



Brussels, 7 February 2019  
(OR. en)

5879/19

MAR 20  
OMI 8  
ENV 93  
CLIMA 34

## 'I' ITEM NOTE

---

From: General Secretariat of the Council  
To: Permanent Representatives Committee

---

No. Cion doc.: 5782/19 MAR 16 OMI 4 ENV 79 CLIMA 27  
No. prev. doc.: 5653/1/19 MAR 19 OMI 7 ENV 92 CLIMA 33

---

Subject: IMO - Union submission to be submitted to the 74th session of the Marine Environment Protection Committee (MEPC 74) of the IMO in London from 13 – 17 May 2019 concerning harmonised rules on the discharge of liquid effluent from exhaust gas cleaning systems  
– *Endorsement*

---

## INTRODUCTION

1. On 4 February 2019, the Commission transmitted to the Council a Staff Working Document containing a draft submission to the 74<sup>th</sup> session of the Marine Environment Protection Committee ('MEPC') of the International Maritime Organization ('IMO') related to a proposal for a new agenda item (output) on harmonised rules on the discharge of liquid effluent from exhaust gas cleaning systems. The deadline for transmitting the draft submission to the IMO Secretariat is 8 February 2019.

2. Regulation 4 of Annex VI to the International Convention for the Prevention of Pollution from Ships ('MARPOL') allows the use of equivalent devices, in particular for the application of Regulation 14 reducing the sulphur content of marine fuels. As an alternative to the use of low sulphur fuels, exhaust gas cleaning systems (EGCS) have been developed and used by ships to achieve equivalent reduction of sulphur oxide emissions. However, the present knowledge on the composition and harmfulness to the marine environment of liquid effluents discharged by the majority of these systems into ports and sensitive sea areas leads States to take local or regional restriction or prohibition measures. It is proposed that MEPC considers the inclusion of a new output in its programme of work in order to evaluate and harmonize the development of rules and guidance on the discharge of liquid effluents from EGCS, including conditions and areas.

### **WORK WITHIN THE COUNCIL**

3. The draft submission was examined by the Shipping Working Party at its meeting on 6 February 2019. At that meeting, modifications to the draft submission were agreed with the purpose of reaching consensus. It was also agreed that the Presidency would be allowed to indicate at the time of transmission that the document may be released to the public by the IMO secretariat prior to MEPC 74.
4. However, there is no agreement on who should submit the draft submission. The Commission maintains the view that the draft submission should be made by "the European Commission on behalf of the European Union", while the Member States consider that it should be made by the Member States and the European Commission.
5. Given the urgency and importance of the matter, it was agreed at working party level to propose to transmit the submission in the name of the Member States and the European Commission, while taking good note of the position of the Commission.
6. The Council preparatory bodies remind the Commission that draft Union submissions to the IMO should be presented in good time before the submission deadlines so as to allow for a proper examination and discussion of the matter during at least two working party meetings.

## CONCLUSION

7. In the light of the above, the Permanent Representatives Committee is invited to
    - endorse the text of the draft submission in the annex, with a view to its transmission by the Presidency to the International Maritime Organization by 8 February 2019.
-

## WORK PROGRAMME OF THE COMMITTEE AND SUBSIDIARY BODIES

### Proposal for evaluating and developing harmonised rules and guidance on the discharge of liquid effluent from exhaust gas cleaning systems

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom and the European Commission

#### SUMMARY

<i>Executive summary:</i>	Regulation 4 of MARPOL Annex VI allows the use of equivalent devices, in particular for the application of Regulation 14 reducing the sulphur content of marine fuels. As an alternative to the use of low sulphur fuels, exhaust gas cleaning systems (EGCS) have been developed and used by ships to achieve equivalent reduction of sulphur oxide emissions. However, the present knowledge on the composition and harmfulness to the marine environment of liquid effluents discharged by the majority of these systems into ports and sensitive sea areas lead States to take local or regional restriction or prohibition measures. It is proposed that the Committee considers the inclusion of a new output in its programme of work in order to evaluate and harmonize the development of rules and guidance on the discharge of liquid effluents from EGCS, including conditions and areas.
<i>Strategic direction, if applicable:</i>	1 and 2
<i>Output:</i>	New output
<i>Action to be taken:</i>	Paragraph 32
<i>Related documents:</i>	

#### Introduction

- 1 This document is submitted in accordance with the provisions of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.1), taking into account resolution A.1111(30) on the implementation of the Organization's Strategic Plan.

