The Impact of Decarbonization on Shipping

Facing the Decade of Decarbonization
Marine Environment Protection Annual Conference

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As a result of the new sulfur regulations, the maritime industry is expected to increase the demand for low-sulfur fuel by 2.0 - 2.5 MMBD worldwide.
IMO Vision to Halve GHG Emissions by 2050

• 2018 Initial IMO Strategy on reduction of GHG emissions from international shipping

  • Implement energy efficiency design index for new ships

  • Reduce CO2 emissions per transport work by an average of 40% by 2030 with a goal of 70% by 2050

  • Reduce GHG emissions from international shipping by at least 50% by 2050
How do we get there – LNG as Marine Fuel

• “2019 Will be the Year of Acceleration for LNG as Marine Fuel”
  - February 2, 2019

• Large order books for LNG powered vessels of all types

• Expanded LNG port infrastructure and additional LNG bunkering vessels
LNG as Marine Fuel cont.

• Expensive to modify existing vessels for LNG
• LNG newbuilds cost more than traditional engines
• Lack of infrastructure for re-fueling along many routes
• Danger of price spikes for available LNG marine fuel as demand surges
• LNG is not carbon neutral
• New technologies developing
Alternative Clean Energy Sources

- FLAGSHIPS building two hydrogen fuel-cell vessels
- Port of Antwerp orders the *Hydrotug*, the first hydrogen fueled tug (hydrogen-diesel hybrid)
- NYK - 49,000 dwt methanol-fueled methanol carrier
- MOL to study installation of a hard sail on coal carrier
- C-Job Naval Architect studying feasibility of ammonia as marine fuel
- French IMO delegation: mandatory slow-steaming limits on ship speed/caps on installed power
Market and Industry Response - Examples

- Through 2018 - $580 billion in green bonds issued through 2019 - another $170 to $180 billion
- University of California announces it will divest all carbon assets from $84 billion fund
- May 2018 NYK issued green bonds to fund LNG fueled vessels and other NYK projects
- October 2019 - Cargill, Maersk Tankers, and Mitsui announce collaboration to develop fuel-saving technologies and new technical solutions
Currently - 12 Banks with US$100 Billion

• Principle 1: Annual Assessment of climate alignment

• Principle 2: Third-Party assessment and reporting

• Principle 3: Enforcement through contractual covenant clauses

• Principle 4: Name and shame public reporting
Going Forward - 2050 and Beyond

Decarbonization is Messy

• Will LNG early adopters be rewarded or get burned?
• What mix of technologies make sense for your fleet?
• What modifications make sense?
• Decarbonization will require stakeholder buy-in
• We need the right mix of regulatory clarity, public-private partnership and financial investment
• Beware unintended consequences