November 2023

Shipping Market Review

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Summary: A contractual route to decarbonisation

How a voyage index would increase cargo owners' willingness to pay for energy efficiency

Shipping markets are struggling to access the full potential of the energy efficiency encapsulated in the existing fleet. This could be about to change. The introduction of a voyage index would enable transparent benchmarking of environmental performance on an apples-to-apples basis. When cargo owners recognise the standards of excellence, they will become more willing to pay for high performance. A voyage index could cap ocean costs while guiding cargo owners towards their climate targets. This would encourage long-term vessel contracts, making such vessels prime candidates for increased energy efficiency and, eventually, sustainable fuel adoption.

Seaborne transportation is a critical infrastructure for the world economy. The shipping industry carries 80-90% of global goods and accounts for 2.5% of global CO_2 emissions. Seaborne transportation is the most cost- and energy-efficient way of moving goods. Still, progress is required. The industry is working towards clear climate targets for 2030 and 2050 formulated by the International Maritime Organisation (IMO). Retrofits and operational levers are expected to deliver most of the emission reductions towards 2030, while new vessels burning new fuels are expected to drive the industry towards net zero by 2050.

Ocean transport is widely perceived as a commodity

Ocean transport is viewed by many as a commodity. Cargo owners are finding it challenging to accept paying a premium for a commodity if they cannot gauge the quality of the offering. Their willingness to pay for lower emissions will likely increase if transparency and benchmarking provide them with assurance about the product quality they are paying for.

Failed market mechanism

The IMO has introduced a framework that aims to deliver transparency and benchmarking, but the Carbon Intensity Indicator (CII) fails to produce environmental benchmarks that allow vessel operations to be compared on an apples-to-apples basis. Take terminal efficiency as an example. Under the CII framework, the environmental impact from terminal operations is compared across regions instead of performance being benchmarked among peers.

Performance to be measured by a voyage index

To allow competition to drive change, it is essential to create a voyage index that displays carbon intensity per voyage (grams of CO_2e emitted per unit-NM) and split the voyage emission into variables that allow performance to be evaluated and optimised. The voyage index should be powered by a global terminal heatmap that displays efficiency. The voyage index could constitute a critical addition to commercial contracts.

The introduction of a carbon budget per vessel

The emission benchmark for individual voyages would represent the average emission performance of similar vessels on that specific route. Over the course of a year, these individual benchmarks would be combined to create a vessel's individual carbon budget. This budget would then serve as a standard against which the vessel's actual emissions can be compared to assess its environmental performance.

The industry will learn what good looks like

When energy consumption per voyage becomes transparent, it will be easier to benchmark best practices among stakeholders, regions, commodities and vessel operators. Stakeholders in the industry will start to recognise what good looks like.

Cargo owners will become willing to pay

Cargo owners can introduce a cap on ocean costs if they commit only to paying fuel costs in accordance with the voyage benchmark index (weather-adjusted). At the same time, they can maximise their potential Scope 3 emission reductions if they allow the operator to earn the difference between the budget and the realised energy consumption. Shipowners will be paid for performance. Vessels that have not been retrofitted with energy-saving devices and are run by operators that do not excel in voyage optimisation will find it increasingly difficult to make a profit.

Paving the way for new vessels burning new fuels

The benchmark for individual voyages can be reduced annually to align with specific climate targets. Combined with the cap on ocean costs, this will enable cargo owners to commit to long-term vessel contracts and incentivise vessel owners to order new vessels built for performance rather than the asset game. The route towards 2050 is likely to be characterised by long-term contracts with cargo owners that secure the uptake of sustainable shipping fuels and vessels that operate on long-term contracts.

Beyond vessels: How systemic changes are softening the call to decarbonise

How to read the commercial implications of climate regulation

The shipping industry's climate challenge is not only about reducing emissions from vessel operations. It is as much a question about taking out emissions by changing the commercial architecture of the industry. The ability to reduce emissions quickly trickles down to business models, causing contractual issues and split incentives between stakeholders. Business model innovation that unlocks pockets of untapped potential is likely to unleash a consolidation push among small and medium-sized players. The traditional tonnage provider seems most exposed. The ability to meet climate targets requires long-term investments that do not necessarily sit easily with the asset game.

The shipping industry is working to reduce greenhouse gas emissions in accordance with International Maritime Organisation (IMO) regulations. Operational levers are expected to deliver most of the emission reductions towards 2030, while new vessels burning new fuels are expected to drive the industry towards net zero by 2050.

Global regulatory transparency

The industry is guided by a global regulatory framework that provides clear instructions for reducing greenhouse gas emissions towards 2030 and 2050. In parallel with this, the European Union has introduced a regional price on carbon from 2024 that will work to amplify further the effects of the global regulations introduced by the IMO.

Untapped potential for emission reductions in the commercial architecture of the industry

The new legislation demands significant reductions in the industry's absolute level of emissions. Regular improvement in ships' energy efficiency is required. But the IMO targets for absolute emission reductions should not be interpreted as "efficiency targets per vessel". The efficiency improvements required for individual vessels will decrease significantly when we release some of the untapped energy-efficiency potential currently encapsulated in shipping's commercial architecture. Today, much of the industry's known emission abatement potential remains inaccessible due to split incentives between vessel owners, operators, cargo owners and terminals. This is likely to change when the impact of environmental regulation begins to straighten out these fundamental commercial misalignments.

Energy-efficiency improvements are in conflict with business models

Many vessels currently trading are emitting above their potential. In many cases, owners' business models are limiting the economic incentives to reduce emissions. For example, there is little incentive for traditional tonnage providers to invest in energy-saving initiatives onboard vessels (e.g. installation of rotor sails, an air lubrication system, a new propeller design, etc.) when they do not have access to fuel savings. And with no direct control of the vessel's daily operation, it is challenging to optimise the potential of commercial decarbonisation measures such as weather routing, slow steaming, just-in-time arrival, etc. to reduce voyage emissions.

The traditional tonnage provider model is no longer fit for purpose

Traditional tonnage providers do not earn most of their income from trading vessels, but from buying and selling ships. This has created fleets of vessels built with standardised design at lowest possible cost in order to access the maximum reward the next time the market peaks. Technical upgrades to the vessel are carried out mainly at the request of operators or cargo owners and are often limited to projects that can be repaid during the charter period.

Climate regulation translates into earnings

The competitive landscape will likely change once climate regulation translates into earnings. The climate agenda calls for long-term energy-efficiency planning that cannot be guided by the asset game. The enrolment of the shipping industry into the European Emission Trading System (EU ETS) will, from 2024, introduce a price on carbon, with low-performing vessels penalised. Still, its geographical reach is limited to European ports, making it more likely to result in a fragmented market rather than a systemic transformation. A systemic change could be achieved with the introduction of a global carbon tax, though.

The cost of capital will decline for ships operated on long-term contracts

All vessels can be retrofitted to attain a better environmental rating, but the business case may only be straightforward sometimes. More vessels are likely to be employed on long-term contracts to allow further investments in energy efficiency, and asset ownership is expected to consolidate. Vessels on long-term contracts can be attractive candidates for investors not traditionally engaged in the shipping industry. It could become more common for infrastructure funds, which favour cash flow stability, to own vessels, supporting a market consolidation that makes it increasingly difficult for traditional owners to compete on cost of equity and debt.

Charting the course for 2030: How to gauge the size of the industry challenge

To drive down emissions, commercial performance could be benchmarked against a voyage index

Voyage optimisation is an art that most operators are working to perfect in order to save fuel and reduce CO_2 emissions. Terminals represent a complementary element that could reduce the industry's absolute emissions by 10-20% or more. Improved collaboration between ship and destination can instruct vessels to slow steam and save fuel rather than sailing at full speed only to have to wait. Terminals are not always responsible for extended waiting periods, but they are the single point of reference that can be used to demonstrate the potential. A global heatmap illustrating terminal efficiency may spur competition and drive change through transparency and benchmarking.

The shipping industry is a service sector that plays a vital role in the global economy by providing essential infrastructure. Ports and terminals connect the industry with its customers. While global supply chains are highly optimised, inefficiencies still occur, which could otherwise result in increased upstream or downstream costs. Terminal operations often act as buffer capacity to global supply chains.

Lower costs are causing inefficient infrastructures to persist

In the shipping industry, this means port call planning that fails to minimise Scope 3 emissions for cargo owners. This situation will persist until it is no longer the cheapest alternative for cargo owners. The combined costs of excessive fuel consumption, carbon pricing (i.e. the EU ETS), and demurrage must exceed the alternative costs elsewhere in the supply chain before industry dynamics are likely to change. Tighter legislation or evolving stakeholder demands (e.g. a louder call to minimise Scope 3 emissions) could accelerate change before cost parity is reached.

Terminals are the key to further emission reductions

Nonetheless, increased collaboration between ships and their destinations represents massive potential for vessels' emission reductions. The reduction potential is not limited to vessels idling while waiting to load or discharge at ports; crucially, it also extends to the fuel-saving possibilities that arise when ships can lower speeds or navigate through favourable weather conditions while avoiding arriving too early.

10-20% emission reductions

Estimating the potential impact of behavioural changes that have not yet occurred is a challenging task. Nevertheless, it is currently estimated that emissions from global seaborne trade could be reduced by 10-20% if trading were optimised to reduce waiting at ports. This potential increases further if ambitions to reduce Scope 3 emissions start to determine cargo owners' vessel selection.

Introducing a global heatmap for terminal efficiency…

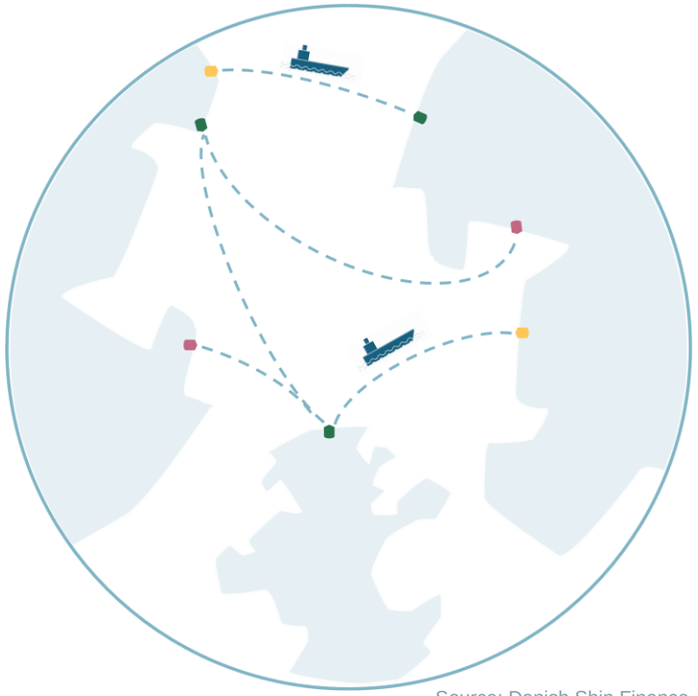
By enhancing transparency and implementing benchmarking, terminals, cargo owners and ship operators will start to become familiar with the commercial trade-offs between costs and emissions. A global heatmap for terminal efficiency would foster competition that can reduce cargo owners' Scope 3 emissions beyond traditional voyage optimisation, while simultaneously maintaining some flexibility in supply chains.

…that powers a voyage index for benchmarking

Terminal efficiency could become a vital component in a voyage index that aims to establish a benchmark for vessel performance between two points. The journey between port A and port B could be rated on a scale that resembles the IMO methodology from A to E, where the most efficient voyage is rated A. Efficiency would be impacted by seasonal factors, including weather-related factors above and below the sea. The voyage index, seasonally adjusted or not, could constitute a critical addition to commercial contracts.

Voyage index

Powered by a global terminal heatmap



Source: Danish Ship Finance

How do we measure progress without knowing what good looks like?

Contract innovation will drive change and incentivise vessel owners to order new ships that are built for performance rather than the asset game

Today's environmental benchmarking is often measured as annual averages relative to previous years' performance. This data tells us very little and offers little benchmarking of actual performance. Competition will drive change in the shipping industry when operators are benchmarked on voyage emissions. Cargo owners' willingness to pay for performance will increase when we learn what good looks like. Vessels will be owned and operated to deliver long-term value and energy efficiency. The asset game will continue to exist, but a growing number of vessels will be employed on long-term contracts.

Many large corporations, direct or indirect shipping industry customers, have publicly committed to ambitious emission reduction targets, but only a few have factored these objectives into their approach to ocean transportation. Ocean transport is viewed by many as a commodity. Cargo owners are finding it challenging to accept paying a premium for a commodity if they cannot gauge the quality of the offering. Their willingness to pay for lower emissions will likely increase when transparency and benchmarking provide them with assurance about the product quality they are paying for.

The willingness to pay for performance will increase when quality can be assessed

To allow competition to drive change, it is essential for carbon intensity per voyage (grams of CO_2e emitted per unit-NM) to be disclosed and for the voyage emissions to be split into variables that enable performance to be evaluated and optimised. The voyage index should be powered by a global terminal heatmap that displays efficiency across commodities, operators, vessel types and seasons. Enhanced collaboration between stakeholders is crucial when aiming to reduce vessel emissions. When fuel consumption per voyage becomes transparent, it will be easier to benchmark best practices among stakeholders, regions, commodities and vessel operators. We will then start to learn what good looks like!

Performance should be measured against a carbon budget

The emission benchmark for individual voyages should represent the average emission performance of similar vessels on that specific route, rather than the actual emissions from a single journey. Over the course of a year, these individual benchmarks would be combined to create a vessel's individual carbon budget. This budget would then serve as a standard against which the vessel's actual emissions can be compared in order to assess its environmental performance. The benchmark for individual voyages could be progressively reduced to align with specific climate targets defined by individual actors, the IMO or the Paris Agreement.

Apples-to-apples comparison

Establishing carbon budgets based on average market performance across the same operational profile would allow stakeholders to measure performance accurately. It would become a performance benchmark that compares apples-to-apples, whereas it can be argued that the current Carbon Intensity Indicator methodology compares apples with oranges.

A vessel aided by a three-knot current is more efficient than one going against that current. Similarly, a ship that is strategically coordinated to align with cargo availability and logistics will have shorter waiting times and lower fuel consumption than one affected by loading or discharging delays.

More cargo being delivered on long contracts will drive change

Cargo owners that aim to cut their Scope 3 emissions must switch to alternative fuels eventually. These fuels are predicted to be significantly more expensive than traditional ones and unavailable on spot markets. Few hedging opportunities currently exist, and few ship operators have strong enough balance sheets to purchase these new fuels on long-term contracts. Much indicates that cargo owners must secure the fuel that enables them to reduce their Scope 3 emissions. By adding a voyage index to their vessel contracts, cargo owners can place a cap on their ocean costs. The voyage index should tighten annually to promote investments in energy efficiency and greater collaboration between stakeholders. This would allow cargo owners to commit to long-term vessel contracts that incentivise vessel owners to order new vessels built for performance rather than the asset game. ▪

Shipping Markets At A Glance

Shipping Market Review – November 2023

Shipping markets at a glance

Crude and Product Tankers set for another strong year in 2024

The outlook for freight rates and secondhand prices is mixed. Tanker vessels are structurally positioned for a great 2024, whereas Container, Gas Carrier and Dry Bulk owners may need to scrap older and less efficient vessels to maintain current fleet utilisation levels. The long-term demand outlook is being shaped by global trends that call for less seaborne trade per dollar growth. Trade volumes could begin to shrink, while smaller parcel sizes and changed trading patterns may increase demand for more regional trades by smaller vessels. The shipbuilding industry's ability to renew the existing fleet is under pressure. A total of 231 of the 300 yards globally, representing almost 40% of the current yard capacity, will have delivered their last vessel on order by year-end 2025.

The energy transition is front and centre in the shipping industry, with climate targets and sustainable shipping fuels very much in focus. Still, demand for vessels that transport fossil fuels is booming. High oil and gas prices have led to an exploration surge, while many renewable energy projects are experiencing increased costs due to inflationary and supply chain pressures. The Gas Carriers orderbook is very high, while few Oil Tankers are on order. Demand for gas is clearly expected to peak later than for oil, but both segments are likely to see structural reductions in demand when renewable energy production scales up.

We have previously discussed how the global economy is transitioning to become less seaborne-intensive per dollar growth.

Progressive policy is making an impact

This trend is only intensifying in the wake of the big decarbonisation packages and climate targets that are being launched globally (e.g. the Inflation Reduction Act, EU Green Deal, REPowerEU and Fit for 55).

More local and more secure

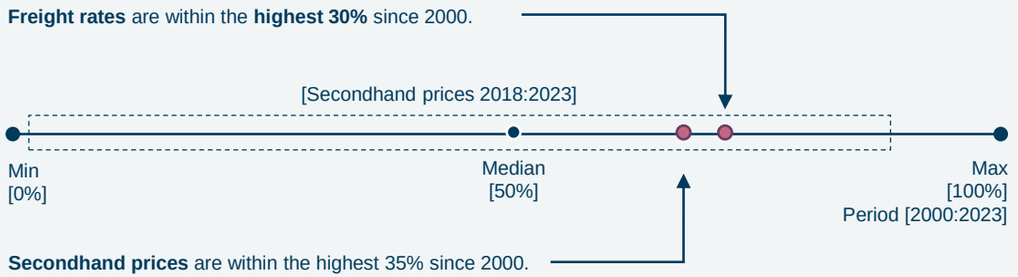
The increased geopolitical tensions that have propelled energy (and food) security back to the top of global agendas have made reducing dependence on fossil fuels even more urgent. Domestically produced (renewable) energy is more challenging to disrupt or weaponise than its imported alternatives.

A great reset is about to emerge

These trends are driving a push for lower seaborne trade volumes of fossil fuels during the lifetime of vessels currently trading. But the transformation does not stop here: the global impetus for renewable feedstocks and increased use of circular material flows is equally likely to change global seaborne trade volumes, trading patterns and parcel sizes across multiple ship segments, often in favour of smaller vessels.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023



Strong freight rates and high secondhand prices illustrate that demand has been running ahead of supply in 2023. The outlook for 2024 is more mixed. The world fleet is expanding ahead of demand, but there is variation between segments. Tanker segments are expected to be heading for a strong 2024. In contrast, the expansion being seen for the Container, Gas Carrier and Dry Bulk fleets is expected to be difficult to absorb without older vessels being retired.

Deliveries of new vessels is set to decline by 10% in 2024, but the combined dwt capacity is only scheduled to decrease by 6%. The percentage increases when measured in cgt, since more LNG and large Container vessels are due to be delivered.

Scrapping activity has remained low in 2023, even though we did start to see increased activity in the Dry Bulk, Container and LNG segments. More vessels are likely to be scrapped during 2024.

Contracting activity declined by 5% (dwt) in the first ten months of 2023 compared to the same period in 2022. A reduced appetite for LNG and Container vessels is evident when we look at activity in cgt terms, with total contracted volumes dropping by 29% in the first ten months.

The orderbook represents 10% of the fleet, and 10% and 34% of orders are scheduled for delivery by the end of 2023 and 2024, respectively.

Seaborne trade volumes have increased by 2.4% in 2023 and are expected to grow by 2.5% in 2024.

Distance-adjusted demand: In 2023, travel distances have added approximately 1.8 percentage points to demand growth, whereas this figure is expected to drop to 0.5 percentage points in 2024.

Earnings and vessel prices

Tankers and Gas Carriers are driving the ClarkSea Index

At the end of 2022, the ClarkSea Index was at levels among the highest 10-15% observed since 2000 but has since lost 34% (more than USD 10,000 per day). At the end of October 2023, the index was trading at around USD 23,500 per day, which is still among the highest 30% seen since 2000. Tankers have lost momentum during 2023, declining 50%, but have continued to contribute positively to the ClarkSea Index, together with LPG vessels. Containers contributed briefly over the summer months, while the Dry Bulk segment remains subdued.

High freight rates and secondhand prices

Secondhand prices dropped by more than 30% in the second half of 2022 but have in 2023 remained stable at around index 150. Like the ClarkSea Index, secondhand prices are among the highest 30% seen since 2000. Sale and purchase activity declined by 15% (number of vessels) during the first ten months of 2023 compared to the same period last year. This was largely driven by weaker market activity within the Dry Bulk and Tanker segments.

