

# IMO 2020

What Impact Will It Have on  
Commodity Markets?



On January 1, 2020, the global shipping industry will undergo a radical change. All ships must reduce the sulphur content within marine fuels from 3.5 percent to 0.5 percent as mandated by the International Maritime Organization (IMO). As with all radical changes, winners and losers await, meaning there is significant opportunity everywhere.

Bunker fuels are a 5.5 MMBbl/d market and IMO 2020 is likely to have a significant impact on financial commodity markets now and over the next few years as shipping companies face the choice of utilizing lower sulphur fuels, installing scrubbers, or switching to alternative fuels such as liquefied natural gas (LNG). In this paper, Sarp Ozkan, from Drillinginfo looks at what to expect. Unless otherwise stated, all figures are from Drillinginfo.

## What is Happening? What Are the Options for Shippers?

The IMO is decreasing the sulphur content specification of bunker fuels in non-emission control areas (ECAs) from 3.5 percent to 0.5 percent effective January 1, 2020 (Figure 1). The IMO considered a possible delay of the implementation until 2025, but studies found there would not be a shortage of 0.5 percent bunker fuel oil, keeping the new specification in place for next year. To deal with the lower sulphur specification, there are several choices to be considered.

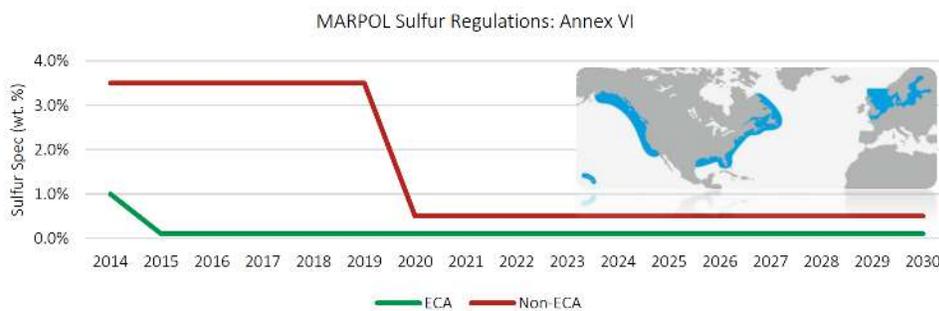


Figure 1 - IMO 2020 and Current ECA Areas (Blue)

### An Increased Demand and Higher Prices for Low Sulphur Distillates

The obvious choice is to use fuels with lower sulphur content (e.g. marine gas oil, intermediate fuel oil). To do that many refineries would need to install upgrading equipment since high-sulphur fuel oil will no longer have a market and most demand for it will be gone by the new year. Even if these refineries wanted to change feedstock to accommodate, there is a limited amount of crude oil that is light and sweet enough for use in non-complex, topping refineries.

This option means that the cost of bunker fuels will increase as the lighter components needed to blend the low-sulphur product will compete as blendstock for other high-value distillate products. This will increase distillate-level product demand more than 2 MMBbl/d, as this is the amount necessary to blend the 0.5 percent sulphur specification. Conversely, 2 MMBbl/d of high-sulphur resid would not have a home. Refiners with coking capacity will benefit, as they have the capability to refine the bottom of the barrel.

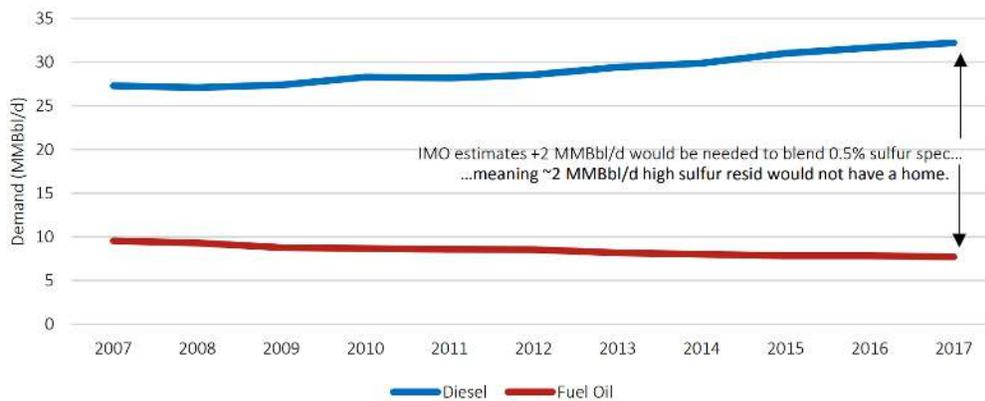


Figure 2 - Historical Diesel and Fuel Oil Demand (Source: BP Statistical Review)

