

ALFA
LAT



New products and solutions for a changing planet

– Marine Division

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PureBallast

- Market leading position in ballast water treatment



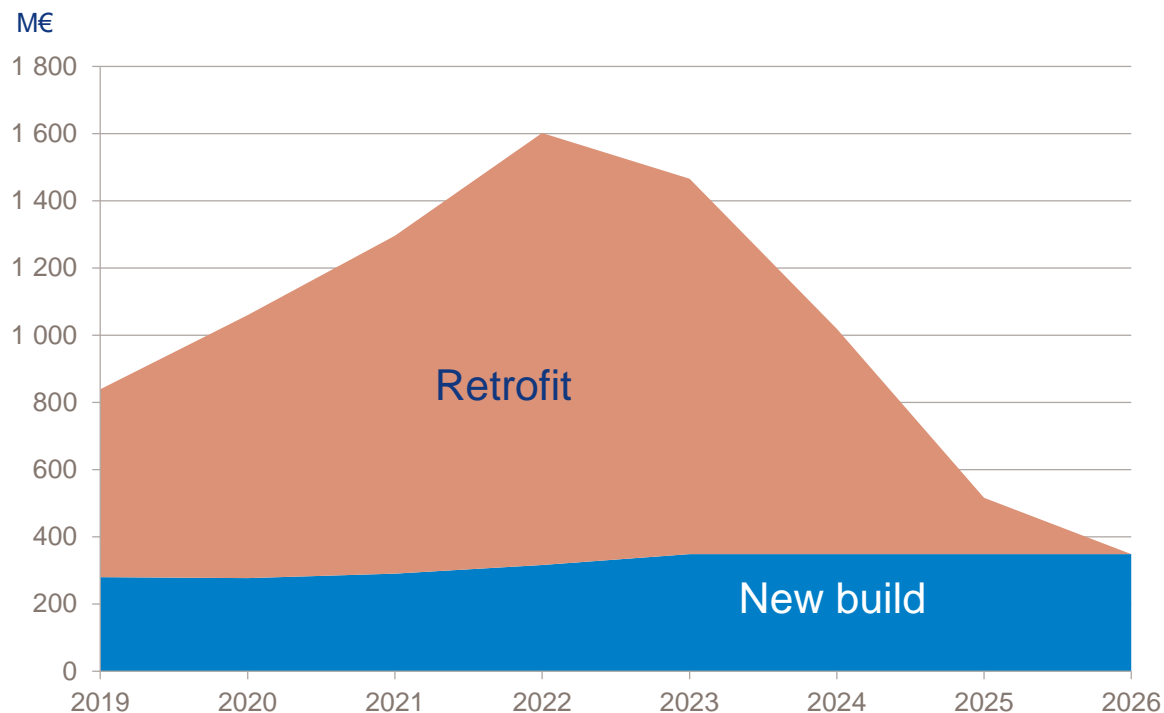
- First supplier with
 - USCG Type Approval with zero days hold-time
 - Revised IMO G8 Approval – mandatory from October 2020
- 1500 m³/h larger UV reactor strengthened the position in bulker and tanker segment
- Unmatched global 24/7 service offer to support compliance

PureBallast

– Available opportunity ahead of us



EUR 8 B
market value



October, 2019

* Source: Clarkson & Alfa Laval analysis

PureSOx

- Market leading position in SOx cleaning

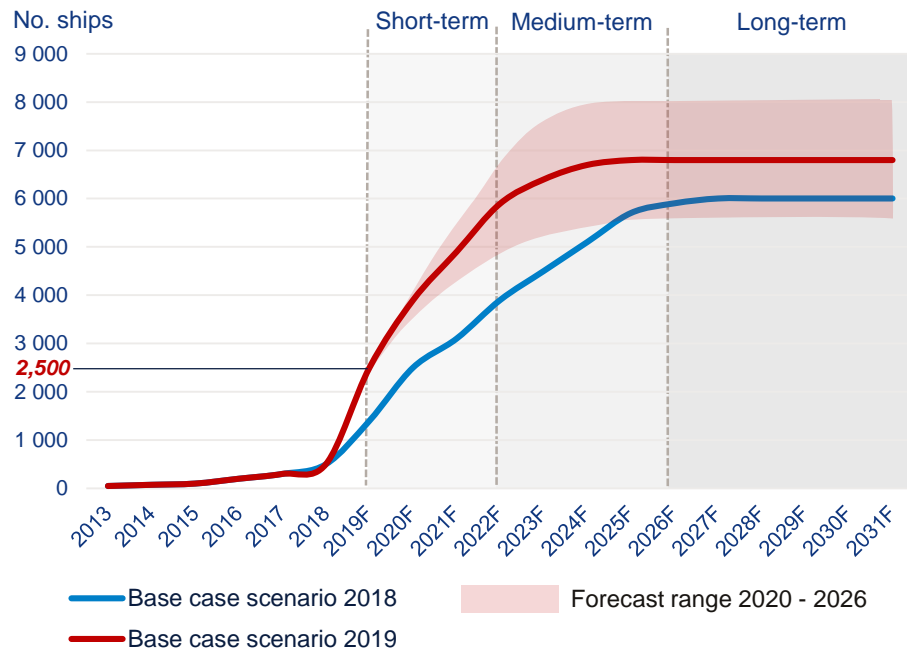


Water cleaning system



- Delivered on ramp-up
- New modular water cleaning system launched
- Connectivity & compliance services gains traction

