
RINA
Tanker fleet trends and challenges
IENE
5th ENERGY & SHIPPING SEMINAR
April 29, 2026 | B & E Goulandris Foundation
Energy Security, Energy Transition and the New Maritime Reality
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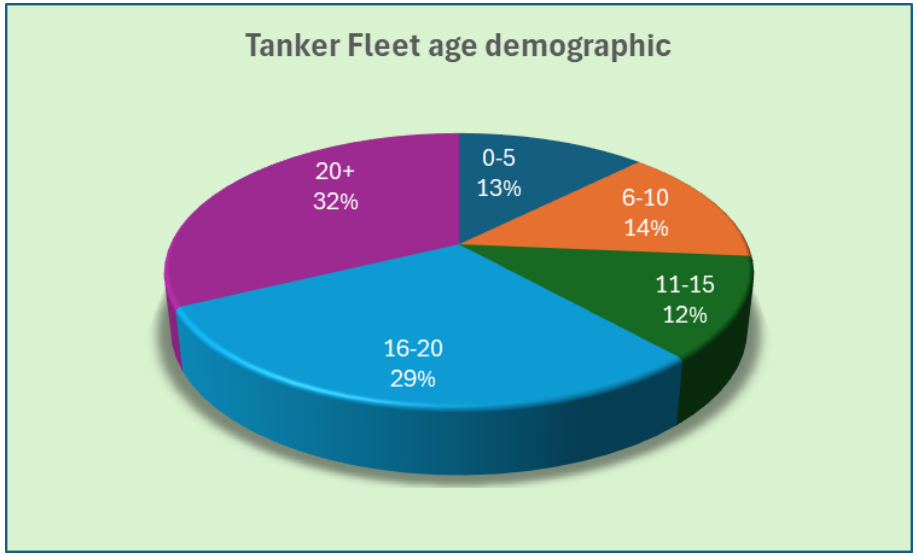
Current Tanker Fleet and NB Orderbook overview

World tanker Fleet demographic

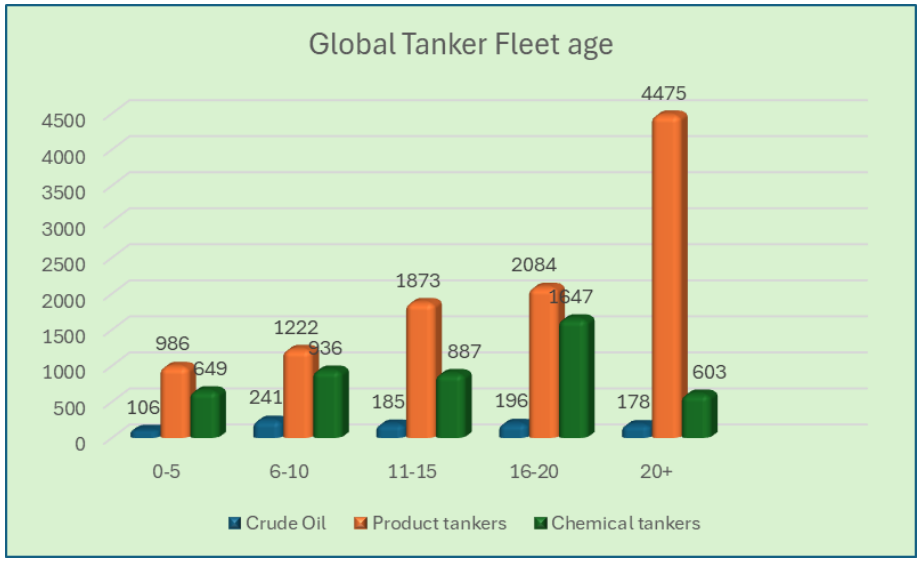
Tanker Fleet Demographic

The fleet is aged due to low orders in the previous years and low demolition rates. Orderbook has been strengthened since 2024



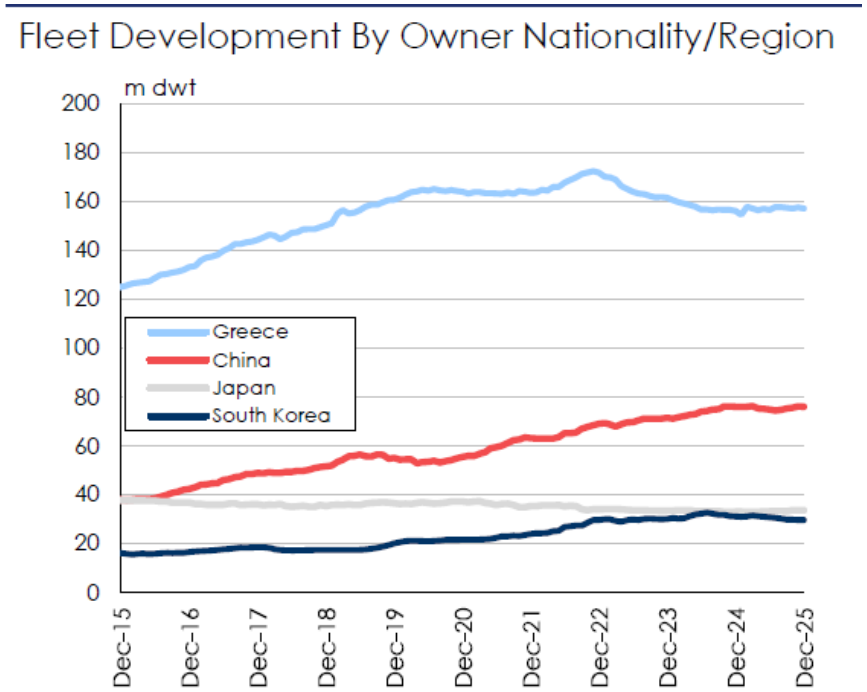
Global tanker fleet age by tanker segment

47% of the Crude Oil tankers and 62% of the Product tankers are above 15 years of age



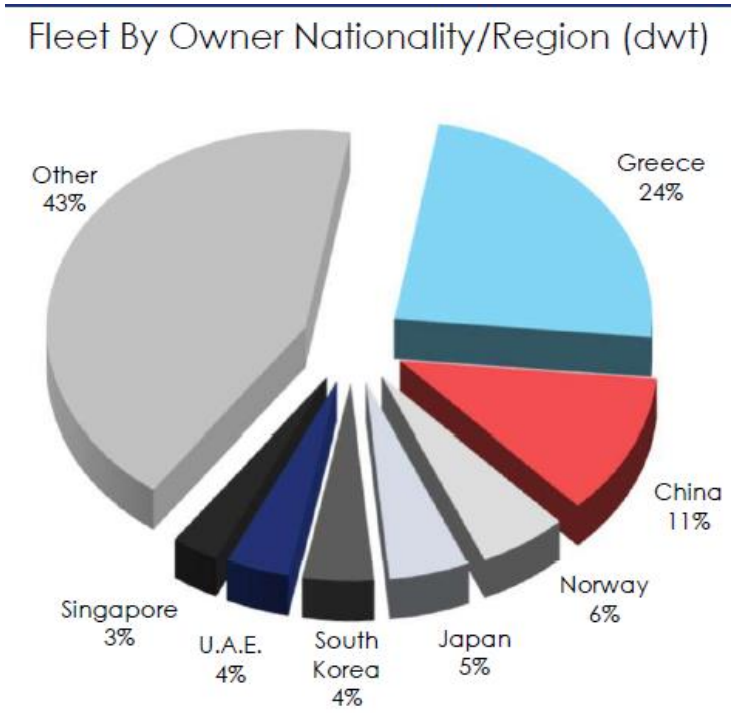
Greeks dominate at Tanker vessels Ownership Chinese Owners share is growing

