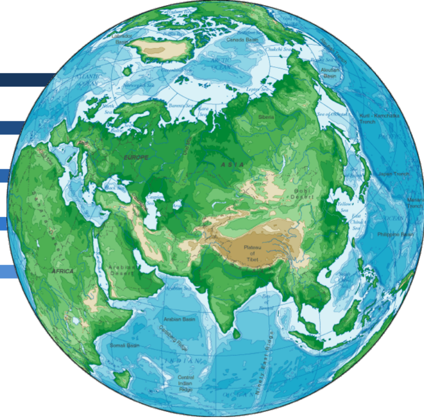

Oil Market Update: Searching for Stability

Challenges in the Refining Sector

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Executive VP - Turner, Mason & Company

CSIS

Washington DC

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Turner, Mason & Company

CONSULTING ENGINEERS

IMO - Who Goes First?

Poor Company Financials
Charter Model Disincentives
LNG Retrofits Not Economic
Waste Disposal Issues

High Capital Cost
Long Lead Times
Permitting Hurdles
Refineries With Greatest Need are Least Capable Financially

Both Ship's owners and refineries delay (or don't have time for) investments – leading to surplus fuel oil in 2020

Impacts of IMO Regs.

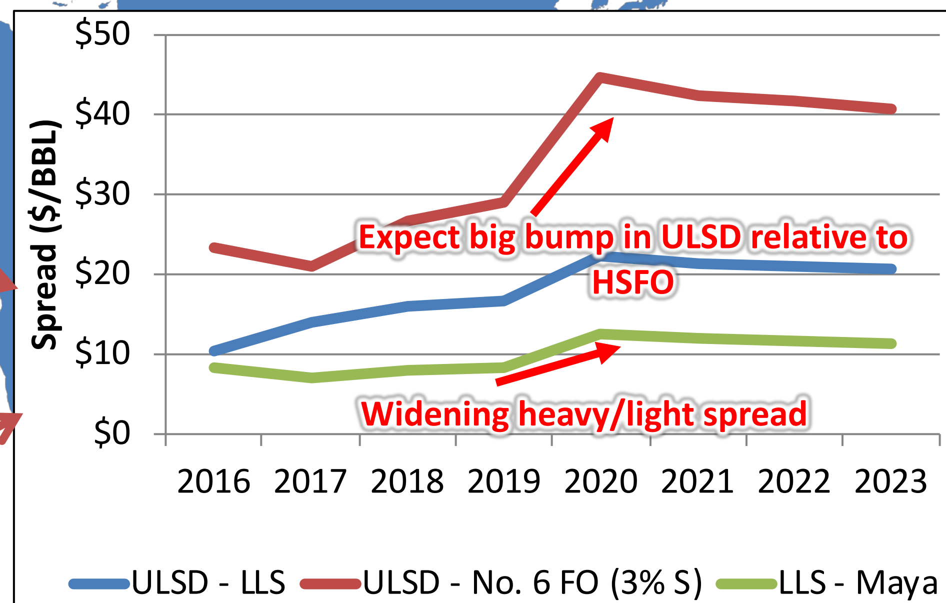
- U.S. Refineries – Limited FO production - 2.5%
- Most refiners will benefit from: higher distillate cracks/bigger heavy crude discounts
- Mexican refineries to take another hit – FO yields = 25%

- Refineries in the ROW also have higher FO yields – 11% on average but many >20%
- Will stress and likely lead to shutdowns of some uncompetitive refineries

TM&C estimates about 2 Million BPD of fuel oil will be displaced by distillate

Significant Enforcement Uncertainty

Gasoline margin impact dependent on VGO blending



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