Day 1: Setting the Stage

Welcome Address & Update on Port Operations During the Age of Tariffs

Dr. Noel Hacegaba, Deputy Executive Director, Port of Long Beach
POLB: Port Efficiency & Productivity
Innovation, Digitization and Collaboration

2019 FTDC | October 28, 2019
Dr. Noel Hacegaba, Deputy Executive Director
PORT OF LONG BEACH
WORLD’S 9TH BUSIEST PORT COMPLEX

*BASED ON 2018 CONTAINER CARGO VOLUMES

PORT OF LOS ANGELES

PORT OF LONG BEACH
MAJOR ECONOMIC ENGINE
$200 BILLION IN TRADE, MILLIONS OF JOBS
POLB Strategic Plan

Goal #1: Strengthen the Port’s competitive position through secure and efficient movement of cargo while providing outstanding customer service
OPERATIONAL EXCELLENCE
Complexity in the Supply Chain
Ocean Carrier Alliances

**THE Alliance**
- COSCO Shipping
- OOCL
- CMA CGM
- APL
- ONE
- Hapag-Lloyd

**OCEAN Alliance**
- MSC
- MAERSK LINE
- ZIM
- HMM

**2M+H+Z Alliance**

**Independent Carriers**
- Matson
- WAN HAI LINES LTD.
- PIL
Port’s Role in Optimizing Operations

- Facilitating communication and collaboration
- Enabling innovation and information-sharing
- Enhancing velocity and reliability
- Creating value for the end-user
### Port Efficiency Overview

**Tenant Services and Operations Division | December 17, 2018**

### Customer Needs
- Speed
- Reliability
- Cost

### Supply Chain Relationships

- **Primary Roles**
  - Cargo Owner
  - Ocean Carrier
  - Terminal Operator
  - Port Authority
  - Trucker
  - Railroad
  - Labor

### Decisions
- **Cargo Owner**
  - Origin inland to port
  - Origin port
  - Ocean carrier
  - Destination port
  - Port to destination inland point
  - Trucker

- **Ocean Carrier**
  - Subject to cargo owner input:
    - Origin inland to port
    - Origin port
    - Destination port
    - Port to destination inland point
    - Trucker

- **Terminal Operator**
  - Origin inland to port
  - Lease concession with port authority
  - Labor

### Current Issues
- PierPass 2.0 launch
- Free Time & Demurrage
- Chassis Provisioning
- Container Delivery
- Cargo information access
- Rail transfer between terminal and railroads

### Solutions
- Optimizing terminal gate hours
- Maximizing cargo availability
- Reducing cargo dwell time
- Optimizing chassis availability to truckers/cargo owners
- Maximizing the terminal cargo delivery capabilities

### Landlord Port – Role & Challenges
- Transfer of cargo between water & land
- Building Infrastructure & Facilitating process improvement
- Rail Challenges: Terminal work rules, Class Is train scheduling
- Terminals Challenges: Chassis & export empties on terminal

### KPIs
- Truck turn time
- Truck dual transactions
- Terminal dwell Time
- Chassis availability
- Highway congestion

### Next Steps
- Form team
- Prioritize
- Flow chart issues
- Lead meeting with supply chain
Challenges

• Truck Appointments
  • Terminal operators: missed appointments
  • Cargo owners (trucking companies): appointment availability
  • Ocean carriers: repositioning of empties

• Chassis Availability
  • Dislocation
  • Repositioning
San Pedro Bay Weighted Average Inbound Laden Container Dwell Time in Days

Dwell Time in Days  % > 5 Days

Source: PMSA
Port of Long Beach
Percentage of Moves by Shift and by Week
October 22nd 2018 through September 15th 2019

Day Shift
Night Shift

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* Data provided by Tetra Tech
San Pedro Bay Chassis Provision

• “Pool of Pools” model commenced operation in March 2015

• 3 participating IEPs: DCLI, FLEXI-VAN and TRAC

• 67,500 “interoperable” chassis as of Q1 2019

• 18 Start/Stop locations: MTOs, R/Rs and PCMC
Pool Of Pools
Weekly Chassis Utilization Metrics
August 4th through 31st 2019
August 2019

* Variations in volume effect utilization

Definition: "The "Utilization" of the Chassis Pool with respect to any period of determination shall be calculated by dividing (i) the aggregate number of Usage Days attributable to the Users and customers of such Chassis Pool during such period, by (ii) the number of Contributed Fleet Days for such Chassis Pool during such period. For all measures of Utilization, Chassis shall be grouped by size/type."