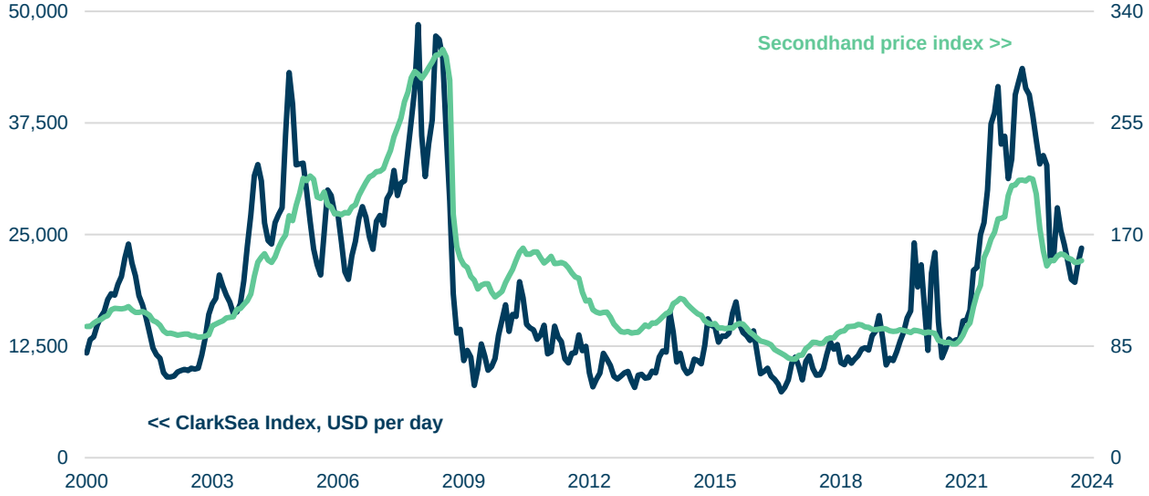
High newbuilding prices but only a small subset of yards are benefiting

Newbuilding prices have continued to move upwards during 2023. The average newbuilding price index has increased by 9% during the year, while newbuilding prices for Gas Carriers are up 11%. In the same period, newbuilding prices for Dry Bulk carriers have only increased by 6%. It should be noted that prices are being settled among only a small subset of yards. Only 81 yards out of 300 yards globally have received new orders during 2023.

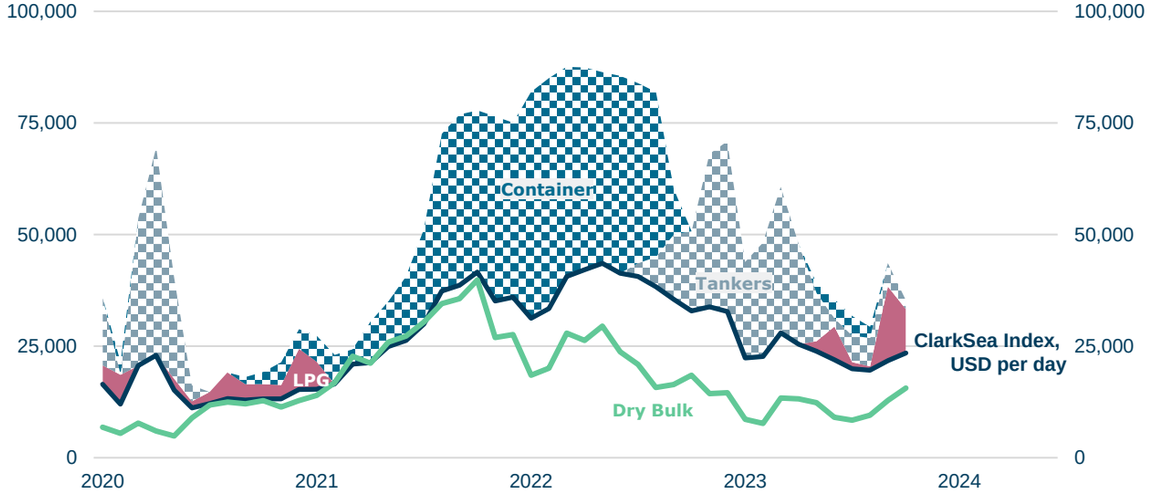
Scrap values are softening while activity is slowly beginning to increase

Steel prices and demolition values have softened by approximately 5-10% during 2023. The high freight rate environment has clearly kept demolition activity low in the past few years, but we are beginning to see increased activity in some segments. The Dry Bulk and Container segments have seen clearly increasing activity, whereas few Tankers and Gas Carriers have been scrapped in 2023.

Rates and values (USD per day and index)



Clarksea Index (USD per day)



Sources: Clarksons, Danish Ship Finance

Supply outlook

Uneven fleet growth casts uncertainty over future freight rates and secondhand prices

A large inflow of new vessels combined with modest demolition activity has propelled fleet growth above 4% in 2023. Deliveries are expected to level off somewhat during 2024, but the fleet is still set to take delivery of new capacity corresponding to 3.8% of the fleet. Demolition is likely to increase across vessel segments.

A stable orderbook-to-fleet ratio

The orderbook-to-fleet ratio has remained stable at around 11% since the beginning of 2022. A massive appetite for fleet expansion among the smaller vessel segments (LNG, Container and LPG) has been filling orderbooks at certain yards. Many other yards are struggling with thin orderbooks, since a prolonged period of low appetite for Tanker vessels (Crude, Product and Chemical) is starving a large group of yards of orders.

Large LNG orderbook

LNG Carriers are running at an orderbook-to-fleet ratio of 52%, with the last six vessels on order scheduled to be delivered in 2029. Demand for LNG Carriers has seen significant structural expansion, primarily due to the shift in European imports from pipelines to seaborne transport. The age profile of the fleet offers few obvious scrapping candidates in the event that supply runs ahead of demand. Instead, steam turbine vessels (31% of the fleet) are likely candidates for premature scrapping should earnings come under pressure from a supply surplus.

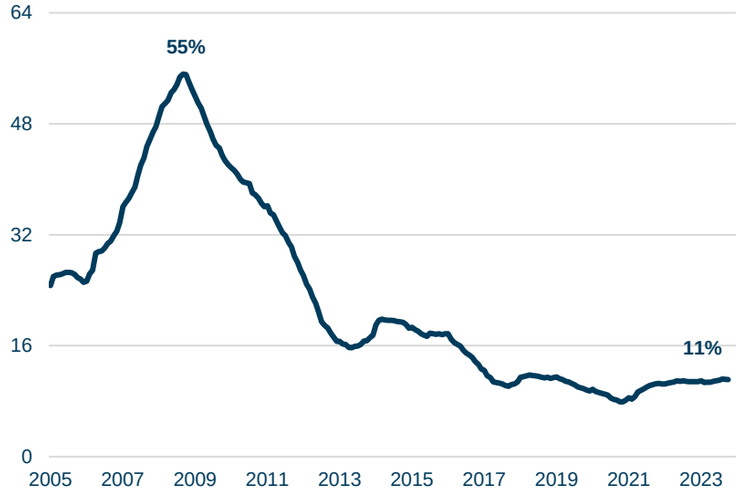
Large inflow of new vessels in 2024

The LNG and Container fleets are positioned for another year of increasing growth in 2024, whereas most other vessel segments are likely to see fleet expansion slowing down in 2024. The LPG fleet grew by more than 10% in 2023 but is only scheduled to increase by 4.5% in 2024.

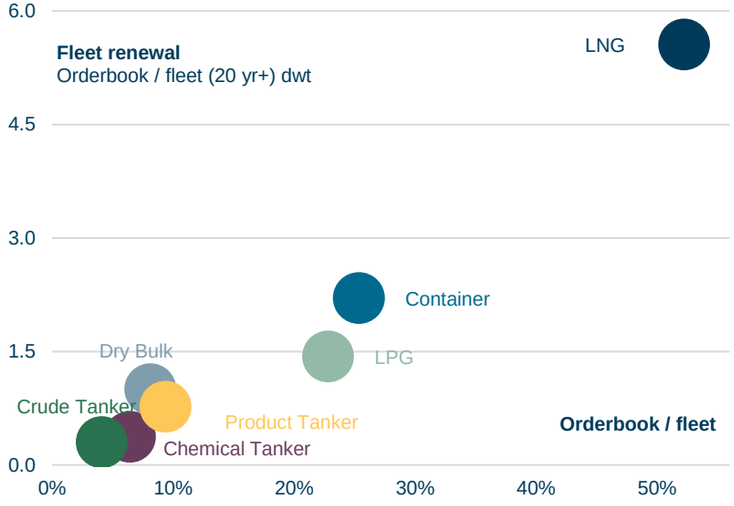
Any inflow of new vessels may be too much if demand is low

Dry Bulk is running at an orderbook-to-fleet ratio of less than 8%, but the fleet is still expected to expand ahead of demand in 2024. The Dry Bulk fleet will take delivery of new capacity equating to 3.3% of the fleet in 2024, whereas demand is only expected to grow by less than 2%. Demolition activity is likely to increase.

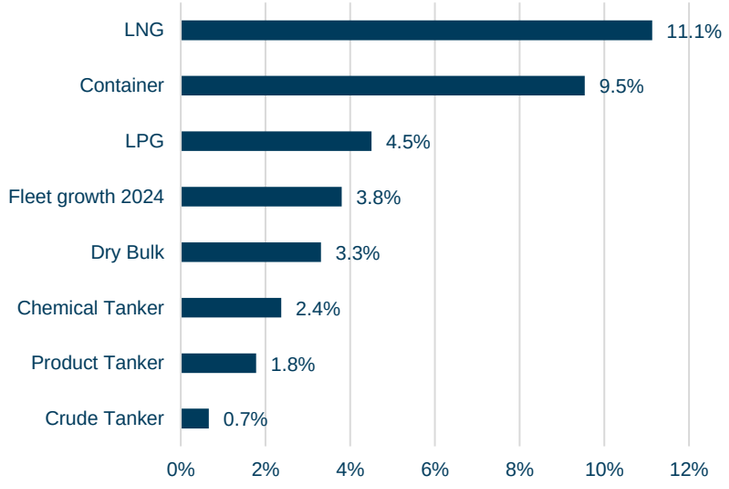
Global orderbook-to-fleet ratio



Orderbook-to-fleet ratio (%)



Fleet expansion in 2024 (before scrapping)



Sources: Clarksons, Danish Ship Finance

Fleet utilisation in 2024

Navigating divergent shipping markets

Longer travel distances will propel demand for Crude and Product Tankers in 2024, whereas the remaining vessel segments will largely maintain their average travel distances. Seaborne demand is predicted to grow almost in line with global GDP.

The fleet is predicted to expand ahead of demand during 2024

Seaborne demand volumes are expected to grow by 2.5% in 2024, while longer travel distances are predicted to elevate demand by an additional 0.5 percentage points. The merchant fleet is expected to expand by 3.8%. The fleet expansion will likely outpace distance-adjusted seaborne demand if reduced speeds (triggered by CII ratings and the EU ETS) or additional scrapping fail to balance the market.

Gas Carriers and Container vessels are the most exposed

For Gas Carriers and Containers, absorbing the incoming vessels is likely to be particularly challenging. Distance-adjusted LNG volumes are expected to increase by 4.9% in 2024, while the fleet is set to expand by 11%. Container demand is predicted to grow by 3.8%, with the fleet scheduled to expand by 9.5%. For LPG, the gap is less pronounced, with supply set to outpace demand by 1.6 percentage points.

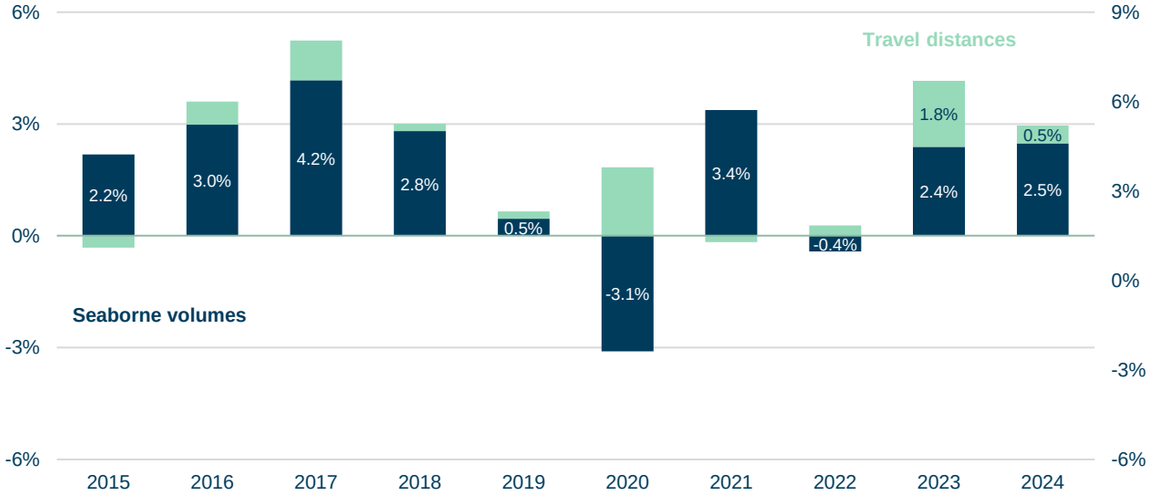
Tankers are expected to experience a strong 2024

The three Tanker segments are expected to experience a year of solid earnings and high secondhand prices during 2024. Crude and Product Tanker demand is expected to outstrip fleet growth by a large margin, whereas Chemical Tanker market fundamentals appear more balanced. Swing capacity will likely move into the Product Tanker market, raising Chemical earnings.

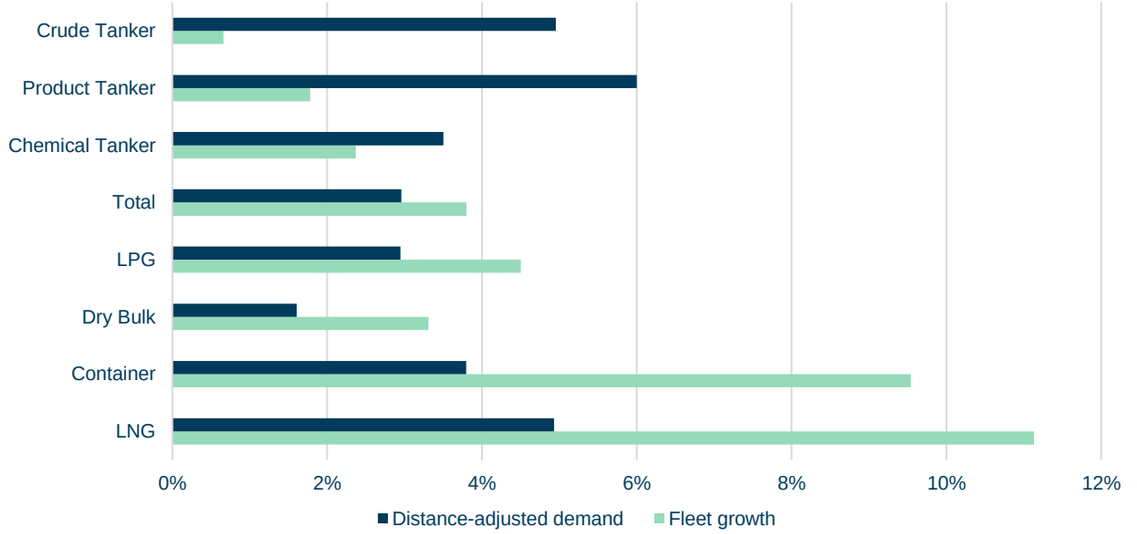
Dry Bulk owners may need to scrap some older and less efficient vessels in 2024

Distance-adjusted Dry Bulk demand is only expected to increase by 1.6% in 2024. Demand for the larger vessels is projected to contract by 0.4%, while demand for smaller vessels is expected to increase by more than 3%, supported by higher Chinese steel exports. The Dry Bulk fleet is scheduled to grow by 3.3%, but there is considerable variation between vessel segments: the Capesize fleet is only up by 1.8%, while Ultramaxes and Kamsarmaxes are set to grow by close to 7%.

Seaborne trade volumes and travel distances



Fleet utilisation, 2024



Sources: Clarksons, Danish Ship Finance

Fleet renewal and the green transition

Most orders are still for vessels with conventionally fuelled engines

The lopsided nature of current orderbooks represents an industry challenge. The shipping segments with the most vessels – Dry Bulk, Crude, Product and Chemical Tankers – are seeing hardly any fleet renewal and seem ill-prepared to meet climate targets. These ship segments are all trading tramp, and thus their decarbonising strategies are being hampered by unpredictable trading patterns. Therefore, the vessels on order are primarily equipped with engines burning conventional fuels.

Low fleet renewal among tramp segments

The combined Dry Bulk, Crude, Product and Chemical Tanker fleet totals nearly 30,000 vessels. The large tramp segments represent only one-third of the global orderbook (measured in cgt). 11% of these orders are dual-fuelled. Chinese yards are building 61% of the capacity on order in these segments.

Large orderbook for Gas Carriers and Containers

The combined fleet of LNG, LPG and Container account nearly 8,500 vessels. Still, their orderbooks account for almost 67% of new capacity on order. 75% of these orders are for vessels that are dual-fuelled in one form or another. South Korea is building 62% of the dual-fuelled orders, while China is building 58% of the conventionally-fuelled orders. Together, they are building 94% of the ordered capacity for LNG, LPG and Container vessels.

Not renewing fleets also represents a risk

There is a risk that a segment's inability to deliver on the climate targets may eventually destroy demand. Young vessels not equipped to meet climate targets could face expensive retrofitting or early retirement.

One-third of vessels on order are dual-fuelled

One-third of the vessels currently on order, representing 53% of capacity, are dual-fuelled. Two-thirds of the orderbook for dual-fuelled vessels has LNG as the alternative fuel, while methanol constitutes 16%. Investments in dual-fuel engines can be considered a hedging strategy against rising biofuel prices in the age of the FuelEU Maritime regulation.

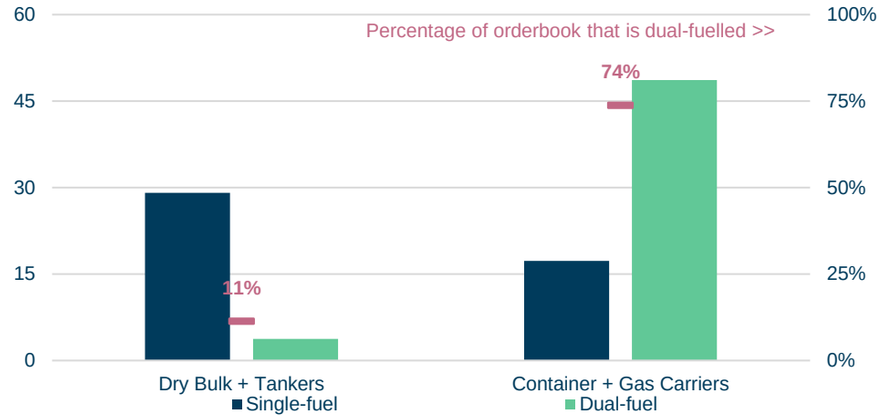
Conventionally fuelled orders dominate the orderbook

The remaining two-thirds of orders, representing 47% of the capacity on order, are conventionally fuelled vessels. The majority of these vessels are not prepared for future upgrades beyond traditional retrofitting. Only 12% of orders for single-fuel vessels, representing 16% of vessel capacity currently on order, are said to be *ready* for future fuel upgrades in one form or another.

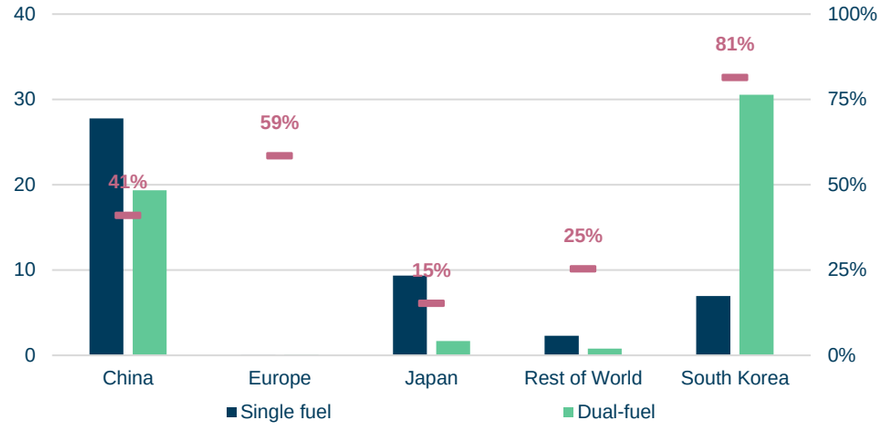
Increased risk of a reduced ability to renew fleets

The long-term consequences of the low contracting activity in the tramp ship segments, combined with fleet renewal that does not currently favour dual-fuel capabilities, could be severe. Young vessels may become early pensioners, increasing the need for fleet renewal. Many of the yards that have traditionally built these vessels are quickly running out of orders.

Orderbook by segment and engine profile (million cgt)



Orderbook by builder region and engine profile (million cgt)



Sources: Clarksons, Danish Ship Finance

Yard capacity and utilisation

Surplus yard capacity remains an issue, but utilisation is high at first-tier yards

Global yard capacity remains relatively stable at around 56 million cgt distributed among 300 yards. The industry is fragmented, and consolidation is expected. Many yards are rapidly running out of orders, while a group of first-tier yards are attracting the lion's share of new orders.

Increased yard utilisation in 2024

Global yard utilisation is expected to increase from 55% in 2022 to 65% in 2023, and further to 71% in 2024. Orders are thinning out from 2025 and yard utilisation is scheduled to shrink quickly in 2025 and 2026. The relatively low peak utilisation in 2023 and 2024 shows that in general yard capacity is not in short supply.

