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Background

HELCOM 35-2014 adopted the Terms of Reference (ToR) of the Correspondence Group between HELCOM Contracting Parties concerning enforcement of the new limits for SOx emissions entering into force in the Baltic Sea from 1 January 2015, which started its work in May 2014 under the lead of Sweden.

HELCOM MARITIME 14-2014 amended the Terms of Reference of the Correspondence Group concerning enforcement of the more stringent limits for SOx emissions (HELCOM CG SECA) to include issues regarding scrubbing technology and associated legislation. The meeting agreed that the SECA Correspondence Group should use November-December 2014 to get some preliminary results regarding scrubbing technology and associated legislation. The CG has continued intersessional work during 2015 under the lead of Sweden.

Action required

The Meeting is invited to consider the attached final report of HELCOM CG SECA concerning enforcement of the new limits for SOx emissions that entered into force in the Baltic Sea in January 2015 and decide as appropriate.

ENFORCEMENT OF THE MORE STRINGENT LIMITS FOR SOx EMISSIONS (HELCOM CG SECA)

Report of the Correspondence Group

Submitted by Sweden

Introduction

The HELSINKI COMMISSION at its 35th session established a Correspondence Group, HELCOM CG AIRBORNE, between HELCOM Contracting Parties and Observer organisations, under the Swedish coordination, concerning enforcement of the more stringent limits for SOx emissions that entered into force in 2015.

The group has representation from the following Contracting Parties

DENMARK	LATVIA
ESTONIA	LITHUANIA
EUROPEAN COMMISSION	POLAND
FINLAND	RUSSIAN FEDERATION
GERMANY	SWEDEN

and the following HELCOM Observer organisations in consultative status:

BALTIC PORTS ORGANIZATION (BPO)

EUROPEAN COMMUNITY SHIPOWNERS' ASSOCIATION (ECSA)

EUROPEAN DREDGING ASSOCIATION (EuDA)

The list of participants can be found in **Annex 1** to this report.

Terms of Reference (ToR)

According to the decision of HELCOM MARITIME 14 the Group's ToR has been amended to include matters related to exhaust gas cleaning technology and associated legislation. In line with the revised ToR the Correspondence Group is instructed to carry out initial exchanges in 2014 and more in-depth work 2015-2016 in order to:

1. Carry out general information exchange regarding implementation of MARPOL Annex VI SECA regulations;
2. Provide input to a joint HELCOM enforcement actions based on systematic evaluations and the objective of achieving efficient and cost effective enforcement within the SOx Emission Control Area (SECA), including:

- considering follow-up of observed violations - i.e. by notifying the next port through port state control (PSC) or other means of contact;
- samplings of fuels;
- considering possible joint, cost effective aerial surveillance or surveillance by ground based monitoring facilities including common standards;

3. In order to ensure a harmonized application, exchange views on the use of exhaust gas cleaning technology and consider:

- measures and precautions to be taken when ships exhaust gas cleaning systems are not operating accordingly or when the equipment is damaged, with the aim to address the problem in IMO;
- measures acceptable to the Contracting States to ensure compliance with MARPOL VI regulation 3-1.2, when the above situation occurs;
- environmental impacts and relevant regulations (international, European, regional, national or local) related to the discharge of wash water from Exhaust Gas Cleaning Systems (EGCS) into the Baltic Sea (international/territorial waters), estuaries and ports;
- management of waste generated by EGCS related legislation and other issues, e.g. composition of waste, port reception facilities, application of no-special-fee system, etc.;
- any possible conflict between provisions of MARPOL Annex V and Annex VI related to waste from scrubbers;
- a possible need for additional amendments of the IMO Guidelines adopted by MEPC.184(59) ”2009 Guidelines for Exhaust Gas Cleaning Systems” (approval of EGCS, wash water criteria, other) and the IMO Resolution MEPC. 219(63) 2012 “Guidelines for the implementation of MARPOL Annex V”;

4. Streamline the work closely with the activities already going on in the IMO, the European Commission (including ESSF and its sub-groups) and in Paris MoU;
5. Follow activities and developments at international level in the field of enforcement measures in other SOx ECA areas (North Sea, North America ECA).

In terms of working procedures the Correspondence Group will:

- be established for the period 2014-2016;
- carry out initial exchanges in 2014 and remaining matters 2015-2016;
- report to meetings of the HELCOM Maritime Working Group;
- be led by Sweden;
- be open to HELCOM Contracting Parties and Observers;
- as far as possible work via correspondence, but convene if need arises.

I. Methodology and general Comments

According to the ToR, once the SECA-requirements enter into force, the group shall continue its work by focusing on “collecting information on implementation, exchanging views and sharing experience, as well as identifying further actions to ensure correct implementation of the requirements and adjusting actions/procedures if needed”.

The group started its discussions on implementing process of SECA requirements at the end of May 2015 to allow enough time to collect necessary information and gain some experience. Information from Contracting Parties was collected by means of a questionnaire (see Annex 2) circulated to the group. Based on received answers a final report, prepared and approved by the group is submitted to the 15th meeting of the HELCOM Maritime Working Group (WG MARITIME).

Between November and December 2014, the group has carried out an exchange of views related to the use of exhaust gas cleaning technology and considered items listed in p. 3 of the ToR. Based on the results of the discussions an interim report has been prepared and circulated to the group and the HELCOM secretariat. The updated outcome of the group’s deliberations can be found in chapter IV of this report.

As previously, in accordance to the p.4 of the ToR, the work of the group was streamlined closely with the activities already going on in the IMO, the EU (including ESSF and its subgroups on implementation of the sulphur directive) and the Paris MoU. The group drafted a list of international groups working on the implementation and enforcement of sulphur regulations, and to take stock of these activities in order to avoid engaging in the same work (see Annex 3).

According to the p.5 of the ToR, the group shall follow activities and developments at international level in the field of enforcement measures in other SECAs (North American ECA and North Sea). Informal discussions, taken place with the colleagues from the United States and Canada, showed that more time was needed to summarise the existing experience and draw any conclusions. Therefore it was decided to continue discussions next year and present information about the experience gained in other SECAs in the next report of the Correspondence Group to the MARITIME Working Group.

Issues under consideration and results of the group's deliberations are reflected under each relevant chapter below.

