Introduction to the legal framework for waste from scrubber installations and ballast water

Roel HOENDERS
Project officer for environmental protection
Unit B.3: Marine Environment, Training and Statistics

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Introduction

Following the mandate laid down in EU law, EMSA supports the European Commission and the EU Member States (27) in ensuring a high, uniform and effective level of maritime safety, maritime security as well as prevention of and response to pollution by ships within the Community.
EU Maritime Transport Strategy 2009-2018:
European Commission, EU Member States and EU maritime industry should work together towards the long term objective of ‘zero-waste, zero-emission’ maritime transport.

EU 2011 White Paper – Roadmap a Single European Transport Area:
The environmental record of shipping can and must be improved by both technology and better fuels and operations.
Introduction

EMSA provides **Commission** and **Member States** with technical and scientific assistance on **sustainable and quality shipping** in order to help them:

- **Develop** legislation, and
- **Apply** properly,
- **Monitor** its implementation, and
- **Evaluate the effectiveness** of the EU measures in place
EMSA and environmental protection

Technical and scientific assistance to the European Commission and Member States:
• Development of new EU legislation and guidelines
• Monitoring and inspection of transposition in Member States of EU legislation
• Trainings and workshops for EU Member States
• Dedicated studies
• Participation in IMO Committees, Working Groups, Correspondence Groups, HELCOM
• Developing guidance for compliance with EU legislation

Topics:
• Ballast water
• Ship recycling
• Port reception facilities
• Air pollution
• Green House Gases
• Places of refuge
• Illegal discharges of oil pollution
• AFS
EMSA and PRF

• Assisting COM and Member States in monitoring and implementing of Directive 2000/59/EC:
  - Assessment of Waste Reception and Handling plans (2006)
  - Reports and notes on specific issues (e.g. on exemptions, common criteria to grant reduced fee for ‘green ships’ etc.)
  - Inspection visits to Member States: assessment of legal and practical implementation (2007-2011)
  - Horizontal Assessment on the implementation of the PRF Directive (2011)
  - Assist in the reviewing process of the Directive (on-going)
  - Organize workshops and technical meetings (various – most recent in April 2011)
  - Outsourced studies, e.g. the most recent “Study on the Delivery of Ship-generated Waste and Cargo Residues to Port Reception Facilities in EU Ports” (2012)
**Background: air emissions**

- Pressure on the shipping industry to reduce air emissions from vessels grows day by day.

- Regulations to more strictly limit the sulphur content in marine fuel are in place with the revised Annex VI to the MARPOL Convention (adopted by IMO in 2008)

- These are set to tighten, among other, the 2015 Emission Control Area sulphur limit (in fuel).

- Regulation 4 (on Equivalents) of the revised MARPOL Annex VI adopted by res. MEPC.176(58) allows the use of alternative compliance methods at least as effective in terms of emission reductions as that required by the revised MARPOL Annex VI: *also included in compromise agreement on the revision of the EU Sulphur Directive*
Background: air emissions (cont.)

- Exhaust gas cleaning systems (EGCS - also referred to as scrubbers) are one solution for vessels to meet such limits over the coming years.

- The waste produced by different EGCS:
  - waste wash water,
  - sludge, and
  - solid waste...

- ...needs consideration with regard to correct disposal

- Dependence on the availability of adequate reception facilities in ports

- These waste types are currently not in the scope of Directive 2000/59/EC on port reception facilities
IMO legal framework for EGCS waste

- MARPOL Annex VI (the 2008 amendments)

- 2011 Guidelines for reception facilities under MARPOL Annex VI
  - adopted with Resolution MEPC.199(62) (on 15 July 2011)

- 2009 Guidelines for Exhaust Gas Cleaning Systems
  - Adopted with Resolution MEPC.184(59)
  - revoked the previous Guidelines adopted by resolution MEPC.170(57)
MARPOL Annex VI

- Regulation 17 on reception facilities specifies two types of wastes that Parties must ensure the provision of reception facilities for ships calling at their ports:
  - ozone depleting substances (ODS) and equipment containing ODS (regulation 12), and
  - exhaust gas cleaning residues (EGCS residues)
- More specifically, regulation 17 firstly requires that ports, terminals and repair ports should provide reception facilities for EGCS residues, without causing undue delay to ships.
- Relaxation from this principle is allowed, if
  - the port is remotely located from industrial infrastructure (necessary to manage and process those substances), or
  - the latter is lacking and the port therefore cannot accept such substances.
The 2011 Guidelines for reception facilities under MARPOL Annex VI:

- Define (in paragraphs 2.4 and 3.2) **EGCS residues** as a product of the water treatment process. Such residues contain sulphates, ash / soot, metals and hydrocarbons removed from the wash water.

