

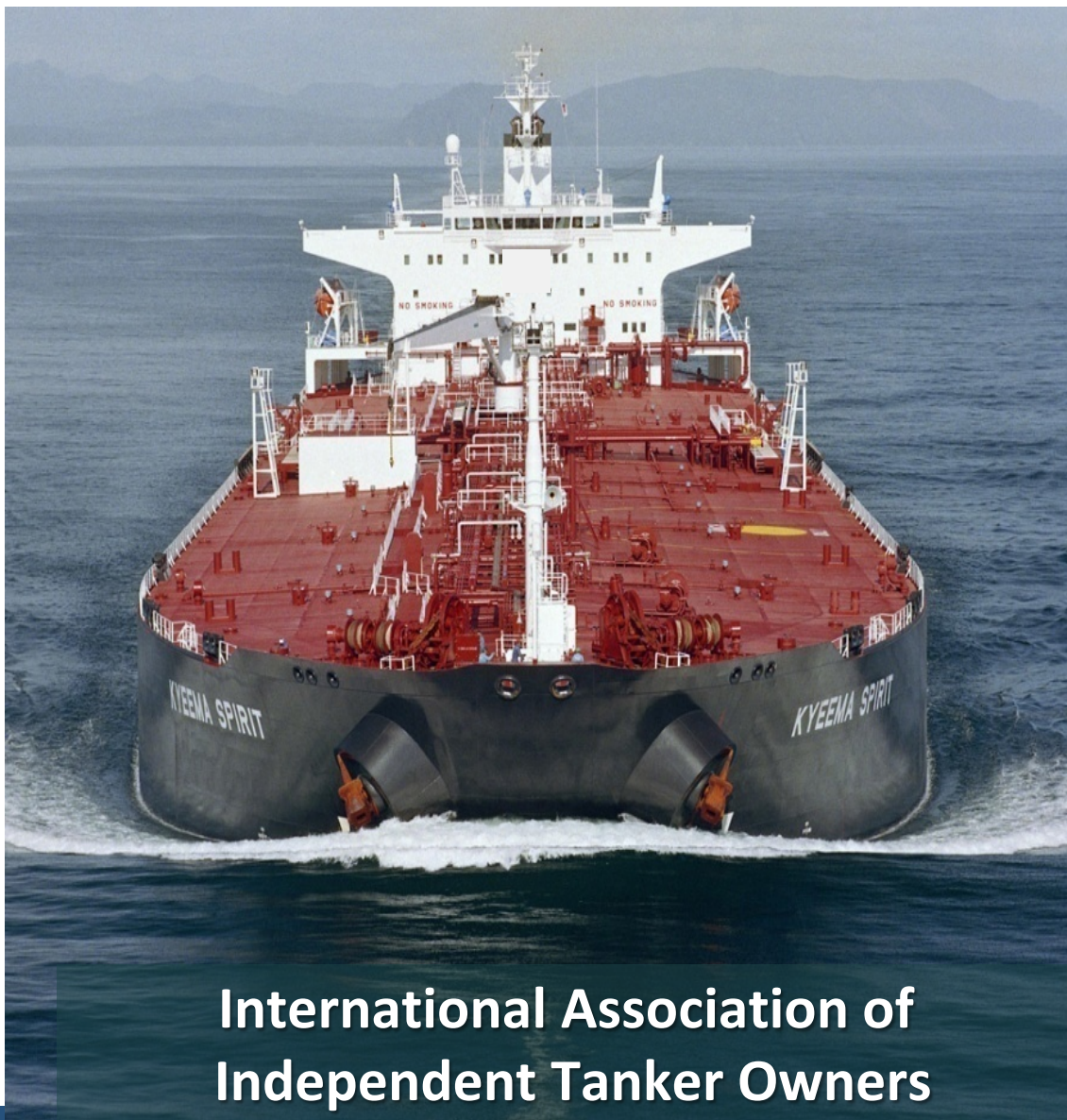


INTERTANKO

European Panel Meeting Rotterdam

2020 Sulphur Cap Options for Ship Owners

February 2018



**International Association of
Independent Tanker Owners**

Leading the way, making a difference



2020 Sulphur Cap

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- Options for Ship Owners
 - MGO/MDO, Low Sulphur Fuel Oil (LSFO) - blends, «hybrids»
 - Exhaust Gas Cleaning Systems (EGCS) – «scrubbers»
 - Other fuel types, e.g. LNG, methanol, etc.
- Cost for compliance – very expensive, no matter the option
- Compliance date – 1 January 2020
- IMO adopts amendments to reg. 14 of MARPOL Annex VI
 - retain reference to Sulphur limits of 0.50% and 0.10% only
 - clarifies the due date will not change
 - prohibit carriage of fuels with Sulphur content higher than 0.50% on board ships which do not have a scrubber (the banning is **not** covering carriage of fuel oil as cargo)



