

# Uncharted waters

The shipping industry has had years to prepare for tighter emissions standards coming into force next year, but it is in the coming months that much of their planning will be translated into action. By Surabhi Sahu

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**B**enjamin Franklin once said: “You may delay, but time will not.” This is certainly true for the international shipping industry as it prepares for a plethora of stricter environmental rules that are set to bring escalating costs and operational challenges.

Among the upcoming rules, the International Maritime Organization’s global sulfur limit for marine fuels, which will be cut to 0.5% from January 1, 2020, is among the most significant.

While restrictions on sulfur emissions in shipping are not an entirely new concept, as Emission Control Areas in certain regions have long existed, the transition to the IMO 2020 rule is daunting. The majority of bunker demand will have to switch from high-sulfur fuel oil (HSFO) to 0.5% sulfur almost overnight, calling for extensive planning by shipowners, charterers, ship crew and refiners, among others.

The operational challenges will be manifold, and the costs astronomical. S&P Global Platts Analytics estimates the total global impact of this rule on various sectors in the energy space, as well as other industries, will be in excess of \$1 trillion over five years.

Shipowners will have to choose a marine fuel strategically, considering factors such as the age of their vessels, trading routes and locational availability

of the various fuel options. They will also have to manage the fuels after bunkering, with critical factors being how many receiving tanks the vessel has and tank segregation requirements.

According to Platts Analytics, the global bunker fuel specification changes in 2020 mean some 3 million b/d of HSFO will have to be replaced. As a result, LSFO, marine gasoil and blended distillates will all play important roles in the bunker fuel mix in 2020 and onward.

The exact bunker fuel mix that will prevail is still an unknown, as it will depend on availability of the different fuels as well as their relative pricing. Still, there is growing consensus in the industry now that very low sulfur fuel oil (VLSFO) will be one of the main marine fuel choices come 2020. In fact, either through direct use or blending, gasoil will also be in greater demand because of the sulfur limit change for marine fuels under IMO 2020.

Recent announcements by oil majors such as ExxonMobil, BP, Total, Cepsa, Sinopec on the supply of 0.5% sulfur bunker fuels to meet rising demand have quelled some concerns in the industry about their availability.

There is also the option of equipping a vessel with scrubber technology, which removes sulfur oxides from the exhaust gas of ship engines, meaning HSFO can still be burnt.

Most shipowners have already made a conscious choice regarding their bunker fuel choice post-2020.

This includes many big shipping companies such as AP Moller-Maersk, Hapag-Lloyd, Teekay Tankers, BW Group, CMA CGM, Pacific International Lines and Mitsui OSK Lines.

Japan's MOL, for example, will mainly use low-sulfur fuel oil, but also plans to install sulfur oxides scrubbers on about 50 vessels, mainly VLCC and capesize bulkers, the company said in May.

The company is also advancing plans to use other cleaner fuels – LNG and methanol – for bunkering.

Some container shipping companies, such as Maersk and Hapag Lloyd, plan to use both 0.5% sulfur marine fuels and scrubbers with HSFO to comply with the rule.

But in any case, taking no action is arguably a decision on the part of a shipowner, implying that VLSFO or 0.5% sulfur compliant bunker fuel will likely become their default marine fuel choice.

An important procedure to carry out before switching, as emphasized by the International Bunker Industry Association last year, is cleaning of fuel oil tanks. Failure to do so could see a vessel breach the sulfur limit despite being loaded with compliant fuel, and also carries operational risks, according to the IBIA.

Some global shipping companies, such as Thailand's Precious Shipping and Norway headquartered Hoegh

Autoliners, have already said that they are cleaning bunker tanks on their vessels.

For those who plan to use 0.5% sulfur bunker fuels and haven't started the clean-out, there should be an urgency to do so to ensure there is no residual heavy sulfur fuel left in them.

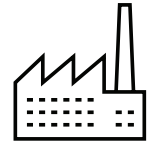
### Clean break

Tank cleaning comes with its challenges. Manual tank cleaning is considered the best method, but this needs the vessel to be in dry-dock or anchorage. Tank cleaning can be done with additives but this process requires some cycles.

Another option is to load LSMGO or VLSFO into the tank and flush out the fuel system with the low sulfur fuel oil. There is still a risk that tanks will not be 100% clean at the end of this process.

One large shipowner told Platts that November 30 could be a potential "sweet spot" date to shift to compliant fuels as it would give some leeway to finish off the remainder of HSFO in ships' tanks and ensure a smooth transition to 0.5% sulfur bunkers.