II. Enforcement

Legislation

Most of the countries have not adopted any new additional legislation to enforce sulphur requirements, preparing instead new guidance/checklists for inspectors and other supporting documentation. One member of the group informed about ongoing revision of national system of sanctions and another member circulated preliminary information about revised national fines for infringements of MARPOL Annex VI requirements. Only in one country a new legislations is adopted, introducing "mandatory quality indicators for oil products, biofuels and liquid fuels". Some members of the group mentioned that from 1 January 2016 fuel delivered to a ship and used on board will be checked in accordance to the Commission Implementing Decision (EU) 2015/253 of 16 February 2015 laying down the rules concerning the sampling and reporting under Council Directive 1999/32/EC as regards the sulphur content of marine fuels. Adjustments will also be made in most EU member states to align national inspection procedures with the EU Sulphur Inspection Guidance.

Inspections and fuel samples

The group noted that all CP undertake inspections, which are carried out by port state control officers or inspectors of other competent authorities (Officers) in accordance with MARPOL requirements and Guidelines for PSC (Resolution MEPC.181 (59)). The inspections consist of documentation control, equipment checks, soundings and fuel samples. The following documents are normally checked: IAPP and IOPP certificates, Oil Record Book, bunker delivery notes (BDN), logbooks and records related to the fuel switchover before entering SECA, and records of navigational activities.

In some countries fuel samples are taken every time the inspection is conducted, in others only if inspection of documents indicates an infringement or non-compliance is suspected. One member of the group informed that fuel samples will become a part of inspections from the beginning of 2016. If applicable, the emission abatement methods are also controlled.

Since 1st of January 2015, the frequency of inspections and number of fuel samples taken on board vessels has increased, in most CP doubled, compared to the previous year. The samples are taken as close to the main engine as possible, usually from the service tank, in some cases also from return pipe and fuel filter. The number of samples taken by responsible officers during one inspection varies in CP from 1 to 3. From 1 of January 2016 inspectors in all CP will take 3 samples in each sampling point. One will be retained on board a ship and two taken ashore.

Samples are analyzed by accredited laboratories and in most cases it takes a couple of days (ranging from 1 to 7) to obtain the results. Only in one country it takes 1-2 hours. In few countries express analyses, that take about 6 hours, are performed. However, this costly method is only employed when there are clear grounds to suspect that non-compliant fuel has been used. The group agreed that whenever evidence

proving a ship's non-compliance is received after the ship has sailed from the port, reporting to the next port of call would be appropriate.

Officers in few countries use portable equipment that promptly gives an indication of sulphur content of the fuel used on board. The results provided by this equipment are indicative and do not substitute the results of laboratory analyses.

The group shortly discussed what value of sample analysis results should be used as a limit value indicating non-compliance and agreed that a distinction should be made between the technical incompliance and limits based on which an infringement can be pursued. All members of the group agreed that 0,11% sulphur content in fuel shows technical incompliance in line with the verification procedure of the Appendix VI of the MARPOL Annex VI. One member of the group was of the opinion that due to possible errors/inaccuracy of lab analyses 0,12% limit could be accepted as compliant.

Regarding the specific value on which legal actions against non-compliance should be taken the views varied. Some members of the group agreed that introducing a common limit value would be useful, while others were of the opinion that agreeing on a limit for taking actions against non-compliance would create a new "de-facto" limit, which is not the intention. Therefore it is up to the Contracting Party to decide, depending on the circumstances of each individual case.

The use of standard ISO 4259

The group briefly discussed practical implications related to the use of fuel verification procedure in line with the Appendix VI of the MARPOL Annex VI and the industrial standard ISO 4259. The group agreed that inconsistency between the standard and MARPOL verification procedure exists and that the IMO should discuss this matter further. Only one member of the group was positive to the use of ISO standard. The majority in the group preferred a uniform application of fuel verification procedure according to the Appendix VI of the MARPOL Annex VI in order to avoid conflicting interpretation of the results of analyses of sulphur content in marine fuel that may originate from the ISO 4259 standard.

THETIS-S database

Most EU Member States report the results of sulphur inspections to the THETIS-S in addition to national databases. The group, noting that the system is not yet fully functional, highlighted a number of advantages of the THETIS-S that are summarised below. The system:

- allows sending alerts about ships potentially violating the rules,
- allows following inspections done by other countries;
- assists states using the system to better target vessels for inspections and allows exchange of information about inspections, violations, sanctions, etc.;
- may also facilitate and harmonise the inspection procedures;
- allows linking data received during the inspections with fuel analyses data;
- helps to generate and print reports from sulphur inspections;
- will, if decided, allow handling similar information from other Paris MoU members which are not EU MS (Canada and Russia). By inclusion of data from Russia the whole Baltic Sea SECA area will be covered.

At the same time, the group agreed that some improvements should be made and highlighted the following shortcomings of the system:

- no statistic function;
- system works slowly;
- system requires excessive information inter alia: ship's tank capacity and amount of fuel in it, which is not always easy to provide;
- no possibility to record ships without IMO number;
- information on some ships may be missing after certain time;
- search of ships is somewhat complicated.

It was also suggested that certain functions of the system should be improved to allow quick and smooth reporting and handling of data. It was proposed to include in the THETIS-S front page one additional key:

"generate the annual report", which would be in accordance with article 7 of the Commission Implementing Decision EU 2015/253 of February 2015.

The majority agreed that THETIS-S is a good base for development of a targeting tool. At the same time, it was recognised that as long as a comprehensive set of data is not available, it is a challenge to develop a reliable targeting method.

One member of the group mentioned a new national and accessible to all inspectors database that was created to gather all relevant information related to sulphur inspections (including the name of the ship, the date and port where the sample was taken and also the results of the fuel analyses). The centralisation of reported data helped to facilitate inspections, to avoid repeated inspections of the same ship and will be used to develop a more risk-based inspection regime. Development of a national automated system for transmission of data is planned in at least two CP.

