



Capital Link's 8th Operational Excellence in Shipping Forum – Oct 2018

IMO 2020 & Marine Fuels – An Oil Major's Viewpoint

Energy lives here™

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IMO Regulation

Global sulphur cap of 0.50% to be adopted in 2020

- No change to 0.10% sulphur ECA
- Fuels with sulphur content over 0.50%: no longer be allowed without abatement technology
- Enforcement will be handled by IMO member states
- The fuels supply chain would require reconfiguration



Compliance options

In 2020 about 95% of deep sea fleet will use 0.50%S compliant fuels



LNG

246 LNG vessels estimated by 2020
(excludes LNG carriers)

Ferries, Oil/Chemical tankers leading uptake; Containerships new-builds

67 supply locations concentrated in Europe



HSFO with Scrubbers

1,623 ships installed / on order, 68% retrofits

Scrubbers installed are open loop mainly, hybrid emerging

By 2020: estimated 2,500 to 3,000 ships fitted



0.50%S or 0.10%S

Composition of new 0.50%S fuels remain uncertain

Concerns over compatibility and stability issues may drive higher demand of MGO

Source: DNV LNGi, EGCSA, Platts'

Choosing a suitable low sulphur fuel

“it is all about the Know”

- “Know” your supplier
 - Quality, Reliability, Integrity
 - Innovation
- “Know” your fuel
 - ISO 8217: 2017
 - Fit for Use
- “Know” your onboard handling
 - Best practices
 - Technical support
- “Know” your lubricants
 - Best practices

News Release

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ExxonMobil Confirms Specification Details for its 2020 Compliant Fuels

Additional locations announced for availability of ExxonMobil's 0.50 per cent sulphur fuels

- All of ExxonMobil's announced low sulphur compliant fuels will be residual grades
- Fuels will be compatible with each other, provided best practice guidance for bunkering, handling and storage is followed
- Newly developed cylinder and engine oils, as well as services, will complement ExxonMobil's fuel offer



ExxonMobil issues best-practice tips
for switching to low sulphur fuel

ExxonMobil fuels' development process

Development goes beyond ISO 8217 testing

- Cross Functional Team
 - ExxonMobil Research and Engineering (EMRE)
 - Refinery Product Quality Advisors
 - Refinery Optimizers
 - Marine Fuel Technical Advisors
- Rigorous process on fit for use assessment
- Patented technology identifying compatibility issues



ExxonMobil commitment

Long term commitment to cleaner fuels, including marine

- Long-term refinery investments
 - New delayed coker unit, Antwerp
 - Hydrocracking expansion, Rotterdam
 - Evaluating multi-\$B project, Singapore
 - Evaluating significant upgrades, Fawley
- 0.50%S fuels available ahead of 2020
- Technical support at point of use
- New range of marine lubricants and services



ExxonMobil lubricants' for 2020

Landscape will be simplified post 2020

- Cylinder oil

Fuels sulphur range

LNG/LPG

0.10 - 0.50%

$\leq 3.5\%$

Lubes BN range

Low BN

40 BN

High BN

Evolving engine design

Cold corrosion

- TPEO: working with OEMs to develop next generation oils
- Mobil Serv Cylinder Condition Monitoring

Resources

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