- 2 In this document it is proposed to include a new output to evaluate and harmonize the development of rules and guidance on the discharge of liquid effluents from EGCS, including conditions and areas under which liquid effluents from EGCS can be discharged and to regulate as appropriate access for ships equipped with such systems on that basis.

### **Background information**

- 3 At its fifty-eighth session, the Committee adopted, by Resolution MEPC.176(58), a revision of Annex VI to the MARPOL Convention, significantly reducing emissions of sulphur oxides (SO<sub>x</sub>). Regulation 4 of MARPOL Annex VI provides for the possibility of using equivalent provisions to meet in particular the requirements of Regulations 13 and 14.
- 4 At its fifty-ninth session, the Committee adopted the "2009 Guidelines on Exhaust Gas Cleaning Systems" by resolution MEPC.184(59), and revised them at its sixty-eighth session by resolution MEPC.259(68).
- 5 These guidelines are currently being reviewed again by this Committee and the Sub-Committee on Pollution Prevention and Response (PPR), under output 1.12 of Resolution A.1110(30) on the organization's strategic plan for the six-year period 2018 to 2023. This work mainly concerns the updating of the Guidelines, also taking into account of the non-functioning of EGCS accidental breakdown, temporary non-compliance and instrument malfunction and relevant amendments to the Port State Control guidelines (MEPC.181(59)).
- 6 At its seventy-third session, the Committee took note of an intervention "that interim guidance from GESAMP in document MEPC 59/4/19 had identified there was a need to consider that the environmental benefits of reducing pollution to air were not diminished should discharge washwater present additional risks, especially as in future there would be more ships using EGCS leading to a potential increased risk and possible unintended consequences to the marine aquatic environment. The Committee consequently agreed to instruct PPR 6 take this view into account when reviewing the 2015 Guidelines for EGCS, in conjunction with further advice from GESAMP." (Document MEPC 73/19, paragraph 5.12).
- 7 Furthermore, at its seventy-third session, the Committee also adopted Guidelines for discharge of exhaust gas recirculation (EGR) bleed-off water. EGRs are used to comply with the NO<sub>x</sub> Tier III emission limit, Exhaust Gas Recirculation (EGR) System. Since the EGR system is equipped with a scrubber to clean the recirculated exhaust gas, the system needs to bleed off its wash water.

### **IMO's objectives**

- 8 The proposal aims to protect the marine environment from discharges of harmful substances due to the development and use of new equivalent technologies, such as exhaust gas cleaning devices (OS2) and to harmonize the implementation of Regulation 4 of Annex VI to the MARPOL Convention (OS1).

### **Need**

- 9 The entry into force of the global sulphur limit for marine fuels on 1 January 2020 may lead to a rapid uptake of EGCS in international shipping.