Given that refiners will have to meet the increased demand for the lower sulphur distillate level products that need to be blended into the bunker fuels, this will mean that the price of bunker fuels will move closer to the price of lower sulphur distillates. To put the numbers in perspective, since the middle of 2018, lower sulphur distillate content No. 2 fuel oil has been trading at a 30 percent+ premium to No. 6 3.0 percent sulphur bunker fuel (Figure 3). However, the higher demand that the IMO 2020 regulations will create starting January 2020 will mean that distillate prices will increase to incentivize refineries to produce more distillates as well.

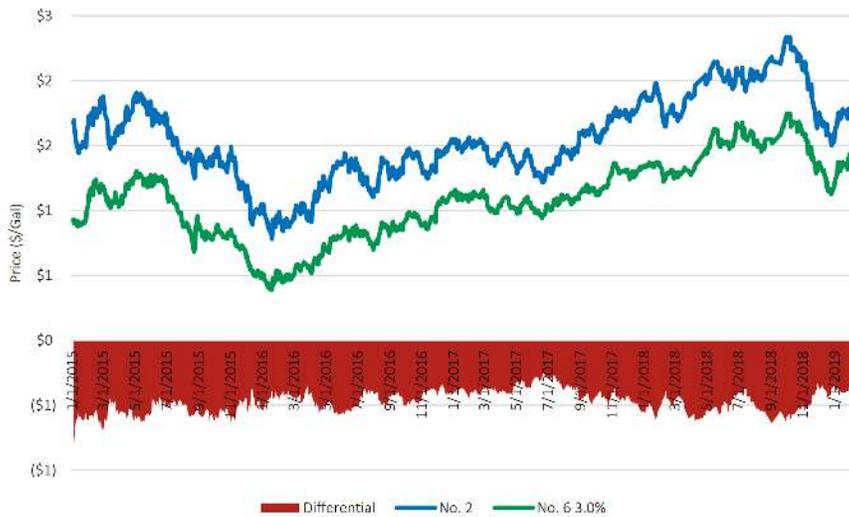


Figure 3 - Historical Pricing for No. 2 and No. 6 3.0 percent Sulphur Fuel Oil at USGC (Source: MarketView by DI)

Refiners who produce high-sulphur resid have to change their configuration or switch their crude supply. There are very few crudes that have the chemical composition to enable the resid to blend away easily. These are light, sweet crude oils with atmospheric residue sulphur content below 0.5 percent and vacuum residue content below ~0.75 percent, such as Cabinda (Angola), Qua Iboe (Nigeria), and Eagle Ford (USA) (Figure 4). Even benchmark crudes like WTI (USA), LLS (USA), and Brent (UK/Norway) require further processing before the whole bottom of the barrel can be saleable (Figure 5). There is a limited amount of these crudes available, meaning that the value of these crudes should increase for refiners that do not have the downstream refining capacity to upgrade the bottom of the barrel.

