiers and Member States in their capacity as flag States) would like to receive automatic notifications, either on updates in the system or on uploaded emissions reports. As these features already exist, there is a need to promote how they work. By informing on how to activate notifications, the problem would be solved;
- Get in touch with the users by launching a (periodic) survey to make an inventory of doubts and requests for clarifications on the THETIS MRV system. This could also be the place to get the users' feedback on how to further optimise the tool.

An additional issue related to the THETIS MRV system is that of outliers in the database, i.e. the presence of data that is obviously incorrect. By issuing a warning signal in THETIS-MRV in case a shipping company adds unrealistic information, the number of mistakes and especially outliers could be further reduced. This, in turn, will improve the reliability of the data reported.

As highlighted in the previous section, port State control authorities do play a large role in the enforcement of the EU MRV Regulation, especially concerning non-EU flagged vessels. Some of the authorities have developed good practices in how to check whether a DoC is on board the vessel before the vessel enters a port (so-called pre-arrival checks). As this is not yet standard practice, those Member States could be encouraged to share their insights with the other Member States. Good practices on pre-arrival checks could be shared throughout Europe.

Some of the recommendations could be considered in case the Regulation would be revised. The study team is aware of the fact that given the current political process, a revision is only a long-term option. However, the study team would still like to highlight these recommendations which in the short term could be addressed by means of guidelines. The following elements could be considered in this context:

- Include a specific deadline for submitting data for verification in the EU MRV Regulation. As highlighted in the study, currently, no such deadline exists and shipping companies do have the possibility to submit their information close to the deadline of 30 April to verifiers. The verifiers have, in such a case, limited time available to verify the data. To avoid this, a clear deadline for submitting relevant inputs for the verification of the emissions report could be set, for instance on the 31<sup>st</sup> of March;
- Give more sanction options to NABs. As highlighted in the analysis, NABs can only refuse or withdraw an accreditation. They regard both as disproportionate measures, especially when the verifier is to a large extent compliant. In such cases, the NABs would like to have a 'lighter' sanction at their disposal as well. This could, for instance, be a warning;
- Further analysis on the impact of different verification methods. As highlighted in this study, verifiers do arrange their verification process in various ways. Although all approaches are in line with the EU MRV Regulation, this study could not assess whether such different verification methods have an impact on data reliability. If that was the case it could be that the possibilities to design the verification process to one's own best insights needs to be limited/further specified. Nevertheless, additional research is needed before such a conclusion could be drawn.

## 1 Introduction

### 1.1 Background and aim of the study

In 2013, the European Commission (EC) set out its strategy to integrate maritime transport emissions in the EU greenhouse gas (GHG) reduction policies (COM(2013) 479), which is a three-step strategy:

1. The implementation of a system that requires large ships using EU ports to monitor, report and verify their CO<sub>2</sub> emissions;
2. The definition of greenhouse gas reduction targets for the maritime transport sector;
3. The implementation of further measures, including market-based measures.

With the adoption of Regulation (EU) 2015/757 on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport in April 2015 (in short: EU MRV Regulation), the first step of this strategy was accomplished.

From January 2018 on, the Regulation required companies to monitor (for vessels above 5,000 gross tonnage (GT)) fuel consumption and other parameters on voyages to and from ports under the jurisdiction of a Member State and within these ports. From 2019 onwards, by 30 April of each year, companies have to submit an emissions report for each of their vessels falling within the scope of the Regulation. The reports need to be submitted to the Commission and the authorities of the flag State concerned. The emissions reports contain information on the annual CO<sub>2</sub> emissions and other relevant information for the entire reporting period (i.e. the previous calendar year).

Based on the emissions reports submitted, the European Maritime Safety Agency (EMSA) publishes the main data on their website. So far, data were published for the reporting periods 2018, 2019 and 2020.<sup>6</sup> In August 2021, the European Commission published the second annual report, the 2020 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport which relates to the 2019 reporting period.<sup>7</sup>

The EU MRV Regulation is complemented by two delegated and two implementing regulations:

- Commission Delegated Regulation (EU) 2016/2071 amending Regulation (EU) 2015/757 of the European Parliament and of the Council as regards the methods for monitoring carbon dioxide emissions and the rules for monitoring other relevant information;
- Commission Delegated Regulation (EU) 2016/2072 on the verification activities and accreditation of verifiers pursuant to Regulation (EU) 2015/757;
- Commission Implementing Regulation (EU) 2016/1927 of 4 November 2016 on templates for monitoring plans, emissions reports and documents of compliance pursuant to Regulation (EU) 2015/757;
- Commission Implementing Regulation (EU) 2016/1928 of 4 November 2016 on determination of cargo carried for categories of ships other than passenger, ro-ro and container ships pursuant to Regulation (EU) 2015/757.

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<sup>6</sup> <https://mrv.emsa.europa.eu/#public/emission-report>.

<sup>7</sup> SWD (2020) 82 final Commission Staff Working Document Full-length report *Accompanying the document Report from the Commission 2019 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport*.

For this study, Delegated Regulation 2016/2072 is of specific relevance, as this Delegated Regulation provides further requirements on how the EU MRV Regulation should be implemented. Therefore, Delegated Regulation 2016/2072 is discussed throughout the report; the other implementing and delegated Regulations are outside the scope of this study.

At the time of this study (i.e. early 2022), three reporting periods (2018, 2019 and 2020) have finished. All actors involved in the EU MRV system have had time to implement the requirements of the Regulation and have gained experience in fulfilling these requirements. Based on these experiences it is possible to identify how the different actors have implemented the requirements, to understand what works well and what could be improved to further optimise the implementation of the EU MRV system.

### *Aim of the report*

This report aims to assess the current status of implementation of Regulation (EU) 2015/757 and, where relevant, the related implementing legislation in all 27 EU Member States as well as relevant EEA countries<sup>8</sup> (i.e. Norway and Iceland). Besides providing the Commission with an overview on how Regulation (EU) 2015/757 is implemented, the report collected information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation.

It is important to note that the study relies to a large extent on views of different stakeholders involved in the EU MRV system as they can provide information on how they have implemented the requirements. The different stakeholders were asked how they have implemented the system and what, in their opinion, works well and what could be improved. The Study Team bundled and reviewed them. Several points for improvement mentioned by the stakeholders are already addressed by the Commission. For instance, since the consultation of the stakeholders by the Study Team, a legal revision has been running in parallel.

### *Methodology*

To assess how the different actors have implemented the EU MRV Regulation, a set of dedicated research questions per stakeholder group were formulated. An overview of questions and a description of the methodology followed can be found in Annex II. The research questions strongly focus on the procedures put in place by the different stakeholders. As only the different stakeholders can provide answers to these questions, the outcomes of the study rely to a large extent on stakeholder inputs. When reading Chapters 2 to 6 it is important to keep in mind that the findings presented are to a large extent how stakeholders interpreted the obligations introduced under the EU MRV Regulation.

## 1.2 General introduction to the EU MRV Regulation

### *Scope of the EU MRV Regulation*

According to Article 1 of the EU MRV Regulation, the Regulation aims to promote the reduction of CO<sub>2</sub> emissions from maritime transport in a cost-effective manner. To achieve this objective, the Regulation lays down rules for the accurate monitoring, reporting and

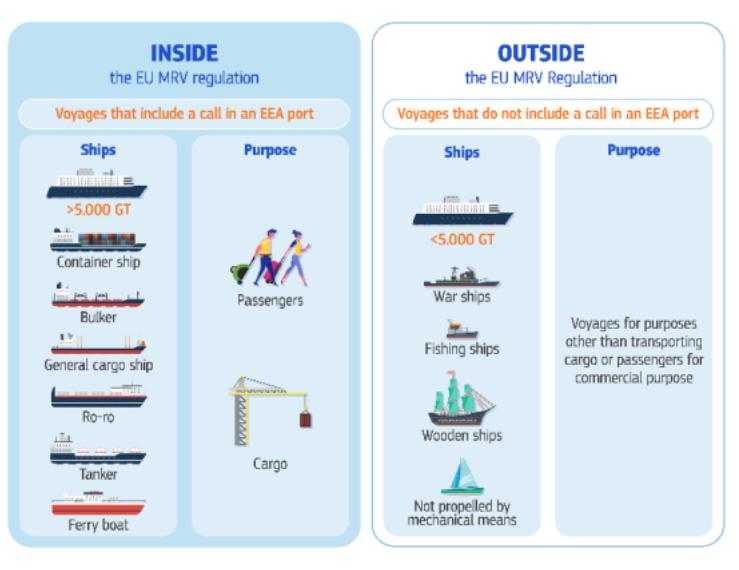
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<sup>8</sup> EEA = European Economic Area.

verification of CO<sub>2</sub> emissions and other relevant information. The Regulation applies to vessels arriving at, within or leaving a port in an EU Member State.

The Regulation does not apply to all vessels active in Europe, as Figure 1.1 highlights. The Regulation only applies to the larger vessels, more specifically to those above 5,000 GT. Vessels smaller than 5,000 GT as well as specific vessels not transporting goods or passengers for commercial purposes do not fall within the scope of the Regulation (Article 2(b)). In addition, also not all voyages of vessels above 5,000 GT fall within the scope. Only voyages that serve the purpose of transporting passengers or cargo for commercial purposes need to comply with the requirements of the EU MRV Regulation. For example, when a vessel larger than 5,000 GT does visit an EU port for bunkering purposes only, this particular voyage does not fall within the scope of the EU MRV Regulation.

**Figure 1.1 Scope of the EU MRV Regulation**



Source: SWD (2020) 82 final.

When a vessel falls within the scope of the EU MRV Regulation, the shipping company needs to monitor and report on the emissions produced for all those voyages that fall under the scope of the EU MRV Regulation: all those voyages that include a call in an EEA port.

### **The EU MRV process and its actors**

Based on the Regulation, the shipping company is required to prepare two documents: (1) a monitoring plan and (2) an emissions report (for more details see below). Both the monitoring plan and the emissions report need to be verified by an independent accredited verifier, who assesses whether both fulfil the requirements laid down in the Regulation. In case the emissions report is in line with the requirements, the verifier issues a Document of Compliance (DoC). This document states that for the past reporting year the vessel fulfilled the requirements on monitoring and reporting of emissions. The DoC proves that a vessel is compliant with the EU MRV requirements.

#### **The monitoring plan**

For each specific vessel falling within the scope of the EU MRV Regulation, a monitoring plan should be prepared. In this plan, the choice for monitoring the vessel's emissions is laid down. The company can opt for one of the four fuel monitoring methods: the use of Bunker Fuel Delivery Notes (BDN) (method A), bunker fuel tank monitoring on-board (method B), flow meters for applicable combustion processes (method C) or direct emission measurements (method D). The monitoring plan needs to be verified by the verifier (Article 13(1)). The plan has to be submitted to the verifier no later than 31 August 2017 or no later than two months

after the first call in a European port (Article 6(1) and (2)). At least once a year, the company needs to check whether the plan is still up-to-date (Article 7(1)). If the plan needs to be updated the verifier should be notified (Article 7(2)).

### The emissions report

Each year the company should report on the environmental performance of the specific vessel falling within the scope of the EU MRV Regulation. The report needs to be verified by the verifier (Article 11(2)). In particular, the verifier assesses whether the emissions reported were determined in accordance with the requirements laid down in Articles 8, 9 and 10 of the Regulation as well as in the monitoring plan. Once the verifier is satisfied with the information in the emissions report, the company receives a verification report (Article 11(3)) and a DoC (Article 17(1)). The company needs to submit the emissions report no later than 30 April of each year to the Commission and the flag State concerned (Article 11(1)).

Member State authorities, in their capacity as flag and port States, are involved in the EU MRV process as well. The flag State authorities need to ensure that vessels flying their flag do comply with the requirements laid down in the Regulation (Article 19(1)). More concretely, this means that the authority needs to ensure that for each vessel, a monitoring plan exists and that an emissions report is produced, which are all verified by an accredited verifier. If the vessel is non-compliant the flag State authority can penalise the company. The port State authorities can check whether a vessel entering their port has a valid DoC on board. If the vessel does not have a valid DoC, the authority can impose a sanction to the company.

Figure 1.2 presents the above-described steps, graphically below.

**Figure 1.2 Steps of the EU MRV process**



Source: SWD (2020), 82 final.

An actor that is not included in Figure 1.2, are the National Accreditation Bodies (NABs). The EU MRV Regulation lays down that verifying the monitoring plan and emissions report can only be done by an accredited verifier (Article 3(f)). To obtain the accreditation, the verifier needs to be accredited based on Regulation 765/2008.<sup>9</sup> The NABs are assigned the

<sup>9</sup> Regulation (EC) No 765/2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products.

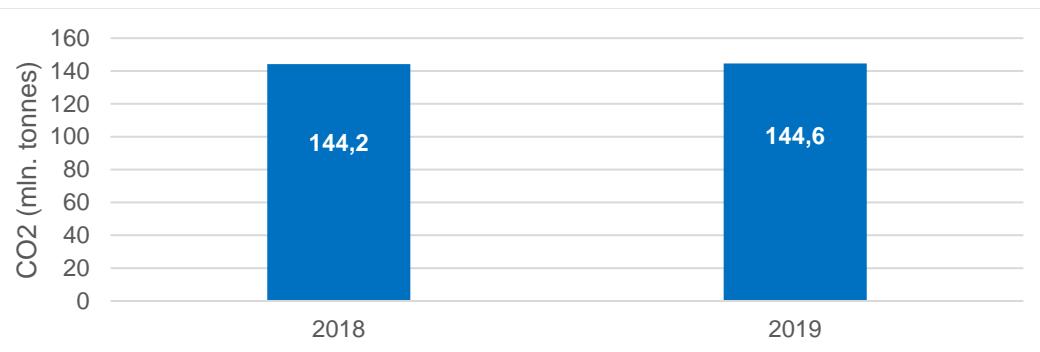
task to accredit the verifiers. This should be done before any steps in the EU MRV process as highlighted in Figure 1.2.

### Exploring maritime databases

Since 2018 shipping companies are obliged to report on their emissions produced. As previously discussed, three reporting periods were completed (i.e. for 2018, 2019 and 2020). Based on the information published, the Commission produced two EU MRV annual reports, one on the outcomes of the 2018 reporting cycle and one on the 2019 reporting cycle.<sup>10</sup> In the latter report, it was possible to compare the two reporting cycles and identify some developments and trends. The main trends identified are the following:<sup>11</sup>

- According to the 2<sup>nd</sup> Annual Report, around 144.6 million tonnes of CO<sub>2</sub> emissions occurred in the monitored fleet in 2019, which represents a slight increase compared to 144,2 million tonnes in 2018.<sup>12</sup> These statistics are very similar in 2019 compared to 2018, which shows consistency and robustness of the MRV reported data (in terms of CO<sub>2</sub> emissions). In other parameters, such as fuel consumption, fleet covered, number of shipping companies and average energy efficiency indicators, also no substantial differences have been observed.

**Figure 1.3 CO<sub>2</sub> emissions (in million tonnes)**



Source: SWD (2021), 228 final.

- The number of vessels reported under the EU MRV system was more or less the same in the respective reporting periods. In the three reporting periods respectively 12,173 (2018), 12,195 (2019) and 11,260 (2020) vessels reported on their emissions produced.<sup>13</sup> Two thirds of those vessels fly a non-EU flag. More than half of the vessels are owned by a company based in the EU. This means that the power of control<sup>14</sup> lies with an EU-based company.

<sup>10</sup> The report on the outcomes of the 2020 reporting cycle is still under preparation and is expected to be published in 2022.

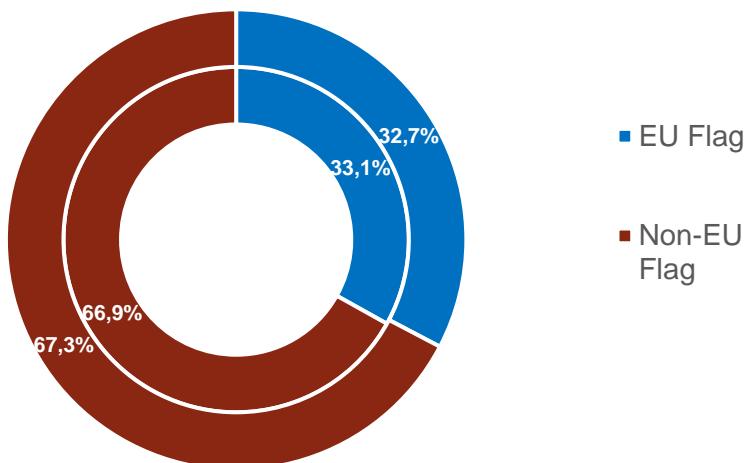
<sup>11</sup> SWD(2021) 228 final Commission Staff Working Document Full-length report *Accompanying the document* Report from the Commission 2020 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport.

<sup>12</sup> SWD (2020) 82 final Commission Staff Working Document Full-length report *Accompanying the document* Report from the Commission 2019 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport.

<sup>13</sup> <https://mrv.emsa.europa.eu/#public/emission-report>.

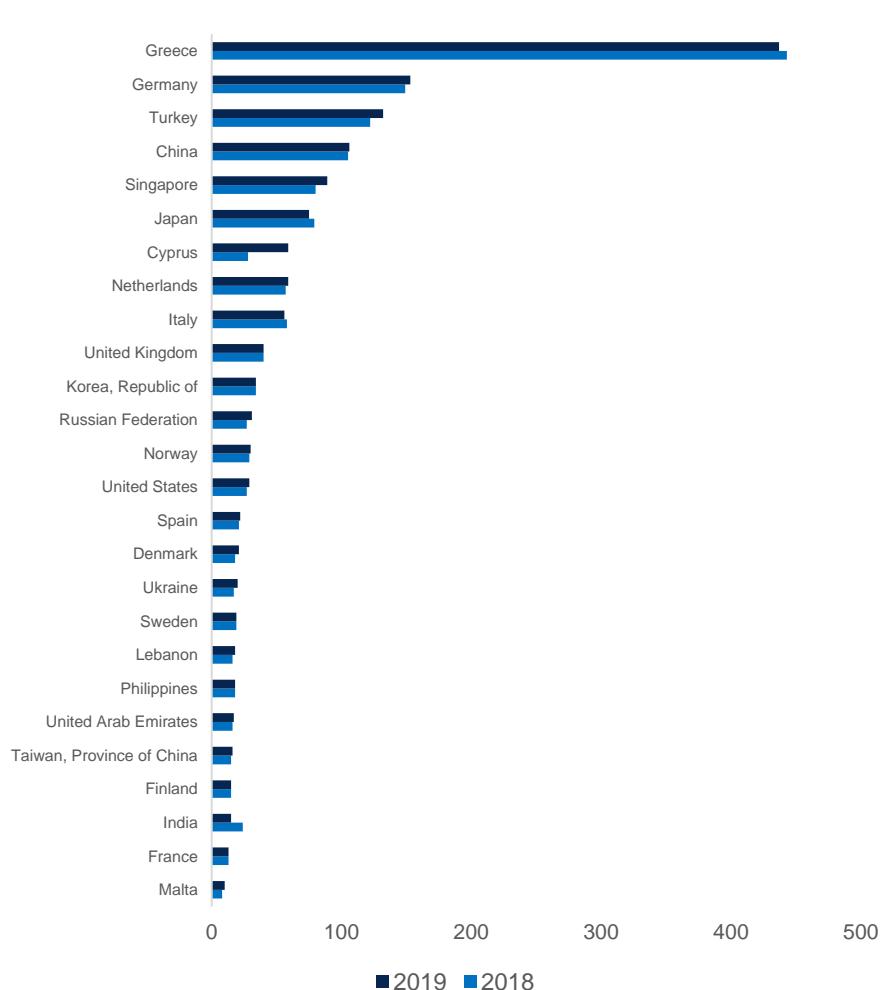
<sup>14</sup> Power of control refers to the company/person that can make actual decisions with regard to the vessel. If the power of control lies with a company active in the European Union, this means that decisions regarding the vessel are made by an EU company. The EU based company can decide to take measures to reduce CO<sub>2</sub> emissions produced by the ship.

**Figure 1.4 Shares of EU-flagged and non-EU-flagged ships (inner-circle 2018, outer-circle 2019)**



Source: SWD (2021), 228 final.

**Figure 1.5 Companies per country reporting under the EU MRV Regulation**



Source: SWD (2021), 228 final.

- In 2018, a total of 5,568 monitoring plans were voluntary registered in THETIS-MRV. In 2019, the number of plans in THETIS MRV increased by almost 40% to a total of 7,747 monitoring plans. The reason why more shipping companies voluntary registered their monitoring plan is difficult to say. Mostly, it seems that more shipping companies became acquainted with the EU MRV system or the THETIS-MRV database.
- Around one-fifth of the emissions reports was created after the deadline of 30 April. The share of late reports increased in the second cycle (19% in 2018 compared to 23% in 2019). Also in absolute terms, the number of late reports was higher in 2019 than in 2018 (2,935 in 2018 compared to 3,181 in 2019).
- The late submission of the reports also delayed the verification procedures. In 2018, 30% of the verification happened after the deadline of 30 April. In 2019, this was 35% of the verifications. This in turn impacted the submission to the European Commission. In 2018, in 45% of the cases the submission of the emissions report was too late. In 2019, in 42% of the cases, there was a late submission.
- As a consequence of the COVID-19 pandemic, not all port State authorities performed inspections for the EU MRV system. Nevertheless, about 58% of all vessels falling under the scope of the EU MRV Regulation were inspected in 2020, to check whether they fulfilled their 2019 obligations. In about 70% of the inspections, the DoC was onboard the vessel. In about 20% of the inspections, no DoC was found. In 10% of the inspection, no information on the DoC presence was included. However, this does not necessarily mean that the vessel is non-compliant. The ship might have had no relevant EEA calls in the previous reporting period and therefore does not have to carry on-board a document of compliance for that reporting period.<sup>15</sup> Based on the figures, it seems reasonable to conclude that the majority of vessels fulfil their obligations set out under the EU MRV system.

## 1.3 Reading guide

The specific requirements per type of actor are described in the following chapters. Chapter 2 focuses on the national accreditation bodies, Chapter 3 on the shipping companies and Chapter 4 on the verifiers. Chapter 5 describes the obligations of Member States in their capacity as a flag State, while Chapter 6 describes the obligation from a port State perspective. In Chapter 7 overarching findings, conclusions and recommendations are presented. The Annexes provide an overview of the applied methodology, sources and data collection tools used.

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<sup>15</sup> SWD (2021) 228 final Commission Staff Working Document Full-length report *Accompanying the document Report from the Commission 2020 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport*

## 2 National accreditation bodies

### 2.1 Introduction

A National Accreditation Body (NAB) is involved in testing the competence and impartiality of the assessment bodies (Chapter IV of the Delegated Regulation 2016/2072). For the EU MRV system, NABs need to accredit the verifier and regularly check the verifications process (according to Regulation 765/2008 and Regulation 2015/757).

The application phase started in 2016, which meant that organisations could apply to become a registered verifier for the EU MRV system. At the end of 2016, after publishing the two delegated acts, the Commission organised a seminar for all the NABs.<sup>16</sup> Subsequently, the accreditation bodies started with the accreditation assessments. The majority of verifiers applied for an accreditation in 2017. According to Delegated Regulation (2016/2072), the accreditation certificate is valid for a period of 5 years. This means that the majority of verifiers needs to apply for a renewal of their accreditation shortly (i.e. approximately spring 2022).

In the case the accreditation of the verifier is refused, verifiers do not have permission to provide verification services for the EU MRV system (please refer to chapter 4 for more information). Apart from the Regulation (Regulation EU 2015/757) and Delegated Regulation (2016/2072), a guidance/best practices document on how accreditation can be obtained was issued by the Commission during the initial phase of the Regulation.<sup>17</sup>

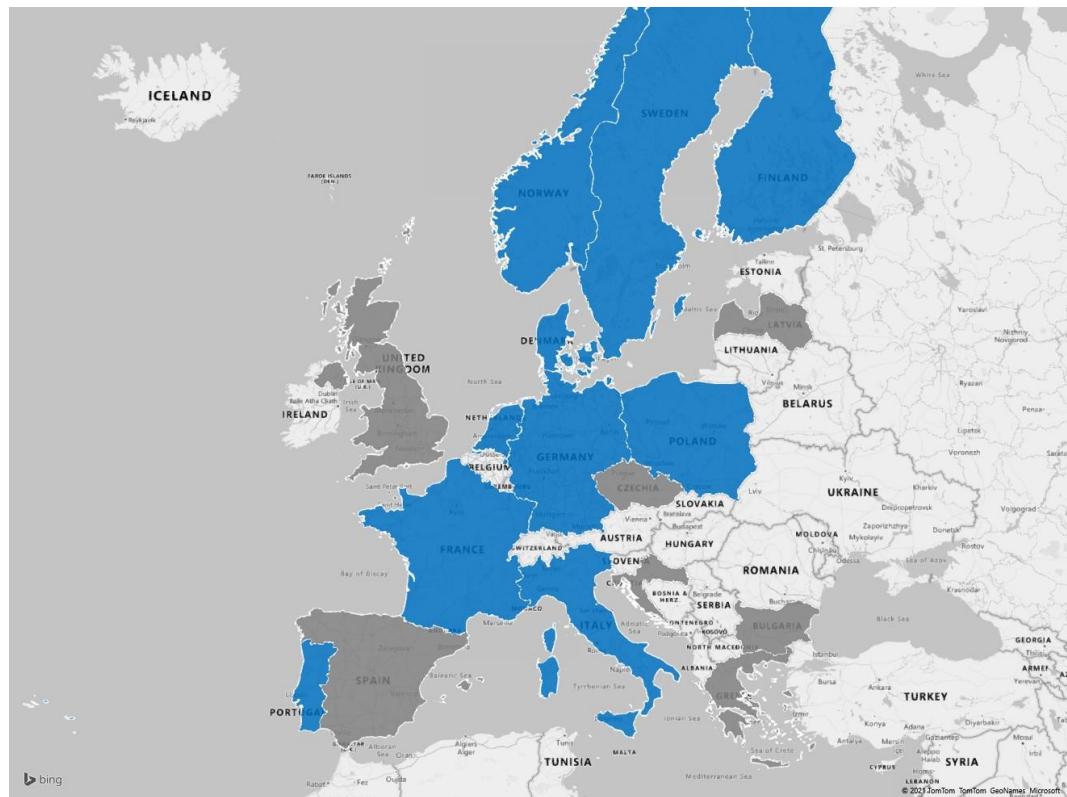
Based on EU MRV Regulation publication data from 2018, 2019 and 2020, a complete list of NABs involved in the EU MRV system has been derived (Annex III). All NABs were invited to participate in the study (17 in total) through a data collection sheet (Annex IV). In total, ten out of the seventeen organisations responded to the data collection sheet request. Two follow-up interviews were held. Figure 2.1 presents the geographical coverage of the NABs that responded to the survey.

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<sup>16</sup> Commission Delegated Regulation (EU) 2016/2071 and Commission Delegated Regulation (EU) 2016/2072 (see Annex I).

<sup>17</sup> European Commission (n.d.), Guidance/Best practices document on assessment of verifiers by National Accreditation Bodies in order to issue an accreditation certificate – How accreditation can be timely obtained during the initial phase under Regulation (EU) 2015/757.

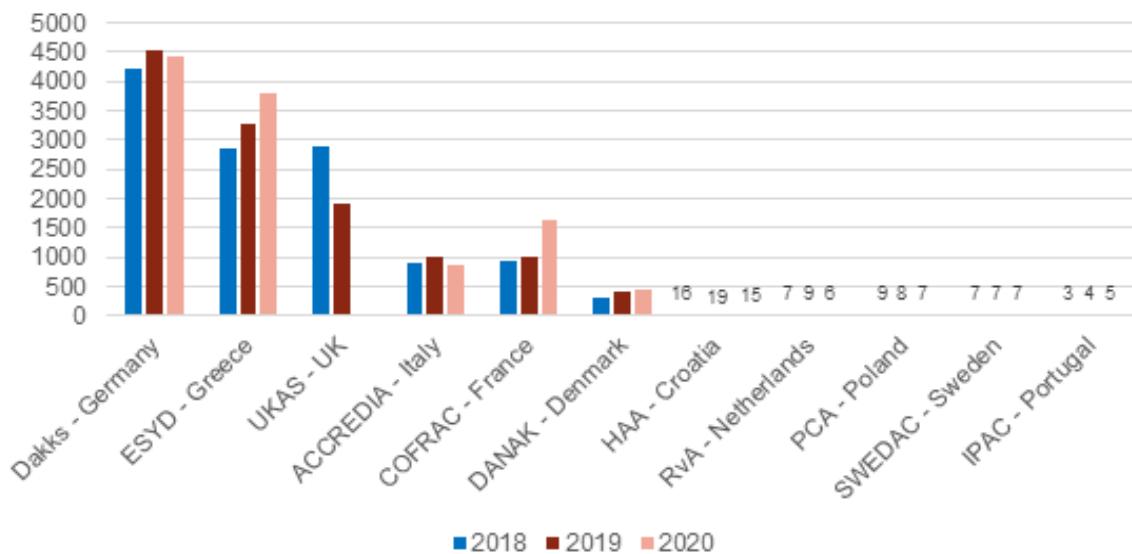
**Figure 2.1 Overview of the NABs that did (blue) and did not participate (grey) in the study**



In the Annual Report on CO<sub>2</sub> Emissions from Maritime Transport, information is provided on the number of emissions reports, disaggregated depending on which NAB accredited the verifier in charge of verifying these reports.<sup>18</sup> Figure 2.2 reveals that the majority of emissions reports are issued by verifiers accredited by six NABs. When it comes to the representativeness of the sample, the ten organisations that responded to the survey equals a participation rate of 56%. In terms of representativeness, they accredited the verifiers responsible for 66% of the emissions reports.

**Figure 2.2 Number of emissions reports (issued by verifiers) accredited by NABs**

<sup>18</sup> SWD (2020) 82 final & SWD (2021), 228 final.



Source: SWD (2020) 82 final & SWD (2021), 228 final.

Note: The United Kingdom Accreditation Service (UKAS) did not accredit emissions reports in 2020 due to the United Kingdom's withdrawal from the EU

The majority of NABs that responded to the data collection sheet is organised as a public organisation (7 out of 10). The others either function as a semi-public organisation, a private organisation or an association operating on a non-profit basis under the supervision of the national ministry.<sup>19</sup>

Over a four year period (2017 to 2020), 25 accreditations were granted and 14 accreditation applications were refused by NABs. The majority of the current verifiers (95%) were accredited during the first phase of the EU MRV implementation, i.e. between 2016 and 2018.<sup>20</sup> However, several accredited verifiers that participated in the study had to change NAB due to the United Kingdom's withdrawal from the EU. Their accreditation would otherwise have been invalidated (please refer to chapter 4 for more information). According to desk and field research, several verifiers that initially applied for accreditation did not proceed because of the perceived workload.

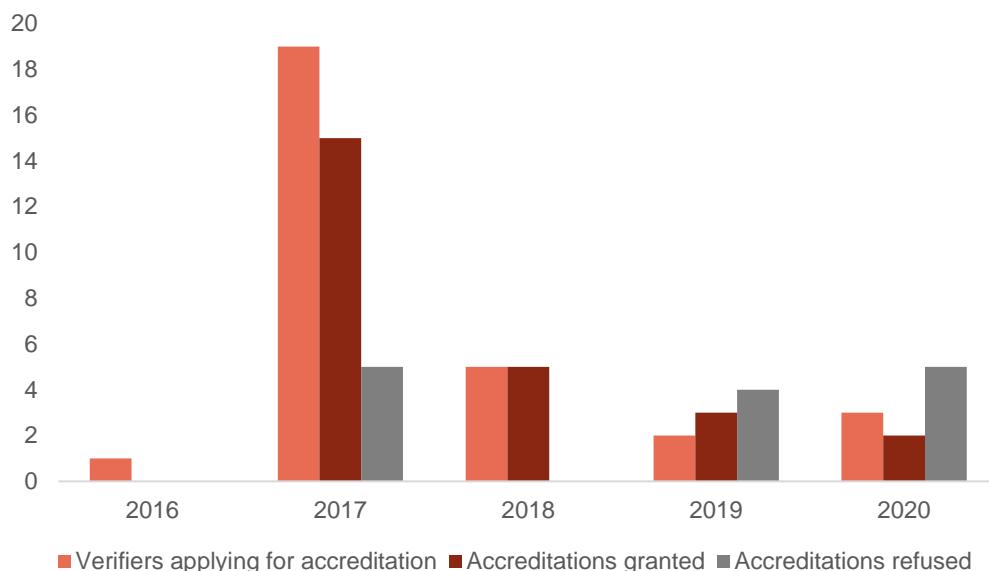
An overview of application and accreditation statistics is presented in Figure 2.3. The figure shows a clear application peak after the introduction of the EU MRV Regulation in 2017. There is also a delay in the accreditation process as the application and accreditation do not necessarily fall in the same year.<sup>21</sup>

<sup>19</sup> Based on question 1 of the data collection sheet for NABs

<sup>20</sup> Based on an interview with NAB

<sup>21</sup> Based on question 2 of the data collection sheet for NABs

**Figure 2.3 Application and accreditation statistics (2016 – 2020) from survey respondents<sup>22</sup>**



Source: respondents from data collection sheet (see Annex IV).

