

## Maritime Issues - Internal regulation on gas emissions:

### The high-sulphur content fuel carriage ban enters into force

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#### 【概要 : Summary】

As of 1 January 2020, the International Maritime Organisation (IMO)'s introduced the new limit of 0.5% m/m (percentage mass of sulphur dioxide gases in the total mass of the emission) for the sulphur contents of fuel oil outside Emission Control Areas (ECAs) at global level. The shipping industry had to choose between continuing using high-sulphur fuel oil (HSFO) at the cost of retrofitting the vessels with an exhaust gas cleaning system (EGCS), e.g. scrubbers, to switch to using new LNG-powered vessels or to retrofit the existing ships with LNG power systems, or to use very low-sulphur fuel oil (VLSFO). As part of the implementation of the global 2020 sulphur limit, it was important to achieve a level playing field for all ship owners. Therefore, the agreement to ban the on-board presence of high sulphur content fuels on ships without scrubber systems was an important step to avoid the fraudulent use of HSFO. Meanwhile, the IMO has adopted the "carriage ban" - rule, prohibiting the ships without EGCS to carrying fuel oil with a sulphur content greater than 0.5%. The rationale behind the amendment of the legislation and the carriage ban for ships without EGCS is that there is no reason to have non-compliant fuel oil on board of a ship without EGCS, like scrubbers. Consequently, ships that install scrubbers to remove sulphur from fuel as they are burnt can continue to use high-sulphur fuel oil. The new IMO

regulation that makes the carriage of non-compliant fuel oil for combustion purposes or operation illegal on board of ships without an approved EGCS or scrubber is intended as additional measure to support the consistent implementation and compliance with the new sulphur limit. It will enable states and Port State Control to more effectively enforce the 0.5% m/m sulphur limit.

#### 【記事 : Article】

##### 1. The IMO's 2020 sulphur limit implementation

Based on the IMO's Marine Environment Protection Committee (MEPC) 70's decision, the MARPOL regulations limit the sulphur contents in fuel oil outside ECAs to 0.5% m/m at global level since 1 January 2020. As of this date, in countries that have acceded to the IMO's International Convention for the Prevention of Pollution from ships (MARPOL) Annex VI, have to comply with the new sulphur limit of 0.5% m/m of bunker fuel outside ECAs. The significant reduction of SOx emissions from ships is expected to have major health and environmental benefits in coastal areas, in particular near ports.

The new global 0.50% sulphur limit of the sulphur contents of ships' fuel oil is part of the IMO's response to reduce the environmental impact of maritime transport. The IMO 2020 sulphur limit is expected to greatly benefit the environment and

human health, by reducing the overall SOx emissions by 77% from ships, equivalent to an annual reduction of approximately 8.5 million metric tonnes of SOx. However, it will still have to be seen if it is similar beneficial for reducing air pollution like the 0,1% sulphur limit in the SECAs/ECAs.

The IMO 2020 sulphur limit means that ships have to adopt to the new limit and use EGCS to remove pollutants from the ship's exhaust, while still using higher-sulphur fuels, or they have to switch to non-petroleum-based fuels, or to a Very Low Sulphur Fuel (VLSF), Marine gas oil (MGO) or MDO (Marine diesel oil). The switch to fuels with lower sulphur content allows for the application of advanced emissions control technologies that substantially lower the harmful emissions from diesel combustion.

In mid 2019, the rate of scrubber installations was at low level, with only 4% of all vessels being scrubber-fitted. However, the number of ships with EGCS installed is expected to exceed 4,000 during 2020. Although the retrofitting costs for installing scrubbers are rather high, with retrofitting costs being estimated between \$2 million and \$6 million for each ship, EGCS are considered being a solution primarily for large ships. The installation costs in case of very large crude carriers (VLCC) would be repaid in about one year to 18 months, depending on the spread between HSFO and VLSFO. The advantage is that vessels with installed EGCS are unlikely to be involved in compliance avoidance. Regarding EGCS or scrubbers, there exist open-loop scrubbers, which use seawater to remove chemicals and particulates and the waste is then treated before being discharged into the sea. In closed-loop systems, the water is recycled back into the scrubber, while hybrid scrubbers are a combination of both systems. The IMO regulations do not determine the type of EGCS to be used. However, some jurisdictions already banned the use of open-loop scrubbers within their territorial waters, like China and Singapore among others.

## **2. Enforcement and monitoring of compliance**

The enforcement and monitoring of compliance with the IMO 2020 sulphur limit is the task of the respective national authorities of states that are Parties to MARPOL Annex VI. They are obliged to give effect to, and enforce, the new sulphur limit. Specifically, port states should conduct initial inspections based on documents including Bunker Delivery Notes (BDN). They can also use remote sensing and portable devices to control sulphur contents. The port states have to be prepared to investigate reports of non-availability and they have to report non-availability of compliant fuel oils and terminals to the IMO.