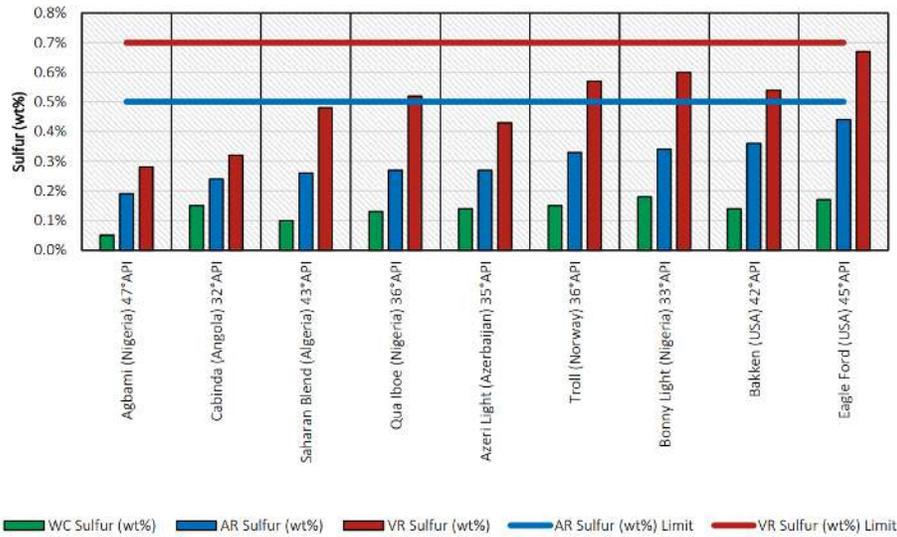


Figure 4 - Blendable Crude Examples

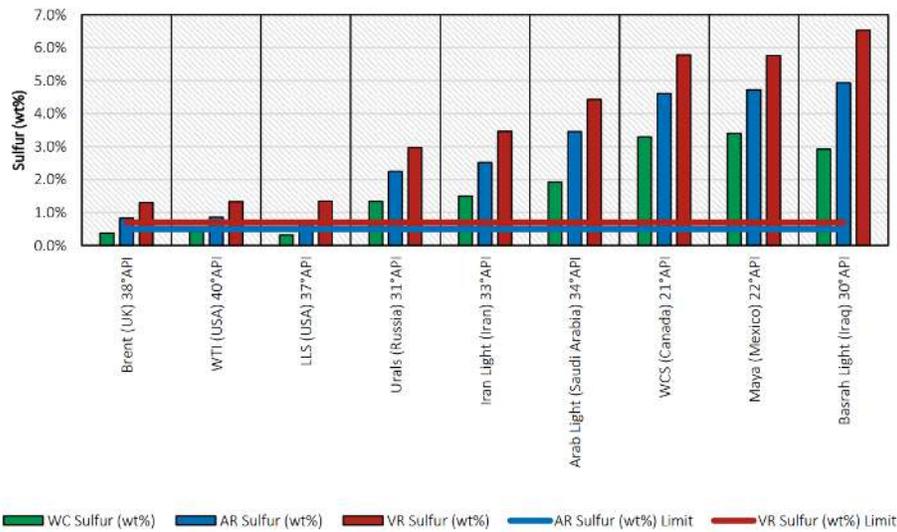


Figure 5 - Unblendable Crude Examples

In the end, more refinery investment will be necessary with the new specification coming into effect. These refinery solutions include solvent extraction, resid hydrotreating, and coking. Since solvent extraction and resid hydrotreating still have their limitations from a feedstock selection and sulphur reduction perspective, coking is likely to be the preferred option since it has the ability to make the most valuable end products from the vacuum residue stream. However, these units will require significant refiner investment because they are the most complex.

### An Increased Demand and Higher Prices for Low Sulphur Distillates

There are a few more options regarding how specifications can be met or avoided altogether. One of them is to remove sulphur post-combustion. This would require installing scrubbers on the ships. Only a fraction (less than 5 percent) of vessels are currently operating with scrubbers and this is only set to increase minimally by January 2020. Scrubbers require significant investment as well, with costs upwards of \$5MM to install. Some shops, like Mercuria, are offering their clients financing options for scrubbers in package deals that include providing them with compliant fuels and fuel hedging.<sup>1</sup>

Scrubbers will certainly be part of the larger equation as shippers navigate IMO 2020 since they can be installed in less than a year (much faster than a coker in a refinery). They also provide a way to meet the new specification in parts of the world where there may not exist the capacity or investment potential for much more capital-intensive refinery-related projects. Another option for shippers is to switch to another fuel source. This would mean switching to LNG or nuclear power to fuel ships. The concept remains largely untested and unproven in commercial uses. Also, the retrofit costs and necessary infrastructure make this a very unlikely option for widespread implementation.

### Significant Opportunities for Traders

IMO 2020 will lead to significant opportunities for traders due to the price dislocations between different refined products and crude grades in different regions. Market volatility and constrained supplies can be expected until the market can figure out the fundamental impacts and work out the issues. Trading instruments are already in place, with the NYME listing 11 Marine Fuel 0.5 percent futures contracts for trading on the CME Globex electronic platform and the Intercontinental Exchange launching a 0.5 percent futures contract this February. This is in response to strong demand for marine fuel 0.5 percent specific derivative contracts, allowing market participants to hedge forward positions in what is a growing industry.

It is not just the crude oil and refined-product markets that will be impacted by IMO 2020. All commodities – from steel to sugar – will be subject to the inflationary pressure that higher fuel costs will put on shipping costs.

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<sup>1</sup> 'Big oil traders set to cash in on shipping fuel overhaul, Reuters, Nov. 2, 2018, <https://www.reuters.com/article/us-commodities-summit-imo/big-oil-traders-set-to-cash-in-on-shipping-fueloverhaul-idUSKCN1N70QD>

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