

IMO 2020 – Marine Fuel Sulphur Limits

Key Points:

- From 1st January 2020, global sulphur limits on marine fuels agreed by the members of the International Maritime Organisation will come into effect.
- Shipowners will need to take action to ensure compliance with the new limit – either by installing ‘scrubbers’ to remove sulphur from existing fuels or by purchasing alternative low sulphur marine fuels.
- A range of potential alternative low sulphur fuels are available, with different challenges and opportunities from each.
- To produce low sulphur marine fuels, refineries need to make major upgrades – something that has not occurred uniformly across the globe.
- Nonetheless, many companies have made infrastructure upgrades in order to provide low sulphur fuels to the market.

1. How will the new limit be met?

- 1.1. Meeting the new 0.50% m/m cap on sulphur will **require action by shipowners** who will be responsible for meeting the limit, but there will **also be a role for fuel suppliers** to play.
- 1.2. With implementation and enforcement happening across the world, the 2020 limit will likely have a major impact across a global market with a daily demand of 3.8 million barrels – approximately **4% of total oil demand**. Most of the current marine fuel demand is met by **High Sulphur Fuel Oil (HSFO)**. This won’t be banned by the new 2020 limit but will only be able to be used in ships with advanced ‘**scrubbers**’, which remove harmful pollutants like SO_x during combustion. Some ports are already drafting plans to phase-out HSFO, however it is estimated to remain as approximately 10% of global marine fuel demand by the end of 2020¹.
- 1.3. An alternative to the installation of ‘scrubbers’ on ships is for fuel manufacturers to produce low sulphur marine fuel alternatives, such as **Very Low Sulphur Fuel Oil (VLSFO)**, **Marine Gas Oil (MGO)**, **Marine Diesel Oil (MDO)** or **Liquefied Natural Gas (LNG)**.

2. What impact will this have on fuel manufacturers and suppliers?

¹ DNV GL Conference Q4 2019

2.1. With mixed adoption rates amongst shipping companies of ‘scrubbers’ on ships, demand for low sulphur marine fuels ahead of the 1st January 2020 has increased. There are a number of opportunities and challenges surrounding the alternative fuels mentioned above, including:

- **Very Low Sulphur Fuel Oil (VLSFO)** – Compliant with the 0.5% m/m sulphur limit, VLSFO is a ready replacement for HSFO – having broadly the same properties, with a fuel producer having removed more of the sulphur. However, VLSFO requires desulphurisation infrastructure and capital investment at refineries, new plants of which can cost up to £1 billion per site.
- **Marine Gas Oil (MGO) and Marine Diesel Oil (MDO)** – Again, available alternatives to HSFO, ‘lighter’ fuels like MGO and MDO are compatible with many ships that have previously used fuel oil. However, middle distillates are already in high demand for HGVs and light road vehicles.
- **Liquefied Natural Gas (LNG)** – LNG has low sulphur content and a number of locations around that world have seen ships converted to LNG. However, transitioning to LNG operation can be capital intensive, and a move away from fuel oils or distillate fuels would require new bunkering infrastructure at locations across the globe.

3. What impact will it have on the UK and the downstream oil sector?

- 3.1. As the principal transport method for international trade, a worldwide shift to low sulphur marine fuels will shake the kaleidoscope of fuel demand for consumers in the UK and elsewhere.
- 3.2. Before the final implementation deadline of 1st January 2020 was agreed, two studies ([CE Delft](#), and [EnSys/Navigistics](#)) were undertaken to assess the feasibility of delivering the compliant fuels required.
- 3.3. While the view was that it would be possible, it is notable that the IPIECA/BIMCO study presented some an assessment that the result of the regulatory change could be *“strains on global oil markets with sharply increased supply costs not only for marine fuels but, critically, for nearly all fuels in all regions worldwide”*².
- 3.4. Part of the reason for the strain identified is that refineries that have not undergone upgrades to produce low sulphur marine fuels might see pressure to meet demand for middle distillates (including MGO or MDO, but also jet fuel and diesel for road uses). The Europe region, and including the UK itself,

² EnSys Energy with Navigistics Consulting, MARPOL Annex VI Global Sulphur Cap 2020 Supply-Demand Assessment Final Report (2016), p3

are net importers of middle distillates³ and this could mean that prices have to change in order to balance supply and demand.

- 3.5. With a relatively short period between the decision in 2016 to move to a 0.50% m/m sulphur limit and implementation in 2020, the **major infrastructure upgrades** at UK, European and global refineries necessary to produce the low sulphur marine fuels identified above **have not occurred uniformly**.
- 3.6. Nonetheless, a number of **companies have made investments over the last decade** – with refinery upgrades on hydrotreaters, FCCUs, desulphurisation plants and coker units – making many suppliers across the global downstream sector ready to supply lower sulphur fuel oils to meet the IMO 2020 implementation.

³ BEIS, Digest of UK Energy Statistics (2019), chapter 3 (petroleum)
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/820657/DUKES_3.2-3.4.xls