Several elements are important when discussing the role of the NABs. Section 2.2 describes the accreditation process differentiating three topics: methods, elements verified and sanctions. Section 2.3. describes the management of the accreditation process, whereas other aspects related to the management of the accreditation process are described in section 2.4. In section 2.5 the main views of the NABs on the EU MRV Regulation are presented and section 2.6 presents a summary of the main findings.

## 2.2 The accreditation process

The accreditation process must consist of the activities listed in Chapter IV of the Delegated Regulation (2016/2072) and ENISO/IEC 17011<sup>23</sup>, including on-site visits to the verifier's office and one or more witness audits (Article 36 of Delegated Regulation 2016/2072).

As part of this study, feedback from NABs and verifiers (as well as other actors) was collected on particular topics, methods, elements verified and sanctions, as presented in the data collection sheet (Annex IV). These data collection sheets are based upon the research questions in the Terms of Reference (ToR) (see Annex II).

### *The accreditation process – methods<sup>24</sup>*

The scope of the accreditation process covers (1) the [initial requests for accreditation](#) (2) the [annual assessment of monitoring plans](#) and the verification of emissions reports. Both accreditation processes will be briefly described in the following section.

#### **Initial accreditation**

Verifiers should be accredited based on Regulation 765/2008. Article 5 of this Regulation lays down the basic principles, however, does not provide specific details for the

<sup>22</sup> Note: Figure 2.3. presents information based on question 3 of the data collection sheet for NABs. This does not automatically result in an equal sum of accreditation being applied, granted and refused.

<sup>23</sup> ISO (2017), ISO/IEC 17011:2017 - Conformity assessment ([link](#)).

<sup>24</sup> Based on questions 17 and 18 of the data collection sheet for verifiers.

accreditation as part of the EU MRV system. More specific details on the accreditation process are laid down in the Delegated Regulation 2016/2072 (Chapter IV).

The following steps are taken for the *initial accreditation* (see article 36 Delegated Regulation 2016/2072):

- Establishment of regulations, manuals, procedures and internal documents for assessing the monitoring plans;
- Establishment of regulations, manuals, procedures and internal documents for assessing the emissions reports;
- Sending all those documents to the NAB for review;
- When accepted by the NAB, the verifier needs to confirm that procedures are in place. The NAB can pay the verifier a visit to check.

Based on the answers given, the initial accreditation seems to be merely an exchange of documentation where the verifier sends the requested information to the NAB and awaits a response. In case of questions, a discussion via phone or email follows. If the NAB is satisfied based on the provided documentation the verifier can receive its accreditation. Article 36 Delegated Regulation 2016/2072 states, in paragraph 1(b), that an on-site visit by the NABs assessment team is part of the accreditation process. Only one verifier explicitly mentioned having received an on-site visit to obtain accreditation. Others did not provide information on this. To what extent NABs indeed pay verifiers a visit is therefore hard to determine.

The duration of the accreditation process seems to differ per NAB. One verifier mentioned that the entire process for the initial accreditation took two months. Others highlighted that a period of six months up to a year was more common. They indicated this might be because it was the first-ever EU MRV accreditation. They hope that in the future the process could be shortened to a few months as this would lead to cost<sup>25</sup> and time savings.

### Annual surveillance

According to Article 38 of the EU MRV Delegated Regulation (2016/2072), the national accreditation body has to carry out the annual surveillance of each verifier to which an accreditation certificate was issued. This *annual surveillance* is organised differently than the initial accreditation. The following section will briefly explain the process from a stakeholder point of view.

Verifiers indicated that in an annual surveillance, the NAB visits the verifier. The NAB's head of office is the head of delegation. At the premises of the verifier, the delegation assesses whether the verifier is following the accredited procedures. In some cases, the delegation also joins a site visit when the auditing team of the verifier visits a shipping company to verify the monitoring plan and/or emissions report. Since the COVID-19 pandemic, the renewal audit is done online and the representative of the NAB witnesses online how the verification process is performed.

NABs have described how they assess whether the verifier has the competence to verify monitoring plans and emissions reports. Methods applied by the NABs are (article 36(1) of the Delegated Regulation (2016/2072):<sup>26</sup>

- Document review of the verifiers' process on competence criteria;

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<sup>25</sup> Not only do the verifiers need to ensure that their staff is available during the audit (i.e. they cannot work on other activities) the verifiers also seem to compensate for the costs made by the staff of the NAB.

<sup>26</sup> Based on question 3 of the data collection sheet for NABs.

- An **on-site assessment** to review a representative sample of the internal verification documentation and assess the implementation of the applicant's quality management system and the procedures or processes for verification.

The **document review** consists of evaluating whether the accreditation requirements are properly addressed. Various examples of document reviews were mentioned by NABs, such as: checking the verifier's management system, assessing compliance with the accreditation standard requirements, checking whether procedures are documented (where applicable) and records are appropriately maintained. The assessment of verifier's independent reviewers (including CVs, training records, examination certificates, etc.) is also part of the document review.

The **on-site assessment** involves the verification of the verifier's personnel competence and representativeness for the scope of accreditation. In practice the on-site assessment consists of:

- **Interviews** with a selection of the verifier's personnel on technical maritime background, and their knowledge on auditing data processes and regulatory requirements;
- Observation of a selection of the verifier's personnel and independent reviewers during a **witness assessment**, where performance and competence of the involved personnel are assessed. These witness audits are carried out each year for every verification body.<sup>27</sup>

### *The accreditation process – elements verified*

After describing the accreditation process methods, several specific elements of the accreditation process will be described. The main topics that are covered in this section are the risk assessment and assessment of impartiality and independence.

#### **Risk assessment<sup>28</sup>**

In article 15 of the EU MRV Regulation (2015/757) the verification procedures are stated. This means that the verifier shall identify potential risks related to the monitoring and reporting process, the different calculation steps and apply effective risk control methods. In practice, verifiers need to identify and analyse three types of risks (1) inherent risks; (2) control risks; (3) detection risks (see Article 11 of Delegated Regulation 2016/2072). Verifiers need to have a procedure in place that describes how they will assess these different risks.

Consequently, NABs were asked in the data collection sheet how they assess the risk assessment plans. According to the responses, the general way to assess a risk assessment plan is through the document review as well as during the on-site visit. The witness assessment is of particular importance. Respondents indicated that the following actions are performed:

- general review of the verifier's procedure from monitoring plans and emissions reports;
- review of sampled files;

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<sup>27</sup> The responses have a large variety in their level of detail. While several NABs only provide several sentence on their activities related to the accreditation process, others tend to provide quite elaborate insight in their processes.

<sup>28</sup> Based on question 4b of the data collection sheet for NABs.

- review of verifiers risk assessment procedure for monitoring plans and emissions reports correct data entry;
- evaluation of the reasonableness of the final output of the risk assessment;
- witness assessment of specific verifications.

### Assessment of impartiality and independence

One of the objectives of the accreditation process is to assess whether the verifier is organised in such a way that their objectivity, independence and impartiality are safeguarded. Article 30 of the Delegated Regulation (2016/2072) states that verifiers shall not carry out verification activities for a company that poses an unacceptable risk to their impartiality or in respect of which they have a conflict of interests. In article 30(3) an unacceptable risk occurs when the verifier provides:

- 1 consulting services to develop part of the monitoring and reporting process described in the monitoring plan, including the development of the monitoring methodology, drafting of the emissions report and drafting of the monitoring plan;
- 2 technical assistance to develop or maintain the system for monitoring and reporting emissions or other relevant information under Regulation (EU) 2015/757.

Analysing the survey responses and discussions with NABs shows how the impartiality and independence requirements and process are interpreted.<sup>29</sup> Impartiality and independence are mainly assessed through a combination of on-site visits, document reviews, interviews and a risk analysis. The risks of impartiality of the organisation and personnel involved are assessed, in addition to the measures taken to prevent conflicts of interest.

This assessment is often followed-up by checking samples of documentation on verifications or through the witness audit(s). Good practices and experiences from ISO 14065, ISO/IEC 17021 and additional public information can also be used.<sup>30</sup> An example of impartiality and independence assessment is provided below.

#### Example of impartiality and independence assessment

The requirements regarding impartiality and independence are assessed through assessing the documents of the personnel on-site. These documents have to confirm that there are no connections between the verifier's personnel and the respective client. Additionally, the impartiality requirements should be safeguarded through mechanisms established by verifiers, as well as their risk analysis. Also, information publicly available is evaluated via the verifier's webpage. During witness, the NAB also pays attention to impartiality and independence issues (think of the style of interviews).

According to the Delegated Regulation (2016/2072), verifiers are **not allowed** to adjust data, provide software to the shipping company, provide other services or have intertwined legal entities among other things. But in practice, verifiers **are able** to provide assistance during the reporting process, for example: providing a specific template. A verifier can provide consultancy services (such as software for calculating and preparing the reports) to other shipping companies as long as they do not verify the emissions report from their clients. When reviewing the process descriptions of NABs complementing with information obtained during discussions with several NABs, they indicate that the requirements for the impartiality and independence requirements for the verifier are sometimes difficult to assess.

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<sup>29</sup> Based on question 5 of the data collection sheet for NABs.

<sup>30</sup> ISO (2020), ISO 14065 - General principles and requirements for bodies validating and verifying environmental information ([link](#)).

Article 30 of Delegated Regulation 2016/2072 states the impartiality and independence requirements applicable to verifiers performing verifications under the EU MRV Regulation. The fulfilment of the obligations by verifiers as laid down in the EU MRV Regulation is sometimes questioned. According to the Regulation, the verifier needs to be independent to and impartial of the vessel it is verifying. NABs highlighted that for them, it is difficult to fully assess the independence and impartiality during the accreditation process, because some verifiers provide other vessels class related services in their capacity as a classification society as well. Based on the data collected, shipping companies choose their classification society as their verifier. Verifiers themselves claim that the fact that they are also the vessel's classification society does not lead to problems with regard to their independence and impartiality and it is actually permitted by current rules. They state that the activities are performed by two different teams that do not interact. For the study team, it was difficult to assess the impartiality and independence of these verifiers.

### *The accreditation process - sanctions*

Article 41 of the Delegated Regulation (2016/2072) states that the NAB may suspend or withdraw the accreditation of a verifier where the verifier does not meet the requirements of this Regulation.

### **Refusal of accreditation**

After going through the initial accreditation process, NABs assess whether the verifier accreditation will be granted or refused. According to the application and accreditation statistics, a total of fourteen accreditations were refused over a four-year period (presented in Figure 2.3). Several applicants applied for accreditation, but were refused accreditation because of several reasons. Resulting from the data collection sheet, the following (main) reasons are mentioned as a cause for refusing an application:<sup>31</sup>

- The NAB detected serious failures in the documentation or records system;
- The verifier was not able to establish a verification body structure and documentation system in accordance with Regulation (EU) 2015/757 and ISO 14065 (due to a lack of personnel and financial resources);
- The verifier has not maintained the required competence (e.g. changes in the organisation, personnel changes, no contracts for verification obtained, information lacking);
- The verifier provides consultancy services on the monitoring plan for the same vessels they are verifying.

In addition, being granted accreditation is not a guarantee of holding the accreditation until the next reassessment cycle. Discussions with NABs suggested there were cases where the accreditation of the verifier was terminated as they did not have any clients and used the accreditation as a marketing tool for other services. This phenomenon partly explains the substantial number of refused accreditations.

### **Non-compliance actions**

As a follow-up question on the initial refusal of a verifier's accreditation (see above), the NABs were asked which actions an accreditor could take in case an accredited verifier is no longer compliant. This section, therefore, refers to the annual surveillance of the NABs that are certified (in line with article 38 of the Delegated Regulation (2016/2072)).

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<sup>31</sup> Based on question 6 of the data collection sheet for NABs.

In general, in case of a non-conformity, the verifier shall implement adequate corrective and preventive actions to solve the issues raised. The NAB will assess the implementation of the actions on their correctness (called accreditation review).

In case these corrective and preventive actions are found to be insufficient, the accreditation can be suspended or, if critical issues are not solved, accreditation can be withdrawn. A couple of examples for suspension of the accreditation are:

#### **Examples for accreditation suspension**

- 1) Lack of plans, information or implementation evidence of the corrections/corrective actions;
- 2) Nonconformities found during the assessment in the surveillance processes that indicate an infringement by the accredited verifier related to integrity and impartiality;
- 3) Evidence obtained that indicates unfair behaviour of the accredited verifier;
- 4) Failure to meet the conditions for accreditation stipulated by the Contract with the accredited verifier;
- 5) Notification of temporary renouncement of accreditation by the verifier;
- 6) The verifier loses its competence to perform verification;
- 7) The verifier prevents performance of assessment or witnessing in the surveillance process as requested by the NAB.

Article 41(6) of the Delegated Regulation (2016/2072) states that decisions of a NAB to suspend or withdraw an accreditation shall be subject to appeal in accordance with the procedures established by Member States according to Article 5(5) of Regulation (EC) No 765/2008. NABs confirm that they have appeal procedures in place, which are in accordance with the national regulation. In general, NABs deal with this requirement by forming an appeal committee that will investigate the appeal on its merits. This group of persons is familiar with the accreditation standard but has no affiliation with the original assessment. The appeal committee ascertains the validity of the appeal. Based on their findings the committee can either submit the case for reconsideration or reject the appeal. In case the appeal is rejected, the verifier has the right to appeal to an administrative court.<sup>32</sup>

## **2.3 Managing the accreditation process**

Another part of the NABs responsibility is managing the accreditation process. In this section, we discuss several internal procedures for managing the accreditation process: selecting the assessment team, competence of assessors, technical experts and developing/ managing a database.

### **Requirements and selection of assessors**

Article 44 of Delegated Regulation (EU) 2016/2072 states the requirements of the assessment team. In short, this means that the assessor should have the competence to carry out the requirements of the harmonised standard reference (article 33), perform an accreditation assessment (assessment, annual surveillance, reassessment) (article 36 to 41) and should have knowledge of data and information auditing (article 24(2)(b)). Lead assessors shall also demonstrate competence to lead an assessment team and internal reviewers. Persons taking decisions on the granting, extending or renewing of accreditation shall have sufficient knowledge and experience to evaluate the accreditation.

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<sup>32</sup> Based on questions 7 and 8 of the data collection sheet for NABs.

First of all, the statistics collected for this study shows that NABs work with relatively small teams to perform the accreditation for the EU MRV Regulation. The team size is generally between one and four assessors according to the answers given. Although the teams are small the overall number of assessors have remained more or less constant between 2018 and 2020. Respondents indicated that in 2018 a total of fifteen assessors were available, while in 2020 their number increased slightly to seventeen.<sup>33</sup>

Following the requirements set in Article 44 of the Delegated Regulation (EU) 2016/2072, we asked which qualifications and/or competency are expected from assessors and how the selection procedure is structured. NABs describe the qualifications and/or competencies that are expected from the assessors as follows:

- Assessors need to demonstrate knowledge on accreditation criteria, including the accreditation standard and, in this particular case, the additional criteria applicable to the activities of the verifier as stipulated by legislation. The knowledge and skills could be obtained from educational background, technical background or training;
- For technical assessors and experts, it is also required to demonstrate knowledge in the activity subject to verification. For the EU MRV Regulation, this means knowledge in the field of maritime transport and/or emissions.

To select the assessment team, several companies make a distinction between technical assessors and an expert (lead assessor). The expert needs to have a higher education, specific knowledge in the maritime sector and be experienced with these types of assessment. For instance, interviews with assessors are held to assess their technical maritime background, auditing data processes and their way of meeting the regulatory requirements. There are also several procedures in place to select assessors. A couple of examples of these procedures are highlighted below.<sup>34</sup>

### **Examples of the process concerning the competence of assessors**

#### *Example 1 – structure of the competence process*

An NAB provides the following main steps concerning the competence process:

- Filling in a form to justify competencies (the NAB defines the criteria);
- Conduct an interview;
- Whose application form (first point about competencies) is validated by a committee;
- Finish training and do a test.

#### *Example 2 – competence process with a focus on training*

Another NAB outlines that assessors have to submit their qualification files/records. Subsequently, they undergo internal training on standards, regulations and accreditation processes. The training programme includes trainee assessments under the supervision of the lead / technical assessor. The nomination of assessors is done by the division head and assessor management department. Assessors have to submit a yearly training plan and will be monitored including regular on-site evaluation.

Finally, the assessment team is composed based on the scope of the accreditation, knowledge and skills of the assessors. There is a lead assessor appointed to the team. The assessors' team is communicated to the verifier.

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<sup>33</sup> Based on question 2 of the data collection sheet for NABs. Not all NABs included statistics in the data collection sheet, which means that the figures are (slightly) underestimated for Europe as a whole. The NABs did not substantiate between type of assessors.

<sup>34</sup> Based on questions 9 and 10 of the data collection sheet for NABs.

### Databases for managing the accreditation process

Article 46 of Delegated Regulation 2016/2072 requires setting up and managing a database of accredited verifiers. Nine out of ten NABs indicate that they have a database in place to keep track of the performance of accredited verifiers. The other respondent has not provided an answer.<sup>35</sup>

As a follow-up question, we asked which information is recorded in the database. According to the respondents, the following information is recorded:

- The overall number of accreditations;
- Specific verifier characteristics and characteristics of the accreditation certificate, such as the date of obtaining and validation of the accreditation, information of the administrative measures imposed on the verifier (if applicable), etc.

The information required in Article 46(1) of the Delegated Regulation (2016/2072) is contained in the NABs databases. These databases are publicly accessible on the websites of the different NABs, as required by Article 46(1) of the Delegated Regulation (2016/2072).

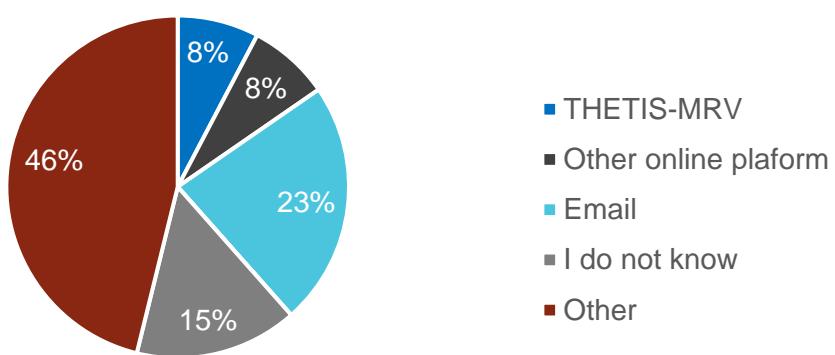
## 2.4 Communication and information exchange with the European Commission

Article 46(2) of the EU MRV Delegated Regulation (2016/2072) requires that any change in the status of verifiers shall be communicated to the Commission by using a relevant standardised template. Other than that, there are no procedures or requirements outlined in the Regulation and Delegated Regulation concerning the communication between NABs and the European Commission.

NABs confirmed that information is exchanged between the European Commission and NABs concerning the status of verifiers.<sup>36</sup> This is in line with requirements laid down in Article 46(2) of the Delegated Regulation (2016/2072). Apart from these requirements, NABs indicate that, in principle, there is limited direct exchange of information with the European Commission.

In addition, the mechanisms to communicate the status of the verifiers are also asked in the data collection sheet. The results thereof are presented in Figure 2.4.

**Figure 2.4 Communication means with the European Commission**



<sup>35</sup> Based on question 11 of the data collection sheet for NABs.

<sup>36</sup> Based on questions 12 and 13 of the data collection sheet for NABs.

Source: responses from question 12 of the data collection sheet (see Annex IV)

Other information exchange takes place because of training, meetings and online platforms, such as the EU ETS network groups. Over the past years, several meetings and workshops were organised by the European Commission together with the NABs.

NABs requested opportunities to discuss EU MRV issues in a formal and regular exchange of information with the European Commission.<sup>37</sup> In particular, NABs would appreciate clarity on how and to whom they should best communicate with the European Commission on the topics of:

- The template to be used as required in Article 46(2) of the Delegated Regulation (2017/2016);
- Procedure to provide information to the European Commission regarding the status of the verifier;
- In the EU MRV helpdesk, a NAB also indicated they would be willing to exchange ideas and information on enforcement and possibilities in THETIS-MRV.

## 2.5 The NABs views on the EU MRV system

Besides information on the accreditation process, the requirements and selection of assessors and communication tools used, the NABs were also asked what their main experiences and views are on the EU MRV Regulation. They provided their views on what works well and what could be improved after the implementation of the EU MRV Regulation. The main findings are summarised below:<sup>38</sup>

### *Elements of the EU MRV system that work well according to NABs*

NABs indicate that the EU MRV obligation has raised awareness of GHG emissions within shipping companies. Together with the availability of data in THETIS-MRV and the transparency thereof, this leads to better awareness of parties active in the shipping industry.

Another aspect raised by stakeholders was that, in their opinion, relatively similar verification process requirements are requested in the EU ETS system.

### *Elements of the EU MRV system that could be improved according to NABs*

From a more technical point of view, NABs raised potential concerns with some aspects of the verification process. According to some NABs, verifiers could further focus on discrepancies in fuel consumption figures, even if these fall within the uncertainty bandwidth of the respective monitoring method and are thus from a regulatory point of view valid.

Another area that might be improved is the requirements for verifier' site visits. The number of site visits conducted by verifiers is limited. This is partly due to the COVID-19 pandemic, where physical site visits were not possible. Some verifiers reverted to virtual site visits. NABs indicated – during an NABs meeting – that virtual site visits could indeed be an interesting approach to be further investigated by verifiers. In section 4.4., the process around site visits from a verifier point of view will be elaborated. The information collected shows site visits are not a standard practice. For the verifiers that performed site visits, they did not visit all their clients. A possible reason might be that the verifier is already familiar

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<sup>37</sup> Based on question 14 of the data collection sheet for NABs.

<sup>38</sup> Based on questions 15 and 16 of the data collection sheet for NABs.

with the procedures in place and therefore decides to be able to verify data from a distance. NABs indicate that the current regulation provides the possibility to waive site visits described in the Delegated Regulation 2016/2072 (Articles 6 and 16).

NABs explicitly mentioned their wish for more structured communication with the European Commission to provide feedback on the progress of the verification/ accreditation activities. Over the past years, several meetings and workshops were organised. However, on certain procedural aspects of the Regulation, the communication process could be further streamlined. Examples of these procedural aspects include the template to be used as required in Article 46(2) of the Delegated Regulation (2072/2016) and the status of the verifier.

A last point raised by NABs relates to the Article 46 of Delegated Regulation 2016/2072. This article states that each NAB should set-up and manage a database containing information on the accredited verifiers. In the data collection sheet, NABs indicated that especially Article 46(1)(b) is difficult to implement. This article states that the NAB needs to register per verifier all countries in which the verifier is active and performs verification activities. However, verifiers are often active globally in the maritime domain and thereby registering all countries in which the verifier is active is a time-consuming task.

## 2.6 Summary of the main findings

Based on the above analysis, the main findings regarding NABs are:

- In general, the accreditation process is working well and long-standing experience of NABs from other sectors is a clear benefit. Together with the 2008 EU framework (765/2008)<sup>39</sup> that sets out the requirements for accreditation and market surveillance relating to the marketing of products, the requirements for NABs are in general rather clear.
- Article 30 of Delegated Regulation 2016/2072 states the impartiality and independence requirements applicable to verifiers performing verifications under the EU MRV Regulation. According to the Regulation the verifier needs to be independent to and impartial of the vessel it is verifying. NABs highlighted that for them it is difficult to fully assess the independence and impartiality during the accreditation process, because some verifiers provide other vessels class related services in their capacity as a classification society as well. Based on the data collected, shipping companies choose their classification society as their verifier. Verifiers themselves claim that the fact that they are also the vessel's classification society does not lead to problems with regard to their independence and impartiality and it is actually permitted by current rules. They state that the activities are performed by two different teams that do not interact. For the study team, it was difficult to assess the impartiality and independence of these verifiers.
- According to some NABs, verifiers could further focus on discrepancies in fuel consumption figures, even if these fall within the uncertainty bandwidth of the respective monitoring method and are thus from a regulatory point of view valid.
- There are two measures a NAB can take in case of non-compliance or non-conformity. First, the NAB can issue a corrective and preventive action to solve the issue at hand, which goes together with an accreditation review. Second, in case of insufficient corrective and preventive actions, the accreditation of the verifier can be suspended or eventually withdrawn. The second measure occurred several times

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<sup>39</sup> Regulation (EC) No 765/2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products.

over the accreditation cycle. For instance, because of misuse of the accreditation (e.g. as a marketing tool).

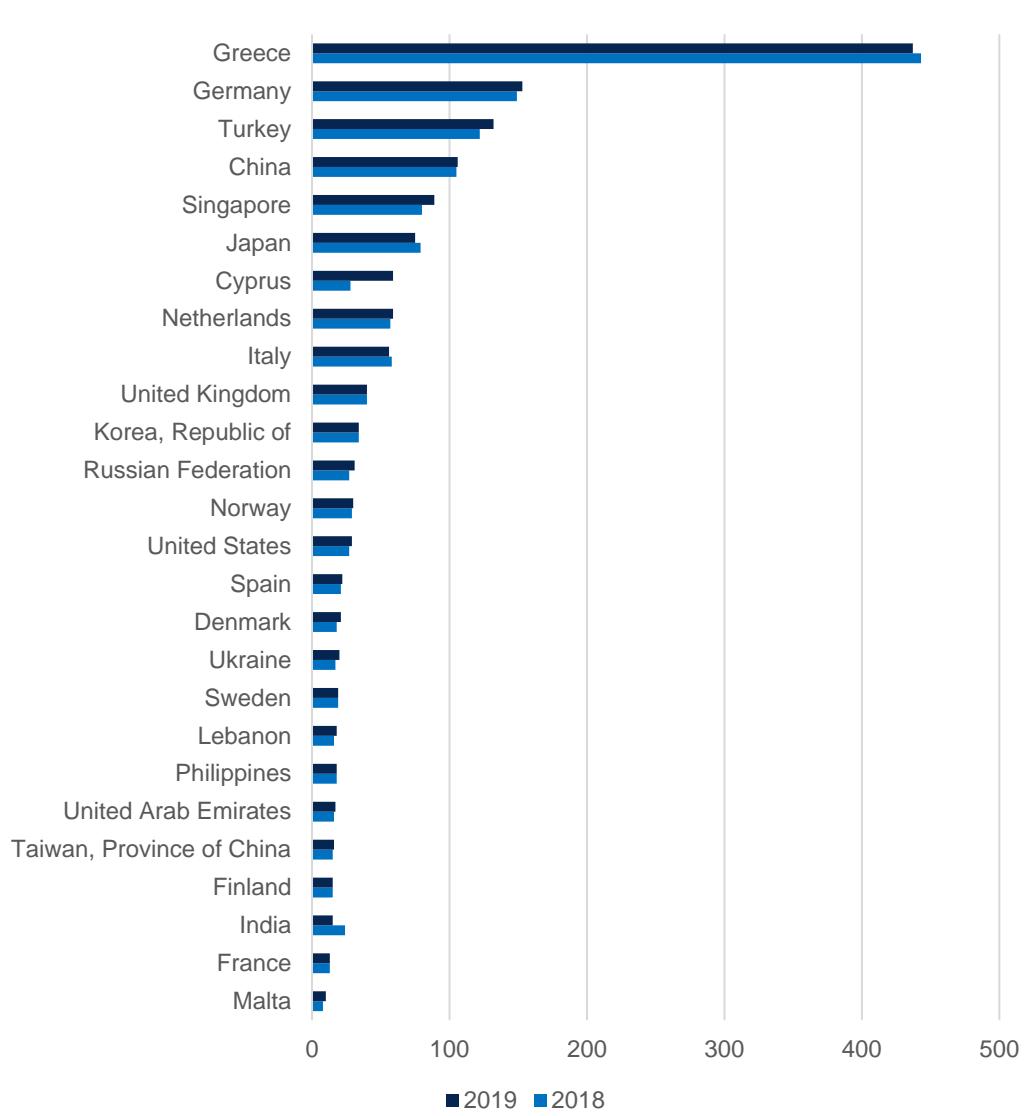
- Article 46(2) of the EU MRV Delegated Regulation (2016/2072) requires that any change in the status of verifiers shall be communicated to the Commission by using a relevant standardised template. Apart from these requirements, NABs indicated in the data collection sheets that (in principle) there is no direct structured exchange of information with the European Commission. At the same time, NABs requested opportunities to discuss EU MRV related topics and issues in a formal and regular exchange of information with the European Commission. In particular, NABs suggested to communicate with the European Commission on the topics of:
  - The template to be used as required in Article 46(2) of the Delegated Regulation (2072/2016);
  - Procedure to provide information to the European Commission regarding the status of the verifier;
  - In the EU MRV helpdesk, a NAB also indicated they would be willing to exchange ideas and information on enforcement and possibilities in THETIS-MRV.

## 3 Shipping companies

### 3.1 Introduction

Shipping companies are involved in the first three steps of the EU MRV process as shown in Figure 3.1. First, they need to establish a vessel's monitoring plan to measure the CO<sub>2</sub> emissions and set up the structure of submitting the monitoring plan to the verifier. Based upon the monitoring plan, the shipping company shall monitor and report on their emissions. The results need to be yearly reported in the emissions report, which is verified by a verifier. Once the verifier has approved the emissions report, a Document of Compliance (DoC) will be issued by the verifier which proves that the vessel is compliant with the requirements of the EU MRV Regulation. In case the shipping company does not obtain a DoC, the vessel concerned can be refused access to an EU port or receive a fine when detected (please refer to Chapter 6 for more information).

**Figure 3.1 Number of shipping companies per country that submitted an emissions report (not per flag)**

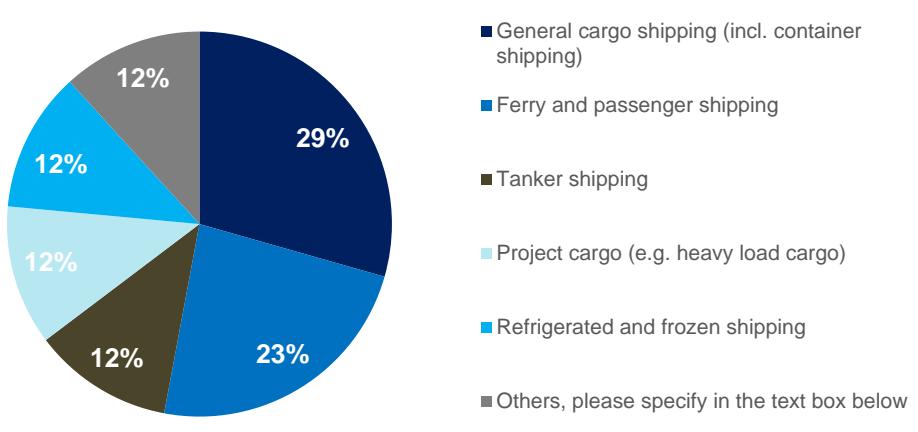


Source: European Commission (2021), publication information from 2018, 2019 and 2020.

Important to know is that the EU MRV requirements do not apply to all vessels active in Europe (as described in section 1.2.). By taking this into account, together with the 2018 and 2019 EMSA publication data, a representative sample of shipping companies was invited to contribute to the study. In the end, more than 80 companies (both compliant and non-compliant shipping companies) were invited to participate. In total, eleven shipping companies responded to our request and filled in the data collection sheet. In addition, two follow-up interviews were held with a large- and medium shipping company.

In total, eleven shipping companies responded, which brings the response rate to 15%. These companies are responsible for a fleet of over 700 vessels (2018: 701 vessels; 2019: 753 vessels) and roughly 70% of these vessels are falling within the scope of the EU MRV Regulation (2018: 478 vessels; 2019: 541 vessels). With an average fleet of almost 70 vessels, the responses represent both medium and large companies. To put these figures into perspective, the respondents cover roughly 5% of all vessels in the EU MRV publication data of 2019. This makes the statistical representativeness of the survey very low (compared to the number of vessels in the EU MRV publication data) to allow drawing strong conclusions from it. However, these respondents have provided an elaborate qualitative description of the procedures in place to comply with the EU MRV requirements. Among the respondents, a large diversity in the type of shipping operations exists (see Figure 3.2).

**Figure 3.2 Type of shipping operations**



Source: Based on question 2 of the data collection sheet for shipping companies.