Pool Of Pools
Weekly Chassis Utilization Metrics
December 30th 2018 through September 28th 2019

* Variations in volume affect utilization

Definition: “The “Utilization” of the Chassis Pool with respect to any period of determination shall be calculated by dividing (i) the aggregate number of Usage Days attributable to the Users and customers of such Chassis Pool during such period, by (ii) the number of Contributed Fleet Days for such Chassis Pool during such period. For all measures of Utilization, Chassis shall be grouped by size/type.”
Pool Of Pools
Chassis on Port & Rail Terminals
Week 38 2019
September 15th through 21st 2019

Total Chassis Fleet is 67,500

- on terminal, 21,846, 32%
- oos, 3,429, 14%
- on street, 36,225, 54%
TECHNOLOGY
Technology and process improvements to strengthen port competitiveness

- Reduce friction
- Standardization and interoperability
- Data exchange, information visibility and predictability
Digitization in Port Operations

• Transactional Products: How fast can we move containers through the gate?
• Visibility Products: Where is my box and when can I get it?
Transactional Products

- Appointment Systems
- Advanced Gate Systems
- Asset Tracking
Visibility Products

- GE Port Optimizer
- Maersk TradeLens
- Predictive Availability
• **Automatic creation of appointments** as soon as containers become available,
• **Automatic cancellation of appointments** that cannot be kept allowing for that time slot to be made available to other truckers
• **Automatic grouping of appointments** to facilitate dual transactions.
THANK YOU
Dr. Noel Hacegaba
Deputy Executive Director
noel.hacegaba@polb.com
(562) 283-7071
Keynote: The Global Supply Chain, Yesterday, Today, and Tomorrow

Sam Ruda, Director, Port Authority of New York & New Jersey
Discussion Topics for PANY&NJ

- Brief Updates from PANY&NJ
- Bayonne Bridge Project: Status and Impacts
- Late Gate, Weekend Hours: Pros and Cons
- Demurrage: Impacts on Terminal Operations
- Tariffs: Impacts on Port Activity
Largest East Coast port. 2nd largest in the U.S.
44 million consumers within a 4-hour drive
Container throughput (in thousand units)
1.5 million annual rail lift capacity

- Four on-dock ExpressRail facilities serving all six marine terminals.
- ExpressRail Elizabeth, Newark, Staten Island and Port Jersey.
- ExpressRail Port Jersey at GCT Bayonne completed in 2019.
- Connection to three Class I railroads, CSX, Norfolk Southern, and CN (Eastern Canada)
Phased Rail Network improvement

PHASE 1
(2004-2008)
$25 million in Port Authority Funds
$39.1 million in Conrail Funds

- Strategic double-tracking and interlocking improvements.
- Improved connections to mainline networks.

PHASE 2
(2016-2020)
$38 million in Port Authority Funds
$21 million in Conrail Funds

- Capacity and staging improvements to support Greenville Yard ICTF.
- Waverly Loop (2) approximately 10,000’ track lengths, additional entrance/exit into Port Newark and additional staging, 2020 completion.
- Raff tracks (2) 5200 feet of staging tracks, 2019 completion.

PHASE 3
(2020-Beyond)

ExpressRail Elizabeth Southbound Connector “Wye.”
Additional staging tracks at Raff Yard.

