



IMO 2020 – Less than 90 days to go

10th Turkey Energy Summit, Antalya

October 8, 2019

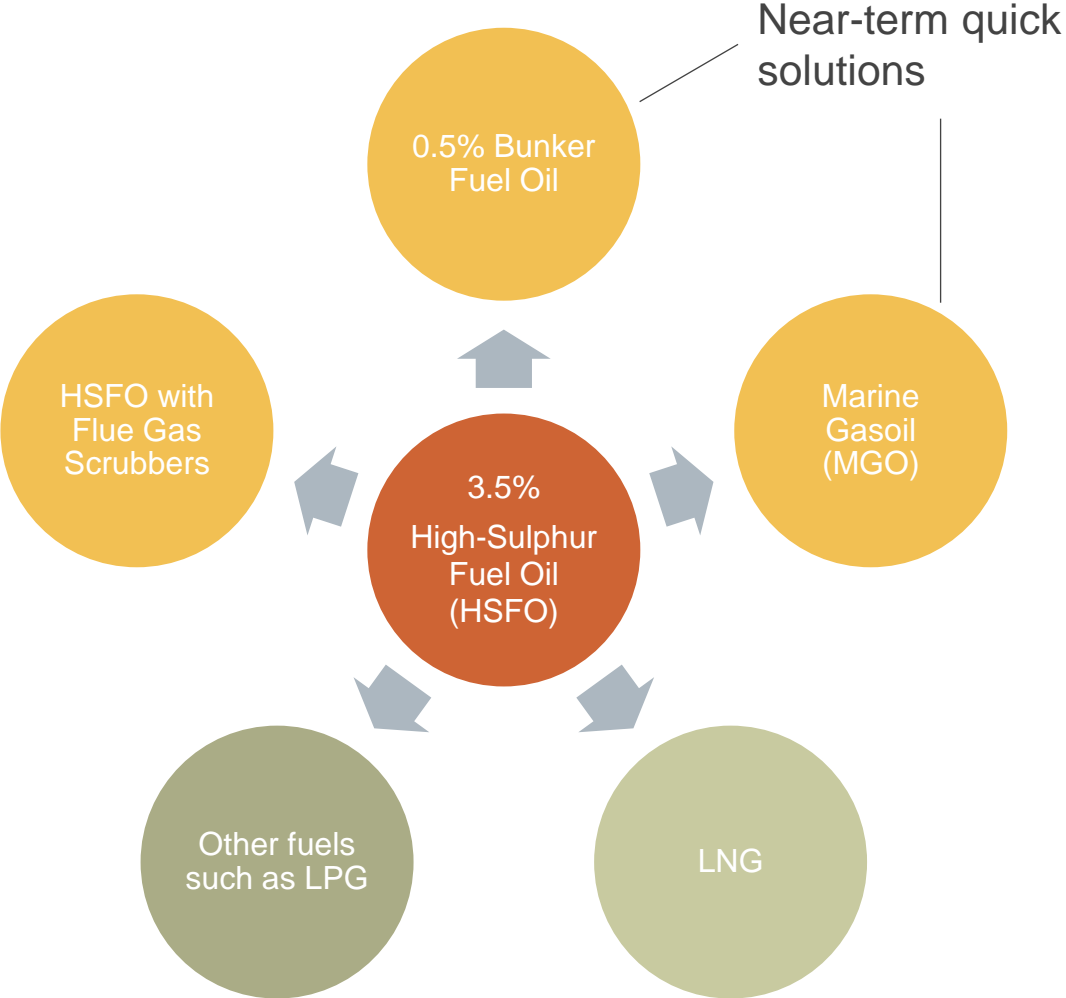
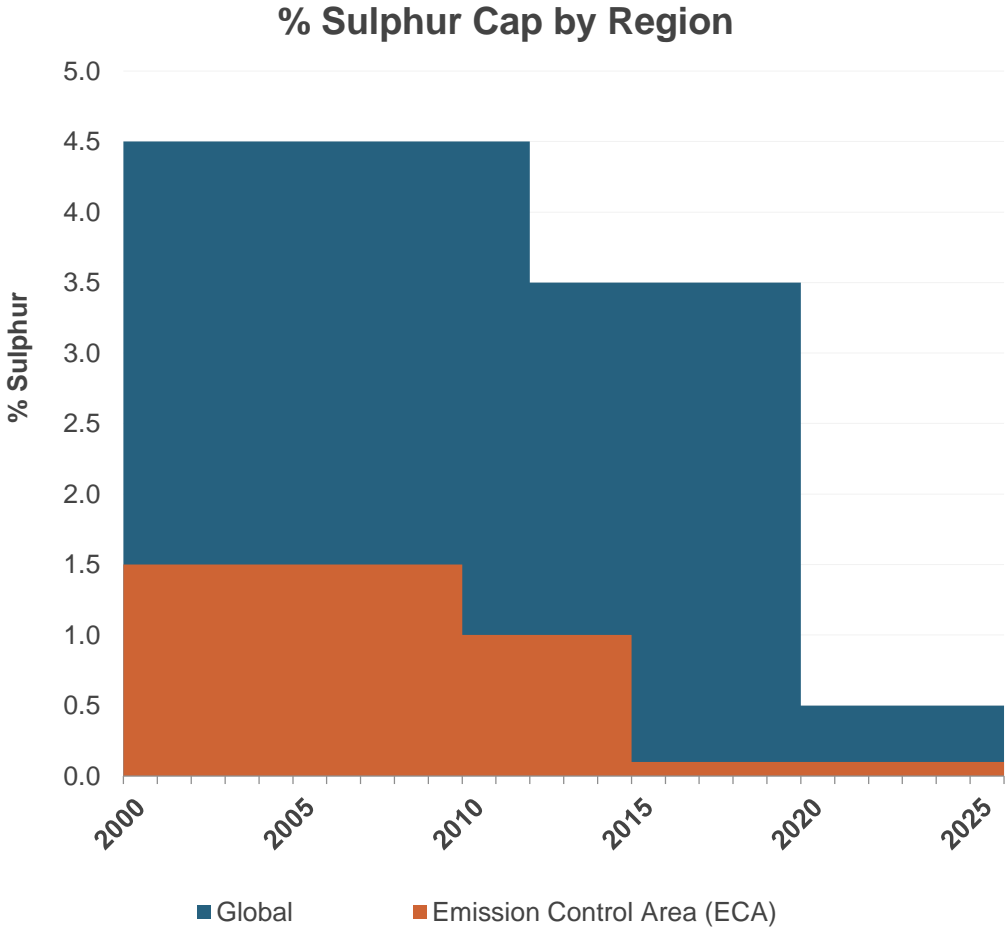
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Gemilerde niye fuel oil kullanılıyor? Zerdüşt...

