AIRES Meets Industry Meeting hosted by CERN, Geneva 1st December 2017



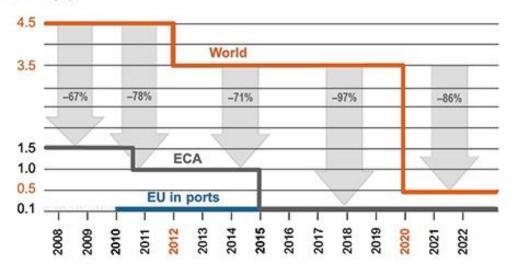
Dario Bocchetti Head of Energy Saving and Innovation Grimaldi Group





Sulphur IMO Annex VI and EU

Sulphur limit (%)



Fuel type Exhaust gas cleaning Particulate Matter (PM) Not regulated = both HFO and distillate are permitted. Permitted alternative under Regulation 4 to achieve any regulated limit. No limit values.

Actual Situation:

- 0,1%S in ECA
- 0,1%S in Eu Port
- 1,5%S for ro-pax in ZPE
- 3,5%S worldwide

2020 Situation:

- 0,1%S in ECA
- 0,1%S in EU Port
- 0,5%S worldwide, at sea and in ports outside ECAs

Grimaldi Group - Experience on EGCS retrofit

Our scrubber retrofit program consists of following projects:

Projects completed:

- N.16 Open loop scrubber fitted on n.4 Ro-pax sail 100% in NE ECA area;
- N.13 Open loop scrubber fitted on n.11 Ro-cargo sail 100% in NE ECA area;
- N.12 Hybrid scrubber fitted on n.3 Ro-Pax sail 100% in NE ECA area;
- N.2 Open loop scrubber fitted on n.2 Ro-cargo sail 100% in NE ECA area;
- N.5 Hybrid scrubber fitted on n.5 Con-Ro sail >50% in NE&NA ECA areas;

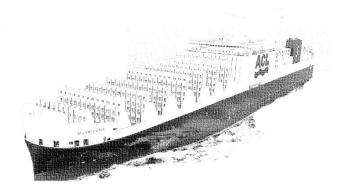
Projects in progress:

N.8 Hybrid scrubber on n.8 Vehicle carrier sail >50% in NE&NA ECA areas;

Projects in study:

- N.8 Hybrid scrubber on n.4 Ro-cargo sail in ECA area;















PREPARING THE NEW FUNNEL







HOISTING THE NEW FUNNEL













