

MARINE ENGINES,
FUELS

11 APRIL 2018

Control and compliance

How IMO is working to reduce emissions from ships



The International Maritime Organization has stated an aim to contribute towards international efforts to reduce atmospheric pollution and address climate change. With the introduction of the 0.50% global marine sulphur cap fast approaching, IMO talks to *Insight* about their intentions for its implementation and enforcement along with progress on a greenhouse gas strategy.

On January 1 2020, in an effort to realise major health and environmental benefits, the [IMO](#) will cut the global limit for sulphur in fuel oil used on board ships from 3.5% to 0.50% (outside emission control areas, where the limit is already 0.10%).

Under the new regulation, ship operators must ensure fuel oil used in the main and auxiliary engines and boilers has

a sulphur content of no more than 0.50%.

This can be met by using low sulphur compliant fuel oil or gaseous fuel. Alternatively, an approved 'equivalent method' can be used, such as the use of heavy fuel oil combined with an exhaust gas cleaning system.

The mandate is clear, but *Insight* wanted to understand just what controls will be in place to ensure compliance once the new limit takes effect.

IMO explains that ships taking on fuel oil for use on board will need to obtain a bunker delivery note, stating the sulphur content of the fuel oil supplied. Ships must be issued with an International Air Pollution Prevention Certificate by their flag state. This includes a section stating that the ship uses compliant fuel oil, as documented by bunker delivery notes, or uses an approved equivalent arrangement. Port and coastal states can then verify that the ship is compliant.

Monitoring compliance and enforcement

In IMO's view, the remit and responsibility for monitoring, compliance and enforcement of the low sulphur mandate lies with the states that are party to MARPOL Annex VI. These states will therefore be responsible for any fines or sanctions for non-compliance.

IMO expects all states to take every reasonable step to increase the availability of suitable fuels.

They are required to keep the Organization informed of compliant fuel availability in ports and terminals and to send notification of any ships presenting evidence of inability to obtain compliant fuel.

The IMO is clearly playing a central role in promotion, providing flag state assistance, and evolving the Annex VI legislation. But, our experience of emissions legislation in other sectors suggests emissions compliance is inevitably delivered when it is backed by strict penalties for non-compliance. Since shipping is a global enterprise, it is unclear how society can hold it accountable for ensuring emissions from marine vessels are controlled and rigorously enforced.

IMO sees this social accountability as a broader issue, which may relate to how civil society works through various organisations, politicians, media etc. to put pressure on governments. However, in terms of flag states, the mandatory IMO Audit Scheme will be used to assess how states perform their obligations as party to IMO's international treaties. This may result in a 'corrective action plan' and the provision of assistance where needed.

Moving to ban non-compliant fuel on board ships

The IMO's Marine Environment Protection Committee (MEPC) is the forum where all environmental matters relating to shipping are discussed. In advance of the next MEPC meeting, the Sub-Committee on Pollution Prevention and Response (PPR) took place in

February where the move to ban non-compliant fuel on board ships from 2020 moved ahead.

To help ensure consistent implementation of the regulation, PPR agreed draft amendments to MARPOL Annex VI that will prohibit the carriage of non-compliant fuel oil.

With the exception of ships fitted with an approved 'equivalent method', the sulphur content of any fuel oil carried for use on board ships shall not exceed 0.50%.



The move to ban non-compliant fuel on board ships from 2020 is moving ahead

The Sub-Committee has forwarded the proposed draft amendments to MEPC for urgent consideration at its meeting in April. Once approved, the draft amendments could be adopted in October and then enter into force on 1 March 2020, just two months after the 0.50% limit comes into effect.

The Sub-Committee also agreed the outline of draft guidelines for consistent implementation of the 0.50% sulphur regulation, which would cover:

- How ships can prepare for implementation, including relevant time schedules.
- Impact on fuel and machinery systems resulting from new fuel blends or fuel types.
- A standard reporting format for compliant fuel oil non-availability.
- Safety implications relating to the option of blending fuels.
- Other useful guidance/information to assist Member States and stakeholders, including quality assurance, monitoring and integrity of the supply chain.

These draft guidelines will be developed with a recommendation that they could be presented directly from the working group to MEPC in October 2018.

In addition, draft amendments to MARPOL Annex VI were developed, relating to a definition of 'sulphur content' and testing and verification procedures of in-use fuel oil samples. These would be expected to enter into force in summer 2021. Draft amendments are also being developed to other guidelines:

- Port state control under the revised MARPOL Annex VI.
- Monitoring the worldwide average sulphur content of fuel oils supplied for use on board ships.

- Onboard sampling for the verification of the sulphur content of the fuel oil used on board ships.

IMO says that consistent implementation of the 0.50% sulphur limit for all ships will ensure a level playing field is maintained.

The Organization expects this to mean that the anticipated improvement to the environment and human health will be achieved.

Fuel quality standard

Fuel quality is clearly a key issue in the implementation of the new sulphur limit.

The International Organization for Standardization (ISO) has been asked to consider the framework of the ISO 8217 standard for fuels supplied on a worldwide basis for consumption on board ships.

This aims to keep consistency between the relevant ISO standards on marine fuels and the implementation of the 0.50% sulphur regulation.

There is also work underway to develop best practice documentation for fuel oil purchasers and users. This is intended to assist them in assuring the quality of fuel oil delivered to and used on board ships, with respect to both compliance with the MARPOL requirements and the safe and efficient operation of the ship. The guidance will pertain to aspects of the fuel oil purchase up to the loading of the fuel oil on board. The recommendations should be finalised by MEPC in April 2018.

MPEC lines up to adopt GHG strategy

Along with addressing air pollution, the IMO has stated an aim to contribute towards international efforts to address climate change. Its third greenhouse gas (GHG) emissions study, in 2014, showed that by 2050 CO₂ emissions from international shipping could grow by between 50% and 250%, depending on future economic growth and energy developments. This fact, combined with the anticipated decrease in CO₂ emissions from the automotive sector, could make CO₂ from marine applications a more significant piece of the global total.

IMO has already adopted mandatory energy efficiency measures, applicable to more than 96% of the world's merchant fleet by tonnage.

However, steps are now being taken towards considering further measures to address GHG emissions.

IMO Member States have produced an initial strategy for reducing GHG emissions from ships, which is set for adoption by MEPC in April 2018.

Mandatory collection and reporting of fuel oil consumption data for ships of 5,000 gross tonnage and above will begin from 2019. This will provide a firm statistical basis for an objective, transparent and inclusive policy debate in MEPC, which will result in a revised and more comprehensive strategy for adoption in 2023.

In other transportation sectors it has been demonstrated that lower viscosity lubricating oils can deliver fuel economy improvement, and with it CO₂ emissions reduction, while also providing excellent hardware protection. It will be interesting to see if the marine sector, which can be perceived as being slow to change, might be encouraged to also embrace low viscosity oils to increase fuel economy and so lower fuel costs and CO₂ emissions.

INSIGHT

'INFINEUM', the interlocking Ripple Device, the corporate mark comprising INFINEUM and the interlocking Ripple Device and 润英联 are trademarks of Infineum International Limited. © 2019 Infineum International Limited. All rights reserved.