
Working paper on verification procedures and accreditation of verifiers

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A. Introduction

The EU Regulation on the monitoring, reporting and verification of emissions of CO₂ from maritime transport ([EU 2015/757](#)) (hereafter: EU MRV Regulation¹) lays down rules for the accurate monitoring, reporting and verification of CO₂ emissions and other relevant information from ships above 5,000GT calling at EU ports.

Article 15.5 and Article 16.3 of the EU MRV Regulation empowers the Commission to adopt delegated acts in order to further specify the rules for the verification activities and methods of accreditation. Elements that shall be considered are provided in Annex III Part A for verification activities and in Part B for methods of accreditation. These rules shall be based on the principles for verification and methods for accreditation provided for in Article 14, on Regulation (EC) No 765/2008 on Accreditation and Market Surveillance (Accreditation regulation²) and on relevant internationally accepted standards. In developing options for further specifying rules on accreditation and verification, a broad range of standards are considered.

The following relevant internationally accepted standards for verification of GHG emissions statements have been identified:

- ISO 14065:2013[E] International Standard on Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition;
- ISO 14064-3:2006[E] International Standard on Greenhouse gases - Specification with guidance for the validation and verification of greenhouse gas assertions;
- ISO 14066:2011[E] International Standard on Greenhouse Gases - Competence requirements for greenhouse gas validation teams and verification teams;
- ISO 17011:2004 Conformity assessment - General requirements for accreditation bodies accrediting conformity assessment bodies.

ISO 14064-3, ISO 14065 and ISO 14066 are mandatory standards to follow for accredited verifiers. ISO 17011 is a required standard to use for NABs.

Annex III of the EU MRV Regulation contains a list of elements that the Commission shall take into account when adopting the delegated acts. The elements are listed below and are related to other sections of the EU MRV Regulation and detailed in relevant internationally accepted standards.

- Verification procedures:
 - Competencies of verifiers (*EN ISO 14065 Section 6, EN ISO 14066*);
 - Assessment of the conformity of the monitoring plan (*EN ISO 14064-3 section 4.3.3*);
 - Verification of the emission report (*EN ISO 14064-3 section 4.4 – 4.11*);
 - Documents to be provided by companies to verifiers (*EU MRV Regulation Article 4.4*);
 - Risk assessment to be carried out by verifier (*EN ISO 14064-3 section 4.4.1*);
 - Materiality level (*EN ISO 14064-3 section 4.3.5*);
 - Reasonable assurance of the verifier (*No references identified*);
 - Misstatements and non-conformities (*EU MRV Regulation Article 13.3 & 13.4*);
 - Content of the verification report (*EN ISO 14065 section 4.9*);

¹ Source: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0757&from=EN>

² 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

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- Recommendations for improvements (*EU MRV Regulation Article 4.7*);
 - Communication company-verifier-Commission (***This will be developed by EMSA and is therefore not included in this document***).
 - Accreditation of verifiers:
 - How accreditation for shipping activities can be requested (*ISO17011 section 7.2, Accreditation Regulation Article 7*);
 - How verifiers will be assessed by the national accreditation bodies in order to issue an accreditation certificate (*ISO17011 section 7.5 – 7.9*);
 - How national accreditation bodies will perform the surveillance to confirm the continuation of the accreditation (*ISO17011 section 7.11*);
 - Requirements for national accreditation bodies in order to be competent to provide accreditation to verifiers for shipping activities, including reference to harmonized standards (*ISO17011 Section 6*).

When developing the options in this document, compatibility with relevant elements of international standards on assurance engagements that apply for professional financial audit firms (ISAE 3000 and ISAE 3410) have been considered to enable verifiers that are bound to adhere to these standards to perform verification engagements for the EU MRV Regulation

Section B provides an overview of the workflows of verification and accreditation activities. Section C describes the elements related to verification procedures and subsequently section D the methods for the accreditation of verifiers.

The aim of this paper is to facilitate the discussions of the Shipping MRV subgroup of experts on verification and accreditation established under the European Sustainable Shipping Forum (ESSF) in view of the preparation of the above mentioned delegated act(s).

Costs of verification and accreditation

Accreditation bodies charge verifiers for the costs incurred and activities performed for the assessment of the accreditation application, granting accreditation and performing surveillance assessments.

Verifiers charge companies for the activities performed to assess monitoring plans and verify emissions reports. It is expected also that verifiers pass on the cost of obtaining and maintaining the accreditation to companies in their verification fees.

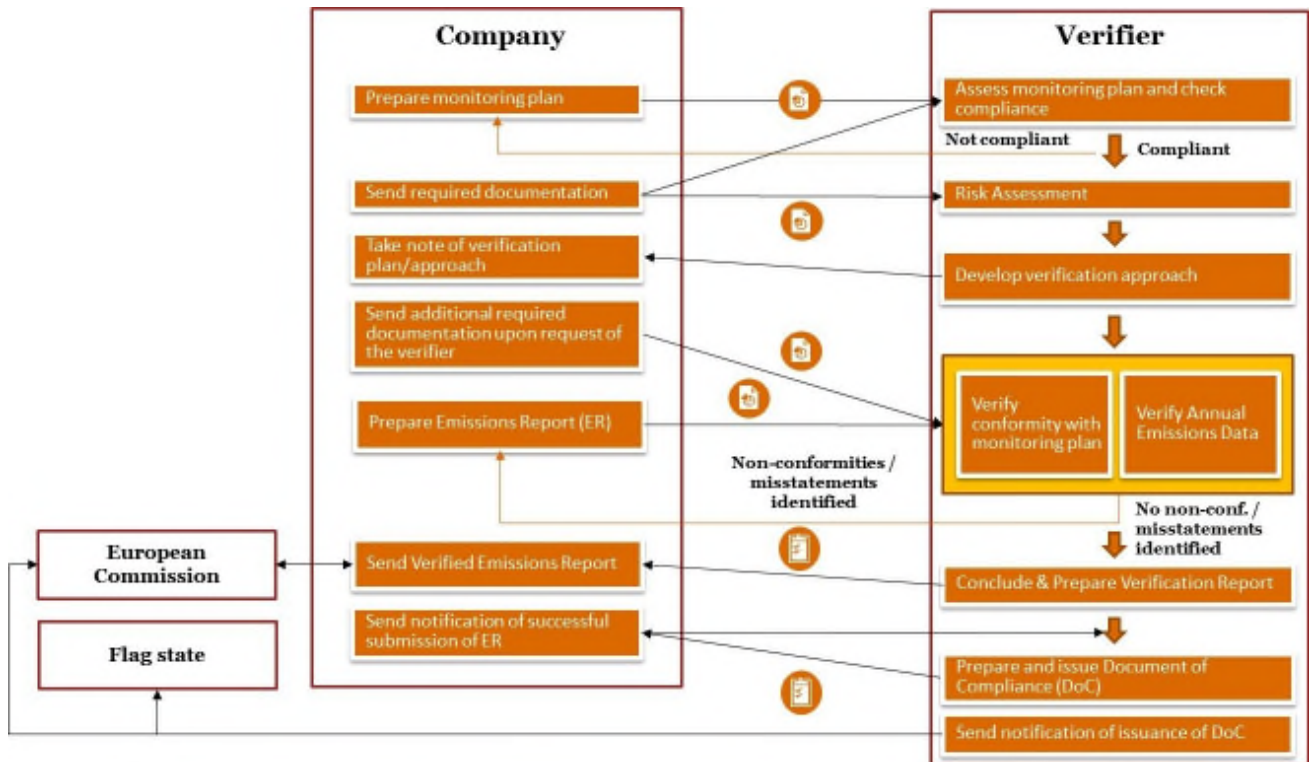
Disclaimer

The information and views set out in this paper are those of the author(s) and do not necessarily reflect the official opinion of the Commission.

B. Overview of workflows

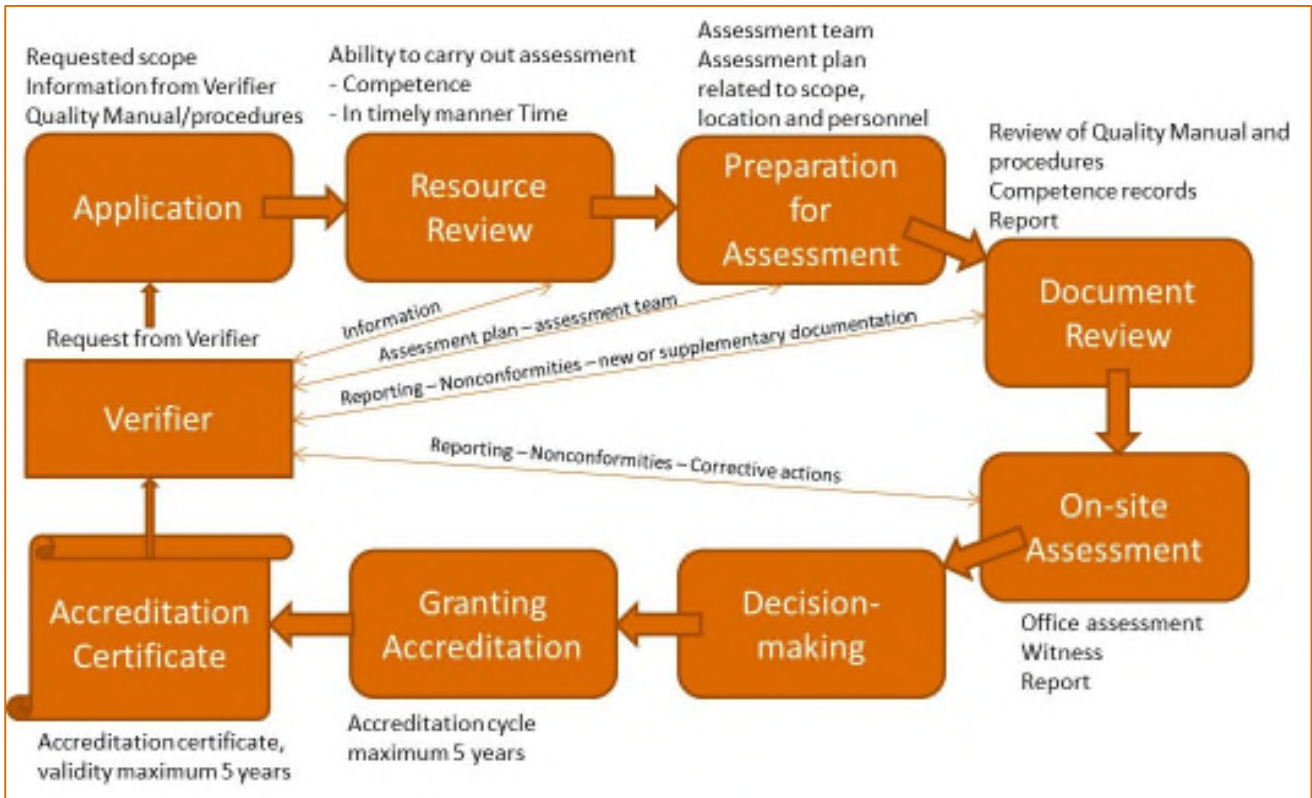
This section provides a visual overview of the workflow for verification and accreditation for the EU MRV Regulation.

Workflow for verification



Workflow for accreditation

The picture below provides an overview of the accreditation process for the initial assessment.



The picture below provides an overview of the accreditation activities after the initial assessment has been completed.



1. Competencies of verifiers

1.1. Potential needs for rules

Issue:	Competence requirements for verifiers are not specified in the EU MRV Regulation	
Actors involved:	VERIFIERS	Verifiers need to be competent in order to perform verification under the EU MRV Regulation (Recital 26)
Rules needed for:	VERIFICATION	The delegated act could define the competence requirements for shipping MRV verifiers in order to perform verification engagements adequately.
	ACCREDITATION	EU national accreditation bodies will assess the competence of verifiers in order to grant accreditation under the EU MRV Regulation
Impact on company	Specifying competence requirements for verifiers contributes to creating a level playing field, and accreditation will ensure companies that all accredited verifiers fulfil the needed competence requirements.	
Relevant internationally accepted standards	EN ISO 14065	Section 6.2 – 6.5
	EN ISO 14066	All sections
Relevant EU legislation:	Accreditation Regulation 765/2008	Article 13.3
	EU ETS Accreditation and Verification Regulation 600/2012	Articles 3.8, 35-39

As part of the pre-engagement activities for verification engagements, verifiers must ensure to possess sufficient competence for performing these engagements. Assessing competence of verifiers is an important element of the accreditation process. Under accreditation, EN ISO 14065 is the relevant international standard on verification of Greenhouse Gas (GHG) emissions. Competence requirements for verification teams are further specified in EN ISO 14066.

According to EN ISO 14065:

- Competence is the ability to apply knowledge and skills to carry out verification of the monitoring and reporting of data on CO₂ emissions;
- Different competence criteria exist for different roles in the verification process, mainly Lead Auditor, Auditor, Technical experts, Independent reviewer;
- Verifiers must have a process in place to evaluate, train, qualify and monitor competence of personnel entrusted with verification activities ;
- Documentation of the process of ensuring competence of verifiers shall be part of the management system of the verifier (verification body).

Verification of Transport Work requires a similar set of competencies of verifiers compared to CO₂ emissions. However, the characteristics of information reported differs (distance, amount of cargo carried).

In addition to EN ISO 14065, the EU MRV Regulation includes many elements specific to the monitoring reporting and verification of CO₂ emissions for maritime transport. Therefore, important elements to consider when specifying the of competences necessary

in the Delegated act in addition to EN ISO 14065 are:

- Competence for the verification of elements specific to the maritime sector;
- Competence to assess the conformity of monitoring plans of ships against the EU MRV Regulation.

Furthermore, for the purpose of verification of the amount of Transport Work and other relevant information, specific competence requirements concerning distance sailed, amount of passengers and mass / volume of cargo carried need to be considered.

1.2. Options discussed in the subgroup

The following further specifications of competence of verifiers are suggested for the Delegated act, based on EN ISO 14065 Section 6 and on Regulation 600/2012 (Accreditation and Verification Regulation, AVR):

- Competence requirements for lead auditors, verification teams, independent reviewers and technical experts;
- Continued competence process (general requirement for verification companies).

The following competence criteria are suggested to be included in the Delegated act for verifying elements specific for the maritime sector and assessing whether monitoring plans are compliant with the EU MRV Regulations:

- Knowledge of the EU MRV Regulation, relevant international standards, other relevant legislation as well as applicable guidelines;
- Knowledge of and experience in sector specific technical monitoring and reporting aspects.

The table below provides an overview of technical monitoring and reporting aspects applicable for the maritime sector for the purpose of this EU MRV regulation. The verifier shall gain an understanding of these aspects to the extent relevant for the verification of the specific ship.

Subject matter	Examples of sector specific technical monitoring and reporting aspects (non-exhaustive)
Assessment of the monitoring plan	<ul style="list-style-type: none"> • EU MRV Regulation including its Annexes, delegated and implementing acts • Other relevant legislation (MARPOL Annex VI, NOx Technical Code, Sulphur Oxides Regulation, and Fuel Oil Quality Regulation (Regulation 18 of IMO)); • Other relevant guidance (SEEMP); •
Monitoring and reporting CO2 emissions	<p>Required</p> <ul style="list-style-type: none"> • Emission sources of the ships installation; • Understanding of registration of voyages and how completeness and accuracy of the list of voyages is ensured by the company; • Understanding of reliable external sources that could serve as means to cross check information from with data from ships (including AIS tracking data) • Understanding how fuel calculation methods are applied by ships in practice; • Understanding of application of uncertainty levels in accordance with the EU MRV Regulation; • Understanding how a fuel's carbon content is determined (e.g. which standard is used); • Understanding of application of Emission factors for all fuels, including LNG, hybrid fuels, biofuels etc.; • Knowledge about fuel handling, fuel cleaning, tank systems; • Understanding of the ship's maintenance / quality control of metering equipment; • Available templates for EU MRV Regulation ; • Interpretation of a Bunker Delivery Note (BDN); • Interpretation of operational logs, voyage abstract and port abstract, ship deck log; • Commercial documentation e.g. charter party agreements, bill of lading etc; • Existing statutory requirements; • Understanding of the operation of the ship's Bunkering systems; • How fuel density is determined by ships in practice;

	<ul style="list-style-type: none"> • Understanding of deviations from planned routes due to weather conditions, piracy etc.).
Monitoring and reporting Transport Work	<p>Required</p> <ul style="list-style-type: none"> • Registration of cargo carried (in volume or mass); • Registration of distance travelled; • Registration of time spent at sea; • Registration of deadweight carried / ballast water³; • Registration of number of passengers

Based on feedback from stakeholders there will be one single list of competencies covering the assessment of monitoring plan and the verification of emissions reports. the list of competencies is agreed by the subgroup.

