



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR MOBILITY AND TRANSPORT

Directorate D - Logistics, maritime & land transport and passenger rights
D.1 - Maritime transport & logistics

Brussels, 10 April 2017

Minutes
European Sustainable Shipping Forum
11th meeting of the Sub-Group on Exhaust Gas Cleaning Systems (EGCS)
Brussels, 23 February 2017
Albert Borschette Conference Centre, room AB/2C
(Rue Froissart 36, 1040 Brussels)
DRAFT AGENDA

1. Approval of the agenda and of the minutes of previous meeting

- 1.1. Minutes of the previous meeting, earlier distributed by email, were adopted with adjustments in the list of participants. Final version of the minutes for the 10th ESSF EGCS sub-group meeting sent by email to the sub-group on 9th March 2017.
- 1.2. Present minutes reflect the Summary Table sent after the meeting on 9th March 2017. New format for experts groups meeting has been applied. As of this meeting, all ESSF meeting reports will have to use the same template
- 1.3. Agenda for the 11th EGCS sub-group meeting adopted with a small re-adjustment in the order of the items and with the postponement of the discussion topic on the revision of the EGCS work package structure, delayed for the next meeting.
- 1.4. Additional introductory points addressed:
“E-passes”
 - i. Confirmations can be sent only after the deadline for registration to the meeting.
 - ii. Sub-group members were reminded to send requested data for registration
 - iii. The deadline for registration was highlighted as a very relevant date.

2. Nature of the meeting

- 2.1. Meeting held within the frame of Commission Decision C (2013) 5984 final of 24 September 2013 on setting-up the group of experts on maritime transport sustainability - The European Sustainable Shipping Forum (ESSF), as amended by Commission Decision C (2015) 9741 final, of 7 January 2016.
- 2.2. The meeting was non-public (only for invited members, Commission Services and EU institutions)
- 2.3. The main subjects of the 11th meeting where relevant actions can be extracted from the meeting were:
 - a. Sampling and Analysis of Washwater from EGC systems (in particular for the 11th sub-group meeting the campaign exercises by EGCSA and Germany were discussed)
 - b. Washwater Sampling and Analysis Guidelines (discussion on submission to IMO)
 - c. Revision of the IMO 2015 EGCS Guidelines (IMO Res. 259 (68)) – The main part of the Agenda was dedicated to this point, with a view to allow for the finalization of works leading to the conclusion of the revision and to the final proposal for a submission to IMO.
 - d. Operational/transient non-compliance scenarios.
- 2.4. To be noted from the specific points in the 11th EGCS sub-group meeting agenda (Annex 1):
 - a. A significant increase in the work of the ESSF EGCS has been noted, mainly due to the intensification on the washwater sampling & analysis exercises and to the work on the proposed amendments to the 2015 EGCS Guidelines.
 - b. 4 (four) submissions are currently in preparation within the EGCS sub-group:
 - i. Submission with proposed amendments to the 2015 EGCS Guidelines – A 2 years’ worth of work that has largely dictated the agenda of the EGCS sub-group for the past 6 (six) sessions.
 - ii. INF paper submitting the draft “Washwater Sampling & Analysis Guidelines”, which first draft had been sent previously to the

- iii. Submission asking MEPC to consider tasking PPR to further continue the work submitted by the INF paper on point ii) above.
- iv. Submission with proposal for specific guidance on accidental breakdown, instrument malfunction and perceived temporary non-compliance and transient performance of EGCS, under coordination by Norway.

The above listed submissions represent not only the different deliverables but also the main commitments of the EGCS sub-group in terms of contribution to the work at the international stage.

3. List of points discussed

The list of points discussed, listed below, reflect the outline of the Agenda for the 11th EGCS sub-group meeting. The list of points discussed can be found below:

3.1. Report from the ESSF 7th Plenary Meeting

- a. The ESSF EGCS sub-group was debriefed on the outcome of the 7th ESSF Plenary meeting held on 24JAN17. A presentation was delivered by the V-Chair of the Sub-group containing the main points from the EGCS sub-group Progress Report and the outcomes of discussions.
- b. The following recommendations to Plenary are extracted from the EGCS submitted progress report (also included as Annex 2 in the present minutes)
 - *To note the progress in general of the EGCS sub-group, item 6.1 to (Annex 2 - attached);*
 - *To approve the revised timeline for finalization of the IMO submission paper on proposed amendments to the "(2015) Guidelines for Exhaust Gas Cleaning Systems (resolution MEPC. 259(68))", item 4 to (Annex 2 - attached) report;*
 - *To note the further progress in development of the above mentioned submission (item 6.2 to (Annex 2 - attached)) and to recall:*
 - *the invitation to the members of the Plenary to consider co-sponsoring of the IMO submission, item 6.3 to (Annex 2 - attached);*
 - *the progress on cooperation with the U.S. EPA, item 6.4 to (Annex 2 - attached);*
 - *To note the information on alternative EGCS technologies; item 6.5 to (Annex 2 - attached) report;*
 - *To note the final Report on the results of the questionnaire regarding waste from scrubbers, item 6.6, and Annex 2 to (Annex 2 - attached);*
 - *To note the progress with the EGCS washwater sampling campaigns being undertaken by EGCSA/EUROSHORE and Carnival, item 6.7 to (Annex 2 - attached); to encourage sludge sampling analysis as a second step; and to support the development of IMO submission papers;*
 - *To endorse the proposed way forward on development of the operational non-compliance guidelines and potential amendments to the EGCS guidelines and/or the 2009 MARPOL Annex VI port state control guidelines, item 6.8 to (Annex 2 - attached);*
 - *To note the progress on development of draft guidelines for discharge of EGR bleed off water, item 6.9 to this report; and*
 - *To endorse further activities, item 6.10 to (Annex 2 - attached)*
- c. The ESSF Plenary welcomed and supported the progress achieved by the EGCS sub-group, especially with regard preparations of submission to the IMO on revision of the "(2015) Guidelines for Exhaust Gas Cleaning Systems (resolution MEPC. 259(68))". It was decided to have a last round of discussion at the next EGCS Sub-group meeting on 23/02.
- d. Regarding operational non-compliance, these aspects have been discussed by the EGCS sub-group during the development of the proposed EGCS guideline revisions with a view to being covered either by separate IMO guidelines or included as an appendix to the proposed EGCS guidelines amendments. It is anticipated that this aspect will be addressed by the sub-group, under the coordination of Norway, in a further submission to the IMO. The work will be held by correspondence and at the sub-group's meetings throughout this year, to allow submission to MEPC 71 (July 2017) or PPR5 (early 2018) at the latest.
- e. Following suggestion from the Netherlands it has been agreed to bring the issue of development of the EGR bleed-off (following the last IMO PPR 4 meeting) by correspondence, with a view to produce a submission to MEPC 71.

