



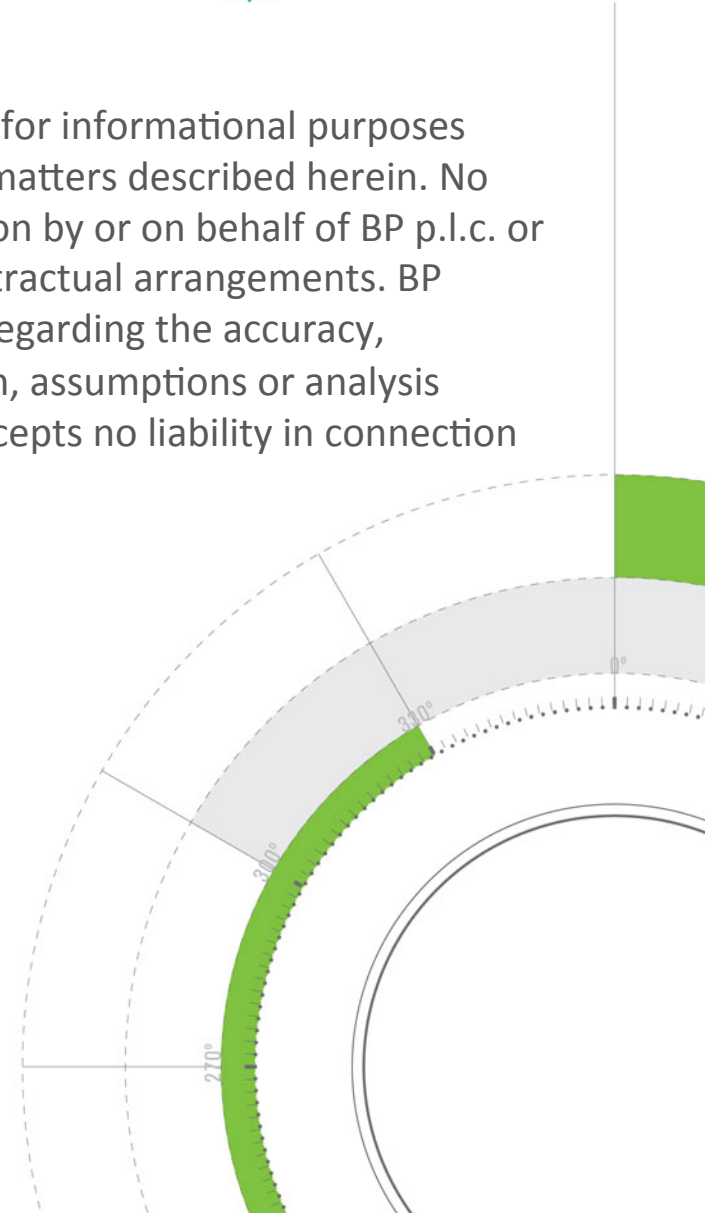
Bracing up for 2020 - A refiner's response to breaking the status quo