First-tier yards will utilise 95% of capacity in 2024…

The group of approximately 100 first-tier yards, which represent 67% of global yard capacity but 92% of the orderbook, are expected to increase utilisation from 63% in 2022 to 79% in 2023 and an astonishing 95% in 2024.

…while second-tier yards will only utilise 13% in 2024

The remaining group of 200 second-tier yards, representing 33% of global yard capacity but only 8% of the orderbook, will soon run out of orders. Their capacity utilisation has dropped from 51% in 2022 to 36% in 2023, and will deteriorate further to 13% in 2024.

Almost full utilisation at first-tier Chinese yards

Chinese yard capacity totals 23 million cgt (41%), distributed between 150 yards. 50 first-tier yards account for 70% of domestic capacity but 93% of the orderbook. First-tier yard utilisation is set to increase sharply from 73% in 2022 to 95% in 2024 and 2025. Capacity utilisation at second-tier yards peaked in 2022 at 67% and is expected to deteriorate to 57% in 2023 and 24% in 2024.

Japanese yards are struggling to compete

47 Japanese yards control 17% of global yard capacity (10 million cgt) but have only attracted 10% of orders. Yard utilisation is generally low, but first-tier yards are expected to improve utilisation from 56% in 2022 to 62% in 2023 and 65% in 2024. Second-tier yards peaked at 43% in 2022, which is set to decline to 30% in 2023 before recovering to 32% in 2024.

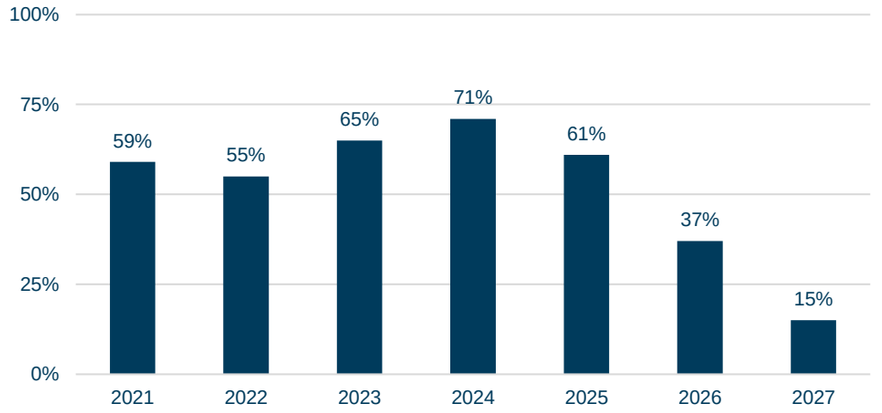
Full capacity utilisation at South Korean yards

South Korean yard capacity is concentrated to 12 yards that can together handle 12 million cgt (22% of global yard capacity). They have attracted one-third of global orders. Nine first-tier yards control 99% of the capacity. Yard utilisation averaged 53% in 2022 and is expected to increase to 78% in 2023 and 107% in 2024. The figure for 2023 is misleadingly low, since many vessels take longer than one year to build.

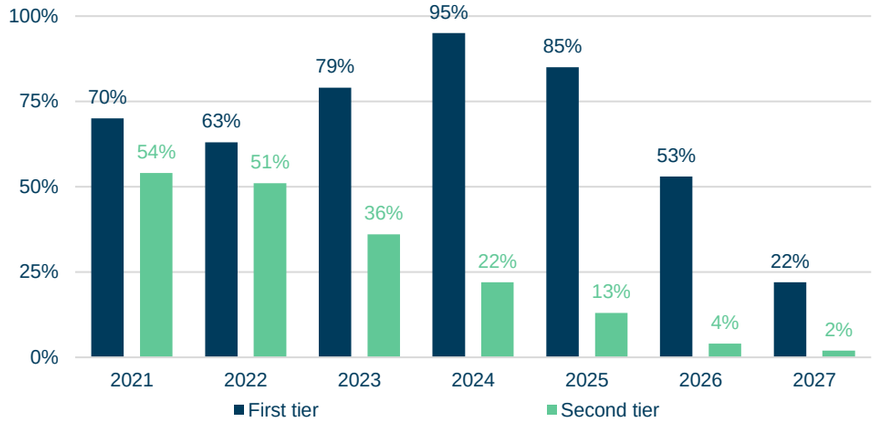
First-tier yards are doing well in Europe

There are 49 European shipyards with a combined capacity of 3.8 million cgt (7% of global yard capacity), These yards have secured 6% of the orderbook. 14 first-tier yards control half the capacity but two-thirds of the orderbook. The first-tier yards managed to utilise 80% of their capacity in 2022, only to see their delivered capacity drop in 2023 (long building periods), but in 2024 yard utilisation is scheduled to peak at 105%.

Global yard utilisation



Yard utilisation by tier



Sources: Clarksons, Danish Ship Finance

Massive increase in idle yard capacity

40% of the current yard capacity will see their last orders delivered before the end of 2025

The lopsided nature of current orderbooks means that even though yard utilisation is increasing in 2023 and will continue to rise in 2024, many yards are due to deliver their last orders during these years.

12% of yard capacity will run out of orders in 2023…

A total of 63 yards, representing 6.8 million cgt – 12% of global yard capacity – will deliver their last orders in 2023. These yards are all second-tier yards located in China or within the "Rest of the world" group.

…as well as another 10% of yard capacity in 2024…

There are 88 yards due to deliver their last orders in 2024, with a combined capacity of 5.6 million cgt (10% of current yard capacity). Surprisingly, six of these yards are first-tier, while the remainder can be found in the group of second-tier yards. China and the ''Rest of the world" group once again dominate the picture, but European and Japanese yards are also exposed.

…and an astonishing 17% in 2025

The outlook is more uncertain for 2025, as new orders could utilise more capacity than expected. Today, 80 yards are expected to deliver their last orders in 2025. These yards represent a combined capacity of almost 9.5 million cgt or 17% of the current yard capacity. 34 yards from the first-tier group and 46 yards from the second-tier group are due to run out of orders. These yards are primarily located in China and Japan.

Yard capacity could drop by 40%

A total of 231 of the 300 yards globally could deliver their last orders before the end of 2025. These yards represent 21.8 million cgt or almost 40% of the current yard capacity. Yard capacity may not necessarily be closed simply because orderbooks are empty, but the risk is clearly on the rise.

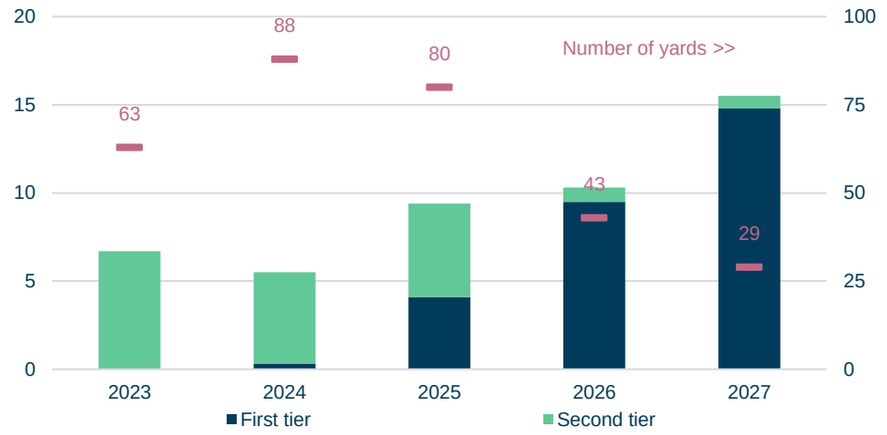
Low capacity for future fleet renewal…

If all yards were to close down operations the same year they delivered their last orders, global yard capacity would fall to 34 million cgt, distributed between only 70 yards, in 2026. That would imply that yard capacity utilisation in 2026 could increase from the current 37% to almost 60% based on the current orderbook.

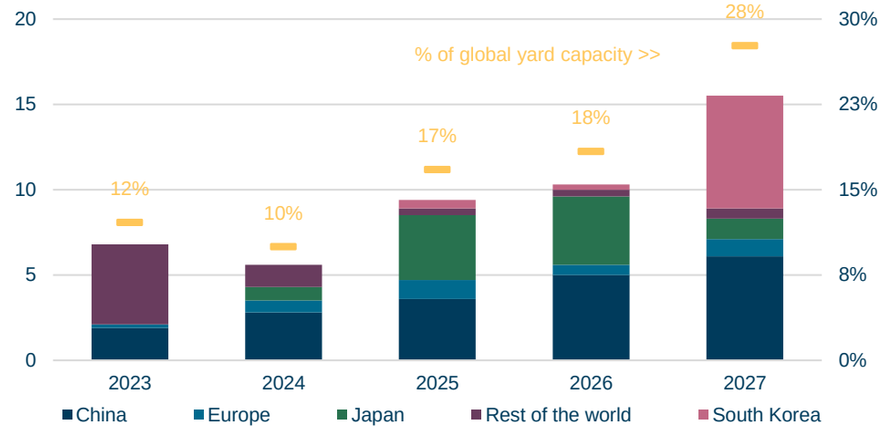
…may delay the industry's transition to net zero

The shipping industry's ability to renew fleets, meet customer demands and reach climate targets will be impacted negatively if something like 40% of current yard capacity closes towards 2030. Of course, yard capacity can be reactivated when demand returns, but this takes time.

Vacant yard capacity (million cgt)



Vacant yard capacity by builder region (million cgt)



Sources: Clarksons, Danish Ship Finance

Container

Shipping Market Review – November 2023

Container

The supply-demand balance is only expected to worsen in the coming years

The Container market has continued its downward ride with both freight rates and secondhand prices experiencing significant declines. Although the fleet's cargo-carrying capacity has already increased significantly, a massive inflow of vessels is still projected for the rest of this year and next year. Weak growth and high inflation continue to weigh on the outlook for the global economy. The Container market is therefore expected to suffer from surplus vessel capacity in the coming years. Different strategic approaches and a high bet on dual-fuel vessels by liner operators may reduce dependence on chartered vessels in the coming years. Timecharter rates will likely decline, and increased scrapping and layups of vessels seem inevitable.

Freight rates and secondhand prices

Despite average timecharter rates continuing to experience significant declines, they remain slightly below the top 40% observed since 2000. However, average box rates have dropped below the median and are now close to pre-pandemic levels. The average secondhand price index has declined by 7% in the past six months, driven by lower prices of older vessels. Conversely, newbuilding prices have remained fairly stable, supported by continued contracting of the more expensive dual-fuel vessels.

8,000+ teu vessels: Weakening demand and a buildup of retail inventories in the EU and the US have continued to pressure box rates. Average box rates have declined by over 10% in the past six months and are now closing in on pre-pandemic levels. In the same period, the one-year timecharter rate for a 9,000 teu vessel has decreased by 24%, from USD 56,000 per day to USD 42,500 per day. Average fixture periods have been fairly stable at around ten months – significantly less than the two to three years seen during the pandemic. The price of a five-year-old vessel of 10,000 teu has decreased by 5% in the past six months, to USD 79 million.

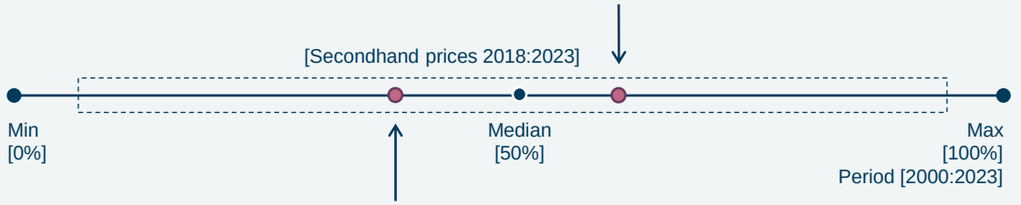
3-7,999 teu vessels: Cascading effects from larger vessels have been a key contributor to weakening freight rates. The one-year timecharter rate for a 6,800 teu vessel has declined by 24% in the past six months, going from USD 37,000 per day to USD 28,000 per day. The price of a five-year-old vessel of the same size has declined by 6% in the same period and is currently at USD 66 million.

Feeder vessels: The one-year timecharter rate for a 2,500 teu vessel has decreased by 27% in the past six months, to USD 13,500 per day. The price of a five-year-old vessel is USD 29 million, having decreased by 5% in the same period.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023

Freight rates have decreased by 30% in the past six months but remain above the median.



Secondhand prices are below the median and have decreased by 7% in the past six months.

Weak growth in the global economy and high inflation rates across Western countries have kept Container demand low. Volumes have increased marginally by 0.1% in 2023 after having decreased by almost 4% in 2022. Distances have added another 0.8% to demand growth. Fleet utilisation has weakened in 2023, as the Container fleet has expanded by around 6%, while easing port congestion has also added around 1% to the active capacity. Average speeds have been more or less stable this year.

Deliveries: 1.5 million teu has been added to the fleet (6% of the fleet) in the first ten months of 2023, compared to 0.8 million teu in the same period in 2022. An additional 0.8 million teu is scheduled for delivery this year.

Scrapping has increased in 2023, with 57 vessels sold for demolition so far (0.4% of the fleet). This is higher than in 2022, when a mere three vessels were demolished. It is mainly smaller vessels that have been scrapped.

Contracting decreased by 40% in the first ten months of 2023, to 1.5 million teu (around 6% of the fleet), with primarily methanol-powered dual-fuel vessels ordered.

Orderbook: The orderbook has been fairly stable, as the number of vessels delivered has been offset by continued contracting of dual-fuel vessel. The orderbook is now at a historical high (in terms of capacity) of 7.5 million teu (27% of the fleet).

Demand: Seaborne Container trade volumes decreased by 4% in 2022, as a weakening global economy and high inflation took their toll on demand for containerised goods. Demand has remained low in 2023, with volumes still far from 2021 levels. Average distances have increased slightly as North American imports from Southeast Asia has increased.

Market dynamics in the last six months

Players are still looking at a Container market in rapid decline

Weak fleet utilisation due to high fleet growth and low demand has caused significant falls in freight rates. Shipowners have tried to limit the damage through various measures, but with little effect.

Freight rates remain in the top 40% despite steep falls

Average timecharter rates in the Container market have tumbled by more than 80% since their peak back in March 2022. However, despite this steep decline, average timecharter rates remain within the top 40% observed since 2000 and around 50% higher than 2019 levels. Spot rates have fallen even further, with freight rates on mainlane routes almost on a par with pre-pandemic levels, while rates on intra-regional trades are around 30% higher than pre-pandemic levels.

Container demand is still far from 2021 levels

A weakening global economy and high inflation rates have eroded households' disposable incomes while also reducing their purchasing power. This has lowered demand for Container vessels, as fewer containerised goods have needed to be transported. As such, Container demand decreased by 5.2% in 2022 and has continued to be below 2021 levels during 2023. In comparison, the Container fleet's cargo-carrying capacity has already increased by around 15% since the start of 2021.

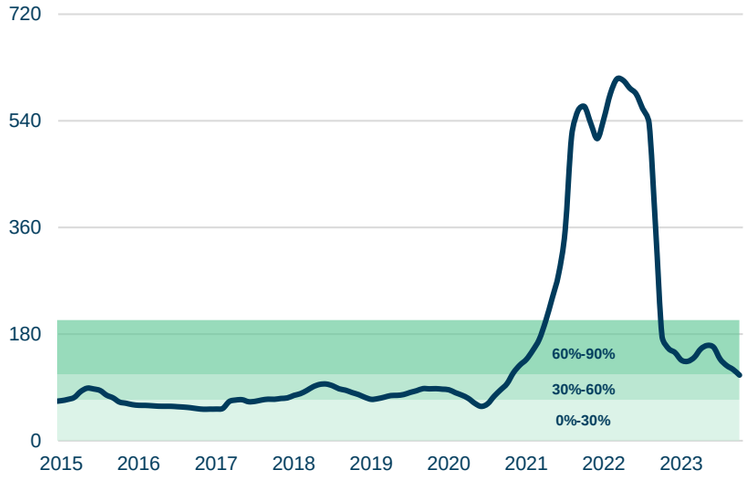
Limited measures have been taken to manage capacity so far

The Container market is already experiencing excess fleet capacity. While many measures could be taken by shipowners and operators to manage capacity, we have only seen these being applied to a limited extent so far. For instance, idle capacity has been roughly stable during 2023 at around 3% of the fleet. Likewise, average speeds have remained more or less unchanged in the same period (although they are close to an all-time minimum). We have seen an increase in the number of blank sailings, though.

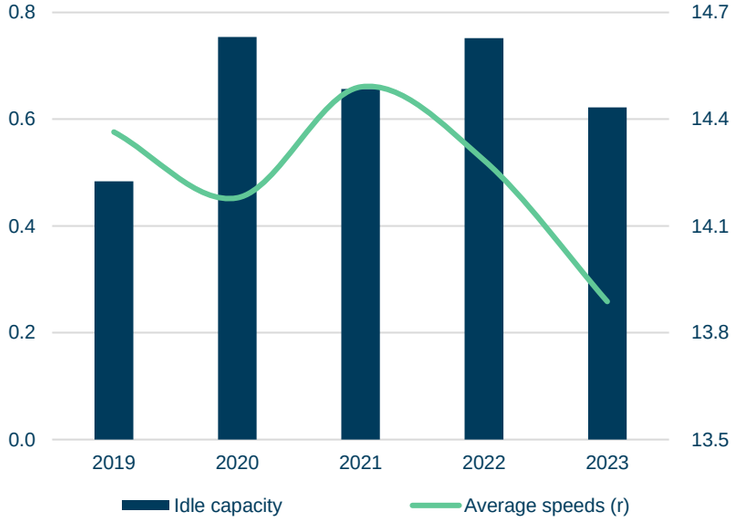
More shipowners are demolishing vessels

Demolition activity has increased significantly in 2023, having been almost non-existent in 2022. Even though demolition has increased, it remains at very low levels, with around 0.4% of the fleet scrapped so far in 2023. Primarily small and very old Container vessels have been demolished.

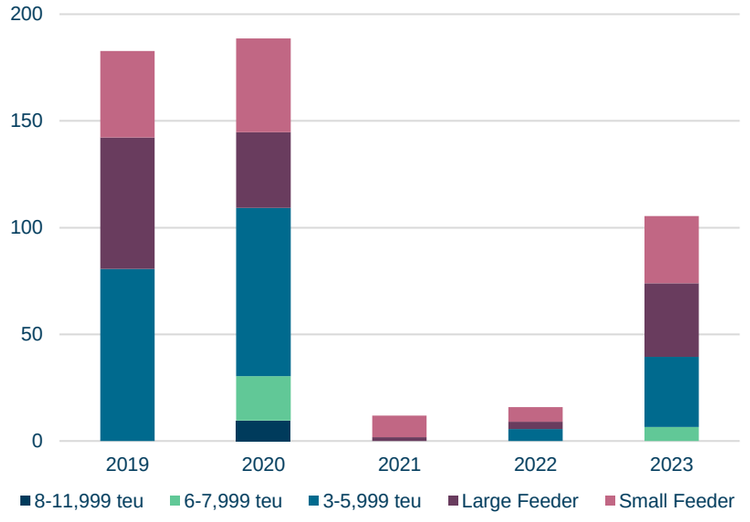
Average timecharter rate index (2000=100)



Idle capacity and average speeds (million teu and knots)



Demolition activity by subsegment (million teu)



Source: Clarksons, AXS Marine, Danish Ship Finance

Container outlook (1/2)

The deteriorating supply-demand balance may affect market players in different ways

The Container market is expected to suffer from excess capacity in the coming years, as the supply-demand balance worsens. This may increase the asset concentration towards liner operators.

Highest gross fleet growth in 13 years

A continued decline in earnings has not stopped shipowners from ordering new vessels. Contracting activity in 2023 has been driven by orders for dual-fuel vessels, which account for 80% of total orders. A staggering 902 vessels are currently on order, which are expected to lift the fleet's cargo-carrying capacity by around 10% annually in 2023 and 2024, and 6% in 2025, before scrapping. The Container market has not experienced gross fleet growth this high since 2010.