Remote surveillance methods

The group shortly considered other detection methods and agreed that a remote monitoring of air emissions from ships through joint aerial surveillance, or surveillance through ground based monitoring facilities would be useful to detect violations and monitor the compliance in the Baltic Sea. In a few countries the technology is under development and various projects are ongoing testing aerial and other surveillance methods. Ground based monitoring facilities (some of which use in-situ measurements and an optical remote sensing method) are used in at least three countries. One member of the group informed about recent developments and a newly established system of monitoring of sulphur emissions from ships using "sniffers". The sniffer technology is used at ground based monitoring facilities as well as on board small airplanes flying over major shipping lanes. It was also mentioned that the results of the sniffing measurements indicate a high level of compliance.

The group was further informed about ongoing projects to develop an automatic transmission of collected data to THETIS-S and/or IMDatE.

It was also recognised that further co-operation between HELCOM CP/other SECA countries, aiming at coordinating activities on remote sensing and developing common procedures for the evaluation and quality assurance of results is needed.

III. Violations and sanctions

Sanctions and penalties

In four countries no volitions were detected between 1st of January and 30th of June 2015. The number of violations detected during the same period in three other CP was 20 (based on results of fuel sample analyses) and 39 detected by remote sensing. According to the information received, the highest sulphur content of fuel oil that has been detected was 0,6%. Most cases of violations are still under investigation, and in one country all detected violations were reported to the prosecutor.

Sanctions and penalties are introduced in all CPs. Five countries employ administrative fines for violation of sulphur requirements and four countries use criminal sanctions, when the size of the penalties is defined by the court on a case by case basis. Fines can be imposed for use of non-compliant fuel by a ship, for delivery of non-compliant fuel to a ship (sulphur content in excess of values claimed in the bunker delivery note), for deficient reporting by marine fuel suppliers and for deficiencies in documentation and fuel samples. The size of fines is determined taking into account the scope of infringement, financial gains from infringements and their repeatability. At present the size of fines ranges from 350 to 57 000 EUR.

The system that relies on administrative sanctions allows increasing fines for repeated infringements and also depriving those responsible for violation of economic benefits of infringements. This praxis is used in most countries, with one exception, where the national legislation does not support increasing fines in cases of repeated infringements, allowing instead inspectors to decide on the level of penalty in given

limits. The system of criminal sanctions often does not accommodate a possibility to increase fines for repeated infringements.

Last year the group discussed the advantages of these two systems and some members mentioned that penal sanctions have proven to be inefficient with almost no infringements prosecuted and that the review of that system was under consideration. In one CP a revision of national penal system is in process and a proposal for the new legislation is expected to be prepared by the end of 2015.

Fuel non – availability reports and supervision of bunker suppliers

The group agreed that a use of non-compliant fuel oil might only be accepted if it can be proved that compliant fuel was not available to purchase and when necessary actions are taken in accordance with the regulation 18.2.1 of MARPOL Annex VI. The group noted that the number of reports on non-availability of compliant fuel has decreased during 2015 compared to the previous year. From 1st of January until 30th of June 2015 8 non-availability reports were received by CP.

If a non-availability report is submitted and information is verified to be correct it is not likely that action against the ship will be taken. Actions usually undertaken by CP in connection with received non-availability reports are:

- informing relevant supplier(s) of own ports regarding the rules and encouraging them to make the compliant fuel available;
- reporting to the relevant authorities of other port states on non-availability of compliant fuel oil in their ports;
- requiring vessels to better plan upcoming voyage;
- notifying the Commission (EU MS) in accordance with article 4a.5b.b. of the Sulphur Directive.

All CP have appointed competent national authorities supervising fuel suppliers. After collecting "fuel non-availability" reports these authorities conduct investigations, including inspections, verification of provided documentation and fuel oil samples. One member of the group informed about the national register of fuel suppliers and mandatory reports that fuel suppliers shall submit annually to the competent authorities. These reports contain information about bunkering activities, including records about the quantity, type and sulphur content of fuel sold in individual ports,.

IV. Environmental impact of Exhaust Gas Cleaning Systems (EGCS) waste management and related legislation

As instructed, the group has carried out an exchange of views related to the exhaust gas cleaning technology and associated legislation. These discussions were carried out during 2014 (first round) and the results have been reported to the HELCOM MARITIME 14. At the same meeting the ToR of the group were extended to cover additional matters related to the use of EGCS and related legislation. These matters were discussed during November-December 2014 (second round) and updated to some extent during 2015. The discussion was initiated by means of a questionnaire circulated to the group and attached as Annex 4 to the report. This chapter reflects combined outcome of the group's deliberation, with short summary of the first round discussions and more comprehensive reflection of the discussions carried out in the second round.

1. Environmental impacts of EGCS

Wash water discharge

The majority of the group agreed that the use of alternative fuels and innovative methods for reducing emissions should be promoted. Concerning emission abatement methods, and specifically, EGCS, the group agreed that their impact on the environment must be considered thoroughly.

One member of the group, referring to the results of a conducted investigation and the current level of activity, conveyed that "releases of acidity and hazardous substances from exhaust gas scrubbers operating in open mode in a port are not assessed to lead to violation of the environmental quality standards in the short term". Other members of the group highlighted the lack of knowledge about the composition of wash water from scrubbers, which creates a certain degree of uncertainty related to the impact of EGCS effluents

on the marine environment in general and especially in particularly sensitive areas. These uncertainties have already resulted in restrictions to discharge wash water from scrubbers in some European countries. One member of the group expressed the view that until those uncertainties are resolved, the use of open-loop scrubbers shall be prohibited not only in ports but even in the Baltic Sea due to its slow water exchange.

The group has prepared a list of already conducted and ongoing studies and investigations related to the environmental impact of EGCS which should bring some clarity to this matter and form ground for potential future regulations. The list is enclosed as the Annex 5 to this report.

Since the matter is still under discussion in most CP it proved to be difficult to collect information about potential future legislation and its implications. One member of the group indicated that if restrictions are introduced they will apply to all scrubbers and no distinction will be made based on the quantity of wash water discharged, while another member stated that potential restrictions will most probably only apply to new installations. An overview of national requirements for discharge of wash water from EGCS is presented in the Annex 6 to this report.

Several members of the group mentioned that a common understanding is needed regarding the use of open loop scrubbers in ports/coastal waters, as well as an agreement that future changes of the wash water criteria (revised Resolution MEPC. 259(68)) should not apply retroactively in order to avoid punishing ”early movers”.