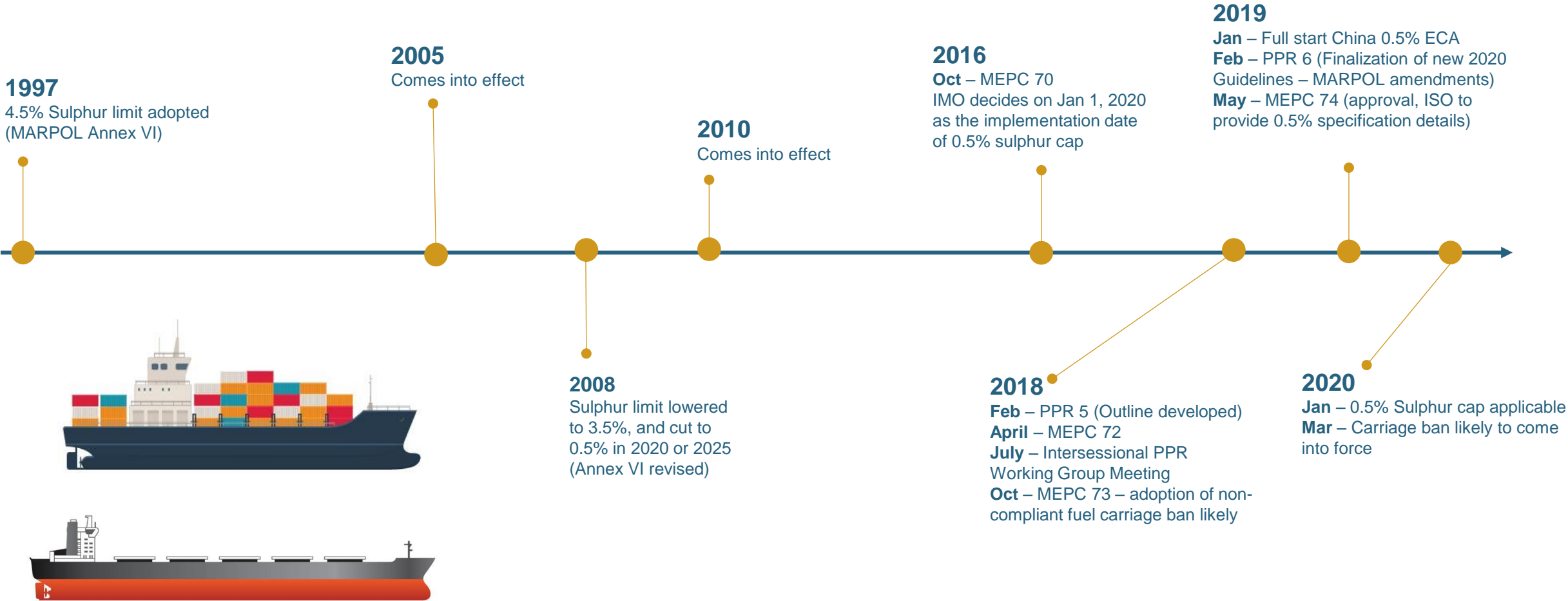
- 1875 Robert & Ludwig Nobel Bakü'de petrol buldu
- ABD'deki boru hattı sistemini Rusya'ya getirdiler ve Rus rafinerilerini Bakü sahalarına bağladılar, petrol vagonunu geliştirdiler, nehirde mavnalarla petrol taşıdılar
- Fakat Rusya ötesi pazarlar için kömür ile çalışan tankerler yetersiz kalıyordu
- 1878'de Ludwig Nobel, Zoroaster tankerini geliştirdi – dünyanın fuel oil yakan ilk tankeri
- Fuel oil, rafinerilerin elinde kalan, satamadıkları ürün olmaktan çıkıp, gemicilere para ile sattıkları bir ürün haline geldi
- Bugün dahi, dünyadaki fuel oil pazarının yarısından fazlası gemcilik sektörüne ait



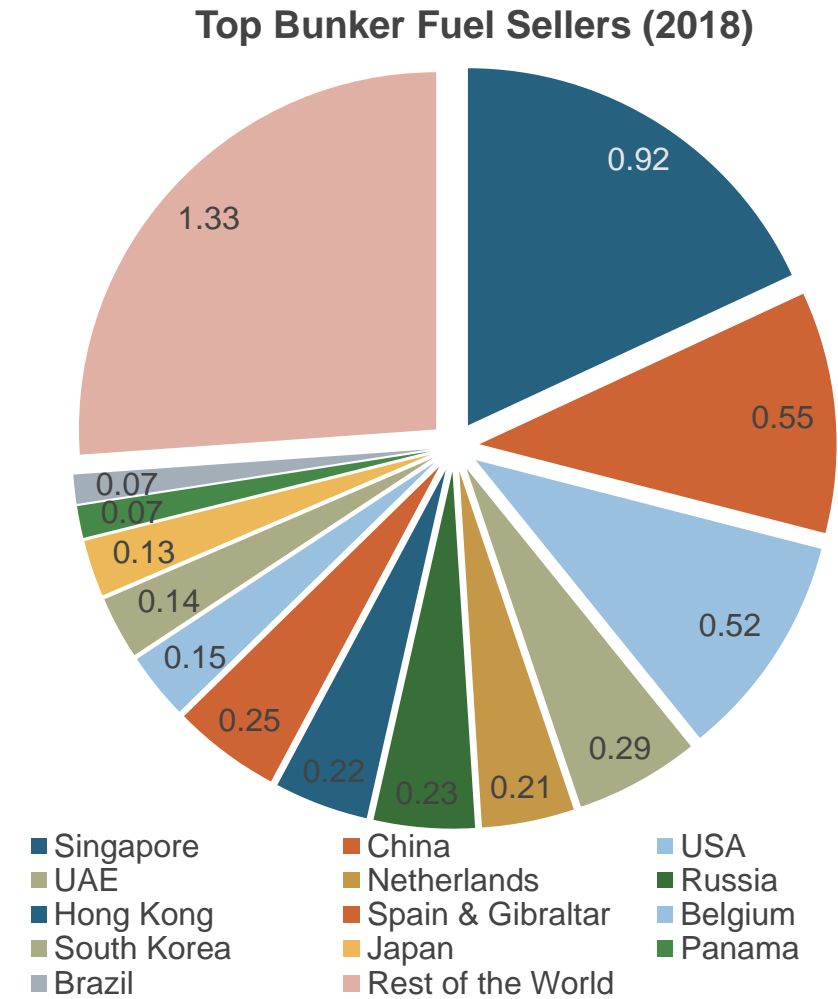
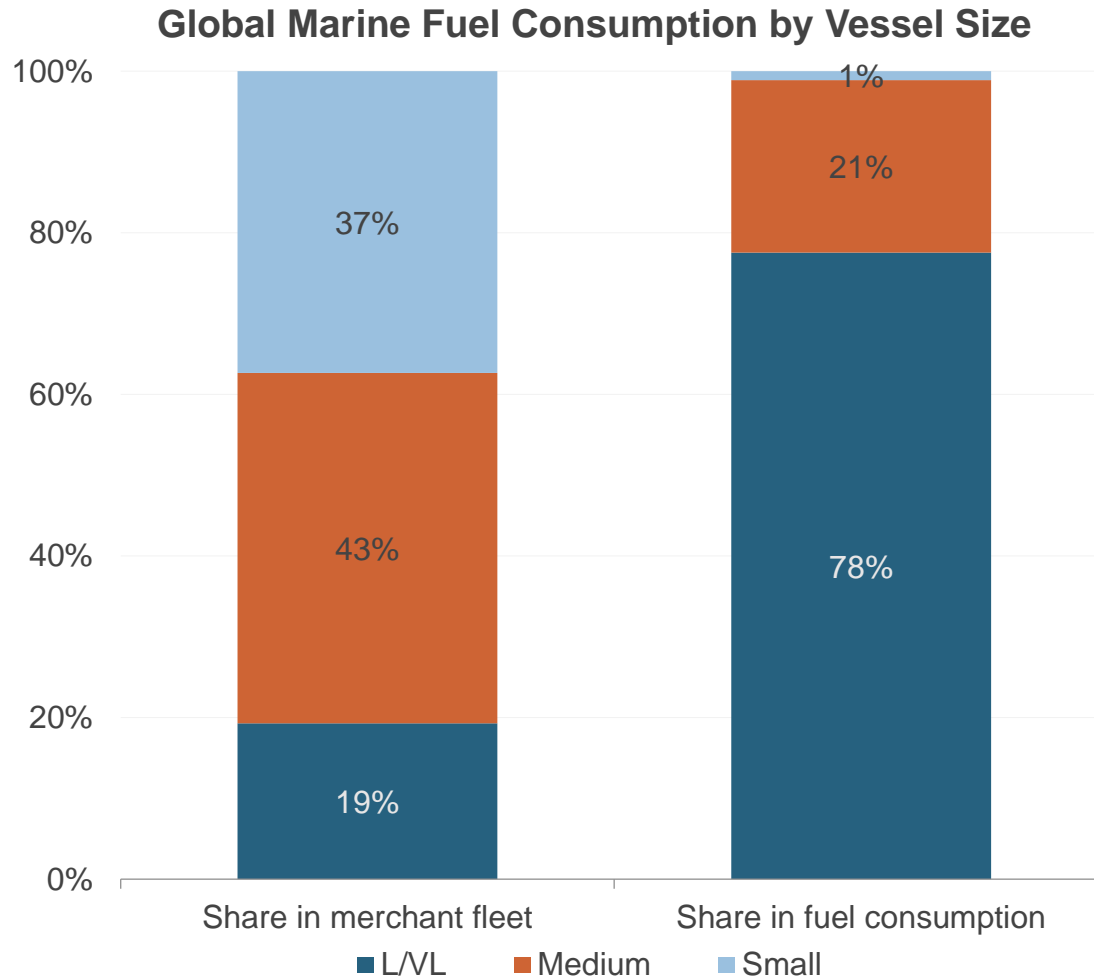
IMO2020...Several Solutions, All Costly



