



# PREPARING FOR CHANGE: POSITIONING THE REFINING INDUSTRY TO TACKLE THE IMO'S NEW SULPHUR REGULATIONS

**The shipping industry is bracing itself for a huge shake up. The International Maritime Organization (IMO) has cut sulphur limits in marine fuel, and shipping firms have less than two and half years to reduce sulphur emissions from the fuel funnel from 3.5 per cent m/m to 0.5 per cent m/m. The new regulations will be enforced from January 1st 2020. On the surface, this is great news for the environment, but delve a little deeper and it will have serious repercussions for the shipping, marine fuel bunkering<sup>1</sup> and refining industries.**

For the shipping industry the implications and the effect on current ship engine performance, lubrication, consistency of fuels from port to port, along with record keeping and crew training, bring real issues on the human side of compliance. The knock-on effect globally is also likely to include increased fuel prices that cut across the consumer front from toys to airline jet fuel cost, not to mention the rise in freight rates.

Ships essentially have two options to tackle the issue; switch to a low sulphur marine fuel (known as compliant fuel) or invest in exhaust gas cleaning systems (EGCS), colloquially known as 'scrubbers'. There are other looming regulations being discussed on lowering CO<sub>2</sub> emissions which scrubbers do not address making switching to alternative fuels such as liquefied natural gas a viable option. However, all of these options are costly. The shipping industry has to consider all financial implications including ballast water management today, using future scrubbers or not, sludge handling, Emission Control Area (ECA) fuel switching, and new European regulations on Monitoring Recording and Verifying (MRV) of voyages for any ship that calls at an EU port. The shipping industry's historically low freight rates increases the difficulty in making the decision between 'now' and long term options. So where does the industry go from here? Shippers seem to expect the refining industry to supply low sulphur marine fuels but according to a recent survey by KBC, 85 per cent of refiners don't yet have a plan to cope with the changes.



Very few ships receive their marine fuels or bunkers' direct from refiners. The middlemen known as the bunkering industry, which are essentially the businesses that connect the refining output of marine fuels and marine fuel blendstocks to the shippers are faced with new challenges. An array of blendstocks, quality and compatibility issues to deliver safe and stable fuels in a more complex environment. Bunkering providers are also looking to address the logistics of sulphur components, margin, competition, and port readiness. Consolidation is taking place in this sector and some businesses are looking to make the most of the opportunities here.

Shippers or bunker providers rely upon the refining industry to supply the required marine fuel components to the market. The impact of the IMO's decision to reduce sulphur emissions is pushing the refining industry to make difficult decisions within a very short time horizon. Is it a financial risk to invest in the necessary assets to effectively get out of the high sulphur fuel oil business? Is this an opportunity for the refinery that encourages the long term strategic investment for the next 20 years?

Refiners are not only facing marine fuel production challenges, but against the backdrop of global decarbonisation outlets for bottom of the barrel heavy, high sulphur liquid fuels are diminishing. A cursory review of the utility companies, their fuel mix and strategies, show a dwindling demand for liquid hydrocarbon fuels to generate power opting for cleaner abundant liquefied natural gas.

The question for refiners is not how to respond to the new regulations fallback position here is simple just supply mid-distillate gasoils. But the key will be how they address the ever shrinking outlet for bottom of the barrel high sulphur liquid hydrocarbon fuels? For the refiner it is not one component of the product pool, it's the shift in demand and price on all production streams.

The key considerations for a company are: the location of their refinery; the crude oil grades used as the refinery feedstock (looking beyond the historical crude diet and consider forward possibilities), their availability and future prices; the complexity of the refinery and availability of residue destruction, residue upgrading and sulphur removal capacity; and the availability of compatible and economic blending components and access to the new bunkering locations.

Refiners can benefit from market uncertainties by seeking new investment opportunities to enhance operating flexibility. Rigorous modelling tools will allow refiners to investigate their operations as market conditions evolve to define the asset blend that makes the most sense for their site and market. In addition, new optimisation and real-time data integration will support margin capture, driving realised operations closer to the optimum.

It really doesn't have to be all doom and gloom for the industries that will feel the squeeze under the new regulations. Viewing the challenges from a molecular management perspective, analysing the current state of the refinery industry and what changes can be made prior to and following the 2020 January 1st deadline will provide opportunity for many refiners to prosper.

With less than two and a half years until the regulations are implemented, refiners must act fast. They must access the choices available and the decisions to be made for a strategic pathway forward. The bunker fuel transition gives refiners suffering from overcapacity and oversupplying, the perfect opportunity to implement new margin-boosting technology. Adopting this technology may help to future-proof refineries while boosting margins and delivering the cleaner fuels that the shipping industry will require. New refinery optimisation strategies based on rigorous simulations, analytics and real-time data integration will assure continued compliance without sacrificing margin capture and subsequently protecting the price at the pump for the consumers.



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