

Bunkering: New Rules, New Fuels & New Opportunities



An Overview

- **An introduction to IBIA**
- **2020: both a challenge and a great opportunity**
- **Fuel Availability**
- **Choice of Fuel**
- **Fuel Quality and Compatibility**
- **Scrubbers**
- **The cost of the change and the effect on prices**
- **Compliance and Enforcement**
- **Summary**

The voice of the global bunker industry

- **IBIA represents members globally across the entire industry value chain**
- **IBIA has representative status at the IMO and actively lobbies on the industry's behalf**
- **We participate globally in a range of committees and correspondence groups covering every aspect of bunkering**
- **Members participate in developing strategy and operational plans through IBIA Working Groups**

Membership profile

- **Members in over 80 countries**
- **Across the entire industry value chain**
- **Energy Majors, Refiners, Traders and Brokers**
- **Suppliers, Ship Owners, Charterers**
- **Port Authorities, Storage Terminals, Agents**
- **Credit Reporting Companies, Lawyers, P& I Clubs**
- **Equipment manufacturers, Journalists and Consultants**

IBIA partners with other industry stakeholders



- **IMO**
- **Governments**
- **Shipping Associations**
- **IHMA, Nautical Institute, IMarEST**
- **SIGTTO & SGMF**
- **Port Authorities**
- **Maritime Anti-Corruption Network**

No Generic Solution for 2020

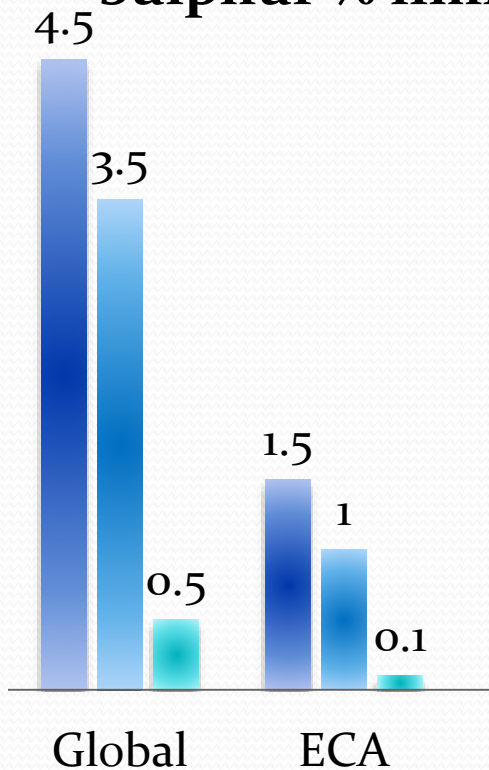
- **Depends on Vessel Type, Size, Age and Value**
- **Trading pattern**
- **Time spent in ECA**
- **Fuel Oil / low sulphur bunkers price differential**
- **Crew experience with fuel handling**
- **In house technical resources**

The world as we know it

- **Residual fuels (HFO/IFO) used for shipping since 1950s**
- **Marine distillates (MGO, MDO) traditionally mainly used for auxiliary engines**
- **Price of marine fuels linked to crude oil**
- **Typically sold to ship on 15-30 days credit terms**
- **Changes in refining since around 1970 caused residual fuel oil quality to change**

MARPOL Annex VI 'step changes'

Sulphur % limit changes



- 2005: 4.5% global limit
- 2006: 1.5% ECA limit
- 2010: 1.00% ECA limit
- 2012: 3.50% global limit
- 2015: 0.10% ECA limit
- 2020: 0.50% global limit

Sulphur regulations huge impact

- **Residual fuel bunkers (HFO/IFO) typically has 2-3% sulphur content**
- **Marine distillates (MGO, MDO) traditionally up to 1.5% or 2% sulphur**
- **Since 2015, MGO also used in main engines due to sulphur regulations in ECA**
- **Demand for 0.10% and 0.50% sulphur fuels cannot be met by traditional residual fuels**
- **New low sulphur fuel formulations emerging**

Transition is unprecedented in scale

- ECA change was 16 million tons from 1.00% to 0.10%
= 0.15 million tons sulphur extracted
- Global Cap will be 120 million tons from 2.6% to 0.50%
= 2.5 million tons
- Over 15 times more sulphur to be extracted
- There will be a wide range of 0.5% S blends
 - Compatibility/Stability issues
 - Pour point issues
 - Cat fines
 - ISO grading
- None blended commercially yet / fuel testing growth?

CE Delft's conclusion **

The analysis demonstrates that in all cases, as well as in a number of sensitivity scenarios, the refinery sector has the capacity to produce sufficient amounts of maritime fuels with a sulphur content of 0.5% m/m or less, while producing products on specification for all other sectors

**** Availability study undertaken for IMO in 2016**

What will happen to HSFO supply?