- f. Following suggestion from the rapporteur, the Work Package structure will be revised by the sub-group, and presented for endorsement of the ESSF Plenary in June.
- g. The Plenary requested also to assess the legal framework for scrubber discharges. This should be done by the Sulphur Committee (next meeting on 3/03, already included in the agenda - Water Discharges from Emission Abatement methods. EU Member States on acceptability of discharges into national waters. Compatibility with the Water Framework Directive (Directive 2008/105/EC). (update of table on MSs positions, IMO EGCS guidelines)
- h. The EGCS Report to the 7th Plenary meeting included, attached, the updated Report on the PRF Questionnaire exercise, summarizing and concluding on the whole questionnaire results, following from the consolidated replies of the EGCS sub-group, including further input provided by the EGCS sub-group members.

3.2. Work Package 7: EGCS (Sludge + Washwater + Bleed-off water)

- a. Germany presented the overview of the German Sampling & Analysis Study, conducted by the German Federal Maritime and Hydrographic Agency (BSH) on behalf of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).
- b. Results will be submitted to support legislative procedure on national and international level
- c. Reliable water sampling to achieve comparable results with other studies
- d. Timeline:
 - September 2016: project start
 - Mai 2017 – Mai 2018: sampling on board
 - December 2018: Final Report
- e. EGCSA provided an update on 2nd phase of the washwater sampling & analysis exercise, with further results expected before the end of 2017.
- f. 2nd phase makes use of the lessons learned and comments provided by the ESSF EGCS Sub-group to the 1st phase.
- g. Conclusions regarding both washwater sampling campaigns:
 - i. More shipowners are encouraged to get involved in both (German and EGCSA/EUROSHORE) sampling campaigns
 - ii. EGCSA and Germany agreed on possibility of sharing samples taken from ships in framework of their respective studies, for the sake of comparing results of their analysis (using slightly different methodologies)
- h. In addition to the two sampling campaigns mentioned in the points above, one other point became increasingly relevant in the context of EGCS washwater data collection – the Washwater Sampling guidelines, and the submission to IMO based on this initiative.
 - i. At the previous meeting sub-group decided to continue the work (under EGCSA coordination, and with EMSA support) with the objective to prepare the submission to MEPC 71 in view of possible harmonization in the approach of different sampling & analysis exercises, mostly in favour of the future comparability of results.
 - ii. On 23/02 the group agreed to work on a basis of the draft of a submission distributed on 20/02 with the intention of:
 - Sending a general INF submission with rationale to MEPC 71, and EGCSA/Euroshore sampling guidelines as an example (with a link to EGCSA website) - EU submission, with possible co-sponsors
 - Sending a detailed proposal to PPR5 (with suggested text, as Andy suggested 'extract' from EGCSA sampling guidelines, covering key parts of your document)

3.3. Work Package 9: Operational non-compliance scenarios

- a. Following submission from Norway to MEPC 69 (developed in cooperation with the sub-group) and as instructed by the Plenary, the sub-group launched a discussion on a submission to IMO, addressing operational non-compliance guidelines.

- b. Lars Christian Espenes (Norway), being coordinator of the work, prepared a first draft of the submission, which was distributed before the meeting. The sub-group provided general comments. The group will be working by correspondence.
- c. The US expressed interest in being involved in the consultation process.
- d. The scope agreed by MEPC69 was underlined to the sub-group as a fundamental guide to what should be considered acceptable by the sub-group. Any topic for amendment proposed outside the scope should be reconsidered by the sub-group. The underlined points below, as taken from MEPC69 Final Report should be regarded as the main scope reference for the ESSF work on the specific subject of EGCS accidental breakdown, instrument malfunction and temporary non-compliance.

“Committee agreed to include a new output on "Review of the 2015 Guidelines for Exhaust Gas Cleaning Systems (resolution MEPC.259 (68))" in the biennial agenda of the PPR Sub-Committee and the provisional agenda for PPR 4, with a target completion year of 2019.

In agreeing to the new output, the Committee also agreed that the scope of the work under the output would be as follows:

- a. *further refinement of the EGCS Guidelines, including clarification of the terms "EGC system" and "EGC unit"; PAH (polycyclic aromatic hydrocarbons) monitoring; emission testing; approval of scrubbers in accordance with Schemes A and B;*
 - b. **development of specific guidance on accidental breakdown, instrument malfunction and perceived temporary non-compliance and transient performance of EGCS; if appropriate; and**
 - c. **development of consequential amendments to the 2009 Guidelines for port State control under the revised MARPOL Annex VI (resolution MEPC.181(59)).**
- e. As explained by coordinator by e-mail, the document will be introduced with the view of having a short discussion on the paper (general), and then work can be developed on the text intersessional up towards the deadline.