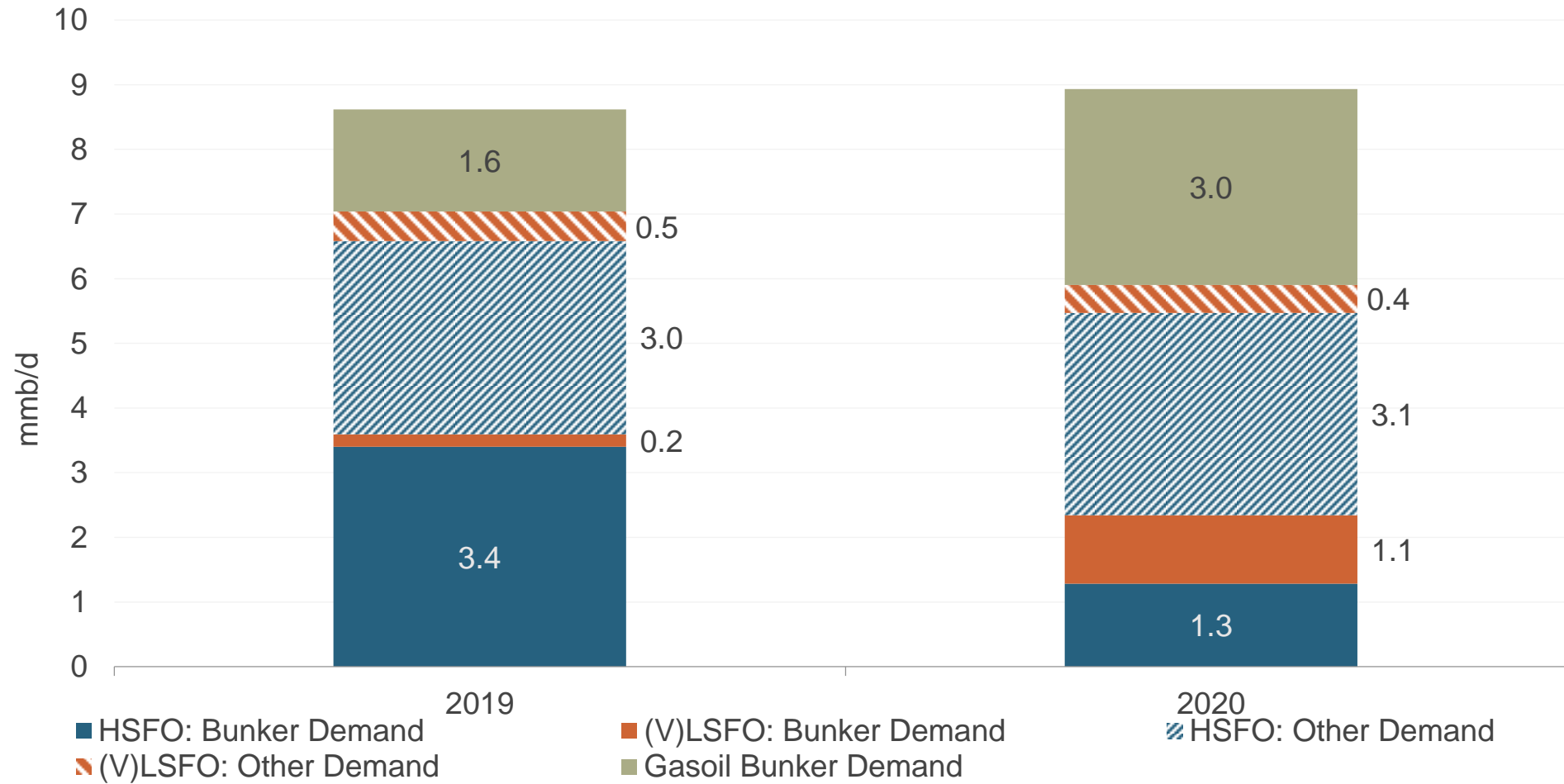
Marine Bunker Fuel Demand: Timetable of IMO's development of Guidelines/MARPOL Amendments on consistent implementation of 0.5% Sulphur limit



