

Agricultural Transportation Coalition 31st Annual Meeting

IMO 2020 – What Shippers Need to Know

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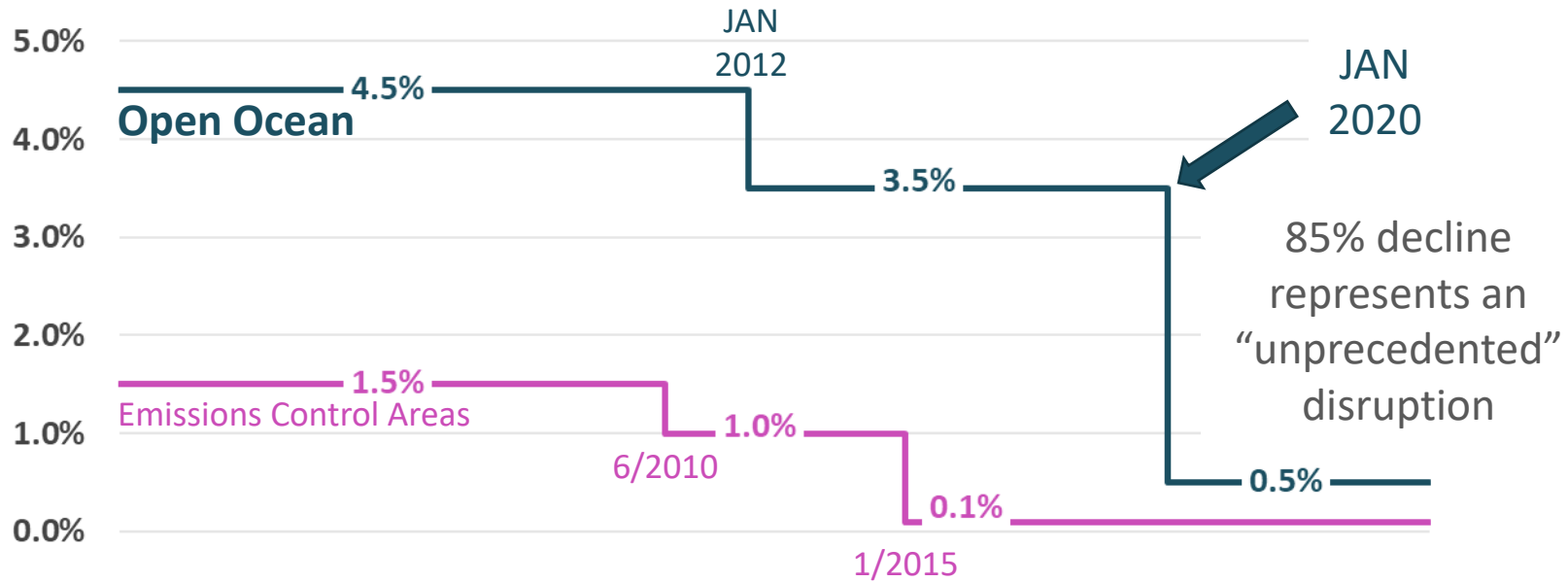
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Permissible Sulfur Content for Ships without Exhaust Scrubbers



DIRECT IMPACT on

- Carriers/Ship Owners
- Refineries

INDIRECT IMPACTS on

- Shippers and other consumers of diesel
 - Trucking, Rail, Air transport
 - Farm Equipment
- Global Oil Market
- Global Sulfur Market