Several elements are important when focussing on the role of the shipping companies within the EU MRV system. First, a shipping company needs to ensure that a monitoring plan is in place to measure their CO<sub>2</sub> emissions. The monitoring plan needs to be submitted to their verifier. Section 3.2 provides information from stakeholders on how this is done. In section 3.3, a description of the emissions reporting process is provided, while section 3.4 elaborates further on the verification elements of the EU MRV system. In section 3.5 the main views on the EU MRV system from a shipping company's perspective are presented. Section 3.6 presents a summary of the main findings.

## 3.2 Monitoring plan

The first step in the EU MRV process for shipping companies is to produce a monitoring plan (Article 6 of Regulation 2015/757). The plan will allow the company to (among others) measure their CO<sub>2</sub> emissions in a structured manner to be compliant with the EU MRV Regulation. In the monitoring plan, the shipping company needs to elaborate on their chosen fuel monitoring method. The monitoring plan will be reviewed by the verifier, which

can result in revisions. Finally, the monitoring plan will be annually checked on correctness. These aspects will be outlined in this section.

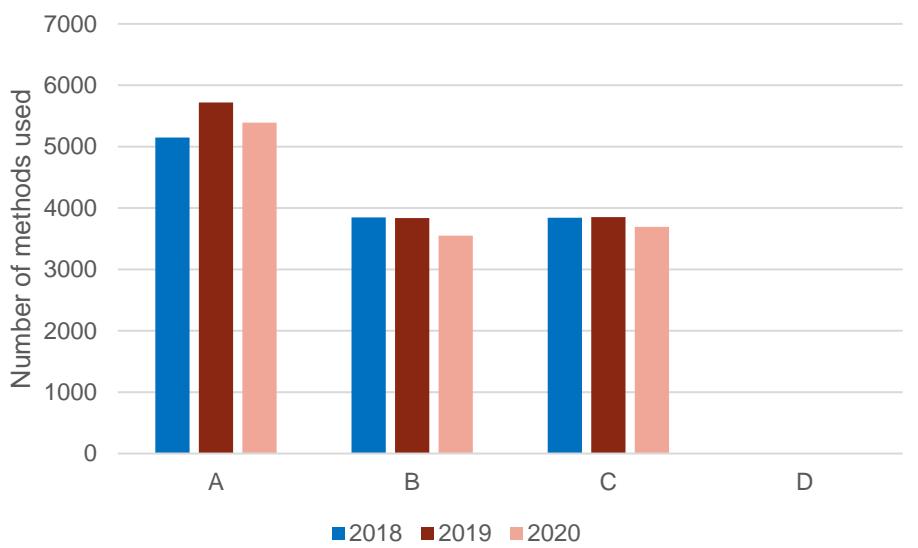
### Monitoring method: fuel monitoring methods

Article 5 of the EU MRV Regulation lays down the requirement for companies to determine the CO<sub>2</sub> emissions, for each of their vessels, in accordance with the methods set out in Annex I of the Regulation. The following methods can be used to calculate the actual fuel consumption for each voyage:

- Method A: Bunker Delivery Notes (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<sub>2</sub> emissions measurement.

The Regulation (2015/757) leaves the choice for the monitoring method with the shipping company. Under the Regulation, it is possible to use multiple monitoring methods. Any combination of these methods, once assessed by the verifier, may be used if it enhances the overall accuracy of the measurement (Annex I). The final choice needs to be laid down in the monitoring plan and be approved by the verifier. In the emissions report, the results of the annual emissions should be presented using the method/methods included in the monitoring plan.

**Figure 3.3 Overview of applied monitoring methods across entire fleet, per year**



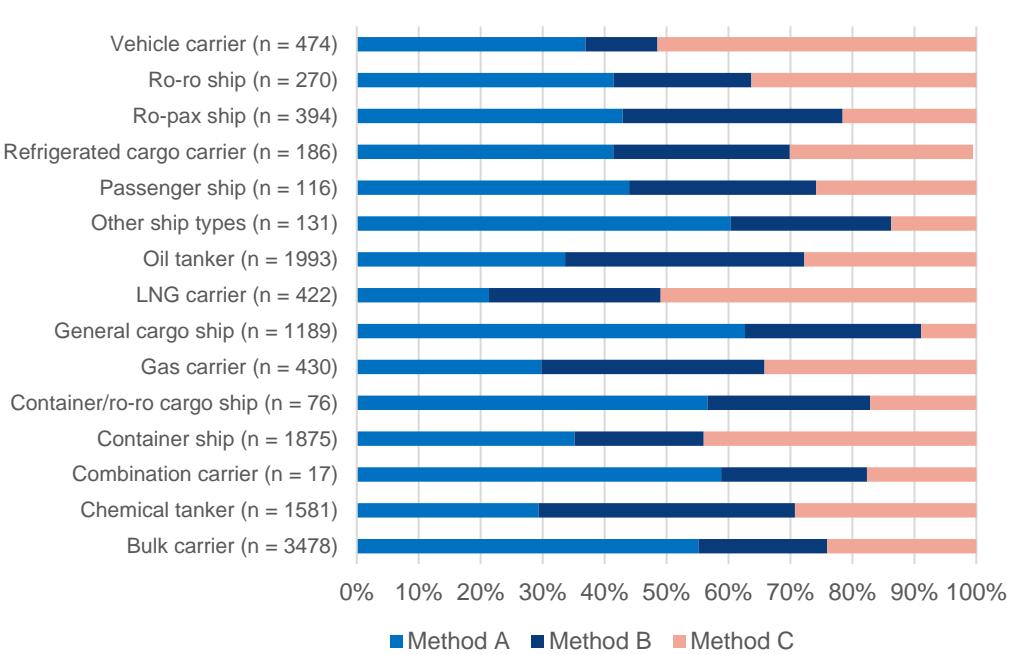
Source: EMSA (2021), THETIS-MRV ([link](#)) (modified by author).

An overview of the monitoring methods chosen and applied by the entire fleet is presented in Figure 3.3. These statistics reveal that in principle shipping companies do not apply monitoring method D. Over a three-year period, only three emissions reports were submitted based on monitoring method D. In 2020, the largest part of the fleet uses monitoring plan A (43%), whereas method B and C are used in respectively 28% and 29% of the cases. While the yearly development of monitoring methods used by the entire fleet is rather minimal, there is quite some fluctuation on what monitoring methods is used per ship type. Figure 3.4 provides an overview of the monitoring method per ship type in 2020.

Comparing the EU MRV publication data with the results from the survey shows that in our (small) sample (n = 14) the monitoring method C is slightly overrepresented compared to all the applied monitoring methods (43% uses method C whereas this method is used in

29% according to EMSA data). Consequently, there is a slight underrepresentation of monitoring methods A and B in the study compared to yearly EMSA data.

**Figure 3.4 Overview of applied monitoring methods by the entire fleet, per ship type in 2020**



Source: EMSA (2021), THETIS-MRV ([link](#)) (modified by author).

Note: n (between brackets) is equal to the number of vessels.

Subsequently, we asked shipping companies about their main reason(s) for choosing a particular monitoring method. They indicate that the following parameters were the reason for their chosen monitoring method:

**Figure 3.5 Reasons for choosing a monitoring method**

Method A	Method B	Method C
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Availability of measuring equipment's on board of the vessel	<input type="checkbox"/> Availability of measuring equipment's on board of the vessel	<input type="checkbox"/> Availability of measuring equipment on board
<input type="checkbox"/> Uniformity of the method across all vessels in the fleet;	<input type="checkbox"/>	<input type="checkbox"/> Operability of the method
		<input type="checkbox"/> Accuracy of the monitoring method
		<input type="checkbox"/> Reduction of administrative workload;
		<input type="checkbox"/> Direct insight in the energy efficiency performance of the vessel

Source: responses from question 5 of the data collection sheet (see Annex V).

There are various reasons for choosing a specific monitoring method. Respondents that opted for method A indicated that this was solely because of the availability of measuring equipment onboard the vessel. Method B is chosen because of that same reason. Although, respondents indicated that the uniformity of the method across all vessels in the fleet was also a reason for them to choose method B. The main reasons for choosing method C were the availability of the equipment, but also the operability and accuracy of the method. Another aspect mentioned during the stakeholder consultation was the reduction of

administrative workload (as there is little manual intervention needed with method C) and direct insight into the energy performance of the vessel.

In short, the methodology presented above shows that the availability of actual hardware is a rather important reason for choosing their monitoring method. On top of that, method C was chosen because of reducing the administrative workload and providing direct insights into the energy performance of the vessel.

### **Revisions of the monitoring plan**

Based upon Article 7, shipping companies shall regularly, at least annually, check whether the monitoring methodology can be improved.

The majority of shipping companies (9 out of 11) indicated that they perform annual checks on the monitoring plan. Using an example, the process of performing regular (annual) checks on the monitoring is described.

#### **Example of how annual checks are performed**

The organisation creates a company- and vessel specific file. The company file contains information on all the procedures, while the vessel file contains all the vessel detail (e.g. vessel characteristics and emission sources). The vessel file is annually reviewed as part of the verification process and in case of flag changes, transfer of class, changes of ownership. The company file is also reviewed annually.

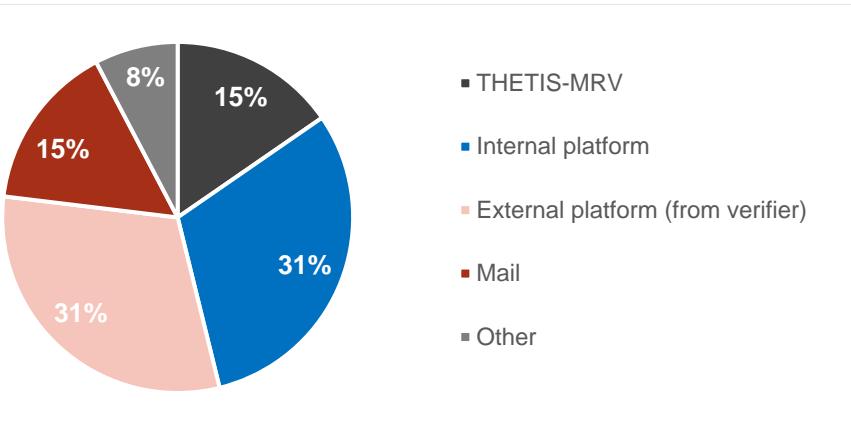
The main focus of the annual checks is the verification of monitored data by employees in the office. One shipping company specifically mentions the annual review of applied sensors onboard the vessel.

In case the monitoring plan is revised, these revisions are recorded in the revision record (in line with Article 6(j) of the Regulation 2015/757) and this is brought to the attention of the verifier.

### **Documentation of annual checks of the monitoring plan**

After the potential revisions of the monitoring plan are adjusted properly, the annual checks of the monitoring plan are documented. The majority of shipping companies document these (annual) checks on the monitoring plan by either an internal, or external platform. An overview of the documentation tools is presented in Figure 3.6.<sup>40</sup>

**Figure 3.6 Documentation tools to monitor the monitoring plan**



Source: Based on question 14 of the data collection sheet for shipping companies.

<sup>40</sup> Based on question 8 of the data collection sheet for shipping companies.

In the THETIS-MRV application, there is both a mandatory and a voluntary module available. Via the mandatory module, shipping companies generate emissions reports. After approval of the document, verifiers will issue a DoC in the system. Through the voluntary module, companies can draft their monitoring plans and the application makes the monitoring plan available for the assessment of the verifier. Although according to EMSA the voluntary module is used by approximately 15% of the shipping companies, the low response rate to the questionnaire, makes our sample not representative to draw conclusions. <sup>41</sup>

In the category 'other', shipping companies also mention the following documentation tools:

- A standardized template (the revision record);
- Cloud-based systems (such as SharePoint, Fleet Management System);
- Email notifications of the particular vessel.

### 3.3 Emissions report

The second step in the EU MRV process for shipping companies is to report on their emissions. The reporting procedure consists of submission of requested data to the verifier and reporting in the THETIS-MRV database. These aspects will be outlined in this section.

#### Submission process of requested data

This section briefly describes the submission process of requested data and the workload for employees to fulfil the EU MRV requirements.

For the record, all respondents in the sample indicated that they were able to timely submit the requested data for the emissions report in 2018 or 2019. As a consequence, these shipping companies provided limited information on the ability to timely submit the requested data.

#### Example of the submission of requested data

*Fuel monitoring method = method C;*

*Shipping company size = medium (between 8 and 49 vessels);*

The process is organised as follows:

- 1) Disaggregated data is received every three seconds through an automated system;
- 2) The data contains information on the travel ID, date of departure and arrival, port, cargo, DWT, distance, duration, fuel consumption, efficiency, CO<sub>2</sub>, EEOI, To EU port, From EU port and draft;
- 3) Aggregated data (e.g. data accuracy, verifier name, monitoring method, fuel consumption, CO<sub>2</sub> consumption between ports) is automatically produced into an emissions report;
- 4) The emissions report is distributed to the verifier. Other documents, such as the calibration certificate of the flow meters and the bill of lading are also provided to the verifier;
- 5) The emissions report is reviewed by the verifier.

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<sup>41</sup> <http://www.emsa.europa.eu/thetis-mrv.html>.

Employees of shipping companies spend a relatively small part of their available time per year on fulfilling the EU MRV requirements. Besides the tasks related to the EU MRV Regulation, they perform many other tasks. The person responsible might very well also be responsible for other reporting obligations or even being involved in the actual operations of a vessel. Interviewees indicated that in some, often smaller companies, the captain or the engineer is the one who needs to perform the reporting obligation. The consequence is that the person is not always aware of all the obligations that need to be fulfilled. The fact that the EU MRV reporting is not part of the core activities of the personnel hampers that the emissions reporting processes become an integrated part of their routine.

### Reporting in the THETIS-MRV database

Article 12 of the Regulation (2015/757) states that the emissions report shall be submitted using automated systems. The THETIS-MRV database plays a central role by facilitating the automated upload of emissions reports and thereby facilitating the reporting process of the EU MRV requirements. Through a question in the data collection sheet, we asked shipping companies whether the exchange of information via this platform is adequate to communicate on any revisions, corrections, conclusions or recommendations.<sup>42</sup> We also asked to identify (if any) potential points of improvement.

Shipping companies indicate that the THETIS-MRV could be made more user-friendly. With several relatively 'simple' modifications, a substantial part of the (administrative) burden from shipping companies could be relieved. Several of the recurring elements will be briefly described, but it should be noted that several of these aspects are also currently being developed by EMSA or are planned to be developed in the future. In addition, there are many tutorial videos available, to which specific reference will be made.<sup>43</sup> We will describe the reflection of the sector as well as the developments (in progress) by EMSA.

Stakeholders indicated that the submission of emissions reports to the verifier is done on a one-by-one basis. Shipping companies (especially the ones with a large fleet) indicate that bulk uploading and downloading of emissions reports instead of single vessel uploads would save substantial time. In the tutorial video 'C22 Upload data through XML files' the submission in XML format, but also the uploading of multiple documents is being explained. By the end of 2021 EMSA also responded to the bulk downloading request and made bulk downloading (up to 40 files) possible.

According to stakeholders, the emission sources (in other words engine(s)) are not automatically filled in every year. This means that the emission sources need to be manually added to the THETIS database for each vessel. The same holds for the management data, which are not automatically added to the vessel specifics. In practice, several shipping companies are registering this information manually per vessel. However, THETIS does provide the functionality of automatic loading of these particulars into the emissions report via the Monitoring Plan. The tutorial video 'C19 Emission Report Content' provides further explanation on how the emission sources can be loaded from the monitoring plan.<sup>44</sup>

Stakeholders indicate that before a 'new' file can be uploaded in THETIS, the first file needs to be deleted, while the option of overwriting files would be more intuitive. During the consultation, stakeholders requested the possibility to overwrite a report in THETIS. During a workshop with EMSA, this aspect of THETIS has been thoroughly discussed. Main line of thinking is that, when providing the option to overwrite reports, there might arise negative side effects (such as many uploads from users). Also, from a system point of view, building this option in is very complex. For instance, what programming rules should be applied in

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<sup>42</sup> Based on questions 14 and 15 of the data collection sheet for shipping companies.

<sup>43</sup> <http://emsu.europa.eu/thetis-mrv/thetis-mrv-videos/thetis-mrv-companies.html>.

<sup>44</sup> EMSA (2018), C22 Upload data through XML ([link](#)).

the system when information is missing in the new uploaded file? Does this mean that the previously registered information is to stay untouched, or does it mean it should be deleted?.

From a technical point of view, shipping companies indicated that the option to submit an emissions report in XLS format instead of the XML files would be preferred. The XLS format is probably (better) aligned with the shipping company's internal process. EMSA responded to this request by thoroughly explaining, in a tutorial video 'C22 Upload data through XML files', the submission of data in XML format.<sup>45</sup>

There is a request from shipping companies to change contact persons themselves. Currently, the permission lies with EMSA. This has been one of the discussion points in a workshop with EMSA. They indicated that this functionality of THETIS is included in the development plan. They aim to have an administrator per company that is able to change the role of the persons.

### 3.4 The shipping companies' views on the EU MRV system

Besides the specific questions related to the monitoring plan and the emissions report, shipping companies were also asked which elements of the EU MRV system, in their opinion, work well and which do not. The main findings are summarised below.<sup>46</sup>

#### *Elements of the EU MRV system that work well according to shipping companies*

The most valuable outcome identified by shipping companies is that systematically measuring and documenting emissions provides a coherent baseline of environmental performance. Consequently, companies gain knowledge and insights on their fleet emissions. These insights even led to easier and simplified communication with their clients (shippers, forwarders, etc). Shipping companies can transfer emissions-related information to their client, which raises awareness on the receiving end of the supply chain. Overall, the collection and presentation of data (voyage data, transport and fuel consumption) into one unified and transparent platform (THETIS-MRV) is experienced as a positive step.

At the start of the EU MRV system, there was some difficulty streamlining internal processes to comply with the EU MRV Regulation. External communication and expectations from the verifier were also experienced as a challenge. After several years, the industry became more familiar with the requirements and now indicates the verification process of the monitoring plan and emissions report has been further streamlined. Several shipping companies indicated that the submission and verification process of the monitoring plan by the verifier is seen as something that works well.

#### *Elements of the EU MRV system that could be improved according to shipping companies*

The European Commission and IMO have both adopted a system to monitor the environmental performance of the shipping fleet. The European Commission first established the EU MRV Regulation followed by the IMO introducing IMO Data Collection System (DCS). During the consultation of shipping companies it became clear that having two systems in place is sometimes confusing for them, especially as the two legal regimes do differ on several elements. In order to address these differences, the Commission

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<sup>45</sup> EMSA (2018), C22 Upload data through XML ([link](#)).

<sup>46</sup> Based on questions 16 and 17 of the data collection sheet for shipping.

proposed to amend the EU MRV Regulation 2015/75 in which some of the issues raised have been addressed.<sup>47</sup>

The European Commission indicated that one of the lessons learned in the annual report 2019 on CO<sub>2</sub> emissions is to update the THETIS-MRV software to include warning and error messages when companies are entering seemingly incorrect or incomplete data.<sup>48</sup> While several adjustments were made recently, shipping companies identified several elements that could be further improved. In section 3.5. and chapter 7 these findings will be discussed in detail.

There is also feedback received from companies regarding the interpreting of the scope, definitions and interpretation of the regulation, which remains difficult for them at times. For example, the definition of a voyage: any movement of a ship that originates from or terminates in a port of call and that serves the purpose of transporting passengers or cargo for commercial purposes – can result in inconsistencies considering the intent of the EU MRV Regulation. In the offshore industry, for example, cargo is loaded/unloaded onto an offshore platform, which is - under this definition - not defined as a voyage. Fuel is of course consumed and cargo is transported. Similar topics (e.g. ship types, definition of voyage and type of operation) related to the scope of the Regulation have also been raised and answered via the EU MRV helpdesk.<sup>49</sup> In addition, there is a section on Frequently Asked Questions (FAQ) included in the website.

Finally, companies indicated the need for clear communication and guidance material. During the stakeholder consultation, they have mentioned the following aspects:

- Request for guidance on how to deal with hybrid fuels (e.g. agreement on emission factors, guidance on how to include these in the monitoring plan and emissions reports). This could lead to issues in the future, with the number of vessels (partly) sailing on alternative fuels increasing in the future. So does the need for guidance on how to deal with this. This particular topic has also been raised two times in the EU MRV helpdesk;<sup>50</sup>
- In general, stakeholders suggested that they would like to explore the options to share insights on the different monitoring methods with other organisations. This would give them better understanding on the usability of the different monitoring methods for their fleet and organisation.

### 3.5 Summary of the main findings

Based on the above analysis, the main findings regarding shipping companies are:

- Knowledge of the EU MRV requirements from a shipping company's and verifier's perspective has been developing for a couple of years. Both shipping companies and verifiers needed to learn, experience and further develop their procedures. Methods and processes have now matured, which makes implementation manageable. This is also reflected in the constant emission figures over time and the relatively small percentage of clear emission outliers nowadays.<sup>51</sup>

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<sup>47</sup> COM(2019) 38 final Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2015/757 in order to take appropriate account of the global data collection system for ship fuel oil consumption data.

<sup>48</sup> European Commission (2020), 2019 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport.

<sup>49</sup> In total, 4 organisations have raised – during the period Dec'20 and Sept '21 – questions regarding the scope of the EU MRV Regulation.

<sup>50</sup> In total, 2 organisations have raised – during the period Dec'20 and Sept '21 – questions regarding the use of alternative fuels and the application of the EU MRV Regulation.

<sup>51</sup> The European Commission provided for the purpose of this study a list of 95 outliers.

- Despite this positive development over the last couple of years, several companies indicated that the activities related to the EU MRV Regulation are not yet considered within the core tasks of the shipping company's personnel (this especially holds for smaller companies). In practice, office personnel of shipping companies interact only periodically with the requirements under the EU MRV Regulation. The fact that the EU MRV reporting is not part of the core activities of the personnel is a sign of its limited administrative burden, though it might hamper that the emissions reporting processes become an integrated part of their routine.
- During the stakeholder consultation, shipping companies indicated that there are elements of the THETIS-MRV that could be made more user-friendly. Several of these elements are currently being developed or are expected to be developed in the future. Other elements are not directly related to functionalities of THETIS-MRV, but rather relate to better communication on the existence of these functionalities. Today, the helpdesk and FAQ<sup>52</sup> are available to support users of the database and in which specific elements and issues can be brought forward by users and interaction can take place.

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<sup>52</sup> <https://mrv.emsa.europa.eu/#public/faq>.

## 4 Verifiers

### 4.1 Introduction

Verifiers play a crucial role in the EU MRV process as (1) they need to verify the content of the monitoring plan prepared by the shipping company for each specific vessel falling within the scope of the EU MRV Regulation and (2) they need to verify the content of the emissions reports submitted each year (Article 13). Based on the verified emissions report the verifier issues a DoC, which a vessel needs to enter an EU port. In case the verifier does not approve the emissions report, the vessel cannot receive a DoC and exposes itself to sanctions (please refer to chapters 5 and 6 for more information).

A verifier is defined as '*a legal entity carrying out verification activities which are accredited by a national accreditation body pursuant to Regulation (EC) No 765/2008 and this Regulation*' (Article 3(f) of the EU MRV Regulation). Before being able to perform verifying tasks as part of the EU MRV Regulation, the potential verifier needs to follow an accreditation process. Since the entry into force of the EU MRV Regulation, the number of accredited verifiers has decreased. In 2018, 23 verifiers were active, in 2019 the number of available verifiers was 21 verifiers and in 2020 shipping companies could choose from 19 available verifiers.<sup>53</sup> For an overview of verifiers active in EU MRV system, please refer to Annex III.

The verifiers are either classification societies or environmental verification companies. The share of classification societies has increased over the last three years as the number of environmental verification companies decreased. In 2019, the share of classification societies was 52% (who verified the performance of 2018), while in 2021 this share increased to 63% (who verified the performance of 2020). The classification societies also verified the majority of the emission reports. In 2019, 82% of all emission reports verified, were verified by one of the classification societies. In 2021, the share increased and 86% of all emission reports was verified by classification societies.<sup>54</sup>

Based on the 2018 and 2019 overviews prepared by EMSA as part of THETIS-MRV, all verifiers included in those overviews were invited to participate in the study. In the end, six verifiers filled in the data collection sheet. These were: Bureau Veritas, China Classification Society, Der Norske Veritas (DNV), Nippon Kaiji Kyokai, Registro Italiano Navale, (RINA) and Verifavia. Follow-up interviews were held with Bureau Veritas, Nippon Kaiji Kyokai and Verifavia.

Jointly the six verifiers who responded to the data collection sheet issued around 60% of all DoCs issued in both 2019 and 2020.<sup>55</sup> Therefore, the answers presented in the analysis can be considered representative for this stakeholder group.

Concerning the EU MRV system, several elements are of importance when discussing the role of the verifiers. Section 4.2 describes the activities of verifiers with regard to the monitoring plan, while section 4.3 elaborates on the emissions report and subsequent verification report. The main topic of section 4.4 is the site visits conducted as part of the verification process. In section 4.5 the main views of the verifiers on the EU MRV system are presented. Section 4.6 presents a summary of the main findings.

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<sup>53</sup> Based on public information on the EMSA website: <https://mrv.emsa.europa.eu/#public/emission-report>.

<sup>54</sup> Based on public information on the EMSA website: <https://mrv.emsa.europa.eu/#public/emission-report>.

<sup>55</sup> In 2019, the six verifiers verified 7,629. In 2020, they verified 7,802 vessels.

## 4.2 The monitoring plan

Based on Article 13(1) of the EU MRV Regulation the verifier needs to verify whether the monitoring plan as prepared by the shipping company for a specific vessel complies with the requirements laid down in Articles 6 and 7 of the Regulation. Based on Article 6, this means that information on, amongst others, the ship (Article 6(3)(a)), the CO<sub>2</sub> sources (Article 6(3)(c)) and the procedures for monitoring fuel consumption (Article 6(3)(f)) is provided to and verified by the verifier. Based on Article 7, the shipping company is obliged to inform the verifier of any changes in the monitoring plan.

The format in which information should be submitted is laid down in the legislation (Article 6(5) and Commission Implementing Regulation (EU) 2016/1927). Which tools and methods are used to submit the information to the verifier is left open as the legislation states: '*For the purpose of assessing the monitoring plan, the verifier may resort to inquiry, document inspection, observation and any other audit technique deemed appropriate*'. As the section below shows verifiers do use a variety of tools and methods to collect the information.

### Transferring the information for the monitoring plan to the verifier<sup>56</sup>

In order to receive information on the specifics of the vessel, all verifiers who responded to the stakeholder consultation indicated that they have their own online portals or IT tools in place, which can be used by the shipping company to upload relevant data. In case questions arise based on the information provided, the majority of verifiers contact the shipping company by phone or email to clarify the information. About half of the verifiers also conduct site visits to collect the relevant information. One verifier highlighted that for each new vessel that needs to be verified, they carry out the site visit. The others who conduct site visits indicated that the decision is made on a case-by-case basis.<sup>57</sup> Site visits are discussed in more detail in section 4.4.

Besides information received from the shipping company and information collected during site visits, some verifiers also use other sources to collect the relevant information. Two verifiers indicated that they also use external databases to collect information on the vessel for verification purposes. Both mentioned using IHS Markit information, especially the Seaweb tool.<sup>58</sup> One verifier mentioned also using its own class information when assessing the monitoring plan. The additional information is used to verify (i.e. check) information submitted by the shipping company.

Although all verifiers use different methods to collect and receive relevant information regarding the vessel, some seem to be stricter in how they wish to receive the information than others. One verifier indicated that information can only be shared via their online portal. The portal is also used for follow-up questions. This specific verifier does not use any other tools to communicate with the shipping company. Another verifier acts oppositely and indicated that information can be shared based on what is most convenient for the client.

The current COVID-19 pandemic has influenced the information collection process. Several verifiers explicitly state that, before the pandemic, they offered more opportunities to receive the information. For instance, site visits were conducted and shipping companies could physically meet in the verifier's office to discuss the monitoring plan. Since the start of the pandemic, the verifiers shifted to online communication only. Whether, after the pandemic, they will revert back to more face-to-face interaction is not yet clear.

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<sup>56</sup> Based on question 2 of the data collection sheet for verifiers.

<sup>57</sup> The respondents did not provide information on the number of site visits they carry out per year.

<sup>58</sup> IHS Markit is an information provider that provides amongst other information on the maritime and trade sector. One of their products is a ship tracking tool Seaweb that provides real-time ship monitoring and real-time intelligence on vessel activities. The information can be used to verify data submitted by the shipping company.

## Assessing the conformity of the monitoring plan<sup>59</sup>

According to Article 13(1) of the EU MRV Regulation, the verifier needs to assess whether the monitoring plan is in line with Article 6. In the data collection sheet verifiers were asked how they have organised this process and what information they check. In their responses, verifiers indicated that a dedicated audit team is responsible for the verification of the monitoring plan. When doing their work, the members of the auditing team follow the requirements of Article 5(2) of the Delegated Regulation 2016/2072. So, first, they check whether the shipping company used the right format as laid down in the Commission Implementing Regulation (EU) 2016/1927. Second, they check whether all elements mentioned in Article 6(3) are indeed filled in (i.e.: no gaps in the template). Third, they check whether the information filled in is representative of the vessel at hand. To assess whether the information provided is accurate, some verifiers use 'an example vessel', a vessel that has similar dimensions, similar equipment and a similar operating profile to see whether the actions included in the plan are sensible. Others do not use such an 'example vessel' as they believe that all vessels and journeys are unique and therefore not comparable.

Article 5(3) of Delegated Regulation 2016/2072 leaves open which auditing technique the verifier should use to assess the conformity of the monitoring plan. Based on the answers given in the data collection sheet, the majority of the verifiers seem to rely on a documentation check. Some also have conversations with the staff of the shipping company; however, this does not seem to be standard practice. Although observations can be used as an auditing tool, they do not seem to be used in practice.

## Reasons to revise the monitoring plan<sup>60</sup>

Besides Article 7 of the EU MRV Regulation, the verifier also verifies the monitoring plan in case of a revision. The shipping company is obliged to assess the monitoring plan at least once a year and, in case it no longer suffices, needs to inform the verifier, who needs to reassess the monitoring plan.

The verifiers were asked what the main reasons are for revising the monitoring plan. The main reason given by all six verifiers is a change in ownership (Article 7(2)(a)). Based on the data provided, a change in ownership is in 55% of the cases the reason for revising the monitoring plan. Other frequently mentioned reasons for revision are a change in data availability (i.e.: more and better data become available, Article 7(2)(c)) and the use of new fuels (Article 7(2)(b)). Four of the six respondents indicated to come across those reasons for changes as well. The other reasons included in Article 7 were not mentioned as reasons to revise the monitoring plan.<sup>61</sup>

Article 7(3) lays down the obligation for shipping companies to inform the verifier without undue delay in case of changes to the monitoring plan. In case the reason for modification is a change in ownership, the verifier is often indeed informed by the (new) owner of the vessel. Based on the answers given it seems that most shipping companies, at least in the case the ownership changes, actively inform the verifier of the change.

Other reasons for revising the monitoring plan are often detected by the verifiers themselves. In their response to the data collection sheet, several verifiers mentioned that during the annual review of the monitoring plan, changes come to light. During these reviews, they can become aware of incorrect information, such as a mismatch between measuring equipment, monitoring method and/or vessel's plans or the fact that reported

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<sup>59</sup> Based on question 3 of the data collection sheet for verifiers.

<sup>60</sup> Based on question 4 of the data collection sheet for verifiers.

<sup>61</sup> Other reasons could be new CO<sub>2</sub> emissions resulting from new emission sources or due to the use of new fuels not yet contained in the monitoring plan and where any part of the monitoring plan is identified as not being in conformity with the EU MRV Regulation.

fuels are not in line with the ones mentioned in the monitoring plan. In such cases, the verifier will contact the shipping company and ask for clarification.<sup>62</sup>

### Internal review of the monitoring plans

Once the monitoring plan is assessed satisfactorily, the audit team needs to send the plan for an internal review. This is in line with Article 8 of Delegated Regulation 2016/2072. Several verifiers indicated that they have created a new function for this obligation – the Technical Reviewer.<sup>63</sup> The Technical Reviewer is an employee who is not part of the audit team. Therefore, he/she was not involved in the auditing process of the monitoring plan. The Technical Reviewer receives all information related to the monitoring plan. So he/she does not only receive the plan itself, but also the underlying data and the steps taken in the verification process.

#### An example description of the internal review

The independent reviewer checks the format of the monitoring plan, reviews the results of the site visit and desk top reviews as well as strategic and risk analyses, consistency of assessment implementation dates, independent review dates and final assessment issuance dates, confirms corrective actions were carried out satisfactorily and are closed, reviews and confirms correct format and information in the assessment report (grade of errors correctly evaluated, basis for error identification and correction request appropriate, evidence provided etc.), and that everything was carried out following EU MRV Regulation and the delegated acts.

