



# Regulation-Ready

**As 2020 approaches, new challenges emerge.**

BY **WENDY LAURSEN**

**S**hipping companies will start ordering sulfur cap-compliant fuels as early as mid-2019. Big refiners like BP and Shell are changing their processing plants accordingly, but an estimated 80 percent of compliant fuel will be blends supplied by other sources.

Low-sulfur fuel, high-sulfur fuel and LNG have been around for a long time. What's new is 0.5 percent low-sulfur fuel to meet the IMO 2020 requirements.

Apart from the significant additional cost of compliant fuel, the International Chamber of Shipping (ICS) says that implementation of the global sulfur cap will be far more complex than the previous introduction of Emission Control Areas (ECAs). The reason is the sheer magnitude of the changeover and the much larger quantities and types of fuel

involved – not to mention continuing uncertainties about the availability, safety and compatibility of compliant fuels in ports worldwide.

ICS says shipowners may initially encounter quality or compatibility issues with the new blended fuels but warns that the higher cost of alternative compliant fuels – including 0.1 percent distillates if these are the only fuels available – will not be considered a valid excuse for claiming non-availability and circumventing the regulations.



### MANAGING COSTS

Industry-wide, fuel costs are expected to rise by \$60 billion, and Inatech has developed an app that enables companies to map their fleets in real time and plan the best routes, given sea and port conditions, to get the lowest prices for their fuel. Tanker operator Torm worked with Inatech on the app's design and is among the first clients.

Some major container shipping lines have already announced surcharges for additional fuel costs, many relying on low-sulfur fuel, some with a cautious move toward LNG. According to Seabury Maritime, the cost of shipping a container from China to the U.S. East Coast, about \$1,600, will rise to \$2,200 in 2020. The company is offering a service to boost transparency in fuel surcharge calculations, saying the lack of industry standards allows for only a rough estimate of the economic impact of new fuels.

Seabury Maritime Vice President Nikos Petrakakos notes: "Most fuel data may seem like an important trade secret, but more transparency can actually lead to deeper relationships and less pushback from rightfully suspicious customers."

Victoria Cantu, Director of Business Development at FUELTRAX, notes that even now fuel quality issues can be a problem globally. After the 2018 Houston incident, in which dozens of ships took on contaminated fuel, ship operators should always be alert, she says.

The company's mass flow meters offer a way of precisely measuring fuel that's being received on board and also measuring the fuel that is being consumed – to support the IMO Data Collection System and E.U. Monitoring, Verification & Reporting requirements. In real time, the crew can monitor fuel-quality parameters and take immediate action to stop the bunkering process if required. A skid-mounted system is

available that can be moved between ships and between ports if desired.

### COMPATIBILITY CHALLENGES

Fuel systems supplier Auramarine warns that many main and auxiliary engines currently in operation may originally have been designed to run on fuels that differ significantly from 2020 fuels. Maintaining the correct fuel viscosity and temperature at the engine inlet is crucial regardless of the fuel in use, and the fuel supply system needs to be able to deliver it as specified by the engine maker in order to guarantee efficient combustion.

When switching fuels, compatibility issues can arise when different fuels are present in the same pipes and tanks. This typically results in sludging and blockages in bunker and service tanks, pipe runs, filters, separator internals and fuel injection equipment, all of which can have a serious detrimental effect on the health of the engine.

The company offers a service that provides shipowners with a detailed understanding of a vessel's individual fuel filtration, pump system, and heating and cooling requirements to ensure a fit-for-purpose solution is in place.

### LUBE MONITORING

While variable fuel quality is a concern, ship operators are also considering the potential impact on cylinder oils and lubricant monitoring. Operators who plan to switch to low-sulfur compliant fuels are already considering how to run down stocks in advance of the sulfur-cap deadline so they can minimize the mixing and disposal of redundant products.

Chevron Marine Lubricants has developed a new line of cylinder lubricants specifically to meet the challenges of



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Grindrod and InfraCo are jointly developing the Lake Victoria Marine Transport Project, through the East Africa Marine Transport Company Limited ("EAMT"), to implement an efficient and scheduled freight transport service across Lake Victoria. eleQtra Limited ("eleQtra"), in its capacity as principal developer of InfraCo, will lead the procurement process on behalf of EAMT. InfraCo is a member of the Private Infrastructure Development Group, multi-government donor-funded, infrastructure development and finance organisation delivering pioneering infrastructure in the poorest and most fragile countries. Grindrod is an integrated freight logistics and shipping service provider, incorporated in South Africa. eleQtra is a private limited company incorporated in England and Wales with expertise in the development of, and investment in, infrastructure projects in Sub-Saharan Africa.

EAMT is seeking qualified Marine Vessel Builders ("MVB") to design and build one roll-on/roll-off ferry with the option of a second vessel exercisable by EAMT. Each roll-on/roll-off ferry will have a capacity of approximate 1,200dwt.