- Specifically they may contain sulphite salts (CaSOx), other metal sulphites (NaSOx and KSOx), metal oxides and Vanadium (V), Nickel (Ni), Magnesium (Mg), Aluminium (Al), Iron (Fe), Silicon (Si) and Polycyclic aromatic hydrocarbons (PAHs).

- Encourage the concept of regional arrangements (without limitation to Small Island Developing States) as an alternative to ensure adequate PRF.
  - This is different from the PRF requirements in other Annexes and could mean that facilities would not be available in all ports (incl. in Europe).
The 2011 Guidelines (continued)

• Parties must notify IMO in the event that a port or terminal cannot provide ODS or EGCS residue reception facilities.

• In addition Parties must notify the Organization where such facilities are, alternatively, provided, and should update regularly the GISIS database on this availability.

• Alternative reception facilities should have an environmentally acceptable method for processing/handling MARPOL Annex VI wastes.
The 2009 Guidelines

- The **quality of the waste wash water** used in scrubbers is another issue that may be relevant in the present context.
- The relevant international requirements have been established with IMO resolution MEPC.184(59) “2009 Guidelines for Exhaust Gas Cleaning Systems” (revoked the previous Guidelines).
- Section 10.1 on wash water discharge criteria informs that the values monitored and recorded should include pH, PAH (Polycyclic Aromatic Hydrocarbons), turbidity (suspended particulate matter), temperature, nitrates, additives, and establishes the criteria.
The 2009 Guidelines (continued)

- The **wash water discharge criteria** should be revised in the future as more data becomes available on the contents of the discharge and its effects.
- These guidelines also re-iterate that the residues generated by the exhaust gas cleaning unit should be delivered ashore to adequate reception facilities, as such residues should not be discharged to the sea or incinerated on board.
- Moreover, each ship fitted with an exhaust gas cleaning unit should record the storage and disposal of wash water residues in an **exhaust gas cleaning log**, including the date, time and location of such storage and disposal.
Ozone depleting substances (ODS)

- Annex VI to MARPOL regulates also the pollution from the ozone depleting substances (ODS) used on ships and from the equipment containing such substances
- EU has already legal measures in place (Regulation 1005/2009), going beyond MARPOL, and restricting production, import, export, placing on the market, use, recovery, recycling, reclamation, and destruction of ODS
- Not in the scope of this presentation
- EMSA’s environment team looks forward to information on the practices related to the port reception of waste ODS / equipment containing ODS from ships
Annex VI – sewage sludge

- It is worth noting that regulation 16 (on shipboard incineration) of Annex VI mentions in paragraph 5 ‘sewage sludge’, in connection with establishing rules for its incineration.

- This seems to be the only occasion when that waste has been referred to in MARPOL.
Applicability of Annex VI in the EU

- Twenty-four EU Member States have acceded to MARPOL Annex VI.
- MARPOL Annex VI special areas (SECAs) cover large part of the European sea areas (Baltic, North Sea and English Channel).
- Some 14,000 (individual) ships trading in the North European SECA every year; some growth predicted.
- The number of ships with EGCS installed as a means of compliance can reach thousands.
- Annex VI wastes would become a significant group of ship-generated waste; its port reception and further handling needs full attention.
- Annex VI to MARPOL is currently not within the scope of Directive 2000/59/EC on PRF.
IMO Ballast Water Management Convention

• Adopted in 2004
• Created to Reduce the risk of moving non/indigenous species through Ballast Water (1032 aquatic invaders in European Seas)
• Entry into force – one year after 30 Member States, representing 35% of the World's fleet have ratified
• Presently: 36 member states representing 29.07% have ratified. Including Denmark, Norway, Sweden, Russia, Croatia, Albania, France, Spain and The Netherlands in Europe. Germany, Belgium, Finland, Ireland and Italy have indicated they will ratify soon.

• EMSA active on implementing the Ballast Water Action Programme (sampling, risk assessment, system approval)
Provides a Ballast Water Exchange Standard-D1 Interim

At least 95% volumetric exchange
Pumping through 3 times the volume of each ballast water tank
- Less than 3 times accepted when ship proves that at least 95% volumetric exchange is met

At least 200 nm from nearest land and 200 m. depth
- If not possible - as far from the nearest land as possible, and:
  - at least 50 nm /200 m. depth
- Where these parameters can not be met special areas may be designated after consultation of relevant states
Longer Term Ballast Water Performance Standard - D2

Ships conducting ballast water management shall discharge:

- < 10 viable organisms ≥ 50 μm minimum size per m³, and
- < 10 viable organisms < 50 μm and ≥ 10 μm minimum size per ml

Indicator microbes as a human health standard (not be limited to):

- Toxicogenic Vibrio cholerae (O1 and O139): <1 colony forming unit (cfu) per 100 ml or < 1 cfu per 1 g (wet weight) zooplankton samples
- Escherichia coli: < 250 cfu per 100 ml
- Intestinal Enterococci: < 100 cfu per 100 ml
How to achieve the performance standard?