Classification and management of EGCS residues

Classification of EGCS residues is another matter that is under consideration in most CP. Some members of the group noted that due to the limited data on composition of EGCS residues only a general classification of this type of waste is possible at this stage. One possible classification was suggested as follows: a) exhaust gas cleaning discharge water; b) scrubber sludge; c) washing acids. One member of the group shared results of a study concluding that due to its contents of nickel, vanadium and THC EGCS residues exceed the limits used for classification of hazardous waste. Two other members of the group mentioned potential hazardous properties of EGCS residues and classification of such wastes according to the national (and/or European) waste codes.

Regarding the appropriateness of mixing EGCS residues with sludge, one member of the group expressed the view that it is possible to mix these two types of waste, while another was of the opinion that it shall not be allowed due to the substances contained in scrubber waste and for several other reasons. Another member of the group informed about national ports’ potential requirements to ships to provide information on waste classification before delivery of EGCS residues to PRF. The majority in the group was of the view that mixing of EGCS residues with sludge shall not be allowed if the EGCS residues are classified as a hazardous waste.

All members of the group that answered the questionnaire informed that ships can deliver residues from EGCS to PRF (for more information see Annex 6) and that further treatment will be carried out by specialised treatment companies. Although the experience related to the treatment of EGCS residues is limited the following possible treatment methods has been mentioned:

- Sludge: a) Incineration; b)neutralisation, c)separation of water from solids with following water cleaning and utilisation of solids;
- Exhaust cleaning discharge water: neutralisation and water cleaning;
- Washing acids: a) neutralisation, b) separation of liquid from solids with following water cleaning and utilisation of solids.

There was an agreement in the group that the waste from EGCS shall be covered by the mandatory delivery obligation. Several members of the group proposed further that the reception of EGCS residues shall be covered by “no-special-fee” system as other ship-generated waste. In two countries the integration of these wastes into the no-special-fee system is under consideration. One member of the group was of the opinion that if the delivery of this type of waste is to be covered by the “no-special-fee” system, a differentiation within a system must be allowed. This differentiation should be made between ships having the technology installed and those without EGCS, since it will not be fair to require ships that use cleaner

fuel without generating “scrubber waste” to subsidize the waste management for ships generating such waste.

The group recognised the need for harmonized rules regarding classification and handling of EGCS residues. Revision of the EU directive 2000/59 to include scrubber waste as well as adoption of a new HELCOM recommendation were mentioned as possible ways to harmonize the implementation of the requirements within the Baltic Sea region.

2. Uncertainties in the existing legislation

Possible inconsistence between MARPOL Annex V and VI

At the HELCOM MARITIME 14th meeting the question was raised weather wash water from EGCS falls under category "operational wastes" generated on board during the normal maintenance or operations of the ship and if there is a conflict between the provisions of Annex V and VI of MARPOL with regard to the classification and discharge of wash water from EGCS. It was noted that if the wash water is seen as “operational” waste its discharge shall be prohibited according to MARPOL Annex V. Consequently, to address this inconsistency, the “2012 Guidelines” (MEPC.219 (63)) should be amended in order to incorporate wash water from EGCS open systems as "other similar discharges".

The group discussed the matter and the majority was of the opinion that there is no conflict between two Annexes of the MARPOL Convention, since wash water from EGCS is regulated by Annex VI (and MEPC.184 (59)) and not Annex V (and MEPC.219 (63)). Therefore the majority agreed that there is no need to initiate a revision of the legislation or associated guidelines in this regard.

Revision of 2009 IMO Guidelines on EGCS, Res. MEPC.184 (59)

The group noted that provisions of the 2009 IMO guidelines related to a calculation-based methodology for verification of the wash water discharge criteria for pH have been revised and a new resolution, MEPC.259(68) was adopted on 15 May 2015. Some members of the group did not see a need for additional amendments to the guidelines while others suggested that the revision would be necessary when more experience on EGCS is gained and in view of scientific evidence regarding the effects of the EGCS discharges on the marine environment.

One member of the group, viewing the use of EGCS as the main alternative for compliance with the sulphur requirements, pointed out that IMO Guidelines on Exhaust Gas Cleaning Systems have significant shortcomings and needs to be revised for the following reasons. The Guidelines provide information about the approval of each system separately and issuing the SOx Emission Compliance Certificate (with serial number). However, unlike other IMO guidelines concerning the approval of conventional equipment (filtration equipment, sewage treatment plants, incinerators etc.), these Guidelines do not provide any practical instructions on how the approval of EGCS must be conducted and operational characteristics of the system must be tested. This can cause difficulties for Administrations to approve EGCS.

As known, the parallel discussions on scrubbers are conducted within the ESSF subgroup on scrubbers. The group recently agreed that further work is needed to make the guidelines workable and that amendments should not be limited to pH matters. A correspondence group, coordinated by Finland, was established to develop further proposals to amend the guidelines, aiming at potential submission to IMO MEPC 69.

Helsinki Convention

The group discussed the application of the Annex IV of the Helsinki Convention (regulations 6A and 6B) to EGCS residues. Three members of the group interpreted the regulations as applicable to EGCS residues (ship-generated wastes) while other three members were of the view that the Convention did not apply to that type of waste since Annex IV of the Helsinki Convention does not cover MARPOL Annex VI. It was proposed to discuss whether the Conventions should be revised in order to address EGCS residues (taking into consideration that now all HELCOM CP are parties to the Annex VI of MARPOL and the Convention needs to be revised in order to include reference to MARPOL Annex VI).

3. Measures to be taken when ships EGCS are not operating accordingly or when the equipment is damaged.

Under this item the group shared views regarding the interpretation of the regulation 3.1.2 of MARPOL Annex VI and measures to ensure compliance with this regulation when ships' exhaust gas cleaning systems are not operating accordingly, or when the equipment is damaged.

The majority of the group did not experience any difficulties in interpreting the regulation 3.1.2 of MARPOL Annex VI, noting that in case of failure of an exhaust gas cleaning system during the voyage of a ship the provision of MARPOL Annex VI will simply not apply. However, some concerns were raised. One observation was that the regulation 3.1.2 does not provide an answer to the question on what measures are to be taken when an EGCS is not operating accordingly. Another member expressed concerns regarding the possibility of different interpretations of "reasonable precautions" and other provisions of the regulation by the states, which might lead to distortion of competition. For instance, one state might allow a ship to sail on incompliant fuel accepting that the ship with damaged equipment made an appointment for a repair six months ahead, while another state would detain the ship until the deficiency is rectified.