Greece leading the way and China make movements to follow



Data from Clarksons Oil and Tanker trade outlook December 2025

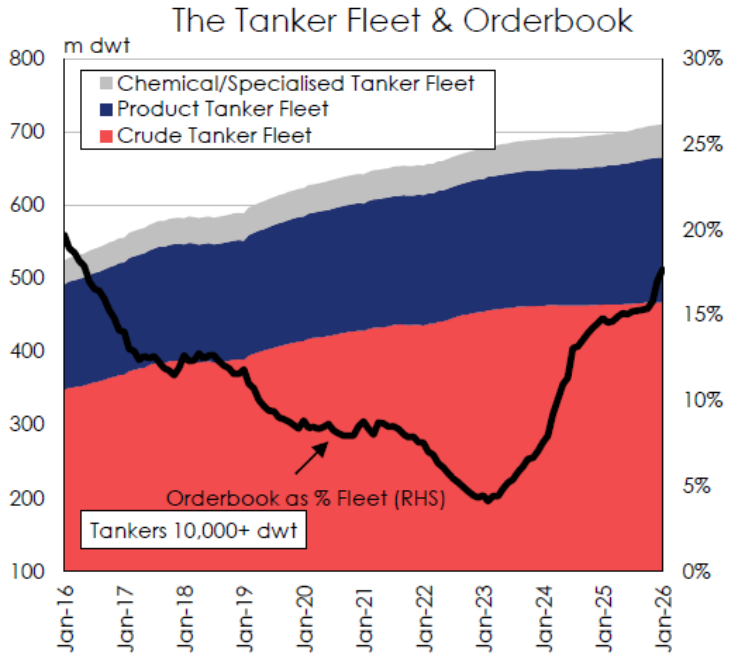
Countries with the highest share at Tanker vessels Ownership

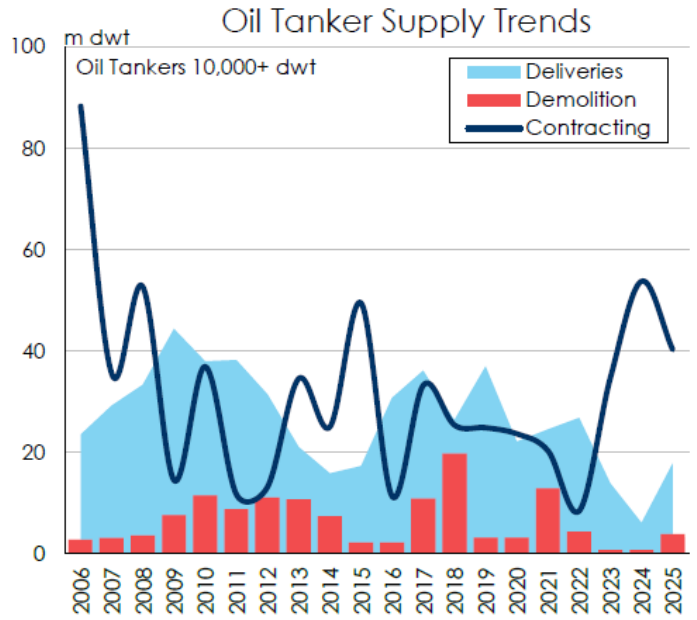


Orderbook trends

Newbuilding order book

Newbuilding orders in 2022 & 2023 reached the lower level in the history especially at larger Crude carriers but this has changed a lot as we had many orders in 2024. High newbuilding prices still stop many owners to order but we see the first signs of prices normalisation. Regardless of the uncertainty of the new fuels Owners are placing orders to replace the aged fleet.



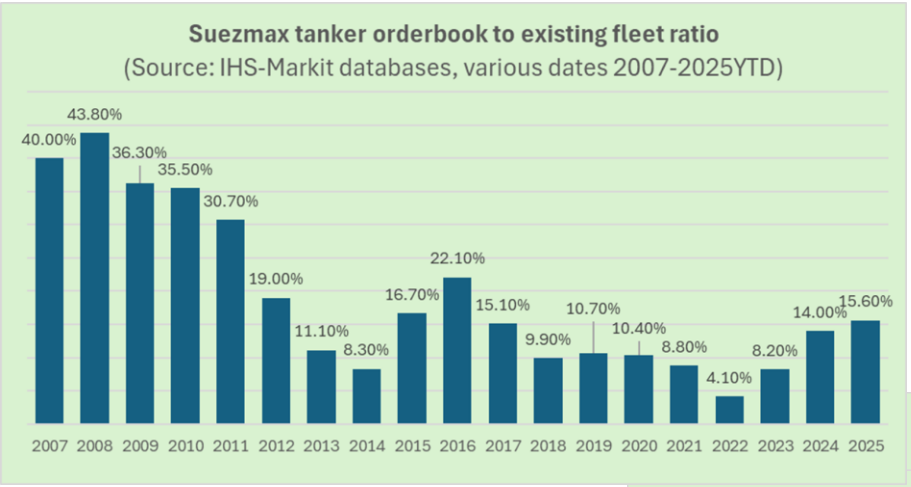


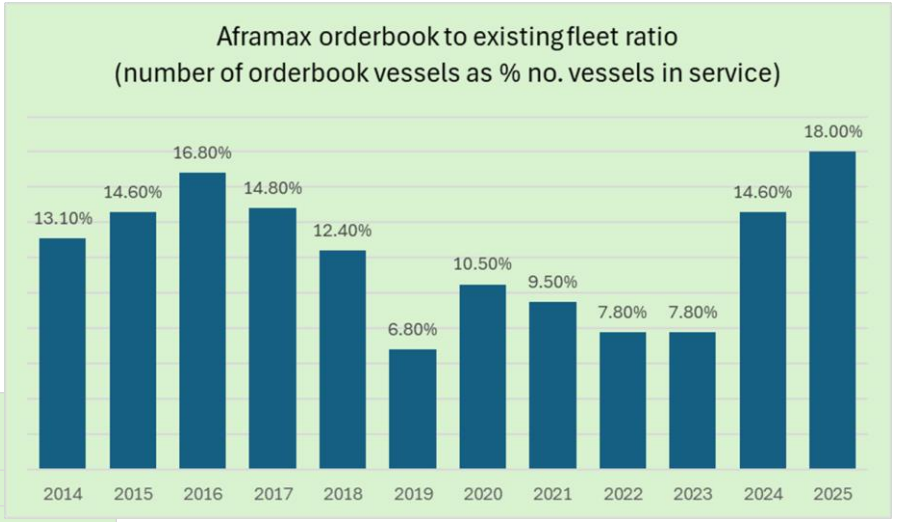
Data from Clarksons Oil and Tanker trade outlook January 2026