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- “Switch over” @ 1 Jan 2020; 00:00 hrs – a complex matter
- IMO followed strong advice from an united industry to develop new Guidelines as well as revisiting some of the current IMO Guidelines
- IMO meeting mid-July 2018
- Guidelines to be adopted late 2018 or first half of 2019
- Ship Owners need to plan ahead and choose means for compliance on existing ships
- If scrubber is the option for existing ships – time left is short



IMO Guidance

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Preparatory and transitional issues

- consumption of the remaining HS-HFO and time needed that current fuels will "be fully flushed" prior to entry into force of the regulation
- how to deal with and limit the impact of possible non-availability of LS-HFO
- cleaning of the fuel tanks
- crew awareness and training

Fuel oil non-availability:

- guidance and information sharing on fuel oil non-availability
- standard format for reporting fuel oil non-availability;

Impact of new fuels on machinery systems

Other safety implications – e.g. preparations of boiler for use of LSFO, safety issues in case of non-availability of LSFO (switching FO/LSFO in boilers)



IMO Guidance

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Verification issues and control mechanism and actions:

- control mechanisms to ensure compliance, e.g. in-use fuel samples
- Port State Control
 - in-use sample analysis
 - MARPOL samples analysis
 - interpretation of fuel sample test results
 - targeting measurements (remote sensing or portable devices)
 - other enforcement practices dedicated to open-sea compliance monitoring

Other useful guidance/information:

- guidance addressing fuel quality issues, fuel availability, quality assurance and integrity of the fuel supply chain
- best practice for fuel oil purchasers/users;
- best practice for Member State/coastal State; and
- best practice for fuel oil providers



Members working for Members

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Ship Owners Preparedness

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- Fuel systems on board ships – segregation of HS and LSFO systems
- Engine Room fuel sampling points
- On board documentation/approval for changes to fuel systems
- HAZID and mitigating measures (<http://www.intertanko.com/Global/ECA-AnnexI-Rec-Hazard%20Assessment%20of%20Fuel%20Changeover%20Processes.pdf>)
- On board Operational Manual including
 - change over @ compliance date
 - bunker tanks cleaning – preparation for compliance
 - renew on board calculators for time needed to switch between 0.50% and 0.10% fuels
- Procedure for fuel oil purchase and testing
- Procedure how to document and report fuel non-availability
- Crew training



