



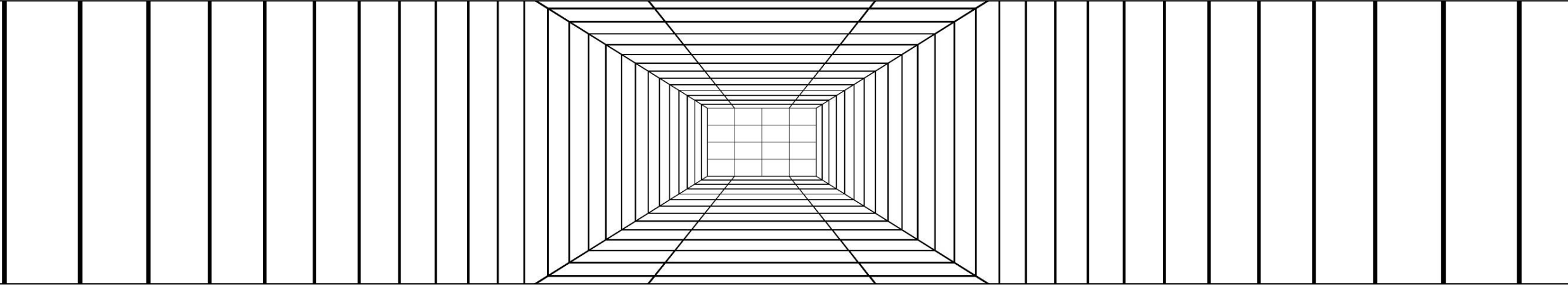
2020 Fuel Scenario A Different Perspective

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A Different Perspective on the 2020 Fuel Scenario



THE VISWA GROUP



Our perspective is simple.

Continue the status quo and keep using HSFO with scrubber. Why?

- Scrubbers are far less expensive. ROI does not exceed 1.5 yrs.
- Banks and financial institutions prepared to give money.
- The scenario is very similar to fitting solar on houses.
- Scrubber Technology has improved, problems almost eliminated.
- Get used to scrubber as we got used to Inert Gas Systems (IGS)



Current Situation

- Yards are full. Big rush for scrubber retrofit
- However, Drydocks not needed
- Overboard Valve Installation and Sea Chest Modification (if required) possible without dry dock



Current Scrubber Outlook

GOLDMAN SACHS IMO 2020 REPORT DATED 21 Feb 2019

- Current Orderbook over 2,100 scrubbers with orders on pace to reach 3,000+ by mid-2020
- Estimated 3,000+ installations by mid-2020

HORIZONTAL SCRUBBER OUTLOOK

- 31 scrubbers on order with 55 orders in the pipeline
- More manufacturers going the horizontal route
- Easiest to install and maintain



Important and useful information

- If you are fitting scrubber don't hedge in 2020, maybe after mid-2021.
- If you are not fitting a scrubber, do hedge in 2020. High volatility expected
- Spike in scrubber orders greater than 40%. 3,000 scrubbers by mid-2020.
- Scrubber fitted vessels cost less and they run faster
- No problem with Open Loop discharge in ports – Japan research submission

IHS Price Forecast Comparison
2017 US dollars

			2019	2020
Dated Brent	FOB	\$/bbl	57.31	62.50
Dated Brent	FOB	\$/T	433.09	472.31
Gasoil 0.1%	CIF NWE	\$/T	539.7	627.2
Marine Gasoil 0.1%	CIF NWE	\$/T	516.5	600.3
Marine Bunkers 0.5%	CIF NWE	\$/T	408.7	544.3
Marine Bunkers 3.5% (MFO 380)	CIF NWE	\$/T	268.6	175.1
Differentials				
Marine Gasoil 0.1% minus Marine Bunkers 3.5%		\$/T	247.9	425.1
Marine Bunkers 0.5% minus Marine Bunkers 3.5%		\$/T	140.1	369.2
Marine Bunkers 0.1% minus Marine Bunkers 0.5%		\$/T	107.8	56.0

Source IHS Markit Forecast

- Note expected price differences between 2019 and 2020
- Crude, Gasoil and 0.5% bunkers price all rise
- 3.5 % sulfur Marine Bunkers Price falls substantially
- Marine Bunkers 0.5% closes in on Marine Gasoil price owing to high production cost
 - Produced by blending large quantity of “gasoil” material with higher sulfur residues
 - Or from ultra-low sulfur residues that have high alternative value in refineries as upgrader feedstock

Wisdom on New fuels

- Big oil companies who will be left with a lot of HSFO will not allow prices to dip. They will know alternate uses.
- Similarly if the prices of LSFO go up, too many people will jump into the advantage of differential pricing. Again big oil companies will know how to bring this down
- To sum up, an equilibrium in the bunker fuel prices will happen very soon (less than 1 year). Those big shipping companies who will not have all the scrubbers will levy a bunker adjustment fee and make sure they don't lose money.
- *It is all about money. The big guys know how to control it and how to earn it. Only those who don't know panic and jump up and down.*

VLSFO (0.5% S) Fuels



VLSFO fuels being supplied in multiple regions. Properties vary by region and by supplier.

REGION/PARAMETER	ASIA	N.AMERICA	MIDDLE EAST	EUROPE
DENSITY	972	895	940	937
VISCOSITY	65	18	90	310
POUR POINT	6	-9	9	27
MCR	2.5	5	3.5	6.5
CATFINES	> 40	27	< 10	< 15
ACID NUMBER	< 0.1	< 0.1	< 0.1	0.5
COMPATIBILITY	2	1	4	1
IGNITION AND COMBUSTION (ECN)	> 40	> 40	> 40	> 40

Viswa published a white paper when ULSFO (0.10% S) was introduced. Viswa will be publishing a white paper on the VLSFO (0.5%)



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