

MARINE ENGINES,
FUELS

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Preparing for IMO 2020

Lloyd's Register gives a view on industry preparedness and the challenges that remain



As marine industry stakeholders decide on the best ways to meet the 2020 International Maritime Organization 0.50% sulphur cap, *Insight* talks to Tim Wilson, Principal Specialist for Fuels, Lubes and Emissions at Lloyd's Register, about his views on issues arising from the new legislation and the cross-industry cooperation that will be needed to address them.

[Lloyd's Register](#) (LR) is an international provider of classification, compliance and consultancy services to the marine and offshore industries and is very much involved in helping its customers to make a smooth transition to the new sulphur levels mandated from January 1 2020. Specifically, LR's Fuel Oil Bunker Analysis and Advisory Service (FOBAS) team, who provide ship operators and managers with independent verification of fuel quality, have, for over one year, been specifically monitoring the quality parameters of

the 0.50% fuels to set a baseline understanding of composition and compatibility for the industry. As Tim explains, the shipping industry has a number of ways to comply. “There are a number of available options for shippers, the main one being to switch to 0.50% maximum low sulphur compliant fuels, however they also include: running on high sulphur heavy fuel oil (HSFO) with an exhaust gas cleaning system (scrubber), using liquefied natural gas (LNG) or even, to a lesser degree, using alternative energy sources such as bio-products, sustainable bio-fuels and electricity,” he explains.

For the 3-5% of ships expected to choose the HSFO plus scrubber route, there is no maximum limit on the fuel sulphur content, which could provide a small outlet for high sulphur refinery products. “There may possibly be 50 million tons per year demand for HSFO in the early months of the implementation, which means major bunker ports, with greater capacity for storage will continue to hold HSFO stocks to meet the demand. However, smaller ports may not have sufficient storage capability to maintain stocks, and it may not be commercially viable to meet sporadic demand. So, it will be quite a challenge for fuel suppliers to get it right.”

With the shipping industry facing a number of challenges in addition to emission reductions, including trade tensions and high capacity availability, shippers are looking for every opportunity to reduce costs and improve margins. This makes the cost of compliance with the International Maritime Organization’s (IMO) 2020 regulation a topic that is receiving considerable industry attention.

As Tim points out, “We are in a transitional phase right now and by January 1 2020 everybody should be ready and transited onto 0.50% sulphur. However, there is another option for shippers, which is not to comply at all, whether that is a commercial decision, based on fuel costs or just a risk-based decision taken on the probability of being caught. In addition, availability of compliant fuels of acceptable quality is another big question, with all these factors in play, I think some level of non-compliance is inevitable as we go through the implementation period.”

Currently, industry estimates for non-compliance vary widely, with some reports suggesting it could be as high as 15% initially. “Whether it's deliberate or by accident, or by sheer fact that 0.5% fuels were unavailable, we expect some level of non-compliance and, with over 50,000 ships having to make the change in the market, not every ship can be checked. However, where compliant fuel availability is the issue, non-compliance can be avoided by using the IMO procedure that allows ships to load high sulphur fuel providing they put in a ‘fuel oil non-availability report’, stating which port did not have a compliant fuel available and providing sound evidence to support the decision. We see some level of confusion in respect of what ‘not available’ means. Does it mean ‘it's not suitable for my engine’, or just that the sulphur content is too high? This level of detail is still being discussed in IMO, so that the fuel non-availability reports can be used effectively in the market. I expect that although there will be some non-compliance, with proper enforcement, as the industry settles over time, this should whittle down to a much lower percentage.”

However, it's not solely a shipping issue, the bunker network has significant logistics changes to make in the coming months.

With the limit set at maximum 0.50% sulphur, Tim suggests that suppliers will need to be very careful to ensure the fuel they supply does not rise above that level. “The supply chain itself has got some preparation to do. The fuels in the tank should be slightly lower than 0.5% so that the fuel delivered to the ship is compliant and has not been contaminated by high sulphur fuel that's still remaining in the tank and supply lines in the ship's manifold.”

In addition to the shipping and bunkering organisations, Tim says IMO 2020 will have significant impacts on the refineries. “The marine industry has been a convenient drain valve for some 300 million tons of residual fuel, with some refiners around the world depending on this market to consume the end product of the refinery process. In 2020 the demand for residual fuel from the marine industry will drop considerably, possibly by around 150 million tons, being replaced by the greater use of distillate fuels in order to meet the low sulphur limits; the big question then is where is it all going to go? Some refineries, where they do not have the more complex means to crack the remaining residues, may close and others are choosing to invest in more complex coking plants to break the residues down further into distillate products. What seems clear however, is that these 0.5% sulphur fuels will be widely variable in their composition with formulations ranging from the familiar higher viscosity residual fuel grades down to the straight distillate marine gas oils. Further to this, and we are already receiving announcements by the oil majors on their 0.50% fuels contribution to the market, we will see carefully engineered fuel blends from various low sulphur refinery streams being used, adding to the wide range of 0.50% fuel offerings.”

Helping to understand and resolve fuel quality issues is an area in which Lloyd's Register is particularly active. “We sit on a number of related technical committees including: the marine ISO 8217 standard TC28 SC4 WG6 working group and the associated technical committees the CIMAC Working Group for fuels. LR is also actively involved in the Marine Environmental Protection Committee through related non-government organisations and the International Association of Classification Societies (IACS). In addition, we aim to guide the shipping industry in understanding the challenges that the fuels will present to ships if they do not meet the specifications as ordered. LR's consultants are well placed to help with questions particularly around availability, compatibility and stability, and we need to be in a position to answer them.”

Since it is not always possible for ships to segregate bunkers, Tim believes the industry needs to work to a new mindset in ordering bunkers, putting in a lot of forward planning, working with the charterers who buy the fuels and attempt to fill the tanks. “I think it is important for us to look at and consider persuading a 'fill only empty tank' policy, which could reduce problems by 80%. Although there will be a diversity and variability in fuels, it will be easier to manage them once they are on board ship. Work is ongoing to provide the ships with tools and methods to enable them to better define what can be mixed and to what ratio. We are confident that every support will be given to ships so they can make an informed decision to mitigate operational risk. But there's no magic bullet, or solution, to deal with this issue”.

With a level of uncertainty still surrounding the quality and stability of future fuels the whole industry is learning about these new fuel formulations together. “This is not a ship's

isolated problem; this is an industry issue, and every stakeholder is involved one way or the other.”

It is going to be an interesting time ahead and, although Tim says some of the questions have been answered, there are many uncertainties that remain. “IMO is still working on the issues and at MEPC 74 the guidelines should be adopted, which means some of the uncertainty should come out. But, for the remaining questions it will be up to us, as operators, ship owners, enforcement agencies, suppliers and charterers, to communicate and cooperate with the intent to comply with the new emissions legislation. Why do I say this; for the better of our environment.”

INSIGHT

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