



SHIPPING 2020

TECHNOLOGY UPTAKE IN THE WORLD FLEET TOWARDS 2020

What is Shipping 2020

WHY:

We need to understand what are possible developments on technology and regulations and how they will impact the shipping industry

CHALLENGE:

Uncertainties associated with market trends and drivers, fuel choices, technology developments and other variables.

The wrong investment decisions will be detrimental to both the industry and individual ship owners.

Wrong decisions impact the financial bottom line and the environment.

ANSWER:

Shipping 2020 aims to create a picture of future possible developments within shipping and to indicate which technologies are most likely to be adopted by the industry by 2020.



Megatrends and external drivers

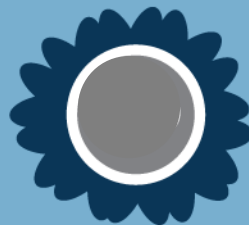
ECONOMIC GROWTH AND DEMAND FOR TRANSPORT

- Boom or bust?
- Growth level and level of contracting
- Overcapacity of vessels?



REGULATORY AND STAKEHOLDER PRESSURE

- Global or local regulations?
- Further requirements on GHG emissions?
- Rating schemes and requirements from charterer and public

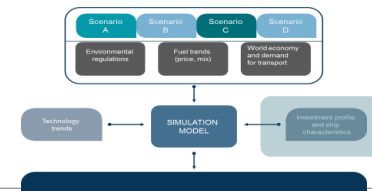


FUEL TRENDS

- Sustained high fuel prices?
- LNG cheaper than HFO?
- Development of LNG infrastructure
- Impact of sulphur regulations

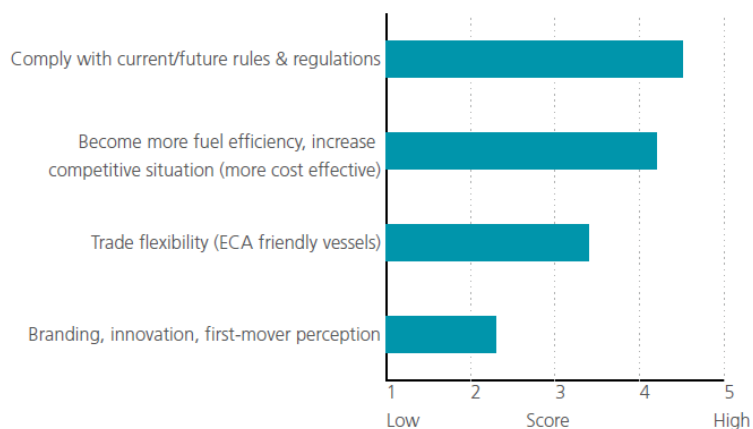


Ship owner survey – motivation and barriers

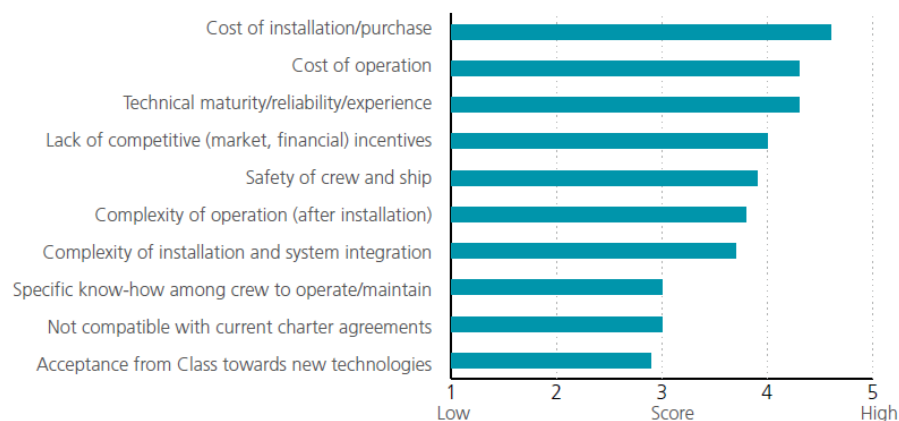


Compliance and fuel efficiency are the main motivation, and cost and technology maturity are the main barriers

Main motivation



Main barriers



Source: DNV survey (23 respondents)

Which technologies do ship owners envisage using in the future?