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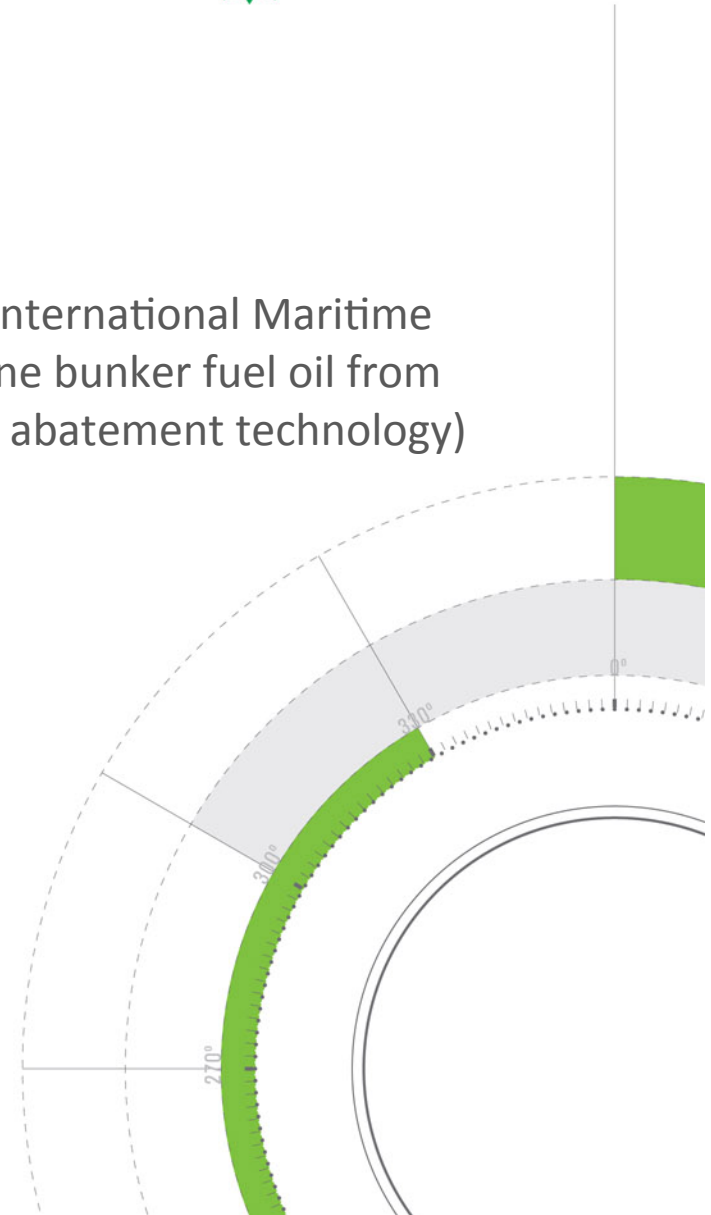


IMO Decision



Thursday October 27th 2016

The Marine Environment Protection Committee of the International Maritime Organisation decided to reduce the sulphur cap in marine bunker fuel oil from current level of 3.5% sulphur to 0.5% (in the absence of abatement technology) starting in 2020.

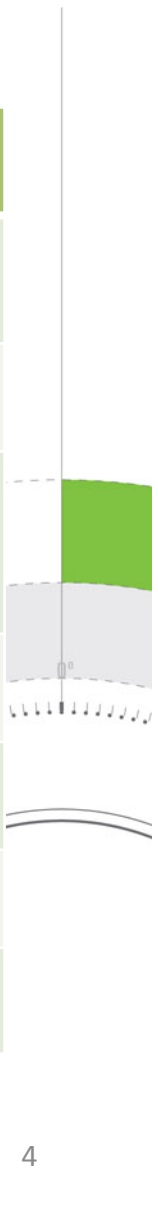


Sulphur Content Recap



Region	Current	Future	Effective
ECA's – North American waters, North Sea and Baltic Sea	0.1%S	-	In place
EU inland waterways	0.1%S	-	In place
China ECA's – Pearl River delta, Yangtze River delta, Bohai Sea waters			
At berth (excl. 1 hour before & after berthing)	3.5%S	0.5%S	2017
All waters once inside ECA's	3.5%S	0.5%S	2018
12 nM off ECA coastlines	3.5%S	0.5%S	2019
International Waters	3.5%S	0.5%S	2020

So what does this now mean?



Will there be enough Fuel?



Generally...

- Everyone will have their view and they will be different,
- BP has long maintained that compliance with the rule in 2020 is technically and commercially feasible,
- The markets will find a way to supply,
- The global refining and fuel supply industry has an excellent track record in meeting global demand with high quality fuel. BP sees this situation as no different

Sounds easy, so what is the noise about?