1.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Competencies of verifiers

- The verifier shall establish, document, implement and maintain a continuous competence process to ensure that all personnel entrusted with verification activities are competent for the tasks that are allocated to them.
- As part of the competence process referred to in the previous point, the verifier shall at least determine, document, implement and maintain the following:
 - general competence criteria for all personnel undertaking verification activities;
 - specific competence criteria for each function within the verifier undertaking verification activities, in particular for the MRV team leader, MRV auditor , auditor-in-training, independent reviewer and technical expert;
 - a method to ensure the continued competence and regular evaluation of the performance of all personnel that undertake verification activities;
 - a process for ensuring ongoing training of the personnel undertaking verification activities;
 - the verifier shall document the competence process and results thereof as part of the verifier’s management system.
- In addition to the previous section, for the purpose of assessment of the conformity of the monitoring plan and verification of the emissions report according to the EU MRV Regulation and the relevant Delegated act, the verifier shall have sufficient sector specific competence, and at least :
 - Knowledge of the EU MRV Regulation, its Annexes, and delegated implementing acts and relevant international standards;
 - Knowledge of and experience in sector specific technical monitoring and reporting aspects, consisting of but not limited to:
 - ~~EU MRV Regulation including Annex I, II and III;~~
 - Understanding of the relevance of other legislation, including MARPOL Annex VI, NOx Technical Code, Sulphur Oxides Regulation, and Fuel Oil Quality Regulation (Regulation 18 of Imo));
 - Understanding of overlap the EU MRV Regulation has with other relevant sector specific guidance (e.g. SEEMP);
 - Understanding how companies and verifiers can leverage on existing maritime specific management systems, e.g. the ISM Code.
 - Emission sources of the ships installation;
 - Understanding of registration of voyages and the way completeness and accuracy of the list of voyages in ensured by the company;
 - Understanding how fuel calculation methods are applied by ships in practice;

³ Depends on decision on parameters for cargo carried

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- Understanding of application of uncertainty levels in accordance with the EU MRV Regulation;
 - Understanding how a fuel's carbon content is determined (e.g. which standard is used);
 - Understanding of application of Emission factors for all fuels, including LNG, hybrid fuels, biofuels etc.;
 - Knowledge about fuel handling, fuel cleaning, tank systems;
 - Understanding of the ship's maintenance / quality control of metering equipment;
 - Available templates for EU MRV Regulation ;
 - Interpretation of a Bunker Delivery Note (BDN);
 - Interpretation of operational logs, voyage abstract and port abstract, ship deck log;
 - Commercial documentation e.g. charter party agreements, bill of lading etc;
 - Existing statutory requirements;
 - Understanding of the operation of the ship's Bunkering systems;
 - How fuel density can be determined by ships in practice;
 - Understanding of deviations from planned routes due to weather conditions, piracy etc.).
 - Understanding of the data flow process of cargo carried (in volume or mass);
 - Understanding of the data used and process to determine distance travelled;
 - Understanding of the data used and process to determine of time spent at sea;
 - Understanding of the application of deadweight carried;
 - Understanding of the machinery and technical systems used on-board ships to determine fuel consumption, transport work and other relevant information.
- For the purpose of the verification of the emissions report, the verifier shall ensure to possess sufficient competence on the following elements:
 - Understanding of reliable external sources that could serve as means to cross check information from with data from ships (including AIS tracking data)

Need for definitions identified

Definition of competence: the ability to apply knowledge and skills to carry out an activity to achieve the intended result.

2. Assessment of the conformity of the monitoring plan

2.1. Potential needs for rules

Issue:	No specific procedure is laid down in the EU MRV Regulation for verifiers to assess conformity of the monitoring plan	
Actors involved:	VERIFIERS	Article 13.1 EU MRV Regulation requires verifiers to assess the conformity of the monitoring plan with the requirements laid down in Articles 6 and 7
Rules needed for:	MP ASSESSMENT	The delegated act could define the minimum procedures to assess conformity of the monitoring plan with the EU MRV Regulation and with the real situation of the ship in order to ensure harmonised assessment by different verifiers (level playing field and guarantee quality)
Impact on company	Specifying rules for minimum procedures to assess monitoring plans contributes to creating a level playing field among verifiers, and ensures companies that all accredited verifiers perform at least the minimum required procedures for the assessment of the monitoring plan.	
Relevant internationally accepted standards:	EN ISO 14064-3	Section 4.3.3
Relevant EU legislation:	Accreditation Regulation 765/2008	Article 2.12 (definition of conformity assessment)

In accordance with EN ISO 14065, verifiers should gain an understanding of the subject matter (which information will be reported) and reporting criteria (how is the information reported) in order to accept the engagement and assess the risks of misstatements. The monitoring plan (Article 6 EU MRV Regulation) is a document in which the company describes the design of the management system the ship has in place in order to monitor and report emissions and transport work for the EU MRV Regulation. In other context of data auditing, the term reporting manual is often used instead of monitoring plan.

2.2. Options discussed in the subgroup

Procedures for assessing the content of the monitoring plan

The following options have been discussed:

- Option 1: No further rules with regard to procedures executed to assess the monitoring plan will be developed. Verifiers will be able to determine which procedures will be required to assess the monitoring plan.
- Option 2: Additional rules that will address the assertions that have to be fulfilled by the verifier in assessing the monitoring plan were agreed. These assertions could be: completeness, relevance and conformity with the EU MRV Regulation.**
- Option 3: A specific set of procedures will be listed that have to be carried out and documented by the verifier when assessing the monitoring plan.

Based on feedback from stakeholders, Option 2 is preferred.

Mitigation of risk of self-review

The following options have been discussed with the stakeholder subgroup:

- Option 1: No further rules will be developed in order to mitigate the threat of self-review by verifiers.
- Option 2: Rules will be specified that will mitigate the threat of self-review by verifiers. These rules could include:

- The verifier is prohibited to accept a verification engagement for the EU MRV Regulation to companies for which the verifier has provided consultancy work on the preparation of the monitoring plan or emissions report;
- Clear description of the services provided in the engagement letter;
- Source data will only be provided by the shipping company.

It is to be noted that EN ISO 14065 and the EU MRV Regulation contain clear requirements related to impartiality. Also the requirements on avoidance of conflict of interest in EN ISO 14065 shall be taken into account. This standard specifies that the verifier should take appropriate measures to manage such conflicts and to ensure that verifiers remain independent and impartial throughout the verification process. As a starting point verifiers need to avoid self-review by avoiding providing consultancy / advisory work on the monitoring plan if the verifier is also assessing the monitoring plan and verifying the emissions report. These provisions together with specific procedures for assessing the monitoring plan in the delegated act should guarantee that the verifier does not develop a conflict of interest when assessing the monitoring .

Time allocation

Verifiers will estimate the time required to assess the monitoring plan. This is a new element for verifiers verifying CO₂ emissions under accreditation. In accordance with Article 7 of the EU MRV Regulation, verifiers are required to perform a re-assessment of the monitoring plan as a result of updates due to identified non-compliances or certain changes to the ship's monitoring and reporting system. It should be considered whether further rules are necessary to provide verifiers the option to charge additional time as a result of re-assessments. The following options have been discussed in the stakeholder subgroup:

- Option 1:** No further rules with regard to time allocation will be specified. The time allocation is subject to the best estimation of the verifier and the verifier will determine if and how this will be addressed in the verification contract.
- Option 2:** In line with EU ETS (Article 9.2 of the Accreditation and Verification Regulation No 600/2012), rules will require the verifier to include a clause in the verification contract that offers the possibility to charge additional time. This additional time might be required to (re-)assess the monitoring plan.
- Option 3:** Additional rules will be developed that specify the time to be spent and charged by the by the verifier on assessing the required elements of the monitoring plan.

Time and budget determination is part of the commercial and contractual process between verifiers and shipping companies. This includes agreement on dealing with re-assessments of monitoring plans. Based on the outcome of the discussions with and feedback from the subgroup, Option 1 is the preferred option. No further rules will be needed.

2.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Objectives of assessment of the conformity of the monitoring plan

- As part of the planning phase of the verification engagement, the verifier shall plan for activities to be carried out. In developing the assessment plan, the verifier shall address the following assertions:
 - Completeness of information provided in the monitoring plan;
 - Accuracy of the information provided in the monitoring plan;
 - Relevance of information provided in the monitoring plan; and
 - Conformity of the information provided in the monitoring plan with the EU MRV Regulation.

Monitoring plan assessment activities

It was suggested to split between initial assessment and cases where the verifiers is to reassess a modified Monitoring plan further to circumstances under Article 7.2 letters b) c) and d) of the MRV Regulation

INITIAL ASSESSMENT

- The verifier shall carry out at least the following activities during the initial assessment of the monitoring plan:

- Assess that the company used the appropriate monitoring plan template and that information is provided for all mandatory items determined by the EU MRV Regulation;
 - Validate that the information in the monitoring plan accurately describes the emissions sources and measurement equipment installed on the ship, systems used and procedures in place to monitor and report relevant information for the EU MRV Regulation;
 - Assess that, when applicable, the ship has provided sufficient justification supported by evidence that conditions to apply the derogation for monitoring on a per voyage basis fuel and CO₂ emission conform to Article 9.2 of the EU MRV Regulation will be fulfilled according to schedule.
- When assessing a ship's monitoring plan, the verifier shall take into consideration available information on existing management systems. Verifiers shall only accept as relevant existing management systems, effectively applied and covering elements of the monitoring and reporting system required under the EU MRV Regulation.
 - The verifier shall consider different types of activities for the assessment of the monitoring plan, including but not limited to inquiry, document inspection, observation.
 - The verifier shall ensure that competent personnel different from the verification team will review whether all assessment activities have been completed and conclude whether the monitoring plan provides a fair view on the ship's monitoring and reporting system and is in conformity with the EU MRV Regulation
 - If, based on the assessment the verifier concludes that the monitoring plan is in conformity with the EU MRV Regulation, the verifier shall formally inform the company of the acceptance of the monitoring plan.
 - The verifier shall timely inform the company in writing about the acceptance, or in case the monitoring voluntary modules of the MRV IT tool are used, provide acceptance within that tool.

RE- ASSESSMENT OF A MONITORING PLAN AFTER SIGNIFICANT CHANGES

A reassessment of conformity is necessary when, significant changes to the monitoring and reporting system occur (those mentioned under Article 7 § 2 letters b), c) and d) of the EU MRV Regulation);

- Assess that that information for all the relevant mandatory items determined by the EU MRV Regulation reflects the new situation;
- Validate that the information in the monitoring plan accurately describes the emissions sources and measurement equipment installed on the ship, systems used and procedures in place to monitor and report relevant information for the EU MRV Regulation

2.4. Need for further guidance identified

Guidance could be developed on how verifiers should perform the assessment of the monitoring plan. This could be based on lessons learnt from pilot assessments.

2.5. Examples

Validate whether the monitoring plan reflects the actual situation

When checking whether the monitoring plan reflects the actual situation of the ship, verifiers should validate whether all emissions sources on the ship are included in the monitoring plan and whether the characteristics of these emissions sources are properly described. This could for example be done by comparing the information in the monitoring plan with the ships drawings.

Check completeness and relevance of information

Verifiers need to assess whether all mandatory fields in the monitoring plan template have been filled in by companies. In addition, verifiers need to evaluate whether the information provided is relevant to provide the necessary insight in the way information is monitored and reported by the company.

Compliance with the EU MRV Regulation

The information in the monitoring plan needs to reflect the actual situation and at the same time be compliant with the EU MRV Regulation. For example, if the company uses conversion factors which reflect the actual situation, but are not allowed for the EU MRV Regulation, the company should change these factors for the purpose of compliance with the EU MRV Regulation.

3. Documents to be provided by companies to verifiers

3.1. Potential needs for rules

Issue:	Documents to be provided by companies to verifiers are not specified in the EU MRV Regulation	
Actors involved:	VERIFIERS (requesting info) COMPANIES (providing info)	According to Article 15.4 of the EU MRV Regulation, the company shall provide the verifier with any additional information that enables it to carry out the verification procedures
Rules needed for:	DOCUMENTATION	The delegated act could specify which documents the company has to provide to the verifier, while Article 15.4 already enables the verifier to ask for additional documentation if needed for the purpose of verification
Impact on company	Specifying documents that companies are required to provide to verifiers contributes to a level playing field where verifiers generally ask for similar documents when performing verification activities for the EU MRV Regulation. This is a benefit for companies, as they are aware of the most relevant requests verifiers are likely to make.	
Relevant internationally accepted standards:	EU MRV Regulation EN ISO 14065	Article 4.4 Para 24b(III) Section 7.3
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Article 10

Verification of monitoring & reporting systems and aggregated reported data typically includes inspection of information retained in documents related to:

- Identification of the company, the ship and the monitoring and reporting system including design of processes, systems, risks and controls -> Summarized and referenced to in the monitoring plan;
- Monitoring and reporting CO₂ emissions and Transport Work, including documents providing evidence for the reported data points for fuel, distance, time and cargo per voyage, documents demonstrating execution of internal controls and documents demonstrating adequate calculations, aggregation and consolidation of data.

Companies need to provide documents to verifiers to enable them to verify the compliance of the monitoring plan with the EU MRV Regulation and to verify the reported aggregated emissions and Transport Work. Providing documents to verifiers enables verifiers to perform certain procedures (partly) off-site and to store documents in their client file as verification evidence. This evidence serves as means for verifiers to enable reviewers and accreditation bodies to re-perform verification activities in order to assess the quality of verifiers.

3.2. Options discussed in the subgroup

Availability of documents

The following options have been discussed with the stakeholder subgroup.

Option 1: Shipping companies will be allowed to determine in which place documents will be retained.

Option 2: **The delegated act will require shipping companies to have at least a copy (electronic or on paper) of the documents listed above in the office for verification purposes.**

Based on feedback received from stakeholders, a preference is expressed for Option 2. This means that the Delegated act will specify that for documents whose original is kept onboard ships, it is acceptable for the purpose of verification that copies of these documents are available in the office of the shipping company. This could enable efficiency as it could allow verifiers not to perform site visits on board ships.

Retention of documents

The following options have been discussed with stakeholders:

Option 1: The retention period for documents as set by international maritime laws will be respected. This is considered to be three years for most documents listed. In case international maritime laws require for certain documents a retention period of more than three years this will be followed accordingly.

Option 2: The retention period will deviate from the international maritime laws (e.g. will be set at 10 years as is the case for EU ETS)

Based on the feedback received from stakeholders, a retention period of a minimum of three years is preferred for all information used for the preparation of the emissions report. This will be included in the Delegated act.

Specification of documents to be provided

The delegated act should specify a minimum list of documents that shipping companies shall provide to verifiers (provided that these documents are applicable to the specific ship and to the monitoring method chosen).

