

The final countdown

The shipping sector is looking for a clear lead from the IMO at MEPC 70 on the implementation date of the 0.5% global sulphur cap. Once a decision is made, says Melanie Davidson of DuPont, the exhaust gas cleaning industry is ready to step up its game

To date, scrubbers have been installed or are under contract for installation in over 300 ships. However, 2016 was a surprisingly quiet year for scrubber sales, with few new contracts signed. Low oil prices and regulatory uncertainty left shipowners preferring to delay the decision to install scrubbers until the International Maritime Organization (IMO) made a definitive decision on the year in which the global 0.5% sulphur limit would be adopted. That decision may come up sooner than expected.

Since the IMO Annex VI regulations were adopted, a large question mark has hovered around the year 2018. That is the year identified as the latest time that the IMO may decide whether or not there will be enough low sulphur fuel available in 2020 for shippers to meet the 0.5% global sulphur limit.

The question on availability was recently answered definitively in a study commissioned by the IMO and carried out by CE Delft. The findings support the availability of low sulphur fuel in 2020. At MEPC 70 in October 2016 there will be the opportunity for IMO to vote on behalf of 2020. From shipowners to yards to scrubber manufacturers to refiners, all are looking for a definitive answer that will enable them to maximise the time to make preparations.

Given the confirmation of fuel availability in the CE Delft findings as well as the stated positions of many IMO Member States, it is most likely that the implementation year will be 2020. Shipowners have many known and proven technical options for meeting that limit. Many will switch to marine diesel oil (MDO), at least in the short term, some will continue business as usual with heavy fuel oil (HFO) but will need to also

install an exhaust gas cleaning system, and others will pursue alternative fuels such as liquefied natural gas (LNG) and methanol.

Ships once were powered by wind or by manpower, followed by an era of coal, then heavy fuel oil. In the future, it is likely there will not be one defined fuel source across the marine industry. Ships will specialise, be tied to certain trades and positions, and therefore can make individual decisions on fuel types that maximise their profitability. Dual fuel engines can help with flexibility. At an IHS Markit industry roundtable at SMM 2016, sponsored by ExxonMobil, Exxon suggested, quite rightly, that the shipping industry was moving to a multi-fuel world.

the installations. It affects producers of exhaust gas cleaning technology, shipyards, suppliers, installers, equipment vendors, seafarers, engine makers and refiners.

A key question for refiners is what is the future of HFO? Will it be available in the long term? The answer is yes. If refineries do not have to upgrade their heavy fuel or install increased hydrotreating capacity, they will prefer not to. It is expected that heavy fuel with a higher sulphur content will become significantly less expensive compared to low sulphur fuel oil over time, making the position of installing a scrubber economically sound and future-proof for shippers. There is no evidence that HFO will go away in the next 20 to 30 years.

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For ships looking to minimise changes and maintain their current bunkering systems and locations, it is preferable to maintain the status quo and have engines continue to burn heavy fuel. However, in that case they will be forced to use a scrubber. It is estimated that in the run-up to 2020 between 500 to 2,000 additional ships will retrofit with scrubbers. By 2025, up to 20% of the global fleet could have this technology installed.

This impact is significant to many parties, not just for owners who will have to pay for

Another question for refiners involves so-called 'ECA fuels' or 'designer fuels' – low sulphur heavy fuels currently offered mainly in the Northern European emission control area (ECA). These boutique fuels operate similarly to HFO in engines, but are not like HFO in that they may not be compatible with each other. The effect of mixing different 'ECA fuels' is unknown and a source for concern. Unlike these fuels, regular HFO allows ships to operate as they always have, anywhere in the world, using the same type of fuel they al-

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ways have. This limits operational challenges, crew training, and maintenance concerns associated with engine repair or replacement.

For shipyards, a 2020 installation date means more work, which is a good thing. In addition to newbuilds, there will be an uptick in retrofit/repair work. Many existing ships will need to be taken out of service to install the exhaust gas cleaning systems, which typically consist of a spray tower, tanks, pumps and instrumentation and the associated wiring and piping.

Yards that are sitting empty may find themselves with waiting lists to perform this specialised work. Although scrubbers can be installed with a riding crew, it is recommended to have at least two weeks out of service, shore-side, with heavy equipment for the more difficult aspects of installation, such as the replacement of the silencer with a scrubber tower.

Enforcement of the global sulphur limit will remain a challenge for the industry. Coordination and consistency in upholding sulphur limits at sea is required, as is consistency in sanctions for violators. Organisations like the Trident Alliance are working hard to ensure a level playing field across the

industry, and governments and industry partners should support their efforts.

The future for the scrubber industry looks bright, with a high rate of adoption. It is expected that payback times will be short as the price differential between HFO and MDO/MGO increases. Additionally, the technology has come a long way in the last three years, and we can expect continued improvements in things like emission monitoring, wastewater treatment, and reduced system footprint.

With many options, shippers will be able to make smart choices that both protect their bottom line as well as human health. The scrubber is one way to meet the low sulphur regulation that allows the freedom to operate as 'business as usual'. The scrubber industry is ready to meet the needs of the marine market. Now it is up to the IMO to decide what happens next.

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