CARRIER/SHIP OWNER Options for Current Fleet

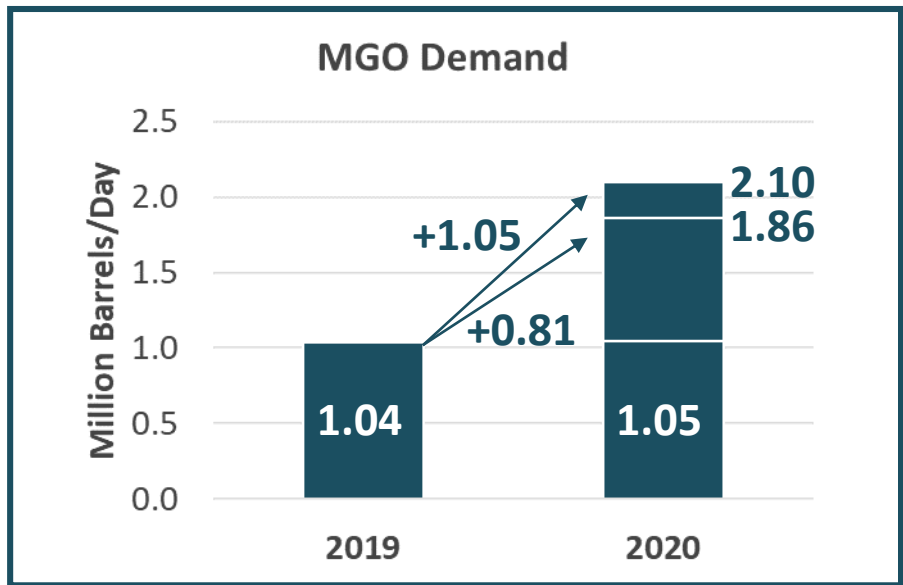
- 1. Install Exhaust Scrubbers
- 2. Burn IMO 2020 spec bunker (max 0.5% Sulfur)

Significant Uncertainties

- 1. Scrubber uptake rate
- 2. Rate of non-compliance
- 3. Level of excess desulfuring capacity
- 4. Level of global refinery spare capacity
- 5. Average sulfur content of residual fuel
- 6. Crude oil elasticity

Primary IMPACT ON REFINERIES

- 1. Middle distillate demand to jump by **3.7% - 4.7%** in 2020
 - Global refinery throughput has been growing at around 1.1% per year





POTENTIAL PRICE IMPACTS

		Current Prices	Post IMO 2020	
			Low Oil Price	High Oil Price
Brent (crude oil)	\$/bbl	62	60	80
Brent (crude oil)	\$/MT	471	456	608
HFO (bunker)	\$/MT	400	586	738
MGO (marine diesel)	\$/MT	640	986	1,138
ULSD (land diesel)	\$/MT	970	1,494	1,725
Increase over current prices				
HFO (bunker)			46%	84%
MGO (marine diesel)			54%	78%
ULSD (land diesel)			"	"

Fuel currently comprises ~50% of a carrier's operating costs



Ocean Carrier Response --


Pass costs on to shippers through revised bunker surcharge formulas

Common Traits of Revised Formulas

- 1. All are rebased to new, ultra low sulfur fuel spec (0.5%)
- 2. Calculated based on fuel consumption per TEU with a headhaul/backhaul factor
- 3. Adjustment for reefer boxes

Is this fair?

In the sense that costs are simply passed on to shippers, yes... but...



$$\begin{aligned}
 &\text{Bunker Recovery Charge} = \text{Fuel Price/Ton} \times \left(\frac{\text{Fuel Consumption}}{\text{TEUs Carried}} \right) \times \text{Headhaul Factor} \times 1.5x \text{ Reefer Adjustment}
 \end{aligned}$$



- 1. Shippers typically do not have the information and knowledge required to effectively quantify and compare surcharge formulas across carriers
- 2. Passing 100% of fuel costs on from those that control fuel reduces the incentive for carriers to be efficient



$$\text{MSC Bunker Recovery Charge} = \text{Fuel Price/Ton} \times \left(\frac{\text{Fuel Consumption}}{\text{TEUs Carried}} \right) \times \text{Headhaul Factor} \times \text{Reefer Adjustment}$$



Fuel consumption is a factor of:

1. Vessel Size (wide range)
2. Rotation Length
3. Ship Speed (a factor of rotation length and number of ships deployed)
4. Round trip capacity utilization

Regarding capacity utilization:

- Carriers are disincentivized to compete for backhaul volumes because full fuel cost is already accounted for
- Shippers face being penalized for a carrier’s inability to fill vessels