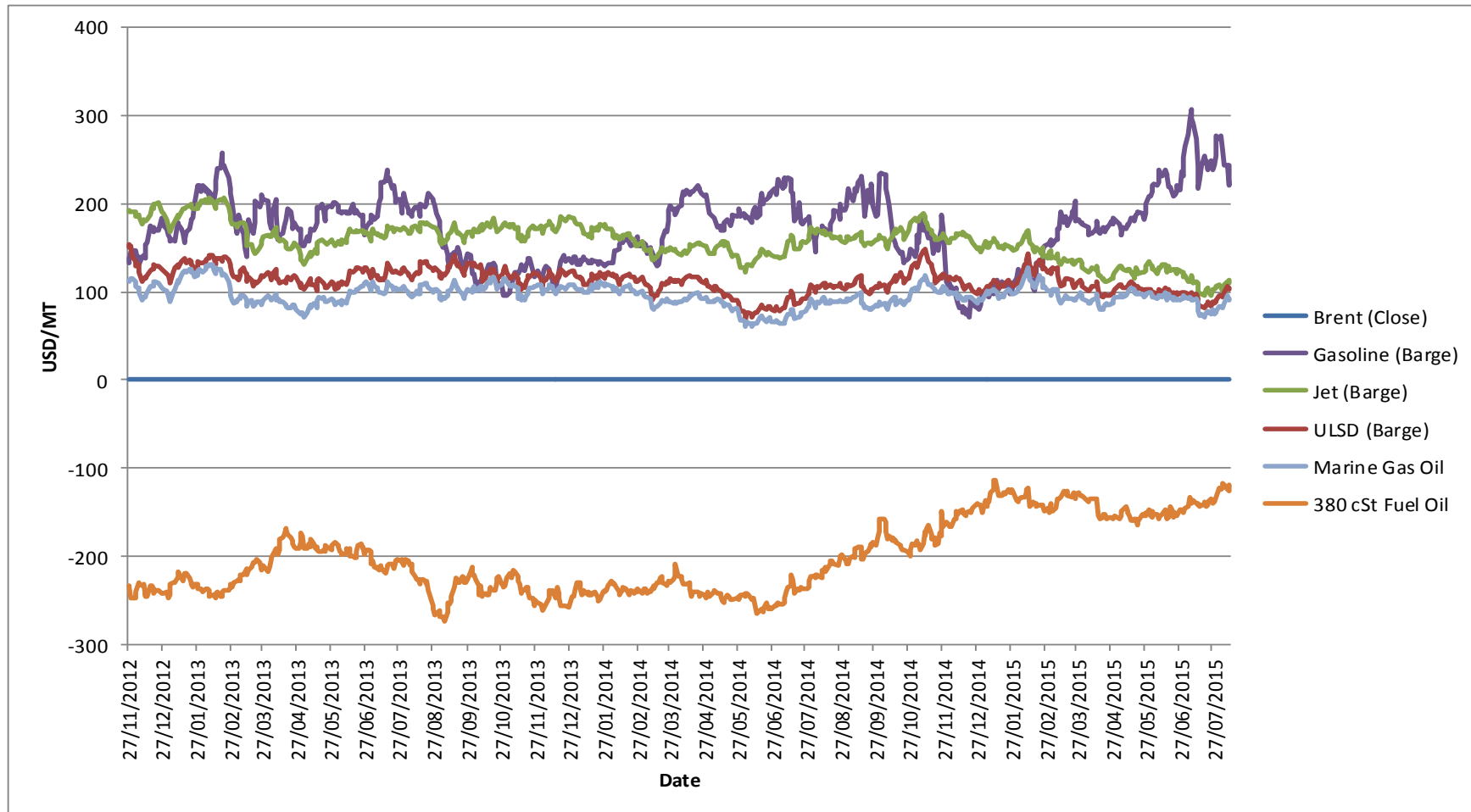
To understand this, we need to think like refiners...