3.4. Work Package 8: Proposed Amendments to the 2015 EGCS Guidelines

- a. As an attempt to put the large majority of the EC proposals for the Revision of the EGCS Guidelines, EMSA as Technical Secretariat to the sub-group, delivered a presentation including the main discussion points where agreement within the sub-group was still to be reached.
- b. The main proposals from the EC, notwithstanding being all representative of previous interventions by EMSA in earlier rounds of discussion, had all been consolidated and integrated in the contributions from the Commission to the finalization of the EGCS Guidelines revision work. The submission of the consolidated EC proposals has however taken place at the 16th round of comments, already towards finalization/conclusion. That in itself has brought a substantial challenge to the Coordination of the work and led to the need for further discussion at the 11th sub-group meeting. In addition, several sub-group members have requested clarifications on different aspects of the EC proposal.

EMSA presentation included a small chronology of the main relevant milestones in the EGCS Guidelines revision work:

Date	Milestone	
April 2015	Start of the Revision work – [1 st Round]	To make the Guidelines more user-friendly and to solve possible industry problems
April 2016	MEPC69 – Accepted new Unplanned Output [6 th Round]	Agreed on the Scope and defined clearly what should be the scope for the revision.
June 2016	Outcome of Industry “Splinter Group” [9 th Round]	Good conclusion on 10.2.1 Inconclusive PAH - Concerns on PAH onboard reliability Expectations for PAH developments given – no further developments
December 2016	Work closing towards submission to MEPC71 [16 th Round]	EC makes a consolidated contribution, following earlier inputs throughout the process
February 2017	Final Discussion [20 th Round]	Final discussion to prepare submission to MEPC71

- c. EMSA included as context information to the presentation some relevant passages from MEPC59/4/19 (GESAMP Advise on the first version of the EGCS Guidelines) with the following passages transcribed:
- i. *11 GESAMP points out that an environmental benefit in reducing SOx emissions to the atmosphere can only be achieved if the discharged washwater does not create further risks to the aquatic environment*
 - ii. *12 In the longer term, with more ships discharging EGC effluent in a wide variety of harbour configurations, there is a potential risk to the environment. ...*
 - iii. *... generalised marine environmental risk assessment should be developed, ...*
 - iv. *Results of such a risk assessment could be used to convince administrations that the practice poses no risk to the marine environment or, alternatively, that some restrictions on discharge may be required to reduce the risk to the environment.*
 - v. *10 The washwater guideline lacks any recommended procedures in the event of the levels of the environmental quality parameters being exceeded. The crew therefore has no information as to an appropriate course of intervention. This is the most urgent aspect that in the consideration of GESAMP needs to be addressed in order to make the guideline work.*
- d. In addition to the above, the presentation included arguments that aimed to clarify and support the contributions from the EC to the 16th and later rounds of correspondence work on the EGCS Guidelines. Some background generic considerations were also outlined in the presentation to support the discussion and to put all EC contributions into context, clarifying their contents, reach and objective in the wider context of the EGCS Guidelines Revision work:
- i. *Increased number of EGC systems installed – around 90 installations reported to GISIS database¹*
 - ii. *EGCS Guidelines used for the wider stakeholders' community on aspects that go beyond certification.*
 - iii. *Guidelines Open for further continuous revision of existing criteria, based on evidence-based information. No such information has yet been made available to IMO.*
 - iv. *Concerns over local limitations on EGCS water discharge as a result of non-existing environmental risk/ impact assessment for critical areas.*
 - v. *Reports on no water treatment plants being considered in current open-loop systems²*
 - vi. *Further information needed to different stakeholders – need for consolidated information on EGCS systems. (It is noticeable a remarkable amount of non-technically founded conclusions – some ruling out EGCS on the basis of insufficient knowledge.*
- e. The background above deserved some discussion with a significant number of sub-group members sharing different views on the matter, remarkably on the EGCS in open loop operation, where water treatment was mentioned to be in place by many shipowners/operators³. Further to that the general “negative” tone of the above listed considerations was also contested without however developing any further confrontational views on the matter. The discussion that followed was constructive and allowed for an agreement on the relevant outstanding points for finalization of the EGCS Guidelines revision.
- f. Resulting from a late work session the group managed to reach a compromise on the principles of the submission on revision of the EGCS guidelines, and with that, a decision was possible to proceed with a submission to the IMO MEPC 71 Committee. After extensive 20 rounds of consultations over 2 years of intensive work – by correspondence and at the meetings, the draft submission to IMO MEPC 71 has been finalised.

¹ More than 90 installations are actually known as EGCS Manufacturers report a much higher number of sold units. The sub-group agreed that in the future the actual communication of data to GISIS is a topic that needs to be addressed. It should represent clearly the number of EGCS installations to date.

² No production of sludge in EGCS operating in open-loop was a conclusion taken from the ESSF EGCS contribution/reply to the PRF Questionnaire.

³ There seems to be a bit conflicting information when comparing the allegations from shipowners with the conclusions from the PRF Questionnaire report by the EGCS sub-group. At a later stage this might be a point to revisit and understand in which cases and situations sludge is not being generated (i.e. no water treatment is being processed).