In the EU, already with the introduction of the 0.1% sulphur limit in SECAs in 2015, the compliancy of ship operators and owners with the SECA sulphur limit had to be controlled. In 2019, the European Maritime safety Agency (EMSA) announced that it has contracted more remotely piloted aircraft systems (RPAS) also called UAVs (unmanned aerial vehicles) or drones, in order to improve maritime surveillance capabilities. The utilisation of RPAS is an option for monitoring the vessels' emissions and for individualising non-compliant ships. Random spot checks on fuel samples from ships and/or bunker suppliers are performed to test for compliancy with the new sulphur limit.

## **3. Carriage ban of high-sulphur fuels for vessels without scrubber technology**

The ship owners and operators can continue burning less-expensive high-sulphur fuel by using the EGCS technology. However, until March 2020, the MARPOL Annex VI allowed also ships without EGCS to carry high sulphur fuel oil (HSFO). This created an enforcement problem since it still allowed ships to carry non-compliant fuel oil in their bunker tanks, as long as they did not burn it.

In November 2017, shipping associations submitted a proposal to the Pollution Prevention and Response (PPR) Sub-Committee, calling for a prohibition on the carriage of non-compliant fuel oil, as defined

in regulation 2.9 of MARPOL Annex VI, with a sulphur content exceeding 0.50% m/m on board ships. The proposal also included suggestions on the content of guidelines to promote an effective and consistent implementation of regulation 14.1.3 of MARPOL Annex VI, in order to clarify the rules regarding the carriage of high sulphur fuel oil (HSFO) on board of ships without EGCS.

The MEPC 70 agreed to ask the PPR Sub-Committee to consider the details of the implementation of the global sulphur cap and operational and safety concerns, including preparations for any transitional, technical, safety and verification challenges regarding the 0.5% sulphur cap. The 5<sup>th</sup> PPR Sub-Committee needed to decide whether the existing regulatory framework was sufficient to ensure that ships comply with the 2020 sulphur limit. Ahead of the 5<sup>th</sup> session of the PPR Sub-Committee, which took place 5-9 February 2018, an unusual coalition of shipping associations and environmental groups including ICS, Intertanko, BIMCO, the Clean Shipping Coalition, Friends of the Earth, WWF and others joined together to advocate for a general ban on the carriage of HSFO, except aboard vessels equipped with EGCS technology. The group warned that since the current regulation would not prohibit the carriage of HSFO for ships without EGCS, it would create an enforcement question as it still allowed ships to carry non-compliant fuel oil in their bunker tanks, as long as they do not burn it. Any failure by governments to ensure consistent implementation and compliance with the new sulphur limit rules and enforcement could lead to serious market distortion and unfair competition. Instead, a ban on the on-board presence of high sulphur content fuel on ships without scrubber systems is a step to avoid the fraudulent use of HSFO.

Accordingly, the PPR Sub-Committee came to the conclusion that the carriage of non-compliant fuels should be prohibited for ships without a EGCS technology on board and agreed to ban carriage of non-compliant HSFO, exempting ships fitted with exhaust gas cleaning system or scrubber. As part of

the implementation of the global 2020 sulphur limit it was important to achieve a level playing field for all ship owners. Any failure by governments to ensure consistent implementation and enforcement of the new sulphur limit could lead to serious market distortions and unfair competition. The Sub-Committee reached the important agreement to move forward with the carriage ban of HSFO on board ships. This prohibition of carrying non-compliant fuel oil on board ships exempts ships fitted with EGCS. The rationale behind the amendment to Regulation 4.1 of MARPOL Annex VI is that there is no reason to have non-compliant fuel oil on the ship if the ship does not have equipment to remove the sulphur from the fuel, like scrubbers. The amendment to Regulation 4.1 of MARPOL Annex VI was approved by the MEPC 72 Committee meeting in April 2018 and was then adopted at the MEPC 73 in October 2018. This amendment to the Regulation 14.1 of MARPOL Annex VI entered into force on 1 March 2020.

For a ship without an equivalent arrangement approved in accordance with Regulation 4.1 of MARPOL Annex VI as listed in paragraph 2.6, the sulphur content of fuel oil carried for use on board the ship shall not exceed 0.50% m/m as documented by bunker delivery notes.

