

The Important aspects of IMO 2020

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Introduction and Summary

Big questions around the IMO 2020 issues are swirling around without crystal clear answers.

With less than 10 months to go, let us review the key issues: Availability and prices, scrubbers, compatibility and stability, ISO 8217 inadequacy, and patents.

Briefly, availability of 0.5% VLSFO will not be an issue. Prices will hover anywhere from \$30 to \$120/MT over HSFO prices. Scrubbers can't be beat for price differentials above \$80/MT. Compatibility and stability of blends will be a big headache. Buying ISO 8217 compliance fuel will not guarantee fit for use, and finally, formulation patents guarantees expensive litigations.

Availability and Prices of 0.5% S Compliant Fuels

There will be plenty of fuel, but for a price. All the major oil companies have built residue-destruction process units like delayed cokers and resid hydrocrackers to flood the market with marine gasoil. They maybe salivating at the prospect of charging customers \$200/MT or more vs. HSFO, which might not be the case.

There are two factors besides competition and price manipulation that might keep a lid on prices:

About half of the world's crudes are low Sulfur, suitable for production of VLSFO, in the form of Straight Run Fuel Oil, vacuum tower bottoms, low sulfur gasoils (both atmospheric and vacuum), and not even counting ULS shale crudes. This will flood the market with LS FO blend components.

The internal cost of production based on December 2017 Gulf Coast data shows costs between \$30 to \$120/MT above 3.5% S HSFO. [1] Even with addition of profit margins of the order of 30 to \$60/MT, still the VLSFO will be much more competitive than MGO.

Scrubbers

The shipowners that waited until the last moment to get scrubbers are kicking themselves, but they have only themselves to blame.

We together with others have popularized the scrubber Return On Investment (ROI) calculations "ad nauseam". [2]

We published analyses of ROI for given CAPEX and OPEX in excruciating detail, with IRR of 130 to 140%...and paybacks from 4 to 7 months, depending on ship size, to no avail. It was as crystal clear as it could be: for price differentials greater the \$80/MT above HSFO and consumption of ~60 tons/day, scrubbers are the way to go.

Now suddenly, “THEY” have seen the light. Unfortunately for them, all scrubber vendors are fully booked for the next two years.

Compatibility and Stability

2020 will see an enormous increase in the number of blends purportedly meeting specs. The reason is desperation to come up with the cheapest possible blends, thus forcing the use of a large variety of blend components of dubious properties and quality, and skimping on meaningful tests.

Predicting stability and compatibility of bunker blends is well established, and step by step calculation “how-to” information is widely published by major oil companies [3], but rarely used. There will be a terrible price to pay for cutting corners, but then uneducated and lazy buyers will have only themselves to blame.

ISO 8217 Inadequacy for 2020

Critical properties of a 2020 bunker blend are stability and compatibility.[3]

These depend crucially on the blends and blend components asphaltene content and the aromaticity of the blend, which has to be high enough to keep asphaltenes in solution.

These issues of including asphaltenes and aromaticity in specs have been brought to the attention of ISO working group defining the new Publicly Available Specs (PAS) to be issued 3Q2019. After ISO WG “lost” the proposal, it is not certain that these will be included in PAS.

Managing Tankage for the 0.5%S Bunkers

Everyone touching 2020 bunkers will have to get used to the need to SEGREGATE bunker tanks by content:

- Paraffinic blends only
- Aromatic blends only

For so called “Hybrid” blends, the rules are different:

- Keep aromaticity of the hybrid blend greater than 50%
- Always pour paraffinic blend components on TOP OF aromatics

Patents for 2020 Formulations

All major oil companies defensively patented 2020 bunker blend formulations to protect themselves from a repeat of the UNOCAL patent fiasco. [4] [5]

The patents themselves are extremely broad, and are hardly defensible in court. But because they are extremely broad, it is impossible to avoid infringement.

Are you going to pay royalty for every ton you sell? Or can you afford a lengthy and costly litigation to take on Exxon, Shell, Total, etc.??

Now is the time to negotiate a friendly royalty-free agreement than to go to court.

Get Informed

The best 2020 outcome is to have an educated bunker supplier and consumer. We hold periodic seminar covering the topics mentioned above in great detail. We invite the bunker community at large to avail themselves of this educational opportunity. The information is available at www.theblendtiger.com

References

- [1] Barsamian, A. et al, "2020 Blend Recipes", Oil & Gas Journal, Dec 2017 issue
- [2] Barsamian, A. et al, "IMO 2020: Scrubbers vs. 0.5%S Not a Slam-Dunk", Ship & Bunker, Aug. 10, 2018
- [3] Barsamian, A. et al, "Bad Bunkers: ISO 8217 will not save you", Ship & Bunker, Mar.6, 2019
- [4] US Patent 9,803,152 B2 Kar et al, assignee: ExxonMobil, 'Modifications of Fuel Oils for Compatibility', October 31, 2017
- [5] Barsamian, A. , et al "Patent Wars?", Ship and Bunker 2019

The Author

Eliseo Curcio is a Chemical Engineer, and CEO of Blend Tiger; a consulting company working in the blending business and financial modeling. He previously worked as Vice President and CFO at Refinery Automation Institute (RAI), where he transformed the business and increased revenue in few years. He also created a blending training platform, considered one of the best in the business to learn blending. Mr. Curcio is an optimization and modeling specialist, with over 10 years of experience in the areas of gasoline, diesel, crude and bunker blending, ethanol nonlinear property correlations and octane boost, and naphtha and butane blending. Mr. Curcio works often with traders and brokers developing custom algorithms and refineries and terminals. He previously worked at Catholic University of Louvain (Belgium) in advanced modeling and optimization in the membrane area. He holds BS and MS degrees in chemical engineering with high honors from the University of Calabria, Italy.

