

The Continuing Journey to 2020 and the 0.5% Sulphur Limit For Marine Fuel

Proprietary

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EGCSA
London



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Topics



- The Maritime Perspective

- Bunker Fuel Demand in 2020 – The Trades Increase
- Scrubbers & LNG = Not the "Fix" for 2020

- Refining Perspective

- 2020 in Three Part Dis-Harmony

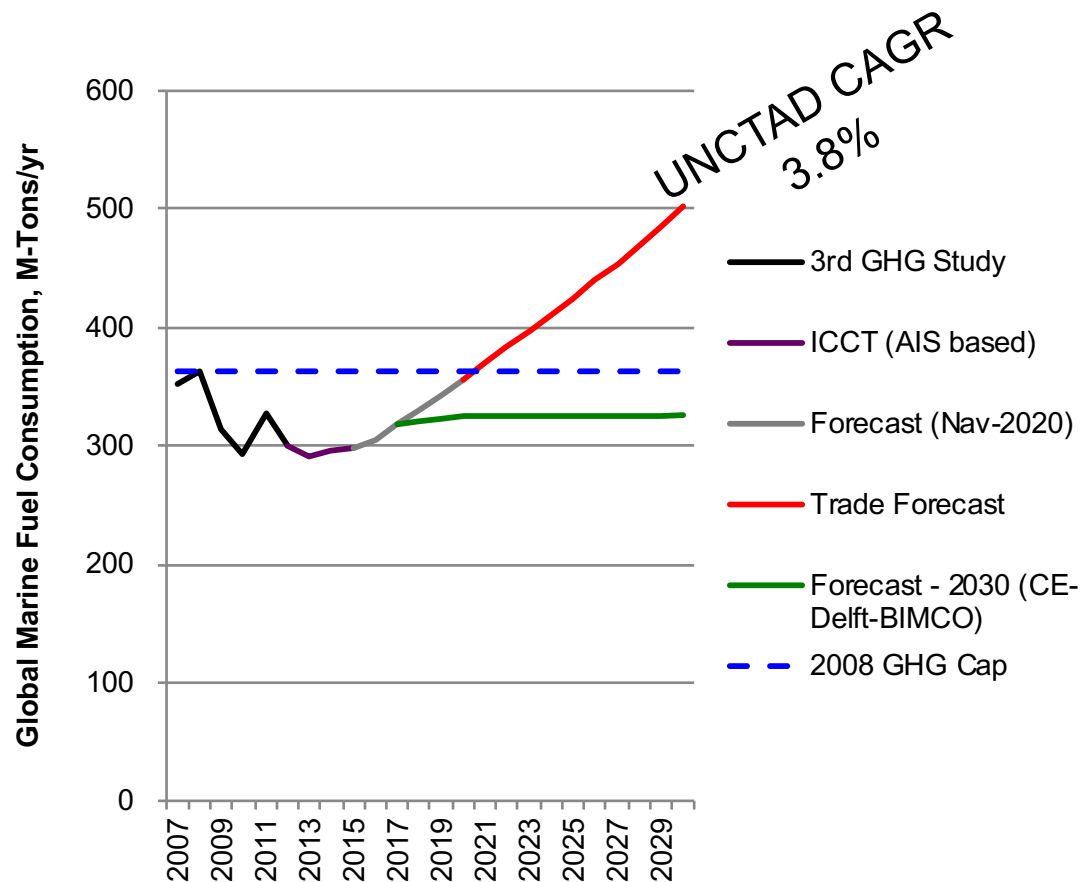
Early 2020 – Mostly distillate & inventory draw

Scramble 2020 – Things could get ugly

Late 2020 – The World returns to sanity (painfully)

Projected Global Marine Fuel Demand in 2020

UNCTAD just increased (3 Oct. 2018) trade growth forecast for 2018-2023 to 3.8% CAGR