Refining Considerations



Relative fuel oil cost vs Brent crude



Source: Platts

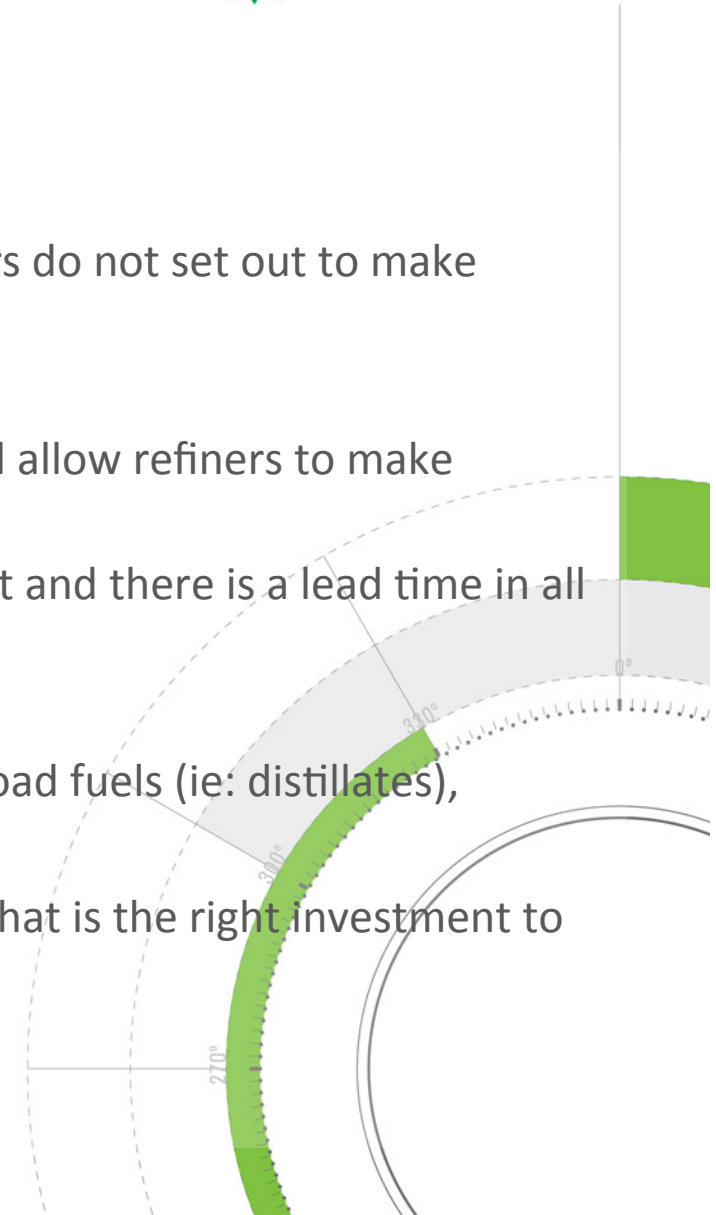
So what this means is...