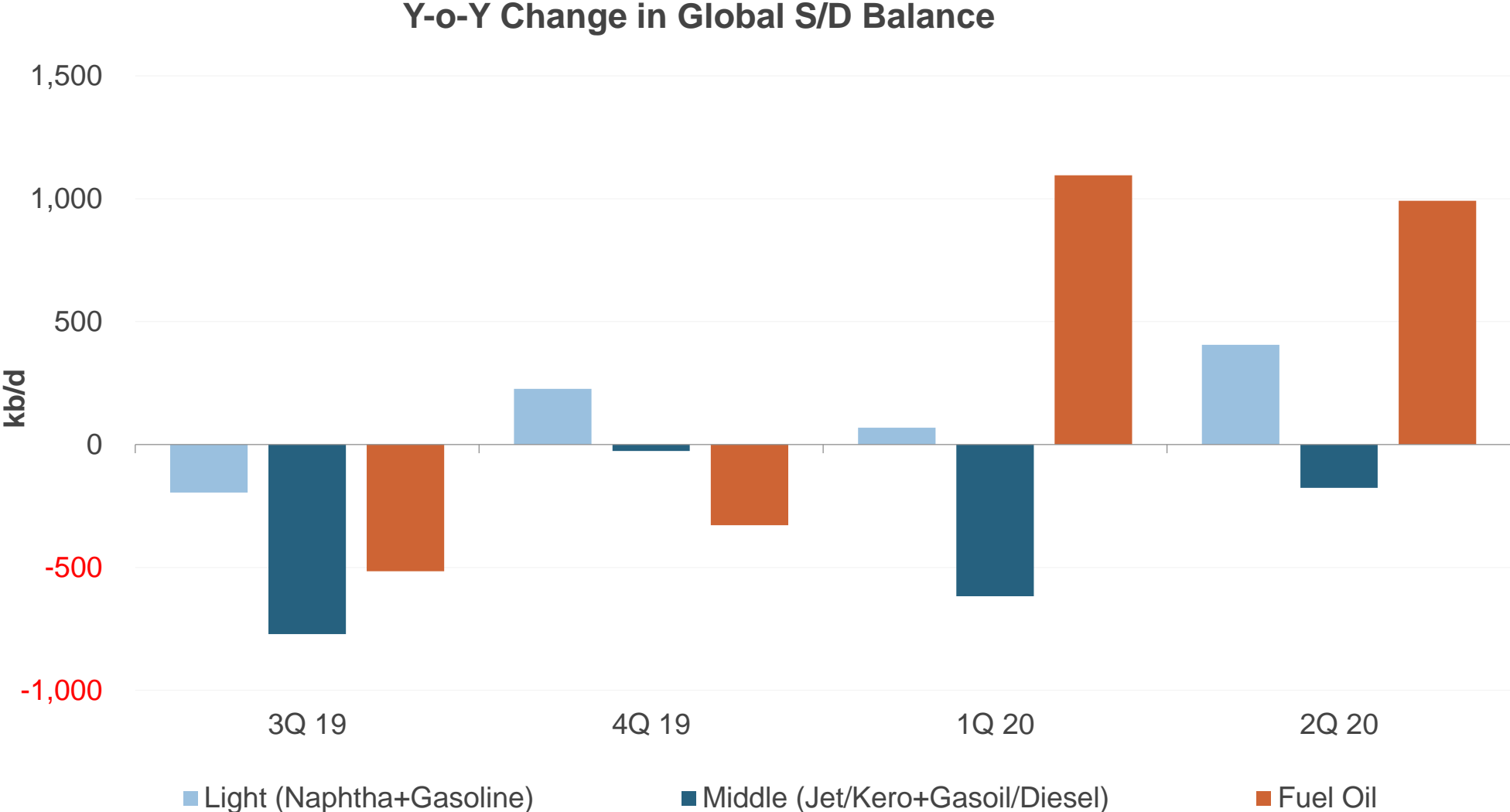
Global Marine Fuel Market Overview



Fuel Oil and (main) Bunker Demand in 2019 & 2020

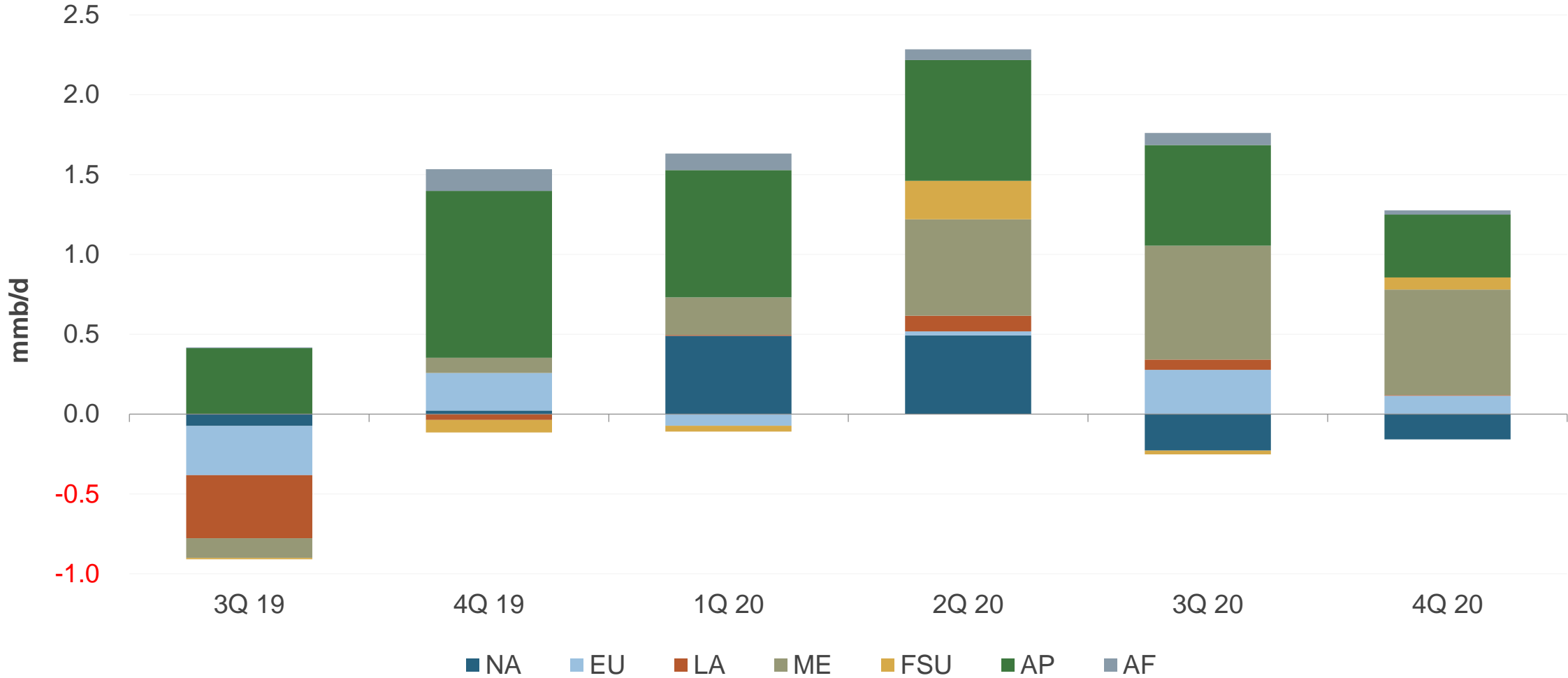


Middle Distillate Shortfall only temporary



