

TERMS OF REFERENCE (ToR)
FOR A SUB-GROUP ON AIR EMISSIONS FROM SHIPS
ESTABLISHED UNDER THE EUROPEAN SUSTAINABLE SHIPPING FORUM (ESSF)

1 INTRODUCTION

The ESSF provides a platform for a structural dialogue, exchange of technical knowledge, cooperation, and coordination amongst relevant maritime industries' stakeholders, Member States authorities and the Commission and its services to better address the environmental sustainability challenges confronting the EU maritime transport sector.

The contribution of maritime transport emissions to the air quality in the Member States can be considerable. Support in assessing this impact, the location and scale of these emissions and technical solutions to address them would be mutually beneficial to the shipping community, regulators and society at large.

In this context, the Commission services have decided to establish a specific Sub-group on Air Emissions from Ships¹ (the Sub-group), aiming to provide expert knowledge in assessing and measuring air pollutant emissions from the sector, the technologies available to address them. The Sub-group is to provide support for the cost-effective implementation of relevant policies in the maritime sector, with priority on Council Directive 1999/32/EC², in order to achieve the projected health and environmental benefits for EU's citizens. The functioning of the Sub-group is without prejudice to the role of the Committee established under Council Directive 1999/32/EC³ as regards the reduction of the sulphur content of marine fuels amended in 2012 (the Sulphur Directive).

1.1 Context and rationale

The Sub-group's work should build upon on the results delivered by its predecessor, the 'Implementation Sub-group' under the ESSF, which has optimally accompanied the transition to low sulphur fuel in the EU Sulphur Emission Control Areas (SECAs) and significantly moved forward the efforts of the maritime community on realising a cost-efficient and coherent implementation of the Sulphur Directive' provisions.

The Implementation Sub-group prepared the technical basis for the:

- Harmonised approach at EU level to sulphur in fuel-specific inspections and reporting which underpinned the Commission Implementing Decision³ under the Sulphur Directive.
- Union Information System (THETIS-S), a key enforcement tool recognised by the Implementing Decision, put in place since 1st of January 2015 by the Commission and the European Maritime Safety Agency (EMSA) and used by the Member States, on voluntary basis. THETIS-S allows to exchanging information on enforcement and drawing statistics on the level of compliance.
- EMSA's Inspection Guidance⁴ including on board sampling guiding principles as outlined in the Implementing Decision.

¹ Ships as defined under Directive 1999/32/EC

² Directive (EU) 2016/802 of the European Parliament and of the Council of 11 May 2016 relating to a reduction in the sulphur content of certain liquid fuels (codification)

³ Commission Implementing Decision 2015/253 of 16 February 2015 which has laid down mandatory frequencies for document verifications and fuel sampling, and reporting under Directive 1999/32/EC

⁴ <http://emsa.europa.eu/main/air-pollution/items.html?cid=149&id=2407>

- Submission by the EU Member States to the International Maritime Organisation (IMO) regarding on-board fuel sampling practices to enhance alignment between EU and global sampling practices.

The Implementation Sub-group had its last meeting on 29th January 2015 and delivered its final report to the ESSF Plenary in June 2015. At its meeting of 6th May 2015, the Sulphur Implementation Committee was informed about the proposal by the Commission to continue the work of the Implementation Sub-group as of 2016 under a mandate with enlarged scope addressing a wider set of shipping air pollutants while keeping the focus on the Sulphur Directive and the shipping community strategy towards 2020. The set of pollutants includes SO_x, NO_x, to be prioritised in view of the coming designation of the EU ECA for NO_x, as well as PM, Black Carbon, and other relevant substances that may become more apparent during the progression of the work. The Sub-group should also develop synergies between air quality and other relevant policies, described in these ToR. The Sulphur Implementation Committee welcomed these new developments and at the meetings on 16th of June 2015 and on 26th January 2016, also the ESSF Plenary recommended the continuation of the work of the Sub-group and endorsed the proposal by the Commission for its future work focus.