When it comes to the measures needed to ensure compliance with regulation 3.1.2 there were differing views in the group. It could be concluded that the group agreed that solutions will vary depending on the situation, and every case of malfunction of the equipment would need to be investigated and dealt with on an individual basis. A measure supported by the majority will be to require a ship to change to the compliant fuel until the EGCS is repaired. One member of the group pointed out that the permanent operation of the ship with a damaged EGS system cannot be resolved by fuel changeover, due to the fact that the ship's IAPP Certificate with Supplement specifies that there is a functioning system to reduce SOx emissions. Fuel changeover, therefore, is only a temporary or precautionary measure to minimize SOx emissions.

The group identified several options to deal with this kind of situations and agreed that a harmonized approach in this regard is needed. In order to facilitate further discussion the identified options are summarized below:

- In case of malfunction of an EGCS and exceeding the maximum allowed SO_2/CO_2 ratio or wash water criteria, corrective actions should be taken according to the EGCS Technical Manual (ETM). Interpretations should, therefore, be based on evaluation of these corrective actions compared to the ETM. A ship should also send an advance notification on any malfunctions of equipment before entering a port, and notify about measures that will be taken.
- In case of failure of its EGCS a ship shall be required to use 0,1 % fuel. If this fuel is not available on board, the ship has to bunker compliant fuel in the next port of call and use it until the EGCS has been repaired. No sanctions should be imposed in such cases, provided that all reasonable precautions have been taken to prevent the damage and that the owner or the master has not acted recklessly.
- A ship should be detained until a compliant fuel is obtained, or equipment is repaired.
- In case of malfunction of an EGCS and absence of compliant fuel on board or difficulty to changeover, a possibility of granting an exemption to a ship for a limited time, necessary to repair the equipment or bunker a compliant fuel, might be considered (individual exemptions might be considered provided that it is shown that attempts have been made to purchase spare parts/order a reparation of the equipment and/or bunker a compliant fuel and if there is a robust plan for rectifying the deficiency).

Further, the group considered developing a HELCOM recommendation and raising the issue in the IMO, aiming at a unified interpretation of the regulation 3.1.2 of MARPOL Annex VI. The majority of the group did not see any need for a HELCOM recommendation, pointing out that the IMO is the responsible body for both unified interpretation of regulations and for guidelines. Neither the group saw a need to raise the issue of unified interpretation of the regulation by the IMO. However, CP expressed their willingness to discuss the issue during the HELCOM MARITME 15th meeting in November.

V. Final remarks and conclusions

Challenges

No major challenges related to the enforcement of new requirements have been experienced so far by Contracting Parties. Some deficiencies related to bunker delivery notes (BDN) and finding suitable location on board to take fuel samples have been mentioned. It was noted that BDN often do not specify exact value of sulphur content of Marine Gas Oil (MGO), indicating the maximum sulphur limit of 0,10 %. Some BDN are of poor quality and refer to the old version of MARPOL Annex VI. Most CP accept this proceeding until further notice.

One of the challenges mentioned often before the entry into force of new sulphur requirements was a potential risk of fuel contamination that could result in loss of propulsion and jeopardize the safety of the ship. Members of the group acknowledged that no reports on loss of propulsion resulting from distillate fuel contamination with the HFO during the switchover operation have been received by the national responsible authorities.

Monitoring air quality

One member of the group informed about a recent study monitoring air quality that demonstrates a reduction of the content of sulphur dioxide in the air by up to 60% since the beginning of this year. According to the study, the reduction in the concentrations of sulphur dioxide can be explained by the more stringent sulphur regulation in the SOx-ECA, which also confirms a high level of compliance with the sulphur regulation.

Few countries, through national environmental inspectorates or research institutes, are planning to conduct similar investigations during 2015-2016. These institutes, however, are not expected to perform measurements of air quality specifically in connection with the more stringent standards for sulphur content in marine fuels. However, as noted, it might be possible to draw some conclusions on the actual impact of SECA regulations from the data collected during the regular and basic air quality monitoring.

The group also agreed that entry into force of 0,5% cap in the EU waters outside SECAs on 1 January 2020 will have some positive effects on the air quality in the Baltic Sea. A view was also expressed that due to the remoteness of non SECA sea areas from the Baltic Sea region this effect will not be substantial.

An introduction of stricter limits in other European sea areas or globally will also have economic consequences associated with bunker supply and operation of ships. It will also facilitate introduction of international monitoring and enforcement measures and reduce incentives to violate requirements.

Harmonisation of enforcement measures

The majority of the group (except one member) expressed the view that further harmonisation of enforcement measures should be discussed both within HELCOM and with other SECA states. The following possible areas where harmonisation could be useful were proposed for the group's discussion:

a) development of harmonized guidelines for sampling (including sampling positions) and interpretation of results of laboratory analyses;
b) agreement on minimum level of sulphur content indicating non-compliance (for instance, 0,11 %) to be reported to the THETIS-S;
c) Reporting on cases of non-compliance to the next port of call. The following options were proposed:
    - use of "Alert" function in THETIS-S to inform other port states about non-compliance cases;
    - drafting a contact list of national coordinators or a standard reporting form in English to facilitate the quick exchange of information among CP's sulphur inspectors. This would also enhance cooperation in cases of non-compliance which occurred outside waters under the jurisdiction of the inspecting state;
d) harmonization of penalties, fines and procedures of penalties and fines recovery;
e) common understanding and clear rules regarding wash water discharge from EGCS in general and the use of open loop scrubbers in ports/coastal waters in particular.

f) an agreement that future changes of the wash water criteria (revised Resolution MEPC. 259(68)) should not apply retroactively in order to avoid punishing ”early movers;
g) measures to be undertaken by the competent authorities in case of malfunction of cleaning technologies (such as EGCS);
h) development of harmonized guidelines for inspections of EGCS;
i) possible coordination of surveillance activities (aerial and by ground based monitoring facilities) as well as processing and use of the data collected from these activities.

