

Shipping Market Outlook: Managing Disruption & Going Green

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World Seaborne Trade: By Industry

Energy sector drives a major 38% of global trade, metals, agriculture & consumer sectors also key...



Source: Clarksons Research



World Shipping Fleet

World Fleet, million GT

World fleet totals >110k ships, 2.4bn dwt, >\$1.5trn

Crude Tankers 243,5 Product Tankers Crude Tankers 111.3 2.324 **Product Tankers** Chemical Tankers 27,1 3.388 Chemical Tankers 1.898 Spec. Tankers 0,4 Spec. Tankers 18 Small Tankers <10,000 dwt 19,2 9.630 Small Tankers <10,000 dwt **Bulkcarriers** 567.4 **Bulkcarriers** 13.884 LPG Carriers 30,7 LPG Carriers 1.668 LNG Carriers 80,6 LNG Carriers 787 **Containerships** 316,2 6.565 **Containerships** Multi-Purpose Vessels 22,5 3.257 Multi-Purpose Vessels General Cargo 31,8 General Cargo 16.771 Ro-Ro 14,2 833 Ro-Ro 1.6bn GT Car Carriers 40,3 Car Carriers 110,904 ships 793 2.4bn dwt Reefers 4,3 Reefers 1.549 Offshore 66,1 Offshore 9.129 Cruise 29,1 Cruise 517 22,7 Ferries 8.723 Ferries 500 600 0 100 200 300 400 700 5.000 10.000 20.000 0 15.000 25.000

World Fleet, No. Vessels

Source: Clarksons Research. Data as of 1st September 2024. Vessels 100+ GT.



IUMI at 150 Years : Shipping Industry Then And Now !

	1874	2024	
Market Structure	Era of development of global liner network and technological progress; labour-intensive industry.	Established, highly mechanised, automated and specialised industry; decarbonisation focus.	
	Key sectors: passenger liners (fast), cargo liners (less elaborate, slower), tramp ships (transporting bulkier cargoes)	Key sectors: 'bulk' shipping (bulkcarriers, oil tankers), containerships , specialised ships	
Fleet	18 million GT	1,638 million GT	
Average Ship Size	3,000 GT	15,000 GT	
Largest Ship Size	19,000 GT	500,000 GT	
Typical Fuel	Wind (c.80%) transitioning to Coal (20%)	Fuel Oil (c.95%) transitioning to greener alternatives	
Hull Material	Iron	Steel	
Largest Fleet (GT)	Britain	China (Owned) Liberia (Flagged)	
Seaborne Trade	approx. 105 million tonnes	12,600 million tonnes	
Trade Growth Drivers	Transatlantic & empire-linked trade between Europe and Asia/Oceania/ Africa/South America	Import growth led by developing world, especially China, India, SE Asia	
Clarksons	Years Since Foundation: 22 years Profit: £27,000	Years Since Foundation: 172 years Profit (2023): \$108m	

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Seaborne Trade, Energy Transition & Geopolitics

Seaborne Trade: Growth, Complexity & Disruption

volume growth of 2.3% projected in 2024, tonne-miles firmer at 5.1% given longer trade distances...



Source: Clarksons Research, July 2024. A Monthly seaborne trade series based on 'basket' of dry bulk, oil, container, gas, chemical and car trades, representing c.80% of global seaborne trade.



Disruption: Red Sea Rerouting Increasing Vessel Demand

increasing tonne miles; re-routing market impact greatest in containership and product tankers, duration uncertain

Gulf of Aden arrivals running at around 75% below typical levels



Tankers & bulkers down more modestly than gas & liner shipping...

Gulf of Aden Vessel Arrivals; Aug vs 1H Dec (GT)



Impacts on vessel demand have varied by sector; largest for containerships

Est. Current Vessel Demand Uplift From Red Sea Disruption



Source: Clarksons Research. *Data basis vessels arriving in the region from either the Red Sea or Indian Ocean, whether or not undertaking a complete 'transit'; basis date vessel first recorded in Gulf Of Aden. Basis data derived from AIS vessel movements data; timeseries subject to variations in movements data coverage over time.