During the internal review, the Technical Reviewer assesses the entire process followed by the audit team. In case of discrepancies or deviations from standard procedures, the Reviewer can ask questions and only once the audit team has successfully managed to answer all questions, the internal review can be closed. Respondents indicated that the internal review is done according to internal requirements set for the review. One verifier mentioned following the ISO 14065 / ISO 14064-3 standards as well. The technical review mainly focuses on whether the audit team has followed all the steps as laid down in the verification procedures. This is in line with the requirements laid down in the Delegated Regulation.<sup>64</sup> Whether or not the information in the monitoring plan is correct, does not seem to be assessed.

The results of the internal review are internally documented by all verifiers. However, the way they report the results differs. The following answers were received:<sup>65</sup>

- internal documentation of the independent review consists of the independent reviewer's completed checklist;
- the independent review becomes part of the internal verification report;
- the independent review is archived in the auditing system;
- findings are included in the internal verification forms (in Excel, with one tab for each of the steps of the process);
- findings are included in the comment section of the verifier dashboard developed by the verifier himself;
- the Technical Reviewer needs to fill in a dedicated form to report on the findings.

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<sup>62</sup> Based on question 5 of the data collection sheet for verifiers.

<sup>63</sup> Based on question 6a of the data collection sheet for verifiers.

<sup>64</sup> The Delegated Regulation 2016/2072 states that the reviewer needs to *ensure that the monitoring plan was assessed in accordance with this Regulation and that due professional care and judgment were exercised*. See Article 8(2).

<sup>65</sup> Based on question 6b of the data collection sheet for verifiers.

### Finalisation of the monitoring plan<sup>66</sup>

Once the monitoring plan was internally reviewed the plan can be satisfactorily verified. The verifier is obliged to inform the shipping company in writing that the monitoring plan is assessed to conform with the requirements of the EU MRV Regulation (Article 9 of Delegated Regulation 2016/2072). The article does not specify how written communication should look like. As a result, verifiers have chosen different options. Three verifiers of our sample send an electronic message to inform the shipping company via online platforms and IT tools that are also used to collect inputs for the monitoring plan. The other three send the shipping company an email that includes an assessment letter. Both the electronic message and the letter form the proof that the monitoring plan is in conformity with the EU MRV requirements.

## 4.3 The emissions report

Besides verifying the monitoring plan, the verifier also needs to verify the emissions report (Article 13(2) of the EU MRV Regulation). During the verification, the verifier needs to assess whether the report fulfils the requirements laid down in Articles 8 to 12 and Annexes I and II of the EU MRV Regulation.

### Information collected for the verification of emissions reports

The shipping company is obliged to prepare, on an annual basis, the emissions report (Article 8). This report needs to be verified by the verifier before a DoC can be issued. To be able to verify the emissions report, the verifier needs to collect relevant information from the shipping company. The verifiers indicated to collect more or less the same information. The verifier collects the following information in line with Article 10(1) Delegated Regulation 2016/2072:<sup>67</sup>

- the complete list of voyages done by the ship under analysis during the reference period according to Article 10 of the EU MRV Regulation;
- the emissions report under review (from THETIS-MRV portal);
- the monitoring plan/plans applied, together with the elements attesting the conclusions following the end of the assessment, carried out by an accredited verifier, if applicable;
- only in case the monitoring plan has not been approved by the same verifier, the procedures mentioned in the approved monitoring plan, together with the ones concerning the activities regarding the data flow and the control activities;
- the emissions report of the previous year, if applicable, if verified by another verifier;
- copies of the ship's official logbook and of the oil record book (if separate) referring to the voyages (intra EU/EEA only) under verification;
- copies of bunkering documents;
- copies of documents containing information on the number of passengers transported and the amount of cargo carried, distance travelled, and time spent at sea for the ship's voyages during the reporting period;

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<sup>66</sup> Based on question 7 of the data collection sheet for verifiers.

<sup>67</sup> Based on question 8a of the data collection sheet for verifiers.

- any relevant information/document considered relevant to evaluate the emissions report (e.g.: evidence of the maintenance and accuracy/uncertainty of measurement equipment/flow meters, an extract of fuel consumption activity data, copies of evidence of fuel tank meter readings, an extract of activity data from direct emissions measurement systems).

Similar to the information required for the monitoring plan, the information required for the emissions report is shared via an online platform or IT tools of the verifier supplemented with information sent via email. Again, some verifiers seem to be stricter on how they wish to receive the information, e.g. only via the platform, while others allow for more options.<sup>68</sup>

### *Data submissions from the shipping companies' side*

Shipping companies should collect the relevant information and report this in the emissions report. During the data collection, the shipping companies indicated to take the following steps:<sup>69</sup>

- 1 Data are collected according to the chosen monitoring method. Shipping companies indicated to either collect information manually or digitally. In case of manual collection, the data are collected on board the vessel and then brought to shore where the office staff compiles the data in the emissions report. In the case of a digitalised system, the disaggregated data is received from the vessel within short timeframes. The data contains all the relevant information such as travel ID, departure date, arrival date, port, cargo specifics, DWT, distance, travel time, fuel consumption, efficiency index, CO<sub>2</sub> emissions, arrival port in EU, departure port in EU, draft and others;
- 2 The data is then aggregated from per-voyage data to an annual level. Both the aggregated and disaggregated data will be shared with the verifier;
- 3 Subsequently, the data are delivered in a standardized (confirmed) template to the verifier. The data are shared using a secure file transfer system, e-mails or uploading to the verifier's system.

### **Verification process of the emissions report**

Article 14 of Delegated Regulation 2016/2072 states that the verifiers should verify the reported data. How this needs to be done is broadly defined: '*The verifier shall verify the data reported in the emissions report through: detailed testing, including by tracing them back to the primary data source; cross-checking them with external data sources, including ship-tracking data; performing reconciliations; checking thresholds as regards appropriate data; and carrying out recalculations.*' The way the submitted emissions report and accompanying data are verified differs per verifier. Based on the answers given in the data collection sheets, it is not possible to extract one common methodology. In the boxes below the three most elaborated methods are discussed. However, it should be noted that other methods are possible as well.<sup>70</sup>

#### **Analysis of AIS data completed with the assessment of the most emission-intensive voyages**

One verifier indicated to first check and confirm the background information of the company and ship, emission source completeness, the fuel used, and monitoring methods. To check whether the voyages reported are complete, AIS data are used. Then the two most emission-intensive voyages are selected for verification of distance, time spent at sea, cargo carried,

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<sup>68</sup> Based on question 8b of the data collection sheet for verifiers.

<sup>69</sup> Based on questions 13a and 13b of the data collection sheet for shipping companies and the additional interviews with shipping companies.

<sup>70</sup> Based on question 9a of the data collection sheet for verifiers.

transport work, the quantity of fuel consumed, and emissions. AIS is used to cross-check reported distance and time. For cargo and transport work, documents such as bills of lading are used for cross-checking. For fuel consumption, documents such as bunker surveys (ROBs) and bunker delivery notes are used for cross-checking. A check is made for the use of correct emission factors. An error margin of max. 5% is allowed. If the error margin in reported values of any of the variables is greater than 5%, the sample is increased until the error margin is brought to less than 5% for all voyages. If the error margin is not brought down to below 5%, corrections are requested.

### Comparing estimated emissions with the reported ones

One verifier fully reproduces the figures presented in the emissions report. Based on the raw (voyage) data the verifier calculated with their shipping data analysis system what the level of emissions probably was. The outcomes are compared to the figures presented in the emissions report. To further validate the figures, several coherency checks are performed, namely: (1) coherency checks for every ship (speed, fuel consumption per distance / per hour / per voyage), (2) coherency checks of efficiency parameters with other ships from the same type, (3) identification of voyages sampled and analysis of documents collected (BDN, logbooks, etc.) and (4) comparison with AIS data (distance, time, fuel consumption) to also confirm the completeness and correctness of the geographical filters used by operators. Based on the outcomes the verifier can either approve the emissions report or ask for corrections.

### Overview of checks made to verify the emissions report

The verifier:

- \* Checks the completeness of the documents and information provided by the company.
- \* Performs the risk analysis.
- \* Established the voyages to be sampled according to the relevant guidelines.
- \* Verifies the data reported in the emissions report tracing them back to the primary data source; cross-checking them with external data sources, including ship-tracking data.
- \* In case of doubts on any of the reported data, the official ship's documents (e.g. logbooks) shall be checked.
- \* Checks the emission sources as described in the monitoring plan.
- \* Checks the completeness of data, including those on voyages.
- \* Checks the data of all the voyages included in the sampling plan through the corresponding documentation and primary sources.
- \* Checks the data of both the individual voyages and the annual aggregates.
- \* Checks the consistency between reported aggregated data and data from relevant documentation or primary sources.
- \* To do so, the verifier(s) shall compare the aggregates resulting from the data reported by the company for the chosen sample with those resulting from the data obtained through the support documentation and primary sources corresponding to the analysed sample; moreover, to check the plausibility of the annual aggregates concerning the whole reporting period, the energy efficiency parameters of the whole sample shall be compared to those relative to the whole year: average consumption per nautical mile, average consumption per unit of transport work, average CO<sub>2</sub> emissions per nautical mile, average CO<sub>2</sub> emissions per unit of transport work.
- \* Checks the consistency between aggregated fuel consumption and data on fuel purchased or otherwise supplied to the ship in question.

When confronting these examples with the requirements laid down in the Delegated Regulation, it becomes clear that each verifier has adopted its own system and methods, selecting one or more methods to verify the data in the emissions report. Nevertheless, none seems to apply all the methods mentioned.

In Article 14, the use of ship-tracking data is mentioned. In the verification process, the majority of verifiers do use AIS<sup>71</sup> data to check whether several mentioned voyages have indeed been made and whether voyages related information is correct. Only one verifier mentioned not to use any ship tracking information. This verifier believes that the data do not provide much additional information and that information on the voyages made can be derived in other ways as well. Although AIS data is not always 100% reliable, the majority of verifiers is of the opinion that the information suffices and is a good way to check whether voyages indeed were made.<sup>72</sup>

### The risk assessment as part of the verification process<sup>73</sup>

Based on Article 15(1) of the EU MRV Regulation, the verifier needs to conduct a risk assessment. During this assessment, they need to identify and analyse the following risks: (1) inherent risks; (2) control risks; (3) detection risks (see Article 11 of Delegated Regulation 2016/2072). The risks are defined as follows:

- Inherent risks – depend on the monitoring and reporting procedures implemented by the ship / company, on the fuel method used, on the measuring equipment used; risk level depends on the judgement of the verifier, based on previous experiences;
- Control risks – depend on the control system implemented by the company when it comes to MRV voyage and annual data; risk level adjusted depending on the evidence provided by the operator to confirm the existence and appropriateness of the quality checks performed all through the reporting period;
- Detection risks – depending on the activities implemented by the verifier and whether they are sufficient to identify any potential non-conformity or misstatement; some verification activities are done systematically to mitigate this risk (i.e. full data analysis, comparison with AIS estimates, sampling of on-board documents, etc). The magnitude of some activities can be adjusted (i.e. sampling size can be increased if the results from the initial sampling were not satisfactory).

To assess the different risks, especially the inherent and control risks, the verifiers look at all the steps taken to collect the data needed. The steps are documented by the shipping company. Steps that need to be written down relate to how data are collected from the engine, how they are submitted to the control room aboard the vessel, how they are transferred to the onshore control room, how they are recorded there and how the data are included in the emissions report.<sup>74</sup> For each step in the process, the risk is assessed. When the verifier assesses the risk as too high, the shipping company is obliged to take mitigating measures to reduce the risk.

All verifiers seem to assess the above risks individually based on a high, medium and low scale. Once they have the three individual risk assessments, they combine the results into the so-called verification risk. Also, this risk could be high, medium or low. In case it is assessed to be high, mitigating measures need to be taken. Often, this is already communicated to the shipping company in the pre-contractual phase. The shipping company is obliged to change its procedures in case it still wishes to be verified by the verifier. In case the shipping company does not change the procedure, the verifier will not conclude any contract.

In case the risk assessment company changes to medium or high risk during the duration of the contract, the verifier can apply a more stringent verification process to mitigate the

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<sup>71</sup> AIS - Automatic Identification System.

<sup>72</sup> Based on question 15 of the data collection sheet for verifiers.

<sup>73</sup> Based on question 16a of the data collection sheet for verifiers.

<sup>74</sup> This are a few examples given.

risks.<sup>75</sup> In case the inherent risks and control risks are assessed as high, the verifiers will increase the sample used in the verification process. The underlying reason is that by increasing the sample size, they can improve the detection of any mistakes and thereby reduce the detection risks. In case both the inherent and control risks are assessed to be low, the sample size can be decreased. Besides increasing the sample size, verifiers also tend to opt for site visits to check on the company data and, if possible, encourage the shipping company to improve its EU MRV procedures to reduce the risks.<sup>76</sup>

Based on the answers provided it seems that verifiers are confident that they can detect any issues with the data. The verifiers indicated that the detection risk is often assessed as low.

### **Independent review of the emissions report**

Once the auditor of the verifier has carried out his/her verification activities and believes that the emissions report is in order, the report, together with a report on the verification activities, is sent to an independent reviewer (similar to the procedure of the monitoring plan).<sup>77</sup> The independent reviewer reviews the internal verification documentation (such as risk assessment, sampling plan, verification plan etc.) and the verification report drafted by the auditor to verify that the verification process was conducted following the EU MRV Regulation. The independent reviewer also assesses whether the verification was done with professional care and judgment. The results of the independent review are separately reported and attached to the verification report.<sup>78</sup>

In case the independent reviewer is not satisfied with the result, the verification report is handed back to the auditor, who needs to address the feedback. Often, this also means that the shipping company will be involved to address the issues. Once the report is amended, the independent reviewer will assess the verification report again. It is only once the reviewer is satisfied that the report can be approved. The final report is included in THETIS-MRV, where it can be accessed by the shipping company. Most verifiers indicated that they manually transfer the information from their verification report into the THETIS-MRV system.<sup>79</sup>

The above procedure is described in the data collection sheets, and the independent reviewer checks whether the steps laid down in the verification guidelines drafted by the verifier were indeed followed.

### **Communication during the verification of the emissions report<sup>80</sup>**

To communicate any revisions, corrections, conclusions or recommendations on the emissions report to the shipping company, all verifiers use their online platform supplemented by email correspondence for very specific questions. Only one of the six verifiers does not allow for email correspondence and only uses its online platform to communicate with the shipping company. Two of the six verifiers also mentioned using the THETIS-MRV from time to time. The reasons to choose the different platforms are not clear based on the answers provided.

Verifiers unanimously indicated not having experienced any (technical) communication problems when communicating with the shipping companies. They attribute this to the fact

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<sup>75</sup> Verifiers do assess the risk profile on a regular basis. Not only is a risk assessment carried out before concluding a contract with the shipping company, also during the contract period the verifier assess the different risks.

<sup>76</sup> Based on question 16b of the data collection sheet for verifiers.

<sup>77</sup> The internal reviewer is an employee of the same verifier who is not part of the auditing team.

<sup>78</sup> Based on question 11 of the data collection sheet for verifiers.

<sup>79</sup> Based on question 9b of the data collection sheet for verifiers.

<sup>80</sup> Based on questions 12 and 13 of the data collection sheet for verifiers.

that the communication tools are the same as the ones used for other dealings with the shipping companies. The only problem that can arise in the communication with shipping companies is a slow response from companies which could lead to delays in the verification process.

## 4.4 Site visits

Based on Delegated Regulation 2016/2072 verifiers are obliged to carry out site visits. For the monitoring plan, site visits are subject to Article 6, and for the emissions report, site visits are subject to Article 16. Both articles allow the verifier the freedom to choose the location of the site visit: '*The verifier shall determine the location or locations of the site visit after taking into consideration the place where the critical mass of relevant data is stored, including electronic or hard copies of documents of which the originals are kept on the ship, and the place where data-flow activities are carried out.*' (Article 6(2) and Article 16(2)). This means that site visits can be conducted either at the office of the shipping company and/or on board the vessel. The Regulation leaves the decision to the verifier. During the data collection, verifiers who perform the site visits indicated that they chose the office of the shipping company as the location for the site visit. In practice, none of the verifiers seems to visit the actual vessel as the relevant information can also be accessed onshore.<sup>81</sup> As such, there have been no on-board visits performed. This practice was confirmed by the shipping companies that participated in the study. The companies indicated that, in case they received a visit from the verifier, the verifier visited the company's office and not the vessel.<sup>82</sup>

The Delegated Regulation states that site visits shall be carried out. This means that it is an obligatory activity in the verification process, unless there is a reason to waive the site visit. In practice verifiers often waive site visits (either onboard the vessel or to the office) based on the outcome of their risk assessment. Four of the six verifiers indicated that they performed site visits in 2019. One verifier indicated that they visited about 80% of their clients (roughly 50 visits), one indicated to have performed 100 visits and the third indicated to visit all their clients.<sup>83</sup> The fourth did not provide any information on the number of visits performed. Based on the data received in survey it is difficult to conclude how many visits were carried out, and how many of the companies received a visit. Based on the figures given, it seems that the site visits performed are all made as part of the verification of the emissions report. How many visits were performed as part of the verification of the monitoring plan is unknown.

In 2020, only two verifiers who responded to the data collection sheet still carried out site visits. The main reason for the verifiers who did not conduct site visits in 2020, while they did in 2019, was the COVID-19 pandemic. Due to travel restrictions, it was no longer possible to perform site visits.<sup>84</sup> Although one verifier indicated not to perform site visits, it became clear from the answers that the verifier remotely verifies the information (i.e.: virtual site visit). Employees involved in writing the monitoring plan and emissions reports are often

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<sup>81</sup> In the maritime industry it is common that vessels do communicate all relevant information on the voyage, the cargo and the fuel consumption and a frequent basis to the office. This is done at least once every 24 hours, but in some companies, this is even done more frequently.

<sup>82</sup> Based on question 13c of the data collection sheet for shipping companies and the additional interviews with shipping companies.

<sup>83</sup> However, the first did not indicate how many clients they have, so it is unclear whether they visited them all. The second did not provide information on how many clients they have.

<sup>84</sup> The relation between a decrease in the number of site visits and the pandemic was also underlined in the second EU MRV report published by the Commission (SWD (2021) 228 final).

interviewed by phone. The monitoring and reporting systems in place are checked through video conference and screen sharing. As such, the site visit is conducted from a distance.<sup>85</sup>

The decision to conduct a site visit differs between verifiers. Some verifiers indicated they visit all companies. Once the verifier receives a message that information is uploaded in the THETIS-MRV, the verifier will contact the shipping company and schedule a meeting (i.e.: site visit). Other verifiers indicated to decide on a case-by-case basis. Based on a risk analysis as well as the assessment of the monitoring plan, a site visit can be planned. Although the specific details of a site visit might differ between verifiers, they all have common elements. First of all, it is the verifier who prepares the agenda of the day (which is in line with Articles 6(3) and 16(3)). So, the verifier indicates which aspects need to be checked, who needs to be present and what documentation needs to be available. During the day the following activities are carried out:

- Interviews with staff involved in the preparation of the monitoring plan and emissions report, to establish their familiarity with the procedures;
- Check on ship certificates, other ship documents and data as well as the plans;
- Observation and walk through of the procedures in plans.

Results of the site visit are included in an audit report which is shared with the shipping company.<sup>86</sup>

Based on Delegated Regulation 2016/2072, it is possible to waive a site visit. When asked why site visits were not carried out, the majority of verifiers referred to the reasons laid down in Articles 6(4) and 16(4), namely:<sup>87</sup>

1. the verifier has sufficient understanding of the ship's monitoring and reporting systems, including their existence, implementation and effective operation by the company;
2. the nature and level of complexity of the ship's monitoring and reporting system are such that a site visit is not required;
3. the verifier can obtain and assess all requisite information remotely.

Quite some verifiers seem to waive the site visits based on the above-mentioned reasons. This might explain why the number of site visits conducted is limited. The two verifiers that did not perform site visits in both 2019 and 2020 are both classification societies. As it seems likely that shipping companies that wish to have a classification society as verifier would choose their own, these verifiers have already a thorough understanding of the vessel and its performance. Some verifiers also mentioned that they already provide other services to the shipping company and, as a result, know the company and the vessels well. They believe that a site visit does not bring any additional information and the existing legislation allows them to waive the site visit for such reasons.

## 4.5 The verifier views on the EU MRV system

Besides information collected on the verification of both the monitoring plan and the emissions reports, as well as the site visits, the verifiers were also asked what their main

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<sup>85</sup> Based on questions 10a and 10b of the data collection sheet for verifiers.

<sup>86</sup> Based on question 10c of the data collection sheet for verifiers.

<sup>87</sup> Based on question 10d of the data collection sheet for verifiers.

experiences with and views are on the EU MRV Regulation. They could provide their views on what works well and what could be improved. The main findings are summarised below.

#### *Elements of the EU MRV system that work well according to verifiers<sup>88</sup>*

The most frequently mentioned element that works well is the fact that the EU MRV system leads to transparency concerning the environmental performance of individual vessels. The fact that the performance is measured in a harmonised way (i.e. the different methods available) and reported similarly for all vessels (i.e. in the mandatory templates) leads to more insights into the environmental performance of the sector as a whole. In addition, the Regulation also provides the verifiers with sufficient guidance on how to perform their tasks.

Another element appreciated by the verifiers is the fact that the Regulation offers sufficient room to consider the difference between operators. The EU MRV Regulation provides the possibility to verify the environmental performance on a voyage basis. The environmental performance of vessels can be very different based on their operational profile. As the EU MRV Regulation provides the possibility to consider the differences between vessels falling within its scope, verifiers are of the opinion that the individual performance of a vessel is assessed in a fairer manner. Overall, the EU MRV Regulation creates fairer treatment for all vessels falling within the scope of the EU MRV Regulation. The room for flexibility also reduces discussion with shipping companies.

After three years of verification, verifiers highlight that the processes are becoming more and more streamlined. At the start of the EU MRV process in 2017/2018, there were still many hiccups in the systems and processes were not performed very smoothly. As the different stakeholders, especially shipping companies and verifiers, have become more acquainted with the requirements and procedures, fewer mistakes are made, verification processes have become smoother and results better.

#### *Elements that could be improved according to verifiers<sup>89</sup>*

In addition to the elements that work well, the verifiers also provided feedback on elements that could be further improved. One of the challenges they still face after three years is how to deal with the change in ownership or the change of flag. As highlighted in section 4.2, a change in ownership is the most common reason for revising the monitoring plan. It also affects the emissions report. Although the Regulation is clear on who needs to provide the relevant information and is therefore responsible, in the verification process this can still lead to some challenges. In particular, verifying information from a company that is not your client can be difficult as obtaining answers is not easy.

An element linked to the above is the definitions of 'time at sea' and 'voyage time.' These terms are open for interpretation, and this can lead to discussions with shipping companies. These are topics that often need further clarification which leads to time delays (and sometimes not meeting the deadline of 30 April).

Verifiers also mentioned that, for them, THETIS-MRV does not always feel user friendly and intuitive. Information needs to be included in different subsections of the system, which could result in small mistakes. At the same time, correcting these mistakes can be a time-consuming task. As shipping companies faces similar problems, some verifiers have agreed with their clients to only upload information within the THETIS-MRV once it is actually approved, so that the number of mistakes made in THETIS-MRV remains limited.

The last point that might lead to problems in the verification process is the upcoming use of bio-fuels and alternative fuels. Currently, there is not sufficient guidance on how to deal with

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<sup>88</sup> Based on question 19 of the data collection sheet for verifiers.

<sup>89</sup> Based on question 20 of the data collection sheet for verifiers.

vessels that partly use fossil fuels and partly use alternative fuels. As it is expected that the number of vessels using alternative fuels will increase in the coming years, guidance on how to deal with this is welcome.

## 4.6 Summary of main findings

Based on the above analysis, the main findings regarding verifiers are:

- Concerning the monitoring plan, the verifiers seem to strictly follow the requirements laid down both in the EU MRV Regulation as well as the Delegated Regulation 2016/2072. Some verifiers collect information from more sources than mentioned in the legislation. Where the legislation leaves room for choice and interpretation, the practices of the verifiers do differ. Examples are the auditing techniques used to assess the conformity of the monitoring plan (often only a document review is used, sometimes combined with conversations) and the written communication regarding the approval of the monitoring plan (either via the online platform or in a physical official letter).
- The Delegated Regulation states which activities should be carried out by the verifier when verifying the emissions report. In practice, verifiers seem to use different methodologies to assess the correctness of the data included in the emissions report. Based on the descriptions provided, it seems that the verifiers rely to a large extent on data provided by the shipping companies themselves. The majority of verifiers that participated in the survey and interviews use AIS data to cross-check the data received from the shipping companies. Whether other additional data are used to verify the outcomes remains unclear as stakeholders consulted did not provide feedback on this.
- Verifiers are obliged to carry out a risk assessment. All verifiers work with a high, medium and low standard for each of the three risk categories. Verifiers seem confident they can minimise the detection risk, as they indicate these are often assessed to be low. For the other risks (inherent and control) the outcome of the assessment could be different. Stakeholders indicated that those risks could be assessed as medium or high.
- The number of site visits conducted appears limited. This is partially due to the current COVID-19 pandemic which poses travel restrictions on actors. Site visits were not, however, standard practice before the pandemic either, and those verifiers that performed site visits did not visit all their clients. A possible reason might be that the verifier is already familiar with the procedures in place and therefore decides to be able to verify data from a distance, as allowed by the EU MRV Regulation under specific conditions and based on the outcomes of their risk assessment. This might apply to the verifiers who are also classification societies. According to Articles 6 and 16 of Delegated Regulation 2016/2072, the verifier can choose the location of the visit. All verifiers who visit chose the office of the company and not the vessel.
- Verifiers indicate that it took some time before the verification procedures were implemented satisfactorily. Required procedures seem to become more standardised and both verifiers and shipping companies are better aware of what is expected from them. In other words, the procedures relating to the EU MRV system have become more efficient and smoother. The verifiers are optimistic that further improvements can be made in the coming years. A thing to consider is to set a deadline for submitting the required information for the emissions report to the verifier. Currently, the Regulation only contains deadlines for submission of the emissions report to the Commission (i.e.: 30 April) and having a DoC onboard the

vessel (i.e.: 30 June). Adding a deadline for submitting the information to the verifiers might lead to less delays in the verification process. However, this would require a revision of the Regulation, which may be a complicated process. As an alternative, stakeholders might be encouraged to submit information earlier on in order to meet the deadline of 30 April.

- To further optimise the verification process, verifiers would like, in addition to the existing guidance already provided, to receive some more guidance on how to deal with specific topics. Examples given are guidance on the use of bio-fuels and other alternative fuels. In addition, verifiers would welcome (automatic) notifications in case the THETIS system is modified and/or upgraded.

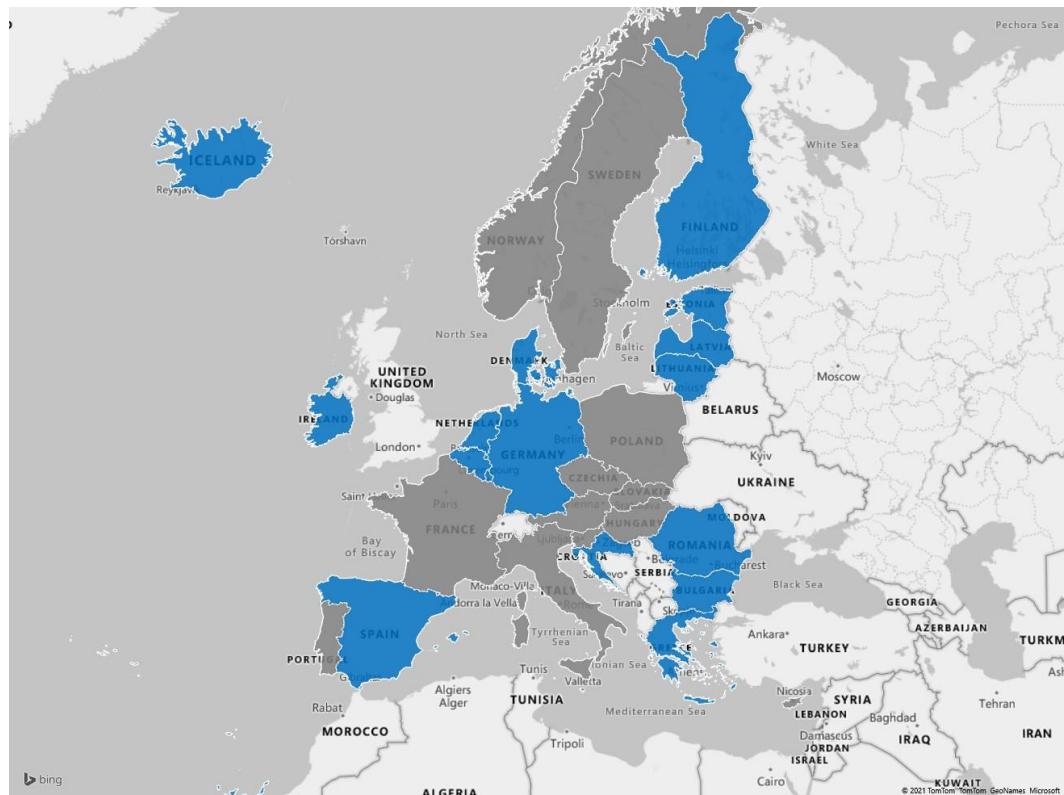
## 5 Member States as flag States

## 5.1 Introduction

Member States in their capacity as flag States play a role in the EU MRV system. According to Article 19 of Regulation 2015/757, they need to be actively informed by the shipping company flying their flag that the emissions report was submitted, and they need to know whether a DoC is issued by the verifier. The tool used to inform the flag State authority on both aspects is THETIS-MRV. As flag States, Member States have the obligation to ensure that vessels flying their flag are compliant with the requirements laid down in the EU MRV Regulation (Article 19). In case a vessel is non-compliant, a Member State in their capacity as flag State needs to follow up on this and can sanction the shipping company.

Flag State authorities from the EEA were invited to participate in the data collection for this study. Authorities in third countries were not included in the research. As a result, 29 flag State authorities were asked to participate in the study. A total of fourteen countries responded. Figure 5.1 presents Member States that participated.

**Figure 5.1 Overview of the Flag States that did (blue) and did not participate (grey) in this study**



Concerning the EU MRV system, several elements are of importance when discussing the role of the flag State authorities. First of all, a flag State authority needs to ensure that vessels flying their flag hand in their emissions reports. Section 5.2 provides more details on how this is done across the different flag States. Section 5.3 describes the actions a flag State authority can take in case of non-compliance with the EU MRV Regulation, while section 4.4 elaborates on communication tools used. In section 5.5 the main views of the flag State authorities on the EU MRV system are presented. Section 5.6 presents a summary of the main findings.

## 5.2 Obligation to ensure that shipping companies submit the emissions report

By no later than 30 April of each year, the shipping company needs to submit the verified and approved emissions report to the Commission as well as the flag State authority (Article 11(1) EU MRV Regulation). Flag State authorities were asked how they receive the emissions reports. All indicated that THETIS-MRV is the main tool to receive the reports. Some also indicated that besides THETIS-MRV they also receive the reports via email.<sup>90</sup> Some respondents remarked that it would be good if they could receive a direct notification once a report is submitted. Currently, they check this manually, which they see as an additional burden. THETIS-MRV already has a function which provides such direct notifications. As not all Member States' representatives are aware of this possibility, it is recommended to bring it to their attention, for example during meetings on the EU MRV Regulation.

Article 19(1) of the EU MRV Regulation obliges Member States to take all the necessary measures to ensure compliance with Articles 8 to 12 of the EU MRV Regulation by the ships flying their flag, based on the information published by the Commission in accordance with Article 21(1). In other words, they need to ensure that for each vessel flying their flag and falling within the scope of the EU MRV Regulation an emissions report was submitted for verification and, following the verification process, a DoC was issued. Regulation 2015/757 states that the fact that the verifier issued a DoC for the vessel shall be regarded as evidence of compliance with Articles 8 to 12 of the EU MRV Regulation (Article 19(1)). However, the EU MRV Regulation does not prevent flag State authorities from conducting other checks to ensure that ships flying their flags have complied with Articles 8 to 12 of this regulation. Some flag States participating in the study, indicated that it would be helpful to receive further guidance on the checks they should perform under Article 19(1) of the EU MRV Regulation. Approaches to ensure that emissions reports are handed in<sup>91</sup>

In the data collection sheet, flag State authorities were asked how they fulfil the obligation laid down in Article 19(1). Several respondents (e.g.: Croatia, Finland, Germany, Ireland, Latvia and Lithuania) indicated to indeed check whether vessels flying their flag have fulfilled the obligation either once the deadline for handing in the emissions reports has passed (i.e.: 30 April) or once the Commission makes publicly available the information on the CO<sub>2</sub> emissions reported (i.e.: 30 June). To check whether the vessel fulfilled its EU MRV obligations, the employee of the flag State administration:

1. Makes an export of THETIS-MRV contents;
2. Identifies all vessels flying the nation's Flag which are being generally subject to MRV Regulation (based on gross tonnage, type);
3. Checks if these ships called at an EU port in the reporting year using information included in SafeSeaNet;
4. If yes, check if the emissions report was submitted in THETIS-MRV.