Annex 1

2015-10-12

HELCOM MARITIME CORRESPONDENCE GROUP SECA		
LIST OF PARTICIPANTS		
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Annex 2

HELCOM Correspondence Group concerning enforcement of the more stringent limits for SOx emissions 2015 (HELCOM CG SECA)

Collecting information on implementation and enforcement

Questionnaire (29 May 2015)

Enforcement, challenges and information exchange

1. Have any new legislation/changes to existing legislation related to the implementation and enforcement of sulphur requirements been adopted in your country since 1st of January 2015? If yes, please, describe shortly its nature and content.

2. Describe, please, shortly enforcement measures already implemented or planned.

3. Which challenges related to the enforcement of regulations, if any, have you experienced so far?

4. Have you encountered cases of non-compliance which occurred outside your territorial seas/EEZ (i.e. change-over too late)? How do you deal with such cases?

5. Do you see a need for harmonisation of enforcement measures among HELCOM Contracting Parties? If yes, which measures could/should be harmonised in your opinion?

6. Do you use Thetis-S information system? What are advantages of the system? Is there anything that should be improved? Are you in favour of the future development of a targeting tool or do you plan continuing using the current national intelligence system?

7. Have you monitored significant differences in air quality (sulphur concentrations) in port cities and/or coastal zones after the entry-into-force of the 0,1% requirement? Are you planning to monitor the situation before and after 1//1/2015 to identify the added-value of the SECA requirements?

8. Do you foresee any effect on the Helcom area on 1 January 2020 when the 0,5% cap will enter into force in the EU waters outside SECAs?

9. Any additional information you wish to provide.

Non-availability and bunker suppliers

10. How many “fuel non-availability” reports have you received since 1 January 2015?

11. Who signs these reports (master, agent, other responsible person)?

12. Which competent authority collects these reports? How these are processed?

13. Which measures (requirements to a ship, actions against fuel suppliers, etc.) are undertaken by competent authorities when “non-availability” is reported?

14. Which authority is responsible for monitoring bunker suppliers? How do the authorities respond to complaints regarding the fuel quality?

15. Have you experienced problems with the quality of the bunker delivery notes (e.g. not containing the information according to MARPOL Annex VI, Appendix V)?

16. Any additional information you wish to provide.

Inspections and fuel samples

17. Have any changes in existing inspection and fuel sampling procedures been introduced in your country since 1st of January 2015 or have been planned as of 1st of January 2016?

18. How the inspections are carried out (oil samples, document checks, other)? Which documents are checked?

19. Has number of inspections conducted in your ports and fuel samples taken onboard ships increased compared to the previous year? If yes, to what extent (indicate numbers, if possible)?

	2014	2015
Number of inspections		
Number of samples of fuel used onboard		
Number of MARPOL samples		

20. How many oil samples are taken during one inspection and where these are taken (day tanks, fuel lines)?

21. Do inspectors use portable equipment to check fuels sulphur content?

22. Are the results of sample analyses obtained from laboratories while a ship is still in the port? If not, could you, please, indicate an approximate waiting time?

23. What value of sample analyses results is used as a limit value indicating non-compliance (e.g. 0,11%, 0,12%)?

24. Is there a need for CP to agree on and use same sulphur limit values indicating non-compliance?

25. Do you see any practical implications between the use of the sulphur verification procedure in MARPOL Annex VI, Appendix VI and to the industrial standard ISO 4259?

26. Describe remote sensing methods (fixed, aerial), if any, used in your country to detect violations and monitor the compliance?

27. If remote sensing methods are used, how will the information be used (entered in THETIS-S, report to the next port of call, other?)

28. Any additional information you wish to provide.

Violations and sanctions

29. Have you detected any violations of 0.1 % -sulphur limit since January 1, 2015? Provide, if possible, information on:

    a) number of detected non-compliances:
    b) reasons for non-compliance:
    c) what measures/sanctions were undertaken by the responsible authorities?
    d) how the observed violations have been followed up?
    e) other comments and additional information you wish to provide.

30. Could you describe whether and how your system of sanctions deprives those responsible of economic benefits of infringements? Do the fines increase gradually at the repeated breaches?

31. Please, update information below[1] if your system of penalties has been changed.

Denmark	In Denmark the penalties lies within the criminal law system. The size of the penalties will be defined by the court based on a calculation from the Danish Environmental Protection Agency and the police/ district attorney's office. The calculation will be based on the following principles: to ensure that the fines at least deprive those responsible of the economic benefits derived from their infringement and that those fines gradually increase for repeated infringements. If the current system proves inadequate we will consider the possibility to introduce administrative fines.
Estonia	The maximum amount is 32 000 €.
Finland	We have only criminal fee in force in our national legislation. And this means that in the case of violence of the sulphur requirements a prosecuting authority will handle the case. Very often the prosecutor waives prosecution because of the lack of proof.
Germany	The amount of the penalties is currently under discussion.
Latvia	Administrative fine - 350-1400 EUR.
Lithuania	For incompliance of sulphur limits, indicated in Mandatory quality indexes, administrative fines could be imposed. The upper limit of such fines is 50000 Litas (14500EUR). We consider them as sufficient.
Poland	Pecuniary sanctions for violation of sulphur requirements have been introduced in the act on prevention of sea pollution from ships. They can be imposed for the use of non-compliant fuel by a ship; for delivery of non-compliant fuel to a ship (sulphur content in excess of values claimed in the bunker delivery note); for lack or deficient reporting by marine fuel suppliers; for deficiencies in documentation and fuel sample. Pecuniary penalty may be imposed by maritime administration (Director of Maritime Office) on marine fuel suppliers and on ship owners. The penalty may be up to 50 000 SDR (about 57 000 EUR).
Russia	There is Code of Administrative Offences, in which one Chapter deals Administrative Violations in the field of Environment and Natural Resources. Among the Articles of this Chapter there is one which is concerned the Operation of motor vehicles, including sea-going ship and river ship, in excess of the norms of the content of pollutants in the emissions or noise standards. But this article does not specify concrete fine in case of violation of sulphur requirements.

[1] Information provided by the CP last year.

Sweden	The Swedish system relies on criminal sanctions, where infringement of the sulphur regulations may be punished with a fine or prison (two years maximum). These penal sanctions have, however, proven to be inefficient and no infringements have been prosecuted so far. Therefore a revision of the system is under consideration.