- g. This is going to be an EU Submission, with possible co-sponsors (such as the US, IACS, Interferry)
- h. The final draft submission and annex with amendments have been sent by Jorma Kämäräinen from Finland (coordinator) on 2/03/2017.
- f. The table below lists the main areas where discussion was focused during the meeting and where agreement in principle was achieved with great cooperation and spirit of compromise:

Issue	Substance	Purpose
<u>Washwater</u> <u>Vs</u> <u>Discharge</u> <u>Water</u>	Proposal of EC for a definition of Functional Streams.	<ul style="list-style-type: none"> Not strictly for “regulating”, also for “Transparency” Discharge Water functional concept is kept. To keep the whole functional diagram visible. To assist further future interpretation, guidelines development, criteria revision. Consistent with Appendix 3 <p>CONCLUSION FROM DISCUSSION:</p> <ul style="list-style-type: none"> “Discharge Water” was agreed to be the terminology that better reflected the nature and applicability of the discharge water criteria in the EGCS Guidelines. Corresponding amendments to the relevant sections were then agreed. The term “washwater”, representative of a relevant process stream within the EGCS, was however also agreed to be kept as a definition and in the relevant sections. It was agreed to define washwater as <i>Cleaning medium brought into contact with the exhaust gas stream for the reduction of SOx</i>
<u>Definitions</u> <u>(expanded 2.3)</u>	Proposal to include definitions	<ul style="list-style-type: none"> Not strictly for “regulating”, also for “Transparency” Concepts brought to the Definitions are not making new requirements. If used in the text terminology should be defined. To bring the Guidelines to common practice. Other EGCS technologies still covered with by the “relevant” applicable criteria. <p>CONCLUSION FROM DISCUSSION:</p> <ul style="list-style-type: none"> Following discussion the sub-group agreed to the proposal for having expanded definitions into 2.3 also with the concepts of “open-loop” and “closed loop” operation, “bleed off water”, amongst others)
<u>Closed Loop</u> <u>and</u> <u>Temporary</u> <u>stored EGCS</u> <u>Waters</u>	Proposal to include Section 10.1.7 Discharge from Temporary Storage of EGCS waters	<ul style="list-style-type: none"> PAH criteria existing not suitable for closed-loop discharges or for discharge. Clear need for harmonization in monitoring discharge from EGCS water that has been temporarily stored, and cannot be related to engine power rating. Fundamental principle – text open for contributions. <p>CONCLUSION FROM DISCUSSION: Following discussion the sub-group agreed to keep the proposed new section 10.1.7:</p> <p>10.1.7 Discharge water from Temporary Storage</p> <p><i>10.1.7.1. Any discharge water originating from the EGCS and discharged overboard following temporary storage within any tank designed for that purpose and featured in the ETM-A or ETM-B should meet, independent of any flow rate, the following discharge water criteria:</i></p> <ul style="list-style-type: none"> <i>pH</i> Section 10.1.2 <i>PAH</i> Maximum of 50 µg/L PAHphe (phenanthrene equivalence) before any dilution for control of pH, <i>Turbidity</i> Not greater than 25 FNU (formazin nephelometric units) or 25 NTU (nephelometric turbidity units) or equivalent units, before any dilution. <p><i>10.1.7.2 When demonstration of compliance with the provisions contained within this section is not possible, the water intended for discharge should be considered a wet residue.</i></p>

3.5. Proposal for revision of the Work Packages

Similarly to the previous EGCS sub-group meeting, there was no time left in the meeting to discuss this important topic. The discussions on the finalization of the different submissions to IMO (EGCS Guidelines revision, Washwater Sampling Guidelines and EGCS Accidental Breakdown, instrument malfunction and transient behaviour, has taken almost the whole meeting, leaving no time left to address the revision of EGCS Work Packages.

4. **Conclusions/recommendations/opinions & Next Steps**

4.1. Report from the ESSF 7th Plenary Meeting

- a. From the report of the ESSF 7th Plenary Meeting it could be concluded that:
 - i. The Plenary welcomed and supported the finalization of the submission to the IMO on revision of the "(2015) Guidelines for Exhaust Gas Cleaning Systems (resolution MEPC. 259(68))", having agreed to have a new session of discussion for finalization of the draft submission at the EGCS meeting reflected in the present minutes.
 - ii. Agreement from Plenary was achieved regarding the proposed way forward with EGCS accidental breakdown, instrument malfunction and transient behaviour with Guidance to be developed on this regard, with a view for submission to MEPC 71 (July 2017) or PPR5 (early 2018) at the latest. Following the discussions at the meeting it was concluded that PPR5 would be the most likely possibility.
 - iii. Work Package structure to be revised by the sub-group, and presented for endorsement of the ESSF Plenary in June.

4.2. Work Package 7: EGCS (Sludge + Washwater + Bleed-off water)

- a. Conclusions regarding both washwater sampling campaigns:
 - i. More shipowners are encouraged to get involved in both (German and EGCSA/EUROSHORE) sampling campaigns
 - ii. EGCSA and Germany agreed on possibility of sharing samples taken from ships in framework of their respective studies, for the sake of comparing results of their analysis (using slightly different methodologies)
- b. Next Steps:
 - i. Revised draft of the INF submission to be distributed to the group for comments
 - ii. 20/03 (at the latest) – final draft sent to COM to launch interservice consultations
 - iii. Council (Shipping Working Party) consultations
 - iv. Getting confirmations from potentially interested co-sponsors
 - v. Deadline for submission to the IMO of non-bulky documents – 28/04/2017
 - vi. Continuation of work on preparation of submission to IMO PPR5 meeting (in 2018)

4.3. Work Package 9: Operational non-compliance scenarios

- a. Next steps:
 - i. 1st consultation round (draft + consultation matrix sent by the coordinator on 7/03/2017 with a deadline for comments by 4/04/2017).
 - ii. Submission to PPR5 (early 2018)

4.4. Work Package 8: Proposed Amendments to the 2015 EGCS Guidelines

- a. Next steps:
 - i. Text of the submission and annex (proposal for revision of the EGCS guidelines) will be sent for the Interservice consultations,
 - ii. Council consultations (at least 2 SWP meetings)
 - iii. Getting confirmations from potentially interested co-sponsors
 - iv. Deadline for submission to the IMO – 31/03/2017

4.5. Revision of Work Package structure

The need for an update on the EGCS sub-group Work Package table has been reiterated. No time has been possible to work on this important task. Several opinions and recommendations have stemmed from the sub-group members giving indication to have the Work Package structure more adapted to the actual work of the EGCS sub-group.