The entering into force of the implementation of the carriage ban of non-compliant fuels on 1 March 2020 represents a two months delay after the 0.50% global sulphur limit comes into effect, but it was considered early enough to avoid any significant market distortion by non-compliant ship owners and operators. It will also make it far easier for any country to enforce the new rules, as it would no longer have to prove that the vessel had burnt the high sulphur fuel in its engines.

#### **4. Implementation of the carriage ban**

On 13 April 2018, the MEPC 73 adopted the amendment that bans ships without EGCS from carrying HSFO from 1 March 2020 onward. Furthermore, the IMO's MEPC 74 also approved and adopted a comprehensive set of guidance and guidelines to support the consistent

implementation of the lower 0.5% sulphur limit of ships' fuel oil.

The Resolution MEPC.320 (74) contains the "2019 GUIDELINES FOR CONSISTENT IMPLEMENTATION OF THE 0.50% SULPHUR LIMIT UNDER MARPOL ANNEX VI". It is an additional measure to support consistent implementation and compliance and provides a means for effective enforcement by states, in particular by Port State Control.

As of 1 March 2020, ships carrying non-compliant high-sulphur fuel face high fines and detention under new rules entering into force banning the carriage of HSFO, if the vessel has no EGCS. However, questions have arisen in relation to the interpretation of marine fuel oil analysis test results and regarding the avoidance of the enforcement measures by Port State Controls (PSCs) in the light of the reports of ship operators having unintentionally purchased low sulphur fuel oil from bunker suppliers, which exceeded the 0.5% m/m sulphur limit.

The "carriage ban" - rule is intended to make it easier for Port State Control authorities to enforce the IMO's new 0.5% sulphur content limit. The carriage of HSFO as fuel without EGCS technology on board a vessel will be a sufficient proof of the law violation. However, ships will still be allowed to carry higher sulphur fuels as cargo, although some jurisdictions have even banned, or are considering banning, the carriage of HSFO as cargo.

Major port state regimes including Paris MoU, Tokyo MoU and the United States Coast Guard (USCG), have made it clear that they will rigorously enforce the new requirements. With the carriage ban in place, enforcement of the new sulphur limit will be significantly more straightforward, as authorities, including Port State Control officers, only need to prove that the ship is carrying non-compliant fuel. When verifying the sulphur content of samples taken on board, as opposed to the MARPOL sample taken during bunkering, a 95% confidence interval has been given. The samples can be sent for testing to verify compliance. This means a test result up to and

including 0.53% sulphur would be considered as having met the regulatory requirement because the 95% confidence limit is applied to the in-use and on-board samples taken from ships. This is to ensure that ships are not unjustly penalized for marginal excess in sulphur contents, which is unintentional and beyond their control. (MEPC.1/Circ.882). If a ship is tested to have bunkered non-compliant fuels, possibly unintentionally, it will be left to the discretion of the relevant authorities as to what action they take. Currently, it is not possible to indicate the likely action to be taken by Port State Control (PSC), but it is likely to depend upon the facts of each case.

Shipping organisations raised concerns about whether samples collected in accordance with the new on-board sampling guidelines would be representative of the actual sulphur content in the tank. PPR 7 nevertheless agreed on the guidelines because they are needed to support enforcement efforts. The draft guidelines will be forwarded to the MEPC 75 for considering their adoption.

## 5. Outlook

Before the introduction of the new sulphur limit on 1 January 2020, the ship owners had to decide on the introduction of alternative propulsion systems, mostly to install EGCS, or to utilise VLSFO in order to meet the new rules. Some ship owners opted for scrubbers and they could see an advantage from their investment into retro-fittings of EGCS. Besides the problem that open-loop EGCS are not allowed anymore in several regions and countries, the costs of a long-term utilisation of VLSFO and the environmental concerns could prove to become a problem. BIMCO commented on the introduction of the new sulphur limit and showed initial strong price differentials for various fuel options. At the same time, uncertainty remained about the worldwide supply of compliant fuels and there are concerns about the safety and compatibility of fuel options. Two months after the introduction of the sulphur cap for fuel used by ships, BIMCO, INTERCARGO, International

Chamber of Shipping (ICS) and INTERTANKO are all cautiously optimistic about the capability of ship-owners to adapt to the new regulations. Fuel suppliers will have to standardise fuel blends, Flag States will have to report issues to the IMO as appropriate and Port State Control (PSC) personnel has to be trained, according to INTERCARGO's chairperson Dimitris Fafalios.

While implementing the 0.5% sulphur limit in non-SECA areas, the EU is also actively working on the possible future designation of new ECAs like in the Mediterranean Sea. Furthermore, based on the European Green Deal in December 2019, the European Commission will consider further measures to make shipping more sustainable like the inclusion of the maritime sector into the European emissions trading scheme (EU-ETS).

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