Based on the Ecofys study and feedback received from stakeholders so far, the following documents have been identified (non-exhaustive list and specific documents are relevant only for certain ship types):

Cat*	Document	In Advance	Available during verification	Provided upon request	Provided upon request for a sample of voyages
R	Monitoring plan	✓			
R	Documentation / description of ships installation, flow meters used (if applicable) procedures and processes / flowcharts to which is referenced in the monitoring plan (if applicable)	✓			
R	List of all EU MRV voyages including information for each voyage about dates, ports of call, fuel type and consumption data, distance, time spent at sea, cargo carried and applicable conversion & emission factors**	✓			
A	Overview of IT landscape (if applicable)	✓			
R	Official Logbook (copies of relevant sections) and if separate the Oil Record Book (ORB)		✓		✓
A	Evidence of maintenance & accuracy / uncertainty of measurement equipment / flow meters (e.g. manufacturer specifications and calibration certificates (if applicable)		✓	✓	
R	Copies of bunkering documents (BDN, BDN Summaries)		✓		✓
A	Extract of activity data about fuel consumption from flow meters (if applicable)		✓	✓	
A	Copy of evidence of fuel tank meter readings (if applicable)		✓		✓
A	Extract of activity data from direct emissions measurement systems (if applicable)		✓	✓	
R	Copies of documents containing information about the number of passengers transported / amount of		✓		✓

Cat*	Document	In Advance	Available during verification	Provided upon request	Provided upon request for a sample of voyages
	cargo carried				
A	Copies of information received through weather routing systems about voyages (if this would provide information needed about distance travelled and time spent at sea not already recorded in the official log book)		✓		✓
R	Annual Emissions Report		✓	✓	

* R= Required, A= Required if applicable for the company depending on the method of calculation

** In case the verifier realizes that the conditions for the exemption under 9 §2 have not been fulfilled for a concrete reporting period, the company shall provide relevant "per voyage" information and data enabling the verifier to assess with reasonable assurance that the annual aggregated results are accurate and complete..

3.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Availability of documents

- Companies shall make available for the purpose of verification activities, all necessary documents required by the EU MRV Regulation and by the verifier's judgement;
- For documents whose originals are kept on-board ships, companies may make available to the verifier a copy, on paper and / or electronic, of original documents.

Document retention

- The company shall keep records of all relevant data and information used to demonstrate compliance with the EU MRV Regulation and to prepare the emissions report for at least three years after the expiration of the concerned reporting period.
- The documented and archived monitoring data shall allow for the verification of the emissions report in accordance with the EU MRV Regulation. Data reported by the company contained in the voluntary modules of the MRV IT tool may be considered retained by the company, if the verifier can access those data.
- The verifiers shall keep records of all relevant information used for the verification of emissions report, including the assessment of the monitoring plan for at least five years.
- The documented and archived verification records shall allow for assessment of the accreditation in accordance with the EU MRV Regulation.

Documents to be made available for verification purposes:

- For the purpose of assessing the monitoring plan and in addition to the documents related to the mandatory items specified in Article 6 of the EU MRV Regulation, companies shall make available to the verifier the following documents
 - Relevant documentation of the ship's installation, description of processes and procedures and other relevant information that is prepared and maintained outside the monitoring plan (if applicable) and to which reference is made in the monitoring plan;
 - In case of significant changes to the monitoring and reporting system referred to in Article 7, relevant updated versions or new documents enabling the verifier to re-assess the monitoring plan

- During the verification of the emissions report, companies shall make available to the verifier the following information upon request:
 - a list of all voyages of the ship including all relevant information needed to determine its CO₂ emissions, transport work and other relevant information on a per voyage basis and in total for the concerned reporting period;⁴
 - copies of relevant sections of the ship's official logbook and if separate the oil record book. The verifier shall select the sections deemed relevant for the purpose of the verification, e.g. for a sample of voyages;
 - copies of bunkering documents. The verifiers shall select the relevant bunkering documents for the verification, e.g. for a sample of voyages;
 - copies of documents containing information about the number of passengers transported and / or the amount of cargo carried, the distance sailed and the time spent at sea for the ship's voyages in the reporting period. The verifiers shall select the relevant documents for the verification, e.g. for a sample of voyages;
 - draft emissions report.
 - a copy of the last monitoring plan, satisfactory assessed by an accredited verifier
- For verification process and upon a specific requests of the verifier, the company shall make available to the verifier other relevant documents, if applicable on the basis of the monitoring method applied :
 - An overview of the IT-landscape visualizing the data flow of the relevant ship's data;
 - Evidence of maintenance & accuracy / uncertainty of measurement equipment / flow meters (e.g. calibration certificates);
 - Extract of activity data about fuel consumption from flow meters;
 - Copy of evidence of fuel tank meter readings;
 - Extract of activity data from direct emissions measurement systems.
- In case other documents used by the company for the purpose of the EU MRV Regulation are deemed relevant by the verifier, the company shall also make them available upon a verifier's request.

Need for definitions identified

Definition of copies: Paper or electronic copies of original documents

Bunkering documents: Bunker delivery notes or bunker delivery note summaries

3.4. Examples

No additional examples of documents to be provided have been identified.

⁴ Information about fuel is not required **per voyage** if all of the ship's voyages during the reporting period either start from or end at a port under the jurisdiction of a Member State, and according to its schedule performs more than 300 voyages during the reporting period.

4. Risk assessment to be carried out by verifiers

4.1. Potential needs for rules

Issue:	Procedures for carrying out risk assessments under the EU MRV Regulation are not specific and can be further detailed	
Actors involved:	VERIFIERS	<p>According to Article 15.1, the verifier shall identify potential risks related to the monitoring and reporting process comparing reported CO₂ emissions with estimated data based on ship tracking data and characteristics such as the installed engine power</p> <p style="text-align: center;">&</p> <p>According to Article 15.2, the verifier shall identify potential risks related to the different calculation steps by reviewing all data sources and methodologies used</p> <p style="text-align: center;">&</p> <p>According to Article 15.3, the verifier shall take into consideration any effective risk control methods applied by the company to reduce levels of uncertainty associated with the accuracy specific to the monitoring methods used</p>
Rules needed for:	RISK ASSESSMENT	The delegated could further detail the procedures for carrying out the risk assessment in order to guarantee harmonised procedures among verifiers (level playing field and quality)
Impact on company	The requirement of a risk assessment to be carried out by verifiers contributes to a level playing field for verifiers to develop effective and efficient verification plans, focusing on areas of higher risk. Without a risk assessment, verifiers may either do too much work or too little and therefore miss material misstatements in the emissions report. Thus a verifier's risk assessment is important to enable verifiers to provide an appropriate verification opinion cost-effectively.	
Relevant internationally accepted standards:	EN ISO 14064-3	Section 4.4.1
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Articles 11 and 12

When performing verification engagements, it is impossible for verifiers to assess all documents and information used for the preparation of the emissions report. This would be a too time consuming and costly exercise. Verifiers will need to make a selection of processes, systems and documents to assess in their engagement. In order to develop this selection effectively, verifiers need to apply a risk-based approach. By focusing on areas of the monitoring and reporting system representing higher risks of material misstatements, verifiers can tailor their verification approach on developing a response to reduce these risks with verification activities. Verifiers need to consider the need to perform certain verification activities on site (i.e. on the premises of the company) based on the risks identified on the specific monitoring and reporting system for the ship.

Performing a risk assessment is the starting point of the verification engagement. Based on the identified risks, verifiers need to develop a verification approach (verification plan), which includes nature, depth and timing of planned specific verification activities.

During the course of the verification process, the verifier may identify changes in the risks identified, due to changes related to the company's monitoring and reporting system or issues noted during the verification. These circumstances may lead to updates to the risk assessment of the verifier.

The EU MRV Regulation requires verifiers to perform a risk assessment for each ship, since the verification of the emissions report shall be performed on ship level. In assessing risk, verifiers shall compare reported CO₂ emissions with estimated data based on ship tracking data (e.g. AIS) and characteristics such as the installed engine power. Furthermore the verifier shall identify potential risks related to the different calculation steps by reviewing all data sources and methodologies used, and take into consideration any effective risk control methods applied by the company to reduce levels of uncertainty associated with the accuracy specific to the monitoring methods used.

4.2. Options discussed in the subgroup

The following options have been discussed with the stakeholder subgroup:

- Option 1: The delegated act does not include rules for the execution of a risk assessment by the verifier. It will be to the discretion of the verifier how to execute the risk assessment.
- Option 2: The delegated act will set a basic framework for executing the risk assessment on an individual ship basis and that will be in line with Key guidance note no. II.2 that is applicable to EU ETS verifications
- Option 3: The delegated act will set a basic framework for executing the risk assessment on an individual ship basis and that will be in line with Key guidance note no. II.2 that is applicable to EU ETS verifications + additional guidance about carrying out the risk assessment with regard to site visits.**

Based on feedback received from stakeholders, consensus was reached on Option 3.

Suggested option

When evaluating risks, verifiers need to take into account relevant assertions in the monitoring plan and emissions report. The relevant assertions for the EU MRV Regulation are in line with the assertions specified in EN ISO 14064-3 and are applicable for EN ISO 14065:

- Completeness (all emissions, transport work and other information that should have been reported has been reported, e.g. all emission sources have been included in the monitoring plan and emissions report);
- Accuracy (information has been reported appropriately, e.g. the correct source of information is used and the information on that source is accurate);
- Consistency (information reported is consistent with prior years or changes have been justified and disclosed);
- Transparency (information has been disclosed in a clear manner);
- Relevance (only relevant information is reported).

In developing the verification approach, verifiers need to consider the assertions mentioned above as different assertions requiring different type of verification activities to reduce the risk of misstatements in the emissions report.

Verifiers need to consider the risks of providing an inappropriate opinion about whether the emissions report is free from material misstatements (EN ISO 14064-3):

- **Inherent risk** (which events can cause errors in the information to be reported);
- **Control risk** (risks of errors in the information reported that are not prevented by internal controls of the shipping company);
- **Detection risk** (risk of errors in the information reported that are not detected by the verifier).

Practically, verifiers should:

- mainly focus on areas of high inherent risk;
- assess the extent to which they can rely on internal controls based on control testing by the verifier itself; and
- based on this outcome plan the nature and extent of substantive verification activities.

For the purpose of setting a basic framework, in addition to the provisions of the first three paragraphs of Article 15 of the EU MRV Regulation (comparing reported data with estimates, review of data sources and methodologies, consideration of company's risk control methods), it is suggested to specify further rules for performing a risk assessment in the Delegated act covering the above listed issues.

Further specific rules are suggested for risks related to assess suitability of reporting criteria, meaning the assessment of the monitoring plan. The risks mainly relate to the following areas:

- The description of information in the monitoring plan does not reflect the actual situation of the ship;
- The methodology disclosed in the monitoring plan is not compliant with the EU MRV Regulation.

In order to help verifiers and shipping companies understanding the practical implementation of the risk assessment in the verification processes, it is suggested that additional guidance will be developed including examples of how a risk assessment can be performed. This should in particular cover the comparison of reported data for fuel consumption emissions, and distance travelled with estimates derived from AIS data and emissions modelling, given its importance as starting point of the risk assessment.

4.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Risk assessment

- In addition to Article 15.1, 15.2 and 15.3 of the EU MRV Regulation, the verifier shall identify and analyse the following elements to design, plan and implement an effective verification of the emissions report:
 - Inherent risk;
 - Control risk;
 - Detection risk.
- When identifying and analysing risks, the verifier shall consider the following assertions related to the information in the emissions report
 - Completeness;
 - Accuracy;
 - Consistency;
 - Transparency;
 - Relevance;
 - Occurrence;
 - Cut-off.
- The outcome of the risk assessment forms the basis for the preparation of the approach to verification. The verifier shall consider areas of higher verification risk when determining where in the verification approach focus is laid on. **The verifier shall at least consider the following areas to assess risks:**
 - **Voyage data;**
 - **Distance travelled;**
 - **Time spent at sea;**
 - **Fuel consumption;**
 - **CO₂ emissions;**
 - **Cargo carried and / or passengers transported;**
 - **Aggregation of data in the emissions report.**

Need for definitions identified

Inherent risk: Risk of material misstatements due to nature and complexity of a ship's monitoring and reporting without considering any control activities

Control risk: Risk that the material misstatements are not detected by the internal control activities of the company related to the ship's monitoring and reporting system.

Detection risk: Risk that material misstatements are not detected by the verifier.

Completeness: All mandatory information for the emissions report including all CO₂ emissions, transport work and other information that should have been reported has been reported. For example all emission sources have been included in the monitoring plan and emissions report;

Accuracy: information has been reported appropriately, e.g. the correct source of information is used and the information on that source is accurate;

Consistency: method of reporting information is consistent with prior years or changes have been justified and adequately disclosed

Transparency: information has been disclosed in a clear manner;

Relevance: only relevant information is reported;

Occurrence: has the voyage taken place, have emissions occurred and have passengers and cargo been transported;

Cut-off: Information is reported in the correct reporting period.

4.4. Need for further guidance identified

Guidance on how verifiers should use ship's tracking data from an external source and how the verifier should interpret the information for the purpose of the verification of the emissions report. This includes also what information should be used (e.g. voyages, distance, estimated emissions?), which sources are deemed reliable and the costs involved.

Guidance on how a risk assessment could be carried out, by providing maritime specific (not prescriptive) examples.

4.5. Examples

Verification risks for verifiers are twofold:

- Risk of misstatements in the aggregated data in the emissions report
- Risk of non-compliance of the monitoring plan / non-conformities with the monitoring plan.

High-level analytical procedures (risk assessment analytical procedures)

The high level comparison between reported data with estimation based on information about the ship's voyages (based on tracking data), consumption based on installed capacity and other relevant information based on average load factors, type of load carried etc., is an efficient means to obtain insight in the plausibility of the reported aggregated information. By comparing these numbers also to previous periods for example, the verifiers may identify areas for potential risk of misstatements.

If for example a ship has a scheduled route operation of a similar type throughout the year and in comparison with prior years, it would be implausible that the emissions are 50% higher or lower than in previous year. This could give the verifier an indication that an error may have occurred. Based on this indication the verifier can lay focus in its verification on this to find out why there is a major break in trend compared to previous years.

Similarly, if the verifier notes a significant difference between the number of voyages reported for the ship and the number of voyages identified based on tracking data for the same period, this could be an indication of incomplete or inaccurate information reported.

Simple example of a risk assessment

A company operates voyages with one ship, within, from, to and outside the EU. The company identified a risk that not all voyages required for the EU MRV Regulation will be reported. Therefore, the company has identified (described in the MP) the following procedures for the ship to ensure the reported number of voyages is accurate and complete (control risk measure):

- All voyages of the ship are recorded in the official logbook, including information about the dates and time of departure and arrival, the departing and arriving port of call (completeness of voyages);

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- Record all voyages of the ship in an excel spreadsheet including the country of the port of call based on a country list for EU ports (correct identification of ports in the EU);
 - Mark for each voyage in a separate column whether the port of call of departure / arrival is within the EU and whether the voyage falls in the scope of the EU MRV Regulation (correct filtering of voyages falling in the scope of the EU MRV Regulation).

Based on the communication with the company, the estimated number of EU MRV voyages is 150.

For the verifier, incompleteness of number of reported voyages is an inherent risk (risk of errors in the information reported). For the first reporting period of a company, the verifier will likely qualify this inherent risk as high (assumed risk without any internal controls implemented by the company). The verifier may decide that the control risk (remaining risk due to implementation of internal controls by the company) is medium. This could be based on the following considerations:

- the company is monitoring and reporting for its first time;
- the company has described relevant procedures to be implemented; and
- the verifier does not know upfront if the procedures described above are effective.