2018 Staging and Fluidity Study Preliminary Recommendations

- Additional Raff Staging Tracks
- ExpressRail Elizabeth Southbound Connector
- Improved AKLB Operating Rules
1 billion square feet of warehousing and distribution space

- 1 billion square feet of warehousing and distribution space within 50 miles of the port.
- High concentration of warehouse and distribution centers near the port and located on key freight routes.
- Significant growth in E-Commerce and Perishables/Food & Beverage
215-foot Bayonne Bridge Impacts

- Mix of vessel types calling Port is evolving
- Increased access by ultra large container vessels between 10,000-18,000 TEU
- Not seeing Port consolidation (yet) on East Coast
- Commenced “New Start” Study with Army Corps
Late Gates/Weekend Gates: Pros & Cons

- Weekend gates and late gates happening today, but terminal specific
- Generally in response to “events” including holidays and response to weather
- Not a Collective Bargaining issue
- Efficient means to add capacity
- Response to strong intermodal growth
- There is a cost
- Also requires coordination with CBP
Tariff Impacts YTD

- Top Line impacts have been limited (thus far)
- Some shifts in seasonality attributable to “go live” dates for tariffs
- Share declines from China, but this pre-dates the start of tariffs
- Too early to tell on Europe tariffs that were effective 10/18/19
- Cargo mix for exports has moderately changed but not declined in the aggregate
- Strong interest in FTZ Applications
Foreign Trade Zone No.49

- Port of NY and NJ is located in Foreign Trade Zone No.49.
- Zone users total 81, including:
  - Warehouses/distribution centers.
  - Processing and assembly/manufacturing.
  - Crude oil importing and refining.

FTZ BENEFITS

- CASH-FLOW SAVINGS
  Only pay duties on imported items as they leave the FTZ and enter domestic territory.

- ZONE TRANSFERS
  Transfer merchandise in bond to another FTZ without an entry.

- WEEKLY ENTRY
  Reduce paperwork and save money by replacing individual or daily entries with one weekly entry.

- INVERTED DUTY
  Choose between paying the duty rate of the finished product or the rate that applies to imported parts and/or materials.

- DUTY EXEMPTION
  Avoid merchandise processing fees, duty payments, and duty drawback on exported products.

- AVOID LOSSES
  Avoid duties on obsolete, surplus, waste, or scrap parts.

- ADDITIONAL BENEFITS
  - Lower costs, increase supply chain, and boost efficiencies
  - Increase inventory control
  - Reduce losses of high-end products
  - Expedite shipments with direct delivery
  - Create return on initial investment quickly
Keynote: Brimstone or Hellfire? How lowering sulphur will impact the future of sustainable shipping

Takashi Masuda, SVP Marketing and Commercial, Ocean Network Express (ONE)
Footwear Trade Distribution and Customs Conference
2019

Oct 28 2019
Takashi Masuda
Surveys 1-3

Survey One:
What is ONE’s market share in terms of fleet scale size?

Survey Two:
How much fuel is being consumed by the Global container ship fleet annually?

Survey Three:
How big is the financial impact of IMO2020 to the container shipping annually?
Survey One Choices

1. 17.9%
2. 12.2%
3. 6.7%
4. 2.8%
Survey Two Choices

1. 70 million metric tons
2. 2 million metric tons
3. 275 million metric tons
4. 45 million metric tons

Disclaimer: All figures guesstimates based on various published data
Survey Three Choices

1. usd14 billion
2. usd21 billion
3. usd100 billion
4. Usd1.3 billion

Disclaimer: All figures guesstimates based on various published data
Agenda

1. Introduction
2. IMO 2020 Recap
3. IMO 2020 Preparations
4. Summary: ONE Approach
5. Q & A
Operating Company Profile

• Tradename
  OCEAN NETWORK EXPRESS PTE. LTD.

• CEO
  Jeremy Nixon

• Global Headquarters
  Republic of Singapore

• 5 Regional Headquarters
  North America (Richmond, VA)
  South America (Sao Paolo, Brazil)
  Europe (London, UK)
  East Asia (Hong Kong)
  South East Asia (Singapore)

• Date of Establishment*
  July 7th, 2017

**Date of Establishment** in this section refers to the date MOL and “K” Line add their investment to the new company. Company registration was done earlier on March 27, 2017, with NYK as the initial investor based on the terms of the business integration agreement.
ONE Global Operations
210 container ships,
1.5 million teus
125 weekly services