Use Type Approved Equipment

Treatment systems **not using active substances** must be tested and approved **by national administration** in accordance with **Guidelines G8**

(Reg. D-3)

Treatment systems **using active substances** must be tested and approved **by IMO** in accordance with **Procedures in G9 and then G8**

(Reg. D-3)
### Timeline for Application of D1 and D2 Standards

<table>
<thead>
<tr>
<th>Ballast Capacity (m³)</th>
<th>Construction Date</th>
<th>Application Dates of the D1 and D2 Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1500</td>
<td>Before 2009*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In/After 2009</td>
<td></td>
</tr>
<tr>
<td>≥1500 - ≤5000</td>
<td>Before 2009*</td>
<td>D1 or D2</td>
</tr>
<tr>
<td></td>
<td>In/After 2009</td>
<td>D2</td>
</tr>
<tr>
<td>&gt; 5000</td>
<td>Before 2012*</td>
<td>D1 or D2</td>
</tr>
<tr>
<td></td>
<td>In/After 2012</td>
<td>D2</td>
</tr>
</tbody>
</table>
Ballast Water and Ports

- Regulations for the control and management of ships’ ballast water and sediments are in the Annex:

- D-2 is a ballast water discharge standard - no requirement for PRF;
  - Potential businesses providing and accepting BW on a route by route basis may develop;
  - PSC guidance on options for when a ship cannot discharge;

- Article 1.12: Sediments means matter settled out of ballast water within a ship;

- Regulation B-1 (on Ballast Water Management Plan) establishes, that such plan shall be specific to each ship and shall, inter alia, detail the procedures for the disposal of sediments at sea and to shore (B-1.3)
Ballast Water and Ports

• Regulation B-5 (sediment management for ships): Sediments from spaces designated to carry Ballast Water shall be removed and disposed of in accordance with the ship’s BWM plan;

• Ships constructed in or after 2009 should be designed and constructed with a view to, inter alia, facilitate removal of sediments (guidelines).

• Article 5 refers to “adequate facilities for reception of sediments” to be provided “where cleaning or repair of BW tanks occurs” (= ports and terminals designated by the Party)
  - Taking into account the guidelines to be developed = G1- Guidelines for Sediment Reception Facilities;

• Each Party shall notify to IMO all cases where the facilities provided are alleged to be inadequate
Ballast Water and Ports

• But sediments usually discharged greater than 200nm from shore or landed during dry docking;
  - In those cases collection should be covered by the local (land) waste legislation covering that dry docking site.
  - However, sediments may be delivered occasionally as ‘ship generated’ waste (i.e. following a PSC inspection).

• No regulation for such occasions (to be dealt with case-by-case through links with local contractors)

• Debate over using sewage tanks for ballast and vice versa still an issue at MEPC – to be addressed after the convention enters into force

• NB: despite some similar language (i.e. ‘adequate facilities’) there is no official link in the Ballast Water Convention to MARPOL (thus also not to Directive 2000/59). Also currently no other specific EU legislation that regulates Ballast Water Management.
Port Waste Reception Facilities Overview

As shipping accounts for about 20% of global discharges of wastes and residues at sea, the protection of the marine environment can be enhanced significantly by reducing discharges of all kind of ship-generated waste and cargo residues into the sea.

The development of adequate port reception facilities (PRF) for ship-generated waste and cargo residues, together with the establishment of systems which provide incentives for ships to use these facilities, are major elements in the process to reduce ships’ discharges into the sea.

International Maritime Organization

The IMO has for many years addressed the delivery of ship-generated waste and cargo residues, mainly by aiming at improving the availability and adequacy of port reception facilities. Relevant requirements thereto have been adopted in the International Convention for the Prevention of Pollution from Ships (MARPOL). In general, MARPOL contains regulations and requirements defining which wastes can be discharged into the marine environment.

MARPOL also imposes an obligation on the State Parties to provide facilities for the reception of ship-generated residues and garbage (that cannot be discharged into the sea). These reception facilities must be adequate to meet the needs of ships using the port, without causing undue delay for ships.

The relevant MARPOL regulations on port reception facilities are:


The 42nd session of the Marine Environment Protection Committee (MEPC) in November 1998 agreed that to achieve “adequate” reception facilities the port should have regard to the operational need of users and provide reception facilities for the type and quantities of waste from ships normally using the port, without causing undue delay for the ships.
THANK YOU FOR YOUR ATTENTION

Roel.Hoenders@emsa.europa.eu