In addition to checking in hindsight whether vessels flying their flag have fulfilled the obligations under EU-MRV, some Member States also actively inform the relevant shipping companies of the upcoming obligations. Examples are Belgium, Bulgaria and Greece who, in the early months of the year, start reminding shipping companies that they need to hand in their emissions reports. The methods chosen differ. For instance, Bulgaria issues a circular letter to instruct and remind shipping companies of their obligation to submit

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<sup>90</sup> Based on question 4 of the data collection sheet for flag State authorities.

<sup>91</sup> Based on question 2 of the data collection sheet for flag State authorities.

emissions report(s). Shipping companies are selected on the basis that in the previous year they fell within the scope of the EU MRV Regulation. Greece sends a reminder to the shipping associations, with the request to distribute it among their members and prompt them to fulfil their obligations under the EU MRV Regulation.

Belgium prepares a list, based on previous reports as well as EMSA information, of vessels that do fall under the scope. They then check whether the vessel made a call to an EU port in the reporting year. By the end of March / early April, they check whether for the specific vessel information is already included in the THETIS-MRV for the emissions report. If no report was submitted to the verifier yet, the shipping company is contacted, and clarification is sought why no action was taken. The company is urged to submit the report. In case the report is approved by the verifier, but not yet sent to the Commission, the company will be contacted to submit the report before the deadline of 30 April. These actions are taken to ensure that vessels flying the Belgian flag do respect the deadline. The decision to proactively inform shipping companies of their obligations is done on Belgium's own initiative.<sup>92</sup>

#### Change of ownership<sup>93</sup>

It is possible that during the reporting period the vessel is sold to a new owner. Under the EU MRV system, the company that owned the vessel on 31 December is the one that needs to fulfil the reporting requirements. The company that owns the vessel on 31 December will be checked by the flag State Authority.

Flag State authorities indicated that, from their perspective, a change in ownership does not lead to any problems concerning the EU MRV Regulation as the new owner needs to inform the flag State authority of a change in ownership anyway. All administrations answered that the new owner needs to request a change in the fleet register. As a result, the new owner is known to the authorities. In some Member States, such as Belgium and Bulgaria, the owner also sends an email to the administration notifying them of the change.

### 5.3 Enforcement of the EU MRV Regulation

Article 20(1) introduces the obligation for Member States to introduce a system of penalties for failure to comply with the monitoring and reporting obligations laid down in the EU MRV Regulation. To check whether their vessels are compliant with the EU MRV Regulation, flag State authorities validate whether a DoC was issued for the vessels. To check this information, the authorities do use the THETIS-MRV. When the DoC is uploaded in THETIS-MRV, the vessel is seen as compliant.<sup>94</sup> In case the DoC is missing, the vessel is non-compliant. In such a case, further action can be taken.

The majority of flag State authorities do have a two-step approach.<sup>95</sup> In case the vessel is non-compliant for the first time, the company will receive a warning. This warning can either be verbal (in the case of Belgium for example) or written (e.g.: in the case of Germany, the Netherlands and Ireland). In the warning, the ISM-manager<sup>96</sup> will be urged to obtain a valid DOC and be more punctual and precise in future reporting periods. As a second step, flag State authorities can issue a fine. This fine can either be an administrative fine or a criminal fine. The amount of this financial penalty differs substantially per Member State as

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<sup>92</sup> Based on the in-depth interview with the Belgian flag State authority. During the interview the respondent stated that the Belgian legal services have interpreted Article 19(1) in such a way that the flag State authority's obligation should start before the deadline of 30 April.

<sup>93</sup> Based on question 3 of the data collection sheet for flag State authorities.

<sup>94</sup> Based on question 6 of the data collection sheet for flag State authorities.

<sup>95</sup> Based on questions 8 and 10 of the data collection sheet for flag State authorities

<sup>96</sup> ISM = International Safety Management

presented in Table 5.1. In addition to issuing a fine, some Member States can impose other sanctions as well. In Greece and Estonia, it is possible to prohibit the vessel from leaving the port. As long as the fine is not paid, the vessel can be detained. In Finland, it is possible to deny the vessel access to any Finnish port as long as the fine is not paid. In the Netherlands, the vessel can ultimately be deleted from the national registry or certificates can be withdrawn. In Croatia, it is possible to obtain an expulsion order for the vessel.<sup>97</sup>

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<sup>97</sup> Based on questions 10 and 12 of the data collection sheet for flag State authorities

**Table 5.1 Overview of possible sanctions in case of non-compliance from a flag State perspective<sup>98</sup>**

Country	Regulatory basis		Sanctions and measures		
	National regulation	Type of regulation	1st non-compliance	Recurrent non-compliance	Issued (in 2019 and 2020)
Belgium	Belgian law of 17 December 2017 amending the law of 25 December 2016 (which includes the EU MRV Regulation)	Administrative law	<ul style="list-style-type: none"> <li>Verbal warning in case of late submission</li> <li>Administrative fine (1250 to 10,000€) in case of non-compliance with Articles 8, 9, 10, 11(1), 11(2), 11(3), 12 and 18 of EU MRV</li> </ul>	<ul style="list-style-type: none"> <li>Administrative fine (1250 to 10,000€) in case of non-compliance with articles 8, 9, 10, 11(1), 11(2), 11(3), 12 and 18 of EU MRV</li> </ul>	2020: 2 Verbal warnings + verification procedure
Bulgaria	Merchant shipping code	Administrative law	<ul style="list-style-type: none"> <li>Detention of the vessel (Article 363 (2.2))</li> <li>Financial sanction (Article 374 (1)): 2,000 to 50,000 BGN</li> </ul>	<ul style="list-style-type: none"> <li>Financial sanction (Article 374 (1)): 2,000 to 50,000 BGN</li> </ul>	None issued
Croatia	Law on Implementation of Regulation EU 2015/757 on the monitoring, reporting and verification of CO <sub>2</sub> emissions from maritime transport	Administrative law	<ul style="list-style-type: none"> <li>Letter of warning</li> <li>Infringement proceedings and penalties 5,000 to 30,000HRK to the company + fine of 1000 to 5000 HRK to the company's legal representative / fine of 5,000 to 15,000 HRK if sole trader</li> </ul>	<ul style="list-style-type: none"> <li>Infringement procedure + financial penalty</li> <li>Expulsion order in case of non-compliance with Article 20(3) EU MRV Regulation (Article 111 (1))</li> </ul>	None issued
Denmark	Biofuels Act	Criminal law	<ul style="list-style-type: none"> <li>Talk with the shipowner on non-compliance</li> <li>Make a recommendation to the owner</li> </ul>	<ul style="list-style-type: none"> <li>Danish Energy Agency may report the breach of the law to the Danish police</li> <li>The Danish police may then issue fines to the ship (. § 8, para. 1, no. 5)</li> </ul>	None issued
Estonia	Atmospheric Air Protection Act §237	Administrative law	<ul style="list-style-type: none"> <li>Fine up to € 300 (natural person)</li> <li>Fine up to € 16,000.- (legal entity)</li> </ul>	<ul style="list-style-type: none"> <li>Fine up to 300 fine units (individual)</li> <li>Fine up to € 16,000.- (legal entity)</li> <li>Prohibition on the vessel to leave the port</li> </ul>	None issued
Finland	<ul style="list-style-type: none"> <li>Act on Environmental Protection on Maritime Transport</li> <li>General Criminal Code</li> </ul>	Administrative and Criminal law	<ul style="list-style-type: none"> <li>Fines (amount determined based on the general provisions of the Criminal Code). Fines shall be in just proportion to the harmfulness and dangerousness of the offence, the motives for the act and the other culpability of the offender manifest in the offence. In addition, a scale based on the offender's income is applied in the calculation of the fines. General criminal proceedings in the case being non-compliance is due to negligence on board a foreign vessel</li> </ul>	<ul style="list-style-type: none"> <li>Fines (amount determined based on the general provisions of the Criminal Code). Fines shall be in just proportion to the harmfulness and dangerousness of the offence, the motives for the act and the other culpability of the offender manifest in the offence. In addition, a scale based on the offender's income is applied in the calculation of the fines. General criminal proceedings in the case being non-compliance is due to negligence on board a foreign vessel</li> </ul>	None issued
France	A decree amending Arrêté du 23 novembre 1987 relatif à la sécurité des navires et à la prévention de la pollution	Administrative law	<ul style="list-style-type: none"> <li>Suspension of the navigation license</li> <li>Withdrawal of the navigation license</li> </ul>	<ul style="list-style-type: none"> <li>Suspension of the navigation license</li> <li>Withdrawal of the navigation license</li> </ul>	None issued
	Code de l'environnement	Criminal law	<ul style="list-style-type: none"> <li>Issue a warrant of infringement (maximum fine 15.000€)</li> </ul>	<ul style="list-style-type: none"> <li>Similar penalty (maximum fines would be doubled)</li> </ul>	

<sup>98</sup> It should be noted that the table does not provide a complete overview as for some Member States no information was obtained.

Country	Regulatory basis		Sanctions and measures		
	National regulation	Type of regulation	1st non-compliance	Recurrent non-compliance	Issued (in 2019 and 2020)
Germany	Administrative Offences Act in conjunction with German Greenhouse Gas Emissions Trading Act	Administrative law	<ul style="list-style-type: none"> <li>Letter of warning</li> <li>Compulsory hearing of the shipping company</li> <li>Fine after hearing in case of intentional or negligent manner</li> <li>In case of delayed payment publication in Commercial Central Register (naming and shaming)</li> </ul>	<ul style="list-style-type: none"> <li>Fine increased by 25% per year (or more) with a maximum of up to € 50,000.-</li> </ul>	<ul style="list-style-type: none"> <li>2019: 30 letters of warning, 12 hearings of which 5 issuances still standing, 6 cases closed without a fine, 1 fine</li> <li>2020: No letters of warning, 9 hearings of which issuance still standing.</li> </ul>
Greece	Ministerial Decision (G.G. B'1922) which cites to articles 13 and 14 of Presidential Decree No 55 /1998 (G.G. A' 58).	Administrative law	<ul style="list-style-type: none"> <li>Fine up to € 100,000.-</li> <li>Prohibition of sailing as long as the fine is not paid</li> </ul>	<ul style="list-style-type: none"> <li>Fine up to € 100,000.-</li> <li>Prohibition of sailing as long as the fine is not paid</li> </ul>	<ul style="list-style-type: none"> <li>2019: None</li> <li>2020: 1 fine</li> </ul>
Iceland	N/A	N/A	<ul style="list-style-type: none"> <li>Record a deficiency</li> </ul>	<ul style="list-style-type: none"> <li>Record a deficiency</li> <li>Detain the vessel</li> </ul>	None issued
Ireland	General Criminal Code	Criminal law	<ul style="list-style-type: none"> <li>Letter of Warning</li> <li>Prosecution</li> </ul>	<ul style="list-style-type: none"> <li>Prosecution</li> </ul>	None issued
Italy	Legislative Decree of 25 July 2019, no 83	Administrative law	<ul style="list-style-type: none"> <li>Fines from € 30,000.- up to € 150,000.- in case of non-compliance with articles 6 and 6</li> <li>Fines from € 20,000.- up to € 100,000,- in case of non-compliance with articles 8, 9 or 10</li> <li>Fines from € 10,000.- up to € 50,000,- in case of non-compliance with articles 11 or 12</li> </ul>	N/A	
Latvia	Law on Pollution	Administrative law	<ul style="list-style-type: none"> <li>Fine from € 75 to € 350 for a natural person</li> <li>€ 140 to € 1,400 to a legal entity</li> </ul>	<ul style="list-style-type: none"> <li>Fine from € 75 to € 350 for a natural person</li> <li>€ 140 to € 1,400 to a legal entity</li> </ul>	None issued
Lithuania	Code of Administrative Offences	Administrative law	<ul style="list-style-type: none"> <li>Fine of € 500 to € 1,000 (failure to monitor emissions)</li> <li>Fine of € 1,000 to € 3,000 (failure to submit emissions report timely)</li> <li>Fine of € 2,000 to € 3,000 (failure to carry DoC)</li> </ul>	<ul style="list-style-type: none"> <li>Fine of € 500 to € 1,000 (failure to monitor emissions)</li> <li>Fine of € 1,000 to € 3,000 (failure to submit emissions report timely)</li> <li>Fine of € 2,000 to € 3,000 (failure to carry DoC)</li> </ul>	None Issued
Luxembourg	Loi modifiée du 9 novembre 1990 relatif aux différentes dispositions internationales, communautaires ou nationales en lien avec la sécurité maritime, la pollution maritime ou encore la sûreté maritime	Administrative and criminal law	<ul style="list-style-type: none"> <li>Administrative: range of corrective measures, interdiction to sail or operate, fine with a maximum of € 2,500</li> <li>Criminal: prison sentence between 3 months and 2 years, fine up to € 25,000,-</li> </ul>	<ul style="list-style-type: none"> <li>Similar to first time non-compliance, however severity might be increased</li> </ul>	None issued
Malta	Subsidiary legislation 234.54 to merchant shipping (monitoring, reporting and verification of carbon dioxide emissions from maritime transport regulations	Administrative law	<ul style="list-style-type: none"> <li>Fines up to € 11,650</li> </ul>	<ul style="list-style-type: none"> <li>In case the vessel is for more than 2 years not compliant with the EU MRV requirements, the vessel can receive an expulsion order</li> </ul>	N/A

Country	Regulatory basis		Sanctions and measures			Issued (in 2019 and 2020)
	National regulation	Type of regulation	1st non-compliance	Recurrent non-compliance		
The Netherlands	<ul style="list-style-type: none"> <li>Regeling Voorkoming verontreiniging door Schepen</li> <li>General Criminal Code</li> </ul>	Administrative and criminal law	<ul style="list-style-type: none"> <li>Warning</li> <li>National detention</li> <li>Deletion from flag register or withdrawal of related certificates</li> </ul>	<ul style="list-style-type: none"> <li>Flag State inspection</li> <li>National detention</li> <li>Police report resulting in a fine determined by the Public Prosecution</li> </ul>	<ul style="list-style-type: none"> <li>2019: no warnings</li> <li>2020: Between 5 to 15</li> </ul>	
Poland	ACT of 16 March 1995 on the Prevention of Pollution from Ships	Administrative law	<ul style="list-style-type: none"> <li>Fines up to 50,000 SDR<sup>99</sup></li> </ul>			None issued
Romania	Decision of Romanian Government no. 22/2018	Administrative law	<ul style="list-style-type: none"> <li>Fine of 30,000 to 40,000 Lei</li> </ul>	<ul style="list-style-type: none"> <li>Expulsion order</li> </ul>		None issued
Slovenia	Maritime Code (Art 121/1)	Administrative law	<ul style="list-style-type: none"> <li>Fines (2.100 to 35.000€ on a legal entity)</li> </ul>	<ul style="list-style-type: none"> <li>Fines (2.100 to 35.000€ on a legal entity)</li> </ul>		None issued
Spain	National law for Ports and Merchant Marine (RDL 2/2011).	Administrative law	<ul style="list-style-type: none"> <li>Fine up to € 120,000 (in case of violation of Articles 8 and 9 EU MRV Regulation)</li> <li>Fine up to € 120,000 (in case of violation of Article 10 EU MRV Regulation)</li> <li>Fine up to € 120,000 (in case of violation of Articles 11 and 12 EU MRV Regulation)</li> <li>Fine up to € 300,000 (in case of falsification of documents)</li> </ul>	<ul style="list-style-type: none"> <li>Similar to first time non-compliance, however severity might be increased</li> </ul>		None issued*
Sweden	According to the Swedish Environmental Code, 1998:808, in conjunction with Chapter 9, section 22 of the Ordinance on Environmental Sanction Change, 2012:259, violation of Articles 8-12 of the MRV maritime regulation may result in the issuance of an environmental sanction charge.	Administrative law	-	-		No environmental sanction charges have been issued in the period.

\* Only penalty procedures that have already been finished are counted.

<sup>99</sup> SDR = special drawing rights

Although Member States do have a sanctioning system in place, hardly a need arose to sanction shipping companies in 2019 and 2020. Belgium indicated they issued two warnings in 2020, Germany issued 30 warnings in both 2019 and 2020. Seventeen (in 2019) and eight (in 2020) fines were issued by German authorities pending the hearing of the shipping company. The Netherlands warned between five and fifteen companies in 2020. The other Member States participating in the data collection indicated no warnings were issued (and consequently no fines).<sup>100</sup>

Asked how Member States ensure that the sanctioning and penalty system is proportionate and dissuasive, the main answer is that the amount of the fines currently applicable to EU MRV violations seems to be sufficient as the number of non-compliant vessels is limited. In addition, the fact that a vessel can be detained in port or even deleted from the register has a large financial consequence for the company. Companies are willing to avoid these sanctions and therefore wish to be compliant.<sup>101</sup>

As highlighted above, the number of non-compliant vessels seems to be limited in the Member States that participated in the data collection. Non-compliant vessels were often late in submitting their data to the verifier, which led to delayed verification.<sup>102</sup> According to the respondents, some companies claimed that they had problems in collecting the data needed, others mentioned IT issues, and some were not aware of their obligations. Since the introduction of the EU MRV Regulation, Member States do see an improvement in the compliance rates as companies have their procedures more in place. Vessels that were non-compliant in 2020 were owned by newly established companies or visited an EU port for the first time.<sup>103</sup>

## 5.4 Communication and information exchange

As part of the EU MRV Regulation, flag State authorities can communicate with other stakeholders. In the data collection sheet, the authorities were asked with whom they communicate, how they communicate and about what they communicate.

### Communication with verifiers

As highlighted earlier, the flag State authorities need to be notified that the emissions report is delivered, and a DoC is issued (Article 19(1)). The main way of finding out whether the shipping company has fulfilled these obligations is by using the THETIS-MRV.<sup>104</sup> All respondents indicated that this is the main tool to be notified that the owner fulfilled the obligation. Germany indicated that it would be appreciated if the authority could receive an automatic notification or alarm when a DoC is issued. Currently, the authority needs to check the system from time to time, which is a costly activity. Some of the smaller flag States, such as Bulgaria, Croatia and Lithuania also receive an email from the verifier indicating that the DoC is issued for a specific vessel.

Overall, flag State authorities do not have much interaction with the verifiers.<sup>105</sup> As a result, they do not have an insight into how the verification process is going. They indicated that this is not always appreciated as the verification process is currently a black box for them. Authorities need to trust that the information in the emission report is correct as they have no possibility to verify the correctness of the information themselves.

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<sup>100</sup> Based on question 9 of the data collection sheet for flag State authorities.

<sup>101</sup> Based on question 11 of the data collection sheet for flag State authorities.

<sup>102</sup> Based on question 7 of the data collection sheet for flag State authorities.

<sup>103</sup> Based on interviews.

<sup>104</sup> Based on questions 14a and 15 of the data collection sheet for flag State authorities.

<sup>105</sup> Based on question 14b of the data collection sheet for flag State authorities.

## Communication with other stakeholders

Besides communication with verifiers, flag State authorities could communicate with other stakeholders, such as other administrations in their country, foreign flag States, port State authorities, EMSA and the European Commission. Overall, flag State authorities do not seem to interact much with other stakeholders as part of the EU MRV Regulation.<sup>106</sup> Based on the answers given, no problems in sharing information seem to occur.<sup>107</sup>

Most frequently mentioned was the interaction with EMSA as Member States can use the information from SafeSeaNet to check whether port calls in the EU have been made ships flying in their flag. In addition, they communicate about technical difficulties in using THETIS-MRV and provide suggestions for improvements to the EU MRV system. The tool used to communicate with EMSA is THETIS. Sometimes emails are sent. To communicate with other authorities in their own national administration phone and email are the most favoured communication tools.<sup>108</sup>

## 5.5 The flag State authorities' views on the EU MRV system

Besides information collected on how flag State authorities ensure that the reporting obligations are fulfilled by shipping companies, measures that can be taken in case of non-compliance and information on communication tools used, the flag State authorities were also asked what their main experiences and views are on the EU MRV Regulation. They could provide their views on what works well and what could be improved. The main findings are summarised below.

### *Elements of the EU MRV system that work well according to flag States<sup>109</sup>*

An element that is appreciated by the flag State authorities is that the EU MRV system has its own section in THETIS-MRV. As a result, information regarding the EU MRV Regulation can be easily accessed. The system has also improved since its introduction, which results in better usability of the program. The time needed to collect information, as a flag State authority, is limited. Although flag State authorities appreciated that THETIS-MRV was introduced, they see some practical points for improvements. They made the following suggestions:

- Create a section for flag State authorities where they can include information on deficiencies detected as well as sanctions given. By including this information, a complete overview per vessel can be obtained. Since the stakeholder consultation, such a dedicated section was developed and launched. Member States can access the information via THETIS-EU;
- Allow downloading fleet information in bulk. Currently, the flag State authority can only download information per vessel which is a time-consuming activity. To reduce the time needed, it would be appreciated if a flag State authority could download all emissions reports and DoCs issued for vessels flying its flag in one go;<sup>110</sup>
- Improve the traceability of certain documents. Several flag State authorities indicated that sometimes it is hard to find the documents they are looking for.

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<sup>106</sup> Based on question 16 of the data collection sheet for flag State authorities.

<sup>107</sup> Based on question 18 of the data collection sheet for flag State authorities.

<sup>108</sup> Based on question 17 of the data collection sheet for flag State authorities.

<sup>109</sup> Based on question 19 of the data collection sheet for flag State authorities.

<sup>110</sup> Since the publication of the present study, such a functionality has been added to THETIS-MRV, allowing Flag State authorities to download in bulk emissions report information for all the ships flying their flag.

A second element that works well is the fact that the verification is done by accredited verifiers, who are not part of the administration. Authorities indicated that it is welcome that the workload can be shared. In case the verification would have become a task of the public administration, it might have led to capacity issues. The flag State authorities are of the opinion that involving private companies who are specialised in environmental monitoring in the shipping industry is a good practice.

#### *Elements of the EU MRV system that could be improved according to flag States<sup>111</sup>*

The flag State authorities indicated that at some points more guidance from the Commission would be welcome. For example, it would be helpful to have a non-exhaustive list of non-conformities according to EU MRV Regulation. This would help flag State authorities to better assess whether a vessel flying their flag is compliant or not.

A second element frequently mentioned is the alignment between the EU MRV Regulation and the IMO DCS legislation. As the two legal instruments do differ on certain important points, the system is not working optimally and creates confusion. Elements mentioned are the difference in vessels included in the scope of the Directive (IMO DCS is defined more broadly than the EU MRV Regulation), different port calls included (IMO DCS includes all port calls, where EU MRV Regulation only includes the ones with a commercial purpose), the different deadlines for handing in the reports (30 June for the IMO DCS and 30 April for the EU MRV Regulation) and how to deal with a change in ownership. To address the alignment issues, the Commission proposed an amendment of Regulation 2015/757 in which some of the issues raised have been addressed.<sup>112</sup>

## 5.6 Summary of the main findings

Based on the above analysis, the main findings regarding Member States in their capacity as flag States are:

- Based on Article 19(1) flag State authorities need to ensure that vessels flying their flag comply with the requirements of the EU MRV Regulation. In other words, they need to ensure that a valid DoC has been issued on time for all the ships flying their flag. However, the moment in time that the flag State authority should perform this obligation does not seem to be sufficiently clear for some of them. The majority of flag State authorities perform this check either after 30 April or 30 June. Member States reactively check whether the vessels were compliant. Several Member States have adopted a more pro-active approach and made shipping companies aware of their obligations a few weeks/months before the deadline of 30 April. Based on the information collected, it is difficult to indicate whether this approach led to a higher compliance rate.
- Flag State authorities do have different sanctions at their disposal in case vessels flying their flag are non-compliant. In most Member States a two-step approach exists. First-time offenders are warned, either verbally or in writing. In case of a second offence, a fine (either administrative or criminal) can be issued. This fine can be issued in combination with other sanctions, such as detention in or refused access to the port, deletion from the registry, withdrawal of certificates or issuing an expulsion order. Although Member States do have a range of sanctions available, so far only a few warnings and even fewer fines were issued. Flag State authorities

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<sup>111</sup> Based on question 20 of the data collection sheet for flag State authorities.

<sup>112</sup> COM(2019) 38 final - Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2015/757 in order to take appropriate account of the global data collection system for ship fuel oil consumption data.

did not detect non-compliance of vessels flying their flag. As such it could be concluded that EU flagged vessels falling under the EU MRV Regulation do comply with the EU MRV requirements.

- Communication between the flag State authorities and other EU MRV stakeholders is limited. The authorities do not interact with the verifiers. To check whether a DoC is issued, the flag State authorities check THETIS-MRV. There is some interaction with other national stakeholders about the EU MRV system and with EMSA. With EMSA the interaction partially focuses on the exchange of information (i.e. on port calls) and partially on technical issues related to THETIS. Flag State authorities did not seem to interact much with the Commission. Nevertheless since 2021 the Commission organises meetings to meet with the Member State authorities. Interaction between a Flag State authority and its counterparts in other Member States is limited.
- Flag State authorities suggested they find certain parts of their tasks under the EU MRV Regulation unclear. A specific point mentioned is the interpretation and clarification on how Article 19(1) should be read. According to some authorities, the first and second sentence lay down a different requirement regarding the inspection of compliance. Further guidance on how to deal with this might make inspections easier and results better.

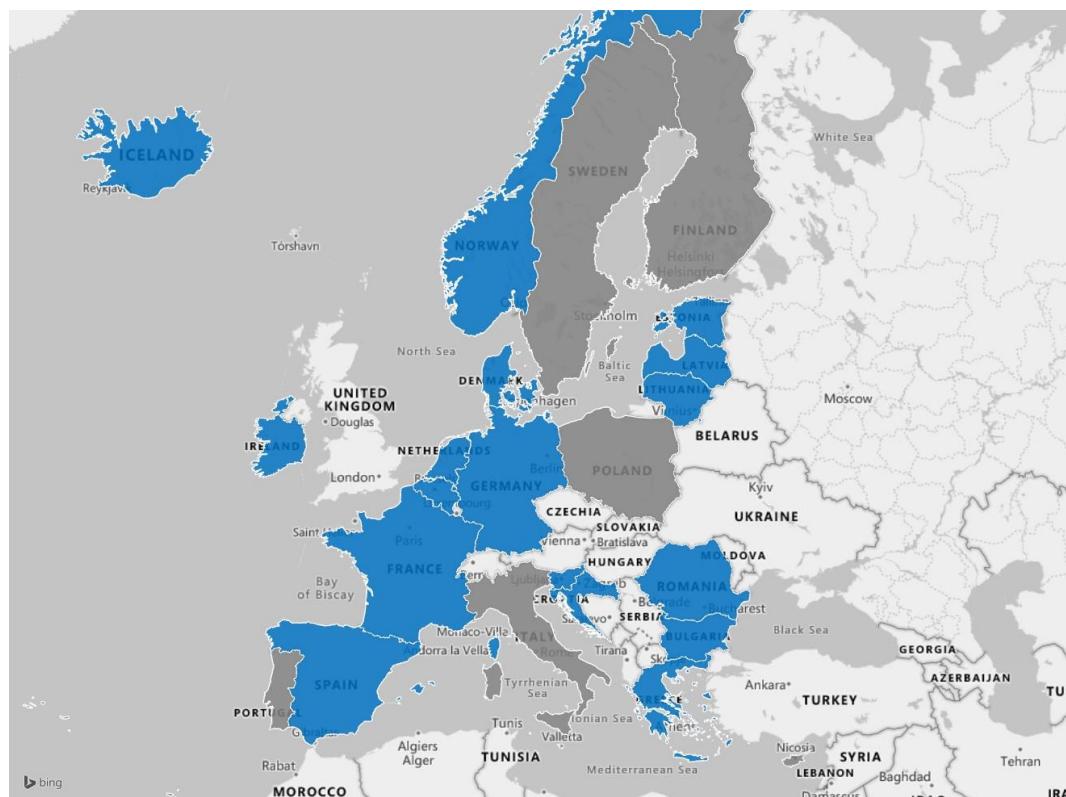
## 6 Member States as port States

## 6.1 Introduction

Member States in their capacity as port States have a role in the EU MRV system as well. They need to ensure that any inspection of a vessel in a port under its jurisdiction is carried out following the Regulation. This includes a check whether a valid document (i.e.: the DoC) is carried onboard the vessel. In case the vessel is non-compliant, the port State needs to follow up through effective, proportionate and dissuasive penalties, which follow from an established system of penalties.

In this study, port State authorities in the EEA were actively involved through the data collection sheet for port State authorities (see Annex VIII) and an additional interview (Table AII.2). In total, 22 EU Member States,<sup>113</sup> Norway and Iceland were invited to participate in the study. In total, 17 port States responded to this request. Figure 6.1 shows the port States that did and did not participate in the study.

**Figure 6.1 Overview of the Port States that did (blue) and did not participate (grey) in the study**



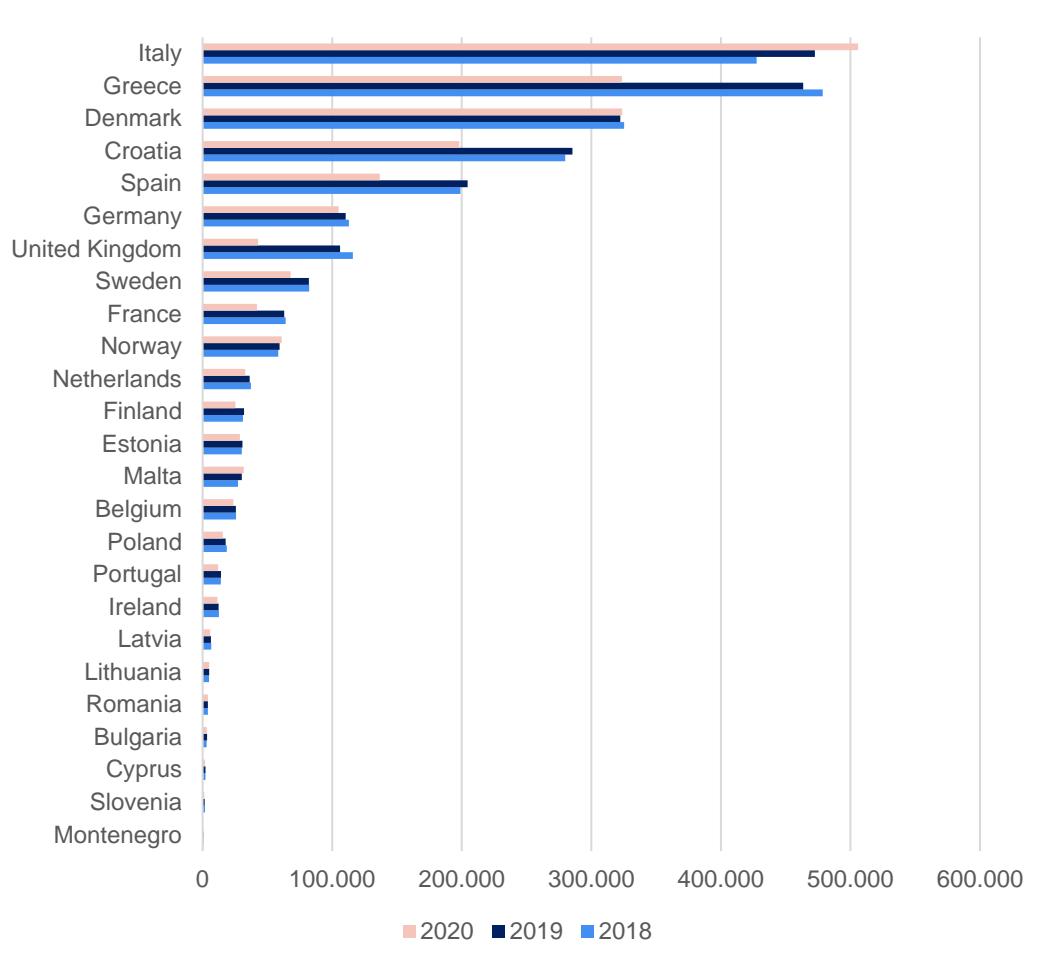
The port States that responded to the data collection sheet provided statistics on the number of vessels calling at their ports. The data collection sheet also requested information on the number of vessels larger than 5,000 GT, as they fall under the EU MRV Regulation.<sup>114</sup> Only several port States provided this information. According to the available statistics, the share

<sup>113</sup> Land-locked Member States, such as Austria, Czech Republic, Hungary, Luxembourg and Slovakia, do not exercise port State control activities and are therefore not included in this part of the analysis.