Survey One: What is ONE’s Fleet Scale market share when measured in TEUs?
Survey One Choices

1. 17.9%
2. 12.2%
3. 6.7%
4. 2.8%

Disclaimer: All figures guesstimates based on various published data
Survey One Answers

1. 17.9%  Maersk
2. 12.2%  CoscoGroup
3. 6.7%  ONE
4. 2.8%  Yang Ming

Disclaimer: All figures guesstimates based on various published data
ONE Fleet Scale (6.7%)  

Top 30 Carriers

<table>
<thead>
<tr>
<th>Rank Operator</th>
<th>Total existing TEU</th>
<th>Ships</th>
<th>Owned TEU Ships</th>
<th>Chartered TEU Ships % Chart.</th>
<th>Orderbook TEU</th>
<th>O/E %</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 APM-Maersk</td>
<td>4,005,468</td>
<td>714</td>
<td>2,275,403</td>
<td>2,273,403</td>
<td>1,790,000</td>
<td>402</td>
<td>44%</td>
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<tr>
<td>2 MSC</td>
<td>3,312,944</td>
<td>523</td>
<td>1,091,542</td>
<td>2,200,402</td>
<td>1,220,402</td>
<td>329</td>
<td>66%</td>
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<tr>
<td>3 COSCO Group</td>
<td>2,771,792</td>
<td>463</td>
<td>1,372,407</td>
<td>1,399,385</td>
<td>1,399,385</td>
<td>301</td>
<td>90%</td>
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<tr>
<td>4 CMA CGM Group</td>
<td>2,664,853</td>
<td>508</td>
<td>1,015,326</td>
<td>1,649,143</td>
<td>1,649,143</td>
<td>379</td>
<td>62%</td>
</tr>
<tr>
<td>5 Hapag-Lloyd</td>
<td>1,651,855</td>
<td>230</td>
<td>1,047,206</td>
<td>804,569</td>
<td>804,569</td>
<td>112</td>
<td>37%</td>
</tr>
<tr>
<td>6 ONE</td>
<td>1,514,913</td>
<td>216</td>
<td>555,924</td>
<td>545,925</td>
<td>545,925</td>
<td>76</td>
<td>43%</td>
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<tr>
<td>7 Evergreen</td>
<td>1,191,872</td>
<td>200</td>
<td>588,042</td>
<td>603,830</td>
<td>603,830</td>
<td>118</td>
<td>92%</td>
</tr>
<tr>
<td>8 Yang Ming</td>
<td>631,578</td>
<td>57</td>
<td>187,335</td>
<td>444,143</td>
<td>444,143</td>
<td>41</td>
<td>97%</td>
</tr>
<tr>
<td>9 PIL</td>
<td>418,298</td>
<td>131</td>
<td>230,265</td>
<td>188,033</td>
<td>188,033</td>
<td>95</td>
<td>45%</td>
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<tr>
<td>10 HMM</td>
<td>412,971</td>
<td>70</td>
<td>129,433</td>
<td>283,532</td>
<td>283,532</td>
<td>134</td>
<td>56%</td>
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<tr>
<td>11 Zim</td>
<td>397,388</td>
<td>69</td>
<td>19,300</td>
<td>318,088</td>
<td>318,088</td>
<td>65</td>
<td>94%</td>
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<tr>
<td>12 Wan Hai</td>
<td>250,249</td>
<td>90</td>
<td>108,020</td>
<td>81,629</td>
<td>81,629</td>
<td>70</td>
<td>33%</td>
</tr>
<tr>
<td>13 IRISL Group</td>
<td>154,415</td>
<td>50</td>
<td>96,183</td>
<td>56,032</td>
<td>56,032</td>
<td>46</td>
<td>38%</td>