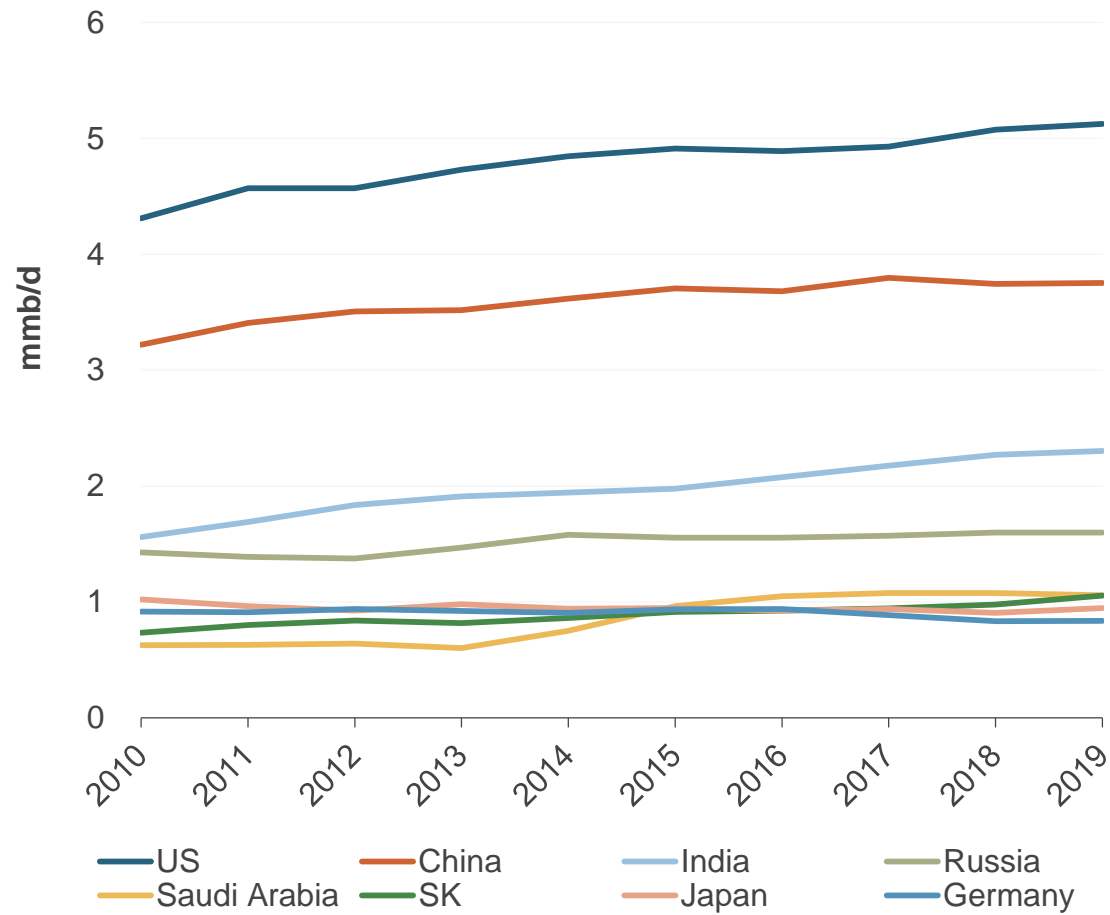
Refinery Throughput through IMO2020

Global Refinery Runs Y-o-Y Change by Region

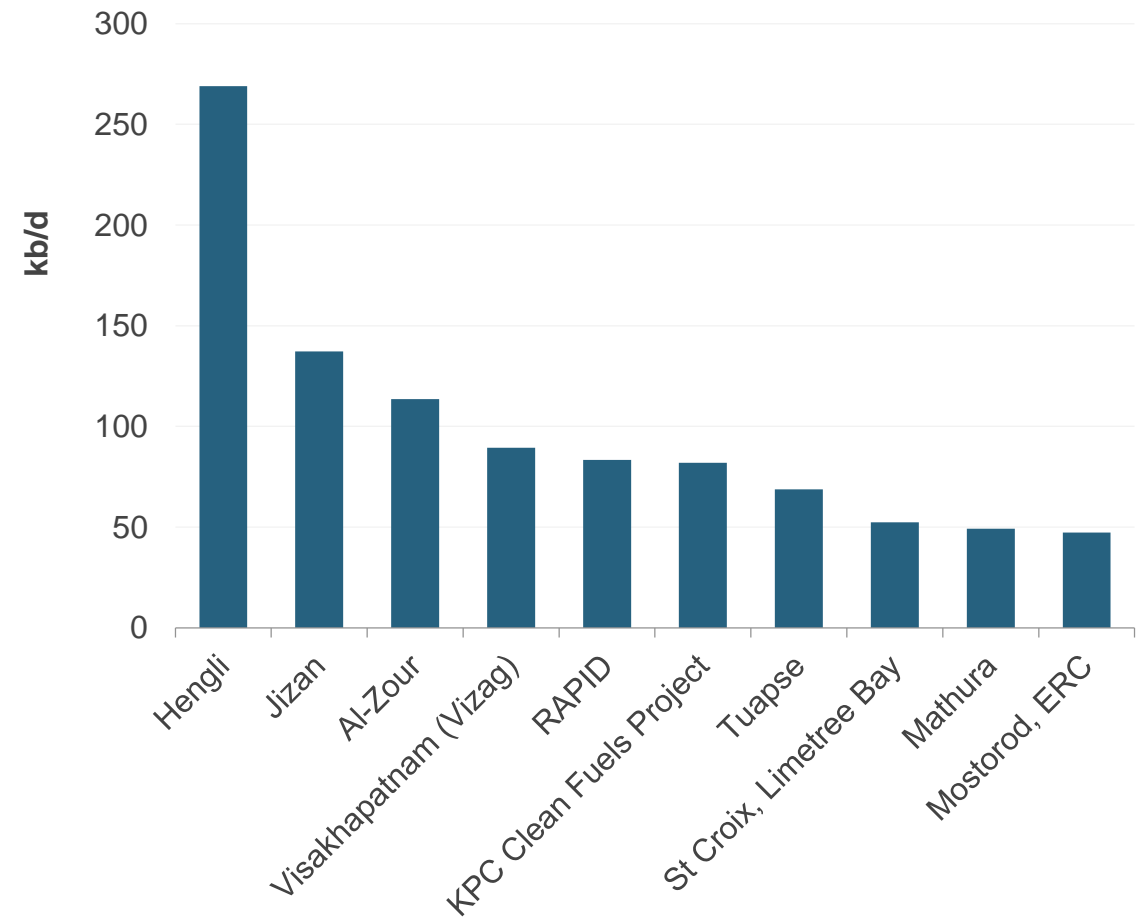


Diesel Supply is Key

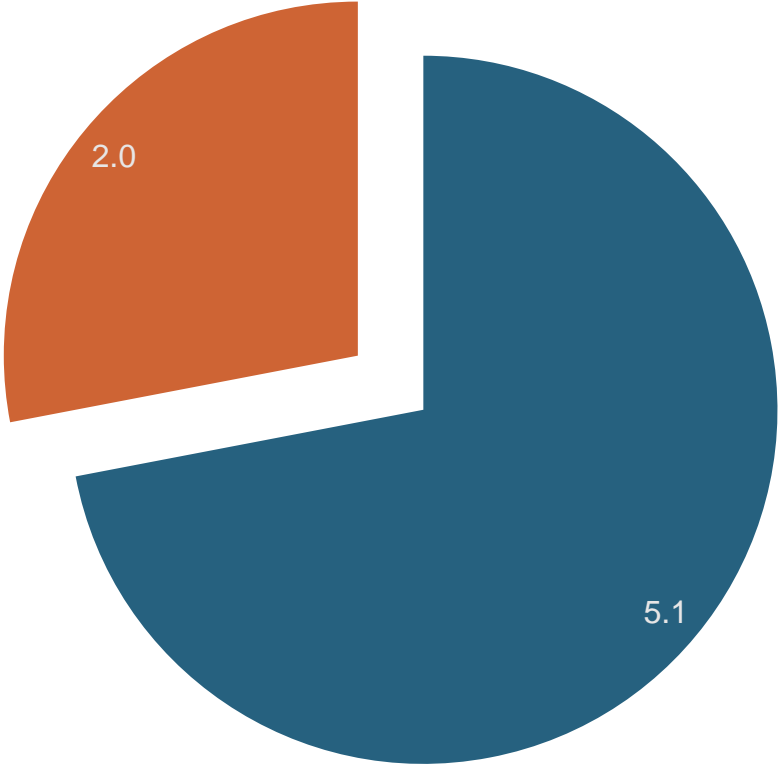