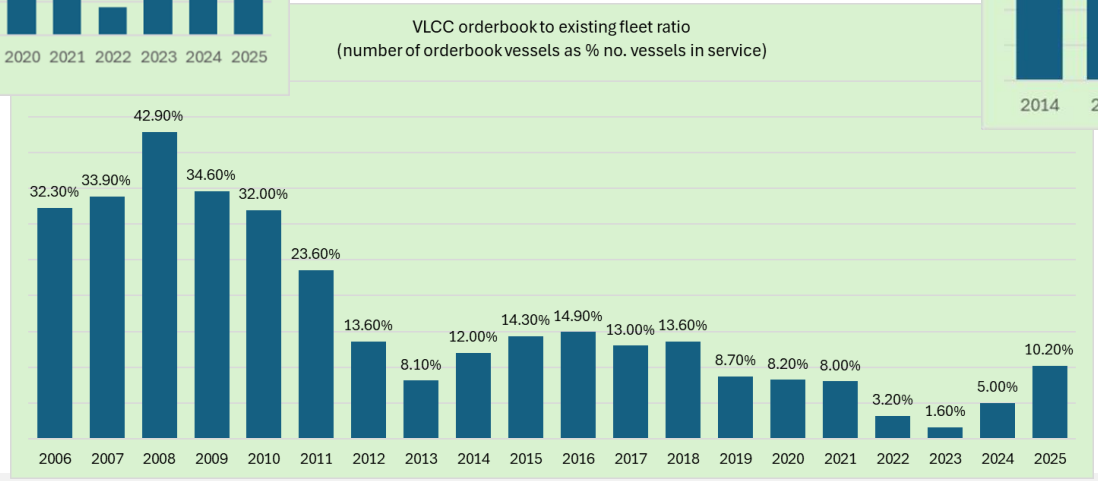
Historical tanker orderbook data

Historical tankers orderbook

In 2024 the Owners came back ordering VLCCs after few years with very low orderbook that lead to only one delivery during 2024. Similarly for other tankers sizes the orderbook has picked up since 2024 but it has not reached the required levels.







Newbuilding prices trend

Newbuilding prices increased in the last two years due to high demand and unavailability of slots at main shipyards. Within 2025 we have seen a slight reduction in prices due to limitation of new orders (57% less than 2024 in the same period), Clarksons is reporting newbuild prices are down 1.2% from the start of 2025, Prices have dropped most notably in the tanker sector by 5% versus the start of 2025. During 2026 the predictions for further price reduction has failed as we see that process are similar with a small upwards trend at the beginning of 2026.

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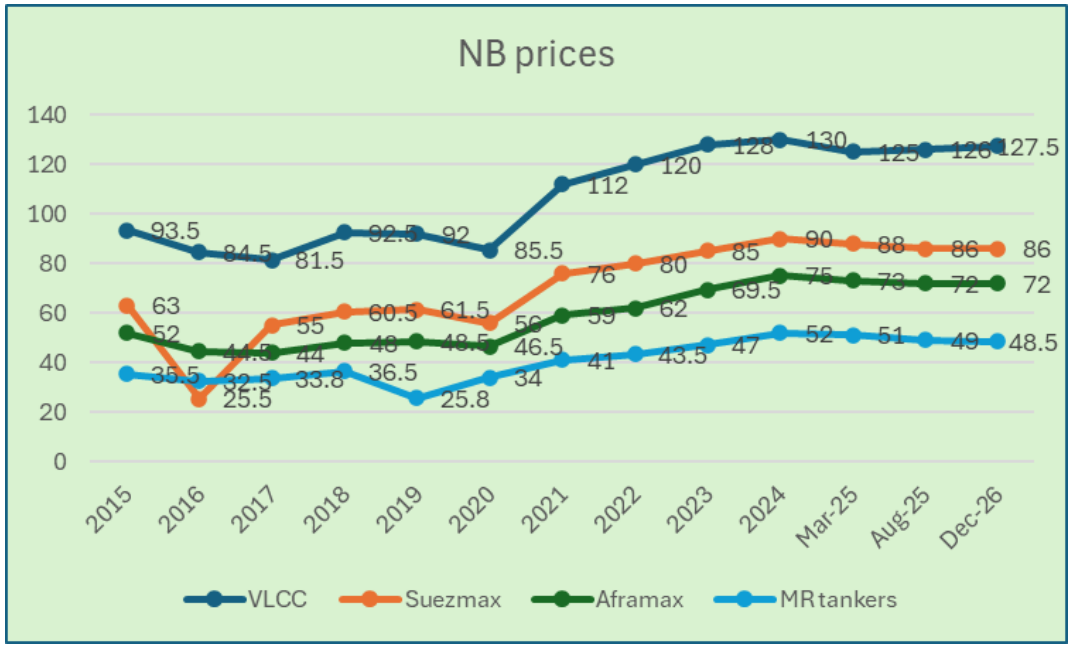
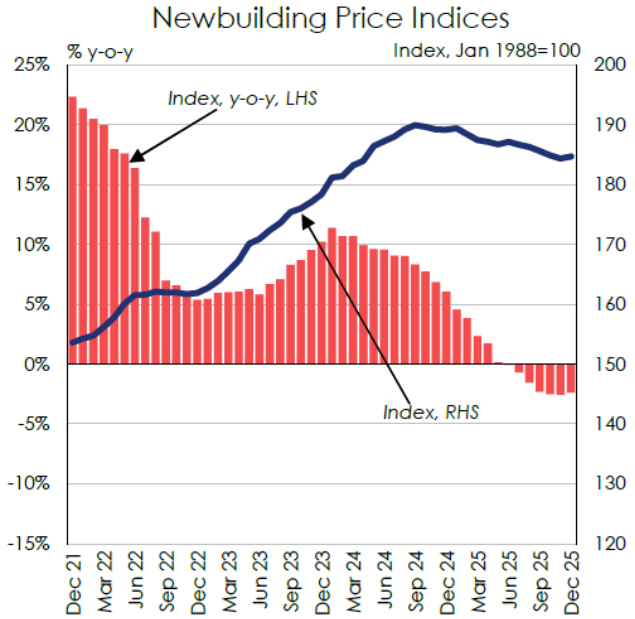
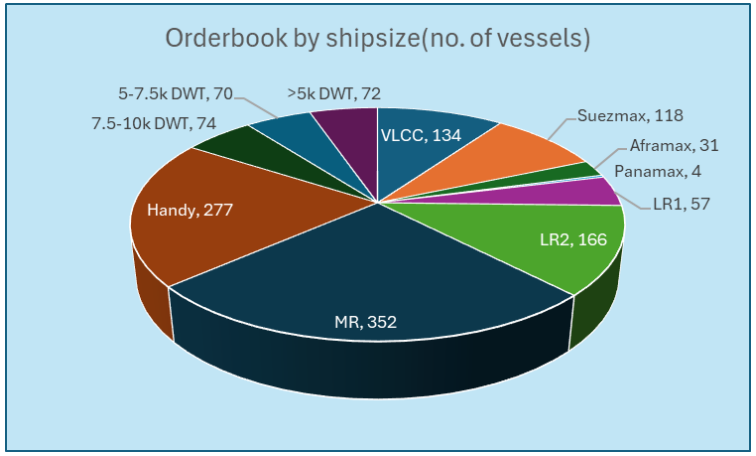
Newbuilding prices trends(year end)													
Vessel type	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Mar-25	Aug-25	Dec-26
VLCC	93.5	84.5	81.5	92.5	92	85.5	112	120	128	130	125	126	127.5
Suezmax	63	25.5	55	60.5	61.5	56	76	80	85	90	88	86	86
Aframax	52	44.5	44	48	48.5	46.5	59	62	69.5	75	73	72	72
MR tankers	35.5	32.5	33.8	36.5	25.8	34	41	43.5	47	52	51	49	48.5