Disruption: Panama Canal Transits Starting To Normalise

Transits in June reached the highest levels since October, returning towards 'normal' levels as restrictions ease

Panama Canal transits remain below 'normal' levels overall but have steadily increased from Jan-Feb lows...

Containership transits now back above pre-restriction levels, while bulkers & LNG carriers are still down...

Panama Canal Transits Restrictions: Set to continue to ease, taking transits back towards 'normal' levels...



Source: Clarksons Research



Disruption: Russia-Ukraine Impacts Ongoing

flow shifts increase tanker tonne-miles; Ukrainian grain exports disrupted but improving, pipeline replaced by LNG



Russian Products : Increased shipments to Asia and Africa – 14% tonne mile impact & Russia-EU pipeline gas volumes



Source: Clarksons Research



Globalisation or Regionalisation? Potential Major 'Trade Blocs'?

Trade friction between emerging groupings of nations may vary; tonne-mile implications for shipping





Seaborne Trade: Energy Transition and Energy Security

Range of impacts on seaborne energy trade from the energy transition, strong growth potential in gas

Seaborne Oil Trade, m. bpd



Seaborne Oil Trade – Avg. Haul Trends: Avg. haul of seaborne crude trade continues to be supported by growing Atlantic exports to Asia. Products trade avg. haul sees significant uplift in the short-term as Russia-Europe volumes are replaced but stabilises thereafter.

Source: Clarksons Research.

Seaborne Steam Coal Trade, m. tonnes



Seaborne Steam Coal Trade – Avg. Haul Trends: After short-term uplift from disruption to Russia-Europe volumes, average haul of seaborne steam coal trade declines steadily going forwards as supply and demand growth are both dominated by the Asia-Pacific region.

Seaborne LNG Trade, m. tonnes



Seaborne LNG Trade – Avg. Haul Trends: Average haul of LNG trade expected to continue to grow in coming years supported by LNG project startups in North America and demand growth in China and SE Asia

Energy Security: Offshore Oil & Gas Still 16% Of Global Energy Supply

Offshore Dayrates have made a strong recovery across the last three years, exceeding previous highs



Source: Clarksons Research



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Energy Transition and Energy Security: Offshore Wind Growing & Will Play Vital Role

Long-term outlook positive despite recent inflationary pressures; ~240 GW projected by 2030 (68 GW today)

The Growth Of Offshore Wind



Offshore Wind In The Energy Transition



Source: Clarksons Research. All data available on Renewables Intelligence Network.





Shipping Supply, Shipbuilding, Decarbonisation & Market Position

Supply Side Constraints In Some Markets

Supply outlook appears manageable; orderbook remains historically low at 14% of fleet GT though varies by sector



Global Fleet Development, m GT

Orderbook As A Percentage Of Fleet GT



Source: Clarksons Research. July 2024.



Fleet Renewal: Ageing Fleet

Average fleet age now 12.5 years, around a third of fleet capacity is now over 15 years



Source: Clarksons Research, March 2024. "Eco" – defined as vessel with modern electronic main engine. Average age of vessels 100+ GT. Proportion of fleet >15 years old in spec unit.



Maritime Decarbonisation - Shipping's Emissions In Context

International shipping emissions trending down; c.2.0% of global GHG emissions (on a 'Well-to-Wake' basis)



Source: Clarksons Research. World Resources Institute/Climate Watch. Global Carbon Project. IEA. Global CO2 excluding LUCF.



comparable data for car, rail and aviation available on request. From 2008 to 2018, aviation CO2 emissions increased by 20%, car 17 and truck increased by 15-20% and rail declined by 10%.

Fleet Renewal Accelerating Regulatory timetable

IMO and EU ETS, further tightening of CII to come

Regulatory Timeline Accelerating



Deep Sea Cargo Fleet By Operational 2023 Cll Rating^



Source: Clarksons Research. Data as of March 2024. A Ratings basis 2023 operational data, where AER metrics are estimated based on Clarksons Research calculations and assumptions combined with operational AIS data for the relevant period. AER estimates are subject to variations in movements data coverage.