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<tr>
<td>14 Antong (OASC)</td>
<td>145,820</td>
<td>122</td>
<td>111,134</td>
<td>34,682</td>
<td>34,682</td>
<td>60</td>
<td>24%</td>
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<tr>
<td>15 KMC</td>
<td>143,064</td>
<td>64</td>
<td>59,894</td>
<td>82,170</td>
<td>82,170</td>
<td>36</td>
<td>56%</td>
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<tr>
<td>16 Zhongguo Logistics</td>
<td>138,480</td>
<td>100</td>
<td>90,153</td>
<td>48,127</td>
<td>48,127</td>
<td>36</td>
<td>35%</td>
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<tr>
<td>17 X-Press Feeders</td>
<td>120,272</td>
<td>79</td>
<td>32,302</td>
<td>87,570</td>
<td>87,570</td>
<td>55</td>
<td>73%</td>
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<tr>
<td>18 STC</td>
<td>107,499</td>
<td>79</td>
<td>73,912</td>
<td>33,587</td>
<td>33,587</td>
<td>54</td>
<td>31%</td>
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<tr>
<td>19 SS Lines</td>
<td>75,617</td>
<td>34</td>
<td>9,555</td>
<td>66,062</td>
<td>66,062</td>
<td>29</td>
<td>87%</td>
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<tr>
<td>20 SM Line</td>
<td>74,310</td>
<td>18</td>
<td>58,521</td>
<td>31,609</td>
<td>31,609</td>
<td>13</td>
<td>22%</td>
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<tr>
<td>21 Arkas / EMES</td>
<td>73,390</td>
<td>45</td>
<td>63,545</td>
<td>9,845</td>
<td>9,845</td>
<td>40</td>
<td>13%</td>
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<tr>
<td>22 Sinotrans</td>
<td>65,153</td>
<td>40</td>
<td>25,507</td>
<td>39,640</td>
<td>39,640</td>
<td>17</td>
<td>61%</td>
</tr>
<tr>
<td>23 Zim</td>
<td>62,990</td>
<td>32</td>
<td>30,559</td>
<td>31,971</td>
<td>31,971</td>
<td>23</td>
<td>51%</td>
</tr>
<tr>
<td>24 Sinotrans</td>
<td>60,408</td>
<td>48</td>
<td>33,519</td>
<td>26,889</td>
<td>26,889</td>
<td>29</td>
<td>45%</td>
</tr>
<tr>
<td>25 Salam Pacific</td>
<td>53,208</td>
<td>53</td>
<td>53,208</td>
<td>0</td>
<td>0</td>
<td>53</td>
<td>0%</td>
</tr>
<tr>
<td>26 Emirates Shg</td>
<td>49,230</td>
<td>10</td>
<td>0</td>
<td>49,230</td>
<td>49,230</td>
<td>10</td>
<td>100%</td>
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<tr>
<td>27 Matson</td>
<td>43,561</td>
<td>27</td>
<td>38,198</td>
<td>5,363</td>
<td>5,363</td>
<td>21</td>
<td>12%</td>
</tr>
<tr>
<td>28 Swire Shg</td>
<td>42,636</td>
<td>36</td>
<td>30,644</td>
<td>12,192</td>
<td>12,192</td>
<td>19</td>
<td>28%</td>
</tr>
<tr>
<td>29 NieuwDutch</td>
<td>35,589</td>
<td>15</td>
<td>0</td>
<td>35,589</td>
<td>35,589</td>
<td>15</td>
<td>100%</td>
</tr>
<tr>
<td>30 Grimaldi (Napoli)</td>
<td>35,623</td>
<td>36</td>
<td>25,823</td>
<td>9,800</td>
<td>9,800</td>
<td>26</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Alphaliner Monthly Monitor January 2019