While tank cleaning is important, tank segregation is also vital. With the multitude of fuels being launched in time for 2020, there is likely to be a wider range of viscosity, requiring temperature adjustments. The risk of compatibility issues may be greater. Therefore, the challenge will still be to keep the fuels segregated to the maximum extent possible.



IMO 2020 cost to energy and other industries

**\$1 trillion**  
over 5 years



Alongside fuel switching, exhaust gas cleaning systems – known as scrubbers – will be an important solution for compliance with IMO 2020, at least initially, and will help alleviate some of the pressure on 0.5% sulfur bunker fuels.

The Exhaust Gas Cleaning Systems Association, or EGCSA, reckons that around 4,000 ships will be fitted with scrubbers globally by January 1, 2020, though other estimates are lower. CE Delft, which acts as a consultant to the IMO, has forecast some 3,000 ships will be fitted with the technology by 2020, while Platts Analytics estimates that around 2,200 ships will be ready with scrubbers by January 1, 2020.

But scrubbers have their own issues. Some argue that “open-loop” scrubbers – which discharge wastewater – do not address environmental issues as they simply take sulfur out of the air and put it into the ocean. Others argue that this is an oversimplification and ignores the fact that the IMO has set out guidelines for cleaning systems which include washwater discharge and monitoring criteria to safeguard against environmental damage.

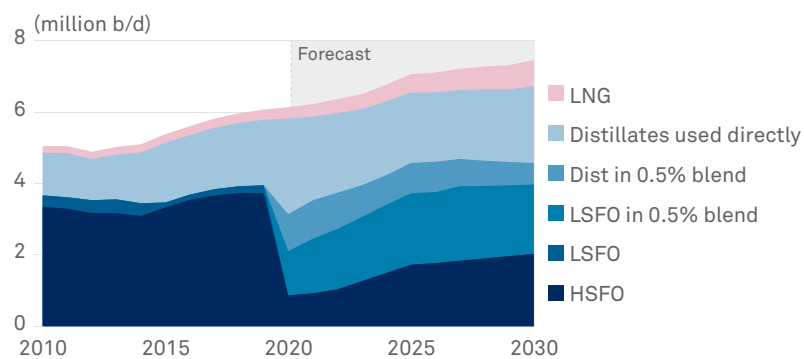
However, a handful of nations and ports have decided to operate independently of the IMO and have introduced local requirements for the operation of scrubbers.

In January, the Port of Fujairah – the key bunkering location in the Middle East – issued a notice banning the use of open-loop scrubbers in its port waters. China has already implemented a ban, from January 1, in its emission control areas covering inland waters and most of its coastline including Bohai Bay waters. Singapore is set to implement a ban from January 1, 2020, with ships that wish to dispose of exhaust gas cleaning residues in Singapore required to engage a licensed toxic industrial waste collector.

Washwater discharge from open-loop scrubbers has also been banned in many other regions including Belgium, California and Massachusetts in the US, along Germany’s Rhine River as well as the Irish Port of Waterford.

Despite some skepticism towards open-loop scrubbers, Japan has decided it will support their use after a study conducted by its Ministry of Land, Infrastructure, Transport and Tourism concluded

## Global bunker fuel demand



Source: S&P Platts Analytics

that no short-term or long-term effects on marine organisms were likely to be caused by the use of this technology.

Meanwhile, the Clean Shipping Alliance 2020 in June said it welcomed the preliminary results of an independent study presented by CE Delft, which indicated that accumulated concentrations of exhaust gas cleaning systems washwater components are at very low levels, and well below applicable regulatory limits.

Another issue cited against scrubbers is their high upfront capital costs. Costs generally range between \$2 million and \$10 million per vessel. If a company such as Maersk were to outfit its roughly 300 vessels with scrubbers at an average cost of \$5 million per vessel, this would amount to \$1.5 billion, Moody’s Investors Service said recently in a research report.

Maersk has so far disclosed about \$263 million of contractual commitments for scrubber investments.

## Sulfur spreads

Still, for some market participants, the investment case for a scrubber remains fairly strong with widespread expectations that the price of HSF0 will decline sharply after 2020, while the price of LSFO/MGO will remain high, at least in the initial years following 2020. This means that the payback time for scrubbers could still be relatively short despite their initial costs.

Although there is still a lot of uncertainty over how great the premium of LSFO over HSF0 will be, the expected tight supply of compliant fuels suggests

that the premium will be strong enough to recover the cost of scrubbers within the first two years, Drewry Maritime Research said in May.

Drewry expects the average price premium of LSF0 over HSFO to be around \$240/mt in 2020, gradually declining to close to \$80/mt by 2023 once the LSF0 supply improves.

