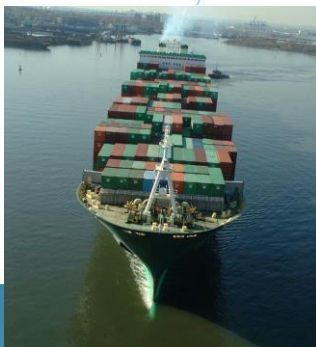




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## Monitoring, Enforcement, Non-Compliance, Penalties

**SAFEMED III**  
**Seminar on MARPOL Annex VI**

*Lisbon,*  
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## MARPOL Annex VI

### Regulation 10: PSC on Operational Requirements

1 A **ship**, when in a port or an offshore terminal under the jurisdiction of another Party, is **subject to inspection by officers duly authorized by such Party** concerning **operational requirements** under this Annex, where there are **clear grounds** for believing that the master or crew are not familiar with **essential shipboard procedures** relating to the prevention of air pollution from ships.

2 In the circumstances given in paragraph 1 of this regulation, the **Party shall take such steps** as to ensure **that the ship shall not sail** until the situation has been brought to order in accordance with the requirements of this Annex.

3 Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.

4 Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements.....



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## MARPOL Annex VI

### Regulation 11: *Detection of Violations and Enforcement*

1 Parties shall **co-operate** in the detection of violations and the enforcement of the provisions of this Annex, using all appropriate and practicable measures of detection and environmental monitoring, adequate procedures for reporting and accumulation of evidence.

2 **A ship** to which this Annex applies may, in any port or offshore terminal of a Party, **be subject to inspection by officers** appointed or authorized by that Party for the purpose of **verifying whether the ship has emitted** any of the substances covered by this Annex **in violation** of the provision of this Annex. If an inspection indicates a violation of this Annex, a **report** shall be forwarded to the **Administration** for any appropriate action.



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## MARPOL Annex VI

### Regulation 11: *Detection of Violations and Enforcement*

3 Any Party shall furnish to the Administration evidence, if any, that the ship has emitted any of the substances covered by this Annex in violation of the provisions of this Annex. If it is practicable to do so, the competent authority of the former Party shall notify the master of the ship of the alleged violation.

4 **Upon receiving such evidence**, the Administration so informed shall **investigate** the matter, and may request the other Party to furnish further or better evidence of the alleged contravention. If the Administration is **satisfied** that sufficient evidence is available to enable proceedings to be brought in respect of the alleged violation, it shall cause such **proceedings to be taken in accordance with its law** as soon as possible. The Administration shall promptly inform the Party which has reported the alleged violation, as well as the Organization, of the action taken.



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## MARPOL Annex VI

### Regulation 11: Detection of Violations and Enforcement

5 A Party may also **inspect** a ship to which this Annex applies when it enters the ports or offshore terminals under its jurisdiction, if a request for an investigation is received from any Party together with sufficient evidence that the ship has emitted any of the substances covered by the Annex in any place in violation of this Annex. The report of such investigation shall be sent to the Party requesting it and to the Administration so that the appropriate action may be taken under the present Convention.

6 The international law concerning the prevention, reduction, and control of pollution of the marine environment from ships, including that law relating to enforcement and safeguards, in force at the time of application or interpretation of this Annex, applies, *mutatis mutandis*, to the rules and standards set forth in this Annex.



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## Monitoring and Enforcement

### 1) Survey and Certification

### 2) Port State Control



- Res. MEPC 181(59) is intended to provide basic guidance for a harmonised approach of port State control inspections as well as the recognition of deficiencies and application of control procedures.

- For Paris MoU Member States, Port State Control Committee Instruction 43/2010/05 is applied (based on Resolution MEPC181(59))

### 3). Sampling





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## MARPOL Annex VI

- SOx: Sulphur Oxides
- ODS: Ozone Depleting Substances
- VOCs: Volatile Organic Compounds
- NOx: Nitrogen Oxides
- Shipboard Incineration
- Fuel Oil availability and quality

### Normal PSC Stepped Approach

- Initial inspection
- Clear Grounds, then ...
- More Detail Inspection
- Expanded Inspection
- Detainable Items