5. Next meeting

Next meeting provisionally scheduled for 11APR2017.



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR MOBILITY AND TRANSPORT

Directorate D - Waterborne
D.1 - Maritime transport & logistics

European Sustainable Shipping Forum
11th meeting of the Sub-Group on Exhaust Gas Cleaning Systems (EGCS)
Brussels, 23 February 2017
Albert Borschette Conference Centre, room AB/2C
(Rue Froissart 36, 1040 Brussels)
DRAFT AGENDA

08:30-09:00	Registration
09:00	Welcome and opening <u>EGCS Sub-Group:</u> <ul style="list-style-type: none"> - Adoption of Minutes of the previous meeting - Adoption of the Agenda DG MOVE
09.15	Report from the ESSF Plenary meeting, 24 January 2017 <i>Rapporteur (Mark Penfold, ABS)</i> <i>Discussion + group's recommendation(s) for a way forward</i>
9.30	Work Package 7: EGCS (Sludge + Washwater + Bleed-off water) The outline and current status of the scrubber washwater study Magnus Kaste (Maritime and Hydrographic Agency - BSH) <i>Discussion + group's recommendation(s) for a way forward</i>
10.00	Work Package 7: EGCS (Sludge + Washwater + Bleed-off water) 1) Update on the sampling campaign 2) Washwater sampling guidelines – draft submissions to IMO <i>EGCSA (Donald Gregory)</i>
10.30	<i>Coffee break</i>
10.45	Work Package 9: Operational non-compliance scenarios <ul style="list-style-type: none"> - Introduction to a proposal - Discussion about a method of work and a timeline Lars Christian Espenes (Norwegian Maritime Authority) <i>Discussion + group's recommendation(s) for a way forward</i>

11.30	Work Package 8: Proposed Amendments to the 2015 EGCS Guidelines - Introduction <ul style="list-style-type: none"> - Revised timeline - - Presentation of consolidated set of proposals – results of 19th round <i>Trafi (Jorma Kämäräinen)/DG MOVE</i>
11.45	Work Package 8: Proposed Amendments to the 2015 EGCS Guidelines – Discussion and Drafting <ul style="list-style-type: none"> - Discussion and drafting - Proposals for amendments to the 2015 Guidelines on Exhaust Gas Cleaning Systems – results of correspondence group in view of submission to IMO. - Discussion and preparation of consolidated submission
12.30	<i>Lunch break</i>
13.45	Work Package 8: Proposed Amendments to the 2015 EGCS Guidelines – Discussion and Drafting (continuation)
15.30	<i>Coffee break</i>
15.45	Work Package 8: Proposed Amendments to the 2015 EGCS Guidelines – Discussion and Drafting (continuation)
16.15	Proposal for revision of the Work Packages Chair/EMSA/ Rapporteur
16.45	AOB Concluding remarks <ul style="list-style-type: none"> - List of follow-up actions - Need for correspondence group - Next meeting
17:00	End of meeting



European Sustainable Shipping Forum

6th Plenary Meeting

Brussels, 24 January 2017

Submission from ESSF sub-groups

Progress report on the work of the sub-group on EGCS

1. Submission from:

ESSF sub-group on Exhaust Gas Cleaning Systems (EGCS)



2. Sub-group recommendation(s) to the Plenary:

1. To **note** the progress in general of the EGCS sub-group, item 6.1 to this report;
2. To **approve** the revised timeline for finalization of the IMO submission paper on proposed amendments to the "(2015) Guidelines for Exhaust Gas Cleaning Systems (resolution MEPC. 259(68))", item 4 to this report;
3. To **note** the further progress in development of the above mentioned submission (item 6.2 to this report) and to **recall**:
 - a. the invitation to the members of the Plenary to **consider** co-sponsoring of the IMO submission, item 6.3 to this report;
 - b. the progress on cooperation with the U.S. EPA, item 6.4 to this report;
4. To **note** the information on alternative EGCS technologies; item 6.5 to this report;
5. To **note** the final Report on the results of the questionnaire regarding waste from scrubbers, item 6.6, and Annex 2 to this report;
6. To **note** the progress with the EGCS washwater sampling campaigns being undertaken by EGCSA/EUROSHORE and Carnival, item 6.7 to this report; to **encourage** sludge sampling analysis as a second step; and to **support** the development of IMO submission papers;
7. To **endorse the proposed way forward** on development of the operational non-compliance guidelines and potential amendments to the EGCS guidelines and/or the 2009 MARPOL Annex VI port state control guidelines, item 6.8 to this report;
8. To **note** the progress on development of draft guidelines for discharge of EGR bleed off water, item 6.9 to this report; and
9. To **endorse** further activities, item 6.10 to this report.

3. Required action(s) to be considered by the ESSF Plenary based on sub-group recommendation(s):

See above.