Long-Term Vessel Speed Trends Generally Maintained

Stronger market conditions / disruption have not driven significant speed increases, with long-term trend downwards



Source: Clarksons Research. *Q1 earnings data as at 18th March 2024, Q1 speed data basis Jan-Feb.



Energy Saving Technologies: Key Examples

ESTs increasingly coming into focus against the backdrop of the ramp-up of environmental regulation and policies

Equipment Group	Technologies	Example Projects	Fuel Savings (Marketing claim)	Vessels Equipped (Fleet & Orderbook)
Engine Room	Waste Heat Recovery Generator	Climeon, Alfa Laval, ABB, Hanwha, Calnetix Hydrocurrent	3-8%	>145
	Fuel Emulsifier	FOWE, IPCO, Kawasaki	3-10%	>175
Propeller	Propeller Duct	Becker Mewis Duct, Kawasaki, other in-house shipyard designs	3-8%	>2,770
	Pre-Swirl Stator	DSME Pre-Swirl, CMES-Tech, SDARI, Wartsila EnergoFlow	4-6%	>2,639
	Rudder Bulb	Kongsberg Promas, SDARI, Wartsila Energopac, other in-house shipyard designs	3-5%	>3,492
	Propeller Boss Cap Fin	Imabari Shipbuilding Hybrid-Fin™, MMG escap, CMES-Tech, SDARI	2-5%	>1,736
	Wake Equalizing Duct	Schneekluth WED, CMES-WID	6-10%	>455
Deck Equipment	Flettner Rotors	Norsepower Rotor Sail, Anemoi Wind Engine	7-10%	>40
	Suction Wing	Econowind, Bound4blue, Oceanbird	10-30%	>43
	Rigid Sail	BAR Technologies, DSIC, AYRO, Oshima Shipbuilding	8-30%	>18
	Wind Kite	Airseas Seawing	Up to 20%	>4
Hull	Air Lubrication System	Silverstream, DSM ALS, Samsung SAVER Air, Alfa Laval, Mitsubishi MALS, Armada	5-10%	>468
	Bow Enhancement (including Windshield)	Ulstein X-Bow, Damen Sea Axe, Kawasaki SEA-Arrow, other in- house shipyard designs	4-10%	>2,443
	Elogrid	Elomatic	2-3%	>7
	Hull Fin	Oshima Advanced Flipper fin, Namura NCF™ , Sanoyas Tandem Fin™, Japan Marine United A.L.V Fin	2-5%	>819

Source: Clarksons Research, March 2024. Data coverage is not comprehensive and may underestimate total uptake.



Alternative Fuels: Current Uptake By Sector

huge uncertainty over longer-term 'solution'



Orderbook (100+ GT) Set To Use Alt. Fuels (~50% Of GT)

Source: Clarksons Research, Data as of May 2024. Biofuel' includes vessels reported to be using or designed for biofuels; many other vessels in the fleet are also capable of using biofuel blends. All ethane fuelled vessels are VLECs or 'multigas' carriers. *Other includes nuclear and CNG capable vessels



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Steps To A Solution?

- "Business As Usual" leads to clear overshoot of IMO targets (and 2008 level)
- Range of scenarios remain; our modelling outlines 4 key steps to one potential solution:

IMO 2050: Four Steps To A Potential Solution?

How does changing the key variables impact shipping's GHG output?

Total Estimated World Fleet Greenhouse Gas Output (WTW), Index Fleet Development, Average Year, m. GT



Source: Clarksons Research. Business as usual assumes no changes to speeds and efficiency, no further alt. fuel ordering and 'base case' trade/vessel demand trends. See World Fleet Register or contact Clarksons Research for more details.



ClarkSea Index, Historical & Forecast: Tracking Market Cycles

Cross-sector index has eased from recent highs, but is still historically firm; less 'downside' outside of containers



Source: Clarksons Research, April 2024



Market Cycle Position: August 2024

Average earnings for each ship type in August 2024 compared to the long-term average



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Shipping Is Hugely Capital Intensive

Fleet & orderbook valued at ~\$2.0 trillion, finance needed for fleet renewal / green ships, capital markets slow in 1H

Continuing complexities in ship finance

market

Shipping capital markets quieter in 2023 but strong year for offshore bond market



Source: Clarksons Research. *1H 2024. Portfolios and fleet/orderbook value as at mid-2024.