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This procurement intends to comply with the applicable procurement guidelines of the European Union (EU). EAMT is under no obligation to pre-qualify any applicant and shall not be bound to give any reason for not pre-qualifying an applicant. EAMT will not be responsible for any costs incurred in the preparation of prequalification applications.

**Parties interested in receiving Pre-qualification Documents should contact EAMT electronically at the address below and request an electronic copy of the Pre-qualification Documents. The Pre-qualification Documents will be circulated by May 15, 2019 via return electronic mail or, made available through a dataroom.**

**East Africa Marine Transport Company Limited**

c/o eleQtra, Principal Developer of InfraCo Africa

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post-2020 fuel and deliver the same high performance and protection expected from Chevron's Taro® engine lubricants – with the added benefit of being compatible with almost all engines, marine bunker fuels and abatement technologies. The range spans Taro Ultra 25, compatible with low-sulfur fuel, distillates and many alternative fuels, to Taro Ultra 140, which is suitable for high-sulfur bunker fuels used in conjunction with scrubbers.

Ian Thurloway, Brand & Marketing Manager at Chevron, says the product range redesign comes at a time when the operating parameters for vessels are different from that of their initial development: "Vessels were operating at higher speeds. There was a lot of high-temperature, high-load operation with traditional high-sulfur fuel oils. That has changed over the last few years with slow steaming, and we have changed our formulations to cope with that change."

Time spent in ECAs is also a consideration, Thurloway adds: "We've always said one size doesn't fit all. You need to have a specific lubricant suited to your application. So if you are steaming into an ECA for a short period, in some cases your 100 BN product is fine, and there are some advantages to using it rather than switching back and forth. But for long periods of time in ECAs, you should really have the correct lubricant, which would be a 25 BN product for long-term distillate use. Post-2020 for operations using a 0.5 percent sulfur fuel combined with a 0.1 percent sulfur fuel for ECA use, Taro Ultra 40 will provide the performance and protection required."

Shell Marine already offers cylinder oils ranging from BN 25 to BN 140, but it too is taking the opportunity to refresh across the board. The company is in the advanced stages of trialing a new BN 40 oil specifically designed for 0.5 percent fuels. Despite a recent commitment to abatement technology by some high-profile shipowners, the company believes only 2,500-3,000 scrubbers will be in operation by 2020.

#### EALS

Phil Cumberlidge, Business Development Manager of PANOLIN's GreenMarine

lubricants, notes another industry trend relating to lubricants for propulsion equipment and deck machinery. "What are the most distracting, time-consuming and, latterly, costly issues related to mineral (petroleum oil)-based lubricants that the marine and offshore industries currently have to address?"

Cumberlidge says, "It has to be the conversion from mineral-based oils to environmentally-acceptable lubricants (EALs), but not from the environmental point of view. It's overwhelmingly with the performance – or more specifically, lack of performance – of some environmentally acceptable lubricants, particularly stern tube lubricants. However, at this point we need to throw a lifeline to all those who have suffered the loss of time and money with failed EALs and reassure them that not all EALs are failing."

Over the past few years, it has been well documented that some EAL base oils are affected by water, resulting in increased acidity and variation in viscosity, which can cause corrosion and black sludge.

"Blends of low-cost base oils with just enough biodegradable oil to pass environmental compliance requirements do not perform like single, robust base oil environmental lubricants," says Cumberlidge. "Lubricant life of only two years (with an expected life of five years), is being experienced due to the breakdown of the chemistry of the lubricant. This includes failure of the additive structure with solubility problems in the base oil, especially in sub-zero temperatures."

Stricter environmental legislation is requiring marine and offshore companies to convert to EALs, and others are doing so because they wish to reduce their carbon footprint. Cumberlidge recommends they seek out those manufacturers whose lubricants do perform well and who can provide a calculation of how much CO<sub>2</sub> reduction can be achieved in various pieces of vessel equipment through the use of their lubricants.

#### TAKING THE INITIATIVE

Just as new fuels and lubricants are driving change for the better in air emissions, there is potential for ships' oily waste to bring environmental benefits. Established in 1996, RYCO-JA collects ship-generated sludge oil and creates a recycled heavy fuel oil used by industrial operations on the island of Jamaica. With the cooperation of the Maritime Authority of Jamaica, CMA CGM Group and local shipping agents, affordable, sustainable and reliable port services are available island-wide.

Kyle Tofte Mullane, Director of Operations at RYCO-JA, says: "When we began operations several years ago, sulfur levels consistently averaged near three percent. But as we approach the upcoming 2020 regulations, we are pleased to see consistent improvements in our oil analysis indicating that vessels are taking the initiative prior to the deadline. Currently, oil analyses of our finished products have consistently maintained a maximum sulfur level of one percent. As long as the quality of waste continues to improve, Jamaica and the Caribbean will benefit from the improved emission standards being set forth by the IMO."

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