<sup>114</sup> Based on question 1 of the data collection sheet for port State authorities

of vessels larger than 5,000 GT differs between 50% and 80% of the total number of vessels calling at their ports.<sup>115</sup>

**Figure 6.2 Total number of vessels calling at EU ports (2018 – 2020)**



Source: Eurostat (2022), Vessels in main ports by type and size of vessels (based on inwards declarations) - quarterly data (mar\_tf\_qm) ([link](#)).

Concerning the EU MRV system, several elements are of importance when discussing the role of the port State authorities. First of all, port States need to ensure that inspection of a vessel is in line with the Regulation. Section 6.2. provides more details on how port States assess whether vessels calling their ports are compliant. In section 6.3, the sanctions/measures that a port State could take in case of non-compliance are described. In section 6.4, the main views of the port State authorities on the EU MRV system are presented. Finally, the chapter provides a summary of the main findings (see section 6.5)

## 6.2 Inspections of vessels related to EU MRV Regulation

In light of Article 19(2) of the EU MRV Regulation, each Member State shall ensure that any inspection of a ship in a port under its jurisdiction is carried out following Directive 2009/16/EC (the port State Control Directive or PSC Directive). This includes checking that a valid EU MRV Document of Compliance (DoC) is carried on board. These inspections can be done from shore, while in case information on the date of issue/expiry of the DoC or the

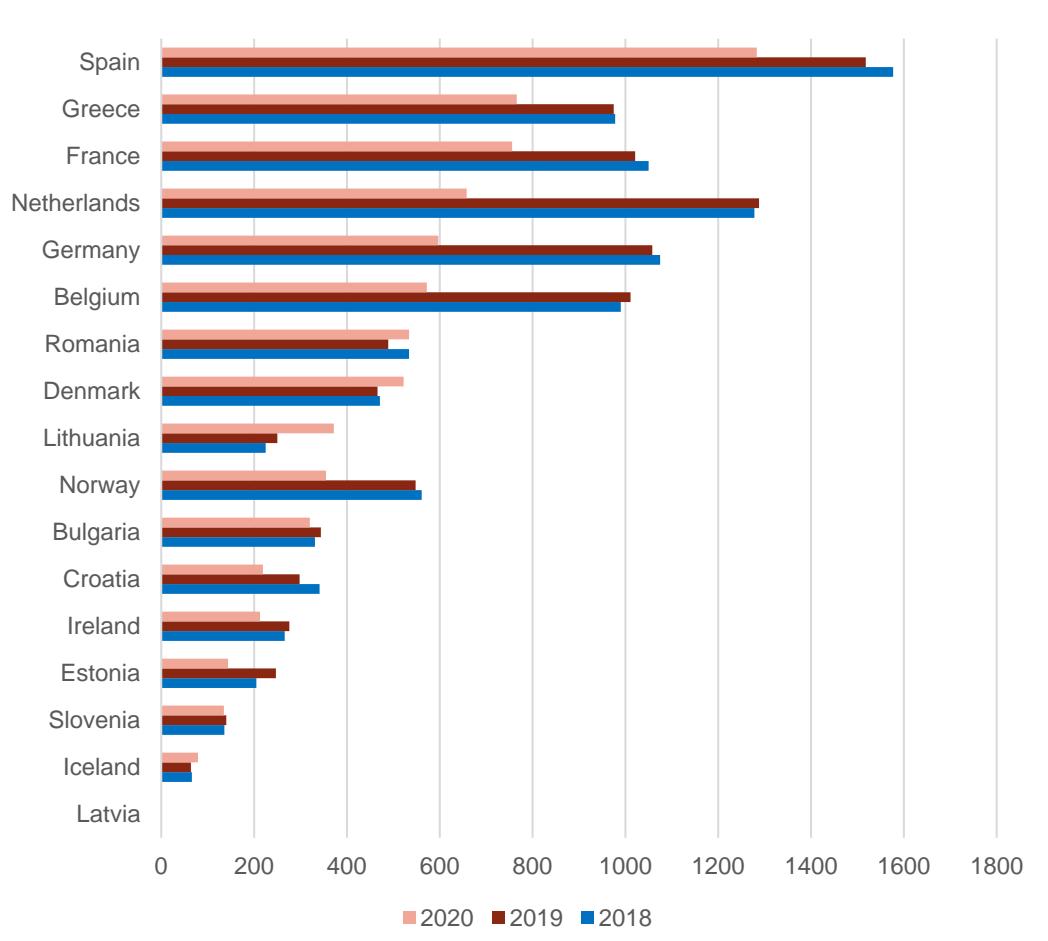
<sup>115</sup> For Germany, Belgium, Greece, Norway, Bulgaria and Slovenia there is data available on both the total number of vessels and the vessels than 5,000 GT.

identity of the verifier is not available, the Member State may check for a valid DoC onboard the ship (in line with Article 19(3) of the Regulation (2015/757).

### Assessment of compliance

According to the answers provided by port States, vessels are selected following the criteria set in Annex I of PSC Directive (2009/16/EC). The main elements Port States consider are the risk profile and the emergency or overriding and unexpected factors. Figure 6.3 presents the statistics provided by the respondents on the number of port State inspections. It should be noted that the number of inspections strongly decreased in 2020 due to the COVID-19 pandemic measures.

**Figure 6.3 Statistics on the number of port State control inspections carried out**



Source: Based on question 2 of the data collection sheet for port State authorities (Annex VIII).

According to data collected in the course of this project, roughly 60% of the port State control inspections are carried out at vessels above 5,000 gross tonnages.<sup>116</sup>

### Checking the document of compliance

The port State authority can check the DoC through the following ways:

1. On-shore checking the document of compliance before the vessel calls in their port;
2. On-board inspection during a PSC inspection.

<sup>116</sup> Based on question 1 of the data collection sheet for port State authorities.

### *On-shore checking the document of compliance before the vessels call in their port:*

Before a vessel enters a European port, the port State Authority is electronically informed on arrival. The company (or agent) will need to register the vessels through an application process. Note that the application procedure varies between European ports (described in the next section). A rough description of the application process from shipping companies' perspective is presented below.<sup>117</sup>

Information is delivered (e.g.: in an Excel workbook), which is loaded into the port operating system. The following information is provided on arrival:

- International Ship and Port Facility Security Code (ISPS);
- Arrival & departure crew;
- Marine Declaration of Health;
- Information related to garbage and others.

The DoC is only part of the delivered information in case it is specifically requested by the PSC. Presumably, this may be also inquired through THETIS-MRV

Article 19(2) of the Regulation (2015/757) states that each Member State shall ensure that any inspection of a ship in a port under its jurisdiction carried out following Directive 2009/16/EC includes checking that a valid document of compliance is carried on board. The following section describes the way stakeholders are implementing the Regulation.

Concerning before arrival checks on the DoC a large variety of processes among European port States is in place. Several port States indicate that there are no processes in place to check the document of compliance before the vessel enters its ports. Others are checking the DoC on aspects such as issuing dates, expiry date reporting period and verifier through the THETIS-MRV. They might also use commercial information to determine the ships port calls. The last group goes one step further and obliges the ship to deliver several documents (among which the DoC) to their information system. In case these documents are not delivered, the ship will face direct actions, such as denial to enter the port. Through three examples, these different practices are described.

#### **Examples of the process for on-shore checking the DoC**

##### *Example 1 – no pre-emptive checking*

The respective port State authority does not perform pre-emptive checks on the DoC before arrival as it is not made compulsory by the regulation.

##### *Example 2 – pre-emptive checking through THETIS*

The port State authority checks whether a document of compliance is uploaded in the THETIS-MRV system. Specifically, all the necessary information prescribed in Article 17(2) of the EU MRV Regulation (2015/757) is checked, as well as the whole procedure that led to the issuance of the document of compliance.

##### *Example 3 – pre-emptive checking through THETIS and direct follow-up actions*

Ships within the scope of the Regulation (2015/757), must on 24 hours pre-arrival notification, among the other documents, attach also the MRV DoC to the national maritime information system / Harbour Master office. In case the document is not declared, the ship is automatically denied the port clearance process. The duty officer (Harbour Master office) evaluates the validity of the document and in case of doubt or inconsistency, the mentioned document is forwarded to the duty PSC officer for consideration.

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<sup>117</sup> Note that this information request was not part of the initial data collection sheets and was added as a follow-up question to the shipping companies that responded to our data collection request.

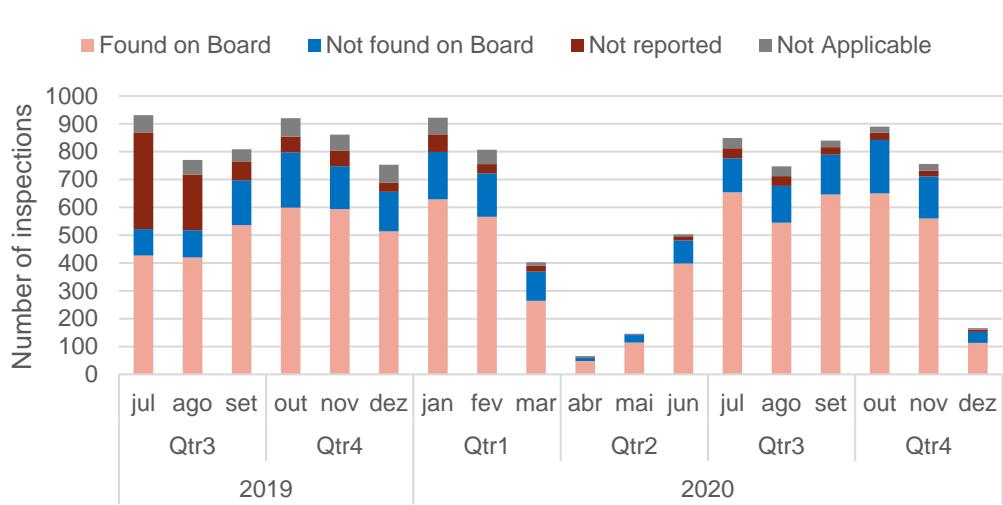
Based on these findings from several stakeholders, the DoC is not always part of the pre-arrival documents that are delivered from the shipping company to the respective port State. Shipping companies indicate that the DoC is only delivered pre-arrival in case it is specifically requested by the PSC.

#### *On-board inspection during a PSC inspection*

In case the document of compliance is inaccurate or incomplete, the port State follows procedures to perform the on-board inspection. A mandatory check of the document of compliance is incorporated in a PSC inspection. The presence of a valid DoC is verified on board, as well as inspecting whether the document contains the required information outlined in Article 17(2) of the Regulation (2015/757). In case inaccuracies or incompleteness concerning this document were discovered, this will be brought to the attention of the Master and can be specified in THETIS.

Figure 6.4 shows statistics concerning checking the DoC during a PSC inspection on board over the last two quarters of 2019 and the four quarters of

**Figure 6.4 Checking the MRV DoC during a PSC inspection**



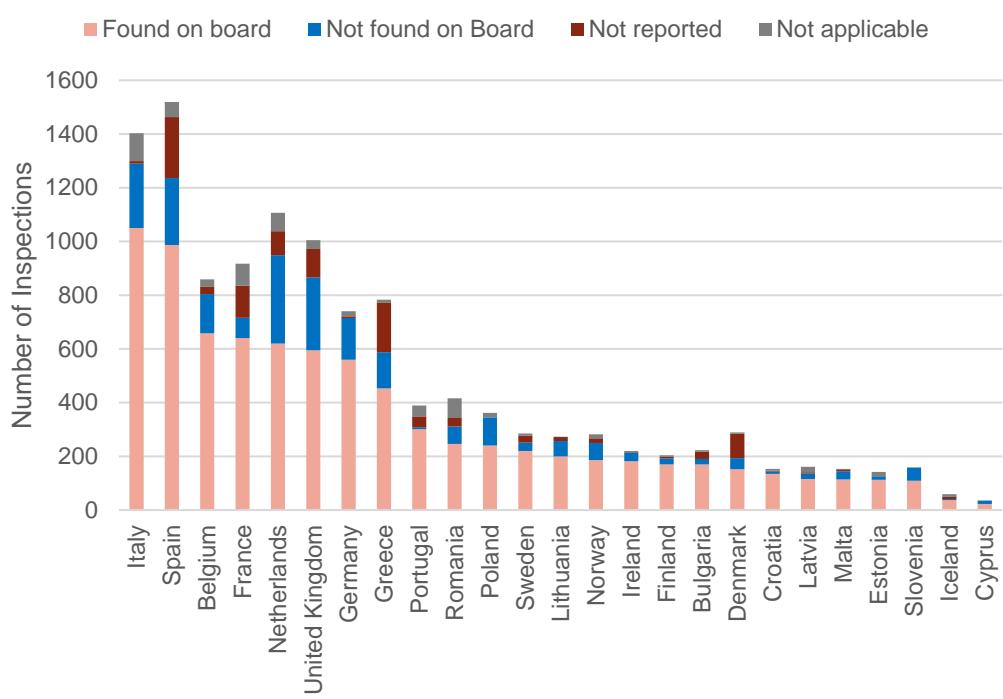
Source: EMSA (2021), *Data on inspection by PSC (between 01 July 2019 and 8 December 2020)* (modified by author).

According to EU MRV Annual Report of 2020, the vast majority of Port inspections (in 2020) showed that Documents of Compliance were on-board of inspected vessels in approximately 70% of the cases. In around 20% of the cases a DoC was not carried on board of the vessel. However, a DoC not carried on board might not necessarily represent a non-compliance situation. The ship might have had no relevant EEA calls in the previous reporting period and therefore does not have to carry on-board a document of compliance for that reporting period.<sup>118</sup>

Figure 6.5 presents statistics about the number of inspections where an EU MRV DoC was issued. This figure clearly shows differences in the absolute and relative share of DoC inspections between the port States.

<sup>118</sup> SWD (2021), 228 final Commission Staff Working Document Full-length report *Accompanying the document Report from the Commission 2020 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport*.

**Figure 6.5 Checking the MRV DoC during a PSC inspection by Country**



Source: EMSA (2021), Data on inspection by PSC (between 01 July 2019 and 8 December 2020) (modified by author).

According to additional information retrieved from the data collection sheets, only a few vessels are registered as being non-compliant. In 2018 and 2019 respectively fifteen and sixteen vessels were registered as being non-compliant by port States.<sup>119</sup> The following main reasons are mentioned by port States that vessels were not compliant:

- Misunderstanding of the regulations;
- Change of ownership/management;
- Problems with the reporting process;
- Lack of an appropriate database;
- Problems with the logistics due to the COVID-19;
- Lack of awareness of the EU MRV Regulation as shipping companies were mostly active outside the EU.

## 6.3 Enforcement of the EU MRV Regulation

Based on Article 20 of the EU MRV Regulation, the Member State concerned shall set up a system of penalties in case a shipping company fails to comply with the monitoring and reporting obligations. The Member State should take measures to ensure that those penalties are imposed. In this section, an overview of the regulatory basis, (potential) sanctions and measures imposed by the port States are discussed.

<sup>119</sup> Based on question 3 of the data collection sheet for port State authorities.

## Legal basis for the system of penalties and measures<sup>120</sup>

The national regulation forms the legal basis for the system of penalties and measures.

### Sanctions and measures

Before applying sanctions and measures, the status of the vessel will be checked in the THETIS database. In case of non-compliance, this will be brought to the attention of the Master. All port States have sanctions and measures in place when a ship does not comply with the EU MRV Regulation. The port States are performing (in line with the flag State authorities) a two-step approach concerning first-time non-compliances.

#### *1st non-compliance*

The first step, in case of the vessel being non-compliant for the first time, the port State will issue a Letter of Warning (LOW). This effectively is a formal way of providing a warning. As a second step, the port State can issue a fine. The amount of this financial penalty differs substantially per Member State. In practice, the financial penalty ranges from 140 to potentially 100.000 euros. In Table 6.1, an overview of the regulatory basis and sanctions and measures imposed by the port States is presented.

In addition to issuing a letter of warning or fine, the national system allows Member States to impose other sanctions as well. In Spain and Croatia, an expulsion order shall be issued (e.g.: in case of recurrently non-compliant or the ship has an expulsion order from another Member State port). In Slovenia, the ship is prevented from entering the national waters in case of a DoC MRV inconsistency or unavailability.

#### *Recurrent non-compliance*

In case the vessel is recurrently non-compliant, the majority of port States indicate there is limited to no difference in sanctions and measures compared to first time non-compliance. Several port States increase the size of the monetary fine (e.g. double).

During discussions with the port States, they signalled that the ability to follow up once a fine is issued could be challenging. In current practice, the fine is imposed on the shipping company, whereas in other sanctions imposed by port States, the master is appointed as the receiver of the fine. With the shipping company being the receiver of the fine, it is complicated to appoint someone who will respond to the action procedure.

#### *Sanctions and measures issued*

The last column in Table 6.1 presents the actual number of sanctions and measures issued in 2019 and 2020. This shows that the number of actual sanctions imposed in the last years is limited.

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<sup>120</sup> Based on question 5 of the data collection sheet for port State authorities.

**Table 6.1 Overview of the regulatory basis and sanctions and measures imposed by the port States<sup>121</sup>**

Country	Regulatory basis		Sanctions and measures		
	National regulation	Type of regulation	1st non-compliance	Recurrent non-compliance	Issued (in 2019 and 2020)
Belgium	Royal Decree of 14 July 2020	Administrative law	1. Fine (20.000 euro)	1. Double the amount of the administrative sanction 2. Issue an expulsion order	2019 = 4 fines; 2020 = 7 fines
Bulgaria	Bulgarian Merchant shipping code	Administrative law	Financial sanctions: 2,000 to 50,000 BGN	Financial sanctions: 2,000 to 50,000 BGN	None issued
Croatia	Law on climate change and ozone layer protection	Administrative law	1. Infringement proceedings and penalties 5,000 to 30,000HRK to the company + fine of 1000 to 5000 HRK to the company's legal representative / fine of 5,000 to 15,000 HRK if sole trader 2. Expulsion order issued	An expulsion order shall be issued (1) in case of recurrently non-compliant or (2) the ship has an expulsion order from another Member State port	None issued
Cyprus	Law 95(I)/2011	Administrative and criminal	1. Criminal sanctions: upon conviction a person is liable to imprisonment for a term not exceeding two years or to a fine not exceeding eight thousand five hundred fifty euro (€ 8.550 ) or to both such sentences 2. an administrative fine not exceeding eight thousand five hundred fifty euro (€ 8.550), depending on the seriousness of the contravention and irrespective of whether or not there is a concurrent case of criminal liability.		None issued
	P.I. 411/2015	Implementing Act	Prohibition of sailing		1
Denmark	Biofuels Act	Criminal law	1. Talk with the shipowner on non-compliance 2. Make a recommendation to the owner	1. Danish Energy Agency may report the breach of the law to the Danish police 2. Danish police may then issue fines to the ship (. § 8, para. 1, no. 5)	None issued
Estonia	Atmospheric Air Protection Act §237	Administrative law	1. Detain a vessel	1. Fine issued (up to 300 euro) 2. Fine issued (up to 16.000 euro) to a legal entity	None issued
Finland	Act on Environmental Protection on Maritime Transport	Administrative law	General criminal proceedings in the case being non-compliance is due to negligence on board a foreign vessel		None issued
	Criminal Code	Criminal law	General criminal proceedings in the case being non-compliance is due to negligence on board a foreign vessel	General criminal proceedings in the case being non-compliance is due to negligence on board a foreign vessel	
France	Code de l'environnement and code des transports	Criminal law	1. Issue a warrant of infringement (maximum fine 15.000 euro)	1. Similar penalty (maximum fines would be doubled) 2. Expulsion order	None issued
Germany	Administrative Offences Act in conjunction with German Greenhouse Gas Emissions Trading Act	Administrative law	1. Compulsory hearing of the shipping company 2. Issue a fine 3. Publication in Commercial Central Register	A fine can be increased by 25% per year (or even more) with a penalty range of up to € 50.000	2019: 3 hearing, of which 1 case was closed without a fine and 2 with fines  2020 = 3 hearings of which 1 issuance still standing, 2 cases closed without a fine
Greece	Ministerial Decision (G.G. B'1922) which cites to articles 13 and 14 of Presidential Decree No 55 /1998 (G.G. A' 58).	Administrative law	1. Issue fines (up to 100.000€)	1. Fine up to € 100,000.- 2. Prohibition of sailing as long as the fine is not paid (Law under revision)	2020 = 1 fine
Iceland	Act on ship surveillance no. 47/2003	Administrative law	1. Deficiency recorded in PSC report	No difference to 1 <sup>st</sup> -time non-compliance in the regulation	None issued

<sup>121</sup> It should be noted that the table does not provide a complete overview as for some Member States no information was obtained.

Country	Regulatory basis		Sanctions and measures		
	National regulation	Type of regulation	1st non-compliance	Recurrent non-compliance	Issued (in 2019 and 2020)
Ireland	Carbon Dioxide Emissions from Maritime Transport	Administrative law	2. Detention in severe instances  1. Letter of Warning 2. Expulsion Order 3. Court Prosecution	1. Expulsion 2. Prosecution	2019 = 4 letters of warning 2020 = 3 letters of warning
Italy	Legislative Decree of 25 July 2019, no 83	Administrative law	1. Fines from 30,000 to 150,000€ in case of non-compliance with articles 6 and 6 2. Fines from 20,000 to 100,000€ in case of non-compliance with articles 8, 9 or 10 3. Fines from 10,000 to 50.000€,- in case of non-compliance with articles 11 or 12		None issued
Latvia	Law On Pollution	Administrative law	1. Administrative fine on a person (between 70 – 350 euro)  2. Fine 140 – 1,400 euro to a legal entity	No difference to 1 <sup>st</sup> -time non-compliance in the regulation	None issued
Lithuania	Code of Administrative Offenses	Administrative law	Fines dependent on the type of administrative infringement (between 500 – 3.000 euro)		None issued
Malta	Subsidiary legislation 234.54 to merchant shipping (monitoring, reporting and verification of carbon dioxide emissions from maritime transport regulations	Administrative law	Fines up to 11,650€	In case the vessel is for more than 2 years not compliant with the EU MRV requirements, the vessel can receive an expulsion order	None issued
Netherlands	Regeling Voorkoming verontreiniging door Schepen	Administrative law	1. Letter of warning 2. Detain the vessel	1. Detention 2. Issue fines	2019 = > 40 letter of warning
Norway	Norwegian Ship Safety and Security Act	Administrative law	1. Order implementation of measures 2. Rectification (i.e. before departure) and/or detention 3. Issue fine	Recurrence will affect the consideration of the severity and may warrant more comprehensive measures (i.e. detention, refusal of access, violation fine)	None issued
Poland	ACT of 16 March 1995 on the Prevention of Pollution from Ships	Administrative law	Fines up to 50,000 SDR <sup>122</sup>		None issued
Romania	Romanian Law (no. 22/2018)	Administrative law	1. Fine (between 6.000 and 8.000 euro) 2. Fine and expulsion (between 6.000 and 8.000 euro)	No difference to 1 <sup>st</sup> -time non-compliance in the regulation	none issued
Slovenia	Maritime Code (Art 117/1)	Administrative law	1. Warning 2. Registering as a deficiency / fine (between 2.100 and 35.000 euro on a legal entity) 3. Expulsion	Prevent the ship from entering the national waters in case of a DoC MRV inconsistency or unavailability	None issued
Spain	National law for Ports and Merchant Marine (RDL 2/2011)	Administrative law	• Fine up to € 120,000 (in case of violation of Articles 8 and 9 EU MRV Regulation)	Similar to first time non-compliance, however severity might be increased	2019: 7 fines * 2020: 5 fines* (Fines imposed between 9,000 and 20,000 euro)

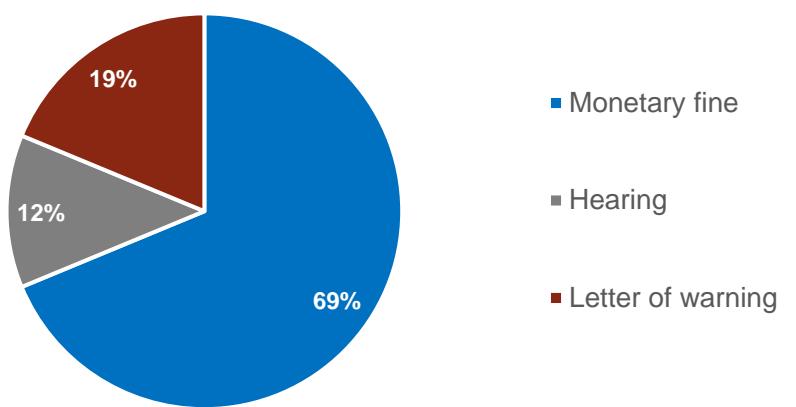
<sup>122</sup> SDR = special drawing rights

Country	Regulatory basis		Sanctions and measures		
	National regulation	Type of regulation	1st non-compliance	Recurrent non-compliance	Issued (in 2019 and 2020)
			<ul style="list-style-type: none"> <li>• Fine up to € 120,000 (in case of violation of Article 10 EU MRV Regulation)</li> <li>• Fine up to € 120,000 (in case of violation of Articles 11 and 12 EU MRV Regulation)</li> <li>• Fine up to € 300,000 (in case of falsification of documents)</li> </ul>	-	
Sweden	According to Section 4 of the Ordinance on monitoring, reporting and verification of carbon dioxide emissions from maritime transport, 2017:880, expulsion orders in accordance with Article 20.3 of the MRV Regulation may be issued.	Administrative law	-	-	No expulsion orders have been issued in the period.

\* Only penalty procedures that have already been finished are counted.

As discussed in the previous section, only a handful of vessels are registered as being non-compliant. These shipping companies were faced with the following kind of sanctions.

**Figure 6.6 Overview of the sanctions / measures issued according to the respondents**



Source: Based on question 7 of the data collection sheet for port State authorities (Annex VIII).

## 6.4 The port State authorities' views on the EU MRV system

Port State authorities were also asked what their main experiences and views are on the EU MRV Regulation. They could provide their views on what works well and what could be improved. The main findings are summarised below.<sup>123</sup>

### *Elements of the EU MRV system that work well according to port State authorities*

Again, the main element of the EU MRV system that worked well are the insights because of measuring and collection of emissions information. Through a better understanding of fuel emissions and consumption, the maritime industry (all actors involved) became better aware of their ecological footprint. In addition, details, such as the parameter 'cargo carried', are important efficiency indicators to also understand the output.

Port States also explicitly mention the efficient functionality of (and direct link between) THETIS EU and THETIS-MRV to verify the issuance of a Document of Compliance (DoC). In the case of a PSC inspection, the information on the DoC can be accessed efficiently through these systems.

### *Elements of the EU MRV system that could be improved according to port State authorities*

There are also several elements mentioned that could be improved to ensure the smooth functioning of the EU MRV Regulation.

First, stakeholders mentioned the need for a centralized reporting system to exchange information on non-compliances. Port States find it difficult to coordinate on noticed/penalised non-compliances as there is limited information available to know whether another Member State has already penalised the respective vessel. The same holds for recurrent infringements, which are difficult to identify and follow up upon. This brought up practical challenges to enforce the regulation. The new THETIS-EU module<sup>124</sup>

<sup>123</sup> Based on questions 13 and 14 of the data collection sheet for port State authorities  
<sup>124</sup> <https://portal.emsa.europa.eu/web/thetis-eu>.

for MRV inspections fulfils this need by providing a centralised system where data on inspections can be exchanged and verifications of non-compliances can be reported. In May 2021, an online workshop was held where EMSA explained the differences between THETIS, THETIS-EU and THETIS-MRV and provided support on how the different systems can be used by Member States.<sup>125</sup>

Second, the legislation leaves room for interpretation. This especially holds for the articles regarding penalties. For instance, a shipping company is only compliant if the following requirements are met: (1) handing in an emissions report by the shipping company to the Commission (and flag State); (2) verifier informs the Commission about issuing the DoC and provides details on the contents thereof and (3) the vessels should have a valid DoC on board. A situation could occur that a vessel has a valid DoC on board but did not comply with requirements (1) or (2). The presence of a valid DoC on board of the vessel does not automatically mean that the shipping company handed in their emissions report and/or that the verifier informed the Commission about issuing the DoC.

## 6.5 Summary of the main findings

Based on the above analysis, the main findings regarding Member States in their capacity as Port States are:

- According to the feedback provided, the pre-arrival checks of the DoC are highly dependent on the respective port. Several port States indicated there is no process in place to check the DoC before the vessels enter their port. Other port States are checking information in the DoC through THETIS-MRV (such as date, reporting period and verifier). This respective process is validated by asking shipping companies whether the DoC is part of the documents to be provided on arrival. It became clear that the DoC is not always part of these documents and only in case of specific requests are these documents delivered.
- Inspection of the DoC is part of a PSC inspection, but not one of the leading criteria for a ship inspection. However, in the case of a ship inspection, the DoC is part of the list. This is in line with the existing regulation on PSC inspection.
- The consultation of port States clearly shows the need for a centralised reporting system for non-compliances. Currently, experience shows that some port States are registering their sanctions in an internal centralised database, while others indicated that records of sanctions and measures are issued in THETIS EU. This makes it difficult to identify recurrent non-compliant vessels. In essence, this aspect also relates to the new THETIS-EU module<sup>126</sup> for MRV inspections, which fulfils this need by providing a centralised system where data on inspections can be exchanged and verifications of non-compliances can be reported.
- Port State authorities have several options concerning sanctions in case vessels entering their port are non-compliant with the EU-MRV (which is rather similar to the actions a flag State can take). The ship can be warned (first-time offence), fined or can be detained. Although this range of sanctions is available, so far only a handful of warnings and fines were issued according to our sample. Another aspect to look into is the ability to follow up once a fine is issued. In current practice, the fine is imposed on the shipping company, whereas in other sanctions imposed by port States, the master is appointed as the receiver of the fine. With the shipping

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<sup>125</sup> Workshop on THETIS MRV Inspection Regime – 5 May 2021.

<sup>126</sup> <https://portal.emsa.europa.eu/web/thetis-eu>.

company being the receiver of the fine, it is complicated to appoint someone who will respond to the action procedure.

- The limited sanctions as a result of inspection shows that the vast majority of companies understand the EU MRV requirements. This is strengthened by the limited number of sanctions that were issued in 2019 and 2020 (see Table 6.1). However, port States mention that there is a continued need for awareness, knowledge and understanding among shippers, companies and agents on what the EU MRV Regulation contains. This especially holds for vessels managed/owned by non-EU countries. Stakeholders mention that, in case the documentation is not readily available, finding the right documentation on the spot takes a significant portion of the inspection time.

## 7 Overarching findings and recommendations

In the previous chapters, the key findings per stakeholder group were presented. Based on the data collection sheets and interviews, it is possible to identify some overarching issues regarding the implementation of the EU MRV Regulation. These findings are presented in Section 7.1. In section 7.2 the study recommendations are provided.

### 7.1 Summary of key findings

The main advantage of the EU MRV Regulation mentioned by all stakeholders is the insights gained in the environmental performance of the largest vessels entering or leaving EU ports. The EU MRV system allows for the systematic collection of vessel performance data. This enables shipping companies themselves, but also other stakeholders, like Member State authorities, to identify trends in the overall performance of an individual vessel and/or the entire fleet. It also enables them to use this information to base their further policies on.<sup>127</sup> As highlighted in Chapter 1, the available data show that the number of vessels falling within the scope of the EU MRV Regulation for the years 2018 and 2019 is more or less constant. Based on this, it could be concluded that shipping companies were aware from the start that new obligations were introduced, and they ensured to have monitoring plans in place and submit emissions reports.

As said, the EU MRV system allows for the systematic collection of emission performance data. Since 2019, shipping companies have been required to submit emissions reports. Different stakeholders indicated that fulfilling the requirements, especially in the first year was rather challenging, as not all shipping companies were able to collect the relevant data, submit it in the right format and deliver results on time. Consequently, verifiers received the emissions reports late and the reports contained mistakes, which had to be corrected. This caused further delays in the process. The start-up issues were also identified in the first EU MRV report from the European Commission.<sup>128</sup> One of the recommendations made in that report was to improve the coordination and cooperation between the different stakeholders to facilitate the implementation of the Regulation. The current study found that especially the interaction between shipping companies and verifiers has improved since the first reporting period. During interviews, verifiers indicated that shipping companies have improved their internal procedures and are now able to submit good quality reports in less time. Verifiers do see a positive learning curve within the companies. This is confirmed by the flag State authorities who see that vessels flying their flag are fulfilling the requirements.