- 10 The use of EGCS onboard ships started mainly from 1 January 2015 in the sulphur oxides emission control areas (SO<sub>x</sub> ECAs), as an alternative to the use of low-sulphur fuels. In March 2015, the number of ships with EGCS was estimated at about 300<sup>1</sup>.
- 11 The Exhaust Gas Cleaning Systems Association (EGCSA) announced on May 31, 2018, the installation or order of 1561 EGCS for over a thousand ships.
- 12 In the IMO fuel availability study, as presented to MEPC 70 (MEPC 70/INF.6), the projection for EGCS uptake was, in the baseline scenario, that about 3 800 vessels would be equipped with EGCS on 1 January 2020.
- 13 The estimated number of EGCS, as presented to MEPC 70 (MEPC 70/INF.6), as well as the statistical data presented by EGCSA, show a significant growth in the use of these equivalent devices. The numbers are expected to increase further after 1 January 2020 due to the projected premium price of the 0.50% fuels entering the market.
- 14 The potential toxicity of EGCS water discharges, for which there is scientific evidence based on knowledge we have from EGCS wash water sampling and analyses carried out<sup>2</sup>, due to the very nature of the pollutant substances present in the exhaust gases, and the increase in the number of these systems, require careful consideration to avoid irreversible pollution of the marine environment.
- 15 GESAMP specifically advised that, with more ships discharging EGCS effluents in a wide variety of harbour configurations, there is a potential risk to harm the environment. A recommendation was given that a generalised marine environmental risk assessment should be developed (MEPC 59/4/19 - PPR 6/11/1). Such assessment could be conducted e.g. by the MAMPEC model, which is already used for the assessment of biocides releases from antifouling paints and for releases of harmful substances from ballast water treatment systems into the marine environment.
- 16 In this regard, the Committee at its 59th session, agreed that the effluent discharge criteria should be revised in the future as more data become available on the contents of discharge and its effects (MEPC 59/24).
- 17 Germany provided initial data from an ongoing study on effluent discharges from EGCS in open and closed loop operation to PPR 6 (document PPR 6/INF.20), concluding, amongst other aspects, on the need to evaluate and discuss the reliability and representativity of the onboard monitoring readings, whilst deriving quantitative estimations for EGCS discharges water emissions in a current status scenario. These data indicate that currently tons of toxic heavy metals are discharged by EGCS into the North Sea, Baltic Sea and the English Channel annually, which have the potential to accumulate in the marine environment, bio-accumulate in marine organisms and are non-degradable. Furthermore, tons of polyaromatic hydrocarbons (PAH) are discharged, which also accumulate partly in the marine food chain. Some PAH are carcinogenic also to humans.
- 18 The expected increase of EGCS installations elevating the described threat to the marine environment, especially in sensitive areas like estuaries and ports, and the multitude of local or regional measures to control the discharge of these systems justifies the need to work on the harmonization of rules to protect the marine environment on the one hand and to facilitate international trade through maritime transport on the other.

---

<sup>1</sup> Scrubbers - An economic and ecological assessment Delft, CE Delft, March 2015

<sup>2</sup> PPR 6/INF.20 - Results from a German project on washwater from Exhaust Gas Cleaning Systems.

## Analysis of the issue

- 19 The different types of available EGCS today can be differentiated according to the following main categories:
- a. Open-loop EGCS use untreated seawater. The natural alkalinity of seawater allows the neutralization of the acidity of the diluted exhaust gases.
  - b. Closed-loop EGCS use fresh water in closed-loop mode and the acidity of the diluted exhaust gases is neutralized with caustic soda;
  - c. Hybrid EGCS offer the possibility to operate on closed loop or open loop, either on one mode at a time or even simultaneously. Hybrid scrubbers are generally used in open-loop mode when the vessel is operating on the high seas and in closed-loop mode circuits in ports or estuaries<sup>3</sup>;
  - d. Dry EGCS do not use liquids in the process but the exhaust gases are cleaned with hydrated lime-treated granulates.
- 20 The operation by ships of installed EGCS, especially in port waters, coastal areas or ecologically sensitive areas are expected to lead to a degradation of the marine environment due to the toxicity of water discharges. Indeed, due to the composition of the exhaust gases, EGCS effluents contain heavy metals (Hg, Cd, Cr, Cu, Ni, Zn), nitric and sulphuric acid, nitrates, and PAHs<sup>4</sup>.
- 21 Today, new rules on the water discharges from EGCS are increasingly restricting or even prohibiting these discharges by ships equipped with those systems to certain sea areas such as ports, estuaries and coastal areas.

## Analysis of implications

- 22 This new output should make it possible to further guide industry as of now with regard to technology choices in order to avoid having to take retroactive measures in a few years' time. These measures could include, but not be limited to, applying stricter discharge criteria or the prohibition, as appropriate, of EGCS water discharges.
- 23 According to information published by EGCSA, as of 31 May 2018, 63% of the gas scrubbers installed or on order, or 988 EGCS, had open-loop technology, and 697 of these systems will be installed on new ships. For these ships, there will be no alternatives to discharging effluent into the sea when the scrubber is operated.

---

<sup>3</sup> Hybrid-ready ready EGCS are open loop scrubbers with the option to be operated on closed loop operations. The hybrid and closed loop systems can only operate if the ship has sufficient tanks to store the effluent. Sludges can be disposed of in ports only if adequate port reception facilities are in place.

<sup>4</sup> 'Assessment of possible impacts of scrubber water discharges on the marine environment' Environmental Project No. 1431, 2012 by COWI; 2014 Report No. (UBA-FB) 002015/E 'Impacts of scrubbers on the environmental situation in ports and coastal waters'; Front. Mar. Sci., 24 April 2018, <https://doi.org/10.3389/fmars.2018.00139> 'A New Perspective at the Ship-Air-Sea-Interface: The Environmental Impacts of Exhaust Gas Scrubber Discharge'.