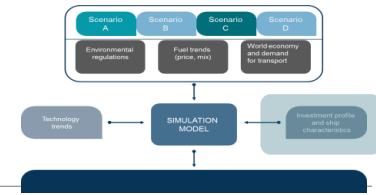


FIGURE 3: FAMILIARITY AND EXPERIENCE WITH TECHNOLOGIES

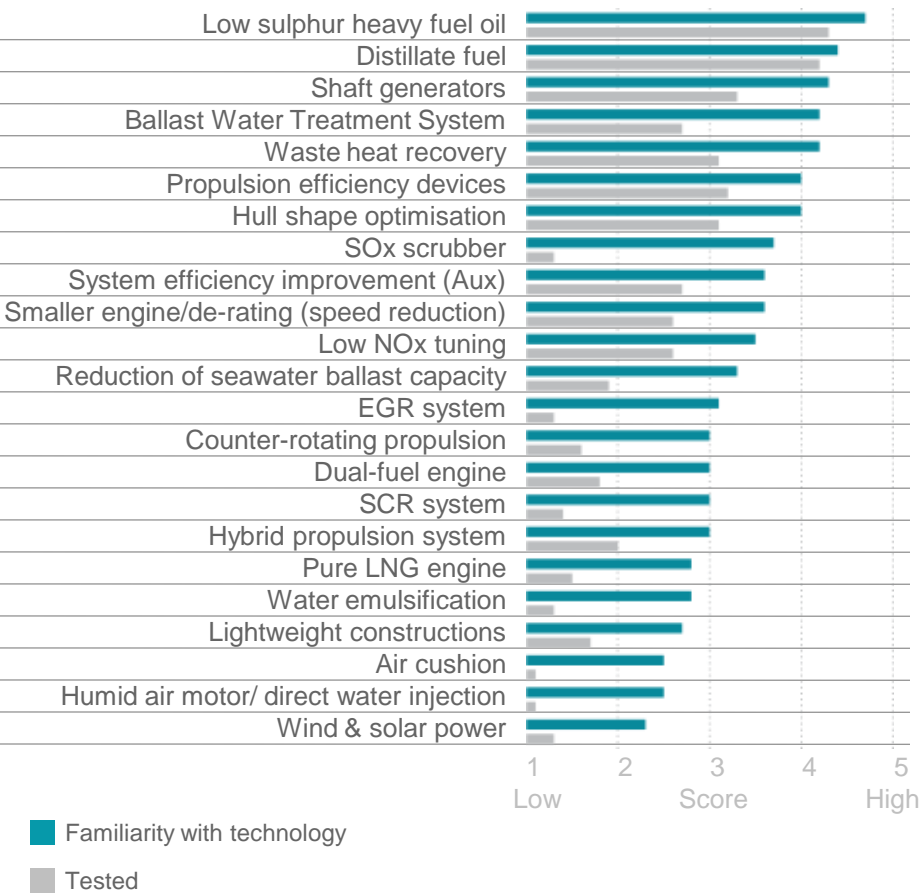
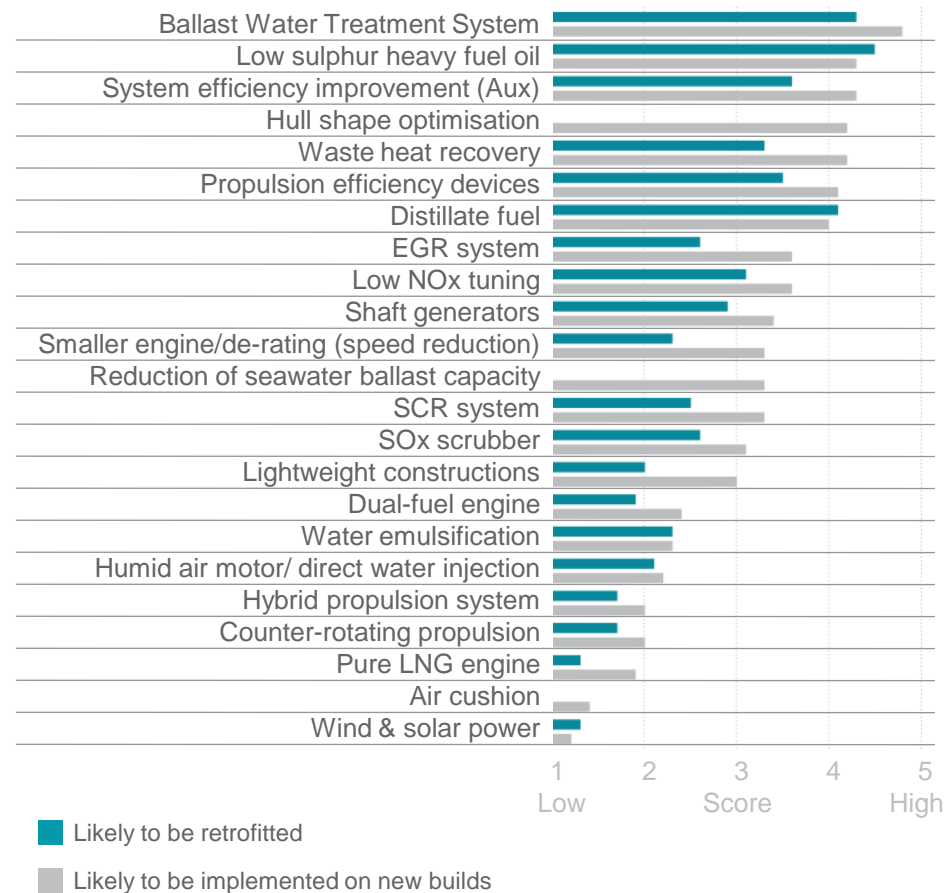