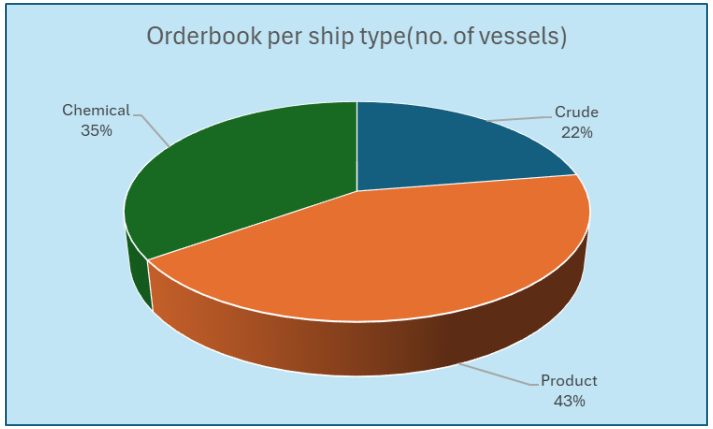


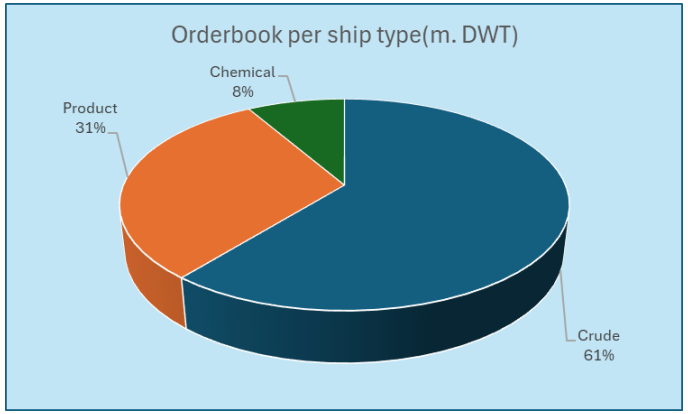


Data from Clarksons Oil and Tanker trade outlook December 2025

What tankers are being ordered







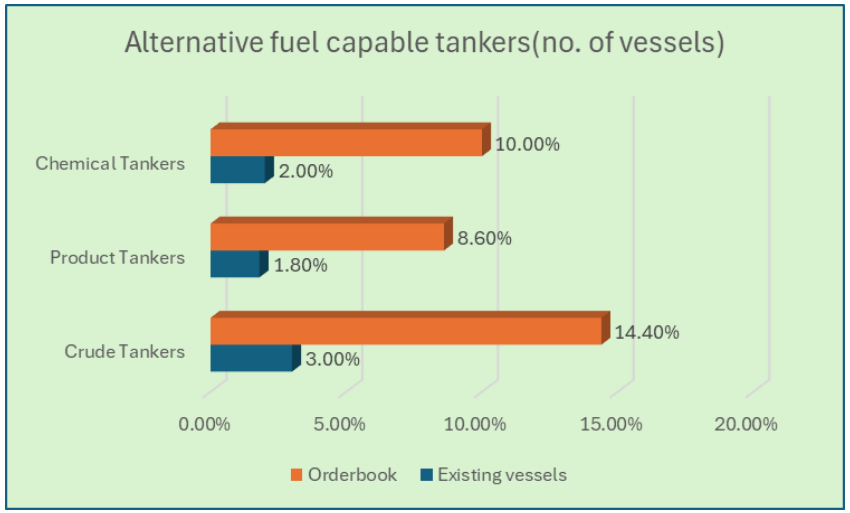
	Orderbook % fleet by the number of vessels	Orderbook % fleet by m G.T.
Crude Oil Tankers	15	17
Product Tankers	6	18
Chemical Tankers	12	19

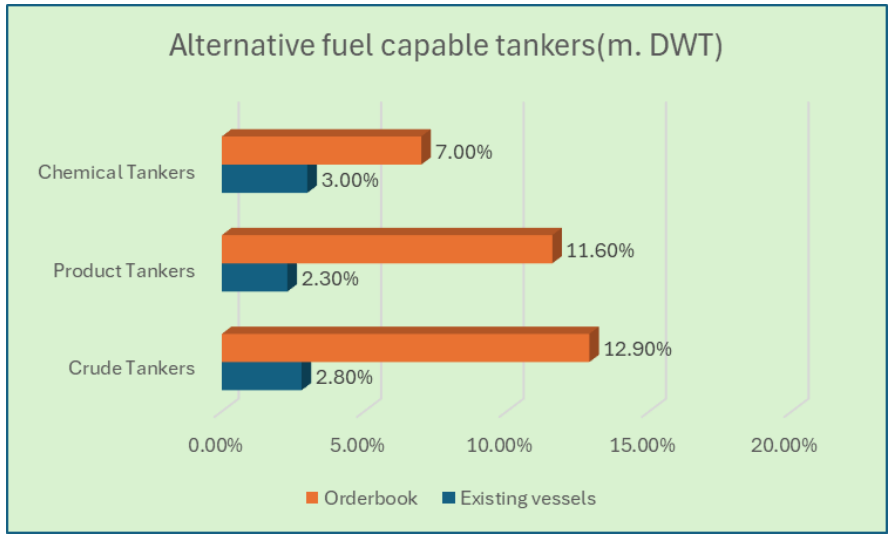
Alternative Fuels

Alternative Fuels at tankers

Orders of alternative fuel vessels are lower than other sector such as Containerships, Ro-Ro and Gas Carriers with LNG to hold the majority. Methanol is used for 28 Methanol carriers.
LNG DF is more evident for VLCCs orders but is reducing as the tanker size is decreasing.