Fuel Sampling

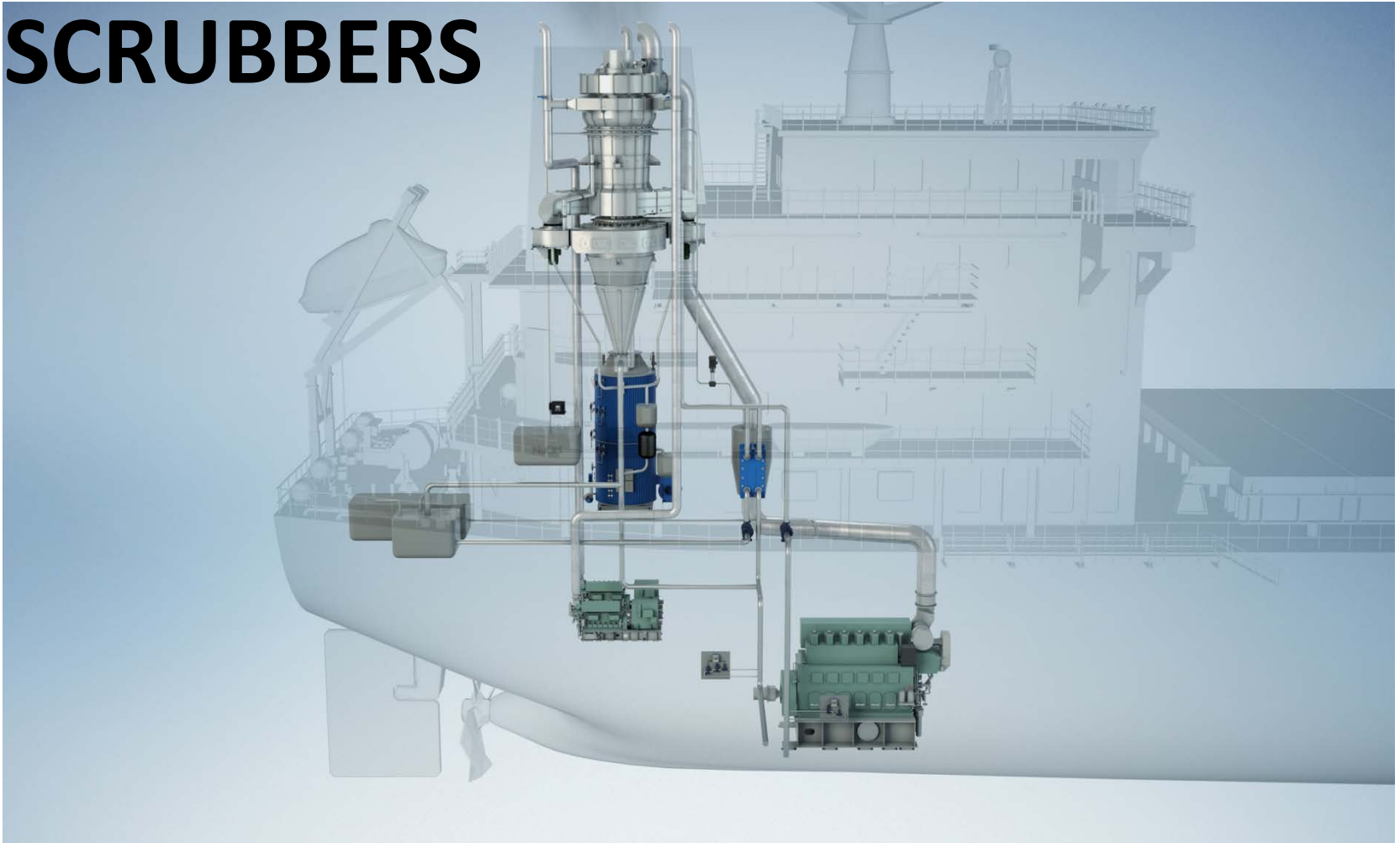
- “MARPOL Sample” – if not taken in accordance with IMO Guidelines (MEPC.182(59)) - particularly not witnessed by receiving ship’s crew, the ship should issue a Note of Protest
- Engine Room fuel sampling points
 - sampling witnessed by crew
 - at least two samples, both sealed and one kept on board ship
 - request & check the sample is sent to an accredited laboratory
- Documentation/approval for changes to on board fuel systems

Use of LNG, methanol, etc.

- Regulatory – IGF Code
- New buildings
- Managing supply

The EGCS is mostly fitted inside the funnel of the vessel

SCRUBBERS



Source: Clean Marine



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- Scrubbers
 - open loop using seawater
 - closed loop using fresh water & solution of sodium hydroxide (caustic soda)
 - “dry scrubber” technology - SO_x “flushed” over surface of a solid sorbet (limestone granulate or calcium hydroxide granulate) with which it reacts and forms a solid salt
- Size – direct proportional with % of Sulphur scrubbed
 - seawater rate of 15 t/MW/hr. to reduce by 1% the S content in the exhaust gas
 - to reduce from 3.5% to 0.5% S content, seawater rate of 45 t/MW/hr.
 - for fresh/brackish water (no caustic soda), seawater flow up to 65 t/MW/hr.
 - In ECA, same S content, the water flow should be some 13% higher than above
- Water-wash and sludge handling – IMO Guidelines
- Port Authorities policy for use of scrubbers

Considerations for EGCS retrofit installations

Item	Issues	Risks
Contracting	Slow decision making	Poor planning
What and how to install	Configuration onboard & size	Suboptimal solutions and extra cost
Selection installer/yard	Unpredictable trading pattern	Insufficient lead time
Preparations	Insufficient documentation	Wrong / late deliveries
Installation	Preparedness	Serial work (longer installation time)
Test & Comissioning	Outstanding work	Time loss/deadlines

Source: Clean Marine



T/C Clause for scrubbers

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A member suggested INTERTANKO develops T/C clauses to cover:

- description of scrubber system incl. modes, max. sulphur and approvals
- impact on bunker clauses; ISO 8217 has no sulphur limit, scrubber ships will be excluded from sulphur limits
- right of Charterer to request an enhanced mode (closed loop instead of open loop, scrubbing to 0.1%S worldwide)
- possible duty of Charterer to have a minimum quantity of compliant fuel on board (for possible unplanned maintenance at scrubber)
- defects at scrubbers: second charter rate required if scrubber is not working (owners cannot compensate the fuel price difference)
- supply of caustic soda solution, fresh water and scrubber sludge disposal
- rejection of scrubbing by local authorities
- maintenance and off-hire