World's Top Diesel Producing Countries



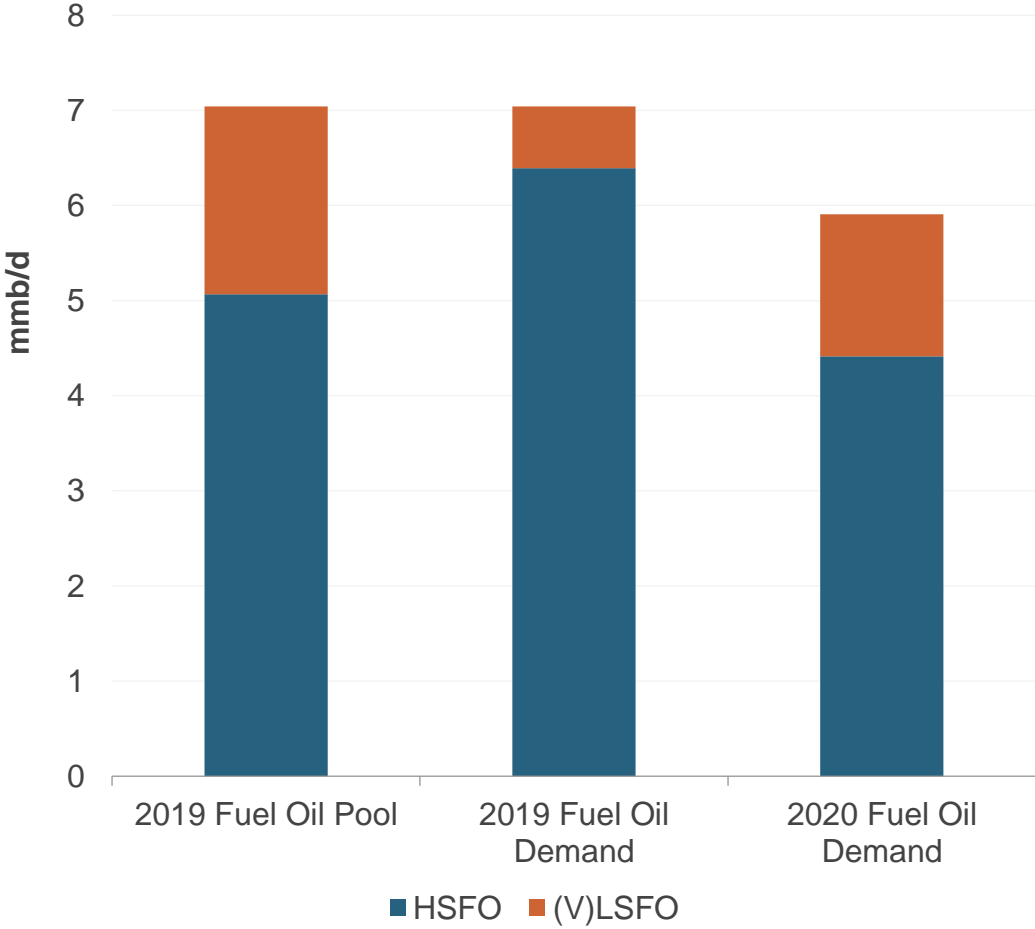
2021 – Top-10 Diesel Producers



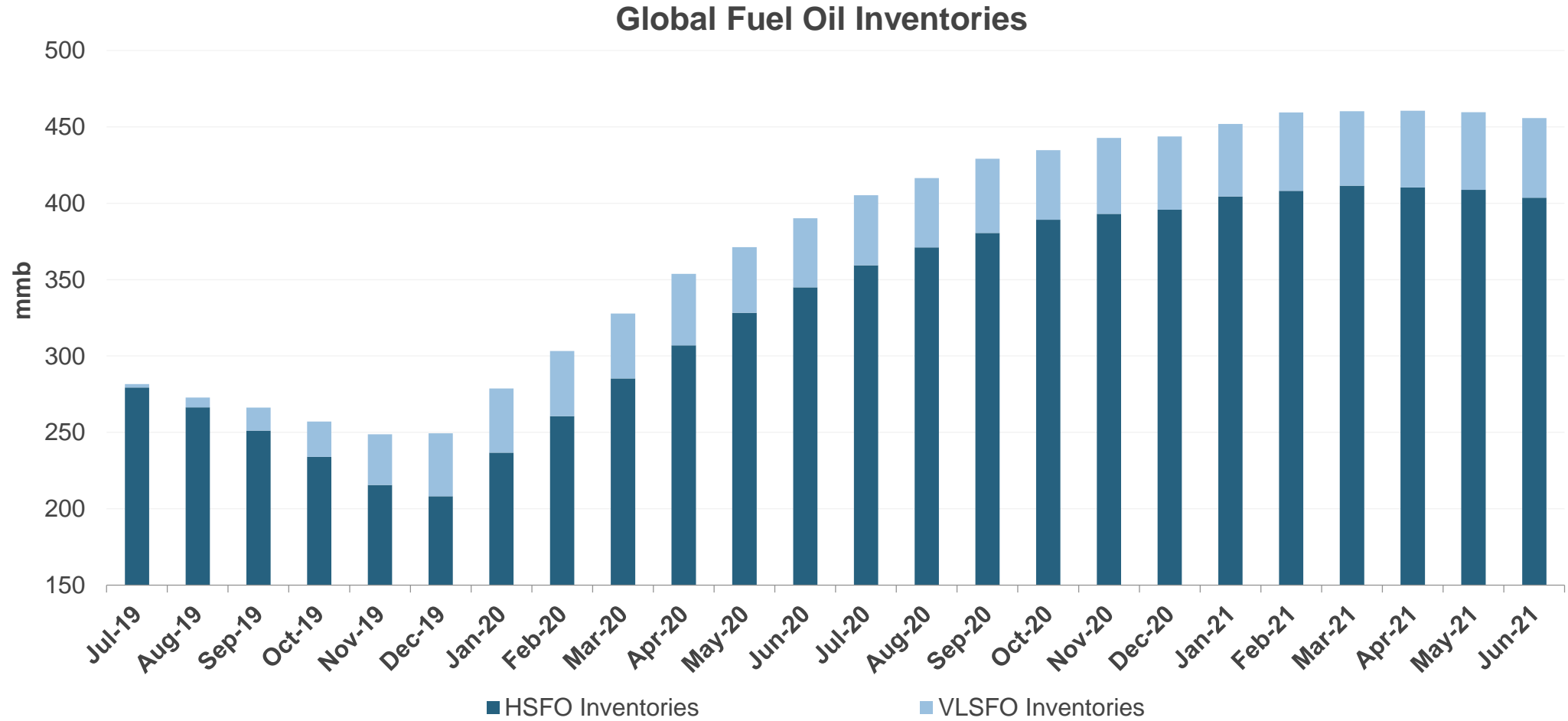
70% of the global fuel oil supply is high-sulphur (greater than 1 wt%)