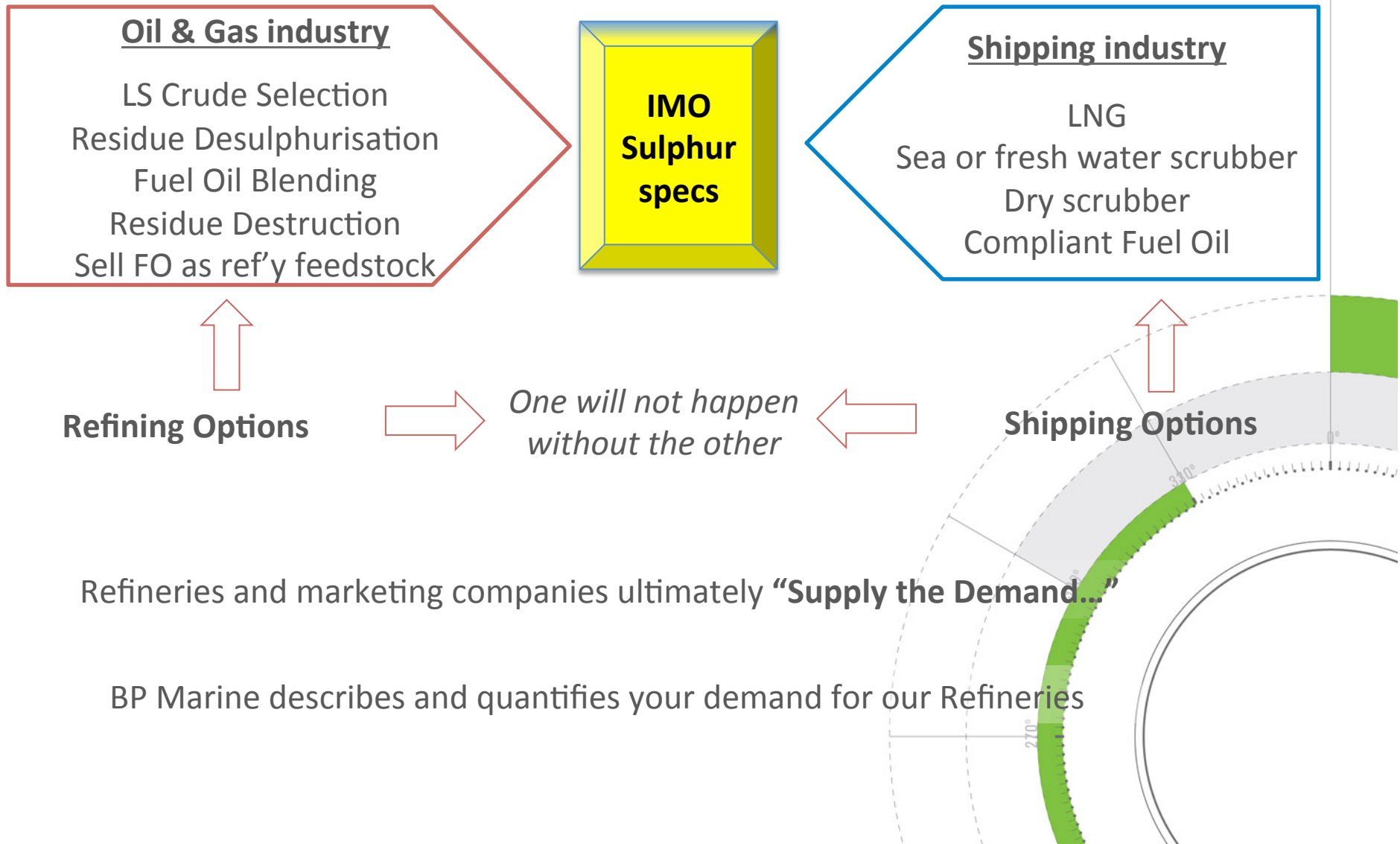
Generally...

- Refineries are complex integrated businesses,
- Residual fuels sell cheaper than crude oil, so refiners do not set out to make bunker fuels,
- **Pricing is all important**
- Clear pricing signals between buyers and sellers will allow refiners to make informed judgments.
- Refinery projects take a long time to plan and invest and there is a lead time in all these decisions
- Refiners may invest in more conversion units but...
 - investments will be in converting fuel oil into road fuels (ie: distillates),
 - upgrades will lead to residue destruction,
- As we approach 2020 the **pricing** will tell refiners what is the right investment to do

But....



We need to talk...



Thoughts for the future of Marine Fuels



There will be no single solution...

High Sulphur Fuel

- Likely economic incentive to continue to burn HSFO bunkers,
- Scrubber economics are likely to be compelling for the largest ships consuming the most fuel,
- technical and capability issues on scrubbers will be resolved,

Refined Low Sulphur Fuel

- Some refiners will produce 0.50% sulphur fuel oil, but not enough to supply the product to all of you.

Blended Low Sulphur Fuel

- As we have seen with ECA 0.1% change, many markets will take a blending route to achieving a compliant fuel oil.