Based on this assessment, the verifier could conclude the detection risk to be medium. Based on this risk, the verifier may plan to perform the following verification activities:

- Check rotation / routing of the ship based on the ports of call of departure and arrival and date / times to confirm a logical order of voyages;
- Check for a moderate random sample of (EU MRV) voyages from the official logbook if these are included in the Excel list (to check if the company did not forget to include certain voyages) -> The sample size could in this case be more than 10;
- Check the correct attribution of a port to the scope of the EU MRV Regulation (is the identification whether a port of call lies within the EU or not correctly applied by the company?);
- Check whether all voyages from, to and within the EU are marked for reporting for the EU MRV Regulation (check filtering).

5. Verification of the emissions report

5.1. Potential needs for rules

Issue:	Procedure under EU MRV Regulation on how to carry out verification activities is not specific and can be further detailed	
Actors involved:	VERIFIERS	Article 13.2 EU MRV Regulation requires verifiers to assess the conformity of the emissions report with the requirements laid down in Articles 8 to 12 and Annexes I and II Main principles on how to carry out such verification are set in Articles 13-15 of the EU MRV Regulation
Rules needed for:	VERIFICATION ACTIVITIES	The delegated act could further define the minimum procedures to verify the emissions report in order to ensure reasonable assurance can be met and verifications by different verifiers are harmonised (level playing field and guarantee quality)
Impact on company	Specification of verification activities contributes to a level playing field for verifiers, in particular it would ensure that verification will be performed in a harmonized way and companies will be able to prepare better for verification, knowing which type of activities verifiers will perform.	
Relevant internationally accepted standards:	EN ISO 14065 EN ISO 14064-3	Section 8 Section 4.4 – 4.11
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Articles 13-20

For the purpose of verification under the EU MRV Regulation, the verification engagements consist of a combination of two elements: the verification of the correct implementation of the management system for monitoring & reporting, and data verification.

In the EU MRV Regulation, the following is included about the verification of the emissions report:

- Article 13: Scope of verification activities and verification report
- Article 14: General obligations and principles for verifiers;
- Article 15: Verification procedures.

In Article 15.5 indicates in relation to the MRV verification procedures the following:

- The Commission is empowered to specify further rules and shall consider all elements set out in Part A of Annex III;
- The rules for verification activities shall be based on the principles provided under Article 14 and on relevant internationally accepted standards.

ISO 14065 as a basis for rule for verification of the emissions report

A relevant international standard has been identified for the verification of CO₂ emissions data: EN ISO 14065. The main procedures required for EN ISO 14065 are:

- Pre-engagement activities (assess impartiality, competence, set up an agreement), addressed in Section 5;
- Verification approach (appointment of verification team, communicate with client, planning the verification in accordance with EN ISO 14064-3; understand the entity and evaluate risk, verification plan, including sampling plan), addressed in section 5;
- Verification activities in accordance with EN ISO 14064-3 (assessment of systems and controls related to the reporting of CO₂ emissions data, assessment of CO₂ data and information).

Although EN ISO 14065 is designed for verification of GHG emissions, the requirements for verification of data are also suitable for the verification of Transport Work.

Backward verification

The EU MRV Regulation requires companies to submit a monitoring plan not later than 31 August 2017 to the verifier.

Companies whose ships visiting an EU port for the first time after 31 August 2017 shall submit a monitoring plan to the verifier not later than two months after each ship's first call in a port under the jurisdiction of a Member State (EU MRV Regulation Article 6.2). This implies that all international companies should be aware of the EU MRV Regulation and should take this into account when planning voyages to EU ports in order to comply with this requirement.

In the event that ship visiting an EU port for the first time in 2018, and companies did not foresee to sail to the EU, companies may have not designed and developed their monitoring plan before executing such voyage. Practically, this could mean that a company will collect data to report the fuel consumption without having a monitoring plan (assessed). This is called backward verification. The company will need to monitor data without having a monitoring plan assessed by a verifier. In those cases, the verifier could need to verify whether emissions and other relevant data have been monitored fully in conformity with the EU MRV Regulation. This would imply that the methodology used to prepare the report should be adapted in order to reflect the monitoring plan prepared by the company afterwards.

Without having a monitoring plan prepared upfront, it is highly likely that the verification exercise will become much more time consuming.

5.2. Options discussed in the subgroup

Verification activities

The following options have been discussed with the stakeholder subgroup.

- Option 1: The use of an adapted version of the procedures prescribed by Articles 13 to 21 of the Accreditation and Verification Regulation No 600/2012 (minimum level of verification activities to be performed), as well as high level guidance on how to execute these verification activities.
- Option 2: To develop an alternative minimum level of verification activities to be performed, which similarly to the AVR would be based on EN ISO 14065 (and related).

Based on feedback received from stakeholders, it is noted that there is no consensus on a preference for either options. **However a third "compromise option" was reached. This will be to develop an alternative minimum sets of rules based on International Standards, as Option 2, but at the same time looking more into detail of what is already contained in the Articles 13 to 21 of the Accreditation and Verification Regulation No 600/2012.**

Specifying rules on the mix of verification activities that the verifier shall consider when performing the verification engagement for the EU MRV Regulation contributes to a level playing field among verifiers. This benefits shipping companies when choosing a verifier. In principle all verifiers will have to follow the same detailed requirements of ISO14065 for the verification of GHG emissions.

EN ISO 14065 requires verifiers to develop a so called verification plan, which, based on the outcome of the risk assessment, describes the different types of activities / methods that the verifier is planning to perform in order to obtain reasonable assurance on the reported data.

A verification of emissions report for the EU MRV Regulation consists of a mix of different types of activities, in line with EN ISO 14065. Verifiers should consider the following type of activities / methods for performing the verification:

- Inquiry (interviews with relevant staff);
- Observation (physical observation for example whether systems are password protected, procedures are followed or whether segregation of duties exist);
- Inspection of documents;

- Re-performance - walkthrough the reporting process from report back to source for 1 example (e.g. based on 1 voyage, has the reporting process been followed as described in the monitoring plan and does this process of collecting individual data points for fuel consumption and transport work lead to reliable data);
- Re-performance - test of controls based on sample (e.g. Check for a number of voyages whether the information about amount of cargo on board has been reconciled (and documented) between the “draft survey” / “noon report” and the bill(s) of lading for the amount of cargo carried);
- Re-performance - recalculations (e.g. application of emission factors, calculation of fuel consumption, calculation of transport work);
- Re-performance – reconciliations (e.g. aggregated number in emissions report with sum of list of voyages, total fuel consumption, total transport work in Excel, list of voyages compared to reliable external sources (if available))
- Analytical procedures (e.g. comparison between fuel consumption of voyages per NM sailed, comparison of emissions between reporting years 2018 and 2019, check rotation of voyages to assess completeness);
- Test of detail (e.g. based on a sample of voyages, reconcile the reported data points from the list of voyages to the primary data source identified in the monitoring plan for the voyage itself, fuel consumption data, distance sailed, time spent at sea, amount of passengers transported, volume/mass of cargo transport).

All types of activities and methods listed above are described in EN ISO 14065, however not made specific for the maritime sector. It could be considered to provide explicit examples in guidance documents about how these verification activities could be performed for shipping companies.

In addition, certain specific rules for verification activities could be developed for the maritime sector and could include:

- Considering reconciliation between the list of voyages reported by the company and the list of voyages identified by an independent third party based on ship tracking data;
- Verifying whether ships use correct definitions in reporting information about cargo carried, such as in or excluding mass of ballast water or unit of reporting.

Backward verification

It is suggested to provide guidance on how verifiers and companies should deal with cases of backward verification.

5.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Verification activities

The verifier carries out verification activities to verify that the emissions report is prepared in conformance with the accepted monitoring plan and that the reported data in relation to the EU MRV Regulation is free from material misstatements.

- The verifier shall carry out and document at least the following verification activities during the verification process for the purpose of emissions, transport work and other relevant information:
 - Assess whether the monitoring and reporting system described in the accepted monitoring plan exists in practice and is properly implemented. The verifier shall consider at least, the following types of procedures to carry out:
 - Inquiry with relevant staff;
 - Observation;
 - Document inspection;
 - Walkthrough procedures, which includes gaining understanding of the reporting processes and a test of one example to confirm that the monitoring plan has been implemented;
 - If applicable, test whether the requirements related to the derogation from monitoring fuel consumption on a per voyage basis (as described in Article 9.2 of the EU MRV Regulation) have been met by the ship.
 - If applicable, test that internal control activities described in the monitoring plan are effectively implemented by the company. The verifier shall at least consider the following type of procedures:
 - Test effectiveness of documented controls, based on sampling;

- Assess the reported data in the emissions report. The verifier shall consider at least the following type of procedures:
 - Detailed analytical procedures;
 - Test of detail based on sampling;
 - Test application of uncertainty and estimates.
- The verifier shall perform at least the following activities to complete the verification engagement after the verification activities have been carried out by the MRV Auditor:
 - Confirm that all verification activities have been completed;
 - Perform final analytical procedures to verify whether all misstatements and non-conformities identified during the verification process have been corrected by the company;
 - Verify whether the information in the emissions report is disclosed in compliance with the requirements of EU MRV Regulation;
 - Form a conclusion on whether the emissions report is in accordance with the accepted monitoring plan and whether the information reported is free from material misstatements;
 - Have the verification documentation reviewed by the independent reviewer
 - Prepare and issue the verification report to the company;
 - Prepare and issue the document of compliance to the company after having assessed satisfactorily the emissions report
 - Notify the Commission and the ship's flag state about the issuance of the document of compliance.

All types of activities and methods listed above are described in EN ISO 14065, however not made specific for the maritime sector. It could be considered to provide explicit examples in guidance documents about how these verification activities could be performed for companies.

In addition, certain specific rules for verification activities could be developed for the maritime sector and could include:

- Considering reconciliation between the list of voyages reported by the company and the list of voyages identified by an independent third party based on ship tracking data;
- Verifying whether ships use correct definitions in reporting information about cargo carried, such as in or excluding mass of ballast water or unit of reporting.

Based on the outcome of the discussions in the final presentation on 5 April 2016, it is suggested to use the minimum requirements of ISO 14065 as a basis, add certain maritime specific elements and to use the structure of the AVR article 13 to 21 to the extent relevant for specifying further rules in the delegated act.

5.4. Need for further guidance identified

How backward verification should be dealt when the ship sails to an EU port of call in the reporting period which the company did not foresee and therefore did not submit a monitoring plan to the verifier timely. An FAQ could be developed for this element.

How verifiers should carry out sampling for the purpose of EU MRV Regulation (e.g. on voyage data fuel data, cargo data, passenger data, distance data), since sampling is a requirement of ISO14065

To provide examples of how verification activities can be carried out by the verifier for ships reporting for the EU MRV Regulation. This may be developed based on lessons learnt from pilot verifications.

5.5. Examples

Verification activities follow the process of companies to prepare the emissions report

In most cases the preparation of the emissions report entails the following steps:

- Identifying which information on which documents (or in which systems) contain relevant and reliable information needed for the EU MRV Regulation per voyage;
- Establish a process to collect the information from these sources per voyage and build a list of voyages for the reporting period including the relevant information per voyage. This is usually either automated in an IT system or produced in Microsoft Excel;
- Perform calculations to determine based on activity data the CO₂ emissions, Transport Work and other information per voyage (automated or manual);
- Perform calculations to aggregate the information of all voyages (automated or manual);

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- Fill in the aggregated information in the emissions report template (automated or manual).

The verification activities are generally tailored to check whether the steps described above have been properly executed. Therefore verifiers use re-performance and re-calculations as part of the approach.

In addition, verifiers shall take samples of voyages and, for these samples, verifiers will need to check the accuracy of relevant reported data for a voyage, for example the fuel consumption and cargo carried. To do so in an effective manner, the verifier can verify a copy of the source document used for reporting the information by the company for samples of specific voyages. By checking that the information on the source document matches with the information in the list of voyages for these specific voyages, verifiers can effectively confirm that the information reported for the sample is correct and in conformity with the monitoring plan.

In order to obtain a sufficient level of comfort, verifiers shall use a mix of different types of verification activities.

Data verification activities for ships falling under the derogation of Article 9.2

Ships operating only voyages from or to EU ports of call and operating more than 300 scheduled voyages (the verifier will need to check also that this is the case and the exemption is applicable) within the reporting period are not obliged to monitor emissions data, or fuel consumption on a per-voyage basis. Fuel consumption for the entire year may be calculated as follows:

Fuel left in tanks on 31-12-2017 + Total fuel bunkered in 2018 -/- total discharged fuel in 2018 -/- Fuel left in tanks on 31-12-2018.

Although fuel consumption is not monitored on a per-voyage basis, the total fuel bunkered in 2018 may be a sum of fuel tanked from 20 BDNs. In order to test accuracy of the total fuel bunkered, a verifier should check for a sample of BDNs whether the information used to aggregate the total fuel bunkered matches with the fuel recorded on the BDN. Similarly sampling applies for discharged fuel.

In addition, verifier should request for evidence of the outcome of the measurement of the fuel left in tanks on 31-12-2017 and 31-12-2018.

The benefits of this derogation for companies is that if fuel is bunkered for multiple voyages, no records of measurement of fuel left in tanks are needed to collect and report and no additional calculations will be needed to determine the fuel consumption per voyage. This could save time for companies.

6. Site visits

6.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify in which cases site visits should be performed	
Actors involved:	VERIFIERS	According to Article 15.4 the verifier may conduct spot checks to determine the reliability of the reported data and information
Rules needed for:	NEED OF SITE VISITS	The delegated act could clarify in which case site visits would be needed and in which location (head office vs. on-board), and therefore provide the definition of site
Impact on company	Visiting clients to perform verification activities on the premises of companies (sites and/or offices) is assumed relevant for GHG emissions verification in general. Companies should expect verifiers to visit the company and should accommodate visits based on the request of and in agreement with verifiers. A common approach on site visits contributes to a level playing field in verification, limiting the administrative burden for companies.	
Relevant internationally accepted standards:	EN ISO 14065, via EN ISO 14064-3	Section A.2.6.2 (guidance)
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Article 21

Throughout the verification process for the EU MRV Regulation, verifiers need to gain an understanding of the company, the control environment (how is monitoring and reporting for the EU MRV Regulation managed from an organizational perspective) and the implementation of the systems, processes and control activities.

While certain types of verification activities are suitable to be performed remotely, other types of activities require a visit to the company's premises for the effective execution. EN ISO 14064-3 provides guidance on collecting verification evidence, in particular physical evidence, obtained by direct observation / inspection of the verifier, is the most persuasive evidence for the verification (more than assessment of documents and by interview). Both EN ISO 14064-3 and ISAE3410 specify that performing verification activities on the location of the client is particularly important for reasonable assurance engagements.

Cost / benefit considerations

11,000 ships are estimated to fall under the EU MRV Regulation. Many ships are sailing throughout the year and are not regularly visiting EU ports for a long period. Requiring verifiers to visit all ships on annual basis would be a logistical challenge, very time consuming and costly. For the development of the Delegated acts, it should be considered which relevant information is currently only available on-board ships and in what way could this information be provided to the verifier remotely.

Although additional cost for travelling will be incurred, performing a visit to the company may be necessary to obtain an appropriate level of understanding of the company's control environment and monitoring system. This is important for verifiers in order to perform their verification. For very small companies, for example with one ship, a simple monitoring & reporting system and a limited amount of data reported, it may be possible to perform the verification remotely.

6.2. Options discussed in the subgroup

The following options have been discussed with the stakeholder subgroup:

Option 1: Verification onboard the ship

Option 2: Verification at the (head) office of the shipping company

Option 3: Remote verification.

Based on feedback received from stakeholders, consensus has been expressed about removing the option of mandatory site visits onboard the ship. Moreover discussion in the subgroup indicated a majority of opinions in favor of considering verification at an onshore office, where a critical mass of data is kept, the rule unless the outcome of the risk assessment proves it unnecessary.

Certain stakeholders expressed the concern that due to the scattered locations of shipping companies across the world, site visits could become costly for individual shipping companies; therefore it was suggested to keep the frequency of site visits as low as possible. Some stakeholder suggested that if a visit would be mandatory, this would be particularly important for the 1st year (in which also the monitoring plan is assessed).