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## Port State Control

- The PSCO should be familiar with the requirements of Annex VI and any related previously recorded PSC deficiency. Verify compliance of the ship by the status of the classification society file.
- No special equipment is needed for the PSC inspection. However, if sampling is deemed necessary, this should be done by the competent authority of the port State taking into consideration IMO Resolution MEPC .182(59)
- The PSCO should ascertain the date of construction of the ship and installation of equipment on board which is subject to the provisions of the Annex, in order to confirm which regulations are applicable



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## Port State Control

### Certificates and documents

- the International Air Pollution Prevention Certificate (IAPP Certificate) (regulation VI/6), including its Supplement;
- the Engine International Air Pollution Prevention Certificate (EIAPP Certificate) (paragraph 2.2 of the NOx Technical Code) including its supplement, for all diesel engines, with the exception of emergency diesel engines, engines installed in lifeboats and any device or equipment intended to be used solely in case of emergency;
- the Technical File (paragraph 2.3.4 of the NOx Technical Code) for each applicable diesel engine;



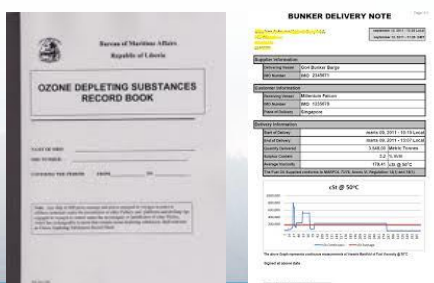
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## Port State Control

- Depending on the method used for demonstrating NOx compliance each applicable diesel engine:
  - the Record Book of Engine Parameters for each marine diesel engine (paragraph 6.2.2.7 of the NOx Technical Code) demonstrating compliance with regulation VI/13 by means of the diesel engine parameter check method; or
  - documentation relating to the simplified measurement method; or
  - documentation related to the direct measurement and monitoring method;
- The Approved Method File (regulation VI/13.7);
- Written procedures covering fuel oil change over operations where separate fuel oils are used in order to achieve compliance (regulation VI/14.6);
- Approved documentation relating to any installed exhaust gas cleaning systems, or equivalent means, to reduce SOx emissions (regulation VI/4);

## Port State Control

- The bunker delivery notes and associated samples or records thereof (regulation VI/18);
- The copy of the type approval certificate of any shipboard incinerator installed on or after 1 January 2000 (for the incinerators with capacities up to 1,500 kW) (IMO Resolution MEPC.76(40) and MEPC.93(45));
- The Ozone Depleting Substances Record Book (regulation VI/12.6);



## Clear Grounds

- A certificate or certificates are missing or clearly invalid;
- Mandatory supporting documents are missing or clearly invalid;
- The absence or malfunctioning of principal equipment or arrangements specified in the certificates or documents;
- The presence of equipment or arrangements not specified in the certificates or documents;
- Information or evidence that the master or crew are not familiar with related shipboard operations, or that such operations have not been carried out;
- Evidence that the fuel used on board the ship does not comply with the requirements; or
- Receipt of a report or complaint containing information that the ship appears to be substandard.





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## More Detailed Inspection

The PSCO should verify that there are :

- effectively implemented maintenance procedures for the equipment containing ozone-depleting substances; and
- there are no deliberate emissions of ozone-depleting substances.

Confirmation of type approval and maintenance of diesel engines:

- the EIAPP Certificate and Supplement, Technical File and Record Book of Engine Parameters or Onboard Monitoring Manual; and
- examination of the Technical File to confirm that no unapproved modifications, have been made to the diesel engines;



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## More Detailed Inspection

- examination if diesel engines, with a power output of more than 5,000 kW and a per cylinder displacement at or above 90 litres are installed on a ship constructed on or after 1 January 1990 but prior to 1 January 2000 and are certified, if so required, in accordance with regulation VI/13.7;
- verification that any diesel engine subjected to a major conversion as defined in regulation VI/13, for ships constructed before 1 January 2000, has been approved by the Administration; and
- verification that emergency diesel engines, intended to be used solely in case of emergency, are still in use for this purpose.
- the record required by regulation VI/14.6, in order to identify the sulphur content of fuel oil used while the ship is within SOx emission control areas, or that other equivalent approved means have been applied as required.