- **Suppliers will need segregated storage and supply lines for several different fuel grades**
- **48 million mt scrubbed = 15% of the market in 2030 or 4 million mt/month. “Who is going to store HSFO for that?”**
- **Major bunker ports with plenty of storage/delivery options will offer HSFO**
- **May not be viable in smaller ports unless they have regular calls from vessels with scrubbers**
- **Ports with low HSFO turnover may not be able to sustain a viable spot market**

Meeting demand for 0.50%S fuels

- **Innovative blending to replace traditional distillates with lower cost products**
- **Expect more new fuel formulations for 0.50%S than seen for 0.10%S**
- **Most refiners looking at options**
- **Intermediator blenders will increase their activity**
- **Growing role for desulphurisation technologies**
- **Fuels may not be good match to current ISO 8217 distillate/residual fuel tables**

Spoilt for Choice

- **Low sulphur:**
 - **ULSGO/LSGO**
 - **DMB/DMC**
 - **ULSFO RM/DM**
 - **VLSFO RM/DM**
- **Scrubbers/Abatement technology**
- **LNG**
- **Alternatives: methanol, ethanol, battery, nuclear, biofuel**

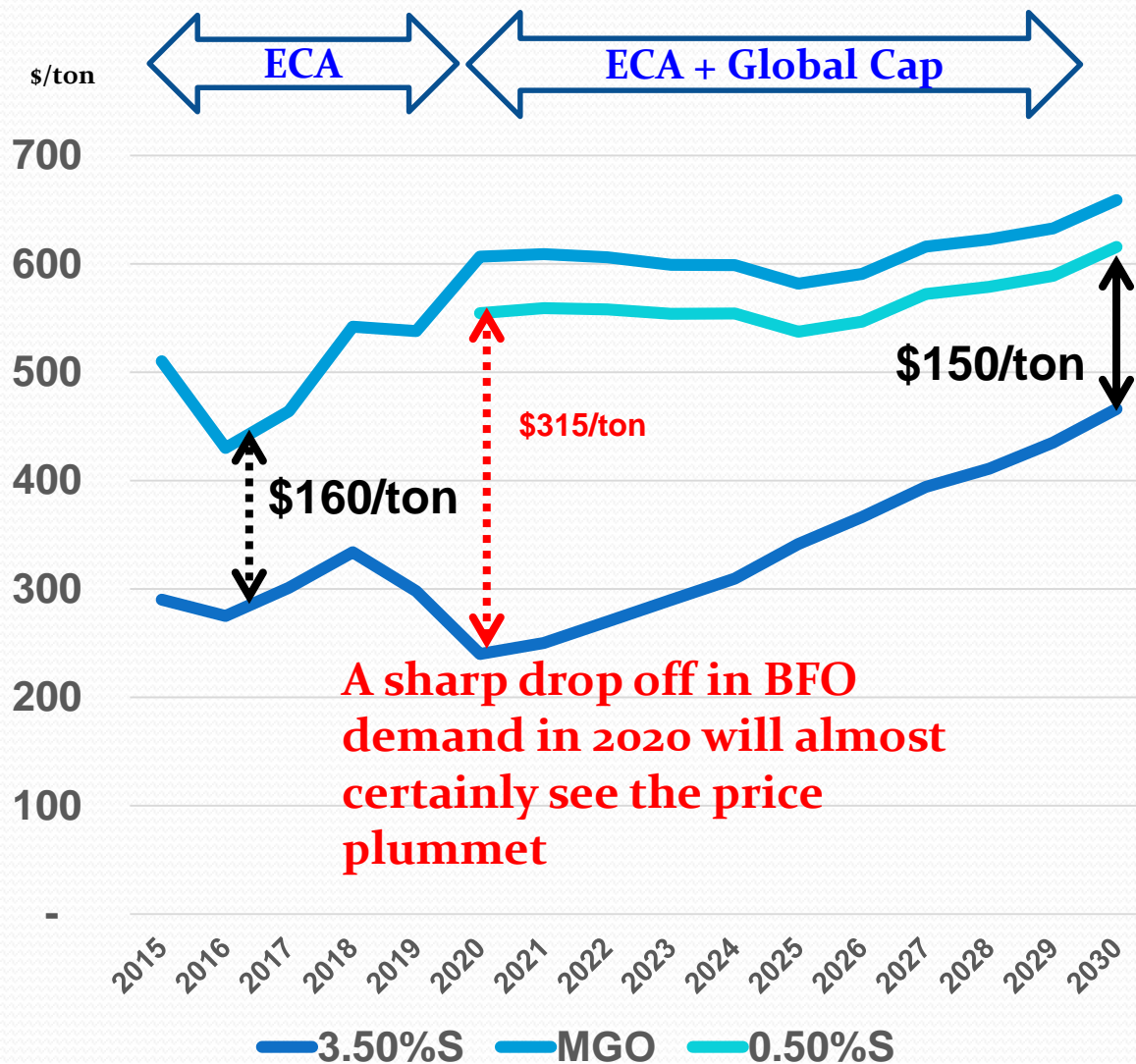
LNG demand may grow due to price fall

- **Lower prices could make LNG bunkers more competitive**
- **But scrubbing can be lowest cost compliance route**
- **LNG not significant before 2025**
- **De-carbonisation will eventually increase consumption of renewables**

Industry fears: Sulphur disputes

- **Majority of sulphur disputes/NOPs relate to ECA fuels**
- **Suppliers saw 90-95% drop in sulphur claims in 2015, NOPs down by about 80%**
- **0.50%S limit likely to increase blending and hence risk of sulphur 'off-specs'**

Prices



BFO will subsequently be priced as cracker/coker feedstock resulting in slightly higher differentials

A sharp drop off in BFO demand in 2020 will almost certainly see the price plummet

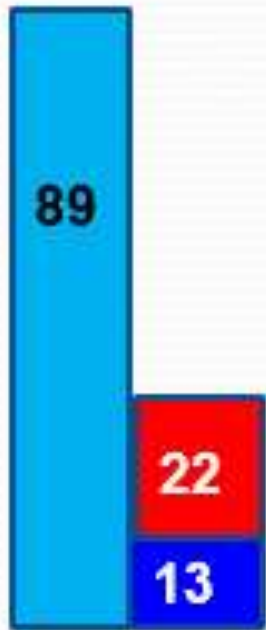
Pricing 0.50% sulphur bunkers in 2020



- **North West Europe will have lowest HSFO prices**
- **BUT higher for 0.50% - the predominant fuel after 2020**
- **Red Sea & ME lower priced than Med & Europe but higher than Singapore**
- **Potential increase in demand in ME from east bound tonnage from the Med and west bound voyages originating in the Arabian Gulf**

Enforcement – serious challenges ahead

- Outside territorial waters and ECA the compliance agency is the vessel's flag state
- There are serious questions as to how diligent certain flag states will be



