



IMO 2020

Entering a New Energy Environment

IMO 2020 Sulphur (SOx) compliance

Shown on seaexplorer.com



seaexplorer Plan Analyse Dashboards^{beta}

Origin: Antwerp (BEANR) Destination: Durban (ZADUR)

Port Rotation			Map	Service Changes		
Port	Voyage Day	Event	Vessel	SOx Compliance	Lloyds Code	Cour
London Gateway Port (GBLGP)	1 SUN	L	Europe		9285988	CY
Rotterdam (NLRTM)	1 SUN	D	MSC Apollo		9247730	PA
Rotterdam (NLRTM)	2 MON	L	MSC Candice		9339284	PA
Hamburg (DEHAM)	3 TUE	D	MSC Dardanelles		9247754	PA
Hamburg (DEHAM)	4 WED	L	MSC Fiorentina		9251705	PA
Hamburg (DEHAM)	4 WED	L	MSC Los Angeles		9300995	LR
Antwerp (BEANR)	5 THU	D	MSC Mars		9725122	LR
Antwerp	6 FRI	L	MSC Romane		9745653	PT

- Closed Loop Scrubber
- Open Loop Scrubber
- Hybrid Scrubber
- IMO 2020 Compliant Fuel
- Liquefied Natural Gas (LNG)
- IMO 2020 Compliant Fuel or LNG

IMO 2020 - Cost Consumption Factors

- Distance x Consumption
- More transparent approach to deal with huge cost impact
- Shippers able to retrace their fuel bill on a TEU level
- Plausibility:
 - CO₂ reporting / backward calculations
 - Mandatory filings as IMO DCS

 Fuel price per ton
 \times Trade factor
 (fuel consumption per round trip + TEU carried)

Bunker Charge Mechanism (BRC)

To be applied: **Q4 2019** Cost to annual fuel bill: **\$2 billion**

 Fuel price per ton
 \times (fuel consumption + TEU carried)

Marine Fuel Recovery (MFR)

To be applied: **Jan. 1, 2019** Cost to annual fuel bill: **\$2 billion**

 Fuel price per ton
 \times Trade factor
 (average fuel consumption on a trade lane, accounting variables like transit time, fuel efficiency, headwind/tide and imbalance)

Bunker Adjustment Factor (BAF)

To be applied: **Jan. 1, 2019** Cost to annual fuel bill: **\$2 billion**

 Fuel price per ton
 \times trade coefficient
 (fuel consumption per round trip + full TEU carried)

Bunker Adjustment Factor (BAF)

To be applied: **Jan. 1, 2019** Cost to annual fuel bill: **\$160/TEU**
 (all contracts with a minimum validity of three months) (which works out to \$3 billion with 19 million TEU handled in 2017)

 Fuel price per ton
 \times Trade wise loading factor
 \times Trade imbalance

ONE Bunker Surcharge (OBS)

To be applied: **Jan. 1, 2019** Cost to annual fuel bill: **Not specified**
 (applies to all new contracts starting on or after Jan. 1, 2019 and valid until further notice. Existing contracts subject to the previous BAF until contracts expires)

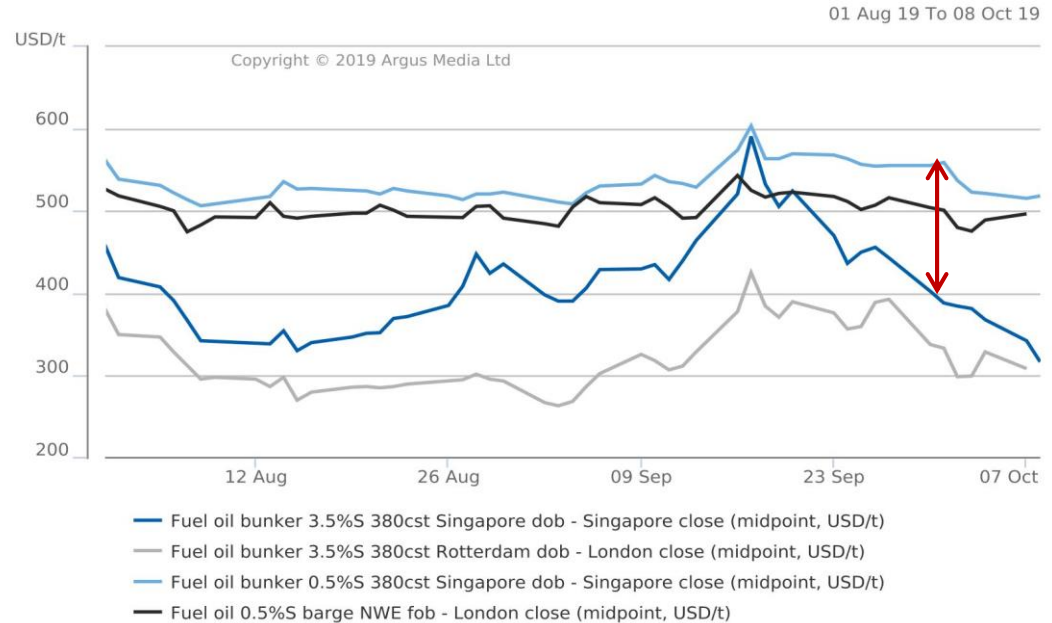
Price volatility

Not only due to IMO 2020



- Geopolitical woes
- Actions of OPEC
- Supply / demand due to global economic development

→ 30% to 40% volatility



Secured Energy Plan

KN Risk Management Solution



Security
and predictability
for budgeting



Accurate
calculation / prediction of
costs for future shipments



Effective
management of
fuel cost volatility

- Total energy exposure can be calculated on TEU level (Trade Factors)
- Mitigated financial risks from energy price volatility