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- The PSCO should verify that the shipboard incineration of sewage sludge or sludge oil in boilers or marine power plants is not undertaken while the ship is inside ports, harbours or estuaries (Reg. VI 16.4)
- The PSCO should verify that the shipboard incinerator, if required by regulation VI/16(1), is approved by the Administration and properly maintained, and that no prohibited substances are incinerated.
- whether the shipboard incinerator is consistent with the certificate of the shipboard incinerator;
- the incinerator operational manual is provided;
- the combustion chamber flue gas outlet temperature is monitored as required (regulation VI/16(9));
- none of the following substances are incinerated:  
Annex I, II and III cargo residues; polychlorinated biphenyls (PCBs); garbage containing more than traces of heavy metals; refined petroleum products containing halogen compounds; sewage sludge and sludge oil either of which are not generated on board the ship; and exhaust gas cleaning system residues.



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## More Detailed Inspection

If clear grounds are established, the PSCO may examine the operational procedures by confirming that the master or crew are :

- familiar with the procedures to prevent emissions of ozone-depleting substances;
- with the proper use, operation and maintenance of the diesel engines,
- have under taken the necessary fuel changeover procedures or with respect to SOx;
- familiar with the operation of the shipboard incinerator
- familiar with the garbage screening procedure to ensure that prohibited garbage is not incinerated;
- familiar with the regulation of emissions of VOC, and are familiar with the proper operation of any vapour collection system and Management Plan
- familiar with bunker delivery procedures in respect of bunker delivery notes and retained samples.





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## Detainable Deficiencies

- absence of valid IAPP Certificate, EIAPP Certificates or Technical Files
- a diesel engine that does not comply with the NOx Technical Code or the relevant NOx emission limit,
- the sulphur content of any fuel oil being used, exceeds the limits of the Annex,
- an incinerator installed on board the ship on or after 1 January 2000 does not comply with requirements contained in appendix IV to the Annex, or the standard specifications for shipboard incinerators developed by the Organization (IMO Resolution MEPC.76(40) and MEPC.93(45));
- the master or crew are not familiar with essential procedures regarding the operation of air pollution prevention equipment



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## Port State Control

On ships not required to be provided with the IAPP Certificate,

- the PSCO should judge whether the condition of the ship and its equipment satisfies the requirements set out in the Annex.
- The PSCO should be guided by the procedures for ships referred to above and be satisfied the ship and crew do not present a danger to those on board or pose an unreasonable threat of harm to the marine environment
- If the ship has a form of certification other than the IAPP Certificate, the PSCO may take such documentation into account in the evaluation of the ship
- In accordance with article 5(4) of the MARPOL Convention a no more favourable treatment is to be given to ships of non-Parties

## Regulation 18

- Fuel oil supplied to ships is to be free from inorganic acids or chemical wastes that could jeopardise the safety of the ship, be harmful to ships' personnel, or which would contribute overall to additional air pollution. The addition of small amounts of additives intended to improve performance is however permitted.
- Administrations to promote fuel oil availability
- **ISO 8217:2010**
- What should be in a Bunker Delivery note
- Kept on board for 3 years
- Note of Protest
- Sampling procedures
- Sample Storage
- Register of local suppliers of fuel oil
  - Suppliers retain a copy of the Bunker Delivery Note (3Y)
  - Administrations take action as appropriate and Inform the IMO

## Sampling Bunkers MARPOL Resolution MEPC.182(59)

*Guidelines for the sampling of fuel oil for determination of compliance with the revised MARPOL Annex VI*

Sample - obtained at the receiving ship's inlet bunker manifold  
- drawn continuously during the bunker delivery period.

**Drawing the primary sample** by one of the following methods:

1. manual valve-setting continuous-drip sampler; or
2. time-proportional automatic sampler; or
3. flow-proportional automatic sampler.



## MARPOL Resolution MEPC.182(59)

### 1. Sampling and Sample Integrity

- Sample receiver attached to the sampling equipment and to prevent tampering or contamination during the delivery
- should not be less than 400 ml – class 750ml

### 2. Sampling Location

### 3. Retained sample handling

- Clean and dry.
- Homogenization of primary sample before taking 3 retained samples
- retained sample container - 90%  $\pm$  5% capacity and sealed.

### 4. Sealing of the sample and labelling

- location; date of delivery; name of bunker supplier; details of the receiving ship; signatures and names of the supplier's and ship's representative; seal identification; and bunker grade.
- may also be recorded on the bunker delivery note.