6.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Site visits

- The verifier shall carry out a site visit to the company for the purpose of gaining sufficient understanding of the company and the ship's actual monitoring and reporting system unless the outcome of the risk assessment proves it unnecessary.
- The verifier shall determine the location or locations for the visit, the activities and time needed based on the risk assessment.
- For the purpose of avoiding the need of on-board verification on the ship, companies should ensure copies of all relevant information/documents of which the original is only kept on the ship are available at an onshore location of the company.
- In determining the location of locations, the verifier shall consider the location where the critical mass of relevant data is kept, including (electronic) copies of documents kept at the ship and where data flow activities take place.
- If the verifier, based on the outcome of a site visit to an onshore location concludes that an on-board verification is needed to reduce the risk of material misstatement in the emissions report, the verifier may decide to perform a visit to the ship.

During the site visit, the verifier shall consider relevant verification activities as described in the section "verification of the Emissions report"

- By way of derogation of the first bullet point above, the verifier may waive a site visit provided that based on the outcome of the risk assessment the verifier:
 - Has sufficient understanding of the monitoring and reporting system for the ship, including the implementation (existence and effective operation) by the company;
 - Concludes that the nature and complexity of the ship's monitoring and reporting system does not require a sit visit;
 - All information the verifier needs to perform the verification engagement, including assessment of the monitoring plan and verification of the data in the emissions report, can be obtained and assessed remotely;

The verifier need to document the justification and considerations for waiving the site visit.

Need for definitions identified

Site: location of the company where for the purpose of the EU MRV regulation a critical mass of data is kept or data flow activities take place.

6.4. Need for further guidance identified

It should be clear for verifiers which information and level of understanding of the ship's monitoring and reporting is required to evaluate how the verification of the emissions report can be done effectively and cost efficient.

It should be clear for verifiers under which conditions a site visit to the company may be waived and under which conditions an on-board verification visit would be inevitable.

6.5. Examples

Assessing how procedures in the monitoring plan are put into practice

Verifiers need to verify whether the procedures in the monitoring plan have been implemented. An effective means to do this is by interviewing the responsible staff of the company and to observe evidence of the implementation, for example by asking for specific examples of activities or systems. Especially, when data flows are more complex, information is kept in different systems and in case of larger amounts of data, it can be efficient to sit together and talk through the process while at the same time follow the procedures in practice based on one example. Companies can provide this evidence efficiently by showing information on their computers. This has proven to be an effective mean as the verifier can ask questions for clarification directly and can conclude on the existence of procedures in practice efficiently.

7. Uncertainty

7.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify how verifiers should check that the level of uncertainty indicated in the monitoring plan is met	
Actors involved:	VERIFIERS	According to 6.2.f.iv, Annex I.B and Article 11.3.c, the company should indicate in the monitoring plan and emission report the level of uncertainty associated with the monitoring method (s) used and have a procedure in place to ensure that the total uncertainty of fuel measurements is consistent with the requirements established pursuant to the EU MRV Regulation (provided that quantitative requirements for the total uncertainty have been established). <i>therefore</i> when assessing the monitoring plan and emission report the verifier should check that the levels of uncertainty are specified and – if applicable – the requirements are met and that such procedure is in place
Rules needed for:	ASSESSMENT OF CONFORMITY OF UNCERTAINTY LEVEL WITH MP	The delegated act could include provisions on how the verifier should check that the level of uncertainty associated with the monitoring methods are specified and the relevant procedure in place
Impact on company	Specifying procedures for checking how uncertainty information is provided contributes to a level playing field in verification. Companies should expect verifiers to request information about estimated uncertainty thresholds in the monitoring plan and actual uncertainty applied in reporting emissions.	
Relevant internationally accepted standards:	EN ISO 14064-3	Section A.2.4.6.3 (guidance)
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Article 19

It is expected that ships will make use of measurement equipment in order to determine the activity data for the EU MRV Regulation. Measurement equipment is designed to achieve a certain level of precision and accuracy. Uncertainty has been defined in the Ecofys study as ‘the range within which the actual value of reported measurements is expected to lie, given a specific level of assurance’. Based on the EU MRV Regulation, “uncertainty’ means a parameter, associated with the result of the determination of a quantity, that characterises the dispersion of the values that could reasonably be attributed to the particular quantity, including the effects of systematic as well as of random factors, expressed as a percentage, and describes a confidence interval around the mean value comprising 95 % of inferred values taking into account any asymmetry of the distribution of values”.

The level of uncertainty is determined by two different concepts: accuracy and precision. Accuracy is defined as the proximity of measured values in relation to the actual value. Precision describes the proximity of the measurements with the same quantity and under the same conditions, in other words, the standard deviation of the average.

Companies can choose different methods to determine fuel consumption/ emissions. It could be considered to provide sets of default values for uncertainty related to monitoring methods by guidance documents (please see 2nd Working Paper on monitoring methods, section 2.10) The level of uncertainty that relates specifically to the individual ship may include different components and varies per ship, depending on the ships installation, measurement equipment and calculation methods.

For the purpose of the EU MRV Regulation, verifiers should check whether the uncertainty thresholds described by the company are compliant with the EU MRV Regulation.

7.2. Options discussed in the subgroup

Uncertainty levels

The following options have been discussed with the stakeholder subgroup on uncertainty levels:

- Option 1: Uncertainty levels are equal for all monitoring methods
Option 2: Uncertainty levels will be specified per monitoring method

Calibration of measurement equipment

The following options have been discussed with the stakeholder subgroup on calibration of measurement equipment:

- Option 1: No requirements for the shipping company to regularly get measuring equipment calibrated based on manufacturer specification. The verifier and operator may rely on the specification of uncertainty levels as provided by the manufacturer and use other audit techniques to mitigate the risk of material errors due to malfunctioning measuring equipment (e.g. cross checks with secondary data sources holding the same information). This does not apply for CEMS, since this monitoring system requires periodic calibration according to manufacturer's standards.
- Option 2: Requirements for the shipping company to regularly get the measuring equipment calibrated according to the manufacturer specification by an accredited laboratory. This includes automated measurement systems such as flow meters and CEMS.
- Option 3: The shipping company needs to have a procedure in place to ensure that the uncertainty levels as specified by the manufacturer are always met and all measurement equipment is regularly calibrated.

Based on feedback received from stakeholders there has been consensus about the fact that requirements for uncertainty for shipping companies should not be included in this Working Paper, but in the Monitoring Working Paper. Moreover the proposed rules on verifiers checking uncertainty levels as described in the monitoring plan and disclosed in the emissions report were accepted.

The following option is suggested on further specification of rules related to uncertainty in the Delegated act for verification activities:

Verifiers shall:

verify whether the uncertainty thresholds described in the monitoring plan are compliant with the EU MRV Regulation (as they either use default values provided by guidance documents or establish specific values);

verify that shipping companies adequately disclose the applied uncertainty levels in the emissions report.

This option on the way to specify verification activities regarding uncertainty was accepted.

7.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Uncertainty

- The verifier shall assess whether the uncertainty thresholds described in the monitoring plan are compliant with the EU MRV Regulation (as they either use default values provided by guidance documents or establish specific values – refer to specific section in the regulation / delegated act));
- The verifier shall assess whether the company adequately discloses the applied uncertainty levels in the emissions report.

7.4. *Examples*

Measurement equipment uncertainty

If, for example the uncertainty of measurement equipment for fuel flows is not allowed by the EU MRV Regulation or guidance developed thereafter to exceed a 10% threshold, the verifier will check whether the company in the monitoring plan did not set a threshold higher than 10%.

If ships should use default values, established, e.g. by guidance documents, verifiers will have to check that the ship used the default values consistently in the monitoring plan and the emissions report.

Uncertainty of the BDN

Companies shall, based on the requirements in the EU MRV Regulation, specify the estimated uncertainty of the fuel information on BDNs. Verifiers may check the basis for the specification of the company of the information, but are not expected to check the uncertainty of information on individual BDNs. This is outside the boundaries of the verification.

In case the ship bunkers fuel only once for three voyages for example, and does not keep track of fuel left in tanks after each voyage, the company needs to attribute a % of the fuel bunkered to individual voyages, especially when one of the three voyages is outside the scope of the EU MRV Regulation. The company should determine how fuel is attributed to individual voyages and should specify the level of uncertainty associated with this estimation. This forms the basis for reliable reporting and provides the verifier insight in the quality of reported data. The uncertainty threshold should be in line with the levels provided by guidance from the EC (work stream of the Monitoring subgroup).

8. Materiality

8.1. Potential needs for rules

Issue:	The EU MRV Regulation does not define materiality and does not specify the acceptable materiality level when verifying the emissions report	
Actors involved:	VERIFIERS	According to Article 13.3, where the verification assessment concludes, with reasonable assurance from the verifier, that the emissions report is free from material misstatements, the verifier shall issue a verification report stating that the emissions report has been verified as satisfactory
Rules needed for:	VERIFICATION OF QUANTIFIED INFORMATION IN THE EMISSIONS REPORT	The delegated act could provide a definition of materiality and the level of materiality that could be acceptable to reach reasonable assurance
Impact on company	Specifying materiality thresholds contributes to a level playing field in verification. Applying a materiality threshold enables more efficient verification and lower verification cost for companies.	
Relevant internationally accepted standards considered:	EN ISO 14065 via EN ISO 14064-3	Section 4.3.5
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Articles 3.9 and 23

When performing assurance engagements, verifiers cannot check all information used to prepare the emissions report. Therefore, verifiers apply a risk-based approach and select certain verification activities, including the depth and frequency of these activities in order to reduce the risk of misstatements in the emissions report. This means that in any assurance engagement, it is (practically) not possible to reduce the risk of misstatements not detected by the verifier to zero. In accordance with relevant international standards (EN ISO 14065) a certain risk of misstatements in the emissions report is acceptable. This concept is called materiality. According to the AVR, '*materiality level*' means the quantitative threshold or cut-off point above which misstatements, individually or when aggregated with other misstatements, are considered material by the verifier.

Information is considered to be material when its omission or misstatement influences the decisions of the user of the information. In practice this means that quantitative thresholds apply for tolerable misstatements and that if exceeded will influence the decision of the user of the information. The materiality concept is applied by verifiers verifying data both in the planning phase and the execution phase of the verification. This means verifiers should plan and execute the verification in such that the risk of material misstatements (above a certain threshold) is reduced to an acceptable level in order to provide reasonable assurance. Furthermore, should verifiers detect misstatements that individually or in aggregate exceed a pre-determined quantitative threshold, this is considered a material misstatement. For the purpose of the EU MRV Regulation, verifiers cannot provide a verification opinion if the emissions report contains material misstatements. Therefore, all material misstatements need to be corrected before the verification process can be completed.

Verifiers should determine the materiality thresholds by themselves. Generally, these thresholds vary between 2% and 10%, depending on the materiality of the reported information to the user, the materiality of reported information to the company and the history of errors in the past. Determining the quantitative threshold on a case by case basis is not easy and requires significant professional judgment. EN ISO 14065 does not prescribe a certain quantitative threshold. In other EU regulation on GHG emissions quantitative thresholds of 2% and 5%

are used. The Greenhouse Gas Protocol (GHG Protocol) is an international accepted standard on quantification of GHG emissions and recommends a threshold of 5% materiality.

8.2. Options discussed in the subgroup

- Option 1: Determination of materiality is left to professional judgment of the verifier
Option 2: The level of materiality is prescribed by the delegated act

Based on the discussions with and feedback received from stakeholders, consensus has been reached that option 2 is preferable. The following thresholds are suggested:

- CO₂ emissions: 5%
- Transport work: 5%
- Other relevant information: 5%

The suggested definition of materiality, in line with the AVR, could be as following:

- ‘materiality level’ means the quantitative threshold or cut-off point above which misstatements, individually or when aggregated with other misstatements, are considered material by the verifier.

8.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Materiality

- The materiality level shall be 5% of the total reported emissions in the reporting period which is subject to verification.
- The materiality level shall be 5% of the total reported transport work in the reporting period which is subject to verification.
- The materiality level shall be 5% of the total reported other relevant quantitative information in the reporting period which is subject to verification.

Need for definitions identified

Materiality level: A quantitative threshold above which uncorrected and undetected misstatements, individually or aggregated with other misstatements could reasonably be expected to influence the decision of the user of the emissions report

Material misstatement or non-conformity: The verifier may consider misstatements or non-conformities as material even if those misstatements and non-conformities that individually or when aggregated with other misstatements, are below the threshold set out in the delegated act where such consideration is justified by the size and nature of the misstatements and the particular circumstances of their occurrence.

8.4. Need for further guidance identified

Link to existing guidance documents on determining samples for data auditing and need for guidance on how sampling is relevant for EU MRV verification purposes. (see also need for guidance in section 5 about verification of the emissions report).

8.5. Examples

A material misstatement

During the verification process of ship X of company Y, it is detected that the company Y made a typo in the application of the emission factor for fuel. The ship has consumed only heavy fuel oil for which the emission factor is 3.1144 tCO₂ / tonne fuel. In calculating the emissions from this consumption, the company accidentally used a factor of 2.1144 tCO₂ / tonne fuel. The root cause is that someone made a typing error in a table of emission factors in the system that is used to calculate the CO₂ emissions. The ship consumed 1,000 tonne heavy fuel oil. The consequence is that the reported emissions are 2,114.4 tonne instead of 3,114.4 tonne. This means misstatement of 1,000 tonne CO₂. The impact of the misstatement is $1,000 / 3,114 * 100\% = 32\%$. This means that if the company does not correct the error, the total emissions in the emissions report are 32% too low. This considered a material misstatement, because the impact on the total reported number is above 5%. This means that the company must correct the misstatement in order for the verifier to provide a verification report with a positive outcome for ship X.

How verifiers apply the materiality principle

Verifiers should use quantitative materiality in the following situations:

- To determine if identified uncorrected errors, individually or aggregated exceed a certain threshold above which the verifier cannot verify the emissions report as satisfactory (refer to example above)
- As part of the determination of the sample size for checking information reported about individual voyages (or for example BDNs if Article 9.2 applies). An example:
 - 0% Materiality: All documents of all voyages need to be individually checked;
 - 2% Materiality: A significant amount of documents from individual voyages need to be individually checked;
 - 5% Materiality: A low amount of documents from individual voyages need to be individually checked;
 - 10% Materiality: A very low amount of documents from individual voyages need to be individually checked.

Note for this example:

The company is required to keep all documents for all voyages (or all BDNs in case Article 9.2 applies) to provide audit trail for the verifier. The verifier is responsible for independently selecting samples on a random basis. While only a low amount of samples may be selected for so called detailed testing, all voyages will be looked at by the verifier by means of other procedures, such as analytical procedures including a rotation check on completeness of voyages)

For determination of sample sizes in data auditing, a guidance document published by the Commission is available⁵.

⁵ <http://admin.interact-eu.net/downloads/3593/COCOF%2520Sampling%2520%2520methods%2520for%2520AAs%252015.09.2008.pdf> and http://ec.europa.eu/clima/policies/ets/monitoring/docs/kgn_4_sampling_en.pdf

9. Misstatements and non-conformities

9.1. Potential needs for rules

Issue:	The EU MRV Regulation specifies only partly how verifiers should deal with misstatements and it does not specify if all misstatements and non-conformities should be corrected or only those material	
Actors involved:	VERIFIERS	Article 13.1 and 13.4 of the EU MRV Regulation provides how verifiers should deal with misstatements and non-conformities in terms of requesting the company to correct either the monitoring plan and the emissions report;
Rules needed for:	VERIFICATION OF THE EMISSIONS REPORT	The delegated act could further specify how the verifier should deal with misstatements and non-conformities
Impact on company	Specifying rules for dealing with non-conformities and misstatements contributes to a level playing field in verification. Companies should be aware that when the verifier identifies non-conformities and/or misstatements, the verifier has the obligation to request the companies to correct all material issues in order to verify the emissions report as satisfactory.	
Relevant internationally accepted standards:		
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Articles 3.27 and 22

The purpose of the verification engagement is to provide a positive opinion that the emissions report is free from material misstatements. During the verification process, companies and verifiers may detect non-conformities of the monitoring plan with the EU MRV Regulation and non-conformities and misstatements of data reported in the emissions report (based on a draft emissions report) with the assessed monitoring plan. In Article 13.3 and 13.4 the EU MRV Regulation specifies rules about dealing with non-conformities and misstatements detected during the verification process. Companies must correct these misstatements and non-conformities and timely submit a revised monitoring plan or emissions report to the verifier. Verifiers must describe in the verification report whether all identified non-conformities and misstatements have been corrected by the company.

