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A photograph of a ship's deck showing several large, cylindrical metal exhaust pipes. The pipes are arranged in a row, and a red metal railing is visible in the foreground. The background is a cloudy sky.

Mind the Cap:

How to avoid future fuel risk

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Executive summary: Thinking the unthinkable on future fuels



Richard Clayton
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The challenge of complying with IMO 2020 by the end of 2019 is straightforward compared with what is further ahead. Shipping must think the unthinkable if it is to achieve the barely possible target of zero-emissions.

IMO 2020 was launched at the 70th session of the UN agency's Marine Environment Protection Committee in October 2016. A decision was reached at that meeting to implement a global sulphur limit on fuels used by commercial ships operating outside Emission Control Area (ECA) zones of 0.5% m/m (mass/mass) with effect from 1 January 2020.

The tight deadline for reduction of sulphur levels from the current 3.5% m/m has had the effect of concentrating minds on which fuels would comply with this regulation, which technologies would enable existing high-sulphur fuels to continue being used, and how the additional expense of compliant fuels or enabling technology could be aligned with revenue levels that are still under pressure.

It is important to see IMO 2020, and specifically the date of 1 January of that year, in context.

IMO 2020 was agreed in amendments adopted as long ago as 2008. When those amendments were adopted, it was agreed that a review should be undertaken by 2018 to assess whether sufficient compliant fuel oil would be available to meet the 2020 date. If not, the date could be deferred to 2025. That review was completed in 2016 and submitted to MEPC 70. The review concluded that sufficient compliant fuel oil would be available to meet requirements.

So, the period between MEPC 70 and IMO 2020 was 38 months. Not long but, in the

International Maritime Organization's view, long enough for 70,000 commercial ships to transition to a greener fuel environment. In welcoming the decision, IMO Secretary-General Kitack Lim said it reflected the determination to ensure that international shipping remained the most environmentally sound form of transport.

The global sulphur cap, as IMO 2020 has become known, was hailed as good news for the environment and for human health. It echoed the key points of the Paris Agreement on Climate Change, which entered into force on 4 November 2016 — one month after at least 55 parties to the Convention accounting for 55% of the total global greenhouse gas emissions had ratified, accepted, approved, or acceded. So, the driver of IMO 2020 was external to shipping. Regulators were tasked with setting a target level for sulphur emissions and a deadline by which that level was to be met.

IMO 2020 divided opinion from day one. In a commentary entitled 'The new 2020 sulphur cap — a \$50 billion surcharge', which was written two months after the MEPC 70 decision, DNB Markets claimed most industry players had been taken by surprise because the broad expectation had been for implementation in 2025. There would be serious financial implications for several sectors of the shipping industry from so short an implementation period.

“With that initial 38-month period now reduced to little more than 12 months, it is time to take stock”



In his May 2017 white paper, 'Tackling 2020: the impact of the IMO and how shipowners can deal with tighter sulphur limits', Platts' Jack Jordan set out the options open to shipowners. These were a sharp rise in fuel bills with no guarantee of consistent quality, a huge up-front capital cost for an exhaust gas cleaning system (known as a scrubber), or a new ship, or the legal risk of ignoring the sulphur cap and hoping the law does not catch up with them. The choice, he feared, would be a miserable experience.

Writing for the 2018 BIMCO Reflections, its president, Anastasios Papagiannopoulos, described IMO 2020 as an issue where the environmental aspects and the financial situation of the industry clashed. He believed shipowners had a simple choice: either to burn compliant low sulphur fuel or scrub the sulphur out of the exhaust emissions. Because few owners had opted for investment in scrubbers by late 2017, he claimed that the refining industry essentially controlled whether shipping would be able to comply with the regulation or not.

Even as recently as June 2018, Edmund Hughes, head of air pollution and energy efficiency at IMO, was urging the industry to come to terms with the fact that the future would be a multi-fuel mix. He emphasised at a KNect365 Future Fuels conference in London that there would be no delay to the 1 January

2020 deadline. There is no option, he said, neither is there chaos nor confusion.

With that initial 38-month period now reduced to little more than 12 months, and with the shipping industry seemingly convinced that pressure on IMO to delay implementation will not work, it is time to take stock.

This *Lloyd's List* future fuels report, the first in a quarterly series, uses Lloyd's List Intelligence data to perform scenario modelling for different fuel price environments, and assesses the strengths and weaknesses of possible options. Some of these options would still consume fossil fuels and are therefore regarded by long-term thinkers as stop-gap solutions. Burning high-sulphur fuel with emissions cleaned by scrubbers is the most obvious stop-gap but shipowners investing to enable the use of liquefied natural gas fall into the same category. Even low-sulphur fuel that complies with the IMO 2020 regulation must be considered a fossil fuel option, and therefore will need further assessment in years to come.

Making sure the new regulation is enforced is the responsibility of IMO member states that are party to MARPOL Annex VI. This report considers the importance of global implementation, and the legal and insurance considerations related to issues such as



detention of ships found to be carrying or burning non-compliant fuel, non-availability of compliant fuel, the cost of taking vessels off-hire for a minor infringement of the regulation, and the apportioning of blame when an infringement is discovered. Implementation was on the agenda of the MEPC 73 meeting in October 2018.

The MEPC 70 decision is a game-changer for shipping because it has stimulated the search not only for new types of fuel but also for new ways of working. Fuel cell technology is under development to offer zero-emission shipping in future; connected propulsion systems linked to data analysis will lead to greater operational efficiency; and shipowners' need to work more closely with engine manufacturers, class societies, bunker suppliers, and fuel specialists will bring the benefits of partnerships.