Under the Platts Analytics reference case, gasoil-HSFO spreads are expected to reach the peak of a little over \$350/mt early in the year, but then will ease back.

“We don't know what the price of compliant fuel is going to be, and the market doesn't know,” Hamish Norton, the president of Star Bulk Carriers, said in April. “The only way to hedge is to put in a scrubber that allows you to use residual fuel oil, which will always exist.”

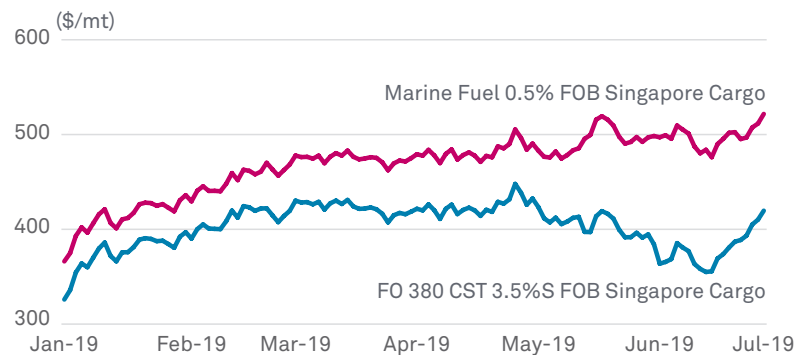
BIMCO, the world's largest international shipping association, said last year that there was anecdotal evidence that there might be a significant premium on long-term charters for oil tankers with a scrubber installed over similar ships without one.

Some expect the adoption of scrubbers to split the time-charter market into two tiers. Some charterers are likely to be willing to pay higher prices for scrubber-installed ships because it would allow them to burn a cheaper fuel, thereby trimming their operational costs. As the deadline on the new marine fuel norms draws closer, the trend of compliant ships fetching a premium will only gather steam, according to some analysts.

Green loans are also paving the way for shipowners to install this technology as banks and other financial institutions lend their support to environmental goals. In October 2018, Star Bulk Carriers said it had secured a \$310 million loan including a \$70 million tranche to exclusively finance the procurement and retrofitting of scrubbers for up to about 50 vessels in its fleet.

Early this year, law firm Watson Farley & Williams said it advised BNP Paribas as coordinating bank and agent, together with a syndicate of four other banks as lenders, in connection with a \$439 million financing backed by China's export credit agency Sinosure of 86 scrubbers for the Mediterranean Shipping Company (MSC), which are to be fitted in China.

## High and low sulfur fuel prices diverge



Source: S&P Global Platts

Japan's Nippon Yusen Kabushiki Kaisha, or NYK Line, said in March it had entered into a Yen 9 billion (\$81.5 million) syndicated loan agreement to fund installation of scrubber systems on its vessels. According to the company, that was Japan's first syndicated loan to be certified by the Japan Credit Rating Agency with its highest ranking of "Green 1," demonstrating the loan was aligned with the core components of the internationally recognized Green Loan Principles.