Total world fleet and orderbook value

now standing at \$2.0tn

Shipbuilding Production & Prices

Impacts from inflation; strong forward cover for yards



Source: Clarksons Research. Data as of 1st July 2024,



Historical Shipbuilding Shares (GT)

China almost 50% of production in 2023, Korean share steady at ~30%



Source: Clarksons Research



Shipping Market Outlook: Managing Disruption & Going Green

Managing Disruption & Going Green

Clarksons Research are committed to providing data and intelligence to help frame the critical decisions that stakeholders across the maritime industry will need to make to facilitate the vital green transition.

- Seaborne Trade growth, distance and complexity as shipping manages geo-political disruption.
- Energy Transition and Energy Security 38% of cargo is "energy" & strong potential in the gases.
- Market strength trade complexities combined with supply side constraints in some markets has helped generate a strong cash position and cross sector market strength.
- Fleet Renewal with an ageing global fleet and decarbonisation regulation addressing shipping's 2% contribution to global GHG, there is strong cross sector shipbuilding demand Green polices may also constrain supply through slow steaming, retrofitting and "tiered" markets
- **Shipbuilding –** around 2,000 ships per year are being ordered and the shipbuilding market is "tight" today although capacity is now expanding, with prices up 40% since 2020, long lead times and "tricky" technology choices

All underlying data available on World Fleet Register, Shipping Intelligence Network, Offshore Intelligence Network and

Renewables Intelligence Network.





Annex: Additional Statistics

Ongoing Red Sea Disruption

More than 110 vessels have been recorded as experiencing an incident in the Red Sea since late 2023

Vessel arrivals in the Gulf of Aden continuing to run at around 75% below typical levels

> 116 ships of 5.5m GT have had a reported incident^ in the Red Sea since Nov-23



Source: Clarksons Research. *Data basis vessels arriving in the region from either the Red Sea or Indian Ocean, whether or not undertaking a complete 'transit'; basis date vessel first recorded in Gulf Of Aden. Basis data derived from AIS vessel movements data; timeseries subject to variations in movements data coverage over time. ARecorded Red Sea incidents basis reported attacks on vessels



Disruption: Parallel Fleet & Sanctions

Vessels involved in Russian trades typically older; growing 'parallel' tanker fleet estimated at >700 ships...



Source: Clarksons Research



Case Study Major Shipping 'Chokepoints'

Six major chokepoints highlighted (others also exist); climate change & geopolitics amongst potential 'disruptors'



Major Chokepoints: Trade Context





Chinese Economy: Strong Imports 2023 & 1H 2024

Chinese commodity import growth firm in 2023 &1H 2024, inventories of some commodities now elevated ...

Chinese GDP growth rebounded in 2023 as economy 'reopened', but growth rates are trending lower in the medium term...



Seaborne imports hit a record 3 billion tonnes in 2023; on track to increase slightly further in 2024 despite risks...

Imports of iron ore, coal and crude oil have been amongst the major drivers of imports growth recently...



Source: Clarksons Research.



Global Fleet Development

Fleet Size, Deliveries & Scrapping



Development of Global Fleet (million GT)

Deliveries & Scrapping of Global Fleet (million GT)



Source: Clarksons Research, August 2024. Note (1): Includes all vessels above 100 GT.



World Fleet Ownership By Region To 2030

China has now overtaken Greece as the largest owner nation



Source: Clarksons Research. Projections as of March 2024



Losses By Vessel Type

Losses by type and as a percentage of end-year fleet



Source: Clarksons Research, September 2024. Note : 2024* = year-to-date



% of Fleet (GT)

0,16%

0.14%

0,12%

0,10%

0.08%

0.06%

0,04%

0.02%

0,00%

Bulkcarriers

----- Losses as % of Fleet

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