Dealing with non-conformities and misstatements

Verifiers should deal with non-conformities and misstatements in a structured way:

- Timely communication of non-conformities and misstatements
- Request companies to correct all issues identified;
- Keep track on issues identified in order to:
 - Estimate the impact (material or non-material);
 - Evaluate whether issues have been corrected appropriately by the company;
 - Evaluate uncorrected issues and the impact on the acceptance of the monitoring plan or the opinion on the emissions report (obtain an understanding of the reason for not correcting these and evaluate the impact);
 - Consider misstatements as material even if those misstatements, individually or aggregated, are below the quantitative materiality level (e.g. a non-conformity could be significant without having impact on the reported data. In that case verifiers could mark this non-conformity as material).

Information about non-conformities and misstatements should be documented by the verifier in a re-performable way to enable the independent reviewer to come to an appropriate opinion.

Material and non-material non-conformities and misstatements

Verifiers must assess the impact of non-conformities and misstatements (issues) in relation to the monitoring plan or the reported information in emissions report. In the assessment, verifiers should consider the root cause of the issue and whether it is one-off or structural in order to estimate the impact of the issue on the reported information. The impact could either be material or non-material. For the purpose of further specifying rules for verification activities in the Delegated act, it should be considered how misstatements and non-conformities have to be dealt with. The EU MRV Regulation requires verifiers to communicate all issues identified to the company. Companies are required to correct the issues as to enable the verification process to be completed.

The purpose of the verification is to ensure the emissions report is free from material misstatements.

9.2. Options discussed in the subgroup

The following options have been discussed with the stakeholder subgroup:

- Option 1: The content of Article 22 of the AVR for EU ETS on addressing misstatements and non-conformities will be used
- Option 2: The content of Article 22 of the AVR for EU ETS on addressing misstatements and non-conformities will be used plus additional requirements on the quantification of misstatements and non-conformities in the verification report.
- Option 3: The content of Article 22 of the AVR on addressing misstatements and non-conformities will be used, with the exception that non-material misstatements do not need to be corrected (except when aggregated non-material misstatements amount to a material misstatement).**

Based on feedback obtained from stakeholders, consensus has been reached on Option 3.

The following way forward is suggested to be included in the Delegated act:

- Before verifiers can provide their assurance opinion, the shipping company shall correct at least, all non-compliances and all material non-conformities and misstatements.
- Verifiers can accept uncorrected non-conformities and misstatements if individually or aggregated, these are considered not material based on quantitative and qualitative evaluation. The verifier can still provide recommendations for improvements in the verification report concerning the areas of non-material misstatements and non-material non-conformities, in order to help the company avoid such misstatements and non-conformities in the future.

9.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Addressing misstatements, non-conformities

- Where the verifier has identified non-conformities in the assessment of the monitoring plan or misstatements and non-conformities during the verification of the emissions report, the verifier shall inform the company thereof on a timely basis and request relevant corrections.
- The company shall correct any communicated material misstatements or non-conformities.
- If the company does not correct communicated misstatements and non-conformities below the materiality level, the verifier shall evaluate the impact of these on his conclusion by assessing the remaining risk that uncorrected and undetected misstatements in aggregate or individually exceed the materiality threshold and that based on the size, nature and particular circumstances of their occurrence the uncorrected misstatements and non-conformities are considered material.
- The verifier shall document and mark as resolved, all misstatements, non-conformities that have been corrected by the company during the verification. This enables the independent reviewer to check that the MRV Auditor has carried out the verification work appropriately.

Need for definitions identified

Misstatement: An omission, misrepresentation or error in the company's reported data, not considering the uncertainty permissible pursuant to the EU MRV Regulation.

Non-conformity for the purpose of the assessment of the monitoring plan: An omission or description in the ship's monitoring plan is contrary to the requirements in the monitoring plan accepted by the verifier.

Non-conformity for the purpose of the verification of the emissions report: Any act or omission of an act by the company that is contrary to the requirements in the monitoring plan accepted by the verifier.

9.4. Examples

Aggregated misstatements

Misstatements above materiality level and non-conformities leading to misstatements above the tolerable thresholds must be corrected. This requires verifiers to determine the impact of the error identified. For example, a company implemented a new IT system and through sampling the verifier noted that information about 1 month of the year is missing in the emissions report. If this is detected based on 1 sample voyage for the related month, the impact is larger than just the one voyage. While the omission of information of the data for the voyage may not be material, it is likely that if this also applied to all voyages in that month, the aggregated omission will be material. This is an example to show how verifiers should evaluate the impact on the aggregated information of a single issue noted during the verification.

Qualitative evaluation

If for example, a verifier finds out that a company applies a structural deduction of 3% on the reported emissions for each voyage and that the company cannot provide a reasonable and plausible justification for this, this may be an indication that the company is deliberately doing this to increase the performance reported. This is considered a misstatement, as it does not give a fair representation of the actual situation. Although this misstatement is quantitatively not material, the verifier may still consider this as material, due to the fact that the company intentionally lowers its emissions without proper justification. In this case, the company shall correct also such misstatement.

Although this example may look hypothetical, in practice this could happen and verifiers should be aware of this option. Should this happen in practice, a verifier may reconsider the integrity of management and therefore even consider stopping the verification if he has serious doubts about management's integrity.

10. Reasonable assurance

10.1. Potential needs for rules

Issue:	The EU MRV Regulation does not provide a definition of reasonable assurance	
Actors involved:	VERIFIERS	Article 13.3 of the EU MRV Regulation requires the verifier to conclude with reasonable assurance that the emissions report submitted by the company is free from material misstatements
Rules needed for:	VERIFICATION OF THE EMISSIONS REPORT	The delegated act could provide a definition of reasonable assurance
Impact on company	Specifying further rules on reasonable assurance contributes to a level playing field in verification. Companies should enable the verifier to reach reasonable assurance by providing access to the relevant documentation and information on the monitoring and reporting.	
Relevant internationally accepted standards:	EN ISO 14065 via EN ISO 14064-3	Section A.2.3.2 (guidance)
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	3.18

The term *reasonable assurance* is derived from the professional financial audit practice. Reasonable level of assurance means a high but not absolute level of assurance that the subject matter conforms in all material aspects with the required criteria. For reaching reasonable assurance, a thorough and detailed understanding and assessment of the organisation and the monitoring & reporting system is required. Reasonable assurance requires also testing design, implementation and effectiveness of controls.

The EU MRV Regulation requires that verification assessment concludes with reasonable assurance from the verifier that the emissions report is free from material misstatements. What is exactly meant with reasonable assurance is not defined in the EU MRV Regulation.

10.2. Options discussed in the subgroup

For the purpose of verification of GHG emissions under accreditation, verifiers shall meet the requirements of EN ISO 14065 (and EN ISO 14064-3). Rules for providing reasonable assurance are partly covered in Article 14 and 15 of the EU MRV Regulation. Further specifications on what verifiers need to do to provide reasonable assurance is specified in chapter three about verification activities.

The following definition, in line with the AVR, could be provided by the Delegated Act:

"reasonable assurance' means a high but not absolute level of assurance, expressed positively in the verification opinion, as to whether the company's report subject to verification is free from material misstatement".

10.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Need for definition identified

Reasonable assurance: means a high but not absolute level of assurance, expressed positively in the verification opinion, as to whether the company's report subject to verification is free from material misstatements and non-conformities.

10.4. Examples

No specific examples have been identified.

11. Content of the verification report

11.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify the details of the verification report	
Actors involved:	VERIFIERS	According to Article 13.3, the verifier shall issue a verification report stating that the emissions report has been verified as satisfactory and the verification report shall specify all issues relevant to the work carried out by the verifier
Rules needed for:	VERIFICATION OF THE EMISSIONS REPORT	The content of the verification report could be further specified in the delegated act. The need of a template could also be considered, to ensure harmonisation
Impact on company	Specifying further rules on the content of the verification report contributes to a level playing field in verification.	
Relevant internationally accepted standards:	EN ISO 14065	Section 8.6
	EN ISO 14064-3	Section 4.9 and A.2.9.1.1 (guidance)
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Article 27

Article 13.3 of the EU MRV Regulation requires verifiers to issue a verification report stating that the emissions report has been verified as satisfactory. This means verifiers will state that the emissions report is free from material misstatements. In addition, the verification report shall specify all issues relevant to the work carried out by the verifier.

In accordance with Article 13.4, verifiers shall include in the verification report whether the company has corrected the misstatements and/or non-conformities identified during the verification. Where the communicated misstatements or non-conformities have not been corrected and, individually or combined, lead to material misstatements, the verifier shall issue a verification report stating that the emissions report does not comply with the Regulation. Article 4 of the EU MRV Regulation implies that verifiers may also include recommendations for improvements in the verification report.

For the content of the verification report, EN ISO 14065 including EN ISO 14064-3 are identified as relevant standards. The table below provides an overview of the required information to be provided in reports for verification / assurance of Emissions Reports as specified in the EU MRV Regulation and other relevant internationally accepted standards.

Information /content	EN ISO 14065 / 14064-3	EU MRV Regulation
Identification of intended user	✓	✓
A title that clearly indicates the report is an independent assurance report (objectives)	✓	
Level of assurance	✓	
Identification of the Emissions Report, including the period(s) it covers, and, if any information in that Report is not covered by the verifier's conclusion, clear identification of the information subject to assurance as well as the excluded information, together with a statement that the verifier has not performed any procedures with respect to the excluded information and, therefore, that no conclusion on it is expressed. (The scope of the verification)	✓	

Information /content	EN ISO 14065 / 14064-3	EU MRV Regulation
That the verification report is accompanied by the responsible party's Emissions Report	✓	
Whether the data and information supporting the Emissions Report were hypothetical, projected and/or historical in nature	✓	
A description of the entity's responsibilities	✓	
A statement that GHG quantification is subject to inherent uncertainty (limitations)	✓	
Identification of the applicable criteria	✓	
Identification of how those criteria can be accessed		
A description of the verifier's responsibility	✓	
Assurance Engagements on Greenhouse Gas Statements (or reference to another assurance/verification standard)	✓	
A summary of the verifier's procedures	✓	
The verifier's conclusion, expressed in the positive form about whether the Emissions Report is prepared, in all material respects, in accordance with the applicable criteria	✓	✓
If the verifier expresses a conclusion that is modified, a clear description of all the reasons therefore	✓	✓
Whether misstatements and non-conformities are corrected by the company		✓
Recommendations for improvements		✓
The verifier's signature	✓	
The date of the assurance report	✓	
The location in the jurisdiction where the verifier practices / contact details of the verifier	✓	

In developing rules for the content of the verification report, specific information about the verification for the EU MRV Regulation for shipping could be considered.

- Information performed site visits;
- Verification team;
- Data gaps;
- Summary of changes identified during the reporting period in the monitoring plan and activity data.

11.2. Options discussed in the subgroup

The following actions have been discussed with the stakeholder subgroup:

Option 1: The content of the verification report will be left to the verifier

Option 2: The delegated act will prescribe a list of minimum requirements about the content of the verification report

Option 3: A template for the verification report will be required by the Commission

Based on feedback received from stakeholders consensus has been reached on Option 2.

These requirements could be:

- General information:
 - Basic information on the company and the ship
 - Basic information about the verification engagement
 - Title of document expressing that it is an assurance report
 - Level of assurance
 - Statement about inherent uncertainty in the GHG emissions
 - Identification of the data verified
 - Responsibilities of the company and verifiers
 - Reference to the verification standard(s) used
 - Date
 - Signature of authorized person
 - Identification of verifier (name, contact details)

- Information on the emissions of the relevant reporting year
- Key relevant requirements being met by the annual emissions report
- Verification opinion
 - Verified as satisfactory
 - Verified as non-satisfactory
 - Not verified
- Findings:
 - Non-conformities
 - Misstatements (corrected and uncorrected)
 - Recommendations for improvements
- Summary of the basis of work
- Summary of changes identified during the reporting year in the monitoring plan and activity data

Other relevant information to be required has been identified based on EU ETS and could be:

- Information on performed site visits
- Verification team
- Data gaps

These requirements could form the basis for a template.

11.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Content of the verification report

- Based on the information collected during the verification, the verifier shall issue a verification report to the company on each emissions report that was subject to verification.
- The verification report shall at least, contain the following elements:
 - Name of the company and identification of the ship;
 - Title of document expressing that it is a verification report
 - Objectives of the verification, including level of assurance and key requirements to be met by the emissions report;
 - Scope of the verification;
 - Reference to the emissions report of the company;
 - Reporting period subject to verification;
 - Reference to the reporting criteria, as well as to the accepted monitoring plan;
 - Information about the emissions, transport work and other relevant information in scope of the verification;
 - Statement about inherent uncertainty in data reported;
 - Responsibilities of company and verifier;
 - Reference to verification / assurance standard used;
 - Summary of the basis of work;
 - Summary of significant changes identified during the reporting period in the monitoring plan and activity data;
 - Verification opinion:
 - Verified as satisfactory (unqualified); or
 - Verified as satisfactory with comments (unqualified, but containing non-material misstatements or non-conformities); or
 - Verified as non-satisfactory (qualified as the report contains material misstatements or non-conformities or due to scope limitations, the verifier is unable to express an opinion)
 - Uncorrected misstatements and non-conformities (including description of nature and size, wh it has material impact or not, to which element of the emissions report it relates to) , if applicable
 - Recommendations for improvement, if applicable
 - Date of the report
 - Signature of authorized person from the verifier
 - Identification of the verifier

11.4. Examples

Clarification note

GHG emissions verifiers have different background and use different approaches in reporting about their work. Main differences exist in:

- Terminology;
- Information provided in the report.

Terminology

- In the field of verification & certification different terminology is used for the report published to clients (e.g. Verification report, Verification statement, Assurance report, Audit report). For the purpose of the EU MRV Regulation, the report prepared by the verifier to be sent to the company is called the **Verification Report**.

Information provided in the report

Verifiers shall document the planned procedures, executed procedures and evidence collected during the verification to build up a re-performable verification file (for independent reviewers, accreditation bodies and in most cases also for internal quality management). In the market, different approaches exist as to what information is included in the external report for the client. Some verifiers provide their clients with all documentation of their verification, including the verification opinion in the report. Other verifiers provide a report to the client in line with ISO14065 and ISAE3410 and keep all documentation of the verification in another file.

For the purpose of the EU MRV Regulation, the aim is to keep reporting simple and in line with accepted international standard. Therefore the suggested requirement for the content of the verification report is limited to what is commonly used in international accepted standards.

12. Recommendations for improvements

12.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify the details of the recommendations for improvements	
Actors involved:	VERIFIERS	According to Article 4.7 of the EU MRV Regulation, companies shall endeavour to take account of the recommendations included in the verification reports in their subsequent monitoring and reporting
Rules needed for:	VERIFICATION OF THE EMISSIONS REPORT	The delegated act could specify what kind of recommendations for improvements the verifier can make
Impact on company	Specifying further rules on the recommendations for improvements that the verifiers can make will further ensure potential conflicts of interest are avoided.	
Relevant EU legislation:	EU ETS Accreditation and Verification Regulation 600/2012	Article 30

The verifier, based on the verification of the emission report, may raise recommendations for improvements. The goal of recommendations for improvements is to improve the quality of the monitoring and reporting system and data accuracy. In general recommendations for improvements are directly related to resolving non-conformities and misstatements. Article 4 of the EU MRV Regulation implies that verifiers provide recommendations for improvements in the verification report.