4. Timing of required action(s) in view of upcoming deadlines and critical requirements:

It is to be noted that the dates for the 71st meeting of the IMO Marine Environment Protection Committee (MEPC 71) have been moved from 8-12 May to 3-7 July 2017 and hence the bulky

document submission deadline is now 31 March 2017. With reference to sub-group recommendation 2.2 above, Plenary is requested to note the intention of the EGCS sub-group to communicate the final draft submission of the "*Review of the 2015 Guidelines for Exhaust Gas Cleaning Systems (Resolution MEPC. 259(68))*" to Plenary, by correspondence, on or before 17 February 2017 to account for COM internal procedures and approval by the Shipping Working Party in time to meet the IMO deadline.

5. Summary of the issue and possible alternative solution(s)

N/A

6. Background information

1. General

Since the last report to Plenary, the sub-group on EGCS has continued its work under the general mandate item 1.2 of the ToR with a view to facilitating the take up of EGCS technologies as alternative emission abatement technologies for compliance with Directive 1999/32/EC, as amended. The sub-group met on 15th September 2016, together with inter sessional correspondence, to further progress the work package items. It should be noted that the workload of the sub-group has increased significantly, in particular regarding the intensification of the washwater sampling and analysis campaigns and the four potential IMO submissions that are in progress. Specific background information to these activities and the sub-group recommendations are detailed below.

2. WP8. Verification and approval of pH criteria – Amendment of the 2015 EGCS Guidelines.

Plenary will recall that further amendments to the IMO EGCS guidelines is not currently a PPR agenda item and that the sub-group had developed a paper for unplanned output to MEPC 69, ref. MEPC 69/19. The MEPC committee approved this unplanned output for the MEPC agenda for the next biennium, at the 69th session and outlined the scope of work for the EGCS guideline revisions to be considered together with matters associated with operational non-compliance (see 6.8 of this report). Plenary will further recall the detailed information on the development of the proposed EGCS guideline amendments submitted as paper 7b to the last Plenary session in June 2016.

In accordance with 2.2.2 of the EGCS sub-group ToR and under the coordination of Finland, the sub-group has continued development of the draft amendments to the IMO (2015) EGCS guidelines to facilitate consistent interpretation and application of same. This has included a total of seventeen discussion rounds, the last of which was concluding at the time of preparation of this progress report. Numerous topics have been discussed at length (refer to the aforementioned paper 7b) and in some areas there remain diverging views and a lack of detailed reference information, for example with respect to washwater PAH and turbidity limits and measurement techniques, nitrate sampling and reporting, system terminology, transient non-compliance, etc. There also remains some concern that the proposed amendments should not be seen as being outside the IMO scope of work.

The ESSF Plenary is invited to note the progress on this topic and to note and support the timeline for preparation of the final IMO submission detailed under item 4 of this report.

3. Co-sponsoring of the IMO submission paper concerning draft amendments to the IMO 2015 EGCS guidelines.

As previously reported, rules regarding co-sponsoring say that all third parties interested to co-sponsor submission of a paper lying within the EU competence, as in the case of the revision of the IMO EGCS Guidelines, should express their intention in advance. Information about this will be communicated to the Council, gathering all EU Member States, together with the final draft. After the paper having been agreed amongst all Member States (possibly revised by them), all interested co-sponsors will then be asked whether they are still interested in co-sponsoring the submission. If so, they will be listed in the heading of the submission.

Of note on this matter is that only IMO members or Non-Governmental international Organisations (NGOs), which have been granted consultative status within IMO, can co-sponsor submissions to IMO. Such ESSF members are requested to kindly consider co-sponsoring the submission.

4. Cooperation with the U.S. EPA (Environmental Protection Agency)

Plenary will recall previous intention for the United States Environmental Protection Agency (EPA) to engage in a dialogue with the EU regarding the proposed IMO EGCS guideline amendments. We are pleased to report that the EPA have joined the EGCS correspondence group and have provided valuable input to the discussions. It is the EGCS sub-group's and Commission's belief that cooperation, regardless of whether it will result in a potential joint submission or simply in a consultation of the draft, will have a positive effect on avoidance of duplicated work by the U.S. and EU on this matter. The ESSF Plenary is invited to note the further progress on this topic.

5. Alternative EGCS Technologies and Innovation

The opportunity was taken at the 10th EGCS sub-group meeting to invite speakers from two parties that are involved in projects utilising alternative EGCS technologies. Interesting presentations were given on the Ecospec cSOx plasma scrubbing pilot project on the “Transtimber” and the Ionada membrane scrubbing technology. Whilst many of the requirements in the existing IMO guidelines for EGCS systems may be considered generic and applicable to all EGCS systems, it was noted that the guidelines were originally developed around established open and closed loop wet scrubbing systems. Hence the full applicability to new, or novel alternative approaches, in particular with respect to the chemistry of the SOx reduction process, requires careful consideration. The evaluation and support of alternative EGCS technologies is foreseen as an EGCS sub-group activity and may necessitate the development of specific guidance for approval and implementation. The ESSF Plenary is invited to note the activity on this topic.

6. WP2. EGCS Waste handling - Cooperation with the PRF Sub-group.

Plenary will recall that EMSA have coordinated responses from the EGCS sub-group on waste from EGCS. This has been a useful exercise in allowing debate within the group where divergent opinions exist and allowing refinement of the responses over a number of rounds. Information has been provided to the PRF sub-group clarifying closed-loop and open-loop concepts, quantification of typical sludge generation rates, a proposal for hazardous classification of wet scrubber sludge and clarifications on the distinctions between open-loop operation and process water in closed-loop operation with bleed off water held in a dedicated tank. Following the sub-group meeting in September, the report has been further refined and is attached for information, as Annex 2 to this report. The ESSF Plenary is invited to note the final version of the report.