ONE ranks #6 of top 30 carriers  
Market Share: 6.7%  
Operating fleet: 216 Containerships  
Operating Capacity: 1.51 Million teus
Recap:
The International Maritime Organization (IMO) will regulate Ocean Carriers to limit the sulphur content of emissions from fuel oil in open waters to be less than 0.5% starting Jan 1, 2020. It is 3.5% in open waters and 0.1% in Emission Control Areas (ECA zones) today.

Methods available:
1. Change fuel from High Sulphur Fuel Oil to Low-Sulphur Fuel Oil or Low Sulphur Gas Oil
2. Install Exhaust Gas Cleaning Systems (Scrubbers)
3. Use new alternative fuel Engines that comply such as LNG (Liquefied Natural Gas), Methanol etc.

MARPOL 2020 Global Sulphur Limit

Q. What is the “2020 Global Sulphur Limit”? 3.5% or less

2020 Global Sulphur Limit to be implemented to improve major health and environmental benefits for the world, particularly for populations living close to ports and coasts, by drastically reducing the amount of sulphur smoke emitting from ships.

Q. How will the industry deal with “2020 Global Sulphur Limit”? 0.5% or less

Various derivatives partners of shipping companies such as shipyards, manufacturers, cargo suppliers and shippers, are fully aware of this regulation and are preparing and developing compliant equipment and oil.

Click for PDF brochure
Enforcement/Penalties for non compliance:

- Policies and penalties set by each Port State
- No set global penalties.
- Industry hope is focus will be on enforcement of compliance without disruption to services. IE minimize disruption to vessel operations while controlling emission levels.
IMO2020 Preparations

Operations

Investments
Operational Preparations: Burning a different fuel

- **LSGO Flushing**
  - Flush dead oil by LSGO for all tanks. LSGO amount is based on the calculation. Dead oil: Unpumpable oil.

- **Sequential Dilution**
  - Dilute the dead oil by LSGO or ULSFO for multiple tanks. Calculate the sulphur content based on the volume of oil.

- **Manual Cleaning**
  - Physical cleaning of fuel oil storage tank.

- **Maximize use of HSFO, pump LSFO for use**
  - No preparation required.

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**Fuel Oil Storage Tank**

- LSGO
- Dead Oil

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**Step 1: Fuel Switch Tank Preparation**
Last HFO Bunker
Last HFO bunker shall be taken according to following rules.
1) Last HFO bunker shall be taken at standard bunker port between 45 days and "XX" weeks before "HFO used deadline". "XX" weeks is 2, 3 and more weeks and it is subject to service. ECA period shall not be counted when you calculate last HFO bunker period.

(Case 1) No ECA

(Case 2) With ECA
Straight Run
ULSGO (S: 0.1%)
VLSGO (S: 0.5%)

Blending (GO + HSFO)
VLSFO (S: 0.5%)

Blending (GO + LCO + HSFO)
VLSFO (S: 0.5%)

Blends

Operational Preparations: Burning a different fuel

Step 3: Procurement of LSFO
Various sources

DISTILLATES

Straight Run HSFO
(S: 3.5%)

Floating storages

Onshore tankages
Survey Two: How much fuel is being burned by the Container Ship Fleet annually?

Note: KT (1,000 MT)
Survey Two Choices

1. 70 million metric tons
2. 2 million metric tons
3. 275 million metric tons
4. 45 million metric tons

Disclaimer: All figures guesstimates based on various published data
1. 70 million metric tons
2. 2 million metric tons
3. 275 million metric tons
4. 45 million metric tons

Disclaimer: All figures guesstimates based on some published data
Illustration extracted from Class NK Guidelines for Exhaust Gas Cleaning Systems v3.
• Alpha Liner estimates including new builds shown above
• ONE will equip some vessels scrubbers using dry dock opportunities.
• Not a lot of vessels intending to using alternative fuel solutions at this moment.

Survey Three:
What is the potential cost impact of IMO2020 to the container shipping industry?
Survey Three Choices

1. usd14 billion
2. usd21 billion
3. usd100 billion
4. usd1.3 billion

Disclaimer: All figures guesstimates based on various published data
Survey Three Answers

Disclaimer: Figures single transactional estimates based on various data

1. usd14 billion  usd200/mt fuel differential
2. usd21 billion  scrubber to existing vessels
3. usd100 billion  engine conversion to LNG fuel
4. usd1.3 billion  cost of Singapore LNG terminal (4 mts/yr)
Summary ONE MARPOL 2020 Global Sulphur Limit

- ONE to be fully compliant
- Main solution to be switch of fuel
- Minimal disruptions to ONE vessel operations due to fuel switch
- ONE will continue to study alternative longer term solutions
- ONE will need to recover the incremental cost of compliance

*subject to change.