UNCTAD was at
2.8% CAGR
2017-2022
just one-year ago

New Expected “Switch Volumes” >4.5 MBDs

Navigistics Derived Case – 2020 Ship Efficiency Increase

		Nav	Nav		Nav	Nav		
		No 0.5%	No 0.5%		With 0.5%	With 0.5%	Switch	
Weight Basis - Metric (MJ/kg)	MJs/Ton	2020	2020	Scrubbers	2020	2020	2020	
Residual Fuel	40,500	257	10,402,709	607,500	607,500	15		
Distillate Fuel	42,600	88	3,748,800		13,544,009	318	230	4.7
LNG	51,919	11	571,109		571,109	11		
		356	14,722,618		14,722,618	344		
		mTons/yr	MJs/Year	MJs/Year	MJs/Year	mTons/yr	mTons/yr	mB/d

Prior Range was 3.6 to 4.2 MBDs in Supplemental Fuel
Avails Report (2016)

- There is a significant potential impact on marine fuel demand of the increase in fuel costs through reduction in “economic” speed (could fall to <4 MBDs if freight rates stay low).

Back to 2020 - IMO says: Don't Worry Be Happy

- MEPC 72 continued to call for “Level playing field” (strong enforcement).
- Carriage Ban – A Certainty for MEPC 73
 - Battle over wording – cargo v. fuel v. bunkers
 - Earliest possible March 2020
- PPR Interessional July 2018 – Non-mandatory ship implementation plans
 - First use of “practical and pragmatic” relating to 2020
- MEPC 73 – will Regulation 18 – non-availability be addressed? The FONAR issue.

No one but IMO says 2020 will be
Smooth Sailing

IEA – Refining cannot handle the switch

OPEC – Trouble ahead

Back to 2020 – EnSys-Navigistics Forecast: Be Worried

- 2020 likely divided into three periods
- **Early 2020** – Primarily distillate based compliant fuel – draw down of any distillate inventory build
- **Scramble 2020** – Refiners bid up light sweet crude oil prices to:
 - Maximize distillate production
 - Minimize **HS** residual production
- **Scramble 2020** – Could be 2008 déjà vu
 - Risk of major crude price spike (then collapse)
- **Late 2020** – Heavy compliant fuel blends gain acceptance
 - World begins to return to “Normal”

Questions?

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Navigistics Consulting

Specialists in:

- Maritime Industry - issues in global and U.S. domestic shipping, markets, logistics, economics, energy efficiency, and regulations. All sectors (tankers, bulkers, containerships, tugs, ports, terminals, dredging, etc.)
- Global marine fuel assessments (market, demand, efficiency, and emissions).
- North America marine/pipeline/terminal oil logistics specialists.
- Wilson Gillette Report covering the Jones Act Product Tanker Market.
- Global and US domestic focus has brought wide range of clients including oil companies, tanker owners, financial institutions, governments, and industry associations.



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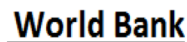
NAVIGISTICS
CONSULTING



EnSys Energy

Specialists in:

- Strategic and regulatory issues in global refining, markets & logistics
- Refining economics and fuels assessments
- North America logistics
- Global focus has brought wide range of clients
- WORLD – Global integrated oil industry LP-based model



Organization of the Petroleum Exporting Countries



EnSys-Navigistics Joint Marine Studies

Extensive marine fuels projects experience:

- 2006/7/8 EPA, API/IPIECA, IMO:
 - Developed rigorous fleet & trade based marine fuels demand projections (Navigistics)
 - Evaluated alternative fuels compliance scenarios (WORLD)
 - Worked closely with IMO's Expert Group on inputs to Annex VI
 - Provided fuels supply analysis for USA ECA submission
- 2009 Major chemical company:
 - Developed rigorous assessment of marine fuels additives market
- 2015: Initial studies on potential impacts of 0.5% sulfur global standard – ICS/BIMCO and oil companies
- 2016: IPIECA, BIMCO, Concawe/Fuels Europe, Canadian Fuels, PAJ:
 - Supplemental Fuel Availability Study
 - Submitted to IMO July 2016 and presented at MEPC70
- 2016 Canadian Shipowner's Association – HFO availability after 2020
- 2016 Oil Company Marine Scrubber Study
- **2017 onwards – 2020 Marine Fuels Advisory Service**
 - **Quarterly reports on the IMO's 2020 0.5% Sulphur Rule**
 - **Covering implementation, enforcement, and impacts.**