1.2 Mandate

The Sub-group on Air Emissions from Ships, with the technical assistance of EMSA, continues to support the Commission, the Member States and the ESSF stakeholders in the implementation actions under the Sulphur Directive, with high priority focus on the preparation for the enforcement, in 2020, of the 0,50% sulphur requirement in marine fuels in the EU waters outside the Sulphur Emission Control Areas (SECAs). To this aim, the Sub-group should assist the Commission in sharing of expertise and development of best monitoring and enforcement practices on low sulphur-content in marine fuels, to coordinate general discussions as appropriate (or when requested by its members or the Plenary) or where, necessary, discuss the technical basis in support of common understanding of legal provisions for the benefit of the shipping community, to be further developed in the appropriate fora.

The Sub-group is also expected to provide input to the Commission mainly in preparation of the implementation report(s) due to be delivered to the European Parliament under the Sulphur Directive. In this context, the Sub-group should also discuss existing mapping practices in the Member States for monitoring of atmospheric emissions from shipping at both EU level as well as national/regional levels, through state-of-the art modelling and measurement, in order to improve the assessment of implementation of relevant legislation.

The Sub-group is also mandated to continue or set the basis for future work on alignments with the national/international discussions about other policy areas in the field of environment (relevant to water, soil media), in order to ensure that synergies are better identified and exploited through reinforced co-operation under the ESSF. Other possible synergies with regard to links to transport, emission abatement methods, and fuel quality and efficiency aspects should also be considered.

2 OBJECTIVES, TASKS, DELIVERABLES AND TIMETABLE

2.1 Objectives

The main objectives for the Sub-group on Air Emissions from Ships are as follows.

In relation to the continuous implementation efforts under the Sulphur Directive:

- Advise on the development of further tools for enhancing and facilitating preparation by Member States under the Sulphur Directive in view of the entering into force of low sulphur fuel as of 2020 in sea areas outside SECAs building on lessons learned with enforcement in the EU ECA since 2015 including the feedback on sulphur inspection by the maritime industry; further assessment of implementation and enforcement strategies (targeting, remote sensing, etc.);
- Promotion of information and best practice sharing; support the Commission in the preparation of the implementation report(s) to the European Parliament under the Sulphur Directive;
- Develop recommendations covering further aspects of implementation, including transposition and reporting (country dialogues, exchanges on national enforcement including on fuel suppliers) as well as the development of air pollution control/monitoring technologies in alternative for example to fuel sampling (emission control technologies -potential for on board continuous monitoring of emissions and remote sensing, fuel consumption monitoring-, land based remote sensing and onboard continuous emission monitoring).

In relation to the mapping of emissions from atmospheric pollutants:

- Based on EMSA work, as well as any other relevant organisation acting at national/international level, consider an overview of air pollutant emissions in the EU and their distribution within the Union;
- Provide a technical assessment of various options for emission monitoring strategies across sea regions (company and national authorities' level).

In relation to setting the basis for alignment between air quality and other policy areas in the field of environment (relevant to water, soil media) as well as transport policies if requested:

- Provide technical input in relation to overlaps between different environmental policy initiatives, and make suggestions on how they can be most effectively addressed without compromising the health and environmental objectives agreed in legislation already.

2.2 Tasks

2.2.1 Information sharing and best practice development. Assessment of implementation and enforcement strategies under the Sulphur Directive in view of 0,50 % sulphur cap from 2020 in the EU.

The Sub-group will be expected to provide recommendations based on the analysis of the inspection data recorded in the THETIS-S with the technical assistance of EMSA. It should encourage a strengthened and uniform use of the system by the Member States. The Sub-group should draw from lessons learned, discuss/identify barriers to the appropriate use (e.g. data quality, frequency of inspections) of THETIS-S and recommend potential solutions (e.g. ad hoc national or EU training by EMSA, local assistance to the Members States, further enhancement of the system, etc..).

In particular, but not exhaustive, the Sub-group should discuss and explore:

- the potential technical basis for developments or relevant initiatives to cater for the enforcement on ships en route (e.g. “fuel calculator”, use of remote sensing technologies, on board emissions monitoring, ...), with special focus on the 0,5 % sulphur in fuel cap from 2020;
- a centralised risk based targeting mechanism (and its basic criteria) for selecting ships for inspection in THETIS-S including alerts from remote sensing;
- defining a roadmap in view of the step up of on board sampling obligations as of 2016 as key enforcement element;
- the added-value of experience acquired by remote sensing projects and provide recommendations on their widespread use in other Member States;
- the possibility to share alerts registered in THETIS-S among EU neighbouring countries (for example Russia and countries accessing THETIS as appropriate);
- the need of publishing shared aggregated enforcement results with the maritime community and to the IMO also taking into account the feedback on inspection from industry.

