

Developments in the use of scrubbers

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Use of scrubbers: Regulatory Incentives

Sulphur Directive (2012/33/EU): emission abatement methods

- **Art. 4(c)** – Member States shall allow:
 - ❑ the use of **emission abatement methods** by ships of ALL FLAGS in their ports, territorial seas, EEZs and pollution control zones
 - ❑ as an **alternative to using compliant marine fuels**

- **Art. 3(A)** – Member States shall ensure that:
 - ❑ marine fuels are **NOT** used within their territory if their sulphur content exceeds 3,50% by mass
 - ❑ **EXCEPT for fuels** supplied to ships using **emission abatement methods** subject to Art. 4c **operating in closed mode.**

Use of scrubbers: Regulatory Incentives

Sulphur Directive (2012/33/EU): emission abatement methods

- **Art. 2 (3)M – emission abatement method** means:
 - any fitting, material, appliance, or apparatus to be fitted in a ship
or
 - other procedure,
 - alternative fuel, **or**
 - compliance method, used as alternative to low sulphur marine fuel

- That meet the requirements set out in this Directive, that is:
 - Verifiable**
 - Quantifiable, and**
 - Enforceable**

- **Art. 4c(2)** - Ships using emission abatement methods shall **continuously achieve reductions** of sulphur dioxide emissions that are **at least equivalent**.

Use of scrubbers: Financial Incentives

Bunker fuel prices

Prices		ICE LIVE				
Port	IFO 380	IFO 180	MDO	MGO	Date	
Singapore	609.00 ↑+4.50	620.00 ↑+4.50	---	928.00 ▶0.00	2013-11-22	
Rotterdam	582.00 ↑+6.00	610.00 ↑+5.00	---	919.50 ↑+18.50	2013-11-22	
Fujairah	619.50 ↑+1.00	650.00 ▶0.00	---	990.00 ▶0.00	2013-11-22	
Busan	660.00 ↑+5.00	680.00 ↑+5.00	958.50 ↑+18.50	968.50 ↑+18.50	2013-11-22	

Regional Bunker Prices: Africa | Asia | L. America | M. East | N. America | N. Europe | S. Europe |

Source: Bunkerindex.com

≥ 300 \$ premium for MGO

Scrubber price & pay-back time

- Assumed price for one scrubber: \$ 2,5 M
- Payback time depends on time spent in SECA's + LSF consumption

Use of scrubbers: moving away from early-adapters phase

Order book predictions

- Exhaust Gas Cleaning Systems Association (**EGCSA**) reported in September 2013 that **62 systems** had been installed and are on order
- **DNV** ('Shipping 2020') foresees in the most likely scenario:
 - ❑ Limited uptake until 2020 when global sulphur limit of 0,5% is enforced: Around **200 hundred installations per year**
 - ❑ After 2020, scrubbers may potentially be fitted on **several thousands ships**.
- Recent statement from both cruise & ferry companies show **confidence** in scrubbers as alternative method of compliance:
 - ❑ Carnival – scrubbers systems on-board 32 ships
 - ❑ DFDS – 8 more ships to be fitted with scrubbers, to 12 in total
 - ❑ ...
- Order book shows that orders & installations are increasingly covering **wide range of vessels** (cruise, container, ferry/ro-ro, tanker, bulker)

Use of scrubbers: remaining barriers

Despite increasing take-up, number of issues need to be addressed:

▪ **Price:**

- Initial investment (CAPEX) remains high especially for smaller companies
- Uncertainty about future price of low-sulphur fuel and LNG

▪ **Regulatory and legal certainty:**

- Transposition and application of Sulphur Directive in EU MS
- Local differences/requirements for the use of scrubbers
- Global 0,5% sulphur content cap in 2020(?)

▪ **Technical, installation and operational**

- Not all existing ships suitable for installation of scrubbers
- Ordering time & docks-availability
- Which system for which ship (open or closed loop, hybrid, dry)
- Some operational issues (efficiency, reliability)

Use of scrubbers: overcoming remaining barriers

COM/EMSA Ad-hoc Expert Group on Scrubbing Technology

- Organized in June 2013
- Over 80 participants from entire user chain (manufacturers, ship-owners, ports, classification societies, Member States)
- Joint identification of **remaining barriers**, notably:
 - ❑ Wash water discharge limits (applicable pH limits)
 - ❑ Approval by flag State (continuously achieve reductions, impacts on enclosed ports, harbours and estuaries, ...) and application of Marine Equipment Directive
 - ❑ Recognition of scrubbers systems approved in non-EU SECAs
 - ❑ Application in combination with other alternative methods
 - ❑ Enforcement
 - ❑ ...

TEN-T Funding

- Over 30M € spent on TEN-T projects co-financing the installation of scrubbers on-board ships

Outstanding matters + lessons learned to be further addressed in the ESSF sub-group on scrubbing technology



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Related Documents

- Final report of the EMSA commissioned study on standards and rules for bunkering of gas-fuelled ships (by Germanischer Lloyd) – OP/06/2012
- Overview and gaps of the regulatory framework for bunkering of gas-fuelled ships (regulatory gap-matrix)
- White Paper "Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system"
- Commission Staff Working Paper on pollutant emission reduction from maritime transport and the sustainable waterborne transport toolbox



Support in relation to the Sustainable Waterborne Transport Toolbox

On 16 September 2011, the Commission issued a Staff Paper "Pollutant emission reduction from maritime transport and the Sustainable Waterborne Transport Toolbox" accompanying the Commission proposal and communication of 15 July 2011 amending Directive 1999/32/EC on the use of low sulphur marine fuels. (The amended Directive was adopted on 21 November 2012 as Directive 2012/33/EU).

The "Sustainable Waterborne Transport Toolbox" aims at addressing the environmental challenges the shipping sector is confronted with in an integrated manner, in order to help it to achieve sustainability objectives in the long run. The proposed actions shall be flexible and neutral and minimise any possible unwanted effects. The actions will be part of a coherent action to facilitate the efficient use of energy in the field of transport, i.e. the Clean Transport System Initiative (see the White Paper Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system). EMSA has been requested to support the development of a number of actions identified in the Sustainable Waterborne Transport Toolbox.

LNG as fuel in ships

The Commission has expressed its intention to proceed with some of the key actions outlined in that document, among them the setting up of a platform gathering the relevant stakeholders on LNG as ships' fuel. For this reason the Commission invited, to a first set of ad hoc meetings, the experts from relevant parts of the industry to initiate an exchange of view, focussing on concrete technical and operational obstacles to the use of LNG. The Commission indicated that at this stage, funding issues will not be addressed. The aim of the Commission at this stage is to develop an action plan that would specifically contribute to the use of LNG as alternative fuel in shipping. In 2012 a total of three expert group meetings took place. The last one, which was organised in Brussels in December, was also attended by a number of Member States representatives.

EMSA is acting as secretariat for the groups currently working; the port- and ship-owner groups.

In May 2012 EMSA published a tender for study to develop possible EU guidance and/or technical standards for LNG bunkering. The tender was awarded to Germanischer Lloyd. The final study is expected to be presented at the beginning of 2013.

The Commission has indicated that there might be a need for other expert groups to meet in order to discuss other issues related to the Sustainable Waterborne Transport Toolbox, such as scrubbers.

THANK YOU FOR YOUR ATTENTION,
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