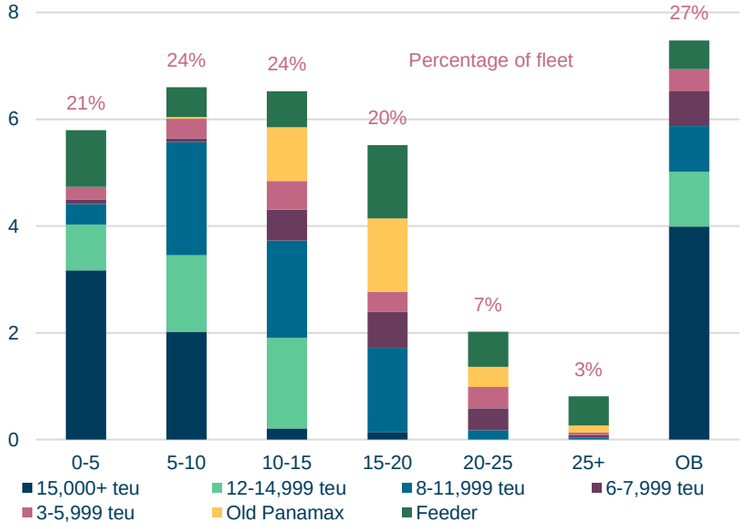
Race for fleet renewal may lead to higher concentration

In our previous report, we discussed how growing surplus vessel capacity may increase the re-employment risk for tonnage providers, as operators own the lion's share of the orderbook (74%). However, the high inflow of new tonnage may also impact the owner concentration in the Container market. Around 70% of the orderbook has been placed by the top ten group owners, of which a significant share is dual-fuel vessels. This may pressure other group owners who have not initiated a renewal of their fleets. Of other group owners' fleets (who averagely own five vessels), vessels over 15 years account for 34% (28% for top ten group owners), while the orderbook equates to 18%. The share is even lower when looking at orders for dual-fuel vessels (4%).

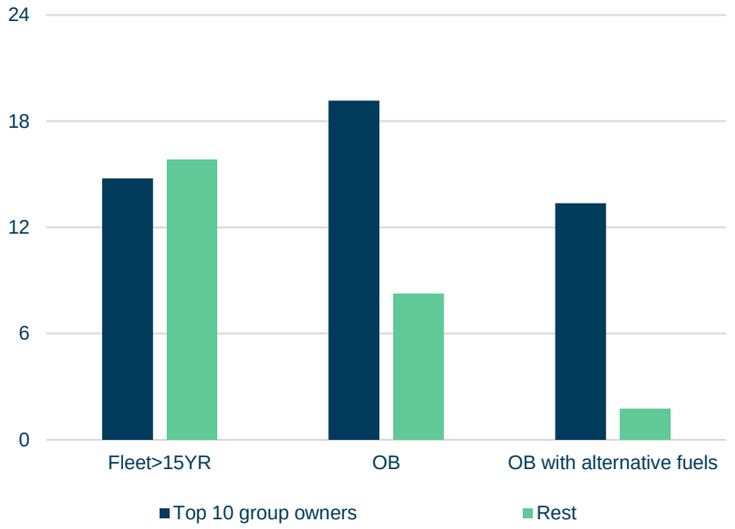
High inflation and low economic growth may impact demand

The increase in excess household savings during the pandemic was a major contributor to Container demand. However, much of the excess savings have been eroded due to the high cost of living and increasing interest rates experienced in recent years and a normalisation of spending after the pandemic. Thus, gross savings rates in the EU and the US have returned to pre-pandemic levels. Furthermore, the global economic outlook remains challenged. Economic growth is projected to fall from 3.5% in 2022 to 3.0% in 2023 and 2024 (lower than the historical average of 3.8% during 2000-2019). Global inflation is expected to remain high at 6.9% in 2023 and 5.8% in 2024. These factors combined will have an impact on demand for containerised goods in the short to medium term.

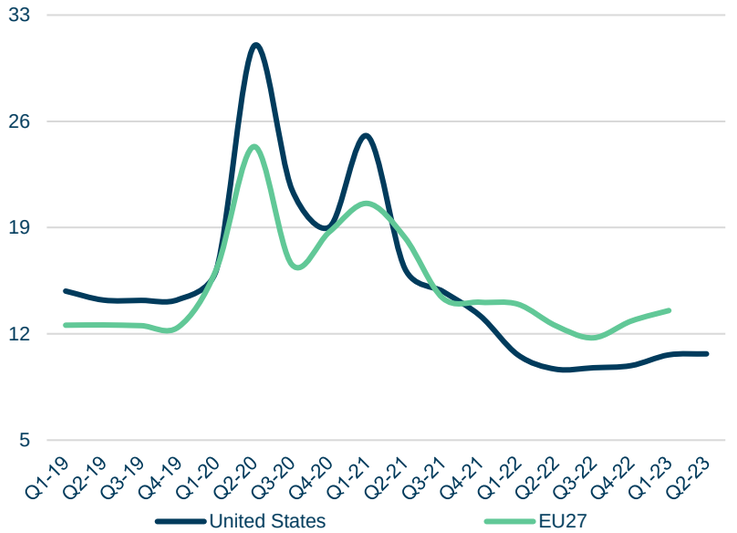
Age distribution of fleet (million teu)



Fleet>15YR and orderbook by group owners (% of fleet)



Gross savings rates* (%)



*Gross savings to gross disposable income for households

Source: Clarksons, AXS Marine, IMF, Eurostat, Danish Ship Finance

Container outlook (2/2)

A few positive signs amid a generally negative market outlook

Pessimism persists on both the consumer and producer sides

Rising geopolitical tensions due to the ongoing Russia-Ukraine war and the conflict in the Middle East have increased commodity prices around the world. This has raised concerns about inflation being pushed up further and kept consumer confidence below 100 in OECD countries. Likewise, expectations on the producer side of economic sentiment have remained negative, as the PMI indices in the US, the EU and China have remained below 50. As such, retail inventories have climbed in the US, which may limit demand for Container trade further in the short term.

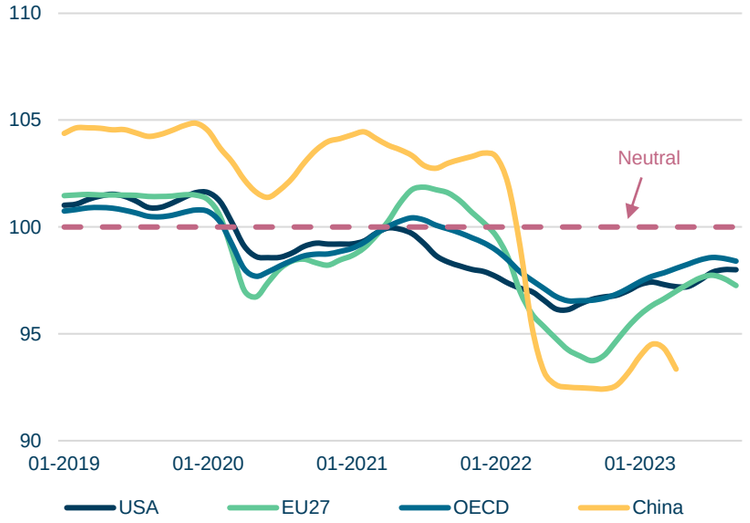
Intra-regional trade seems to be the only positive aspect

Container demand experienced a significant decline in 2022 of 5.2%, with total tonne-miles reaching below pre-pandemic levels. The steepest falls were seen for mainlane trades from the Far East to Europe and North America. Demand is expected to stay muted in 2023, and to only partially recover in 2024, by 3.8%. However, higher diversification in supply chains (as more companies pursue China+1 strategies) and a growing middle class in developing countries have kept intra-regional trade resilient. Intra-regional trade in Asia is expected to contribute half of the demand growth in 2024 and move higher than 2021 levels. Other regions such as Africa and Middle East/India are also expected to contribute to the demand growth in 2024. This may lift demand for larger Feeder vessels by 3-4% in the short to medium term, while the rebalancing potential is also more positive for these vessels.

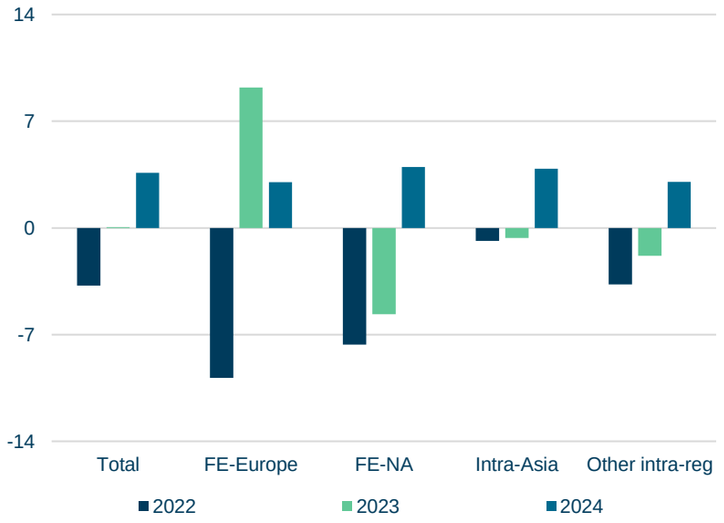
Supply-demand balance set to worsen in the coming years

Despite some positive signs for smaller segments, the supply-demand balance is expected to deteriorate in the coming years. Since 2022, the fleet's cargo-carrying capacity has outpaced demand, and this is only expected to worsen in the coming years. This may pressure freight rates further and lead to increased scrapping and layups of vessels. To put this in perspective, vessels would have to reduce average speeds by over 20% to absorb the excess capacity. We may also see periods of increased cascading effects from larger vessels. For instance, we are already seeing some 15,000+ teu vessels being deployed on intra-Asia routes (4% of total capacity), which was not the case a few years back.

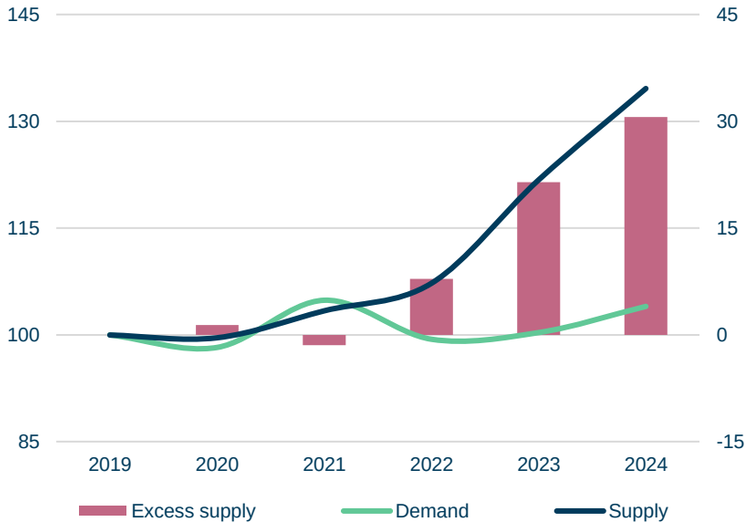
Consumer confidence index (100 = neutral)



Volume growth for selected routes (%)



Supply-demand balance (100 = 2019)



Source: Clarksons, AXS Marine, IMF, OECD, S&P Global, Danish Ship Finance

Container deep dive: A secondhand market in distress?

Why buy old vessels when the market is being flooded with new, modern tonnage?

Tonnage providers have taken advantage of the current market to offload vessels, while liner operators have acquired them. Different strategic approaches will affect the market concentration in future.

Secondhand market has dropped to a historical median

Demand for secondhand tonnage showed unprecedented growth in 2021 and 2022, as owners and operators strived to take advantage of the high freight rates. The turnover ratio for the Container market reached an all-time high of 7.4%. A collapse in freight rates due to weak demand combined with a massive inflow of new and eco-friendly vessels would typically bring the secondhand market to a halt. However, although S&P activity has abated from the record highs in 2021, the turnover ratio as of October 2023 remains at the historical median of around 2.8%.

Older vessels have accounted for 60% of sales in 2023

Around 60% of the secondhand vessels sold so far in 2023 have been older than 15 years. In comparison, the average share of vessels sold that were older than 15 years in the period 2016 to 2019 was around 45%. While the Feeder segments account for a large number of the older vessels sold, the group also includes many 3-6,000 teu and 8-12,000 teu vessels.

Tonnage providers offloading, operators onloading

Secondhand prices across all subsegments reached all-time highs in 2021. Tonnage providers have taken advantage of the attractive prices and the asset game to sell their secondhand tonnage. Furthermore, conditions have been optimal for tonnage providers to adjust their appetite for asset risk, as they have been looking at a market with increasing re-employment risk for their vessels. As such, tonnage providers have accounted for around 70% of secondhand sales recorded since 2021. On the other hand, liner operators tried to take advantage of the strong freight rates in 2021 and have acquired a large share of the capacity sold since 2021. Liner operators have acquired around 60% of the vessels sold since 2021.

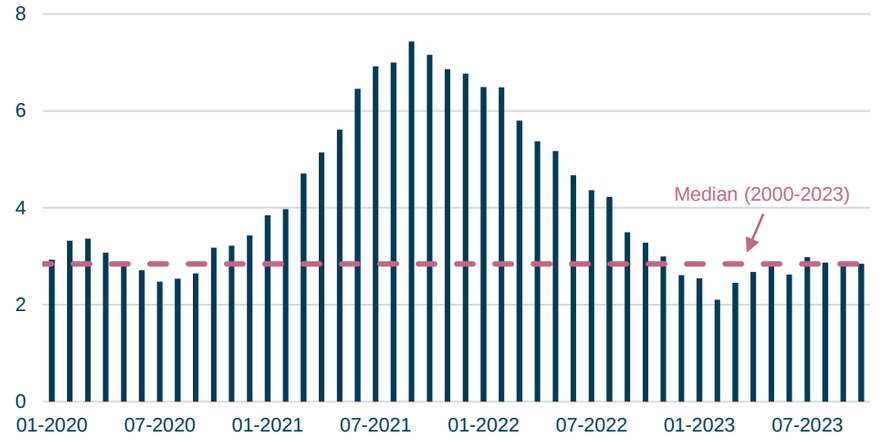
Acquisitions may be driven by prices of older vessels…

The obvious question that springs to mind is why liner operators are acquiring older Container vessels when the market is expected to be flooded with new, modern tonnage. Prices and strategic choices may be part of their motivation. Liner operators could still have vast amounts of capital left from the record earnings they generated during the pandemic. They have invested some of this capital in older vessels that have, on average, been cheaper than newer secondhand vessels. Compared to the newbuilding price parity, five-year-old vessels have been 10-15% lower, while ten- and 15-year-old vessels have been 30-40% lower. This has made it more favourable to acquire older secondhand tonnage.

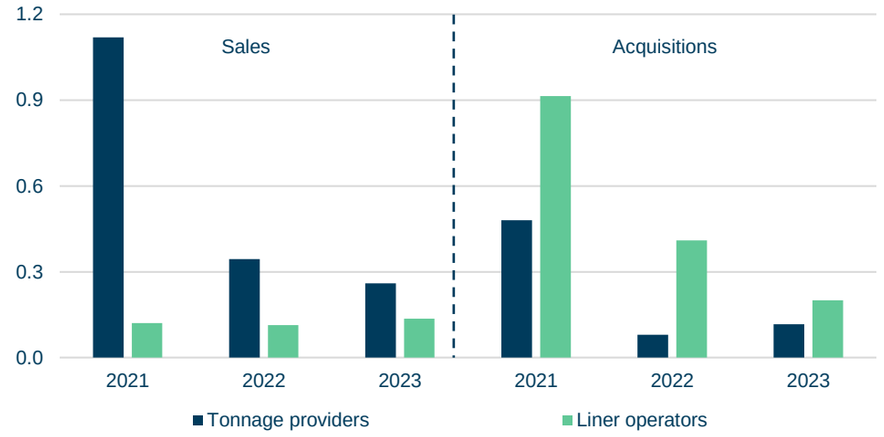
…and strategic positioning for the future

Liner operators may also be taking advantage of the current market and prices to position themselves for the future. By being active in both the newbuilding and secondhand markets, they may be trying to build their market shares in order to better position themselves if demand increases in future. As such, we may see the market becoming even more concentrated in the future. Since 2021, liner operators have already increased their market share by around 4 percentage points and now own around 60% of the fleet.

Container market turnover ratio (% of fleet)



Sales activity by tonnage providers and liner operators (million teu)



Source: Clarksons, AXS Marine, Danish Ship Finance

Dry Bulk

Shipping Market Review – November 2023

Dry Bulk

Diverging trends in the Dry Bulk market?

Market fundamentals have been weak in the Dry Bulk segment. A normalisation of average port congestion has increased the active supply of vessels and built up overcapacity in the market – particularly in the Capesize segment. The Baltic Dry Exchange Index is currently trading around 15% below the average for the past five years. Fundamentals on the supply side seem positive, as low contracting activity will limit fleet growth in the short term. However, there is still uncertainty on the demand side. As well as its unsustainable debt, the Chinese property sector faces structural challenges with a declining population. This may have a significant impact on Capesize demand in the long term, which is heavily dependent on this trade. The outlook seems more resilient for smaller segments, owing to both positive supply and demand fundamentals.

Freight rates and secondhand prices

Weak fleet utilization has lowered timecharter rates by 18% on average in the past six months. Prices of newer secondhand tonnage have been fairly stable, while prices for vessels over ten years old have declined, pushing price-to-earnings ratios within the top 40% seen since 2000. Newbuilding prices are also very high, but prices have predominantly been settled by a small number of orders at a small number of top-tier yards.

Capesize: Weakening fleet utilisation due to easing port congestion has reduced average Capesize earnings. The one-year timecharter rate has dropped by 20% in the past six months, to USD 14,500 per day. The price of a five-year-old vessel has decreased by 11% in the same period, to USD 49 million.

Panamax: Even though Panamax vessels have benefited from the strong coal trade, easing port congestion and cascading effects from Capesize vessels has weakened fleet utilisation. The one-year timecharter rate has decreased by 21% in the past six months to USD 14,000 per day. The price of a five-year-old vessel has decreased by 6% and is currently at USD 32 million.

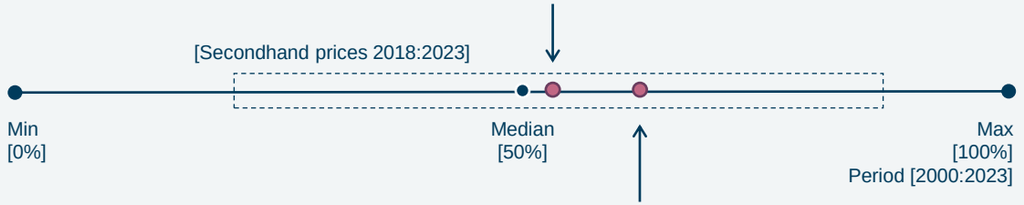
Handymax: Lower grain trade from Ukraine has caused the one-year timecharter rate to decline by 23% in the past six months, going from USD 15,000 per day to USD 11,500 per day. The price of a five-year-old vessel has decreased by 8% in the same period, from USD 32 million to USD 30 million.

Handysize: Minor bulk trade is still slowly recovering from a significant decline in 2022. This has pushed the one-year timecharter rate down by 19% in the past six months, to USD 12,000 per day. The price of a five-year-old vessel has decreased 4% in the same period, to USD 26 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023

Having decreased by 18% in the past six months, **freight rates** are slightly above the median.



Secondhand prices have decreased by 7% in the past six months but are still above the median.

Global seaborne demand for Dry Bulk commodities has slowly recovered from the fall in 2022. Volumes are expected to increase by 3.7% in 2023, having shrunk by 2.8% during 2022. Longer travel distances are projected to add another 0.9% to demand growth in 2023. The Dry Bulk fleet is set to expand by 3.3% in 2023, but easing port congestion has already added around another 2.0% capacity to the active fleet. Average vessel speeds have, so far, only experienced a slight decrease. Fleet utilisation has therefore weakened during 2023.

Deliveries: Around 28 million dwt was added to the fleet (2.9% of the fleet) in the first ten months of 2023, compared to 26 million dwt in the same period in 2022. 9 million dwt is scheduled to be delivered in the rest of 2023.

Scrapping has picked up in 2023, with 5 million dwt scrapped so far (0.5% of the fleet). This is an increase of 40% compared to the same period last year (albeit from very low levels).

Contracting has decreased by 3.1%, going from 28 million dwt in the first ten months of 2022 to 27 million dwt in 2023 (corresponding to around 2.7% of the fleet).

Orderbook: The orderbook has declined by 2.2% during 2023 and is now at 81 million dwt (8% of the fleet).

Demand: Seaborne trade volumes have so far increased by 3.1% in 2023, owing to strong seaborne trade of coal. The levels are slightly above the volumes seen in the same period in 2022.

Travel distances added a further 0.8% to demand growth in the first ten months of 2023. The increase was driven by long-haul trade of coal and higher Chinese imports of iron ore and soybeans from Brazil.

Market dynamics in the last six months

Earnings are currently at a low compared to the seasonal average

The weak earnings cannot, so far, be explained by lower seaborne trade of Dry Bulk commodities. Instead, easing port congestion has weakened fleet utilisation – especially in the Capesize segment.

Low earnings in the Dry Bulk market…

When China lifted its Covid restrictions at the beginning of 2023 and reopened its economy, many Dry Bulk owners were anticipating a significant lift in their earnings. However, this did not materialise. As of October 2023, the BDI Index was trading almost 15% lower than the seasonal average during 2017-2022. The soft earnings were primarily driven by the Capesize and the Panamax segment – the Capesize BDI Index was more than 10% below the seasonal average.

