Ship Operator’s Approach to Compliance with 2020 Sulphur Cap

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Carnival’s Global ECA Approach

Carnival Corporation supports the implementation of the Global ECA in 2020, and there are four practical options for compliance:

Carnival has selected **Exhaust Gas Cleaning Systems (EGCS)** as the *primary retrofit solution* for the existing fleet

However, Carnival is an *industry leader in other compliance options* as well:

- **LNG** → *first in industry to deliver LNG capable ships*
- **Shore power** → *most cold-ironing-capable cruise ships in industry*
- **MGO** → *in use in all ships without EGCS or LNG.*

*A minority of our European brands may also plan to use 0.5% sulphur fuel blends*
Challenges in Compliance

• Availability of compliant fuel

• Fuel compatibility

• Reliability of fuel provided by suppliers
  
  • Compliance with current/incoming regulations

• Mitigation measures for bunker fuel that is non-compliant or poses other compatibility issues
Expectations from Maritime Administrations

• Enforcement of MARPOL Annex VI Regulation 18

  • Ensure that compliant fuel is available

  • Ensure that fuel oil meets quality and safety standards

• Continue to recognize the benefit of open loop Exhaust Gas Cleaning Systems (EGCS)

  • Air emissions?
    • Open Loop EGCS provide major benefits to air quality as originally intended by the IMO

  • Washwater?
    • Studies show that open loop EGCS washwater has negligible impact on the ocean environment based on years of monitoring and compilation/analysis of the largest EGCS washwater laboratory sample database in the marine industry.
Thank you for your time

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