7. WP7. - Washwater discharge criteria

Plenary will recall the detailed information on the EGCS washwater sampling protocol and campaign provided to the January 2016 Plenary session as paper 6b.

EGCSA in association with EUROSORE have undertaken a washwater sampling campaign from installed EGCS units, initially on 8 ships but intended to extend to 30 ships, covering ‘open loop’, ‘closed loop’ and ‘hybrid’ configurations. The work is the most comprehensive investigation of EGCS washwater discharges undertaken by the maritime industry so far. The analysis of the results achieved thus far is still ongoing but has shown that the quality of the EGCS washwater discharges appears to be well within the limits set by the IMO EGCS guidelines (MEPC.259(68)), as referenced by 1999/32/EC, as amended, for alternative emission abatement technologies.

Plenary will also recall that a parallel sampling campaign is being undertaken by Carnival on 40 cruise ships fitted with ‘open loop’ scrubbers and preliminary results also show washwater discharges well below IMO limits. Carnival has also experimented with further refinement of the EGCS washwater system arrangements with additional post EGCS washwater filtration. The sampling campaign,

development and analysis will continue and may be incorporated in the EGCSA/EUROSHORE results in due course.

Germany has also given a brief note on the status of their Sampling & Analysis project, having offered to present the overview of the project to the next ESSF EGCS sub-group meeting.

Having in mind many different on-going initiatives, the EGCSA Washwater sampling & analysis protocol was suggested to be used as a technical guidance document under the title “Washwater Sampling and Analysis Guidelines”, by EGCSA to the sub-group at the last meeting. Following the suggestion from one of the sub-group members, and the general agreement of the sub-group, the subject document should be further improved in order to produce a submission to IMO.

The objective for the work shall be, as far as reasonably possible, the harmonization in the approach of different sampling & analysis exercises, mostly in favour of the future comparability of results. In support of this work package item the intention to submit two papers to IMO is to be noted. One submission is intended to cover the latest version of the “Washwater Sampling and Analysis Guidelines” developed in the EGCS sub-group as an INF paper and a further (non-bulky) submission requesting IMO to consider tasking the PPR sub-committee to develop IMO washwater sampling and analysis guidelines. If successful, it is possible that the sampling guidelines developed in the EGCS sub-group could form the basis of an IMO Circular, thereby encouraging uniform international application of sampling protocols and encouraging the collection of further data.

The ESSF Plenary is invited to note the progress on this topic and support the development of submissions to the IMO.

8. WP9. Operational non-compliance scenarios.

Plenary will recall that the EGCS sub-group had provided feedback to the Norway submission to MEPC 69, ref. MEPC 69/19/2, on operational non-compliance scenarios such as accidental breakdown of the EGCS, monitoring system failure and transitory non-compliance. The MEPC committee approved this unplanned output for the MEPC agenda at the 69th session and outlined the scope of work for the operational non-compliance guidelines to be considered together with EGCS guideline revisions (see 6.2 of this report) and potential amendments to the 2009 MARPOL Annex VI port state control guidelines.

Furthermore, these aspects have been discussed by the EGCS sub-group during the development of the proposed EGCS guideline revisions with a view to being covered either by separate IMO guidelines or included as an appendix to the proposed EGCS guideline amendments. It is anticipated that this aspect will be addressed by the sub-group, under the coordination of Norway, in a further submission to the IMO. The work will be held by correspondence and at the sub-group's meetings throughout this year, to allow submission to MEPC 71 (July 2017) or PPR5 (early 2018) at the latest. The ESSF Plenary is invited to note the progress on this topic.

9. Exhaust Gas Recirculation (EGR) bleed off.

Plenary will recall that the EGCS sub-group provided feedback to Denmark on their information paper, ref. PPR 3/INF.4, on EGR bleed off water. It is to be noted that the IMO PPR subcommittee further progressed this agenda item as draft guidelines for the discharge of EGR bleed off water which will be considered by MEPC 71. The ESSF Plenary is invited to note the progress on this topic.

10. Further activities.

The extensive efforts with the proposed amendments to the IMO EGCS guidelines undertaken by the EGCS sub-group, in both the sub-group meeting and by correspondence, represent the most substantive activity of the EGCS sub-group since the last Plenary session. The intention for the next period is to return focus to the residue and washwater sampling campaign (items 6.6 and 6.7 to this report), finalize the ongoing IMO submission papers and assess required activities for the outstanding existing work packages (updated work package table attached as Annex 1 to this report). It has been recognised that the existing work package items do not accurately reflect the current and foreseen sub-group activities. Therefore it is the intention to develop a revised list of proposed work packages

within the sub-group for plenary endorsement at a future session. The ESSF Plenary is invited to endorse this approach.

The next meeting of the EGCS sub-group is planned for 23 February 2017.

List of Annexes:

[Annex 1](#) – Work Package Table EGCS subgroup – updated January 2017

[Annex 2](#) – Report on the consolidated replies to the PRF Directive questionnaire

ANNEX 3 – Work Package Table (updated following 11th sub-group meeting – 15FEB2017)