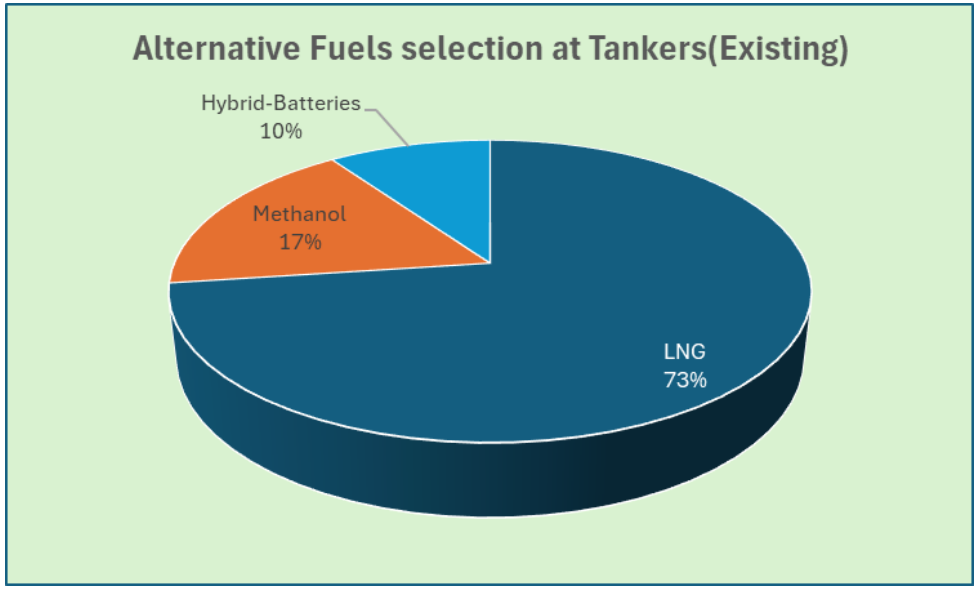
	Existing Fleet				Orderbook			
	No. of vessels		m. DWT		No. of vessels		m. DWT	
Crude Tankers	70	3.00%	13.1	2.80%	51	14.40%	9.9	12.90%
Product Tankers	62	1.80%	4.5	2.30%	47	8.60%	4.5	11.60%
Chemical Tanker	88	2.00%	1.65	3.00%	55	10.00%	0.7	7.00%

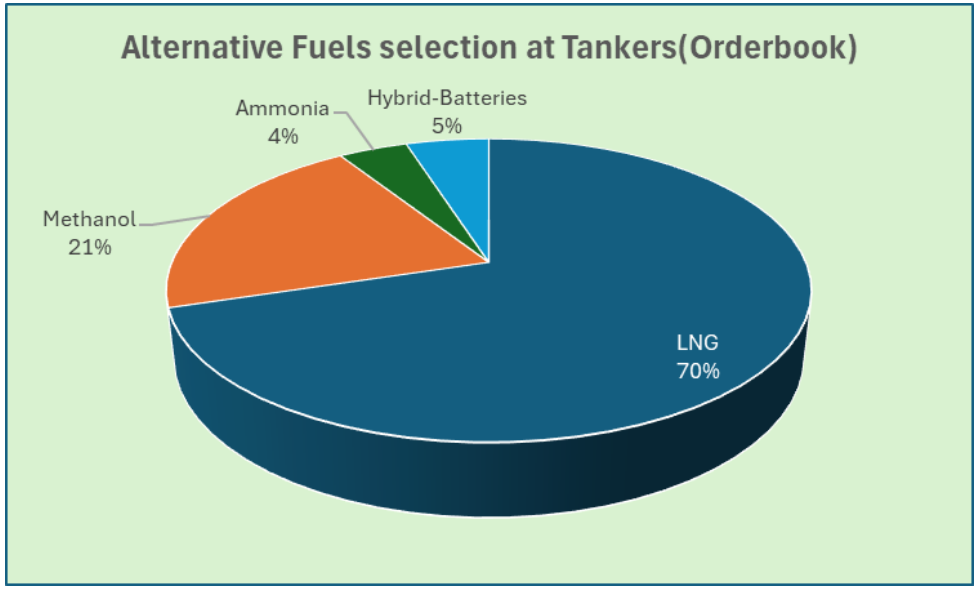




Alternative Fuel type

The Majority of vessels ordered with DF are with LNG. For most tankers operating in the spot market, it is difficult to plan about alternative fuel bunkering at the moment.
Methanol Carriers are the ones using Methanol.
Hybrid battery systems attract attention and this technology is to be further explored