Although the vast majority of shipping companies are currently submitting their reports on time, verifiers highlighted that some companies are still delivering their inputs too late. They indicated that companies that currently do not fulfil their obligations are often newly established companies or companies that have to comply with the EU MRV requirements for the first time. These companies are new to the process and procedure and face start-up difficulties. However, the verifiers see a consistent process of improvement as companies interact with the requirements.

Article 30 of Delegated Regulation 2016/2072 states the impartiality and independence requirements applicable to verifiers performing verifications under the EU MRV Regulation. The fulfilment of the obligations by verifiers as laid down in the EU MRV Regulation is sometimes questioned. According to the Regulation the verifier needs to be independent to

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<sup>127</sup> This study builds upon data from 2018, 2019 and 2020. These were the data available at the start of this study (January 2021).

<sup>128</sup> SWD(2020) 82 final.

and impartial of the vessel it is verifying. NABs highlighted that for them it is difficult to fully assess the independence and impartiality during the accreditation process, because some verifiers provide other vessels class related services in their capacity as a classification society as well. Based on the data collected, shipping companies choose their classification society as their verifier. Verifiers themselves claim that the fact that they are also the vessel's classification society does not lead to problems with regard to their independence and impartiality and it is actually permitted by current rules. They state that the activities are performed by two different teams that do not interact. For the study team, it was difficult to assess the impartiality and independence of these verifiers.

NABs are tasked with the accreditation of the verifiers as well as regular checks of their performance. In case a verifier complies with all the requirements laid down in the relevant legislation, the NAB grants or renews the accreditation. In case the verifier does not (fully) comply with the requirements, the NAB can refuse or withdraw the accreditation. Withdrawal or refusal of an accreditation has far-reaching consequences and is a sanction that in some cases of non-compliance is considered disproportionate. NABs therefore indicated that, if they had a wider range of sanctions at their disposal, the EU MRV system could be further strengthened.

The study team tried to obtain insight in the way the verification is done by the verifiers. However, how the different methods used will impact the outcome of the verification process remained unclear. In other words, it is not possible to draw conclusions on the quality of the verification done, as assessing what would be the most appropriate method was not possible within the scope of the study.

Flag State authorities need to ensure that vessels flying their flag and falling within the scope of the EU MRV Regulation do comply with the requirements as laid down in the Regulation. In case of non-compliance, Member States have to impose sanctions. Our survey showed that, so far, Member States in their capacity as flag State, issued only a few warnings to vessels not complying with the requirements. This is an indication for a high compliance rate. However, as the study team did not receive information from all Member States (including several Member States with a large fleet flying their flag), a conclusion for the compliance rate of the total EU-flagged fleet can only be drawn with caution as compliance rates in the missing Member States are not known.

Another element to consider is the fact that only one-third of the vessels falling within the scope of the EU MRV Regulation is EU-flagged. This means that for two-thirds of the vessels falling within the scope of the EU MRV Regulation, no checks on compliance are performed by flag State authorities as there is no obligation for non-EU flag State authorities to perform those checks. To check whether non-EU flagged vessels fulfil their requirements, port State control inspections play a crucial role: Port State control can check whether vessels entering an EU port have an EU MRV DoC on board and can impose sanctions in case of non-compliance. According to the studies' survey, not many sanctions have been imposed so far, but an assessment of the compliance rate of non-EU flagged vessels highly depends on the control activities/frequency of inspections of EU port State authorities. As highlighted in Chapter 6, Member States in their capacity as port States do not often perform inspections for EU MRV purposes only. The selection of vessels for a port State control inspection is rather based on other grounds (i.e.: based on selection criteria laid down in Directive 2009/16/EC, which focuses on general safety levels).

THETIS-MRV is used to share information regarding the EU MRV system. As such, almost all stakeholders, except for the NABs, use this system to share relevant information. Although the system has many features to support information sharing, stakeholders still find it difficult to use the system. Both the Commission and EMSA have invested in improving the functionalities of THETIS-MRV. Whether these improvements sufficiently address the issues raised by the stakeholders could not be assessed by the study as many of the changes came into effect after the closure of the data collection by the study team.

From the publicly available EU MRV data available via THETIS-MRV, it is clear that the data is not free of outliers. This indicates that the verification process could further be improved. In an ideal situation, the verifier should notice the unrealistic inputs and make sure that these are corrected. However, in practice, this does not seem to be the case. EMSA or the European Commission can detect these outliers, however, their task is to make the verified data publicly available and not to control the verified data. As a result, the outliers remain in the system.

Based on our analysis, the quality of the implementation of the EU MRV system could not be fully assessed for all elements, but overall, the EU MRV system seems to a large extent be working as intended. Information on the environmental performance of the largest seagoing vessels is monitored systematically and the information is reported and verified on an annual basis by accredited verifiers. For those elements which the study could fully assess, we see some room for a further strengthening of the system, especially in the light of the role that the system might play in potentially upcoming environmental regulation. The next section presents corresponding recommendations.

## 7.2 Recommendations

During the consultation, several stakeholder groups indicated that some of the requirements are not entirely clear for them. They asked whether more guidance, either orally or in written form, could be provided. They suggested having either an (online) meeting with the Commission in which such items could be discussed or some written guidance to support them. The following elements were specifically expressed during the consultation:

- NABs would like to have one or two annual meetings with the Commission to discuss EU MRV related elements. The most pressing topic at the moment is the upcoming reassessment/renewal of accreditations. Nevertheless, other topics might emerge as well;
- Verifiers would like, in addition to yet existing guidance, guidance on how they should deal with vessels (partially) using biofuels and alternative fuels. They would prefer written guidance on this topic;
- Member States in their capacity as flag State indicated that Article 19(1) is not always clear to them and guidance on this would help. For this, a meeting with the Commission would be sufficient as, during the meeting, questions could be discussed.

Besides guidance on how to deal with certain requirements laid down in the EU MRV Regulation, stakeholders also indicated that they sometimes struggle with the use of THETIS MRV. Despite the many attempts of EMSA and the Commission to ensure that stakeholders become familiar with the tool, some elements are not entirely clear for the users of the system. Stakeholders indicate that they would like to see some elements included that actually already exist. Many of the requests made by the stakeholders could be easily addressed by bringing them to their attention. In other words, the functionalities of THETIS could be further explained (again). This could entail the following actions:

- Actively promote the existing tutorials. The tutorials do address many of the topics raised, however, it seems that stakeholders cannot find them. By promoting their location, stakeholders could take note of them;
- Several of the stakeholders (e.g.: verifiers and Member States in their capacity as flag States) would like to receive automatic notifications, either on updates in the tool or on uploaded emissions reports. As these features already exist, there is a

need to promote how they work. By providing information on how these notifications can be switched on, the problem would be solved;

- Get in touch with the users by launching a (periodic) survey to make an inventory of unclear elements. This could also be the place to ask them what is needed to further optimise the use of THETIS and/or to update the Frequently Asked Questions.

Closely linked to explaining the functionalities of THETIS-MRV once again, it could be considered to address the problem of the outliers. For instance, a warning signal in THETIS could be issued in case a shipping company adds unrealistic information. By signalling that the values included are probably incorrect, the number of mistakes and especially outliers could be reduced. This in turn will improve the reliability of the data reported.

As highlighted in the previous section, port State control authorities do play a large role in the enforcement of the EU MRV Regulation, especially concerning non-EU flagged vessels. Some of the authorities have developed good practices in how to check whether a DoC is on board the vessel before the vessel enters port (so-called pre-arrival checks). As this is not yet standard practice, those Member States could be encouraged to share their insights with the other Member States. Good practices on pre-arrival checks could be shared throughout Europe.

Some of the recommendations could be considered in case the Regulation would be revised. The study team is aware of the fact that given the current political process, a revision is only a long-term option. However, the study team would still like to highlight these recommendations which - in the short term - could be addressed by means of guidelines. The following elements could be considered in this context:

- Include a specific deadline for submitting data for verification as well in the EU MRV Regulation. As highlighted in Chapter 4, currently no such deadline exists, and shipping companies do have the possibility to submit their information close to the deadline of 30 April to verifiers. The verifiers have, in such a case, limited time available to verify the data. To avoid this, a clear deadline for submitting relevant inputs for the verification of the emissions report could be set, for instance on the 31<sup>st</sup> of March;
- Extend the sanction possibilities for NABs. As highlighted in Chapter 2, NABs can only grant or refuse/withdraw an accreditation. They regard refusal or withdrawal of accreditation as a disproportionate measure, especially when the verifier is to a large extent compliant. In such cases, the NABs would like to have a 'lighter' sanction at their disposal as well. This could, for instance, be a warning;
- Analyse further the verification processes. As highlighted in Chapter 4, verifiers do arrange their verification process in various ways. Although all approaches are in line with the EU MRV Regulation, the consequences of the different approaches did not become clear during this study. These elements could be further analysed and, based on the outcomes of such an additional analysis, it could be that the possibilities to design the verification process to one's own best insights needs to be limited/further specified. Nevertheless, additional research is needed before such a conclusion can be drawn.

## Annex I – Bibliography

### Articles and reports

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- European Commission (2013) ‘Commission Staff Working Document Accompanying the document Proposal for a Regulation of the European Parliament and of the Council on the monitoring, reporting and verification of carbon dioxide emissions from maritime transport and amending Regulation (EU) N° 525/2013’;
- SWD (2020) 82 final - Full-length report Accompanying the document Report from the Commission 2019 Annual Report on CO<sub>2</sub> Emissions from Maritime Transport;
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- Transport and Environment (2013) ‘GHG emissions from ships: The MRV proposal’.

### Legislation

- COM(2021) 551 final - Proposal for a Directive of the European Parliament and of the Council amending Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, Decision (EU) 2015/1814

concerning the establishment and operation of a market stability reserve for the Union greenhouse gas emission trading scheme and Regulation (EU) 2015/757;

- COM(2019) 38 final - Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) 2015/757 in order to take appropriate account of the global data collection system for ship fuel oil consumption data;
- COM(2021) 652 final - Proposal for a Regulation of the European Parliament and of the Council on the use of renewable and low-carbon fuels in maritime transport and amending Directive 2009/16/EC;
- Commission Delegated Regulation (EU) 2016/2071 amending Regulation (EU) 2015/757 of the European Parliament and of the Council as regards the methods for monitoring carbon dioxide emissions and the rules for monitoring other relevant information;
- Commission Delegated Regulation (EU) 2016/2072 on the verification activities and accreditation of verifiers pursuant to Regulation (EU) 2015/757;
- Commission Implementing Regulation (EU) 2016/1927 of 4 November 2016 on templates for monitoring plans, emissions reports and documents of compliance pursuant to Regulation (EU) 2015/757;
- Commission Implementing Regulation (EU) 2016/1928 of 4 November 2016 on determination of cargo carried for categories of ships other than passenger, ro-ro and container ships pursuant to Regulation (EU) 2015/757;
- Directive 2009/16/EC of the European Parliament and of the Council of 23 April 2009 on port State control;
- Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93;
- 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.

## Websites

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- <https://ihsmarkit.com/index.html>;
- <https://mrv.emsa.europa.eu/#public/emission-report>;
- <https://mrv.emsa.europa.eu/#public/faq>;
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- <http://www.emsa.europa.eu/thetis-mrv.html>.

## Annex II – Methodology

### *Data collection process*

As highlighted throughout the report, five main actors in the EU MRV process were identified, namely:

- National Accreditation Bodies;
- Shipping companies;
- Verifiers;
- Member States as flag States;
- Member States as port States.

For each of these actors, specific questions were formulated in the Terms of Reference (ToR). This report aimed to provide answers to those specific questions. An overview of the research questions is presented below. The research questions focused on how the different requirements laid down in the EU MRV Regulation were implemented by individual stakeholders. As only the stakeholders themselves can provide information on how they have dealt with the requirements, it was of vital importance to involve them during the study. As a result, the outcomes of the study heavily relies on stakeholder input.

To conduct the study, the following research steps were taken:

### *Desk research*

The team started with desk research. During the desk research, the relevant legislation was analysed to obtain an overview of the different requirements per stakeholder group. The analysis was supplemented with other sources, such as policy documents, reports and statistical data. For a full overview of documents used in this study, please refer to Annex I.

The information collected was used to develop the so-called data collection sheets. The data collection sheets enabled the team to collect the information in a structured and comprehensive way, for each group of stakeholders. In total five different data collection sheets were developed. The data collection sheets were shared several times with the European Commission, DG CLIMA to ensure that the right questions were asked. With the approval of the Commission, the sheets were shared with the respective stakeholders.

The data collection sheets were designed in such a way (i.e. Word format) that multiple representatives from one organisation could contribute to the collection sheet. In Annexes IV to VIII, the data collection sheets of the various stakeholder groups are presented.

### *Preparing a list of contacts*

Within each of the stakeholder groups, specialised people work on the EU MRV. Therefore, it was important to identify the right contact persons. Sufficient time was dedicated to compile the lists of contacts. For each of the five stakeholder groups, overviews with contacts were prepared. Each person on the list received a pre-notification informing him/her about the upcoming data collection and asking him/her whether he/she was indeed the right person to contact or that a colleague might be the right person. Based on this action the contact lists was further refined.

To ensure the appropriate representativeness of shipping companies, the following criteria were established for inviting them to the study:

- Size of the company's fleet falling within the scope of the EU MRV: small (< 8 ships); medium (between 8 and 49 ships); large (> 50 ships);
- Ship type: general & containers; bulk vessels and ferry/cruise activities.

For every category, four shipping companies were selected from the yearly EMSA vessel data.<sup>129</sup> In total 32 shipping companies were invited to participate. Additionally, an extraction of (potential) data outliers in 2018 and 2019 was shared by DG CLIMA. These respective companies are all invited to participate in the study.

#### *Invitations to participate in the data collection*

Once the data collection sheets were approved, the stakeholders received an invitation to participate in the study. All invitations were sent between the end of March and early April 2021. During the data collection period, stakeholders were kindly reminded several times to fill in the collection sheet. The deadline for providing information was extended from April 30<sup>th</sup> 2021 to the end of June 2021. Table All.1 present an overview of the number of organisations invited and the number of answers received.

**Table All.1 Overview of stakeholders invited and responses received**

Stakeholder group	Number of invitees	Number of responses	Response rate
National accreditation bodies	17	10	59%
Shipping companies <sup>130</sup>	84	11	13%
Verifiers	17	6	35%
Member States as flag States	29	15	52%
Member States as port States	24	17	71%
<b>Total</b>	<b>173</b>	<b>57</b>	<b>33%</b>

The overall response rate is 33%. Especially, national accreditation bodies and Member States, both in their capacity as a flag and/or port State actively participated in the study. The response rate in those groups was almost 50% or higher.

#### *First analysis*

Based on the written answers received a first analysis was performed. For each of the stakeholder groups, the main elements were analysed and the first answers to the specific research questions were formulated. This exercise allowed the team to identify any gaps in the knowledge and prepare for the follow-up interviews. The first outcomes were discussed with the European Commission during a workshop held on 6 July 2011. Based on this discussion the elements for further clarification were identified.

#### *In-depth interviews with stakeholders*

To fill the gaps identified and to collect additional information where relevant several in-depth interviews were conducted. Interviews were held with representatives of different stakeholder groups. An overview of the interviews held is presented in Table All.2.

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<sup>129</sup> According to the EMSA vessel data, there are no large companies (> 50 ships) solely active in ferry/cruise activities.

<sup>130</sup> This groups is a mix of compliant companies (32) and non-compliant companies (52).

**Table All.2 Overview of in-depth interviews per stakeholder group**

Actor	Organisation	Interview date
National accreditation bodies	DakkS	16/07/2021
	COFRAC	20/07/2021
Shipping companies	Symphony Shipping	08/07/2021
	Maersk	31/08/2021
Verifiers	Bureau Veritas	14/07/2021
	Verifavia	27/07/2021
	Class NK	20/07/2021
Member States as flag States	Belgium	14/07/2021
	Germany	25/08/2021
Member States as port States	Belgium	14/07/2021
	Germany	25/08/2021

### *Second analysis*

The results of the interviews were included in the analysis as well. Where possible additional sources, such as information from reports and articles as well as statistics were used to further complete the analysis. It should be mentioned that adding information from other sources was a challenging task as many sources do not provide much elaborate information on how the EU MRV was implemented by different stakeholders.

Based on the outcomes of the second analysis the overarching findings were formulated, conclusions were drawn and recommendations were formulated.

### *Specific research questions*

**Table All.3 Detailed research questions per EU MRV actor**

NABs	<ol style="list-style-type: none"> <li>1. How national accreditation bodies carry out the assessment and annual surveillance of each verifier to which an accreditation certificate was issued, the reassessment as well as administrative measures</li> <li>2. In what way national accreditation bodies fulfil their specific requirements, in particular with regard to the required competences of the assessors and setting up and managing databases of accredited verifiers, as well as in relation to their status that should be communicated to the Commission by using a relevant standardised template</li> </ol>
Shipping companies	<ol style="list-style-type: none"> <li>3. Investigate the reason why some ships did not submit an emissions report in 2018 and 2019 despite having called an EEA port in these reporting periods.<sup>131</sup></li> <li>4. With regard to the monitoring plans: How companies perform and document annual checks on the monitoring plans</li> <li>5. With regard to emissions reports: How companies are dealing with reporting on ships where their responsibility was taken in the middle of the reporting period</li> </ol>
Verifiers	<p><b>Monitoring plans</b></p> <ol style="list-style-type: none"> <li>6. How verifiers gather relevant information from the companies and assess the monitoring plans.</li> <li>7. How verifiers carry out site visits to validate information submitted in the monitoring plans.</li> <li>8. How verifiers address non-conformities in the monitoring plans.</li> <li>9. How the independent review of the assessment of the monitoring plans is carried out and included in the internal verification documentation.</li> <li>10. How verifiers fulfil their obligation to inform companies about the conclusions of the assessment of the monitoring plans</li> </ol> <p><b>Emissions report</b></p> <ol style="list-style-type: none"> <li>11. How verifiers gather relevant information from the companies.</li> <li>12. How verifiers identify potential risks and carry out risk assessments.</li> <li>13. The verification plans.</li> </ol>

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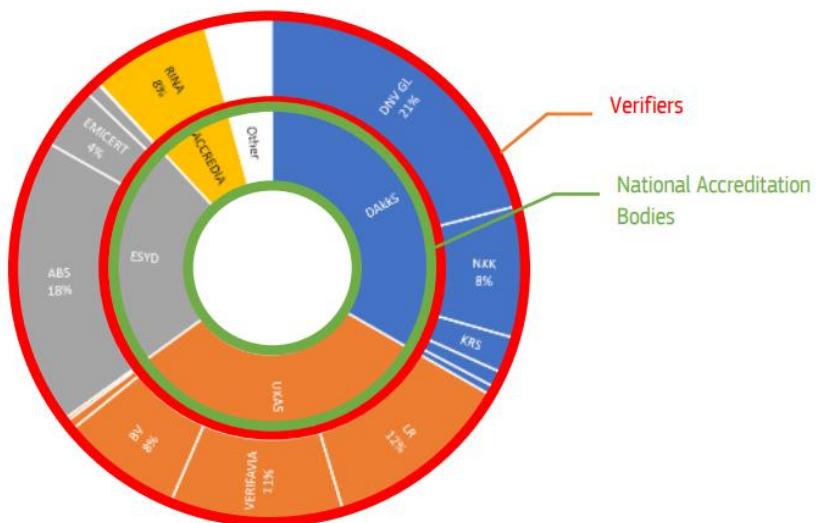
<sup>131</sup> The list of ships to be further investigated will be provided by EMSA, based on a relevant sampling methodology.

	<p>14. How verifiers carry out the verification activities concerning emissions reports.</p> <p>15. How verifiers verify reported data.</p> <p>16. How verifier conduct site visits for the purpose of gaining sufficient understanding of</p> <p>17. the companies and a ship's monitoring and reporting system.</p> <p>18. How verifiers address misstatements and non-conformities in the emissions report.</p> <p>19. How verifiers carry out all tasks completing the verification of emissions reports.</p> <p>20. How verifiers communicate recommendations for improvement.</p> <p>21. Whether and how verifiers fulfil their obligations related to issuing verification reports to the companies.</p> <p>22. How the independent review of the emissions reports is conducted.</p> <p>23. How verifiers establish and follow the procedures for their verification activities and compile internal verification documentation.</p> <p>24. How verifiers compare reported data with estimated data based on ship tracking data and characteristics.</p>
Member States	<p>25. How Member States as flag states assess whether all ships of their fleet are in compliance with the regulation requirements.</p> <p>26. How Member States as port states assess whether the ships calling their ports are in compliance.</p> <p>27. How Member States lay down rules on and set up a system of effective, proportionate and dissuasive penalties for the failure to comply with the monitoring and reporting obligations.</p> <p>28. How Member States carry out and record follow-up actions, such as imposing penalties and expulsion orders.</p> <p>29. How information is exchanged between national authorities and how it is shared with the Commission, EMSA and other Member States and flag states concerned.</p>

Source: European Commission, Terms of Reference (ToR).

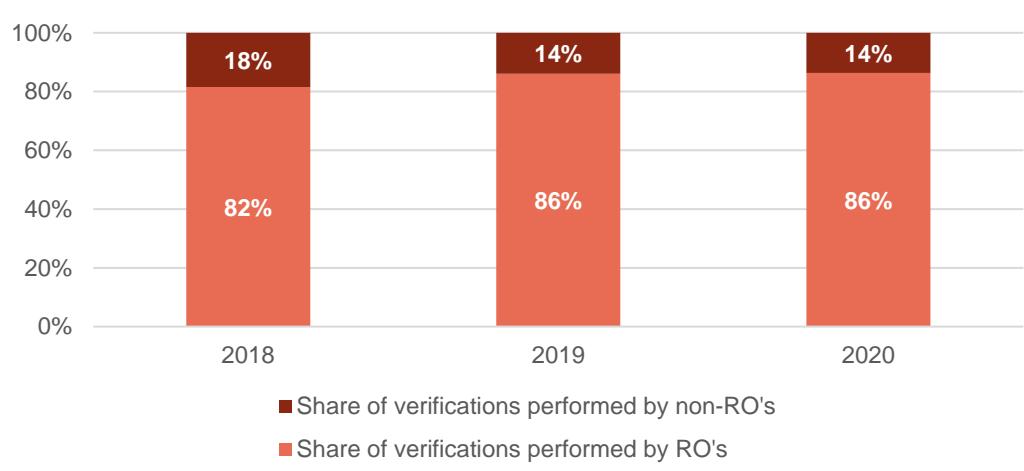
## Annex III – Background information on verification

**Figure AIII.1 Verifiers and related National Accreditation Bodies are behind 90% of all emissions reports**



Source: European Commission (2020), Annual Report on CO<sub>2</sub> Emissions from Maritime Transport.

**Figure AIII.2 Share of classification societies and recognised organisations (ROs) in the group of verifiers**



Source: EMSA (2021), EU MRV Publication of Information.

**Table All.I.1 Overview of verifiers actively performing verification activities under the EU MRV**

	2018		2019		2020	
	Name verifier	RO?	Name verifier	RO?	Name verifier	RO?
1	American bureau of shipping	Yes	American bureau of shipping	Yes	American bureau of shipping	Yes
2	Bureau Veritas Certification France	Yes	Bureau Veritas Certification France	Yes	Bureau Veritas Certification France	Yes
3	China classification society	Yes	China classification society	Yes	China classification society	Yes
4	Croatian register of shipping	Yes	Croatian register of shipping	Yes	Croatian register of shipping	Yes
5	DNV GL	Yes	DNV GL	Yes	DNV GL	Yes
6	Dromon Bureau of Shipping	Yes	Dromon Bureau of Shipping	Yes	Dromon Bureau of Shipping	Yes
7	EMICERT	No	EMICERT	No	EMICERT	No
8	EnvService GmbH	No	EnvService GmbH	No	EnvService GmbH	No
9	EUROCERT S.A	No	HELLENIC LLOYD'S S.A.	Yes	HELLENIC LLOYD'S S.A.	Yes
10	ICS Verification Services Single Member P.C.	No	ICS Verification Services Single Member P.C.	No	ICS Verification Services Single Member P.C.	No
11	Indian Register of Shipping	Yes	Indian Register of Shipping	Yes	Indian Register of Shipping	Yes
12	Korean Register	Yes	Korean Register	Yes	Korean Register	Yes
13	Lloyd's Register Quality Assurance Ltd	Yes	Lloyd's Register Quality Assurance Ltd	Yes	MRVControl AB	No
14	MRVControl AB	No	MRVControl AB	No	Nippon Kaiji Kyokai	Yes
15	Nippon Kaiji Kyokai	Yes	Nippon Kaiji Kyokai	Yes	Polish Register of Shipping	Yes
16	Polish Register of Shipping	Yes	Polish Register of Shipping	Yes	RINA Services Spa	Yes
17	PricewaterhouseCoopers S.A.	No	RINA Services Spa	Yes	Swiss Climate EcoCare GmbH	No
18	RINA Services Spa	Yes	Swiss Climate EcoCare GmbH	No	Tecnoveritas	No

	2018		2019		2020	
	Name verifier	RO?	Name verifier	RO?	Name verifier	RO?
19	SGS United Kingdom Ltd	No	Tecnoveritas	No	Verifavia SARL	No
20	Swiss Climate EcoCare GmbH	No	Verifavia (UK) LTD	No		
21	Tecnoveritas	No	Verifavia SARL	No		
22	Verifavia (UK) LTD	No				
23	Verifavia SARL	No				
<b>Total</b>	<b>23</b>		<b>21</b>		<b>19</b>	
<b>Share RO's</b>	<b>52%</b>		<b>62%</b>		<b>63%</b>	
<b>Share non-RO's</b>	<b>48%</b>		<b>38%</b>		<b>37%</b>	

Source: <https://mrv.emsa.europa.eu/#public/emission-report>.

**Table AIII.2 Overview of NABs actively performing verification activities under the EU MRV**

#	Name of NAB	Number of verifications		
		2018	2019	2020
1	Hellenic Accreditation System (ESYD)	2737	2645	2463
2	UKAS	2880	1909	0
3	COFRAC	955	999	1652
4	Hellenic Accreditation System	134	635	1331
5	German national accreditation body (DAkkS)	2717	2866	2781
6	ACCREDIA	919	999	882
7	Croatian Accreditation Agency	16	19	15
8	Deutsche Akkreditierungsstelle GmbH	1016	1153	1157

#	Name of NAB	Number of verifications		
		2018	2019	2020
9	SWEDAC	7	7	7
10	Denmark National Accreditation Body (DANAK)	302	414	457
11	DAkkS	269	313	295
12	Portuguese Institute for Accreditation (IPAC)	3	4	5
13	Deutsche Akkreditierungsstelle GmbH	202	215	202
14	PCA Polskie Centrum Akredytacji	9	8	7
15	Dutch Accreditation Council RvA	7	9	6

Source: <https://mrv.emsa.europa.eu/#public/emission-report>.

## Annex IV – Data collection sheet NABs

Country: .....

Name of the organisation: .....

Name of the respondent(s): .....

### *General information*

CE Delft and Ecorys are performing the supporting study for the implementation of Regulation (EU) 2015/757 on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport. This study aims, amongst others, to assess the current status of implementation of the Regulation (EU) 2015/757 and, where relevant, the related implementing legislation in all 27 EU Member States as well as relevant EEA countries (i.e. Norway and Iceland).

Besides providing an overview on how Regulation (EU) 2015/757 is implemented, the study will also collect information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation. By means of this survey, the information will be retrieved from the national accreditation body's perspective.

Please note that the collected data and your responses will be treated as strictly confidential. The data provided will be aggregated in a report to avoid the possibility to recognise any individual entity. Information collected by this survey and used in the report will be de-identified to ensure the confidentiality of the respondents.

Prior to filling in the survey, we want to thank you for your participating. Any questions with respect to this survey in particular or the study in general can be addressed to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

### *Introductory questions*

1. Please indicate how you, as a national accreditation body, are organisation?

- Public organisation
- Semi-public organisation
- Private organisation
- Other, please explain in the text box below

2. Please indicate in the table below several statistics about your company and relation with the EU MRV Regulation. The information will help us to put the answers in the remainder of the survey into perspective (please provide a rough estimation).

Indicator	Unit	2018	2019	2020
Verifiers applying for accreditation	Number of verifiers			
Accreditations granted	Number of accreditations			
Accreditations refused	Number of accreditations			
Assessors involved	Number of employees (FTE)			

The remaining questions in the document will focus on the several specific aspects of the EU MRV Regulation.

### *Accreditation process*

According to EU MRV Regulation, the national accreditation body has to carry out the assessment and annual surveillance of each verifier to which an accreditation certificate was issued, the reassessment as well as administrative measures. More specifically the accreditation process must consist of the activities listed in Chapter IV of the Delegated Regulation (2016/2072) and EN ISO/IEC 17011, including on site visits to the verifier's office and one or more witness audits. In this section, the questions will be about the procedures to assess whether a verifier can be granted an accreditation or not.

3. Could you please describe how you assess whether a verifier has the competence to assess monitoring plans and verify emissions reports in accordance with Article 31 of the Delegated Regulation (2016/2072)? Please elaborate in the text box below.

**Answer:**

4. In Article 36 of the Delegated Regulation (2016/2072), the assessment criteria are listed.
- a. Could you please describe the assessment procedure to identify whether a verifier is in fact assessing monitoring plans and verifying emissions reports in accordance with this EU MRV Regulation? Please elaborate in the text box below.

**Answer:**

Assessment of relevant documents –

On-site visits –

Witness audits –

Other assessment elements –

- b. Please describe how you assess the risk assessment performed by verifiers?  
Please elaborate in the text box below

**Answer:**

One of the objectives of the accreditation process is to assess whether the verifier and its personnel undertaking verification activities to meet the requirements referred to in Articles 22 to 30 of the Delegated Regulation (2016/2072).

5. Could you please describe how you assess whether a verifier meets the requirements regarding impartiality and independence? Please elaborate in the text box below

**Answer:**

6. What are the main reason(s) for refusing an application for accreditation? Please elaborate the three main reasons in the text box below

**Answer:**

Reason 1 –

Reason 2 –

Reason 3 –

Other reasons –

7. In case an accredited verifier is no longer compliant, which actions could you as an accreditor take? Please elaborate in the text box below.

**Answer:**

8. Do you have procedures in place, by which a refused verifier can appeal to your decision? If yes, please elaborate how this procedure is organised.

**Answer:**

### *Managing the accreditation process*

In Chapter V of the Delegated Regulation (2016/2072), the requirements for national accreditation bodies are outlined. In this section, we would like to ask some questions on your internal procedures with regard to the accreditation process (e.g. assessment team, competence for assessors, technical experts, database).

9. The requirements of the assessment team are listed in Article 44 of the Delegated Regulation (2016/2072). Which qualifications and/or competences do you expect from your assessors? (e.g. related to education, technical background, background in shipping or others)

**Answer:**

10. What procedures are in place to select your assessors?

**Answer:**

11. Article 46 of the Delegated Regulation requires setting up and managing a database of accredited verifiers.

- a. Do you have a database in place to keep track of the performance of accredited verifiers?

- Yes
- No
- I do not know

- b. Which information is recorded in the database?

**Answer:**

- c. Who has access to this database?

**Answer:**

### *Communication with the European Commission*

Based on Regulation (EU) 2015/757 you, as an accreditation body, are obliged to communicate information on accredited verifiers with the European Commission.

12. How do you communicate with the European Commission on the status of the verifiers?

- THETIS-MRV
- Other online platform
- Email
- Post
- I do not know
- Other, please specify....

13. What kind of information is exchanged between your organisation and the European Commission?

**Answer:**

14. Do you experience problems in sharing information (both content related and systems used) with the European Commission? Please elaborate.

**Answer:**

### *Closing questions*

15. What are, from your perspective, the three elements in the EU MRV Regulation that worked best after the implementation of the Regulation? Please provide a brief description of these three main elements and motivation why these aspects have worked well.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

16. What are, from your perspective, the three main elements in the EU MRV Regulation that could be further improved to ensure a smooth functioning of the EU MRV Regulation? Please provide a brief description of these three main elements and why these elements should be improved.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

17. Do you have any additional comments related to the functioning of the EU MRV that might be relevant for the current study? Please elaborate in the textbox below.

18. Are we allowed to contact you in case of questions and/or clarifications?

- Yes
- No

19. Please provide us with your contact details in case you want to be informed on the results of this study

On behalf of the entire project team, we would like to thank you for participating. These results will be treated with strict confidentiality.

In case you have addition questions with respect to this survey please reach out to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

## Annex V – Data collection sheet shipping companies

Country: .....

Name of the organisation: .....

Name of the respondent(s): .....

### *General information*

CE Delft and Ecorys are performing the supporting study for the implementation of Regulation (EU) 2015/757 on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport. This study aims, amongst others, to assess the current status of implementation of the Regulation (EU) 2015/757 and, where relevant, the related implementing legislation in all 27 EU Member States as well as relevant EEA countries (i.e. Norway and Iceland).