■ High-Sulphur (>1wt% Sulphur)
■ Low-Sulphur (<1wt% Sulphur)

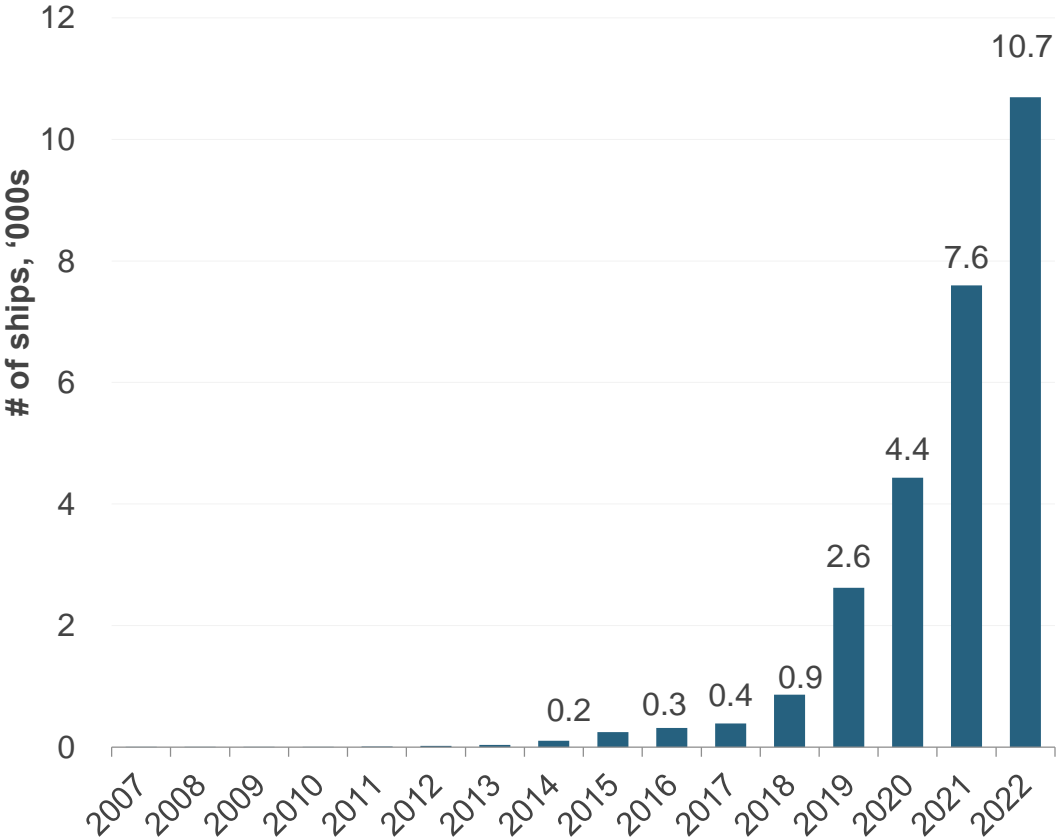


Implied Fuel Oil Inventory Outlook

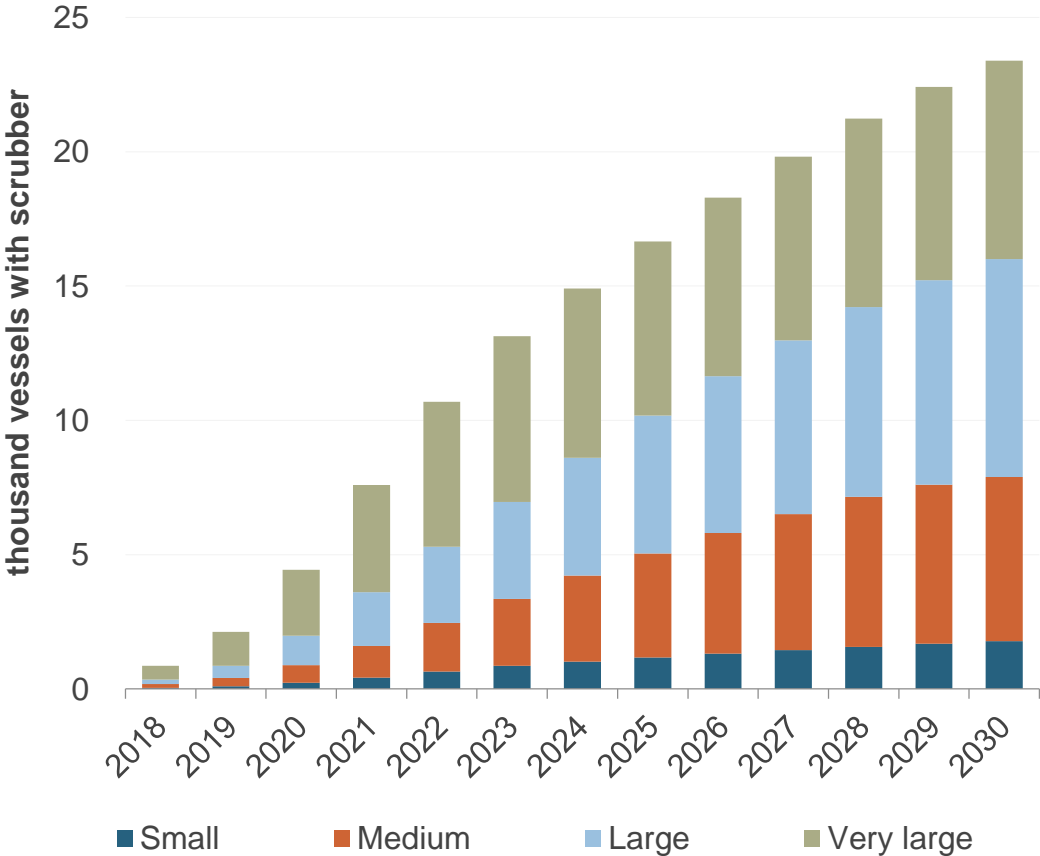


IMO2020: Scrubber order-book looks a bit over overstated for 2019

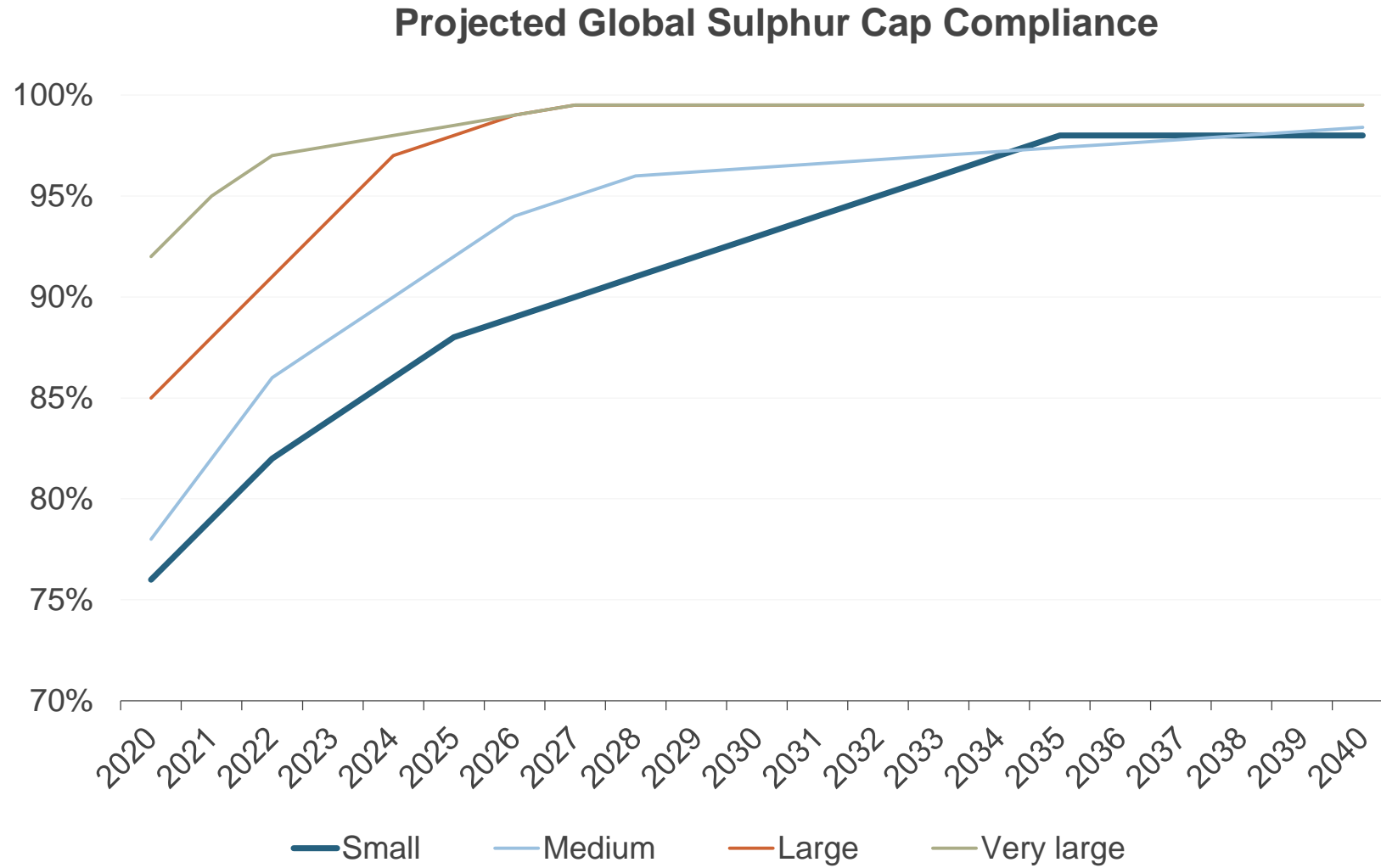
FGE Scrubber Adoption Outlook



Forecast of Vessels Equipped with Scrubbers by Category

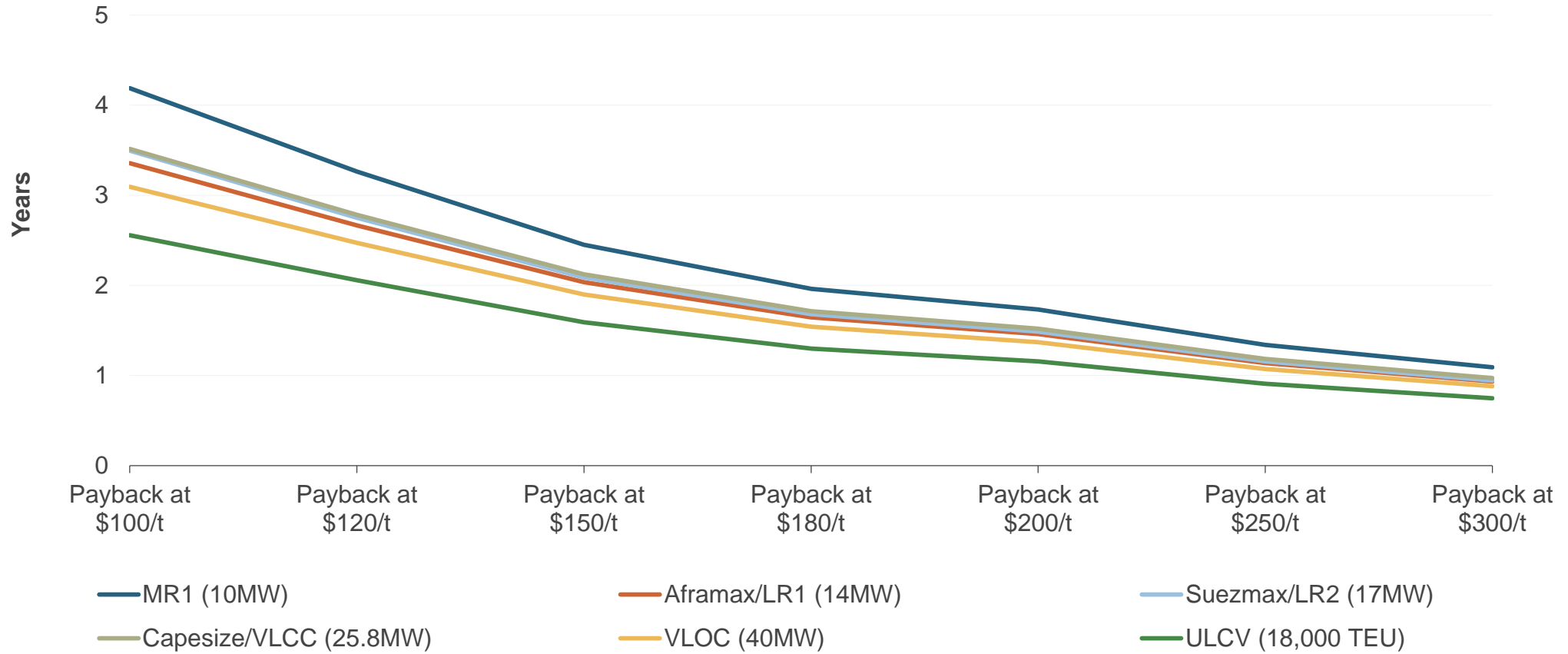


IMO2020: Forecast Compliance and Scrubbers



IMO2020: Scrubber Economics

Paybacks at Different Spreads for Different Vessel Classes (Newbuild Open Loop)



Main Locations Globally for Open-Loop Scrubber Bans



IMO 2020 Transition – Key Takeaways

The transition has started; major impacts of IMO2020 will last for about 2 years

- Trial runs by shippers, production by refiners, tank changeover by terminals and inventory building by traders has all started. It will gather pace during the rest of 2019 and especially in 4Q.
- Refiners will need weak high sulphur fuel oil prices in order to process any of the unwanted fuel oil. High sulphur fuel oil prices will collapse during 4Q 2019 as the market transitions to a lower sulphur world.
- On-shore tankage will fill; the market will be in contango to reward stockbuilding.
- Fuel oil price could fall to \$200-220/t in Europe during 1Q20.
- The middle distillate prices will increase.
- Scrubber investment will be well-rewarded in 2020 (and 2021)
 - Gasoil/fuel oil diff expected to average \$300-350/t in 2020 (\$220-260/t in 2021).
 - Investment still rewarded thereafter, but at a longer payback period (i.e. slower)
- 0.5%S BFO quality will vary, depending on local economics of and demand for distillate and gasoline.
- Shift away from spot sales to term deals for ship-owner/operators (particularly in the beginning, while specifications of a 0.5%S are yet to be properly standardized) will create a two-tiered market along the bunker supply chain.



Thank You

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