…have not been driven by lower demand…

The low earnings have not been a result of decreasing demand. All subsegments are expected to experience a jump in tonne-mile demand in 2023 of 4.6% on average (albeit from relatively low levels in 2022). Strong coal demand from Asian countries, coupled with changing trade flows due to the Russian invasion of Ukraine, has kept demand for Panamax and Handymax vessels high. Even iron ore trade has not experienced any negative effects yet, despite the weak signals from the Chinese property sector. Chinese steel mills have opted to maintain their output in order to build up steel inventories. Grain trade has also experienced growth, buoyed by the record soybean trade from Brazil to China.

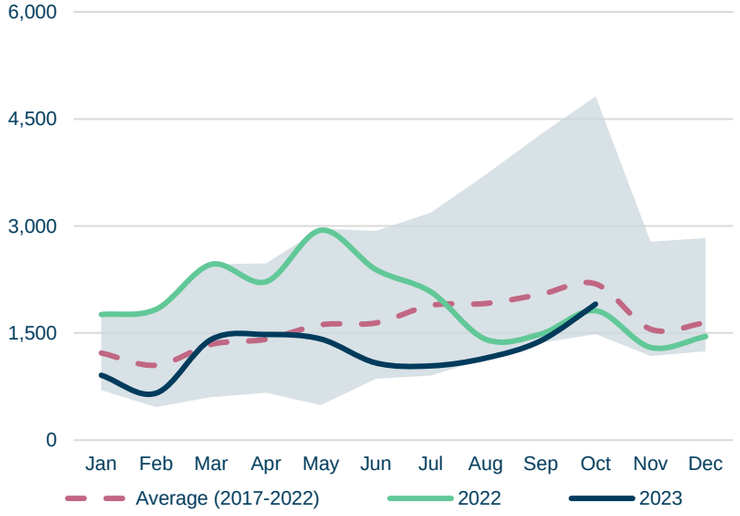
…but by an increase in the active supply of vessels

The low earnings can primarily be attributed to an increase in the active supply of vessels. While the fleet is expected to grow by 3.3% in 2023, the active supply has been further increased by port congestion easing to a three-year low. As such, port congestion of deepsea Dry Bulk vessels decreased from 31% of the fleet in January to 29% by October.

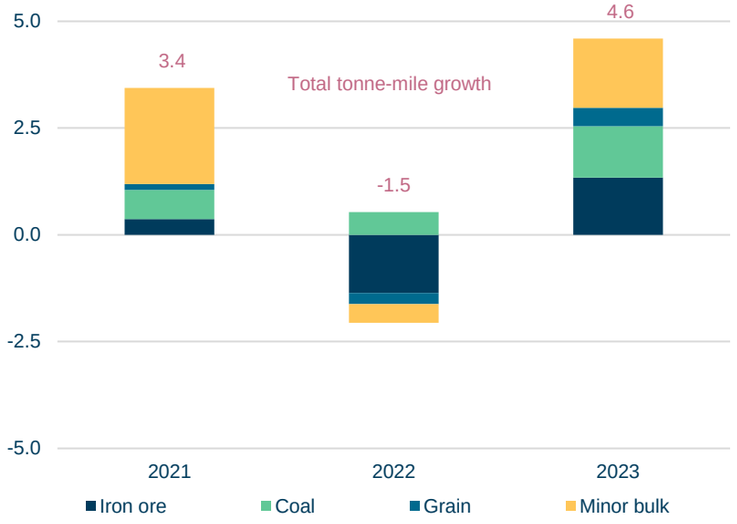
Effects from Panama Canal drought not visible yet

The Panama Canal has been hit by a severe drought this year. The authorities have imposed restrictions on the number of vessels allowed to transit. However, there has not been any visible impact yet on average transit times for Dry Bulk vessels passing through.

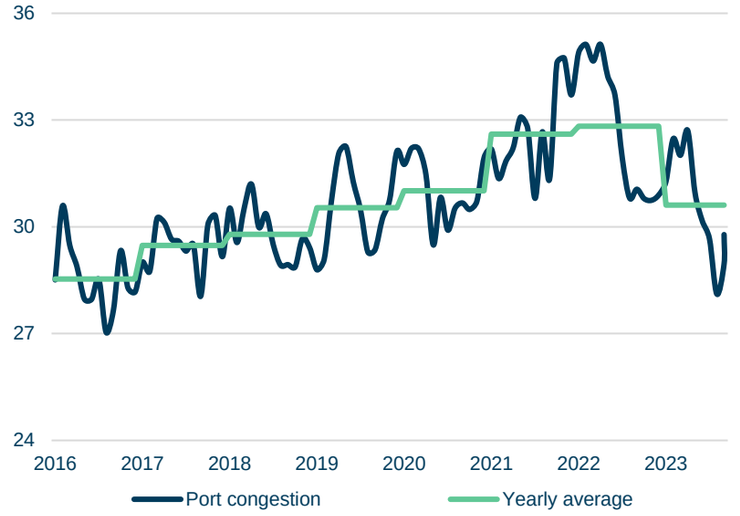
Baltic Exchange Dry Index



Contribution to Dry Bulk demand by commodity (%)



Port congestion (% of fleet)



Source: Clarksons, AXSMarine, IEA, Panama Canal Authority, Danish Ship Finance

Dry Bulk outlook (1/2)

Even low fleet growth in the Capesize segment may not be enough to keep freight rates up once the effects from the struggling Chinese property sector kick in

Positive supply-side dynamics are expected to support freight rates for small and mid-sized vessels in the medium term. However, the outlook for Capesize vessels remains bleak.

Fleet growth is expected to be low in the coming years

The current orderbook remains at an all-time low of 8% of the fleet, which will limit fleet growth in the coming years. The fleet is set to expand by 3.3% in 2023, primarily driven by the Capesize segment. Scheduled deliveries of Handymax and Panamax vessels in 2024 and 2025 will expand the fleet before scrapping by a further 3.2% and 2.5%, respectively. Upcoming hull surveys and scrubber retrofits may periodically offset fleet growth by a little over 1.0% in 2023 and 2024, and 2.0% in 2025.

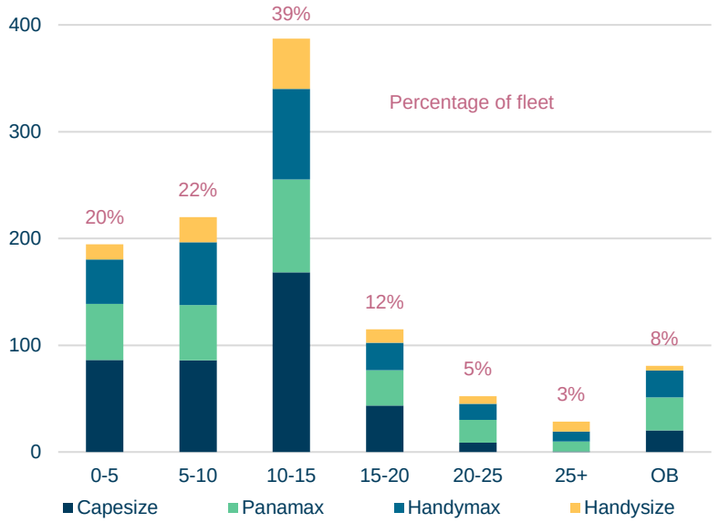
The EU ETS may reshuffle which vessels will call at EU ports

From January 2024, the EU ETS will gradually be extended to cover the shipping sector. This could incur significant costs for vessels trading to, from and between EU ports. As regulation is regional, we may see shipowners/operators shift younger vessels to EU trades and older vessels to other trades. In 2022, 334 individual Dry Bulk vessels older than 20 years either loaded or discharged in EU, of which many may be substituted. This may increase the inefficiency of the fleet and reduce active supply.

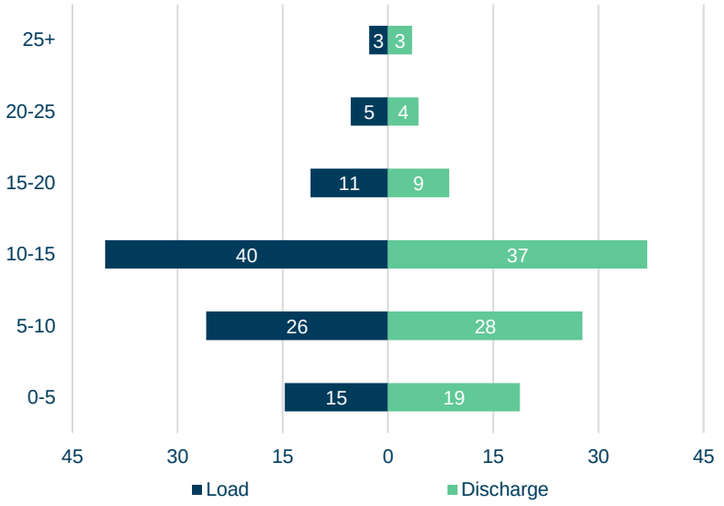
Chinese property sector may weigh on iron ore trade

As expected at the time of our last report, the Chinese property sector (accounting for almost half of global seaborne iron ore trade) has continued to weaken. Newly started real estate projects have decreased year-on-year by 25% and almost halved compared to 2019 levels. The property sector is expected to continue to deteriorate, lowering demand for iron ore. Government stimuli may periodically support demand in the short term. However, the medium- to long-term outlook is negative, as a declining population (estimated to shrink by 80 million people in the next 25 year), increasingly vacant housing stock, and a shift away from a capital-driven growth in China may limit investments in the real estate sector further. We expect global seaborne iron ore trade to decline by 0.7-1.0% annually up to 2025. The outlook becomes even bleaker after 2025. This may have a significant impact on Capesize vessels, as iron ore trade accounts for over 80% of their total demand.

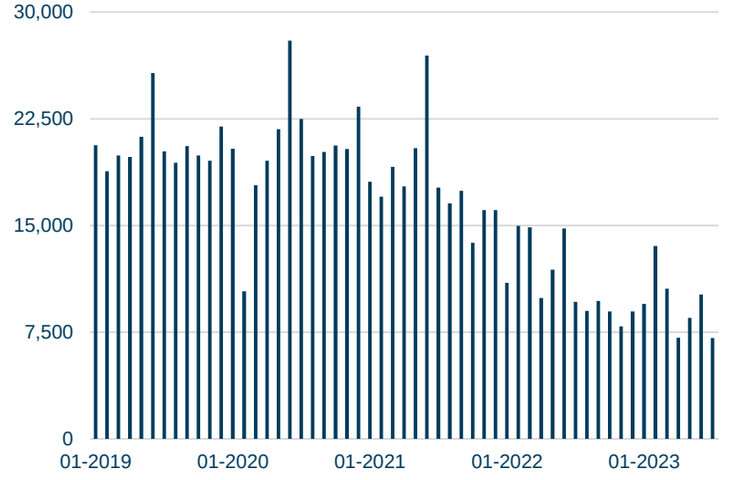
Age distribution of fleet (million dwt)



Shipments from EU ports by age interval, 2022 (% of total mt)



Monthly real estate project starts in China (10,000 sqm)



Source: Clarksons, AXSMarine, IMF, World Bank, S&P Global, National Bureau of Statistics of China, Danish Ship Finance

Dry Bulk outlook (2/2)

Some regional hubs could provide vast opportunities for small and mid-sized Dry Bulk vessels

Coal trade could provide some support for larger vessels

Global coal demand reached an all-time high in 2022. Demand is expected to remain high in 2023 and 2024, driven by the power generation sector in China and India (both countries account for 70% of global demand). Coal consumption in these two countries is projected to grow by around 2.5% annually until 2024, while domestic production will remain relatively flat. The additional demand will likely be supplied by seaborne imports from Indonesia (short-haul) and Australia (long-haul). However, less domestic coal demand in the US may encourage US producers to exports more, adding significantly to total tonne-mile growth. Global seaborne coal trade is currently projected to increase by around 3.0% annually during 2022-24. This will primarily benefit Panamax and smaller Capesize vessels, as they cover around 75% of the seaborne trade.

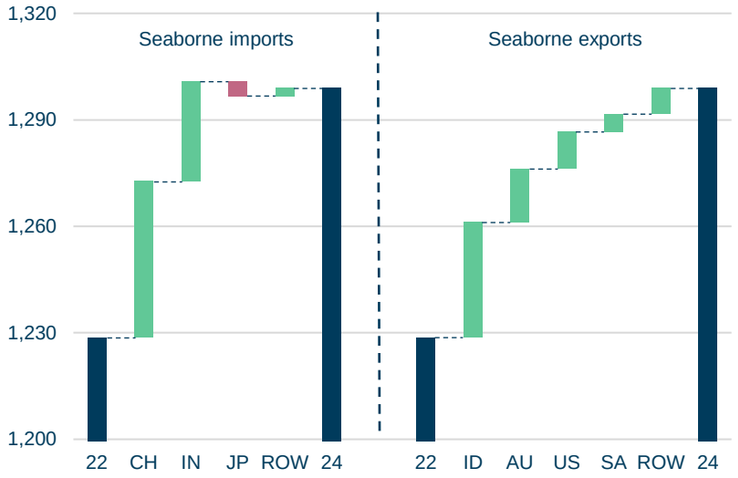
South America could be a vital player in the green transition…

Apart from being rich in iron ore and coal, South American countries enjoy large reserves of raw materials that are critical components in the green transition. Lithium, copper, nickel and graphite are all vital raw materials in the production of batteries, solar panels, turbines, etc. Estimates show that South America accounts for over 20% of known global reserves of these raw materials. In terms of production, however, they account for a mere 5.5%. Scaling production of these raw materials could represent vast potential for South American countries. The region may therefore experience a significant increase in seaborne exports of these raw materials in the medium term, benefiting Handysize and Handymax vessels, as the commodities are primarily carried by these vessels. However, larger vessels may also cascade down to these trades (see deep dive).

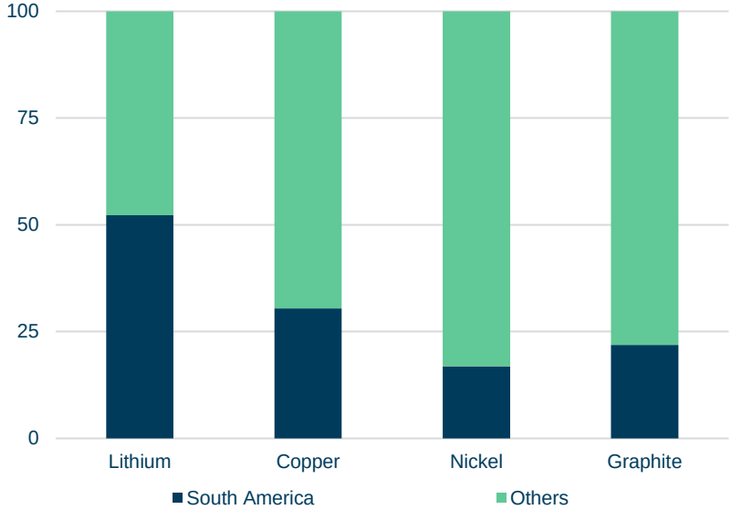
…and in the agricultural space

Grain exports from South America have skyrocketed in recent years, due to higher yields and cultivation of arable land. In particular, soybean production has grown in Brazil, with record amounts shipped to China. This trend is expected to continue, which will likely boost grain exports from the region. Current estimates show that grain exports from South America will be higher than those from other regions and grow by around 2.0% annually until 2025 – increasing demand for Handymax and Panamax vessels further.

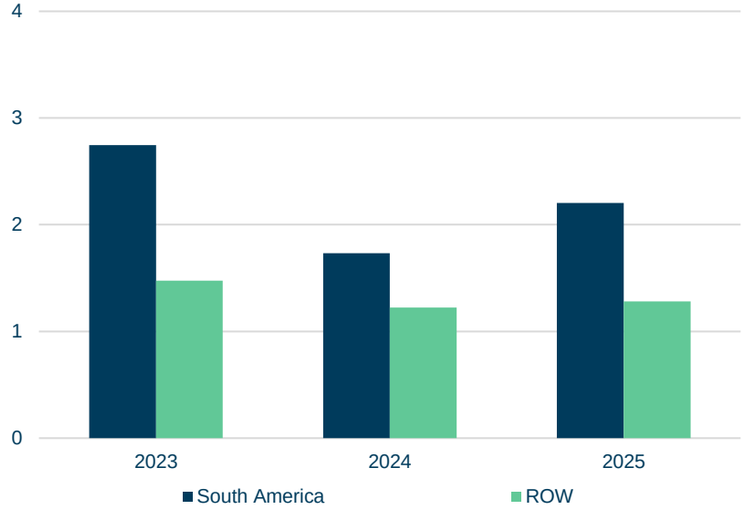
Growth in seaborne coal trade, 2022-2024 (million tonnes)



Selected critical mineral reserves (% of total)



Growth in grain production (%)



Source: Clarksons, AXSMarine, IMF, United States Geological Survey, OECD, Danish Ship Finance

Dry Bulk deep dive: Changing seasonality of Capesize demand?

Higher bauxite trade may provide more stable fleet utilisation for Capesize vessels throughout the year

Traditionally, fleet utilisation in the Capesize segment has weakened when the precipitation season starts in Brazil and Australia. However, a greater appetite for bauxite may change this in the future.

The green transition set to drive bauxite demand higher

Bauxite is a key component in the production of aluminium. The IEA projects a considerable increase in demand for aluminium in the coming decades, as the green transition will require greater use of the bulk material – for example, for lightweight vehicles and solar PV installations. In a net zero by 2050 scenario, the IEA projects a total increase in aluminium demand of 35% by 2050 from current levels.

10% of Capesize demand is covered by bauxite trades

World seaborne bauxite trade has increased by 8% annually in the past five years. The increase has primarily been driven by the Guinea-China route, which so far in 2023 has accounted for around 60% of the trade. Average parcel sizes have likewise increased, as bauxite has traditionally been carried by Handymax and Panamax vessels, but today around 70% is carried by Capesize vessels. Thus, bauxite has started accounting for a larger share of total Capesize demand, going from 5% in 2018 to 10% in 2023.

Capesize demand is highly sensitive to seasonality…

Demand for Capesize vessels is highly sensitive to weather seasonality. Iron ore trade from Brazil and Australia to China accounts for the lion's share of Capesize demand. Iron ore exports from Brazil and Australia are often interrupted during the precipitation season, which usually occurs from November to February. In the past five years, monthly iron ore exports from the two countries have fallen by around 21 million tonnes on average (corresponding to 120 Capesize vessels) from a seasonal high (June-August) to a seasonal low (January-February). This has also impacted average Capesize spot earnings, which have been 50% lower on average in February than in November during the past five years.

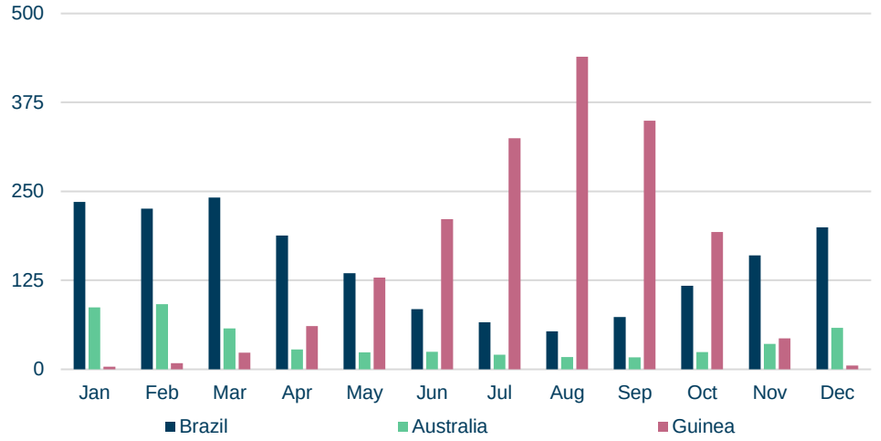
…but growing bauxite trade may lower this sensitivity

The precipitation season in Guinea usually occurs from June to October. Thus, bauxite exports have fallen by 30% on average from a seasonal high (December-January) to a seasonal low (July-August) in the past five years – the opposite of iron ore exports. Thus, when the precipitation season starts in Brazil and Australia, a growing number of Capesize vessels switch from iron ore to bauxite shipments. However, there has been no visible impact on freight rates from these trends yet, as the seasonal increase in bauxite exports is too low to compensate for the seasonal decline in iron ore shipments.