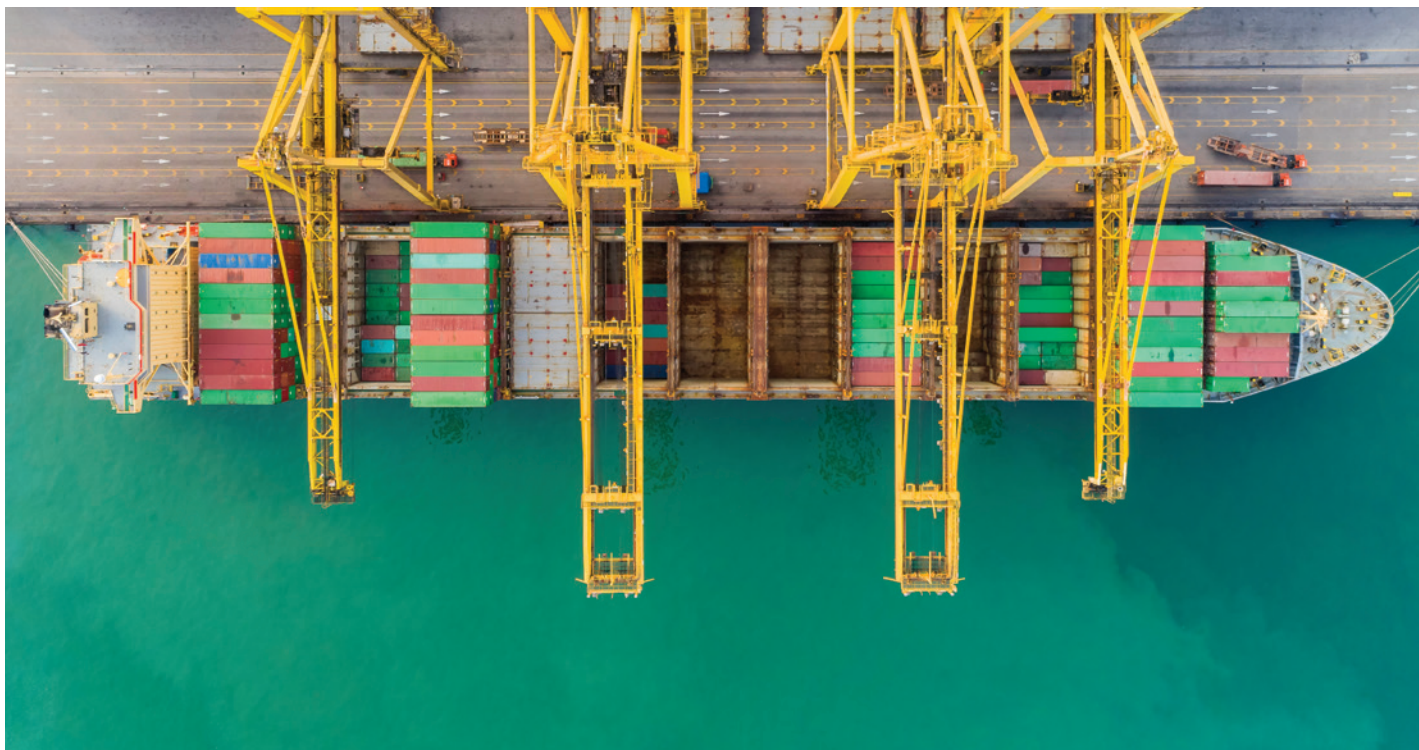
## Ensuring compliance

It is expected there will be a high degree of compliance with the IMO 2020 rule, particularly in the major ports, as stringent checks will be in place with stiff penalties likely to be enforced.

Shipowners who do not comply run the risk of considerable damage to their reputation among charterers and customers. A growing number of shipowners and operators are already developing ship implementation plans, which will mitigate risks and help with compliance.

The largest sources of bunker demand – the biggest container ships, dry bulk carriers – will have to be compliant, so non-compliance will only ever represent a small fraction of global bunker demand. One industry consultant told Platts that non-compliance will at most be 10% in the initial months following 2020.

Meanwhile, port authorities are also stepping up efforts to aid checks. Singapore, the world's largest



bunkering port, has already unveiled a list of measures to help the industry.

MPA will inspect Singapore-registered ships and foreign-registered ships calling at Singapore in accordance with the Flag State and Port State Control regimes, respectively.

“Like the violation of other MARPOL Annex VI requirements, the owner and the master of the ship may be fined up to S\$10,000 (\$7,392) or imprisoned for a term not exceeding two years, or both, for non-compliance of these regulations,” an MPA spokeswoman told Platts in April.

## Collaborate for success

The automaker Henry Ford once said: “Coming together is a beginning. Keeping together is progress. Working together is success.” This could not be more apt in the context of the IMO 2020 rule, where so many stakeholders are involved.

The charterer, owner, ship crew and manager, for example, must be involved while planning for the fuel switchover, to ensure a smooth transition. The ship’s crew will likely have to deal with more varied fuels. Trialing such fuels ahead of 2020 could help them manage the many challenges.

Refiners also need to educate their customers about the fuels specifications they intend to supply and the ports where such fuels will be available. Many of them are already engaging with their customers.

Meanwhile, bunker traders are providing credit to both buyers and suppliers at a time when shipping faces headwinds due to this rule and other impending environmental regulations.

Pricing agencies are also playing their part to bring transparency to a market that currently has limited liquidity, while international shipping industry associations such as BIMCO are already developing bunker clauses to supplement contracts, to aid preparations for 2020.

Platts, for its part, has been publishing daily price assessments for IMO-compliant Marine Fuel 0.5% bunkers on delivered and ex-wharf bases at key ports globally since July 1, 2019. Platts has also launched daily cargo and barge assessments for Marine Fuel 0.5% reflecting residual marine fuels with a maximum sulfur limit of 0.5% at key ports across the globe starting January 2, 2019.

In the end, as IBIA says, “the best course of action is for all parties to try their best to be ready for 2020... Society will judge the entire sector harshly if it fails.” ■