It is common that assurance providers (verifiers) provide management of companies with observations and recommendations where processes and systems related to preparing Emissions Reports can be improved. For the purpose of the EU MRV Regulation, it is expected that such recommendations will relate to non-material non-conformities and misstatements identified by verifiers. In addition, recommendations could relate to efficiencies in the process of monitoring and reporting. Since verifiers work with different companies, they gain a good overview of best-practices in the monitoring and reporting processes of different ships and they could share this knowledge through the recommendations for improvements.

Verifiers, may be tempted to provide too much specific advice in their recommendations, impairing their impartiality. Verifiers are allowed to make recommendations on the “what” could be improved but not on “how” these recommendations should be followed up and implemented.

12.2. Options discussed in the subgroup

The following options have been discussed with the stakeholder subgroup:

- Option 1: No further options should need to be developed based on existing EU ETS legislation as the system shows great resemblance with the MRV Regulation of shipping.
- Option 2: Article 30 of the AVR will be used with additional rules with regard to which recommendations for improvements could be made by the verifier. These rules will focus on limiting the recommendations to be made (e.g. no recommendations for improvements allowed for changing the monitoring method).
- Option 3: **Rules will be developed with regard to which recommendations for improvements could be made by the verifier. These rules will focus on limiting the recommendations to be made (e.g. no recommendations for improvements allowed for changing the monitoring method).**

Based on feedback received from stakeholders, consensus has been reached on Option 3. It is suggested to include a rule for the extent to which recommendations could be specified by verifiers. In addition, it is suggested to include a rule that verifiers shall provide a recommendation in relation to uncorrected non-conformities and misstatements (which are not material).

Furthermore, additional guidance could be developed including examples of recommendations that could be provided by verifiers (e.g. best-practices in the monitoring and reporting processes).

12.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

Recommendations for improvement

- The verifier shall consider communicating to the company recommendations for improvement to the company, in particular in relation to uncorrected non material misstatements and non-conformities;
- The verifier may communicate other recommendations for improvement, where the verifier, based on the outcome of the verifiers the verifier deem this relevant.
- When providing recommendations to the company, the verifier shall remain impartial to the company, to the ship and to the monitoring and reporting system.

12.4. Need for additional guidance identified

Provide examples specifying the extent to which verifiers can make recommendations based on the verification of the emissions report. In principle recommendations on the “what” would be acceptable but not on the “how”. Verifiers cannot have any role in the design and implementation of the monitoring plan. In order to create a level playing field, it should be clear for verifiers how to deal with potential grey areas.

12.5. Examples

Recommendation that would be allowed

During the verification the verifier noted inconsistencies in fuel data due to the fact that information for certain voyages was corrupted due to malfunction of measuring equipment used for reporting for EU MRV Regulation.

It is recommended to ensure measurement equipment is functioning appropriately in order to avoid corruption of data. Attention could be paid to maintenance of equipment. In addition it is recommended to identify potential alternative reliable data sources to fill in gaps that may occur due to malfunctioning of measurement equipment.

Recommendation that would not be allowed

During the verification the verifier noted inconsistencies in fuel data due to the fact that information for certain voyages was corrupted due to malfunction of measuring equipment used for reporting for EU MRV Regulation.

It is recommended to change the fuel calculation method to method A and use BDN to calculate the fuel consumption. The company would not be depending on measurement equipment and reporting fuel consumption would be easier. We also recommend asking department X to check if the data recorded in the system for the BDN is correct, providing a template checklist for this.

This way of providing recommendations would not be allowed because the verifier influences decisions to be made by the company. If for example the company decides to use the template checklist and it turns out that is not effective due to a design flaw, the verifier will be in a difficult position when he detects misstatements as a direct result of his recommendation. In fact he is verifying his own template and this would be a breach in his impartiality.

C. Accreditation

13. Scope of accreditation

13.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify the scope of accreditation for relevant verifiers	
Actors involved:	VERIFIERS & NABs	According to Article 16 of the EU MRV Regulation, verifiers that assess monitoring plans and 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 pursuant to Regulation (EC) No 765/2008
Rules needed for:	ACCREDITATION	The delegated act could specify the scope for accreditation under the EU MRV Regulation
Relevant internationally accepted standards:	EN ISO 17011	Section 7.2
Relevant EU legislation:	Accreditation Regulation 765/2008	
	EU ETS Accreditation and Verification Regulation 600/2012	Articles 43 & 44

The purpose of accrediting verification bodies for EU MRV is to give confidence to parties, relying upon a GHG claim, that the verification body providing the declarations is competent to do so, and has systems in place to manage impartiality and to provide the required level of assurance. Beside the EU MRV Regulation and delegated acts that will be adopted, the main standard of reference to which verifiers will have to demonstrate conformance is *ISO 14065:2013[E] International Standard on Greenhouse gases – Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognition*.

Dual task of verifiers

According to the EU MRV Regulation, the verifier is responsible for assessing monitoring plans and verification of emissions reports of ships. Whereas GHG emissions report verification is already common for GHG verifiers in different sectors, assessing the ship's monitoring plan to confirm that this is in compliance with the EU MRV Regulation is a new activity. As the Regulation allows for some flexibility in determining the monitoring methodology for companies, verifiers could (intentionally or unintentionally) influence the criteria that will also serve as a basis for verification. This could represent a risk of conflict of interest and requires clear guidance.

Accreditation sub-scope of GHG emissions verification

Monitoring emissions for the EU MRV Regulation will be based on four different methods. Depending on the vessels and the complexity of the monitoring methods.

13.2. Options discussed in the subgroup

Dual task of verifiers

The following options have been discussed with the stakeholder subgroup:

- Option 1: One single accreditation activity for both assessing the monitoring plan and carrying out the verification of the emissions report.**
- Option 2: Two accreditation activities and two different verifiers required one for the assessment of the MP and one for the verification of the emissions report. Although this would solve the issue of self-review and mitigate the risk of reduced independence by the verifier, this option is less efficient and more costly for shipping companies.
- Option 3: Two separate accreditation activities (for assessing the monitoring plan and carrying out the verification of the emissions report) which can be performed by the same verifier, together with clear rules on how to perform the (re-)assessment of the MP in order to leave out room for interpretation and safeguard independence and impartiality of the verifier.

For all 3 options the accreditation process for the activity assessing the monitoring plan and carrying out the verification of the emissions report would be the same.

Based on the feedback received from stakeholders, Option 1 is preferred.

However, additional rules need to be specified with regard to safeguarding impartiality and independence of the verifier. In this context the requirements on avoidance of conflict of interest in EN ISO 14065 shall be taken into account. This standard specifies that the verifier should take appropriate measures to manage such conflicts and to ensure that verifiers remain independent and impartial throughout the verification process. As a starting point verifiers need to avoid self-review by avoiding providing consultancy / advisory work on the monitoring plan if and when the verifier is also assessing the monitoring plan and verifying the emissions report.

Accreditation sub-scope of GHG emissions verification

The following four options have been discussed with the stakeholder subgroup:

- Option 1: One single accreditation for all monitoring methods and all types of vessels**
- Option 2: One single accreditation for all monitoring methods and separate accreditation for different types of vessels
- Option 3: Accreditation separate per monitoring method and one single accreditation for all types of vessels
- Option 4: Accreditation separate per monitoring method and separate per type of vessel

Based on the feedback received from stakeholders, option 1 is preferred.

It is suggested that the Delegated act will specify that the accreditation of verifiers covers all monitoring methods and types of vessels.

The scope of accreditation will be defined with respect to two activities:

- assessment of conformity of monitoring plans
- verification of emissions reports

13.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

- The accreditation of verifiers for the EU MRV Regulation entitles the verifier to perform both the assessment of the monitoring plan and the verification of the emissions report for all monitoring methods and all vessel types.
- With due consideration of the impartiality and independence requirements from applicable internationally accepted standards relevant for the EU MRV Regulation both tasks for a specific ship may be performed by the same verification team.

13.4. Examples

No specific examples identified.

14. Accreditation request

14.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify how verifiers can request accreditation under the Regulation	
Actors involved:	VERIFIERS & NABs	According to Article 16 of the EU MRV Regulation, verifiers that assess monitoring plans and 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 pursuant to Regulation (EC) No 765/2008
Rules needed for:	ACCREDITATION	The delegated act could specify how verifiers can request accreditation under the EU MRV Regulation, also with regard to non-EU verifiers
Relevant internationally accepted standards :	EN ISO 17011	Section 7.2
Relevant EU legislation:	Accreditation Regulation 765/2008	Article 7
	EU ETS Accreditation and Verification Regulation 600/2012	Article 45

Allocation of verifiers to NABs

Companies which will fall under the obligations of the EU MRV Regulation will include both EU and non-EU companies. In relation to international trading principles non-EU based verifiers would also be able to obtain accreditation for verification in the maritime sector. Within the EU, the European co-operation for Accreditation (EA) safeguards consistent quality of National Accreditation Bodies (NABs) through peer reviewing.

EU based verifiers are allocated to the NABs in the MS in which they are based. Non-EU verifiers may be allocated to an EU NAB or may be allowed to choose freely an EU NAB. With regard to the first option, it is to be decided how allocation of non-EU based verifiers to NABs should be organized. Considering potential issues such as language, resources, geographical relevance or competence, some EU NABs may not be interested to provide accreditation services for the MRV in the maritime sector. It is also expected that a limited number of non-EU verifiers will offer verification services.

Requesting accreditation for verification for the EU MRV Regulation

In order to obtain accreditation, verifiers need to follow certain procedures specified by the NAB. An important step in the process is to prepare all necessary information in order to submit a formal application for accreditation to the NAB. A key element of the application is providing evidence of the verifier's management system in conformity with EN ISO 14065, the EU MRV Regulation and related delegated acts.

14.2. Options discussed in the subgroup

Allocation of verifiers to NABs

The following options have been discussed with stakeholder subgroup:

Option 1: Allocation of non-EU verifiers to EU NAB could be done on the basis of the largest share in client portfolio.

Option 2: **Non-EU Verifiers are allowed to choose freely an EU NAB.**

Based on the feedback received from stakeholders, option 2 is preferred. Also, based on the discussions there is no need identified for a non-EU based verifier to have a local EU office to perform its duties. EU based verifiers shall apply for accreditation to the NAB in the Member State where the verifier is registered. In case the NAB in that Member State is not providing accreditation services for the EU MRV Regulation, the Member State shall, as far as possible, have recourse to a NAB from another Member State, to which the verifier may apply for accreditation. If the Member State has no recourse with a NAB, the verifier is free to choose to which NAB he will apply for accreditation.

Requesting accreditation for verification for the EU MRV Regulation

NABs, Members of EA, in the EU follow a harmonized standard for the accreditation of GHG emissions verification. EN ISO 17011 specifies the requirements for the application for accreditation. The EU ETS Accreditation and Verification Regulation 600/2012 (AVR) provides specific requirements and a reference to this standard and puts the requirements in the context of GHG emissions verification for EN ISO 14065 plus the specific requirements following the AVR.

Suggested option:

It is suggested to use Article 45 of the AVR as a basis to specify rules to request accreditation for the EU MRV Regulation and to tailor it to maritime. In addition, it is suggested to make reference to the harmonized standard, referred to in the Accreditation Regulation 765/2008, where specific requirements are detailed and used by NABs.

14.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

- Any legal entity may request accreditation pursuant to Article 5(1) of Regulation (EC) No 765/2008 and the provisions of this Chapter;
- Applicants that are not based in the EU can request accreditation from any EU based NAB providing accreditation services for the EU MRV Regulation
- EU based applicants shall request accreditation from the NAB in the Member State where they are registered. In case the NAB in that Member State is not providing accreditation services for the EU MRV Regulation, the Member State shall, as far as possible, have recourse to a NAB from another Member State, to which the legal entity may apply for accreditation. If the Member State has no recourse with a NAB, the applicant is free to request accreditation from any other NAB.
- The request shall contain the information required on the basis of the harmonised standard concerning general requirements for accreditation bodies accrediting conformity assessment bodies.

14.4. Examples

For the application of accreditation to a NAB, verifiers need to provide information to the NAB in advance for the preparation of the assessment by the NAB. The following is an example of what may be requested, based on the application forms of the Dutch Accreditation Council:

- Administrative information about the verifier / verification body;
- Specification of activities to be accredited;
- Proof of conformity with the criteria for accreditation;
 - Proof of formal existence of the company (e.g. by chamber of commerce records);
 - Description of the organization and organization structure;
 - Documentation of quality management system and procedures for conformity with the accreditation criteria, including competence criteria;
 - Internal Audit Report and Management Review for the activity for which accreditation is requested;
 - Specification of the scope of GHG Emissions Verification (maritime);
 - Work instructions / work program for performing GHG Emissions verifications for maritime;
 - Example / template verification report;
 - Report of internal review of the conformity with the requirements for verifiers;
 - Cross reference table between EN ISO 14065 and the management system of the verifier.

15. Assessment of verifiers by National Accreditation Bodies in order to issue an accreditation certificate

15.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify how NABs will assess verifiers to issue an accreditation certificate	
Actors involved:	NABs & Verifiers	According to Article 16 of the EU MRV Regulation, verifiers that assess monitoring plans and 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 pursuant to Regulation (EC) No 765/2008
Rules needed for:	ACCREDITATION	The delegated act could specify how NABs will assess verifiers to grant an accreditation certificate under the EU MRV Regulation
Relevant internationally accepted standards :	EN ISO 17011	Section 7.5 – 7.9 Process for initial assessment
Relevant EU legislation:	Accreditation Regulation 765/2008	
	EU ETS Accreditation and Verification Regulation 600/2012	Article 46 - 48

The Accreditation Regulation specifies that EU NABs shall assess the application of verifiers. The NABs, which are Members of EA, follow a structured and harmonized approach in the process of assessment. This process is specified in EN ISO 17011.

Witnessing verifiers

For the purpose of assessing the conformity of verifications performed to EN ISO 14065, NABs perform office visits to the verifiers premises to review documentation of the verification process and evidence collected to support the conclusion of the verification. In addition during an office visit, the NAB review the implementation of the verifiers quality management system. For the purpose of assessing the performance and competence of verifiers, NABs perform witness visits. This is required by EN ISO 17011. Performing witness visits outside the EU may also be needed, if for the verification the verifier needs to perform a site visit to the company located outside the Member State of residence of the NAB or outside the EU.

Validity of the accreditation certificate

Accreditation certificates have a limited validity period. According to ISO/IEC 17011 (7.11) the accreditation certificate shall be valid for a period not exceeding five years after the date on which the national accreditation body has made the decision to grant accreditation.

15.2. Options discussed in the subgroup

Performing accreditation assessments

Suggested option:

EN ISO 17011 specifies how NABs shall assess accreditation applications. In the AVR, articles 46 - 48 summarise the required procedures NABs have to follow in the processes of assessing verifiers applying for accreditation.

It is suggested to include a similar summary with references to the harmonized standard in the Delegated act. This summary could consist of:

- Preparation for the assessment;
- Assessment, including:
 - Review of relevant information and documents provided by verifiers in the application;
 - A visit to the premises of the verifier to review a sample of verification documentation and the implementation of the quality management system in practice;
 - Witnessing a representative part of the requested scope of accreditation and the performance and competence of staff from the verifier;
- Report findings and non-conformities and request for response;
- Review responses and corrective actions;
- Decision on accreditation and issuing a certificate.