Issues that have not been resolved in previous discussions (see CG report to HELCOM Maritime 14)

32. In your opinion, shall HELCOM CP prepare a submission to IMO aiming at unified interpretations of regulation 3.1.2 of MARPOL Annex VI?[2]

33. What is your approach towards the use of emission abatement methods or innovative fuels for alternative compliance to low sulphur fuels?

34. What is your position towards scrubber acceptance and trials?

35. Have any decisions been made or guidance issued regarding measures that are/will be undertaken by responsible authorities of your country in cases of malfunction of equipment?

36. Have you considered possible non-compliance situations resulting from distillate fuel contamination with HFO and has the potential safety risk (loss of propulsion) related to the fuel switchover by ship entering/leaving SECAs been reported to you?

[2] As you remember the CG discussed a possible need for unified interpretations of the regulation 3.1.2 of MARPOL Annex VI (malfunction of equipment), however the group was not conclusive in its recommendations to the Maritime Committee and according to the group's report "Some of the group's members agreed that the issue should be raised in the IMO aiming at a unified interpretations of regulation 3.1.2 of MARPOL Annex VI, while others thought it would be more appropriate to gain relevant experience and consider this matter at the HELCOM MARITIME meeting in November".

Annex 3

Governmental groups working on implementation and enforcement of sulphur regulations

1. IMO MEPC adopts legislation and develops guidelines. http://www.imo.org
2. HELCOM works on developing a holistic approach aiming at cost effective enforcement of sulphur requirements within the SECA. http://helcom.fi/
3. European Commission works on legislation and guidelines mostly through its two Directorates:

   Mobility and Transport, http://ec.europa.eu/transport/modes/maritime/index_en.htm

   Environment, http://ec.europa.eu/environment/air/transport/ships.htm

   The European Commission has established a *European Sustainable Shipping Forum (ESSF)* to enable dialogue between Member States and brings together governments and maritime industry to discuss practical issues that could be encountered during the implementation of the Sulphur Directive. The tasks of ESSF are to:

   - provide guidance on the implementation of the Sulphur Directive;
   - create the framework conditions for the use of marine LNG as ship fuel;
   - create the framework conditions for the use of scrubbing technology in shipping;
   - explore and evaluate all the available financing opportunities;
   - coordinate research and development activities and encourage innovation.

   Within ESSF there are following subgroups that work with specific areas:

   1) Sub-Group on EGCS;
   2) Sub-Group on LNG
   3) Sub-Group on the Implementation of the Sulphur Directive
   4) Sub-Group on Research and Innovation
   5) Sub-Group on Financing Aspects
   6) Sub-group on Competitiveness.

   More information about ESSF could be found at:

   http://ec.europa.eu/transparency/regexpert/index.cfm

   The European Commission is also assisted by the *Committee for the implementation of the Directive on sulphur content in marine fuels* regarding the implementation.
4. European Maritime Safety Agency, EMSA assist the European Commission by providing regular technical opinions when requested. EMSA provides constant overview regarding the enforcement of the legislation, organizes workshops and seminars and conducts studies for instance on LNG as shipping fuel and operational and safety aspects of scrubbers actions and the alternative emission abatement. EMSA is responsible for the development of THETIS-S. http://www.emsa.europa.eu/
5. Maritime Administrations Implementation Group (MAIG) – an informal group that involves representatives from maritime administrations of a number of Northern European countries that meets once a year to discuss priority matters, *inter alia* implementation and enforcement of sulphur requirements.
6. CompMon, a consortium of member states authorities and their organizations for the implementation of MARPOL Annex VI emission ***comp***liance ***mon***itoring, including SO2, NOx, CO_2, CH_4, and PM. Currently Denmark, Finland, Germany, the Netherlands and Sweden are participating in CompMon.

Annex 4

HELCOM Correspondence Group concerning enforcement of the more stringent limits for SOx emissions 2015 (HELCOM CG SECA)

Collecting information on EGCS and related legislation
Questionnaire (November 2014)

I. Environmental impact of EGCS and waste management

1. a) Are there any investigations made in your country/by your organization related to the environmental impacts of exhaust gas cleaning systems (EGCS) on the marine environment?

   b) Are there any investigations made in your country/by your organization related to the contents/composition of waste water and/or residuals from exhaust gas cleaning systems (EGCS)?

   If yes, could you provide the results of these investigations (reports/ summaries/conclusions/ links to the web pages where the reports can be found)?

2. Does the above mentioned investigations give reason to concerns (please, specify) related to the discharge of scrubber wash water in:

   a) your territorial waters (12 nm) in the Baltic Sea;

   b) in estuaries in general in your country?

   c) in ports in general in your country?

   d) in any particular areas, e.g. declared sensitive areas, in your country?

3. Are there any decisions or plans to prohibit the discharge of wash water from EGCS in areas mentioned above (more information about national legislation might be provided in Attachment 2)? If yes,

   a) When will the prohibition apply?

   b) What is the legal background (Water framework directive, local regulation, other)?

   c) What areas are/will be covered by this prohibition?

   d) Will the prohibition apply to all scrubbers or only new installations?

   e) Will any such prohibition be related to quantities of waste waters discharged, or are they stipulated on a principal basis? For instance, will the bleed-off from so called closed-loop systems, be considered an equivalent discharge as compared to the larger quantities discharged from so call open-loop systems?

   f) If any such prohibitions are in effect, will they be relevant throughout your territorial sea, or could a ship collect its scrubber waste waters in estuaries and ports and release it outside e.g. the 3nm limit (cf. MARPOL ANNEX IV, Reg 11)?

4. Have possible classification of residues from EGCS been considered, taking into account the composition of these residues and possible environmental impact?

5. Have you identified any concerns/problems related to the treatment of EGCS residues? Please, specify.

6. In your opinion, could the residues from EGCS be mixed with the ordinary sludge?

7. a) Are there PRF in ports of your country that are prepared to receive and handle EGCS residues?

   b) Is there any information available on how these residues will be treated after delivery to PRF?

8. Shall “no-special-fee” system cover the residues from scrubbers? Please, substantiate your answer.

9. Is there a need for a harmonized implementation of requirements related to scrubber residues and PRF? If yes, how this could be achieved in your opinion?