While the Sub-group prioritises its work in preparation to the entering into force in 2020 of the 0,50% sulphur in fuel cap, it should also discuss the longer-term perspectives; by sharing of experiences with using continuous emission monitoring systems and how to strengthen enforcement on fuel suppliers from information derived from THETIS-S.

2.2.2. Other implementation issues under the provisions of the Sulphur Directive (reporting, transposition of main enforcement provisions, fuel issues, interface with other relevant ESSF Sub-groups). Updating and assessing of existing practices at international and national level.

In order to increase clarity and reduce administrative burden, the Sub-group is expected to support the Commission in finalising the harmonised reporting for the Member States, including the development of optimised tools like web-based electronic forms. In this context, the Sub-group is expected to draw on experiences with the inspection and reporting requirements existing in EU legislation and, for the latter, draw on Member States experiences with the THETIS-S for their recording of inspection data. The feedback from the maritime industry on inspections should also be shared to assess how the process could be made more cost-effective. The Sub-group should also explore future possibilities for synergies with other inspection regimes as appropriate.

The Sub-group should discuss best practices in Member States annual programmes on sulphur content monitoring and fuels sampling for land based applications and, where appropriate, develop further recommendations relevant to the maritime sector.

The Sub-group should also reflect on design elements of an appropriate control system for fuel suppliers and identify best practices for effective systems of sanctions in the Member States. As well as explore future ways to reinforce the enactment on fuel suppliers to prevent non complaint practices also taking into account ongoing discussions on IMO guidance for fuel oil quality. Moreover, the Sub-group should discuss the technical characteristics of conventional and non-conventional fuels that will enter the market and to guide the development/update of recommendations for existing guidelines and standards – covering technical, operational, and impact on/alignment with existing regulatory aspects in relation to the monitoring and verification of compliance with the requirements of the Directive including a discussion on tolerances applied in assessing non-compliance from sulphur measurements in fuel samples.

The Sub-group should interact as appropriate with other ESSF Sup-groups on issues on joint relevance and refer discussions of any legal matter to the Sulphur Committee.

2.2.3 Assessment of existing practices in determination of current level and evolution of Air Emission from Ships (SOx, NOx, primary and secondary PM and Black Carbon, and other relevant substances).

The Commission has recently requested the technical assistance of EMSA to develop improved methodologies to calculate accurate and structured ship emission inventories based on activity data (international traffic, short sea and domestic shipping) for EU Member States to better assess the contribution of ship emissions to air pollution in the coastal territory of a Member State.

The Sub-group is expected to advise the Commission, and relevant stakeholders on how to move forward the work of the EMSA and assess how the projected reduction of some pollutants occur in accordance with the relevant legislation. The Sub-group is expected to stimulate discussions on the main assumptions/key factors on projections methodologies accuracy (emission factors, economic development/shipping activity models, energy efficiency, alternatives fuels and abatement systems deployment, etc.).

2.2.4 Ensure technical coordination with other environmental initiatives, as appropriate, and developments addressing air emissions from ships carried out by relevant international and regional bodies by facilitating scientific collaboration and cross fertilisation.

The Sub-group will be expected to discuss various relevant international, regional, national and industry initiatives, EU and international policies/initiatives that focus on air pollutants and on its the interlink with other environmental compartments. To share experience, good practice and lessons learned from other initiatives or sectors relevant to the maritime sector.

2.3 Deliverables and Timetable

The Sub-group should start its work in 2016 and shall report on all meetings to the ESSF Plenary as appropriate.

The rapporteur(s) shall participate in the ESSF Plenary meetings and report about progress. Its final report should be delivered to the ESSF Plenary at the end of the second mandate of the ESSF pending Commission decision, unless it is otherwise requested by the ESSF Plenary. Intermediate reports might be requested by the Commission in relation to specific and urgent issues identified under the ESSF and beyond.

The Sub-group is requested to address to the ESSF a report, of maximum 30 pages plus Annexes, which includes an analysis of findings and a set of conclusions and recommendations on the basis of found evidence. The report is to be made publicly available.