Besides providing an overview on how Regulation (EU) 2015/757 is implemented, the study will also collect information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation. By means of this survey, the information will be retrieved from your, the shipping company's perspective.

Please note that the collected data and your responses will be treated as strictly confidential. The data provided will be aggregated in a report to avoid the possibility to recognise any individual entity. Information collected by this survey and used in the report will be de-identified to ensure the confidentiality of the respondents.

Prior to filling in the survey, we want to thank you for your participation. Any questions with respect to this survey in particular or the study in general can be addressed to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

### *Introductory questions*

As earlier indicated, your answers will be treated as strictly confidential, which means that information from individual operators remains anonymous; only aggregated information (from multiple operators) will be presented in the report. For our analysis, it is useful to know the respondent's generic background. In this way we can also put the answers in the remainder of the questionnaire into perspective.

#### 1. What is your position within this organisation?

**Answer:**

#### 2. What type of shipping operations does your company perform? (multiple answers possible)

- General cargo shipping (incl. container shipping)
- Cruise shipping
- Ferry and passenger shipping
- Offshore energy (oil, gas and renewable energy)
- Tanker shipping

- Project cargo (e.g. heavy load cargo)
- Refrigerated and frozen shipping
- Towage services
- Others, please specify in the text box below

3. How are the ships in your fleet managed? Please indicate through the options below

- Shipping company
- Ship manager
- Bareboat charter
- Others, please specify in the text box below

4. Please indicate in the table below several statistics about your company and their fleet. This helps us to put the answers in the remainder of the survey into perspective.

Indicator	Unit	2018	2019
Ships registered in your fleet	Number of ships		
Ships within the scope of EU MRV	Number of ships >5.000 GT		
Ships bought from a previous owner	Number of ships that changed ownership		

The remaining questions in the document will focus on the several specific aspects of the EU MRV Regulation.

### *Monitoring*

Based upon Articles 5 and 6 of the EU MRV Regulation, the shipping companies shall establish monitoring methods to determine (among others) CO<sub>2</sub> emissions and submit the monitoring plan to the verifier. The following questions will focus on these aspects.

5. Could you briefly explain the choice for a certain fuel monitoring method for the ships in your fleet?

a. Could you please indicate what fuel monitoring method is chosen for the ships in your fleet? (multiple answers possible)

- Method A: 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<sub>2</sub> emissions measurement
- b. Please explain in the text box below, why your company has chosen to apply this/these monitoring method(s)?

**Answer:**

- c. In case you indicated more than one fuel monitoring method under question 5a, please elaborate why you use different methods in your fleet? Could you also indicate the percentage of the fleet using the fuel monitoring method?

**Answer:**

Reason for using different methods:

**Shares**

Method A –

Method B –

Method C –

Method D –

Following Article 7 of the EU MRV Regulation, shipping companies shall regularly check (at least on an annual basis) whether the monitoring methodology can be improved and notify the verifier in case of modifications. The following questions will be about the regular (annual) review of the monitoring methodology.

6. Are you performing (annual) regular checks on your monitoring plan(s)?
  - Yes
  - No
7. Could you describe the process of performing regular (annual) checks on the monitoring plans? Please briefly explain the step-by-step process in the text box below.

**Answer:**

8. How is the (annual) check on the monitoring plan documented?

- THETIS-MRV
- Internal platform (please provide a brief description in the text box below)
- External platform (from verifier) (please provide a brief description in the text box below)
- Mail
- Other, please briefly explain how documentation takes place

*Reporting*

Based on Article 11 of the EU MRV Regulation, the shipping company shall submit the verified emissions report to the European Commission and flag State Authority covering information on the ship and company, identity of the verifier, information on the monitoring method and results from annual monitoring. The following questions will focus on these aspects.

9. Are there ships within your fleet for which you were not able to timely submit the requested data for the emissions report in 2018 or 2019?

<b>Not able to submit requested data in 2018</b>	<b>Not able to submit requested data in 2019</b>
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> No

10. In case your organisation was not able to timely submit an emissions report in 2018 or 2019, the following questions are related to the reasons.

- a. What are the main reasons for not being able to timely submit emissions reports? As these reasons can vary per ship there are multiple answers possible

- Ships not within the scope of the Regulation
- Change of responsibility during the reporting period
- Insufficient time period
- Unavailability of data
- Rejected monitoring plan
- Others (please explain in the text box below)

- b. You have indicated the main reasons for not submitting an emissions report (in question 10a). Could you please elaborate in the table on these main reasons?

Main reason	Explanation
Ships not within the scope of the Regulation	
Change of responsibility during the reporting period	
Insufficient time period	
Unavailability of data	
Rejected monitoring plan	
Others	

- c. What aspects of the EU MRV Regulation on emissions reports should be changed in order to timely submit an emissions report in the future?

**Answer:**

Article 11 of the EU MRV Regulation also states that for ships that changed ownership during the reporting period, the new company shall ensure that each ship under its responsibility complies with the requirements. The following question is addressed to companies that bought ships during the reporting and focuses on their ability to meet the reporting requirements. If that situation does not apply to your organisation, please continue at question 12.

11. In case you, as a shipping company, bought ships from a previous owner during the reporting period, please describe how you have dealt with emissions reporting for these particular ships?

**Answer:**

12. What are, from your perspective, the main areas for improvement when it comes to submitting an emissions report? Please provide a brief description of the main areas for improvement.

**Answer:**

### *Verification*

In Article 13 and 15 of the EU MRV Regulation, the scope of the verification activities, verification report and verification procedures are outlined. In practice, the shipping company shall revise/correct its monitoring plan in case of non-conformities determined by

the verifier. Afterwards, the monitoring plan will again be submitted to the verifier for verification procedures. The shipping company shall also provide the verifier with any additional information that enables the verifier to carry out the verification procedures.

13. Could you roughly outline the established procedures for several verification activities?

a. Please describe the procedure to deliver the requested data to the verifier? (e.g. by means of a standardized template, online platform, etc)

**Answer:**

b. Please describe who performs the aggregation of data from a voyage level to an annual level? (e.g. verifier or shipping company)

**Answer:**

c. Site visits can be carried out to validate the information submitted in the monitoring plan and/or the reporting system. Please explain the specific process of carrying out a site visit?

**Answer:**

d. Is the chosen verifier for the EU MRV Regulation the same as your classification society which monitors the technical status of your ship? Please explain in the text box below.

**Answer:**

14. How do you communicate revisions, corrections, conclusions and recommendations of the monitoring plan and the emissions report with the verifier? In case the communication mechanism changes during the process, please explain when this occurs in the text box below

- THETIS-MRV
- Other online platform
- Email
- Post

Other .....

**Answer:**

15. Is the exchange of information between verifier and your organisation via this platform (indicated in question 14) adequate to communicate on any revisions, corrections, conclusions or recommendations? Please also identify potential points of improvements for the platform in the text box below.

Yes

No

**Answer:**

### *Closing questions*

16. What are, from your perspective, the three elements in the EU MRV Regulation that worked best after the implementation of the Regulation? Please provide a brief description of these three main elements and motivate why these aspects have worked well.

**Answer:**

Element 1 –

Element 2 –

Element 3 –

17. What are, from your perspective, the three main elements in the EU MRV Regulation that could be further improved to ensure a smooth functioning of the EU MRV Regulation? Please provide a brief description of these three main elements and motivate why these elements should be improved.

**Answer:**

Element 1 –

Element 2 –

Element 3 –

18. Do you have any additional comments related to the functioning of the EU MRV that might be relevant for the current study? Please elaborate in the textbox below.

**Answer:**

19. Are we allowed to contact you in case of questions and/or clarifications?

- Yes
- No

20. Please provide us with your contact details in case you want to be informed on the results of this study

**Answer:**

On behalf of the entire project team, we would like to thank you for participating. These results will be treated with strict confidentiality.

In case you have additional questions with respect to this survey please reach out to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

## Annex VI – Data collection sheet verifiers

Country: .....

Name of the organisation: .....

Name of the respondent(s): .....

### *General information*

CE Delft and Ecorys are performing the supporting study for the implementation of Regulation (EU) 2015/757 on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport. This study aims, amongst others, to assess the current status of implementation of the Regulation (EU) 2015/757 and, where relevant, the related implementing legislation in all 27 EU Member States as well as relevant EEA countries (i.e. Norway and Iceland).

Besides providing an overview on how Regulation (EU) 2015/757 is implemented, the study will also collect information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation. By means of this survey, the information will be retrieved from the verifier's perspective.

Please note that the collected data and your responses will be treated as strictly confidential. The data provided will be aggregated in a report to avoid the possibility to recognise any individual entity. Information collected by this survey and used in the report will be de-identified to ensure the confidentiality of the respondents.

Prior to filling in the survey, we want to thank you for your participating. Any questions with respect to this survey in particular or the study in general can be addressed to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

### *Introductory questions*

As earlier indicated, your answers will be treated as strictly confidential, which means that information from individual organisations remains anonymous; only aggregated information (from multiple organisations) will be presented in the report. For our analysis, it is useful to know the respondent's generic background. In this way we can also put the answers in the remainder of the questionnaire into perspective.

1. Please indicate in the table below several statistics about your company and relation with the EU MRV Regulation. This helps us to put the answers in the remainder of the survey into perspective (please provide a rough estimation).

Indicator	Unit	2019	2020
Verification of ships	Total number of verified ships		
Documents of Compliance (DoC)	Total number of DoC's issued		

The remaining questions in the document will focus on the several specific aspects of the EU MRV Regulation.

## *Monitoring*

According to Articles 4 to 9 of the EU MRV Delegated Regulation (2016/2072),<sup>132</sup> the verifier shall assess the conformity of the monitoring plan. Before being able to assess the monitoring plan, the verifier needs to gather relevant information from the shipping companies. The following question will focus on this aspect.

2. How is your company gathering the relevant information to assess the shipping company's monitoring plan? Please briefly elaborate on how the relevant information on the monitoring plan is gathered (e.g. data exchange with the respective company, conversation, site visits, etc).

**Answer:**

After collecting the relevant information from the shipping company, the monitoring plan is assessed. The following question is related to the established procedures for the verification activities for every step in the approach.

3. Prior to addressing several specific aspects about the verification activities, please describe the procedure to assess the conformity of the monitoring plan in the text box below.

**Answer:**

In case of any non-conformities, the monitoring plan needs to be revised. The following questions will focus on these revisions.

4. What are the main reasons for revisions and/or corrections on the monitoring plan and methodology (multiple answers possible)? Please also indicate the share of different reasons in the second column (in percentages to maximum 100%).

Reasons for revisions and/or corrections on the monitoring plan and methodology	Share (in %)
<input type="checkbox"/> Use of 'new' fuels not yet contained in the monitoring plan	
<input type="checkbox"/> Change in availability of data (e.g. new measuring equipment, sampling methods, etc)	
<input type="checkbox"/> Change the fuel monitoring method	
<input type="checkbox"/> Change of ownership	
<input type="checkbox"/> Change in the analysis	
<input type="checkbox"/> Incorrect monitoring method (assessed by the verifier)	
<input type="checkbox"/> Others, please specify in the text box below	

<sup>132</sup> Commission Delegated Regulation (2016/2072) ([link](#)).

5. Please briefly elaborate how your company identifies the reasons for revisions and/or corrections (indicated in question 4) on the monitoring plan and methodology

**Answer:**

6. After carrying out the assessment of the monitoring plan, the monitoring plan is subject to an independent review, which also includes internal documentation.
  - a. Please elaborate on how the independent review of the assessment is performed.

**Answer:**

- b. Please also indicate how the internal verification is documented.

**Answer:**

7. How do you as a verifier inform the shipping company about your conclusions of the assessment of their monitoring plan? Please elaborate in the text box below.

**Answer:**

### *Reporting*

According to Article 13 of the EU MRV Regulation, the verifier shall assess the conformity of the emissions report. Before being able to assess the requested information, the verifier needs to gather relevant information from the shipping companies. The following questions will focus on these aspect.

8. How is your company gathering the relevant information to assess the shipping company's emissions report?
  - a. Please briefly explain what kind of information is gathered from the shipping company

**Answer:**

- b. Please briefly elaborate on how the relevant information on the emissions report is gathered. For instance data exchange with the respective company, conversation, site visits, etc.

**Answer:**

9. Prior to addressing several specific aspects about the verification activities. Could you roughly outline the established procedures for the verification activities for every step in the approach?
- a. Please describe the procedure to assess the conformity of the emissions report in the text box below.

**Answer:**

- b. Please describe the procedure to fulfil the obligations related to issuing a verification report to the shipping companies in the text box below.

**Answer:**

In order to gather the relevant information from the shipping company, Article 6 in the Delegated Regulation (2016/2072) states that the verifier shall carry out site visits in order to gain sufficient understanding of the procedures described in the monitoring plan and validate that the information therein is accurate. The following question is related to these site visits.

10. Please explain several characteristics of these site visits to validate the information submitted in the monitoring plan.

- a. Have you performed site visits in order to validate the information submitted by the shipping company in the monitoring plan in 2019 or 2020?

Site visits performed in 2019	Site visits performed in 2020
<input type="checkbox"/> Yes	<input type="checkbox"/> Yes
<input type="checkbox"/> No	<input type="checkbox"/> No

- b. How many site visits have you carried out to gather information from the shipping company to assess the conformity assessment of emissions report? Please explain in the text box below

**Answer:**

- c. Could you briefly explain the process of carrying out a site visit? Please elaborate on how you conduct site visits for the purpose of gaining sufficient understanding of the companies and a ship's monitoring and reporting system in the text box below

**Answer:**

- d. In case the verifier has sufficient understanding of the procedures described in the monitoring plan and validate that the information therein is accurate, the verifier may waive a site visit. Could you briefly explain the reason(s) for waiving the site visits related to the EU MRV regulation?

**Answer:**

- e. In case you have waived the site visits (question 10d), which procedure do you follow to check the monitoring plan?

**Answer:**

11. Please elaborate on how the independent review of the emissions report is conducted?

**Answer:**

12. How do you communicate revisions, corrections, conclusions and recommendations on the emissions report to the shipping company? In case the communication mechanism changed during the process, please explain when this occurred in the text box below

- THETIS-MRV
- Other online platform
- Email
- Post
- Other .....

**Answer:**

13. Do you experience any issues when communicating revisions, corrections, conclusions and recommendations to the shipping company? Please elaborate in the text box below.

**Answer:**

*Reported data*

In Article 14 of the EU MRV Regulation, the general obligations and principles for the verifiers are outlined. This article states that the verifier shall assess the reliability, credibility and accuracy of the monitoring system and reported data. Furthermore, Regulation 2016/2072 Article 14 specifies the details of the verification of reported data. The following questions will specifically focus on the verification of the reported data.

14. In general, how does your company verify the reporting data provided by the shipping company? Please briefly explain the verification procedure.

**Answer:**

The EU MRV Regulation also states that the reported data needs to be coherent with the estimated data (based upon ship tracking data and characteristics).

15. Please explain how the reported data provided by the shipping company is compared with the estimated data (based on ship tracking data and characteristics)?

**Answer:**

16. In addition to Article 15 of the EU MRV Regulation, Article 11 of the Delegated Regulation outlines the risk assessment to be carried out by verifiers. The verifier shall identify and analyse the following risks (1) inherent risks; (2) control risks; (3) detection risks.

- a. How does your company identify potential risks? And are these risks identified for the different calculation steps?

**Answer:**

Inherent risk –

Control risks –

Detection risks –

- b. In case these risks are identified (question 16a) what are the follow-up actions towards shipping companies?

**Answer:**

### *Accreditation*

Finally, in Article 16 of the EU MRV Regulation the accreditation of verifiers is outlined. This article states that verifiers that assess the monitoring plans and the emissions reports, and issue verification reports and documents of compliance shall be accredited for activities under the scope of the Regulation by a national accreditation body. The following question is related to the accreditation process.

17. Please elaborate on the process of receiving accreditation in order to assess the monitoring plans, emissions reports and issue verification reports. Please explain in the text box below.

**Answer:**

18. Please elaborate on how long it took your organization to receive accreditation in order to assess the monitoring plans, emissions reports and issue verification reports. Please explain in the text box below.

**Answer:**

### *Closing questions*

19. What are, from your perspective, the three elements in the EU MRV Regulation that worked best after the implementation of the Regulation? Please provide a brief description of these three main elements and motivation why these aspects have worked well.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

**20.** What are, from your perspective, the three main elements in the EU MRV Regulation that could be further improved to ensure a smooth functioning of the EU MRV Regulation? Please provide a brief description of these three main elements and why these elements should be improved.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

**21.** Do you have any additional comments related to the functioning of the EU MRV that might be relevant for the current study? Please elaborate in the textbox below.

**22.** Are we allowed to contact you in case of questions and/or clarifications?

Yes

No

**23.** Please provide us with your contact details in case you want to be informed on the results of this study

On behalf of the entire project team, we would like to thank you for participating. These results will be treated with strict confidentiality.

In case you have addition questions with respect to this survey please reach out to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

## Annex VII – Data collection sheet flag States

Country: .....

Name of the organisation: .....

Name of the respondent(s): .....

### *General information*

CE Delft and Ecorys are performing the supporting study for the implementation of Regulation (EU) 2015/757 on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport. This study aims, amongst others, to assess the current status of implementation of the Regulation (EU) 2015/757 and, where relevant, the related implementing legislation in all 27 EU Member States as well as relevant EEA countries (i.e. Norway and Iceland).

Besides providing an overview on how Regulation (EU) 2015/757 is implemented, the study will also collect information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation. By means of this survey, the information will be retrieved from the Flag State Authority's perspective.

Please note that the collected data and your responses will be treated as strictly confidential. The data provided will be aggregated in a report to avoid the possibility to recognise any individual entity. Information collected by this survey and used in the report will be de-identified to ensure the confidentiality of the respondents.

Prior to filling in the survey, we want to thank you for your participating. Any questions with respect to this survey in particular or the study in general can be addressed to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

### *Introductory questions*

1. Please indicate in the table below several statistics about your fleet register. This helps us to put the answers in the remainder of the survey into perspective (please provide a rough estimation).

Indicator	Unit	2018	2019	2020
Ships registered in your register	Number of ships			
Ships above 5.000 gross tonnage <sup>133</sup> registered in your register	Number of ships			
Ships applied to sail under your flag	Number of ships			
Ships unsubscribed to sail under your flag	Number of ships			

The remaining questions in the document will focus on the several specific aspects of the EU MRV Regulation.

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<sup>133</sup> Note that the EU MRV Regulation (2015/757) applies to ships above 5.000 gross tonnage (GT).

## *Reporting*

According to Article 11 of the EU MRV Regulation, shipping companies shall submit their emissions report to the Commission and the flag State authority concerned. Additionally, in case another company becomes responsible for the ship during the reporting period, the new responsible company shall ensure that each ship under its responsibility complies with the requirements. The following questions are related to the abovementioned aspects.

2. How do you, as a flag State, ensure that ships flying your flag draft and submit an emissions report if required? Please provide a brief description in the text box below on how you assess whether all ships of your fleet are in compliance.

**Answer:**

3. In case a ship changes ownership during the year, how do you become aware of such a change? Please elaborate.

**Answer:**

4. When it comes to communication with the respective shipping company, how do you receive the emissions report(s)? (multiple answers possible)

- THETIS-MRV
  - Online platform
  - Email
  - Post
  - Other, please specify in the text box below
- 

## *Inspection*

Article 17 of the EU MRV Regulation lays down rules on the document of compliance (DoC). In case the emissions report fulfils the requirements laid down in Articles 11 to 15 and their respective Annexes, the verifier shall issue a document of compliance for the ship concerned. The verifier shall inform the Commission and the authority of the flag State thereof.

5. Could you indicate for how many ships flying your flag verifiers have issued a document of compliance?

**Answer:**

Number of DoCs issued for ships that were compliant in 2018:

Number of DoCs issued for ships that were compliant in 2019:

### *Enforcement*

In case a ship is non-compliant with the EU MRV sanctions can be issued both by the flag State and port State. In this section we would like to ask some questions on how you, as a flag State, can deal with non-compliant ships flying your flag. We make a distinction between ships that are non-compliant for the first time and ships that are recurrently non-compliant.

6. Could you describe how you assess whether all ships flying your flag are compliant with the requirements of the EU MRV Regulation? Please briefly explain the method to assess compliance in the text box below

**Answer:**

7. In case ships are not compliant with the requirements laid down in the EU MRV Regulation, which requirement(s) is / are often not fulfilled? Please provide, to the best of your knowledge, the main requirements that are often not fulfilled in the text box below.

**Answer:**

8. What sanctions can you issue in case a ship is for the first time not compliant with the EU MRV Regulation? Please explain the sanctions / measures below and indicate what the legal basis for the sanction is.

**Answer:**

Sanction / measure 1:

Sanction / measure 2:

Sanction / measure 3:

9. For the sanctions / measures mentioned in question 8, could you please provide, in absolute numbers, how many times you, as a flag State, issued the sanctions / **measure against shipping companies in 2019 and 2020?**

Indicators	Unit	2019 <sup>134</sup>	2020 <sup>135</sup>
Sanctions	Number of sanctions		
<i>Please fill in the sanctions and measures below:</i>			
...			
...			

10. In future years, the same ship could be recurrently non-compliant with the requirements of the EU MRV Regulation. In case a ship flying your flag is recurrently non-compliant, which sanctions / measures could you, under your legal framework, issue? Please provide an overview of possible sanctions / measures and their legal basis.

**Answer:**

Sanction / measures 1:

Sanction / measures 2:

Sanction / measures 3

11. How do you, as a flag State, ensure that the system of penalties is effective, proportioned and dissuasive?

**Answer:**

Once you have issued a sanction / measure, it needs to be followed-up and this follow-up might require some action from your side. The following questions address these follow-up actions.

12. How do you, as a flag State, carry out follow-up actions (such as imposing penalties and expulsion orders) in case a sanction / measure is issued to the ship company? (please answer the following aspects)
- a. Which follow-up actions do you carry out?

<sup>134</sup> Number of sanctions issued for ships that were non-compliant in 2018  
<sup>135</sup> Number of sanctions issued for ships that were non-compliant in 2019

**Answer:**

- b. Who carries out the follow-up actions in case a sanction is issued to the shipping company? Please specify the organisation that performs these activities

**Answer:**

- c. How do you record the follow-up actions on the sanctions / measures issued?

**Answer:**

#### *Organisation, communication and information exchange*

13. Is there, in your country, one single point of contact who coordinates all (European) maritime affairs, for example the EU MRV? If yes, please describe what organisation in the text box below

- Yes  
 No

Based upon Article 17 of the EU MRV Regulation, the verifier shall inform the flag State authority that a document of compliance is issued. Afterwards, the verifier transmits the information using automated systems and data exchange formats, including electronic templates. The following questions are related to the communication between flag State and verifier.

14. How do you communicate with the verifiers involved in the EU MRV process?

- a. How do you receive the notifications on the issuance of the document of compliance? For instance communication via THETIS-MRV, online platform, email, post, etc.

**Answer:**

- b. Do verifiers use different communication tools (as indicated in question 14a)?

**Answer:**

**15.** Do you receive automatic notifications once a document of compliance was issued? Please provide a further explanation in the text box below.

- Yes
- No
- I do not know

According to Article 22 of the EU MRV Regulation the Commission and, where relevant, the Member States shall maintain technical exchange with third countries, in particular for the further development of monitoring methods, the organisation of reporting and the verification of emissions reports.

**16.** What kind of information is exchanged between your organisation and other authorities related to the EU MRV Regulation? Please briefly describe in the table below what kind of information is exchanged and with whom.

	Information exchanged
Other national authorities in your country	
EMSA	
European Commission	
Other countries (flag or port State)	
...	

**17.** How do you share information between different authorities? For instance THETIS-MRV, online platform, email, post, other. Please briefly describe in the table below how information is shared.

	Information shared
Other national authorities in your country	
EMSA	
European Commission	
Other countries (flag or port State)	
...	

**18.** Do you experience problems in sharing information (both content related and systems used) with other authorities involved in the EU MRV Regulation? Please elaborate.

**Answer:**

*Closing questions*

19. What are, from your perspective, the three elements in the EU MRV Regulation that worked best after the implementation of the Regulation? Please provide a brief description of these three main elements and motivation why these aspects have worked well.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

20. What are, from your perspective, the three main elements in the EU MRV Regulation that could be further improved to ensure a smooth functioning of the EU MRV Regulation? Please provide a brief description of these three main elements and why these elements should be improved.

**Answer:**

Element 1 –

Element 2 –

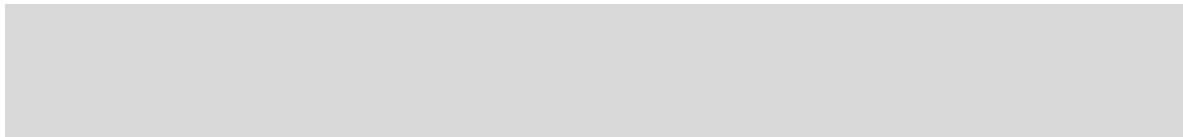
Element 3 -

21. Do you have any additional comments related to the functioning of the EU MRV that might be relevant for the current study? Please elaborate in the textbox below.

22. Are we allowed to contact you in case of questions and/or clarifications?

- Yes  
 No

23. Please provide us with your contact details in case you want to be informed on the results of this study

A large rectangular gray box used to redact sensitive information, likely contact details.

On behalf of the entire project team, we would like to thank you for participation in the survey. The results will be treated with strict confidentiality.

In case you have addition questions with respect to this survey please reach out to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

## Annex VIII – Data collection sheet port States

Country: .....

Name of the organisation: .....

Name of the respondent(s): .....

### *General information*

CE Delft and Ecorys are performing the supporting study for the implementation of Regulation (EU) 2015/757 on the monitoring, reporting and verification of CO<sub>2</sub> emissions from maritime transport. This study aims, amongst others, to assess the current status of implementation of the Regulation (EU) 2015/757 and, where relevant, the related implementing legislation in all 27 EU Member States as well as relevant EEA countries (i.e. Norway and Iceland).

Besides providing an overview on how Regulation (EU) 2015/757 is implemented, the study will also collect information on best practices, successes and shortcomings to complement and update the Commission's knowledge of the quality of implementation. By means of this survey, the information will be retrieved from the port State Authority's perspective.

Please note that the collected data and your responses will be treated as strictly confidential. The data provided will be aggregated in a report to avoid the possibility to recognise any individual entity. Information collected by this survey and used in the report will be de-identified to ensure the confidentiality of the respondents.

Prior to filling in the survey, we want to thank you for your participating. Any questions with respect to this survey in particular or the study in general can be addressed to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

### *Introductory question*

1. Please indicate in the table below several statistics about your organisation's activities in relation with the EU MRV Regulation. The information will help us to put the answers in the remainder of the survey into perspective (please provide a rough estimation).

Indicator	Unit	2018	2019	2020
Ships calling at your ports	Total number of <u>unique</u> ships			
Ships calling at your ports and above 5,000 gross tonnage <sup>136</sup>	Number of <u>unique</u> ships			
Port State control inspections carried out	Total number of port State inspections			
Port State control inspections carried out at vessels above 5,000 gross tonnage	Number of port State inspections			

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<sup>136</sup> Note that the EU MRV Regulation (2015/757) applies to ships above 5.000 gross tonnage (GT).

The remaining questions in the document will focus on several specific aspects of the EU MRV Regulation.

### *Inspection*

According to Article 19 of the EU MRV Regulation, the Member State should ensure that any inspection of a ship in a port under its jurisdiction (in accordance with Directive 2009/16/EC) includes checking that a valid document of compliance is carried on-board. In case information on the date of issue/expiry of the document of compliance or the identity of the verifier is lacking, the Member State may check for a valid document of compliance on board. The following questions will focus on these three aspects in your capacity of a port State.

2. Could you specify how you, as a port State, assess whether ships calling in one of your ports are compliant with the requirements of the EU MRV Regulation? (please answer the following aspects)

a. How do you select vessels for inspection? Please elaborate in the text box below.

**Answer:**

b. Could you provide a description of the process for on-shore checking the document of compliance?

**Answer:**

c. In case information in the document of compliance is inaccurate or incomplete, which procedure do you follow to perform the on-board inspection? Please explain in the text box below.

**Answer:**

d. What are, from your perspective, the main areas for improvement when it comes to the process of checking the document of compliance? Please provide a brief description of the main areas for improvement and motivate why these areas should be improved.

**Answer:**

3. Could you indicate the number of ships calling at your port that had a valid document of compliance on-board (compliant ships) and the number of ships that did not carry a valid document of compliance on board (non-compliant ships)?

Indicator	Unit	2019	2020
Compliant ships	Number of compliant ships		
Non-compliant ships	Number of non-compliant ships		

4. In case vessels did not have a valid document of compliance on-board, what were the main reasons invoked by the shipping company for this? Please elaborate in the text box below.

**Answer:**

### *Enforcement*

Based on Article 20 of the EU MRV Regulation the Member State concerned shall set up a system of penalties in case a shipping company fails to comply with the monitoring and reporting obligations. The Member State should take measures to ensure that those penalties are imposed. The following questions are related to these aspects.

5. What is the legal basis for the system of penalties and measures that can be imposed once a ship is non-compliant with the EU-MRV requirements?

**Answer:**

6. What sanctions / measures can you, as a port State, issue in case a ship is for the first time non-compliant with the EU MRV Regulation? Please explain the sanctions below.

**Answer:**

Sanction / measure 1:

Sanction / measure 2:

Sanction / measure 3:

7. For the sanctions / measures mentioned in question 6, could you please provide, in absolute numbers, how many times you, as a flag State, issued the sanctions against shipping companies in 2019 and 2020?

Indicators	Unit	2019 <sup>137</sup>	2020 <sup>138</sup>
Sanctions	Number of sanctions		
<i>Please fill the sanctions / measures below:</i>			
...			
...			

8. In future years, it can happen that the same ship is recurrently non-compliant with the requirements of the EU MRV. In case a ship is recurrently non-compliant, which sanctions / measures could, under your legal framework, issue? Please provide an overview of possible sanctions / measures and their legal basis.

**Answer:**

Sanction / measure 1:

Sanction / measure 2:

Sanction / measure 3:

9. Could you, as a port State, specify how you enforce whether ships calling in your ports are compliant with the requirements of the EU MRV Regulation? (please answer the following aspects)
- How do you, as a port State, ensure that the sanctions / measures imposed are effective, proportioned and dissuasive?

**Answer:**

- How do you record the sanctions / measures issued?

**Answer:**

<sup>137</sup> Number of sanctions issued for ships that were non-compliant in 2018.

<sup>138</sup> Number of sanctions issued for ships that were non-compliant in 2019.

### *Communication and technical information exchange*

According to Article 22 of the EU MRV Regulation the European Commission and potentially the Member States shall maintain technical exchange with third countries, in particular for the further development of monitoring methods, the organisation of reporting and the verification of emissions reports.

10. What kind of information is exchanged between your organisation and other authorities/ports related to the EU MRV Regulation? Please briefly describe in the table below what kind of information is exchanged and with whom.

	Information exchanged
Other national authorities in your country	
Other ports in your country	
Ports outside your country	
EMSA	
European Commission	
Other countries (Flag or Port State)	
...	

11. How do you share information between authorities / ports? For instance THETIS-MRV, online platform, email, post, other. Please briefly describe in the table below how information is shared.

	Information shared
Other national authorities in your country	
Other ports in your country	
Ports outside your country	
EMSA	
European Commission	
Other countries (Flag or Port State)	
...	

12. Do you experience problems in sharing information (both content related and systems used) with other authorities / ports involved in the EU MRV Regulation? Please elaborate.

**Answer:**

### *Closing questions*

13. What are, from your perspective, the three elements in the EU MRV Regulation that worked best after the implementation of the Regulation? Please provide a brief description of these three main elements and motivation why these aspects have worked well.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

14. What are, from your perspective, the three main elements in the EU MRV Regulation that could be further improved to ensure a smooth functioning of the EU MRV Regulation? Please provide a brief description of these three main elements and why these elements should be improved.

**Answer:**

Element 1 –

Element 2 –

Element 3 -

15. Do you have any additional comments related to the functioning of the EU MRV that might be relevant for the current study? Please elaborate in the textbox below.

16. Are we allowed to contact you in case of questions and/or clarifications?

- Yes
- No

17. Please provide us with your contact details in case you want to be informed on the results of this study



On behalf of the entire project team, we would like to thank you for participation in the survey. The results will be treated with strict confidentiality.

In case you have addition questions with respect to this survey please reach out to [EU-MRV@ecorys.com](mailto:EU-MRV@ecorys.com).

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- at the following standard number: +32 22999696, or
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Publications Office  
of the European Union

ISBN 978-92-68-07926-  
3