II. Uncertainties in the existing legislation (see even Attachment 2)

10. Are there enough clear rules/guidelines related to the installation, approval and use of scrubbers and other alternative technologies? If further regulations are needed could you, please, specify what should be clarified/regulated.

11. a) In your view, is there a conflict between regulation 1.12 of MARPOL Annex V and 2009 IMO guidelines on EGCS (MEPC.184(59)) related to the classification and discharge of wash water from EGCS?

    b) Does the definition of “operational wastes” in reg. 1.12 of MARPOL Annex V and corresponding guidelines (MEPC.219 (63)) cover washwater from EGCS or are those discharges regulated by the provisions of Annex VI and MEPC.184(59)?

    c) If there is a conflict between above mentioned provisions how, in your opinion, it should be solved?

12. Do you see a need to amend the IMO guidelines MEPC.184(59) otherwise (not connected to N11)? What, in your opinion, should be amended?

13. a) What is your interpretation of regulation 6, Annex IV of the Helsinki convention? Does this regulation cover discharge of residues generated by EGCS?

    b) if not, do you see a need for a revision of the convention?

14. Are there any other uncertainties in the existing legislation related to EGCS that you wish to raise and discuss? Please, specify.

Annex 5

Studies on environmental impact of EGCS

A number of studies and investigations have been circulated within the group related to the environmental impact of EGCS as well as composition of generated wash water and residues.

a) *Jurgensen, C.(2013). Scrubbers on Ships, Supplementary Investigation. Lyngby: COWI.*

b) *Jurgensen, C. Kjoholt, K .(2013). Assessment of possible impacts of scrubber water discharges on the marine environment - supplementary note. Lyngby: COWI.*

c) *Ulpre, H. Eames, I. Grieg, A. (2013). Turbulent acidic jets and plumes injected into an alkaline environment. Journal of Fluid Dynamics, vol 734: Cambridge University Press.*

d) *Hassellov, IM. Turner, DR. Lauer, A. Corbett, JJ. (2013). Shipping contributes to ocean acidification, Geophysical Research Letters, Vol 40 Issue 11: American Geophysical Union.*

e) *Kjolholt.J, Aarkre.S, Jurgensen.C, Lauridsen.J (2012). Assessment of possible impacts of scrubber water discharges on the marine environment. Retrieved from Denmark Environmental Protection Agency website: http://www2.mst.dk/Udgiv/publications/2012/06/978-87-92903-30-3.pdf*

f) *Assessment of possible impacts of scrubber water discharges on the marine environment:http://www2.mst.dk/Udgiv/publications/2012/06/978-87-92903-30-3.pdf*

and supplementary note:

http://eng.mst.dk/media/mst/83357/Bilag%202%20-%20Note%20on%20scrubber%20water%20discharges_final_11%2001%202013%20_2_.pdf

g) *Exhaust Gas Scrubber Installed onboard M/S "Suula", Public test Report, Wärtsilä Inc., 20.6.2010*

h) *Exhaust Gas Scrubber Installed onboard M/S Containerships VII, Public test Report, Wärtsilä Inc., 26.5.2014*

i) *MARPOL Certification Tests 2-5-9-2014 – Wash Water, Wärtsilä Inc.*

Expected and ongoing studies:

j) *Study conducted by German Federal Environmental Agency. Publication is expected in the near future.*

k) *The environmental impact of exhaust gas cleaning systems is planned to be assessed while preparing Lithuanian National river basin management plans and Marine strategy (implementing Marine Strategy framework directive (MSFD, 2008/56/EC)). The results are expected to be ready in the middle of the year 2015.*

l) *Joint Industry Project on Scrubber Installation Challenges (JIP SIC)* http://www.zerovisiontool.com/project/scrubber-installation-challenges-sic

m) *Joint University Project "Commercial shipping as a source of acidification in the Baltic Sea" (SHIpH):* http://www.lighthouse.nu/project/shiph

Annex 6

An overview of national requirements regarding discharge of wash water from EGCS and availability of PRF for EGCS residues

Countries	National/Local regulations (if any)	EGCS washwater discharge allowed/ prohibited	Exemptions from regulations (if any)	Availability of PRF for EGCS residues	Additional information/comments
Denmark	Yes, in accordance with Sulphur directive	allowed	No exemptions so far	It is the responsibility of the ports to establish the facilities in case of need. Most ports in Denmark have the relevant facilities for reception of sludge from scrubbers.	In general discharge allowed if the emission abatement methods referred to in Article 4c shall comply at least with the criteria specified in Annex I and II of Directive 199/32 referring to IMO-Guidelines MEPC 184 (59). Under certain circumstances the ports may set rules for themselves, but haven't done yet.
Estonia	No	allowed	No exemptions so far		Ports can set rules for themselves, but haven't done yet. The topic is under discussion.
Finland	No	allowed	No exemptions so far	Yes, vessels can deliver scrubber residues to PRF. Tank trucks will be used to collect the waste.	Ports can set rules for themselves, but haven't done yet.
Germany	Yes	allowed/ prohibited	See further information	In most ports, this is still under consideration. The Port of Rostock is prepared to receive and handle EGCS residues.	EEZ and Coastal Waters: Discharge prohibited unless it can be proved, that washwater fulfils the criteria of the IMO Washwater Guidelines MEPC 184(59). On rivers and in ports: Discharge prohibited.
Latvia	No	Allowed	No exemptions so far		Discussions on improvements of relevant national regulations regarding emissions from EGCS will be continued.
Lithuania	Yes, in accordance with Sulphur directive	allowed	Except port water area	The port of Klaipeda has the relevant facilities to receive EGCS residues. However the way of handling is not settled yet.	Discharge is allowed only if the emission abatement methods referring in the Article 4c shall comply at least with the criteria specified in Annex I and II of Directive 1999/32 referring to IMO Guidelines MEPC 184(59).
Poland	No	allowed	No exemptions so far		Ports and Maritime Offices can set rules for themselves.

Russian Federation					
Sweden	No	allowed	No exemptions so far	Yes, vessels can deliver scrubber residues to Swedish ports. For more information could be found at: http://www.transportgruppen.se/In-English/	National rules prohibiting the discharge of wash water from scrubbers can be introduced. At this stage, however, there are no such regulations in place.