



Session 2

NATURAL GAS IN THE SPOTLIGHT (IN COLLABORATION WITH GLOBAL GAS CENTRE)

Regional Roundtable on the Role of Natural Gas in the Energy Transition

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About Lloyd's Register

Who we are | What we do | How we do it

Lloyd's Register [LR], through attention to **innovation** and planning for the **future**, we have developed a **wide breadth** of capabilities to provide services to a **diverse** range of industries **worldwide**









Maritime Decarbonisation – Natural Gas a key enabler?

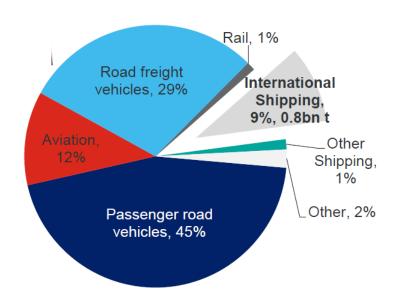
Maritime shipping - GHG Emissions Reduction

2018
IMO Initial GHG
Strategy

2030
Carbon Intensity– 40%
Reduction

2050

Carbon Intensity – 70% Reduction GHG Emissions – 50% Reduction



Shipping's share of global transportation sector CO₂ emissions

Regulatory Drivers

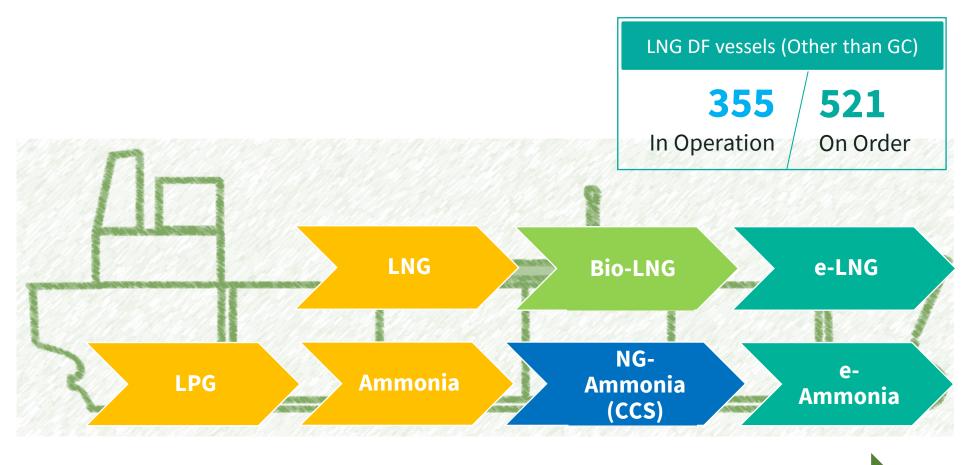
Technical - Design Indices (EEDI, EEXI)

Operational – Carbon Intensity Indicator (CII)

Fuel – Lifecycle emissions standards

Market Based Measures - EU
EU-ETS
Fuel EU Maritime

Gas based pathways - Maritime Decarbonisation



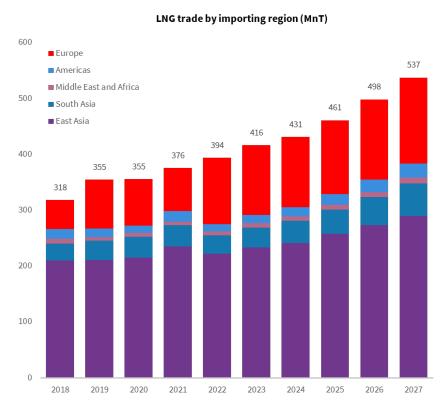
Potential Fuel Mix -**Year 2050** Zero-Carbon alt. fuels: 34% LNG: 34% Other Low Carbon alt. fuels: 18% Oil: 15%

Transition from Fossil Based Fuels to Renewables based Fuels



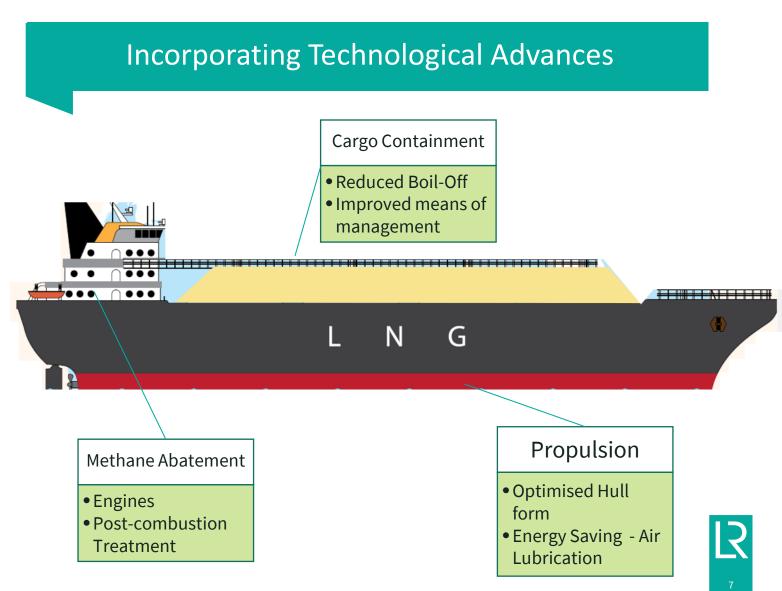
Shipboard Transportation of LNG and Low carbon fuels

LNG Carriers to support growth in LNG seaborne trade



Source MSI, LNGC Outlook Dec 2022

T20 317
In Operation On Order



Enabling low/zero carbon gas value chain

Ammonia

Large scale transportation – thermal power plants/industrial application

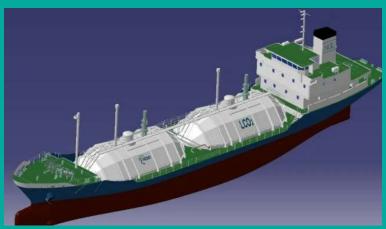
Ammonia Fuelled Very Large Ammonia Carrier



Ammonia FSRU



Liquefied CO₂ Carriers



Source: https://www.offshore-energy.biz/

Liquefied Hydrogen Carriers



Source:Hystra