Sub-Group: EGCS (15 February 2017) – updated after ESSF EGCS 11 th meeting						
Agenda Item	WP	Work-Package Title	Coordinator	Members	Expected Deliveries	Comments/Milestones/Deadlines
Identified barriers hampering scrubbing technology take-up	1	Dry scrubbing technology	-	-	No further work has taken place on WP1 since the first EGCS sub-group meetings. Continuation of the Work package to be re-evaluated on the basis of new contributions to be made.	No developments to report following the 11th sub-group meeting.
	2	EGCS waste handling (see WP7 for washwater)	EGCSA	ESPO LR/IACS EUROSHORE	<ul style="list-style-type: none"> Additional information to be gathered/compiled on sludge composition and H₂S – Sampling & Analysis exercise on EGCS sludge (Need to promote consolidated table with information on EGCS waste, taking into account different technologies and operational aspects) Information to the ESSF PRF subgroup as contribution to the revision of the PRF guidelines INF paper to IMO (PPR3) on EGR bleed-off <u>submitted</u>. 	<ul style="list-style-type: none"> Questionnaire sent attached to the EGCS Progress Report to Plenary (see Annex 2) Final Report with consolidated replies on EGCS waste submitted to the PRF sub-group.
Financing Opportunities (Business Case)	3	Fuel oil quality and availability	CONCAWE	EMSA	<ul style="list-style-type: none"> IMO+CONCAWE Sulphur Monitoring & Survey Reports CO₂ saving potential reflected in the report for Plenary (4 Dec) 	<p>No further actions required. (Note: Need to discuss the continuation of WP3)</p> <p>NOTE: Currently Fuel oil availability is the subject of an ongoing debate in IMO to which different studies are concurring (to support decision on the possible 2020/25 0,50% global Sulphur cap</p>

ANNEX 3 – Work Package Table (updated following 11th sub-group meeting – 15FEB2017)

Addressing barriers hampering scrubbing technology take-up	4	Approval aspects related to EGCS in the MED, IMO EGCS Guidelines and Directive	Rapporteur UK MCA	EGCS SG	<ul style="list-style-type: none"> IMO BDN submission to PPR3 (following proposed amendment to the BDN in MEPC 67/12/7). ETM Guidance (WARTSILA) – to be checked with new WARTSILA representative – Need to define what to expect from WP4 	No further action expected with regards to Bunker Delivery Note.
	5	Trials vs commissioning applying rules (see WP4)	Rapporteur EC/EMSA	EGCS SG	See above deliveries (WP4)	See above (WP4)
	6	Possibility of using HFO during commissioning (see WP4&5)	Rapporteur EC/EMSA	EGCS SG	See above deliveries (WP 4)	See above (WP4)
	7	Washwater discharge criteria (pH value) (see also WP2)	EC/EMSA	EGCSA,ESP O MS,PA	<ul style="list-style-type: none"> Washwater study following from ongoing sampling & analysis campaign, coordinated/led by EGCSA/EUROSHORE initiative Additional information being compiled on water quality standards and requirements. Member States (MS), Port Authorities (PA) and DG-ENV WFD WGC involved. Table with EU ECA MS position with regards to EGCS washwater discharges in ports (task deferred to the ESSF Implementation – now possibly to ESSF Air Emissions – to be checked as part of the Objectives of the Air Emissions sub-group) 	<u>WASHWATER SAMPLING & ANALYSIS</u> <ul style="list-style-type: none"> On-going work joint stakeholders exercise with the sampling & analysis (<u>two ongoing washwater sampling & analysis campaigns</u> – one with EGCSA/EUROSHORE and another with CLIA/CARNIVAL Corp. Washwater Sampling & Analysis Guidelines – decision taken at the 10th sub-group meeting to develop a submission to IMO MEPC71 – sending EGCSA reference and asking MEPC to instruct PPR to further work on it. Germany washwater data collection campaign presented.

ANNEX 3 – Work Package Table (updated following 11th sub-group meeting – 15FEB2017)

	8	Verification and approval of pH criteria according to 10.1.2.1ii externally from the ship	TRAFI	EC/EMSA EGCSA + Members LR, DNV	Proposal for amendments to the 2015 EGCS Guidelines – Submission to IMO for an unplanned output for MEPC 69 + continuation of work in preparation of submission to MEPC70.	<u>PROPOSAL FOR AMENDMENTS TO 2015 EGCS GUIDELINES</u> <ul style="list-style-type: none"> Proposals for amendments to 2015 EGCS Guidelines (RES. MEPC.259 (68)) discussed following results from correspondence work. Topics discussed at the 11th sub-group meeting: <ul style="list-style-type: none"> Definitions (section 2.3 with new proposals) Terminology “Washwater” vs “Discharge Water”. New section proposed 10.1.7, on discharges from Holding Tanks. All agreements in principle achieved at the 11th EGCS sub-group meeting – work to be further continued towards detailed proposal..
	9	On operational non-compliance scenarios (see WP4,5&6)	Rapporteur	EGCS SG	<ul style="list-style-type: none"> <u>Accidental breakdown/Instrumentation malfunction</u> provisions for 2015 EGCS Guidelines, <u>Operational non-compliance</u> to be considered as proposed amendments to be included in the IMO Guidelines for Port State Control under MARPOL Annex VI. 	<u>ACCIDENTAL BREAKDOWN, INSTRUMENTATION MALFUNCTION & OPERATIONAL NON-COMPLIANCE</u> <ul style="list-style-type: none"> Document <i>Draft Guidance on how to handle accidental breakdown, instrumentation malfunction and perceived non-compliance</i> commented by correspondence and new unplanned output requested to MEPC69 (in document MEPC 69/19/2 submitted to IMO). It is important to make the decision on where to include Accidental Breakdown, Instrumentation Malfunction & Operational Non-Compliance related provisions. Should these be within the EGCS Guidelines or on a separate document or even, as an alternative, as an Appendix to the EGCS Guidelines. NO is the Coordinator – having submitted document MEPC 69/19/2 – FI is coordinating the amendments to the EGCS Guidelines. Need to ensure adequate articulation in order to decide where the important relevant provisions on this subject should end up.
	10	Safe NaOH handling/logistics	Clean Marine	EGCS SG	Information on best-practices being gathered/compiled	On-going work - joint stakeholders exercise with technical input from EGCS SG members