- There are 89 signatories to Annex VI and 35 Open Registries according to the ITF
- Of which 13 are not signatories to Annex VI and 22 are
- Open Registries account for 56% of bunker purchases
- This may well encourage re-flagging reducing compliance

Enforcement – serious challenges ahead



- **States that are not signatories to Annex VI have no obligation to enforce the 0.50% global cap**
- **There are 172 states within IMO hence there are nearly 100 non signatory states**
- **However, over 90% of global trade passes through ports in the 89 signatory states**
- **To date 28 states (26 in the EU , USA and Canada) have significantly enforced Annex VI**
- **This means 61 states require port state enforcement resources and to train officers**

Options to improve Compliance

- **Make it illegal to leave port with insufficient bunkers to reach next designated port compliantly**
 - **This requires a change to Annex VI**
 - **Enforcement under local jurisdiction**
 - **Can accommodate scrubbers**
 - **Still requires the state to enforce**
- **Ban carriage of HSFO in bunker tanks unless the vessel has approved abatement system**
- **Other approaches are under review**
 - **Discussion at IMO**
- **IBIA with others are seeking to**
 - **Smooth the transition to 0.50% limit**
 - **Improve compliance**

Enforcement: Fines

- **Within EU non-compliance is treated by some states as a criminal offence and as an administrative offence by others.**
- **Fines for first time offences can range from Euros 3,500 up to Euros 6,000,000.**
- **In most cases PSC can detain a vessel for non compliance**

In Summary

- **IMO's 2020 decision is final**
- **Scale of transition is unprecedented**
- **No generic solution but need to plan**
- **New products will emerge to meet 0.50% sulphur demand**
- **Some ports may struggle to meet demand in 2020**
- **HSFO supply may be discontinued in some ports**
- **Quality and compatibility issues may arise**
- **Contamination risk on board and in shore tanks**

In Summary

- **Scrubbing may be lowest cost route to compliance**
- **Price differential for HSFO and 0.5% increase**
- **LNG unlikely to be significant factor until 2025**
- **Compliance and Enforcement must be clarified**
 - **Compliance: Most people will do the right thing**
 - **But expect inconsistent enforcement**
 - **Amend Annex VI to give PSC increased powers**
- **Invest in training your people now**

Working with our
members to keep the
global marine fuels
industry on course

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