24 Due consideration should be given to early movers who have prepared for the 2020 global sulphur limit in good time as those ships will eventually be affected by the measures to limit discharges that will be taken, either within the framework of the Organization or by local or regional authorities. However, it must be considered that the sooner measures are taken, the lower the economic impact on shipowners will be.

### **Benefits**

25 The timely development of adequate measures to limit polluting discharges, especially in the most sensitive areas, will limit the accumulation of persistent substances (including heavy metals) that is known to occur in particular in ports.

26 By adopting international measures, the Organization will limit the proliferation of local or regional measures, which, because of their diversity and specificities, contribute to the administrative burden on crews and to the increased risk of accidents or incidents on board ships. A uniform measure will also limit the risk of prosecution and detention of ships in the context of port State control inspections.

### **Industry standards**

27 Today, only the guidelines on EGCS in resolution MEPC.259(68) stipulate discharge standards. However, these guidelines do not specify discharge criteria for specific areas. Moreover, it is questionable if the current criteria are fit for purpose in the current scenario, where a significant uptake of scrubbers or other technologies that discharge effluent into the marine ecosystem is occurring.

### **Output**

28 The suggested title of the proposed output is: "Evaluation and harmonization of rules and guidance on the discharge of liquid effluents from EGCS into waters, including conditions and areas".

29 It is considered necessary to be able to take appropriate regulatory measures, taking into account scientific knowledge, to protect certain areas from pollution resulting from the mentioned discharges, which could also include discharge bans from ships using a specific technology.

### **Human element**

30 The completed Checklist for Identifying Administrative Requirements and Burdens is set out in Annex 1. The completed Checklist for Considering Human Element Issues by IMO Bodies is set out in Annex.

### **Urgency**

31 The co-sponsors consider that the sooner uniform and unambiguous regulatory measures are developed and adopted, the better the potential pollution will be controlled and the less significant the economic impacts will be both on industry and administrations. They therefore recommend that the proposed output be included as a matter of urgency in the post-biennial Strategic Plan of the Organization (2020-2021), with the Sub-Committee on Pollution Prevention and Control (PPR) as the associated organ, and should be completed in no more than two sessions.



## Action requested of the Committee

32 The Committee is invited to consider:

1. the proposal for a new output on the *"Evaluation and harmonization of rules and guidance on the discharge of liquid effluents from EGCS into waters, including conditions and areas"*; and
  2. to include the new output in the agenda of its work programme and take action as appropriate.
-

## ANNEX 1

### CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS AND BURDENS

<p>The Checklist for Identifying Administrative Requirements and Burdens should be used when preparing the analysis of implications required of submissions of proposals for inclusion of unplanned outputs. For the purpose of this analysis, the terms "administrative requirements" and "burdens" are defined as in resolution A.1043(27), i.e. administrative requirements are defined as an obligation arising from future IMO mandatory instruments to provide or retain information or data, and administrative burdens are defined as those administrative requirements that are or have become unnecessary, disproportionate or even obsolete.</p> <p><b>Instructions:</b></p> <p>(A) If the answer to any of the questions below is <b>YES</b>, the Member State proposing an unplanned output should provide supporting details on whether the burdens are likely to involve start-up and/or ongoing cost. The Member State should also make a brief description of the requirement and, if possible, provide recommendations for further work (e.g. would it be possible to combine the activity with an existing requirement?).</p> <p>(B) If the proposal for the unplanned output does not contain such an activity, answer <b>NR</b> (Not required).</p> <p>(C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens</p>		
<p>1. Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members, etc.</p>	<p>NR</p> <p><input checked="" type="checkbox"/></p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirements(s) and method of fulfilling it: (if the answer is yes)</p>		
<p>2. Record keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education, etc.</p>	<p>NR</p> <p><input checked="" type="checkbox"/></p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
<p>Description: (if the answer is yes)</p>		
<p>3. Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing, etc.</p>	<p>NR</p> <p><input checked="" type="checkbox"/></p>	<p>Yes</p> <p><input type="checkbox"/> Start-up</p> <p><input type="checkbox"/> Ongoing</p>
<p>Description of administrative requirement(s) and methods of fulfilling it: (if the answer is yes)</p>		