The main section of the report should include the following main deliverables:

D.1 Proposals for future technical developments to cater for the entering into force in 2020 of the 0.50% global cap including enforcement on ships en route, a risk based targeting mechanism for

selecting ships for inspection in THETIS-S, recommendations in relation to use of remote sensing for enforcement purposes, further development of THETIS-S, and for sharing of aggregated results with the shipping community and to the IMO.

D.2 Proposals for technical tools to facilitate reliable and timely reporting under the Sulphur Directive, streamline processes for reducing administrative burden linked to inspections and reporting, and present best practices towards a system for control of fuel suppliers, and sanctions.

D.3 Compendium of best methods and practices with regard to emission inventories and projections as well as measurements (international traffic, short sea and domestic shipping as well as in harbour or coastal areas) to better assess the contribution of ship emissions to air pollution (SO_x and NO_x in priority, as well as PM, Black Carbon and other relevant substances) and their evolution over time for Commission's own reporting obligations versus the other EU Institutions or accountability versus society at large.

D.4 Overview of synergies and overlaps between air quality and initiatives in other environmental or transport compartments at both international and EU level and proposals for how to effectively address them, including further perspectives for emission control technologies (continuous monitoring of emissions and remote sensing, fuel consumption monitoring).

For the sake of time and efficiency, the Sub-group should prioritise its work on deliverables D1 and D2 while only setting the basis for further development on deliverables D3 and D4. Additional deliverables or their reformulation may follow during the work of the Sub-group or upon request of the ESSF Plenary and the relevant maritime community as a whole will be kept updated for endorsement.

3 OPERATION OF THE EXPERT GROUP

3.1 Number, identification, and selection of experts

The Sub-group on Air Emissions from Ships comprises representatives of all Member States-regulatory and enforcement authorities, ship operators and owners, oil industry, engine manufacturers and manufacturers of abatement technology, classification societies, laboratories of analyses, NGOs etc. with the relevant expertise to ensure informed assessment and decisions on all of the areas covered by the current ToR. The composition of the Sub-group may vary according to the priorities to be tackled, and ad hoc experts may be invited as appropriate.

The members will be proposed by the Commission, confirmed by the ESSF Chair, endorsed by the ESSF plenary, and subsequently appointed by the Commission on the basis of the following criteria:

- high level of expertise in at least one of the fields encompassed by the current ToR and in line with the overall mandate ESSF;
- appropriate range of skills in the different fields related to the Sulphur Directive implementation aspects or the assessment of Air Emissions from ships, combined with the ability to examine related questions and analyse specific issues in the general context (legislative, economic, etc.).

Provided that the above two conditions can be satisfied, other criteria are also taken into consideration:

- appropriate balance between regulatory, academic and scientific expertise, NGOs and civil society, and industry expertise;
- a reasonable balance of geographical origins.

3.2 Working method

The Sub-group will be chaired by a representative of the Commission and a representative of the Sub-group members will be appointed Vice-chair. The appointment of the Sub-group Vice-chair will be voted by simple majority.

The Chair and Vice-Chair of the Sub-group decide on its working methods; they are however requested to ensure that the Sub-group members and their supporting expertise are best exploited to allow for in-depth analysis in all the areas covered by these ToR.

The Sub-group appoints highly qualified rapporteur(s), while EMSA shall provide the administrative, secretariat activities and technical expertise. The chair, the Vice-chair, the EMSA representative and the rapporteur(s) will identify Work Packages on specific topics and appoint ad hoc Work Package Leaders as appropriate.

The rapporteur(s) will prepare the final report of this Sub-group, on the basis of the Work Package Leaders written contributions and of relevant material and events identified by the group members and/or the Commission. The rapporteur(s) will highlight and exploit main points of reports presented by experts, create PowerPoint presentations and draft summaries of the discussions held at meetings.

A periodic rotation for the roles of Vice-chair and Rapporteur(s) may be foreseen as appropriate.

On specific implementation, technical or horizontal issues, the Sub-group shall cooperate with and provide input to other relevant Sub-groups established under the ESSF or to relevant international bodies and fora relevant as appropriate.

3.3 Meetings

The meetings of the Sub-group shall be held in the Commission's or EMSA's premises. The Sub-group shall meet at least twice per year. Commission officials may attend meetings of the subgroup.

3.4 Duration

The Sub-group on Air Emissions from Ships is due to start their work immediately after approval of its establishment by the ESSF Plenary and shall be disbanded as soon as its mandate is fulfilled.