Thoughts for the future of Marine Fuels

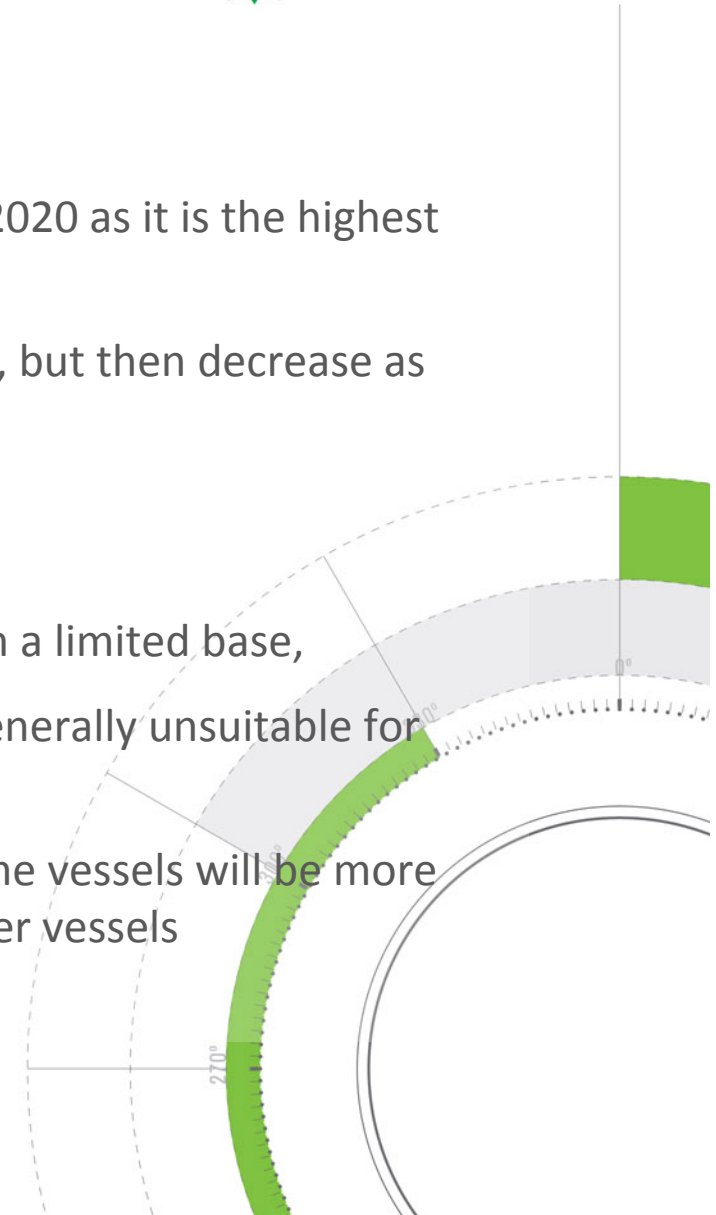


Marine Gasoil

- BP expect MGO to be the backstop solution come 2020 as it is the highest cost fuel,
- MGO consumption may initially increase post 2020, but then decrease as more owners adopt lower cost alternatives,

LNG

- LNG bunkering infrastructure is expanding but from a limited base,
- LNG bunkering is a capital intensive solution and generally unsuitable for retrofitting of existing ships,
- Complexities around storing and handling LNG, some vessels will be more challenging than others (e.g. oil tankers vs. container vessels)



Conclusion



- **Fuel will be available in 2020... however there is no “single solution”**
- The new fuels that entered the market in 2015 may be an indication of what future fuels will look like post 2020
- Price impacts will occur across all refined products and markets & refineries will respond.
- The global fuel industry has an excellent track record in meeting global demand with fuels.
- This will take a more collaborative effort with the ship owners.... so
 - Talk to BP Marine to face the challenges and opportunities together.
- ***Now the work starts on the mechanisms to ease the transition to a lower sulphur world.***