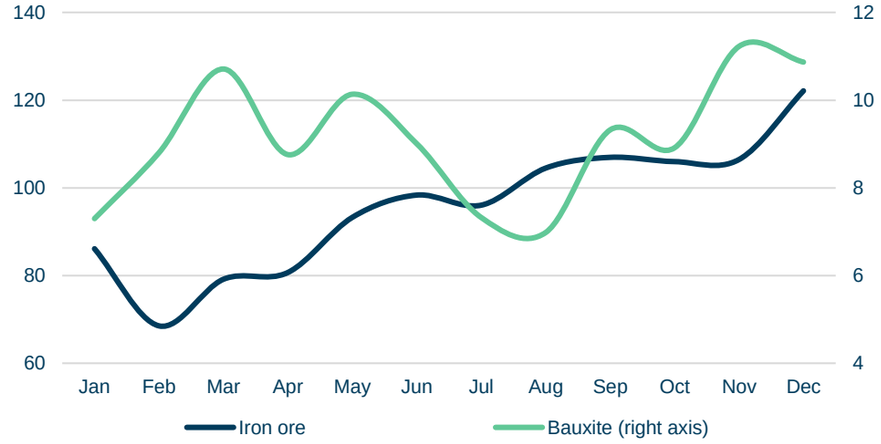
Bauxite may play an even greater role in the future

As mentioned, bauxite demand is expected to increase in the long term. Many countries have planned and permitted mining operations for their huge untapped bauxite reserves. Guinea produced around 86 million tonnes in 2022 (nearly all of which was shipped to China) while holding reserves of up to 7.4 billion tonnes. Likewise, Vietnam only produced 3.8 million tonnes of its 5.8 billion tonnes reserves. When these countries start expanding their production, we may see this trade tap more into the Capesize market and thereby stabilise the seasonal declines in freight rates. However, should exports from Guinea instead be substituted by countries like Vietnam, it could reduce overall tonne-miles.

Precipitation season in BRA, AUS and GUI (mm)



Seaborne bauxite and iron ore exports (million tonnes), 2022



Source: Clarksons, AXSMarine, IEA, United States Geological Survey, World Bank, Danish Ship Finance

Crude Tanker

Shipping Market Review – November 2023

Crude Tanker

The outlook for Crude Tankers remains positive

A favourable outlook for 2024 defines the Crude Tanker market across all subsegments. This optimism persists in spite of challenges such as oil supply cuts from OPEC+ nations, lower global economic growth and subdued forecasts for Chinese GDP growth. Specifically, fleets are set to expand by just 1% before scrapping next year, which compares to a projected 5% growth in distance-adjusted demand. VLCCs are in a favourable position: they stand to gain as the US and Brazil ramp up their long-haul export volumes to cover for limited Middle Eastern exports to China in 2024. Simultaneously, the Suezmax and Aframax Tankers' promising prospects could be tempered by shrinking oil price discounts and breaches of price caps on Russian crude oil.

Freight rates and secondhand prices

In 2023, both freight rates and secondhand prices for Crude Tankers have exhibited stability at elevated levels. To put this in perspective, the rates have been among the top 30% on average since the end of 2022, and prices have ranged within the highest 10-20% bracket. Newbuilding prices are also witnessing historical highs, a trend bolstered by the persistent demand for dual-fuel contracting. It is notable that these prices are predominantly being negotiated and settled with top-tier shipyards.

VLCC: After a steep increase during the second half of 2022, freight rates have stabilised at high levels in 2023. In the past six months, the one-year timecharter rate has decreased by 7% to USD 39,000 per day. Secondhand prices have also steadied. The price of a five-year-old VLCC has declined by 2%, down by USD 2 million to USD 98 million. This is still a 15-year high.

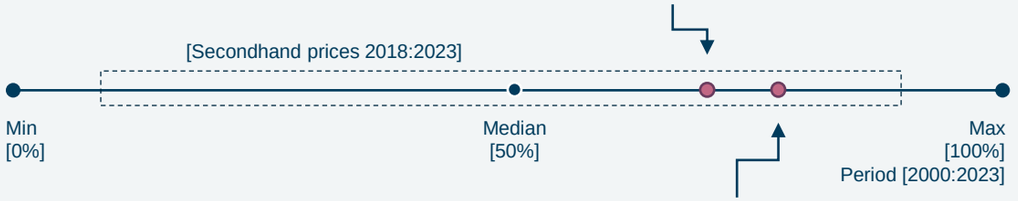
Suezmax: High fleet utilisation is keeping the one-year timecharter rate well above the ten-year average. The rate has been hovering around USD 40,000 per day since November 2022. Demand for Suezmax vessels is continuously high, as the Russia-Asia and US-Europe trades have solidified. The one-year timecharter rate has decreased by 7% in the last six months to USD 39,000 per day. The price of a five-year-old vessel has increased by 14% to USD 78 million. This is the highest level since 2008.

Aframax: Cuts in Russian seaborne crude oil exports have affected the main driver of distance-adjusted Aframax demand. Although still at historically high levels (in the highest 5%), the one-year timecharter rate has decreased by 22% in the last six months to USD 37,000 per day. In the same period, the price of a five-year-old Aframax has risen by 13% to USD 70.5 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023

Freight rates have decreased by 12% in the past six months, but they are still well above the median.



Secondhand prices are well above the median and have increased by 8% on average in the past six months.

Fleet utilisation has increased this year. In the first ten months of 2023, total seaborne crude oil volumes outpaced the levels recorded in the same period for the past six years. Volumes are expected to grow by 2% in 2023, while longer travel distances are projected to add another 4% to demand growth. The Crude Tanker fleet is set to expand by 2% in 2023, but this has already been partially offset by a 1% reduction in average speeds.

Delivery: 8.8 million dwt (2% of the fleet) was added to the fleet in the first ten months of 2023, compared to 20 million dwt in the same period in 2022. An additional 1.6 million dwt is expected to be delivered this year. In 2024, 3.5 million dwt is scheduled for delivery – an all-time low.

Scrapping: No Crude Tankers were demolished in the first ten months of 2023. This has never happened before.

Contracting activity amounted to 11.4 million dwt (3% of the fleet) in the first ten months of 2023, up from 2.5 million dwt in the same period in 2022.

Orderbook: 19 million dwt is currently on order, indicating a 39% increase (albeit from a low base) over the past six months. The orderbook represents 4% of the fleet.

Demand: Volumes have increased by 4% in 2023 compared to the first ten months of 2022, driven by higher volumes out of the US and Brazil. Seaborne trade volumes are currently 2% above 2019 levels.

Travel distances have solidified at higher levels as a result of more activity on the Russia-Asia and Brazil-China trades. This continues to soak up Crude Tanker availability.

Market dynamics in the last six months

The Crude Tanker market is high, despite a recent softening

Rates and prices remain high, but seaborne volumes from Saudi Arabia and Russia have softened. Meanwhile, shipowners have ordered new vessels, but have been less active in the S&P market.

Saudi Arabia and Russia have curbed seaborne crude exports

In an effort to bolster oil prices, Saudi Arabia and Russia have announced additional oil supply cuts of a combined 1.3 mbpd until the end of 2023. The effects are already evident, with crude prices periodically reaching over USD 90 per barrel and seaborne volumes declining. Seaborne crude exports from both Saudi Arabia and Russia have dropped by 12% over the last six months. In August, Russian exports were at the lowest level in one year, while Saudi Arabia's seaborne crude reached the lowest level since early 2021.

Spot earnings have softened, but they are still high

In 2023, one out of three VLCCs has been loaded in Saudi Arabia, while one out of five Suezmax and Aframax Tankers has been loaded in Russia. As a result of less available volumes in Saudi Arabia and Russia, average spot earnings have dropped across all subsegments over the last six months. Although average earnings have experienced softening, they remain well above the ten-year average due to continuously longer travel distances and limited fleet expansion.

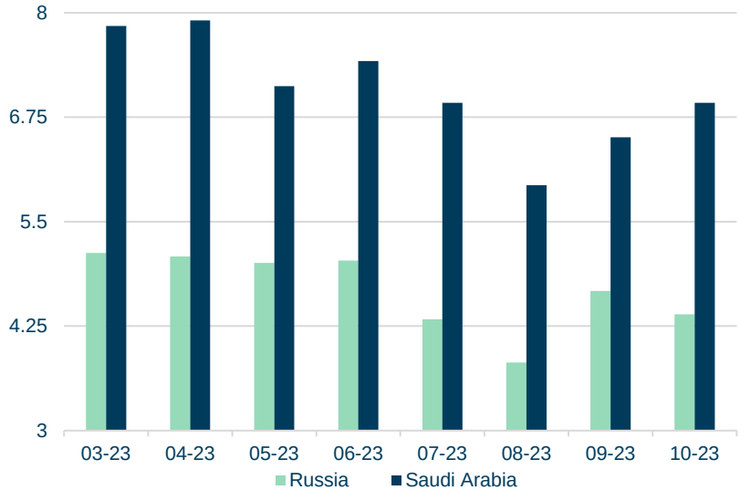
Increased contracting – especially for Suezmax vessels

Despite continuously limited availability at top-tier yards and high newbuilding prices, contracting has picked up in the last few months. After a halt lasting several months, 17 newbuild orders for VLCCs have been placed this year as of October. Meanwhile, contracting activity for Suezmax Tankers spiked to an eight-year high in Q2 2023. Of the 44 Suezmaxes contracted in 2023, 16 vessels (42%) will be LNG-capable. The current Suezmax orderbook represents 9% of the fleet, up from 3% at the start of 2023.

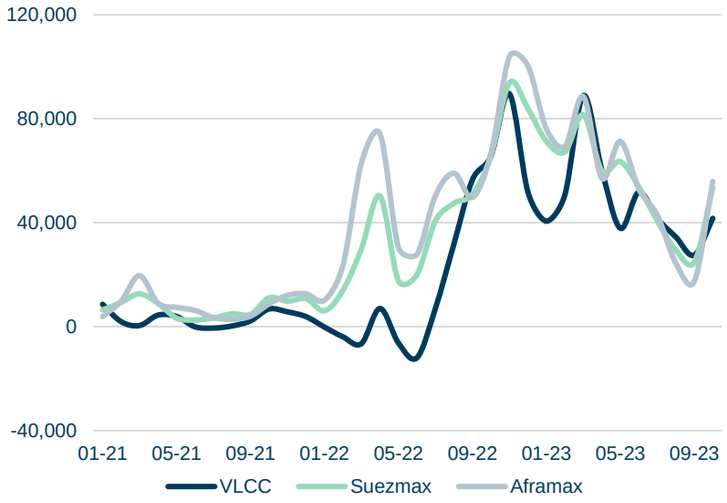
Owners have been less active in the S&P market

Crude Tankers with a combined market value of USD 10 billion changed hands in 2022, 80% higher than the 2017-21 average. Prices are still high, but fewer Crude Tankers have been transacted in the secondhand market during the last six months. Older vessels remain the main driver of transactions.

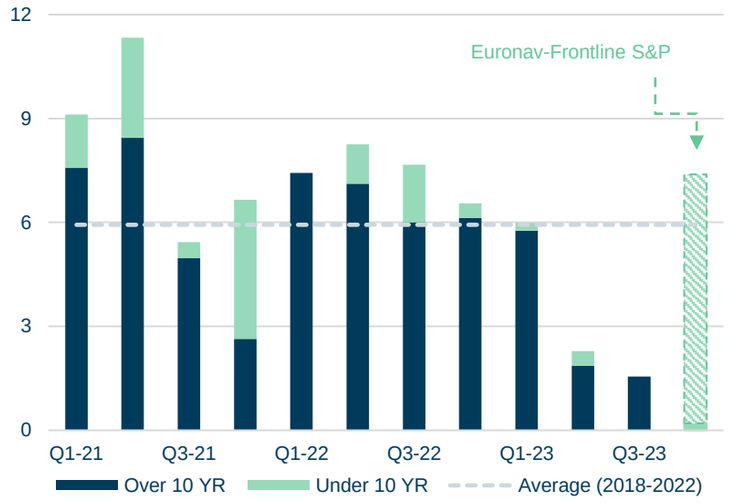
Russian and Saudi Arabian seaborne crude oil exports (mbpd)



Average spot earnings by subsegment (USD/day)



Crude Tanker sales by age group (million dwt)



Source: Clarksons, Vortexa, Bloomberg, Reuters, Alphatanker, Danish Ship Finance

Crude Tanker outlook

Continuously higher fleet utilisation is behind the positive outlook for 2024

Firm distance-adjusted demand coupled with very limited fleet growth makes for a positive market outlook for Crude Tankers in 2024. Fleet utilisation is expected to reach new highs, while uncertainty persists around the effects of oil price cap breaches and oil supply cuts in Saudi Arabia and Russia.

Global oil supply and demand is expected to level out by the second half of 2024

Global oil demand remains on track to grow by 2% in 2023. In 2024, world oil demand is projected to grow by a more modest 1%, reflecting subpar GDP growth and a structural decline in the use of road transport fuel in key markets such as the US and OECD Europe. Global oil supply is expected to outpace demand in the first half of 2024, and then to level out in the second half. Non-OPEC+ countries like the US and Brazil will lead the increase, while OPEC+ supply – especially in Saudi Arabia and Russia – is contingent on voluntary production cuts throughout 2024.

Lower discounts on Russian crude may dampen demand for Suezmax and Aframax Tankers

Even with lower seaborne exports of Russian crude oil, Russian oil export revenues have surged to their highest levels since October 2022 after oil prices breached the price cap set by the EU and G7 countries. China and India remain the largest buyers, sourcing 16% of their total seaborne crude oil imports from Russia, which has boosted distance-adjusted demand for Suezmax and Aframax Tankers. As discounts on Russian crude oil relative to global benchmarks shrink, China and India may increasingly look for alternative sources to cover growing domestic oil demand in 2024. Should this be the case, a rerouting of Russian exports will support demand for Aframax and Suezmax Tankers to a lesser extent in 2024 than in 2022-23. Demand growth for Suezmax and Aframax Tankers is predicted to slow to 4% and 3% in 2024 (8% in 2023).

VLCC demand is expected to increase by 6% in 2024

Saudi Arabia has announced additional oil production cuts of 1 mbpd. These cuts are said to expire by the end of 2023, but even then, Saudi Arabia and other OPEC members still have voluntary oil production restrictions in place for 2024. Assuming these restrictions are upheld, OPEC members in the Middle East (Saudi, Kuwait, UAE, Iraq and Iran) may only add a combined 300,000 barrels per day to seaborne exports in 2024. Most of the seaborne barrels from these countries are shipped on VLCCs and currently cover 40% of China's seaborne crude imports. Next year, China may increasingly rely on other sources to fully cover its expected 600,000 barrels per day oil demand increase. If China source more barrels on long-haul routes from Brazil and the US, VLCC fleet utilisation will strengthen (see deep dive). VLCC demand is could grow by 6% in 2024, while the fleet is expected to expand by just one vessel.

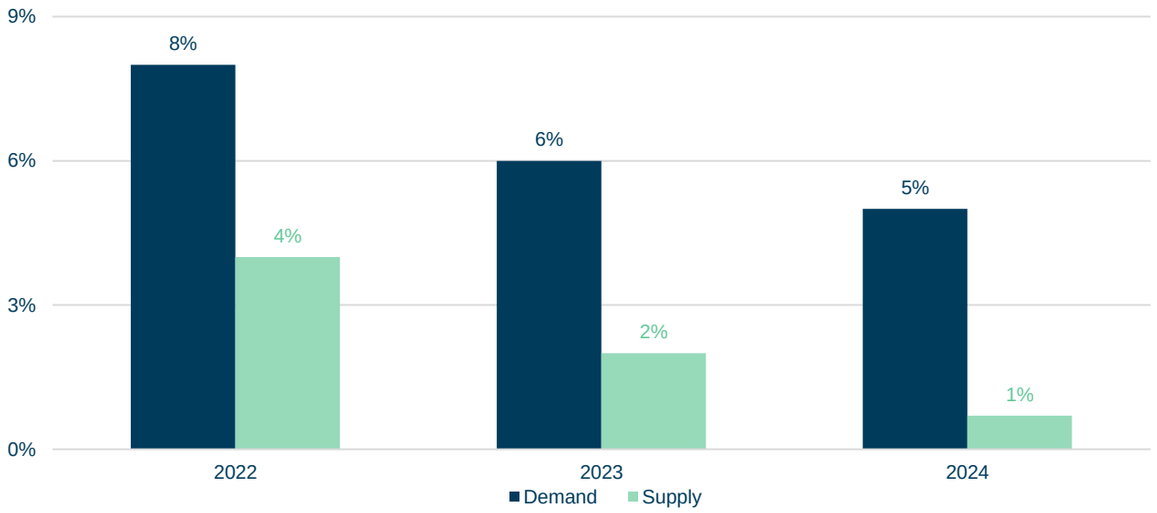
Price cap breaches may lower the cargo-carrying capacity of Aframax and Suezmax Tankers

Sanctions have barred Russian crude from being discharged at EU and G7 ports. However, third countries can circumvent the sanctions if the Russian crude oil is purchased at or below the price cap. If the current price cap breach persists, more Aframax and Suezmax Tankers may transport Russian crude isolated from the international insurance market. An increase in the so-called "shadow fleet" would generally lower the cargo-carrying capacity of the remaining Aframax and Suezmax fleets.

Crude Tankers are likely to continue to prosper

If the global economy escapes a deep recession, and Chinese GDP is not significantly challenged, the outlook for Crude Tankers in 2024 is bright. Distance-adjusted Crude Tanker demand is expected to grow by 5% in 2024, as seaborne volumes are predicted to increase by 4%, with longer distances adding another 1%. In contrast, expected fleet growth is almost non-existent at 0.5-1%. Crude Tanker fleet utilisation is expected to reach new highs in 2024, above the already firm levels of both 2022 and 2023.

Annual (expected) change in Crude Tanker supply and demand (dwt and tonne-miles)



Source: IEA, EIA, Clarksons, Reuters, Alphatanker, European Council, Danish Ship Finance

Crude Tanker deep dive: More long-haul voyages to China?

Increased Brazilian and US seaborne crude oil exports to China may bolster fleet utilisation of VLCCs in 2024

In 2023, VLCC fleet utilisation has been strengthened by increased long-haul US and Brazilian crude exports bound for China. This trend could continue in 2024, as Chinese crude oil suppliers in the Middle East are being limited by voluntary production cuts, while Brazil and the US may have barrels to spare.

Brazil and the US are expected to drive global oil supply in 2024…

Record oil production in the US and Brazil have supported global oil supply growth this year. In 2024, the IEA projects that Brazil and the US will continue to drive oil supply, potentially accounting for 40% of global oil supply growth next year. Meanwhile, oil supply from OPEC members in the Middle East (except Iran) is expected to be limited by voluntary production restrictions in 2024.

…with their seaborne crude oil exports transported on long-haul VLCC voyages

25% of seaborne crude oil loaded from OPEC members in the Middle East is carried on short-haul voyages to China, with average voyage times of around 20 days. Meanwhile, most Brazilian or US seaborne barrels in 2023 have been carried on transatlantic long-haul voyages to ports in Europe and Asia – China in particular, with an average time spent at sea of 42 days from Brazil and 52 days from the US. China imports 10-15% of US seaborne barrels and has been the top destination for Brazilian seaborne crude since 2016. VLCCs transport almost all volumes on these voyages, with cargo owners seeking the economies of scale offered by these vessels. 15% of VLCC volumes discharged in China currently originate from Brazil or the US, up from 8% on average in 2017-22. The US-China and Brazil-China trades have been the main contributors to growth in distance-adjusted demand for VLCCs in 2023.

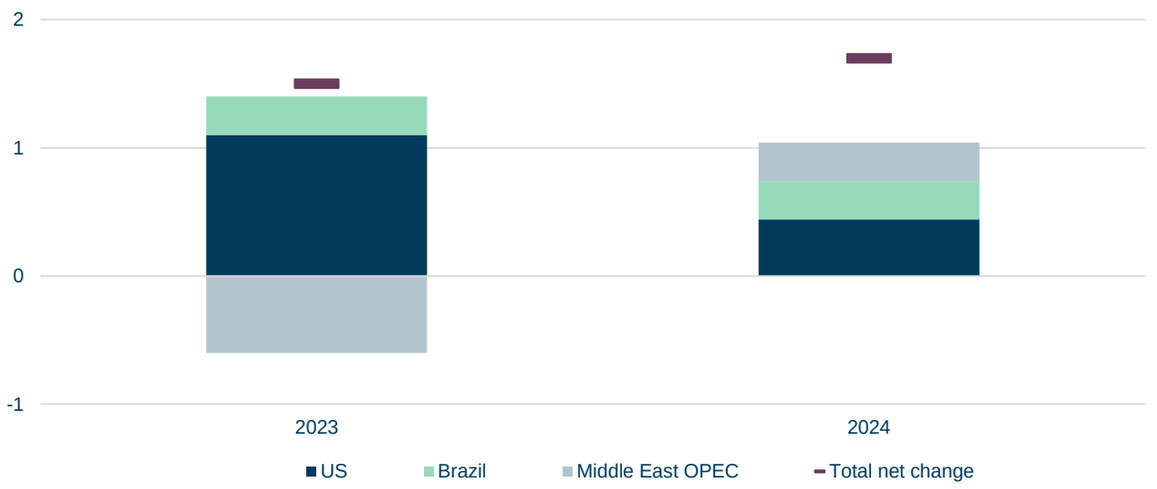
More long-haul voyages to China may continue to support the VLCC market in 2024

Brazil's oil supply growth is projected to expand ahead of domestic oil demand growth in 2024, potentially leaving an additional 250,000 barrels per day up for export. A similar imbalance could add 500,000 barrels per day to US seaborne crude exports next year. Meanwhile, the IEA expects China's oil demand to increase by 600,000 barrels per day above domestic oil production growth, assuming that Chinese GDP is not significantly challenged by the domestic property sector. China is currently importing larger volumes of discounted Russian crude oil, and most Chinese refineries – both new and old – are designed to process Middle Eastern crudes (which is similar to Russian crudes). However, discounts on Russian crude oil are declining and Middle Eastern suppliers in OPEC may only add a combined 300,000 barrels per day to seaborne exports in 2024. As such, China may increasingly source from other producers. Strong financial and geopolitical ties between China and Brazil may put Latin America's largest exporter of seaborne crude oil first in line. China may also source more crude from the US. If excess Brazilian barrels up for export are shipped to China, this will require 2% of the VLCC fleet. Alternatively, should the crude oil be shipped from the US, this could absorb 4% of the VLCC fleet. In either case, inefficiencies in trade flows will increase, bolstering VLCC fleet utilisation as available capacity decreases.