### 5. Retained sample storage



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## Bunker Sampling – Example Method

- Site the sample point carefully.  
“The delivery shall be deemed completed when the oil has passed the flange connecting the seller's delivery facility with the receiving facilities provided by the buyer, at which point the seller's responsibility shall cease and the buyer shall assume all risks.”
- Clean the tube within the sampler and sample valve.
  - The use of low flash point solvents is not recommended
- When bunkering starts, place a container under the sampler, open the sampler valve fully and flush the sampler with fuel. Close the valve and attach container.
- Adjust the needle valve to give a slow and steady drip.
- Time the fill rate to estimate that it will provide for sufficient sample over the expected delivery period.
- On completion of the bunkering, remove and seal the container, fully open the sampler valve and drain the sampler.
- Always close the sampler valve before blowing through the fuel lines on completion of bunkering
- Close the sampler valve if pumping stops, to prevent the sample being drawn back, under vacuum, into the fuel line
- Always get the barge operator to witness removal and sealing of the container. If this request is refused, or if no witness is provided, then note this in the delivery log.
- Ensure the Bunker Delivery note is completed

# Sample Analysis

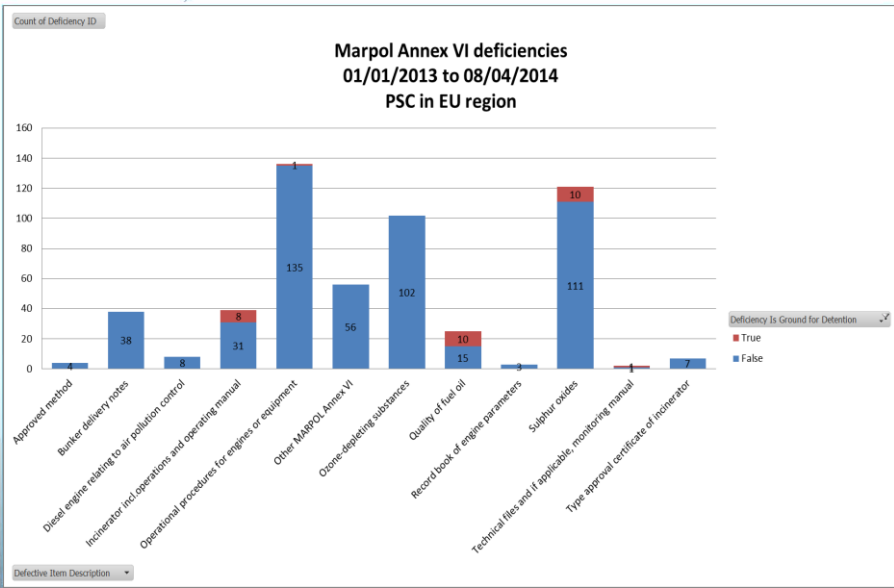
The **reference method** adopted for determining the **sulphur content** shall be ISO method:

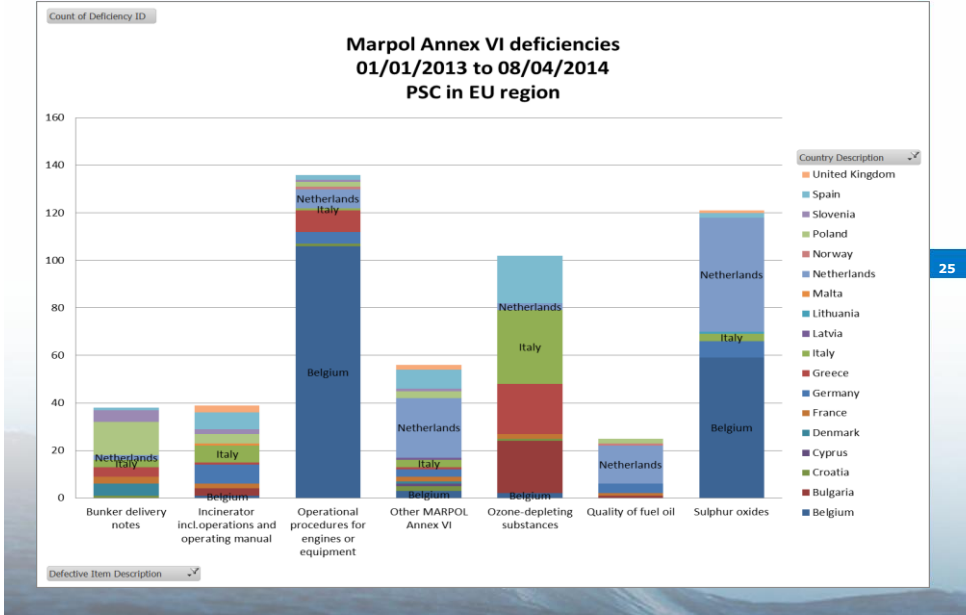
ISO 8754:2003 (Application range 0.03 %m/m -5.00 %m/m)

or:

