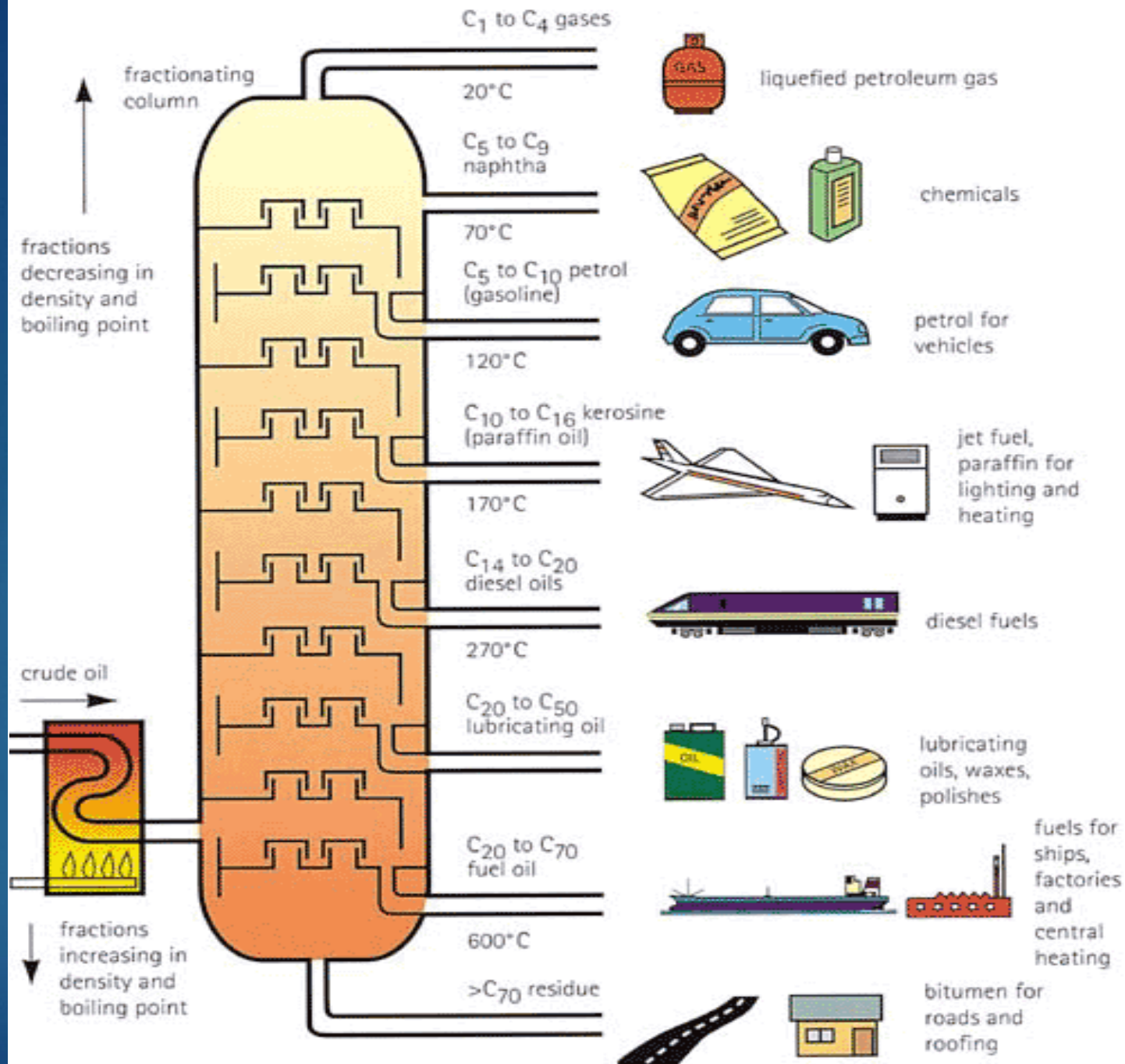


IMO 2020

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Sulfur Emission



IMO resolution on 27 October 2016

- ▶ From 1 January 2020, the limit for sulphur in fuel oil used on board ships operating outside designated emission control areas will be reduced from 3.5% to 0.50% m/m (mass by mass). This will significantly reduce the amount of sulphur oxides emanating from ships and should have major health and environmental benefits for the world, particularly for populations living close to ports and coasts.