FIGURE 4: LIKELIHOOD OF IMPLEMENTING TECHNOLOGIES

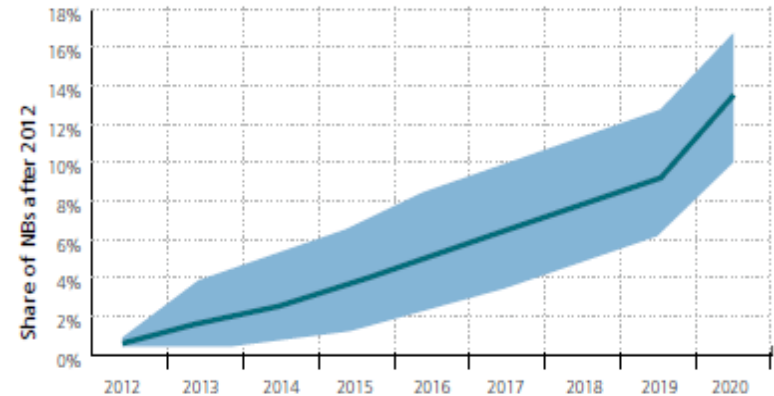


Source: DNV survey (23 respondents)

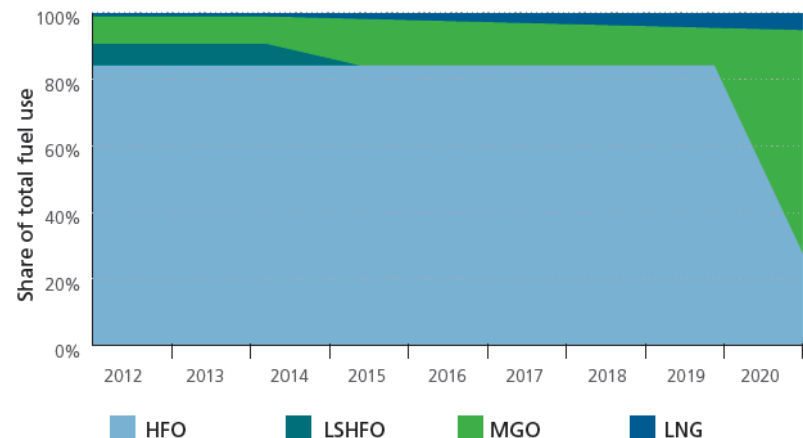
Findings – sulphur regulations

- More than 1000 new buildings in the next 8 years will be delivered with gas fuelled engines
 - LNG price is the main contributing factor, but from 2020 also the global sulphur limit and EEDI
- In 2020, with the global sulphur requirements, scrubbers become a significant solution
 - Scrubbers can be retrofitted and can take 25% of the market, 15-20,000 ship
- In 2020, the demand for marine distillates could be as high as 200-250 million tonnes annually
 - The use of LNG will not significantly impact the demand of other fuels
- Energy efficiency measure will only slow the fuel demand in the short term

Share of LNG fuelled newbuildings



