Role of the classification societies in the context of the new Strategy

International Workshop GHGs and Shipping, CIL - MPA

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FORECAST TO 2050 - SUITE OF PUBLICATIONS
Maritime forecast to 2050 provides outlooks for key drivers

Regulations

Technologies & Fuels

Goods to be transported
Shipping has experienced a surge in environmental regulations over the past decade, which is expected to continue

- **Safety regulations** expected to improve incrementally, with focus on:
  - New environmental technologies and fuels
  - Digitalization including autonomy, control systems, and cyber risk

- Other stakeholders’ expectations:
  - **Consumer preferences** and pressure from investors, non-governmental organizations, politicians, and the general public
  - **Climate-risk** assessment and disclosure
  - Significance of **sustainability challenges** will increase over the next decades
  - Shipping companies have an opportunity to respond strategically to these signals and create **business benefit and value**
Alternative fuel paths - difficult to identify ‘winners and losers’


Key aspects

Primary energy sources:
- Renewables, nuclear?

Processing:
- Captured carbon to produce electro-fuels?

Which energy carriers:
- Liquid, gas, hydrocarbons?

Which energy converter:
- Internal combustion, fuel cells, electric motors?
Switch volumes – Impact from Sulphur Limit 2020

A dramatic shift in the fuel mix
- Will it be possible?

- Are the refineries preparing?
- Theory vs actual availability
- Approx 6-8% increase in global gas oil consumption – impact for other industries as well?
- Geographical shift in supply?
Global bunker demand – Towards 2050

Illustrative purposes only

Source: PIRA energy
Key findings - fuel mix and CO2 emissions for the world fleet

- Reduction of greenhouse gas (GHG) emissions will be the main challenge for shipping in the next decades
  - In the short term, IMO will work on strengthening EEDI and SEEMP
  - IMO will also look at speed reduction, operational indicators, and market-based measures.
  - After 2030, there is a need for large scale uptake of CO₂-neutral fuels

- This will drive innovation and technology development in shipping – the fleet in 2040 and 2050 will be very different
Competitiveness and CO₂ emissions – ship designs

- Many uncertainties – potential for big shifts:
  - It is not clear which fuels and technologies will win in the short or long term,
  - But we need to build ships today – how can we make it robust?

- DNV GL has developed a framework to test competitiveness under different scenarios – taken into account:
  - Fuel & technology
  - Regulations
  - Risk related to market
There is a range of promising CO₂ reduction measures

- In addition to energy-efficiency measures, reaching the IMO target for reducing GHG emissions from shipping will most likely require widespread uptake of fuels with a high GHG reduction potential.
- Digitalization will be a key enabler for reducing in-effectives, and assisting in prototyping in-mature novel technologies and solutions.

### LOGISTICS & DIGITALIZATION
- Speed reduction
- Vessel utilization
- Vessel size
- Alternative routes

### HYDRODYNAMICS
- Hull coating
- Hull form optimization
- Air lubrication
- Cleaning

### MACHINERY
- Machinery improvements
- Waste heat
- Engine de-rating
- Battery hybridization

### FUELS AND ENERGY SOURCES
- LNG/LPG
- Electrification
- Biofuel
- Synthetic/hydrogen etc.
Thank you for the attention!

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