Compliance with environmental regulations may provide further support

96% of the VLCCs carrying Brazilian or US crude oil to China in 2023 have been propelled by conventional fuels, while 30% of these vessels have been over ten years old. Brazil-China and US-China are long routes, burning significant amounts of fuel and adding to absolute GHG emissions. Older VLCCs may have to slow steam to align with emission targets, while modern and more efficient VLCCs will increase their speeds in a firm market. Baseline CO_2 emissions decline by around 24% when ships lower their speeds by 20%. A 20% speed reduction on the Brazil-China and US-China routes would increase time spent at sea to 50+ days, further supporting increased VLCC fleet utilisation.

Annual change in oil production by selected countries (million barrels per day)



Source: IEA, EIA, Alphatanker, Clarksons, S&P Global, Reuters, Aramco, Bloomberg, Danish Ship Finance

Product Tanker

Shipping Market Review – November 2023

Product Tanker

The outlook for Product Tankers remains positive

A favourable outlook for 2024 defines the Product Tanker market across all subsegments. This optimism persists in spite of challenges such as lower global economic growth and subdued forecasts for Chinese GDP growth. Specifically, fleets are set to expand by just 2% before scrapping next year, which compares to a projected 6% growth in distance-adjusted demand. Firm Product Tanker fleet utilisation could lend further support when the EU ETS is implemented in 2024. Meanwhile, demand for MR Tankers could be supported if the reliance on conventional road fuel in key car markets such as the US and OECD Europe proves resilient. Contracting has witnessed a notable surge this year, marked by a firm interest in IMO II-classed MR Tankers and a low appetite for dual-fuel capable/ready vessels.

Freight rates and secondhand prices

Freight rates, though still close to historical peaks, have seen a 16% softening over the past six months. Meanwhile, secondhand prices have surged to levels not seen in 15 years, indicating firm market expectations in the face of recent freight rate easing. Newbuilding prices are ranging within the top 10%, a trend bolstered by the increased demand for new MRs and LR2s. It is notable that these prices are mainly being negotiated and settled between top-tier shipyards in China.

LR2: High fleet utilisation – mainly driven by the Russia-Asia trade and more long-haul voyages from the Middle East to EU ports – is keeping the one-year timecharter rate within the highest 10% bracket, although the rate has softened by 17% to USD 38,500 per day in the last six months. The price of a five-year-old LR2 Tanker is up by 7%, to USD 72.5 million. As of October 2023, this was higher than the average newbuilding price.

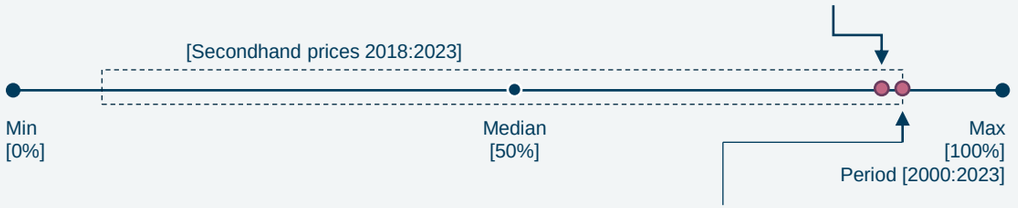
LR1: Slightly lower seaborne volumes have been outweighed by longer average travel distances. Middle Eastern and Asian imports of refined products from Russia have been the main driver of growth in distance-adjusted demand. The one-year timecharter rate is within the top 10% but has softened in the last couple of months. Over the past six months, the one-year timecharter rate has declined by 14% to USD 30,500 per day. Meanwhile, the price of a five-year-old vessel has risen by 9%, reaching USD 51 million.

MR: Increased long-haul trade activity in the Atlantic Basin (e.g. Russia-Brazil and US-EU) and increased Russia-Africa trade (mainly to Northern and Western Africa) have continued to support high freight rates. In the last six months, the one-year timecharter rate has dropped 14% to USD 26,000 per day. The price of a five-year-old vessel is up by 5%, to USD 43.5 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023

Freight rates have decreased by 16% in the past six months but are still not far from all-time highs.



Having increased by 7% in the last six months, **secondhand prices** are currently at 15-year highs.

In the first ten months of 2023, total seaborne demand for refined oil products outpaced the levels recorded in the same period for the past six years. Volumes are expected to increase by 4% this year, while longer travel distances are projected to add another 3% to demand growth. The Product Tanker fleet is set to expand by 2.5% in 2023, although this has already been partially offset by longer times spent on ballast voyages. Average vessel speeds have, so far, only slowed slightly. Fleet utilisation has strengthened during 2023.

Delivery: 3.6 million dwt (2% of the fleet) was added to the fleet in the first ten months of 2023, compared to 4.3 million dwt in the same period in 2022. 3.5 million dwt is scheduled to be delivered next year – a 20-year low.

Scrapping has slowed significantly in 2023, with only five MR Tankers demolished in the first ten months of 2023.

Contracting activity amounted to 11.4 million dwt (6% of the fleet) in the first ten months of 2023, up from 4.1 million dwt in the same period in 2022. This is a ten-year high.

Orderbook: 18 million dwt is currently on order, marking a 43% increase in the past six months. The orderbook corresponds to 10% of the fleet.

Demand: Volumes have increased by 2% in 2023 compared to the first ten months of 2022, driven by higher volumes out of the Middle East. Seaborne trade volumes are currently 4% above 2019 levels.

Travel distances have solidified at higher levels, mainly due to increased activity in long-haul exports from Russia to ports in China, India and Brazil. Distance-adjusted demand has, so far, grown by 6% in 2023.

Market dynamics in the last six months

The Product Tanker market is continuously benefiting from more long-haul voyages

Seaborne exports of refined products from OPEC member countries in the Middle East have held up well, despite the constraints on crude oil production. Simultaneously, Russian volumes have sustained their flow, with an increasing trend towards extended voyages to non-EU destinations, such as Brazil.

Middle East OPEC's seaborne CPP exports have held up well

While curtailing seaborne crude supplies, Middle Eastern OPEC members (except Iran) have increasingly been exporting seaborne clean petroleum products (CPP). Total seaborne CPP exports from these nations have exceeded the highest seasonal volumes recorded during 2017-2022. This has mainly been driven by long-haul voyages to EU countries, supporting demand for LR Tankers.

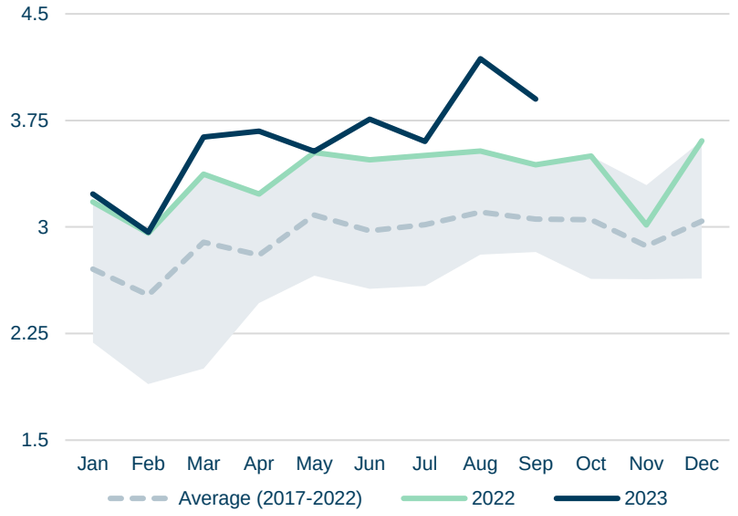
Long-haul Russian barrels replace short-haul US oil in Brazil

Since sanctions were put in place, longer-distance Russian seaborne trades have significantly outweighed a minor dip in Russian seaborne CPP exports. Russia remains a prominent seaborne exporter of refined oil products, accounting for around 11% of total Product Tanker loadings in the past six months (versus 13% in 2022). Refined cargoes from Russia are increasingly finding markets in Asia, Africa and the Middle East. Russia has also ramped up its seaborne oil product exports to Latin America, notably Brazil. In 2022, Russian products represented 5% of Brazilian seaborne CPP imports. Over the last six months, this has surged to roughly 40%. Meanwhile, the US's portion of Brazil's seaborne CPP imports dwindled from 50% in Q3 2022 to 20% in Q3 2023. MR Tankers have replaced LR2 Tankers in carrying almost all seaborne oil products from Russia to Brazil this year.

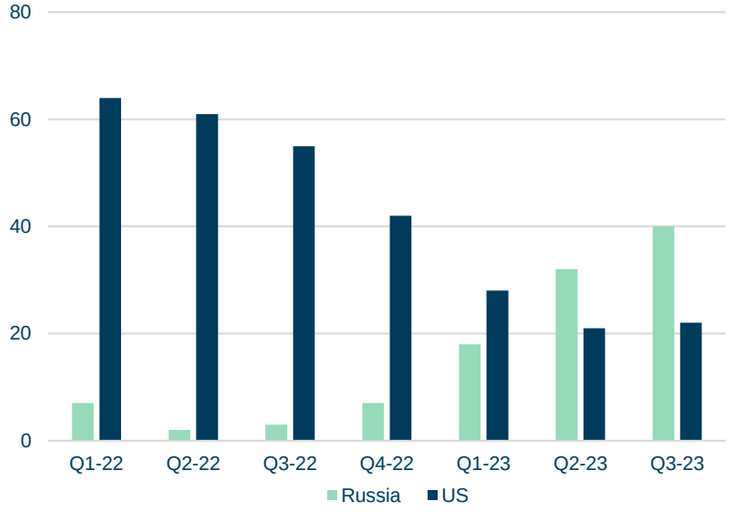
Product Tanker contracting has reached a ten-year high

As of April 2023, contracting had already surpassed the total annual amount of newbuilding contracts in each of the preceding five years. Over the last six months, contracting has increased to its highest point in a decade, driven by multi-year highs in newbuild orders for both MR and LR2 Tankers. Among the vessels currently ordered in 2023, only 5% will have dual-fuel readiness/capability, while 50% of MR Tankers will be classified under IMO II (see deep dive).

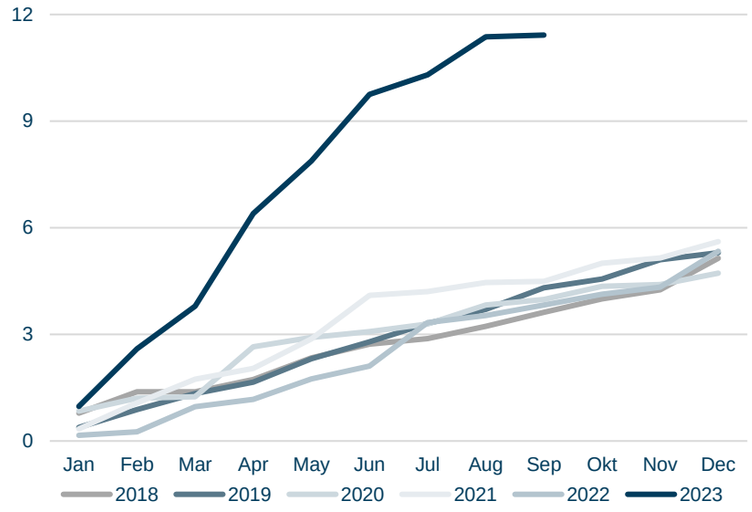
Seaborne CPP exports from Middle East OPEC nations (mbpd)



Share of Brazilian seaborne CPP imports by load country (%)



Accumulated Product Tanker contracting (million dwt)



Source: Clarksons, Alphatanker, S&P Global, Danish Ship Finance

Product Tanker outlook (1/2)

Firm replacement potential, the implications of the EU ETS and low inventories in Europe shape the outlook for 2024

Distance-adjusted Product Tanker demand is expected to grow by 6% in 2024, as seaborne volumes are predicted to increase by 3%, with longer distances adding another 3%. Coupled with expected fleet growth of just 2%, this bodes well for Product Tankers in 2024.

The fleet is expected to grow by 2% in 2024 and 5% in 2025…

The Product Tanker orderbook has increased from an all-time low of 5% at the beginning of 2023, and currently corresponds to 10% of the fleet. Expected fleet growth remains limited in 2024 at 2%, with scheduled deliveries of both MR and LR2 Tankers. The fleet is set for a higher rate of expansion of 4.8% in 2025, mainly driven by the LR2 segment, alongside a limited number of expected LR1 deliveries – the first since 2021.

…and the risk of surplus capacity is limited

Upcoming hull surveys and scrubber retrofits may periodically offset fleet growth by around 2% in 2024 and 2025. Meanwhile, very low scrapping activity for the last 18 months means that almost 20% of the Product Tanker fleet will be older than 20 years by 2025, assuming no further vessels are contracted or demolished.

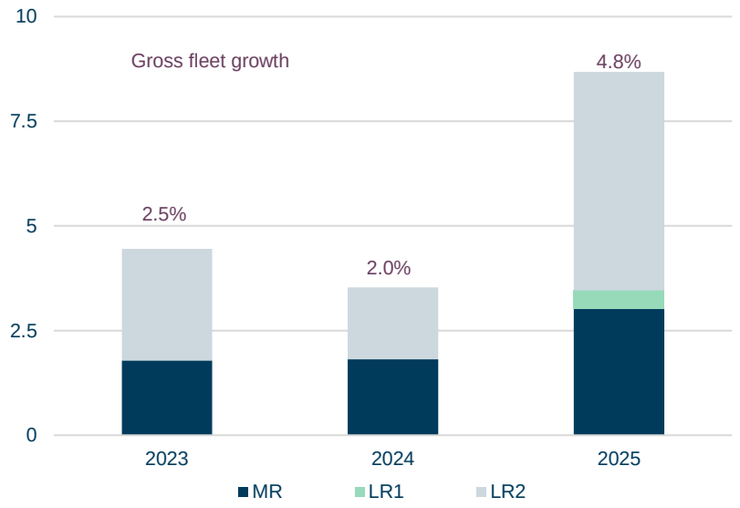
The EU ETS could increase the inefficiency of the fleet

As mentioned in the Dry Bulk chapter, the EU ETS will gradually be extended to cover the shipping sector from January 2024. This could incur significant costs for vessels trading to, from and between EU ports. In the first nine months of 2023, Product Tankers carried 25% of their total volumes on these trades, with 99% of the vessels propelled by conventional marine fuels. As regulation is regional, shipowners/operators could shift younger vessels to EU trades and older vessels, for which compliance is more expensive, to other trades. In the event of continued robust earnings, the redirection of vessels outside EU trades may primarily target those older than 20 years. This may increase the fleet's inefficiency and reduce available capacity. But the effect may be larger if a broader range of older vessels is affected. In 2023, 426 individual Product Tankers (10% of the fleet) older than 15 years either loaded or discharged in the EU.

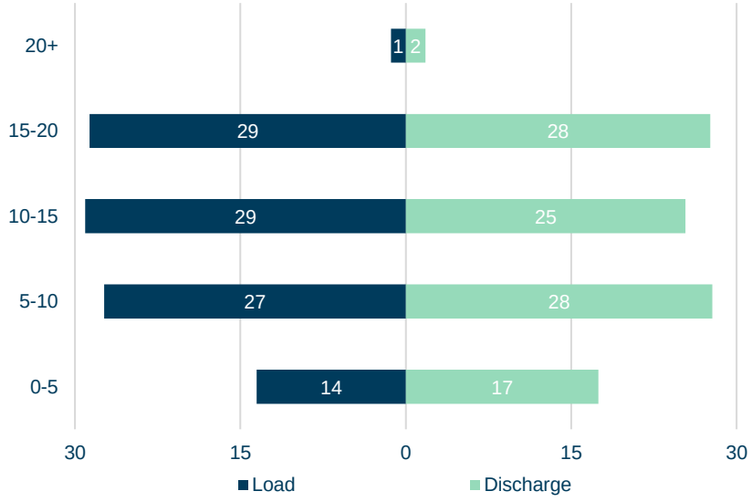
Long-haul flow from Middle East to OECD Europe may continue

Sanctioned crude and product supplies from Russia have made it a challenge for European fuel suppliers to… *(continued on next page)*

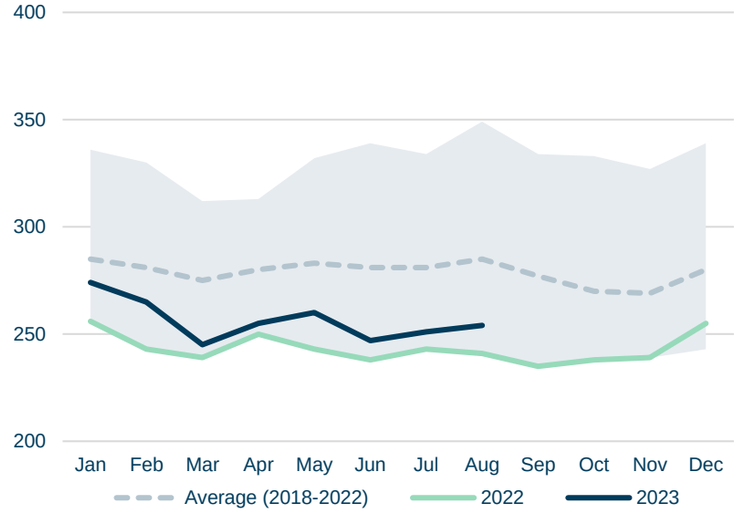
Expected fleet development by subsegment (million dwt)



EU shipments by age interval, Jan-Sep 2023 (% of total barrels)



OECD Europe middle distillate inventories (million barrels)



Source: IEA, Alphatanker, Clarksons, S&P Global, Reuters. ShipEnergy, Danish Ship Finance

Product Tanker outlook (2/2)

Mixed signals on conventional road fuel demand in 2024, potentially supporting demand for MR Tankers

…maintain their inventories. OECD Europe's stocks of middle distillates (of which diesel is the largest product) is almost at a five-year seasonal low. A shortage of refinery capacity may force the region to increase its imports to meet domestic demand. OECD Europe has increasingly replaced short-haul MR flows from Russia with long-haul LR shipments from the Middle East. If this trend continues, it may further support distance-adjusted demand for LRs.

Electric vehicle (EV) markets continue their exponential growth

The IEA expects global electric car sales to reach a new high this year of 14 million units, supported by a broad recovery in total auto sales. If this projection holds, 18% of all new cars sold in 2023 may be electric. The ongoing electrification of the car industry is affecting demand for conventional road fuels such as gasoline and diesel negatively – notably in key markets like the US and OECD Europe.

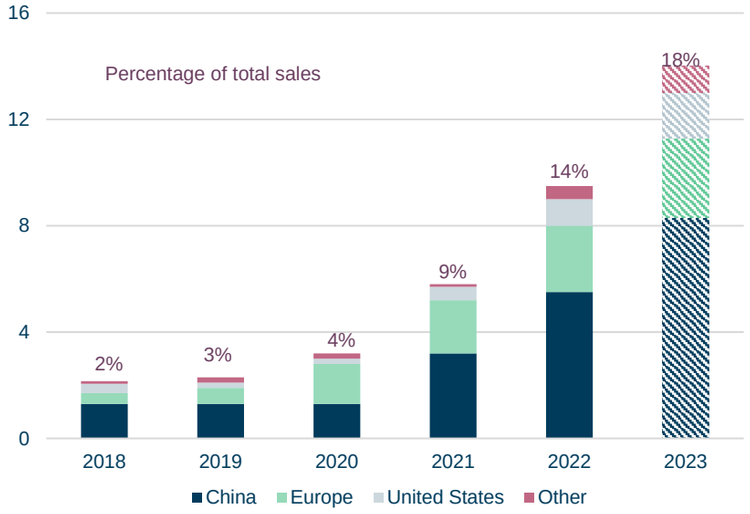
Road fossil fuel demand in key markets may decrease in 2024…

The EIA recently reported a multi-decade seasonal low (excluding 2020) for US gasoline demand. Meanwhile, demand for diesel/gasoil in OECD Europe has yet to return to pre-pandemic levels. Diesel demand dropped by 0.2 million barrels per day (down 4%) during the peak travel season of 2023 (June-August), in comparison to the corresponding period last year. In 2024, conventional road fuel demand in both markets is expected to decrease. This trend will be fuelled by subdued GDP growth, rising EV penetration, energy efficiency, and the post-pandemic shift towards hybrid workplaces.