Witness visits

The harmonized standard EN ISO 17011 require visits to the verifiers premises to be performed in order to assess conformity with the accreditation criteria, EN ISO 14065 and any additional criteria defined in the Delegated Act. This also includes witness in the field, to witness the performance of the verifier’s staff to provide assurance of the competence of the verifier across the scope of accreditation.

Guidance could be provided to NABs concerning witness visits. Where possible, NABs could ask other EU NABs to perform the witness visits on their behalf. EA has procedures in place to provide for this possibility. A potential option would be to organize witness visits via videoconference or similar technical solutions.

No further rules are required

Validity of accreditation certificate

The following options have been discussed with the stakeholder subgroup:

- Option 1: Accreditation certificates could be given a validity period with a maximum of five years.**
- Option 2: NABs would be given the choice of a validity period.
- Option 3: A relatively short first validity period, as the system is new, and then extended after re-assessment.

Based on the feedback received from stakeholders, option 1 is preferred.

This would include an annual witness ‘surveillance’ visit (both in the office and in the field) that is followed by a reassessment if the verifier wants to continue to perform the accredited task.

First year accreditation

A process and timeline for the first year's accreditation needs to be in place, and additional guidance is needed on how to achieve the accreditation during the initial phase (due to “chicken and egg” situation). This relates to any verifier to be accredited for the first time.

15.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

- The validity period of the accreditation certificate shall not exceed five years.

15.4. Need for additional guidance identified

Additional guidance is needed to clarify how accreditation can be received in time during the initial phase, including reducing the risk that verifiers find out close to the deadlines of the first reporting period that they will not get an accreditation in time.

15.5. Examples

No specific examples have been identified.

16. National Accreditation Bodies surveillance to confirm continuation of verifiers accreditation and reassessment of verifiers

16.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify how NABs will perform surveillance	
Actors involved:	NABs	According to Article 16 of the EU MRV Regulation, verifiers that assess monitoring plans and 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 pursuant to Regulation (EC) No 765/2008
Rules needed for:	ACCREDITATION	The delegated act could specify how NABs should perform surveillance to confirm continuation of accreditation of the accredited verifiers
Relevant internationally accepted standards :	EN ISO 17011	Section 7.11
Relevant EU legislation:	Accreditation Regulation 765/2008	
	EU ETS Accreditation and Verification Regulation 600/2012	Article 49 & 50

According to the Accreditation Regulation 2008/765, the NAB shall monitor the verifier. Detailed requirements for surveillance are in EN ISO 17011. Surveillance includes both an on-site visit to the verifier’s premises (office) and witness activity in the field to witness the performance of the verifiers. The on-site visit to the verifier’s premises includes assessment of the continued compliance of the verifiers quality system with the accreditation criteria and review of verification files and personnel record on sampling basis.

The interval between surveillance assessments shall be considered in relation to safeguarding quality and to continued fulfilment of the accreditation requirements. According to EN ISO 17011, the first surveillance on-site assessment is recommended to be carried out no later than 12 months from the date of initial accreditation.

When, during surveillance or reassessments, non-conformities are identified, the accreditation body shall define strict limits for corrective actions to be implemented.

16.2. Options discussed in the subgroup

Option 1: As the EU MRV Regulation has a number of new elements compared to other established systems, annual surveillance of all verifiers, including an office visit could be necessary to safeguard quality, especially given the dual task of the verifier.

Based on the feedback received from stakeholders, there is a preference for annual witness ‘surveillance’ (both in the office and in the field). This is common practice under EN ISO 17011 for the accreditation of verifiers performing GHG verification under EN ISO 14065 and AVR 600/2012.

16.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

- NABs shall perform surveillance activities of verifiers on annual basis.
- The surveillance activities shall consist of a visit at the office of the verifier and a witness of verification activities of the verifier performed at a company site.

16.4. Examples

No specific examples identified.

17. Requirements for national accreditation bodies to provide accreditation to verifiers for shipping activities

17.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify requirements for NABs	
Actors involved:	NABs	According to Article 16 of the EU MRV Regulation, verifiers that assess monitoring plans and 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 pursuant to Regulation (EC) No 765/2008
Rules needed for:	ACCREDITATION	The delegated act could specify requirements for NABs for providing accreditation under the EU MRV Regulation
Relevant internationally accepted standards	EN ISO 17011	Section 6
Relevant EU legislation:	Accreditation Regulation 765/2008	Article 8(7)
	EU ETS Accreditation and Verification Regulation 600/2012	Chapter V, Articles 57, 58 & 59

The Accreditation Regulation 765/2008 set the general requirement for the NAB competence to perform its tasks. EN ISO 17011 specifies the requirements for NABs to provide accreditation services.

NABs should have the following two main sector specific requirements:

- knowledge of the Regulation on MRV of CO₂ emissions from maritime transport, relevant standards and other legislation as well as applicable guidelines published by the Commission;
- knowledge of auditing the relevant data and information and the related verification activities.

The rules for the delegated act could take into account the AVR Key guidance note no. II.9 (EU ETS)⁶ on specific competencies of the members of an assessment team from NABs. This guidance could be replicated for the EU MRV Regulation to ensure that NABs will take the necessary steps to build up the relevant knowledge and expertise.

For those NABs that do not wish to develop competencies for performing accreditation according to the EU MRV Regulation, sufficient rules (Accreditation Regulation 765/2008) are already established to reroute the responsibility from one Member State NAB to another.

⁶ http://ec.europa.eu/clima/policies/ets/monitoring/docs/kgn_9_relation_avr_iso_17011_en.pdf

17.2. Options discussed in the subgroup

Based on feedback received from stakeholders, there is no need for additional competencies to be added apart from the following:

To successfully accredit verifiers for the maritime sector, NABs need to:

- understand all requirements for the maritime MRV system;
- build capacity, knowledge, experience and resources;
- understand the characteristics of different types of vessels;
- understand the characteristics of the different monitoring methods;
- train their own staff to obtain the required competence or make use of (sector) specialists when performing accreditation activities.

17.3. Recommendation of elements for the Delegated Act as suggested by the subgroup

- NABs shall ensure to possess the following competencies before undertaking accreditation assessments for the EU MRV Regulation.
 - understand all requirements for the maritime MRV system;
 - build capacity, knowledge, experience and resources;
 - understand the characteristics of different types of vessels;
 - understand the characteristics of the different monitoring methods;
 - train their own staff to obtain the required competence or make use of (sector) specialists when performing accreditation activities.

17.4. Examples

No specific examples identified.

18. Communication between National Accreditation Bodies and the Commission

18.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify how NABs should communicate to the Commission about accreditations, withdrawals or suspensions of accreditations	
Actors involved:	NABs	According to Article 16 of the EU MRV Regulation, verifiers that assess monitoring plans and 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 pursuant to Regulation (EC) No 765/2008
Rules needed for:	ACCREDITATION	The delegated act could specify information exchange between the Commission and NABs about the identification of accredited verifiers and of potential problems with the accreditation of verifiers
Relevant internationally accepted standards:	Not applicable	
Relevant EU legislation:	Accreditation Regulation 765/2008	
	EU ETS Accreditation and Verification Regulation 600/2012	Chapter VI

NABs are responsible for accrediting verifiers, but also for potential suspension or withdrawal of accreditation, for those verifiers who do not fulfil the requirements. Hence there is a need for communication between the NABs and the Commission (or a delegated party) about the status of the accreditation of verifiers.

Currently, there is no mechanism of communication between NABs and the Commission directly about accreditation of verifiers under the EU MRV Regulation. Without a clear structure, problems might arise in the insight for companies about the accreditation status of verifiers in the system. Given the international context of the EU MRV Regulation, it could become difficult to identify the different verifiers accredited by the different NABs to choose from. Under the AVR, each NAB publishes a list of their accredited verifiers and the European co-operation for Accreditation (EA) publishes also links to each of the EU NAB list of accredited verifiers for EU ETS verification to provide easy access from a central point, which is beneficial for an international system.

18.2. Options discussed in the subgroup

The following options have been discussed with the stakeholder subgroup:

- Option 1: The status of accreditation of verifiers will be communicated by the individual NABs to the Commission. A list of accredited verifiers will be published by the individual NABs.
- Option 2: The status of accreditation of verifiers will be communicated by the EA to the Commission. A list of accredited verifiers will be published by the individual NABs.
- Option 3: **The status of accreditation of verifiers will be communicated by the individual NABs to the Commission by use of a standardized format. A list of accredited verifiers will be published by the individual NABs and the EA through providing direct links to each NABs list of accredited verifiers under the EU MRV Regulation.**

Based on the feedback received from stakeholders, there is a need for transparency on which verification body is accredited. Option 3 has been identified as the most efficient as it ensures a standardized communication about the status of accreditation between the parties involved. From the perspective of the companies this option would also be the most efficient as the EA provides a direct link to each NAB's list of accredited verifiers under the EU MRV Regulation.

18.3. Indicative list of elements for the Delegated Act as suggested by the subgroup

- The status of accreditation of verifiers will be communicated by the individual NABs to the Commission by use of a standardized format. A list of accredited verifiers will be published by the individual NABs and the EA through providing direct links to each NABs list of accredited verifiers under the EU MRV Regulation.
- The Commission can develop an electronic tool in which a list of all accredited verifiers is maintained and made available to all companies.

18.4. Examples

No specific examples identified.

19. Suspension and withdrawal of accreditation

19.1. Potential needs for rules

Issue:	The EU MRV Regulation does not specify rules for suspension and withdrawal of accreditation of verifiers	
Actors involved:	NABs VERIFIERS COMPANIES	NABs may need to suspend or withdraw an accreditation of the verifier The verifier's accreditation may be suspended or withdrawn Companies need to seek a new verifier if the current verifier's accreditation is suspended or withdrawn
Rules needed for:	ACCREDITATION	The delegated act could specify how in the event of suspension or withdrawal, this impacts the DOC's provided by the verifier and how this impacts, if applicable the verification engagement in progress.
Relevant internationally accepted standards:	EN ISO 17011	7.13
Relevant EU legislation:	Accreditation Regulation 765/2008	
	EU ETS Accreditation and Verification Regulation 600/2012	Article 53

A NAB may conclude based on a surveillance or re-assessment of the verifier's accreditation, that the accredited verifier does no longer fulfil all necessary requirements for granting accreditation for the EU MRV Regulation. If the verifier does not resolve non-conformities sufficiently, the NAB may need to suspend or withdraw the verifiers' accreditation. The EU MRV Regulation does not specify the consequences for acceptance confirmations for monitoring plans, verification reports and DOC's issued by the verifier. The EU MRV Regulation does not specify the consequences for the verifications in progress at the time the accreditation is suspended or withdrawn.

Confirmation of assessed monitoring plans, verification reports and DOC's issued by the verifier before the accreditation was suspended or withdrawn should remain valid. If not, this would have significant negative consequences for companies.

Confirmations about assessed monitoring plans, verification reports and DOC's issued during the period of suspension or withdrawal will not be valid and cannot be allowed to be used by companies for demonstrating compliance with the EU MRV Regulation requirements. Depending on the timing and period of suspension of withdrawal, companies may need to engage with another verifier that is accredited to assess the monitoring plan and/or verify the emissions report.

19.2. Indicative list of elements for the Delegated Act as suggested by the subgroup

- In case of suspension or withdrawal of accreditation, all formal documents (confirmation of acceptance of monitoring plans, verification reports and DOC's) issued by the verifier prior to the date of suspension or withdrawal remain valid;
- Companies cannot use confirmations about assessed monitoring plans, verification reports and DOC's issued by the verifier during the period of suspension or withdrawal of the verifier's accreditation for compliance with the EU MRV Regulation requirements.
- The NAB shall inform the verifiers about the conditions under which the accreditation can be re-instated by the NAB.

19.3. Need for further guidance identified

Guidance could be developed on how verifiers and companies should deal with the situation in which the accreditation is suspended or withdrawn close to the planned issuing date of the Document of Compliance by the verifier. It should also be clear how port state authorities will deal with cases in which a ship calls at an EU port with a DOC issued by a verifier whose accreditation is suspended or withdrawn.

Acronyms

ER	Emissions report
AIS	Automatic Identification System
AVR	Accreditation and Verification Regulation No 600/2012
BDN	Bunker Delivery Note
CO ₂	Carbon dioxide
e.g.	exempli gratia
EA	The European co-operation for Accreditation
EC	European Commission
EMSA	European Maritime Safety Agency
ESSF	European Sustainable Shipping Forum
ETS	Emissions Trading System
EU	European Union
GHG	Greenhouse gas
GT	Gross tonnage
ISO	International Organization for Standardization
LNG	Liquefied natural gas
LRIT	Long-range identification & tracking
MP	Monitoring Plan
MRV	Monitoring, reporting and verification of emissions
MS	European Union Member States
NAB	National Accreditation Body
No.	Number
tCO ₂	Ton carbon dioxide
SEEMP	Ship Energy Efficiency Management Plan

Definitions

Notion	Definition	Source of Definition
Accuracy	Information has been reported appropriately, e.g. the correct source of information is used and the information on that source is accurate.	
Bunkering documents	Bunker delivery notes or bunker delivery note summaries.	
Competence (for MRV)	The ability to apply knowledge and skills to carry out an activity.	EN ISO 14065
Completeness	All emissions, transport work and other information that should have been reported has been reported, e.g. all emission sources have been included in the monitoring plan and emissions report.	
Consistency	method of reporting information is consistent with prior years or changes have been justified and disclosed.	
Control risk	Risk that the material misstatements are not detected by the internal control activities of the company related to the ship's monitoring and reporting system.	
Copies	Paper or electronic copies of original documents.	
Cut-off	Reported in the right period.	
Detection risk	Risk that material misstatements are not detected by the verifier.	
Inherent risk	Risk of material misstatements due to nature and complexity of a ship's monitoring and reporting without considering any control activities.	
Materiality level	A quantitative threshold above which uncorrected and undetected misstatements, individually or aggregated with other misstatements could reasonably be expected to influence the decision of the user of the emissions report.	
Materiality of information	Information is considered to be material when its omission or misstatement influences the decisions of the user of the information.	
Materiality level	The quantitative threshold or cut-off point above which misstatements, individually or when aggregated with other misstatements, are considered material by the verifier.	AVR
Misstatement	An omission, misrepresentation or error in the company's reported data, not considering the uncertainty permissible pursuant to the EU MRV Regulation.	
Non-compliance	Any act or omission of an act by the company that is contrary to the requirements in the EU MRV Regulation.	
Non-conformity for the purpose of the assessment of the monitoring plan	An omission or description in the ship's monitoring plan is contrary to the requirements in the monitoring plan accepted by the verifier.	
Non-conformity for the purpose of	Any act or omission of an act by the company that is contrary to the requirements in the monitoring plan accepted by the verifier.	

the verification of the emissions report		
Occurrence	Has the voyage taken place, have emissions occurred and have passengers and cargo been transported.	
Qualitative materiality	The verifier may consider misstatements as material even if those misstatements, individually or when aggregated with other misstatements, are below the materiality level set out in The EU MRV Regulation, where such consideration is justified by the size and nature of the misstatements and the particular circumstances of their occurrence.	
Reasonable assurance	A high but not absolute level of assurance, expressed positively in the verification opinion, as to whether the company's report subject to verification is free from material misstatements and non-conformities.	AVR
Relevance	Only relevant information is reported.	
Site	Location of the company where for the purpose of the EU MRV regulation a critical mass of data is kept or data flow activities take place.	
Transparency	Information has been disclosed in a clear manner.	
Uncertainty	A parameter, associated with the result of the determination of a quantity, that characterises the dispersion of the values that could reasonably be attributed to the particular quantity, including the effects of systematic as well as of random factors, expressed as a percentage, and describes a confidence interval around the mean value comprising 95 % of inferred values taking into account any asymmetry of the distribution of values.	EU MRV Regulation