The search for sustainable future fuels for shipping was launched by MEPC 70 but will not have been completed by 1 January 2020. The year 2019 will be the year of compliant solutions, with most companies having little choice other than to pay more for low-sulphur fuel. Once over that line, further research is expected to build from the platform of compliance to really sustainable future fuels, with the next milestone being IMO's call for a 50% cut in CO₂ emissions

by 2050 over 2008 levels. The industry believes this greenhouse gas (GHG) strategy is possible, although challenging.

The IMO's initial GHG strategy called for a reduction in total GHG emissions from international shipping and outlined a series of short-, medium-, and long-term measures that the UN agency would consider. The short-term measures have a familiar tight deadline for finalisation and agreement — 2023, with mid-term measures between 2023 and 2030, and long-term measures beyond 2030.

As the industry will quickly discover, there are many hurdles to be overcome and much financial pain to be endured before zero-emission shipping becomes a reality. But as IMO's Edmund Hughes insists, there can be no delay, neither can there be chaos or confusion.

Source list

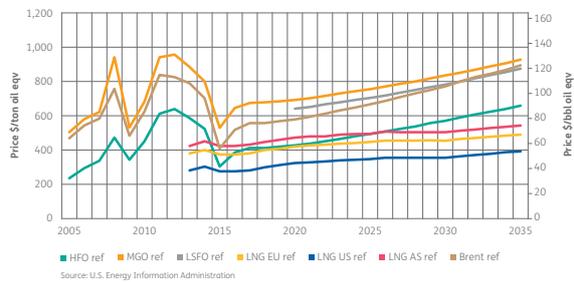
- 'The new 2020 sulphur cap — a \$50 billion surcharge' 2018 BIMCO Reflections. President, Anastasios Papagiannopoulos
- Edmund Hughes, head of air pollution and energy efficiency, International Maritime Organization
- 'Tackling 2020: the impact of the IMO and how shipowners can deal with tighter sulphur limits', Platts

Exclusive data from Lloyd's List Intelligence

This report draws on long-term forecasted oil price scenarios and uses these to analyse the potential take up of fuels, and alternative solutions, in the marine environment post-2020.

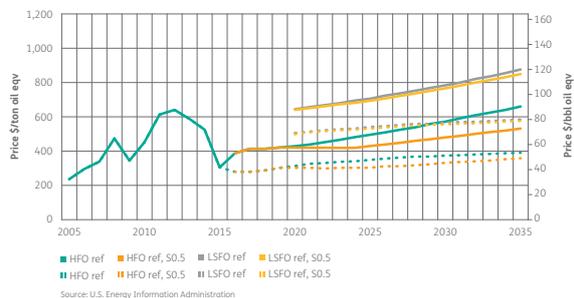
It includes modelling on three oil price scenarios: Reference oil price, low oil price and a gap analysis.

The Reference oil price scenario is based on forecasts by the International Energy Agency (IEA) and US Energy Information Administration (US EIA), which were used to forecast the number and type of newbuilding vessels that will opt for 'alternative' fuel solutions such as scrubbers, or Liquefied Natural Gas (LNG) through to 2035.



The second scenario considers a low oil price environment where the price differential between Marine Gas Oil (MGO) and Heavy Fuel Oil (HFO) is low.

The final scenario looks at the possible implications from excessive HFO supply, with a price that stays at 2020 levels before gradually starting to increase. This creates a gap where the price for HFO is slightly decoupled from other oils.



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How Lloyd's List can help your organisation

Demand for heavy fuel oil will significantly drop as the global fleet switches to compliant fuels. However, owners with larger vessels and fleets continue to invest in scrubbers.

- **Whose needs will you service?**
- **Which customers will you target?**
- **How will you mitigate financial and commercial risk?**

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For the most accurate and up-to-date data available, our made-to-measure data and consultancy services deliver solutions to fit your exact requirements.

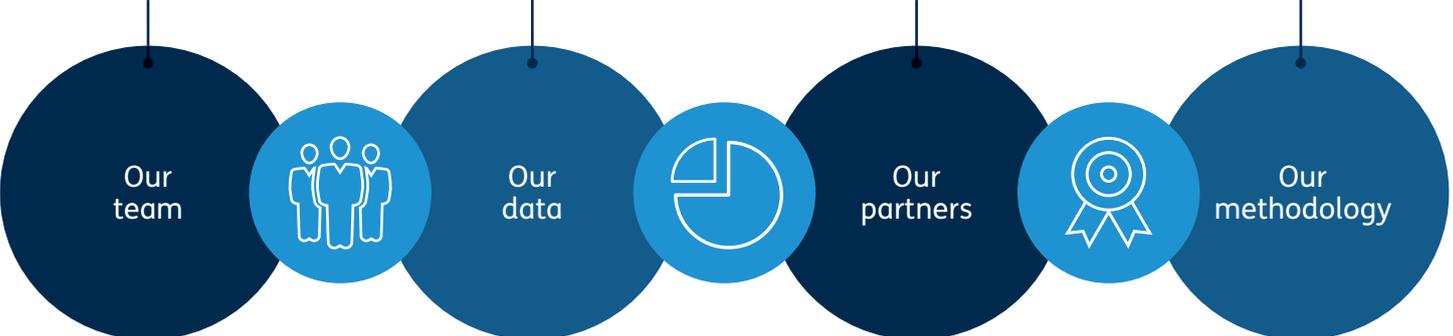


We have decades of detailed, verified data on all vessel characteristics on our database, including engine and equipment data as well as vessel ownership and incident information.



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Why use Lloyd's List Consulting?



Lloyd's List Consulting

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