PrEN ISO 14596:2007 (Application range 0.001 %m/m - 2.50 %m/m)

Test methods do not produce absolute results and they differ in their accuracy and precision. ISO Methods apply ISO 4259 for the 'Determination and Application of precision data....'





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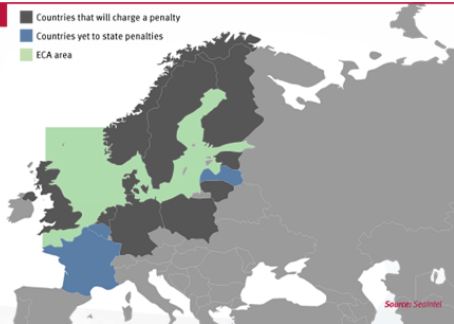
## Penalties

Benefits to Europe's SOx Cheats Will Outweigh the Penalties (Lloyds List):

### PENALTIES FOR NON ECA SOx COMPLIANCE

ECA limits: January 1 2015, maximum sulphur in fuel drops from 1.0% to 0.1%. Other possible permissions are to use LNG fuel or abatement technology with high sulphur content fuels providing SOx emissions are below 0.1%.

Country	Penalty
Denmark	Equal to the cost advantage the carrier had on that voyage
Sweden	To be established when the first case goes to court
Germany	€2,000 - €5,000 (\$2,799 - \$6,898)
Netherlands	Declined to comment
UK	Up to £50,000 (\$82,640)
Finland	To be established when the first case goes to court
Poland	Up to €45,000 (\$62,087)
Estonia	Up to €2,000 (\$2,799)
Norway	Start at €50,000 (\$72,997)
Lithuania	€3,500 (\$2,069) plus the price of taken proper fuel on board



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"Enforcement and penalties for non-compliance with sulphur emission rules are set to be **patchwork and ineffectual** in northern Europe according to research by Danish analysts SeaIntel"



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## Consequences of infractions

EMSA questionnaire (based on **Directive 2005/33** in October 2013):

### What are the legal consequences of non-compliance by ships?

- **Administrative fines:** 16 Member States
- **Criminal penalties:** 8 Member States
- **Ship Detention:** 15 Member States
- **Denial of entry to ports:** 4 Member States

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### Options for Fines

- 1). Ranged from 290 - 5.970 Euro to 12.000- 60.000 Euro
- 2). Statutory maximum fine is 5.900 Euro - unlimited on conviction of indictment
- 3). Linked to Special Drawing Rights (50,000 = 56.500 Euro) for ship owner
- 4). Set value fine if 10% of fuel has a sulphur content more than:
  - 0.01-0.1: 17.090 euro                      0.11-0.2: 34.180 euro
  - 0.21-0.3: 51.270 euro                      0.31-0.4: 68.360 euro
  - More than 0,41: 85.450 euros



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## Consequences of infractions

### 2010:

0: 8 Member States

#### Other Member States:

- 2 (no detention, no information about the amount of fines)
- 10 fines (about 250.000 Euros in total)
- 12 fines (about 12.500 Euros in total)
- 13 administrative penalties (about 32.500 Euros in total)
- After 1 July, 29 not in compliance and 10 detentions
- 1200 SDR Administrative fee (1350 Euro) for supplier for selling non compliant fuel to 2 ships.

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### 2011:

0: 7 Member States

#### Other Member States:

- 1 administrative fine (about 425 Euro)
- 2 (no detention, no information about the amount of fines)
- 3 fines/amount (about 76.000 Euro)
- 5 fines (about 25.000 Euro)
- 22 detentions, 5 to be rectified before departure and 24 warnings,
- 33 administrative penalties (about 116.715 Euro)
- ships were detained for leaving the port area until exchange fuel on-board





**Any questions?**

**Thank you!**

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