EUR 3-5 Bn
market value*



Source: Clarksons Research

*) Market potential 2020-2026

- Higher than anticipated scrubber uptake in 2018-19
- Significant uncertainty between low and high cases depending on fuel delta, fuel availability and regulation
- Higher market potential 2020-2026 than our 2018 guidance

Other environmental products



Product	Waste water Alfa Laval PureBilge	Waste oil Alfa Laval PureDry	Exhaust gas Alfa Laval PureNOx	Waste heat Alfa Laval Aalborg Micro
Driver	MARPOL Regulation	Fuel Efficiency	NOx Regulation	Fuel Efficiency

Fuel challenge

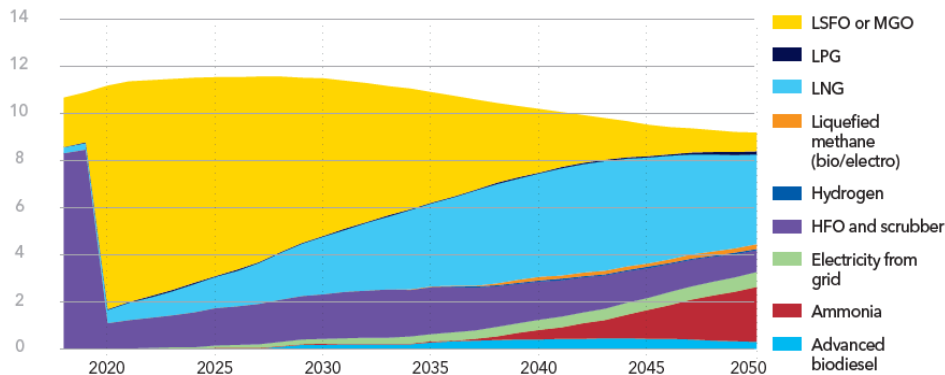
Marine fuel mix projection

– 2018-2050



Energy use and projected fuel mix 2018-2050 for the simulated IMO ambitions pathway with main focus on design requirements

Units: EJ/yr



LSFO, low-sulphur fuel oil; MGO, marine gas oil; LPG, liquefied petroleum gas;
LNG, liquefied natural gas; HFO, heavy fuel oil;
Advanced biodiesel, produced by advanced processes from non-food feedstocks

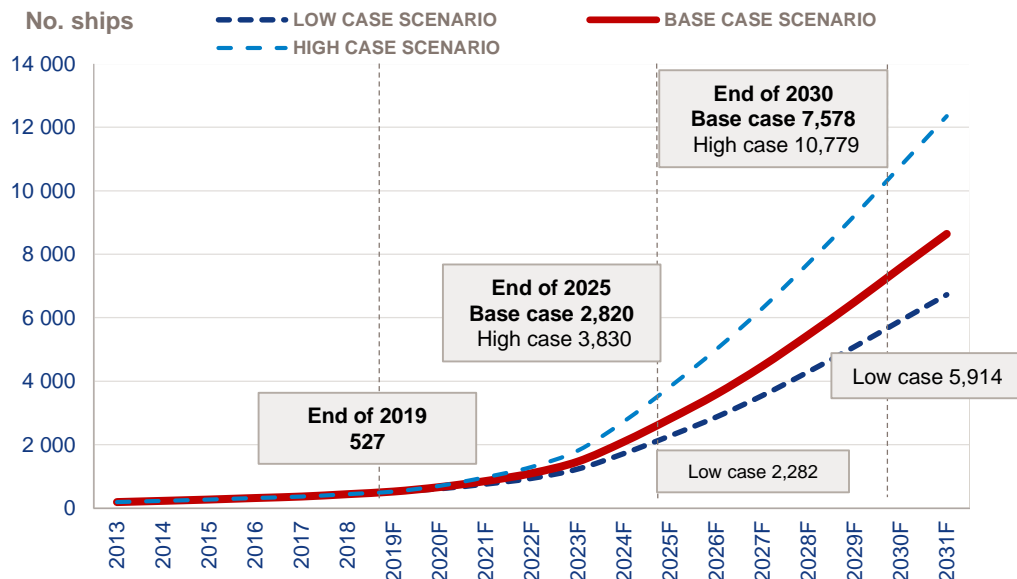
©DNV GL 2019

- Significant transition to compliant fuel from 2020 onwards
- Heavy Fuel Oil and Scrubber will continue to have a role in the medium term
- Liquid Natural Gas projected to be the transition fuel towards decarbonization
- Industry working towards a non-fossil fuel based future

Gas as a fuel

– LNG capable fleet development scenarios

350
vessels
per year

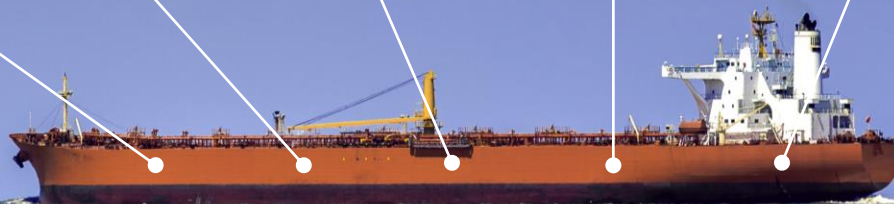


- Significant increase in vessels selecting gas as a fuel going forward
- Long term charter commitments needed to drive this development

Modified from: Shipping Market Overview, September 2019, Clarksons Research

Gas as a fuel

– Product opportunities



Alfa Laval Test & Training Centre

– Prepared for the future



Summary



- Leading provider of solutions into the environmental area
- Gas as a fuel will provide new opportunities
- We have the capability to meet the future

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