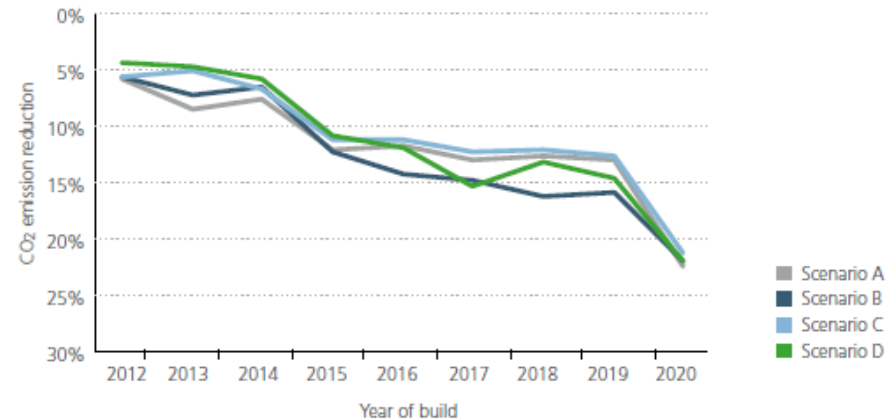
Fuel mix



Findings – energy efficiency

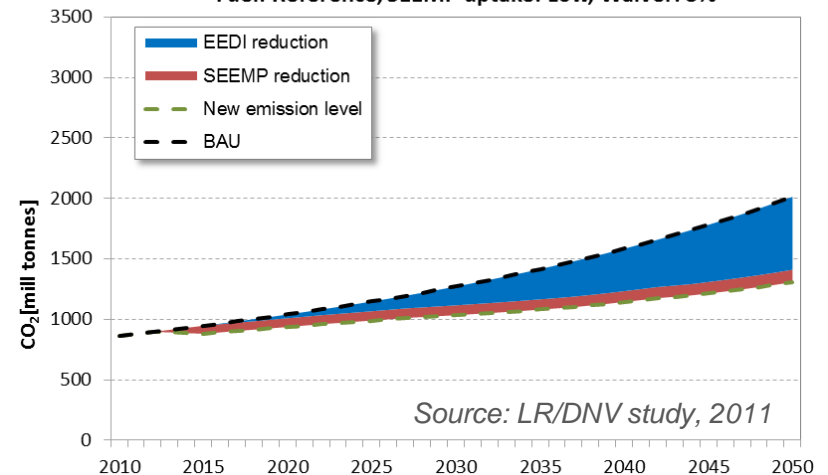
- Newbuildings in 2020 will emit up to 10 to 35% less CO₂ than today's ships.
 - High fuel costs and regulations have increased focus on energy efficiency
 - The EEDI will be also be an important driver
- New technologies emerging, but long time from development to implementation
- Energy efficiency will slow but not reverse growth in emissions
 - Growth in transport demand will cancel absolute reduction
 - New carbon-neutral fuels have to be implemented to reach 80-95% reduction

CO₂ emission reduction on newbuildings



World fleet - Scenario: B2-1

Fuel: Reference, SEEMP uptake: Low, Waiver: 5%



Source: LR/DNV study, 2011

Safeguarding life, property and the environment

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