(Source IMO)

Historic Period

- ▶ 2010 – 4.5%
- ▶ 2012 – 3.5%
- ▶ 2020 – 0.5%

Emission Control Areas

- ▶ Ships trading in designated ECAs have to burn bunker fuel with a sulphur content of no more than 0.1% since 1 January 2015, against the limit of 1% when ECAs were first introduced in 2010.
- ▶ The Marpol Annex VI ECAs are the Baltic Sea area, the North Sea area, the North American area (covering designated coastal areas off the US and Canada), and the US Caribbean Sea area (around Puerto Rico and the US Virgin Islands).
- ▶ China has its own version of ECAs, enforced in phases since April 2016, requiring ships berthing at 11 ports to use 0.5% sulphur fuel. The 11 ports are Guangzhou, Huanghua, Nantong, Ningbo-Zhoushan, Qinhuangdao, Shanghai, Shenzhen, Suzhou, Tangshan, Tianjin, and Zhuhai.
- ▶ Hong Kong has required all ocean-going vessels to switch to fuel not exceeding 0.5% while at berth starting 1 July 2015.
- ▶ While Sydney, Australia has imposed a 0.1% sulphur limit for cruise ships berthing at the port.

Impact to the refiners

- ▶ It is without doubt that the 0.5% sulphur rule will have huge implications for the global refining sector in terms of refinery configuration and operations. Simple refineries that produce a substantial share of their crude run into HFO may face margins pressure, while complex refineries may potentially boost margins with a larger production of low-sulphur products

Impact to the shipowners

- ▶ In September, Maersk determined that IMO 2020 will cause its yearly fuel costs to top \$2 billion (approximately \$100-175 per TEU, depending on length of journey), and announced its plans to shift those increased fuel costs onto its customers before the regulations take effect. Other carriers are following suit, which is creating a ripple effect in the industry and impacting companies that now have to deal with these new fees on top of tariffs.

Three ways to meet IMO 2020 standards and compliance

▶ Buy cleaner fuel MGO

- ▶ Ships can make the switch from high-sulfur fuel oil (HSFO) to marine gas oil (MGO). This is the easiest and quickest solution, but will likely lead to an MGO fuel shortage if most carriers choose this option. MGO is approximately 50 percent more expensive than HSFO.

▶ Install scrubbers

- ▶ Vessels can continue using HSFO as scrubbers clean their exhaust gas. However, scrubbers are a patchwork solution based on nascent technology and the industry has yet to create a set of standards. They can take four to six weeks to install, are only made by a limited number of manufacturers, and can cost between \$5-10 million depending on the size of the vessel.
- ▶ Capacity crunch and cost aside, the most important question every carrier needs to answer is how they'll responsibly dispose of the sludge produced by scrubbers.

▶ Order liquefied natural gas ships

- ▶ Ships that run on liquefied natural gas (LNG) will drastically decrease pollutants, however, LNG tanks could also exasperate capacity crunches as they take up almost three percent of a vessel's TEU slots, whereas scrubbers only occupy at most 0.3%. In the long term, LNG ships take years to build and retrofitting current vessels to burn LNG is expensive. Should more shipping lines acquire LNG ships, they would face a lack of LNG "gas stations" along major routes and would be at the mercy of fluctuating global oil prices.

Conclusion

- ▶ Refiners are certainly not taking the plunge first by making huge investment costs to change production configurations, while most shipowners are adopting a wait-and-see approach as they consider the options before them. It is a dilemma for the parties involved.
- ▶ All the different options will be assessed by all the involved parties and they will have to choose one that they consider the most cost effective, suitable for their operations, and commercially sustainable for the long term
- ▶ Red Sea Bunkering assessed the offers of suppliers for low sulfur fuel enabling to be secure demand of its customers



▶ Thank you