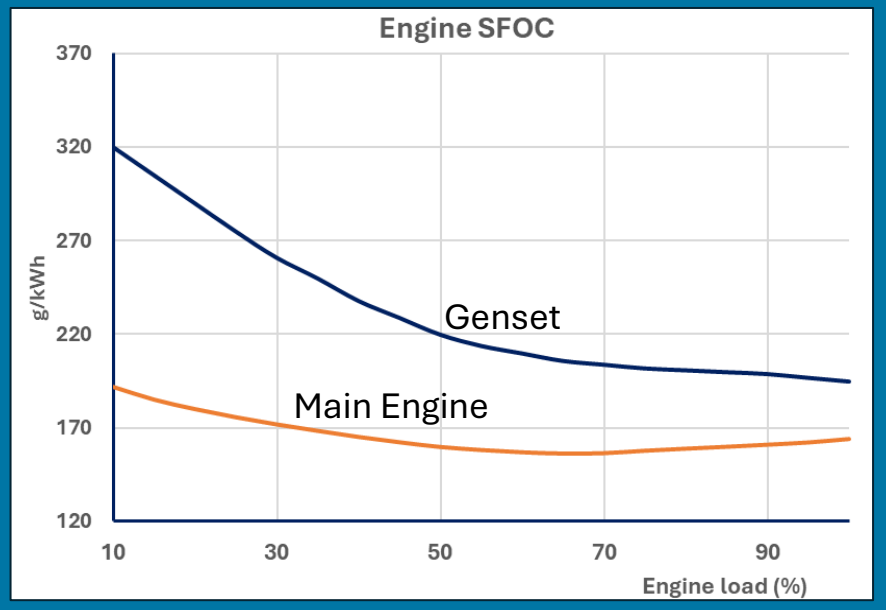


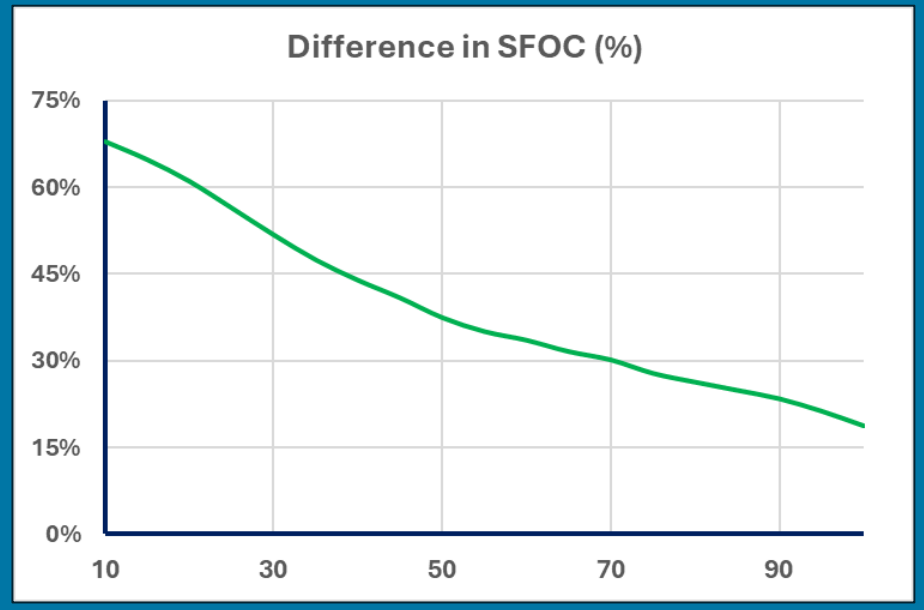


Data from Clarksons Oil and Tanker trade outlook January 2026

Hybrid propulsion concept

The benefit of 2stroke engine





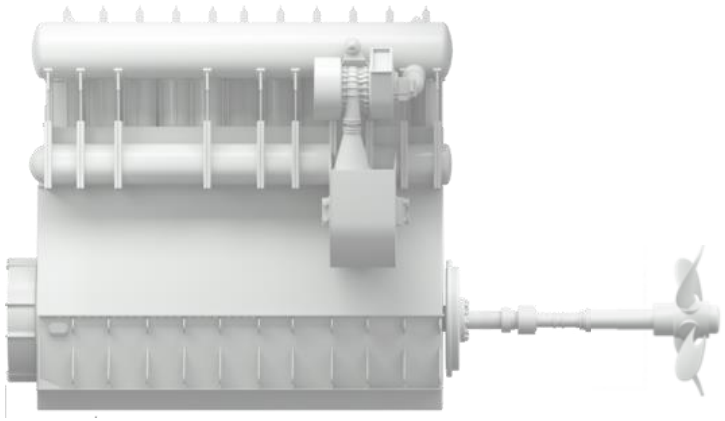
The 2 (main) & 4 (aux) stroke engines have quite different fuel consumption characteristics

- The main engine has lower SFOC, and a rather small variation in SFOC,
- The aux engines have very poor performance at relatively low loads (+ ***very high methane slip***)

As a result, we are motivated :

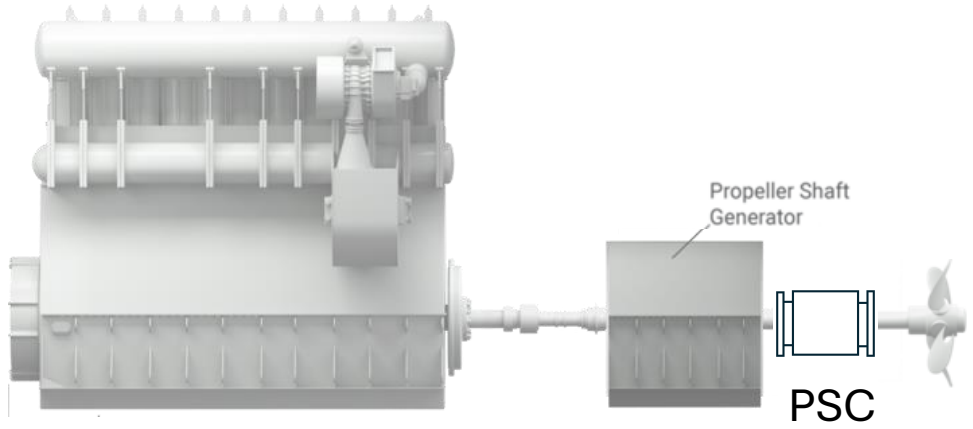
- To enable main 2 stroke engine to produce el.load ***at all times***
- When M/E cannot be engaged, then to ***replace the aux engines with batteries charged by main engine***

How main engine becomes genset at port



- In standard designs, main engine drives the propeller at sea, and is stopped at port

RINA proposal



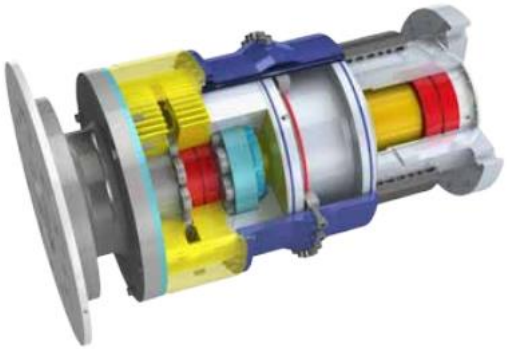
- ✓ **Introduce the shaft generator**
- ✓ **Propeller Shaft Coupling** (PSC) provides an on/off connection between main engine and propeller

Shaft coupling

PSC Propeller Shaft Clutch

It operates by means of hydraulic pressure

Maker: **RENK**
Extensive Reference list (>150 ships)

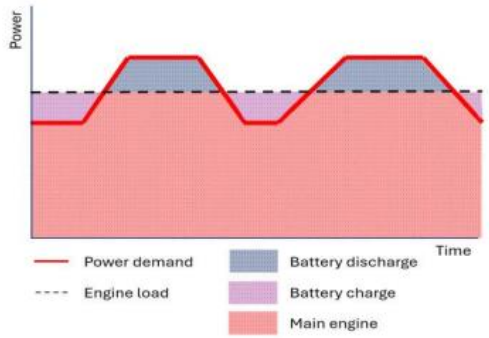


Engaged

Disengaged

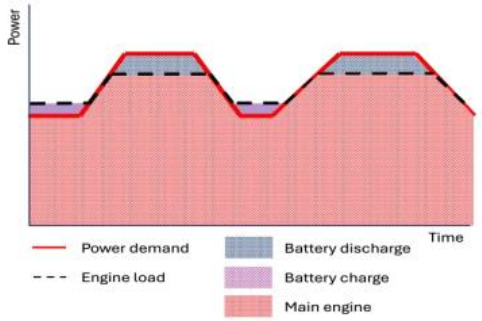
The case of Batteries

Load levelling



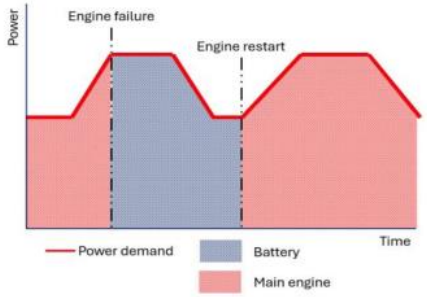
Engines operate at optimal set points for most of the time. Additional power obtained from the battery when required