<p>4. Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs, etc.</p>	<p>NR <input checked="" type="checkbox"/></p>	<p>Yes <input type="checkbox"/> Start-up <input type="checkbox"/> Ongoing</p>
<p>Description: (if the answer is yes)</p>		
<p>5. Other identified burdens?</p>	<p>NR <input checked="" type="checkbox"/></p>	<p>Yes</p>
<p>Description of administrative requirement(s) and methods of fulfilling it: (if the answer is yes)</p>		

## ANNEX 2

### CHECKLIST FOR CONSIDERING HUMAN ELEMENT ISSUES BY IMO BODIES

<b>Instructions:</b> If the answer to any of the questions below is: <ul style="list-style-type: none"> <li>(A) <b>YES</b>, the preparing body should provide supporting details and/or recommendation for further work.</li> <li>(B) <b>NO</b>, the preparing body should make proper justification as to why human element issues were not considered.</li> <li>(C) <b>NA</b> (Not Applicable) - the preparing body should make proper justification as to why human element issues were not considered applicable.</li> </ul>	
<b>Subject Being Assessed:</b> (e.g. Resolution, Instrument, Circular being considered) <b>Harmonised rules on the discharge of liquid effluent from exhaust gas cleaning systems</b>	
<b>Responsible Body:</b> (e.g. Committee, Sub-committee, Working Group, Correspondence Group, Member State)  <b>Marine Environment Protection Committee (MEPC)</b>	
1. Was the human element considered during development or amendment process related to this subject?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2. Has input from seafarers or their proxies been solicited?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
3. Are the solutions proposed for the subject in agreement with existing instruments? (Identify instruments considered in comments section)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4. Have human element solutions been made as an alternative and/or in conjunction with technical solutions?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
5. Has human element guidance on the application and/or implementation of the proposed solution been provided for the following:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Administrations?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Ship owners/managers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Seafarers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
• Surveyors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
6. At some point, before final adoption, has the solution been reviewed or considered by a relevant IMO body with relevant human element expertise?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
7. Does the solution address safeguards to avoid single person errors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
8. Does the solution address safeguards to avoid organizational errors?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
9. If the proposal is to be directed at seafarers, is the information in a form that can be presented to and is easily understood by the seafarer?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
10. Have human element experts been consulted in development of the solution?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
<b>11. HUMAN ELEMENT: Has the proposal been assessed against each of the factors below?</b>	
<input type="checkbox"/> CREWING. The number of qualified personnel required and available to safely operate, maintain, support, and provide training for system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> PERSONNEL. The necessary knowledge, skills, abilities, and experience levels that are needed to properly perform job tasks.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA

<input type="checkbox"/> TRAINING. The process and tools by which personnel acquire or improve the necessary knowledge, skills, and abilities to achieve desired job/task performance.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> OCCUPATIONAL HEALTH AND SAFETY. The management systems, programmes, procedures, policies, training, documentation, equipment, etc. to properly manage risks.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> WORKING ENVIRONMENT. Conditions that are necessary to sustain the safety, health, and comfort of those on working on board, such as noise, vibration, lighting, climate, and other factors that affect crew endurance, fatigue, alertness and morale.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> HUMAN SURVIVABILITY. System features that reduce the risk of illness, injury, or death in a catastrophic event such as fire, explosion, spill, collision, flooding, or intentional attack. The assessment should consider desired human performance in emergency situations for detection, response, evacuation, survival and rescue and the interface with emergency procedures, systems, facilities and equipment.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<input type="checkbox"/> HUMAN FACTORS ENGINEERING. Human-system interface to be consistent with the physical, cognitive, and sensory abilities of the user population.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<p><b>Comments:</b></p> <ul style="list-style-type: none"> <li>(1) Justification if answers are NO or Not Applicable.</li> <li>(2) Recommendations for additional human element assessment needed.</li> <li>(3) Key risk management strategies employed.</li> <li>(4) Other comments.</li> <li>(5) Supporting documentation.</li> </ul> <p>The justification as to why human element issues were not considered NO or NA (Not Applicable) is as follows:</p> <p>(2),(4),(10) &amp; (11) This is primarily a regulatory issue, without effect on seafarers and the Human element.</p>	