# of riders	Ticket	Fuel Surcharge	Total Revenue
15	\$4	\$4	\$120
12	\$5	\$5	\$120



There are 26 vessel strings (deployments) in the Asia – California trade lane

Average weekly capacity (TEUs) of the string with the smallest vessels

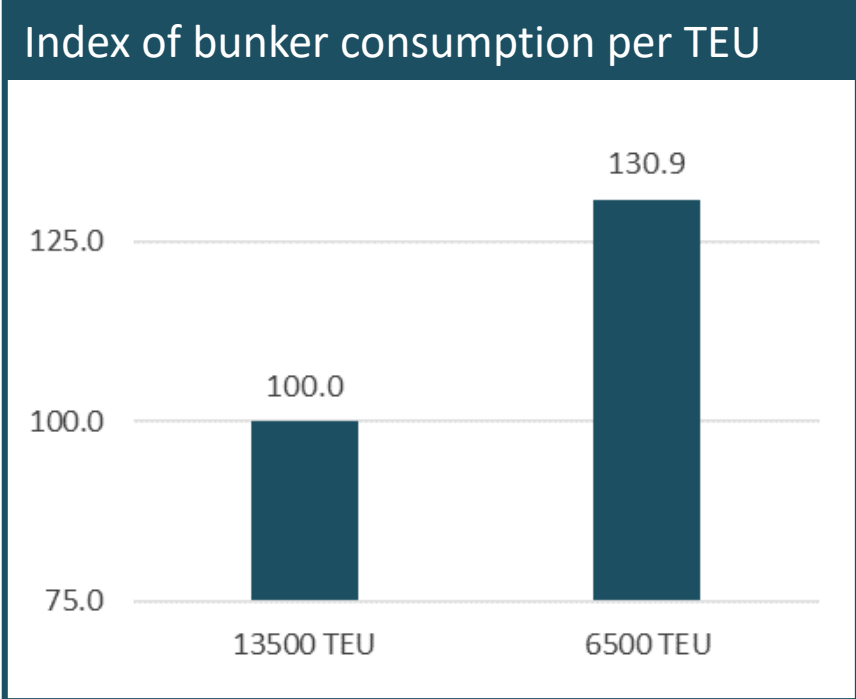
2,700

Average weekly capacity (TEUs) across all 26 strings

8,450

Average weekly capacity (TEUs) of the string with the largest vessels

13,700



Holding all else equal, a shipper whose boxes moved on the smaller vessel will see a 31% higher fuel surcharge



Bunker
Recovery
Charge

=

Fuel
Price/Ton

X

$\left(\frac{\text{Fuel Consumption}}{\text{TEUs Carried}} \right)$

X

Headhaul
Factor

X

Reefer
Adjustment



Important questions:

1. How exactly is the trade lane being defined? Asia-North America is different than NE Asia-California
2. What is the base time period, and how frequently is the headhaul factor updated?
3. Is the headhaul specific to box type? This is very important for reefer shippers because exports are the headhaul for refrigerated containers



Key Takeaways

- IMO 2020 will have price impacts that reach beyond the ocean leg of an intl. supply chain
- Carriers anticipate rising fuel costs, and have revised Bunker Surcharge Formulas
- Carriers are NOT looking to take advantage of shippers, but the fact is they know a lot more about their fuel expenditures than shippers do, and there is a risk that this information asymmetry can only work to the carriers favor
- Carriers have demonstrated a willingness to negotiate Bunker Surcharge Formulas
- Shippers should carefully consider how vessel size differs across carriers and take this into account when evaluating carrier contracts
- Shippers should strive for bunker surcharge formulas that incentivize carriers to compete for volumes by:
 1. Insisting that surcharge formulas assume an optimal capacity utilization rate so that the shipper doesn't end up paying the price for a carrier's inability to fill its ships
 2. Insisting that surcharge formulas are indexed to the average backhaul utilization rate for their specific trade lane in order to incentivize carriers to aggressively compete for backhaul volumes
- Shippers must also understand how reefer surcharges work vis-à-vis headhaul vs. backhaul, and recognize that this may differ between carriers
- Shippers should **not** expect a carrier that has installed scrubbers to pass on those savings



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