Peak shaving



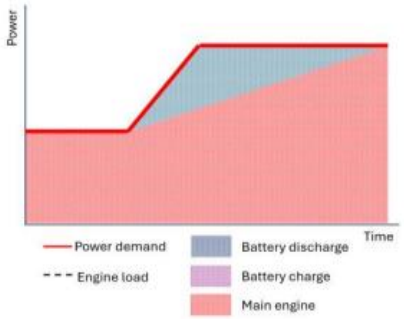
Eliminate the engine load transients, ensuring a steady engine base load and covering additional loads through the energy storage device

Back up power / Spinning reserve



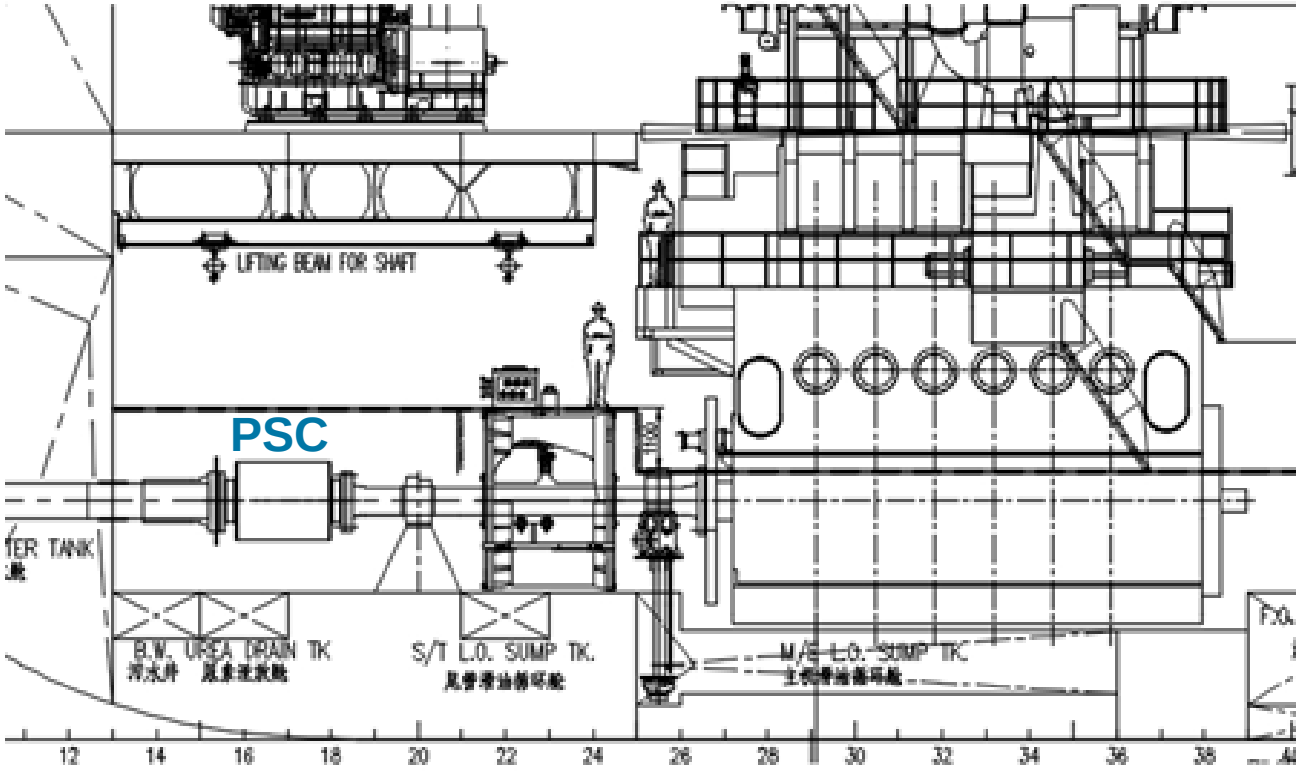
If a genset is failing, then the batteries can supply the needed power until a standby genset is up and running.

Dynamic load transition



When a load demand is imposed too fast, the engine may face abnormal combustion. A BESS can help to soften the rate of load requests to the engine and thus improve its dynamic operability

Fuel savings from electrification



	Standard design	Design with ele. Pump
loading duration (day)	1	1
electrical load (kW)	1050	1100
gen. set SFOC(g/kWh)	220	168
fuel consumption (t)	5.8	4.7
Full loaded NAV. duration (day)	7	7
M.E. power (Kw,11kn)	4232	5103
M.E. SFOC(g/kWh)	158.6	157.7
electrical load (kW)	810	0
gen. set SFOC(g/kWh)	220	0
fuel consumption (t)	158.8	150.5
unloading duration (day)	0.8	0.8
boiler load (t/h)	48.5	1.5
boiler SFOC(t/t)	0.07353	0.07353
IGG FOC(t)	0	27
electrical load (kW)	1420	4700
gen. set SFOC(g/kWh)	220	158.9
fuel consumption (t)	78.2	46.8
Ballast NAV. duration (day)	7	7
M.E. power (Kw,11kn)	3170	4009
M.E. SFOC(g/kWh)	163.5	160.9
electrical load (kW)	780	0
gen. set SFOC(g/kWh)	220	0
fuel consumption (t)	129.0	120.6
total FOC (t,based on HFO)	371.8	322.5

- ✓ *1 set Aux Engine less*
- ✓ *1 boiler less*

Fuel savings of more than 1,000 MT per year
+ emissions …

Project Mermaid : application on MR tankers

MR tanker

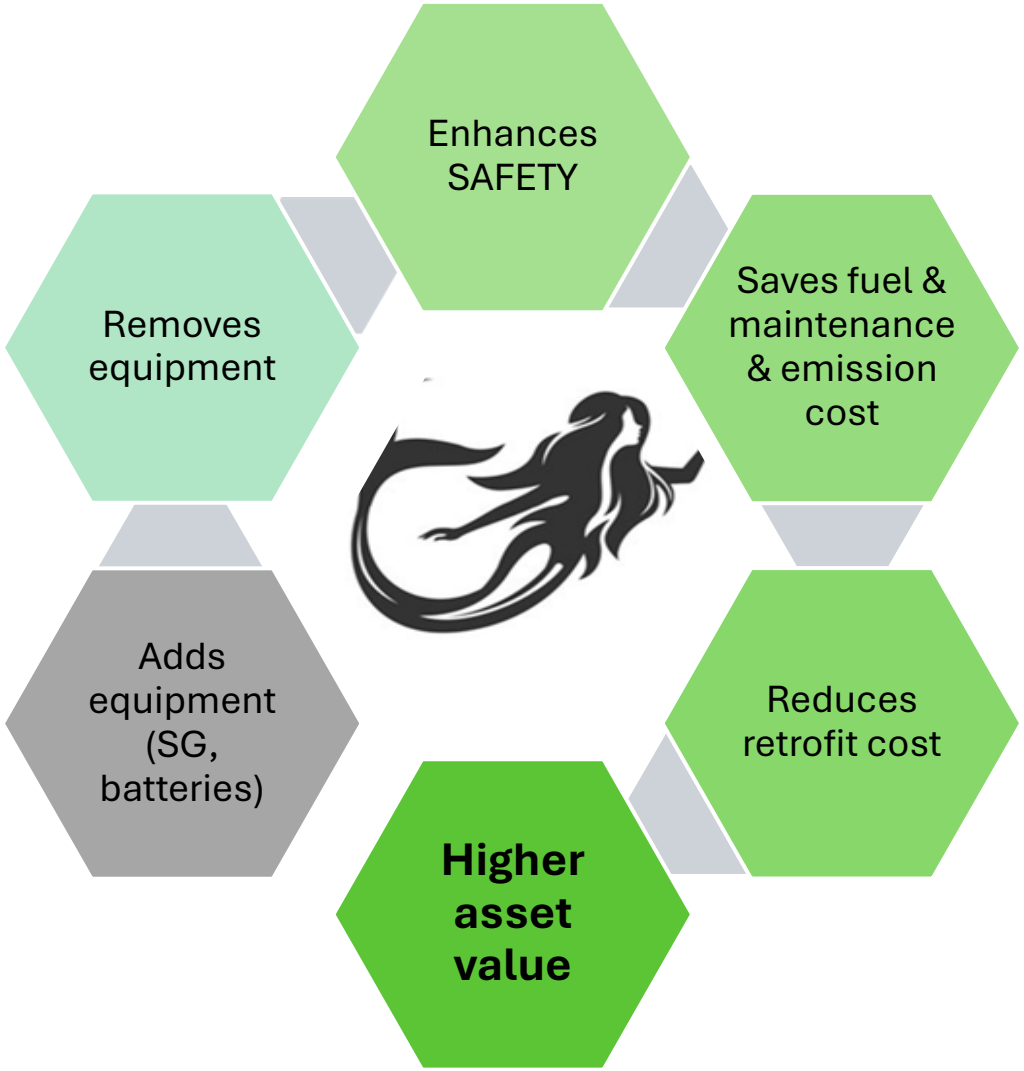
- This type of ship traditionally uses deep well pumps
- They can be of either electric or hydraulic drive

The PSC & Battery usage promote the selection of **electric pumps**

Benefits

- About 15% less fuel consumption
- No hydraulic oil lines, no leakage, no oil condtioning / contamination issues, less maintenance
- Electric motor on deck, easy to access

Conclusion in a nutshell

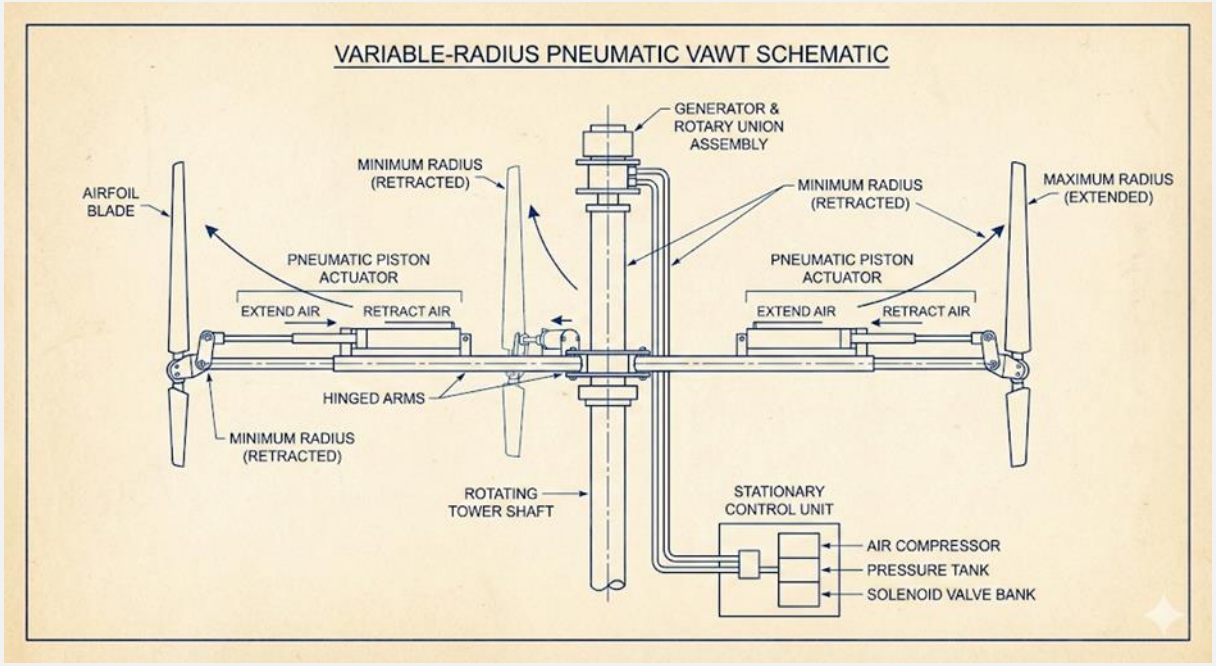


Energy available from the wind

According to a study made by

OXFORD BROOKES UNIVERSITY

Beaufort scale	Description	Wind speed (m/sec)
1	Calm	0.5 – 1.5
3	Light breeze	3.4 – 5.4
5	Fresh breeze	8.0 – 10.7
6	Strong breeze	10.8 – 13.8
7	Moderate Gale	13.9 – 17.1
8	Fresh Gale	18.2 – 20.7



An arrangement of 4 rotors each with dimensions : **H = 35m, Dia = 8m**

Can produce **300 kWe @ wind speed 10 m/s ~ 1.5 MT/day**

which represents a substantial fuel saving at low CAPEX

Thank you!

Spyridon Zolotas
Vice President
Marine
www.rina.org