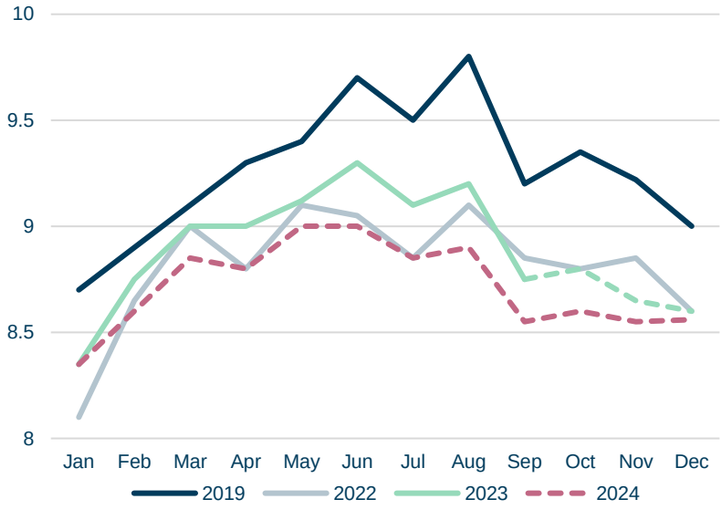
…but there may still be high reliance on conventional road fuel

The IEA estimates that road transport now accounts for around 45% of global oil demand. This is underscored by the 600-million-unit expansion in the global car fleet and 65% increase in road freight activity over the past two decades. In Europe, more than 90% of vehicles rely solely on conventional road fuels. In the US, carmakers have increasingly been producing heavier, less fuel-efficient trucks (including pickups, SUVs, etc.) to meet domestic consumer preferences. Resilient gasoline and diesel demand in the US and OECD Europe next year will likely support demand for MR Tankers the most. These vessels cover approximately 60% of the seaborne imports of refined products in the US and OECD Europe.

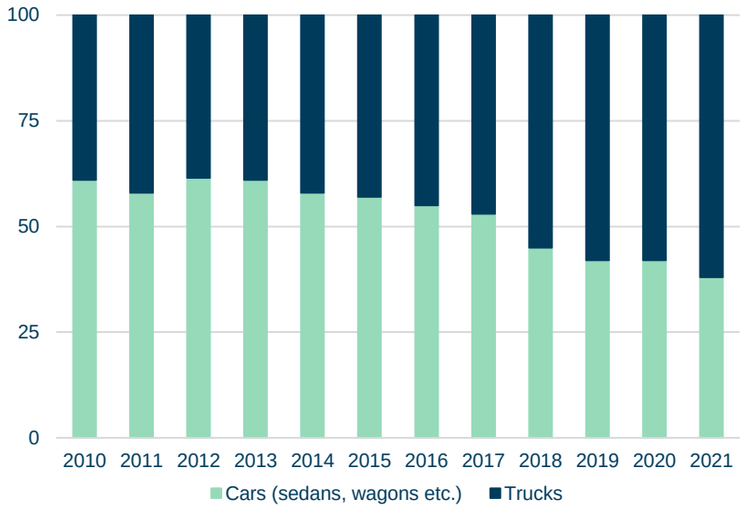
Electric car sales by country/region (million units)



US gasoline demand (million barrels per day)



Share of total US car production for domestic sale by type (%)



Source: IEA, EIA, Alphatanker, Clarksons, S&P Global, Reuters. US BLS, IMF, The Washington Post, ACEA, Danish Ship Finance

Product Tanker deep dive: Preparing for the long term?

Shipowners have been ordering IMO II-classed MR Tankers, which may enable them to adapt to changing seaborne demand patterns

While uncertainty persists around which alternative fuel(s) will propel the future shipping fleets, there appears to be broader consensus on the shift towards greener road transport. This may explain why shipowners have ordered few dual-fuel MR Tankers, and more IMO II-classed MRs.

Road fuel demand is expected to slow in the long term

One critical initiative aimed at achieving carbon neutrality in the global economy involves transitioning away from fossil fuels in the transportation sector – road transport, in particular. The transition may not be linear across regions, but the general long-term outlook favours the gradual phasing-out of conventional road fuels. The EU plans to ban new petrol and diesel car sales from 2035, and leading car brands have pledged to go fully electric by the end of this decade. Other pivotal car markets such as the US and China have declared their aims to attain carbon neutrality by 2050 and 2060, respectively. DNV projects that road transport will lead the way in reducing reliance on fossil fuels and estimates that demand will have halved by 2050, compared to 2023 levels. Meanwhile, the IEA expects that road transport will no longer be a source of oil demand growth by the end of this decade.

Shipowners have been ordering IMO II-classed MRs…

Swing capacity between Chemical and Product Tankers is an established market dynamic. The global phase-out of conventional road fuels is likely to increase Product Tanker shipowners' appetite for IMO II-classified vessels. Approximately half of the MR Tankers contracted in recent years are IMO II-classified.

…and have been less willing to order dual-fuel vessels

The strong market outlook, combined with a growing fleet of retirement candidates, increased MR contracting to 11.4 million dwt (compared to 4 million dwt in 2022) during the first ten months of 2023. Around 85% of the MR Tankers contracted in 2023 are conventionally fuelled. Only a handful of owners are transitioning their fleets towards alternative fuels. The tramp nature of Product Tanker trades may explain why alternative fuels seem to have been less attractive.

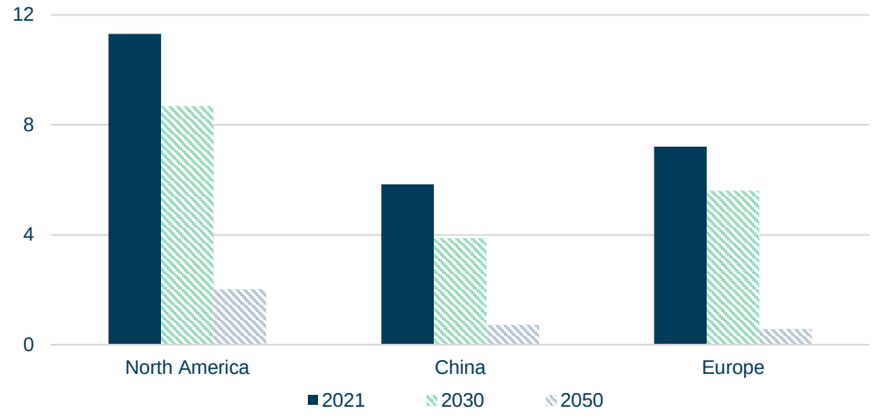
Dual-fuel investments could still serve as a hedge

Investments in dual-fuel capabilities, widely used or not, also serve as a hedge against rising biofuel prices in the age of the FuelEU Maritime regulation. Time will tell if the additional investments in dual-fuel capabilities turn out to yield a return.

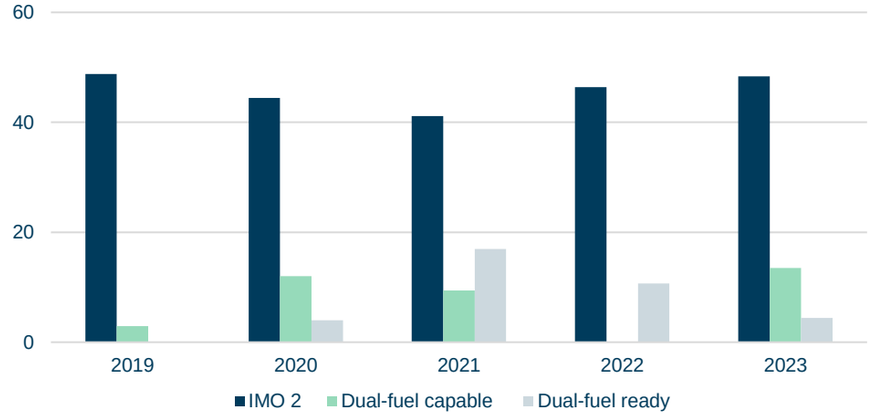
IMO II MRs may transport the marine fuel(s) of tomorrow

Both methanol and ammonia are under consideration as possible candidates for alternative marine fuel usage. Transportation of these fuels may serve as an additional demand driver in the years to come. While ammonia may mainly be transported on LPG Carriers or specialised Ammonia Carriers, increased seaborne methanol demand could be covered by Chemical Tankers or IMO II-III-classed MR Tankers. If more IMO II-classed MR Tankers occasionally swing into the Chemical Tanker market, the cargo-carrying capacity of the MR fleet may periodically decrease. This could support Product Tanker fleet utilisation, even when seaborne demand for conventional road fuel declines.

Oil demand estimates for road transport in selected regions (mbpd)



MR Tanker contracting by ship specification (% of total dwt)



Source: DNV, Alphatanker, Clarksons, Lloyd's Register, Rystad, EMSA, Danish Ship Finance

LPG Carriers

Shipping Market Review – November 2023

LPG Carriers

A high but volatile market

The LPG market has witnessed unprecedented earnings in 2023. A surge in long-haul trade, combined with numerous VLGC dry-dockings, pushed spot rates to nearly USD 160,000 per day in September 2023. However, spot rates have since fallen back to USD 80,000 per day, highlighting the market's inherent volatility. In the short term, the petrochemical sector is expected to drive demand, which may absorb the high inflow of VLGCs. However, demand growth will likely soften in the medium to long term, due to weakening margins in the petrochemical sector and subdued demand from the residential sector. Consequently, overcapacity in the LPG market seems inevitable in the coming years. This could potentially depress timecharter rates, necessitating an increase in scrapping of older vessels.

Freight rates and secondhand prices

Average LPG earnings have surged to record-high levels seen since 2007, fuelled by strong earnings in the VLGC segment. Trends in average secondhand prices have been mixed: larger vessels have seen an uptick in prices, while secondhand prices of smaller vessels have remained fairly stable. Ongoing contracting for dual-fuel vessels has kept newbuilding prices within the top 20% observed since 2004.

VLGC: Freight rates have increased to record highs, as stronger LPG trade between the US and China has boosted total tonne-miles. Earnings have been further supported by a large number of VLGC vessels going for planned hull surveys. The one-year timecharter rate has increased by 88% in the past six months, to USD 74,000 per day. The price of a five-year-old vessel has risen by 6% in the past six months, to around USD 78 million.

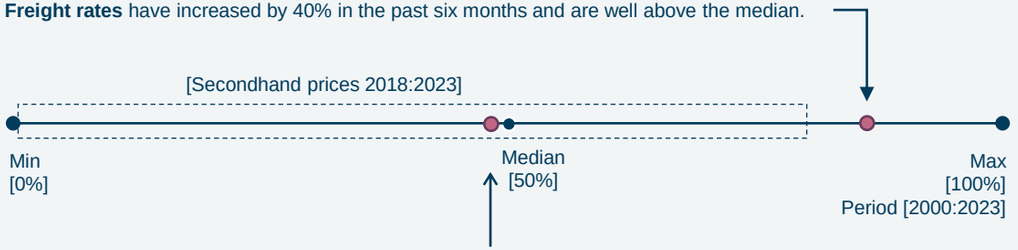
MGC: Strong LPG trade from the Middle East to India has supported earnings in the MGC segment, even though competition from older VLGCs has slowly increased. The one-year timecharter has increased by 8% in the past six months, from USD 26,500 per day to USD 28,500 per day. The price of a five-year-old vessel has remained fairly stable at around USD 50 million.

SGC: Demand growth for SGCs has weakened, as intra-regional trade in Europe has softened. Nevertheless, the one-year timecharter rate has still managed to increase by 7% in the past six months, reaching USD 27,100 per day. The price of a five-year-old vessel has remained stable at USD 36 million.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023

Freight rates have increased by 40% in the past six months and are well above the median.



Secondhand prices have increased 2% in the past six months and are at a historical median.

In 2023, demand for LPG vessels has surged by 12.6% due to increased long-haul trade to Asia. During the same period, the LPG fleet has expanded by 7.7%, driven by a surge in VLGC deliveries. However, this growth has been periodically offset by 2-3% due to a significant number of vessels undergoing planned hull surveys. Average speeds have remained mostly stable throughout 2023, with only a slight uptick observed. Consequently, fleet utilisation has seen a marked improvement over the year.

Deliveries increased by 45% in the first ten months of 2023, to 3.4 million cbm (around 8% of the fleet), compared to the same period in 2022. Another 1.5 million cbm is scheduled to be delivered this year.

Scrapping has remained fairly low in 2023, with a mere 107,000 cbm demolished, distributed between ten mainly smaller vessels. Only one VLGC and one SGC have so far been demolished during 2023.

Contracting activity in 2023 has remained high, with 5.3 million cbm (around 13% of the fleet) contracted so far. VLGCs have accounted for over 80% of the new orders.

Orderbook: The orderbook has continued to expand and now contains 11.2 million cbm distributed between 173 vessels. The orderbook corresponds to 25% of the fleet. The VLGC segment accounts for the lion's share of the orderbook.

Demand: Strong demand from the petrochemical sector has lifted seaborne trade volumes by 6% in 2023. Longer travel distances have added another 6.5% to volumes this year. Chinese imports from the US are driving average distances up in the market.

Market dynamics in the last six months

While experiencing record-high earnings, the VLGC market still remains volatile

Positive demand and supply-side dynamics have driven earnings to a record high, increasing shipowners' appetite for new vessels.

Record earnings for larger vessels…

Average earnings in the LPG segment have increased by 42% in the past six months, reaching an all-time high in September. The strong increase has primarily been driven by record earnings in the VLGC segment, where timecharter rates have risen to unprecedented levels. Average spot rates (as indicated by TCE earnings from Ras Tanura to Chiba) also peaked at over USD 150,000 per day in September, before falling back to around USD 80,000 per day. The smaller segments have also experienced higher earnings, but they are still hovering slightly above the historical median.

…driven by both demand and substantial dry-docking

The high earnings have been propelled by more long-haul trade, as high demand in Asia, coupled with favourable LPG prices in the US, have driven average distances up. At the same time, the active fleet has periodically been reduced by 2-3% due to increased dry-docking of vessels. Over 200 LPG vessels have – so far – had their hull surveys in 2023, with the VLGC segment accounting for over 70%. A further 76 vessels are due for hull surveys in the rest of 2023.

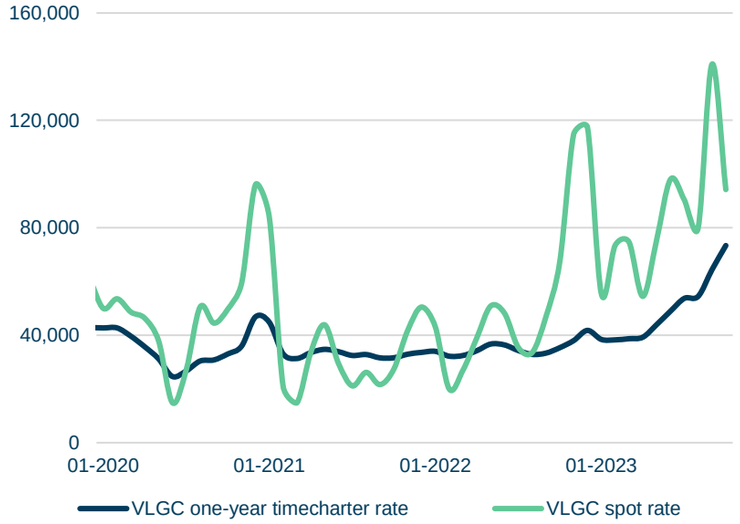
Appetite for new vessels has continued to surge

The high freight rates have increased shipowners' appetite for ordering new vessels, lifting the orderbook to around 25% of the fleet as of October. The VLGC segment has been the primary driver of the contracting activity in 2023. Around 44 VLGCs have been ordered at first-tier yards in South Korea and China and are due for delivery in 2026 and 2027.

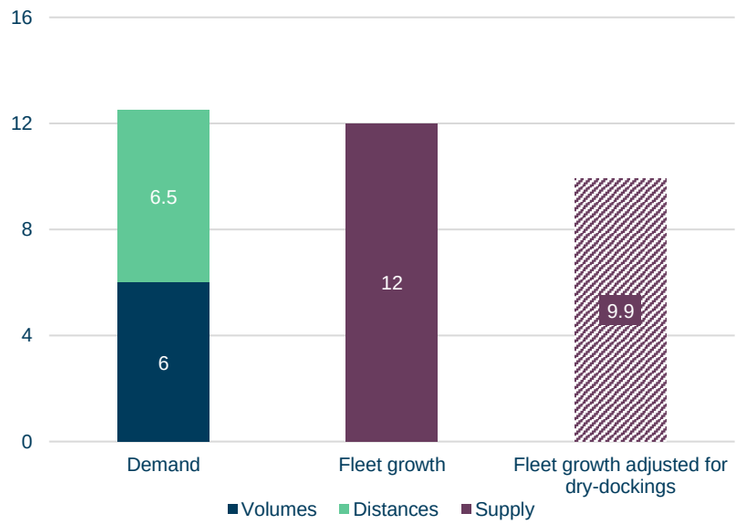
Cascading effects have slowly started to materialise

Around 30 new VLGC vessels have so far been delivered in 2023. Nearly all the new vessels have been deployed on the US-Asia trade, in order to take advantage of their dual-fuel capability and hence greater efficiency. The share of younger VLGCs loading LPG from North America increased from around 80% at the start of 2023 to around 90% in Q3 2023. Older VLGCs are expected to be pushed more towards Middle East-related trades, pressuring MGC vessels. However, there are only small indications of this so far.

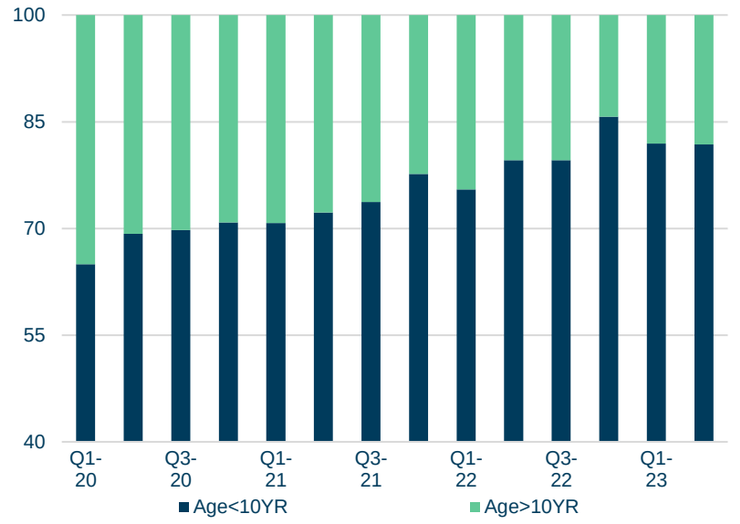
One-year timecharter and spot rates (USD per day)



Fleet and demand growth (%), 2023



Share of VLGC loadings in North America by age group (%)



Source: Drewry, AXS Marine, IEA, EIA, Clarksons, Danish Ship Finance

LPG outlook (1/2)

Is LPG demand from new capacity additions in the petrochemical sector a given?

The petrochemical sector should continue to drive demand in the near term, but this is not a given. While the high fleet growth may be absorbed in the short term, excess capacity seems inevitable in the coming years.

Rising orderbook will keep fleet growth high until 2027

VLGC orders placed in 2023 are not expected to be delivered until 2026 and 2027, due to limited yard capacity. Furthermore, a few VLGCs that were scheduled for delivery in 2023 have been postponed to next year. This has pushed expected fleet growth for the coming years up. With the current orderbook, the fleet is set to expand by 12% in 2023 and a little over 5% annually during 2024-2026. The growth will primarily be driven by the VLGC segment – both in terms of capacity and number of vessels. Fleet growth in 2025 and 2026 may partially be offset by 1-2%, as a large number of LGC and VLGC vessels have planned hull surveys.

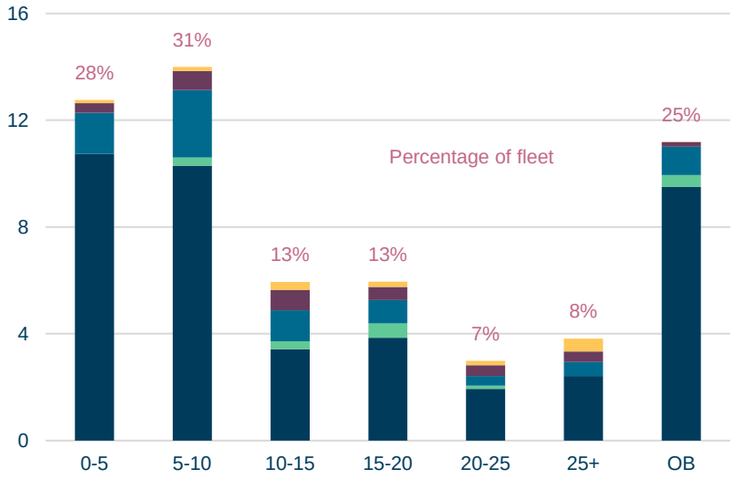
Petrochemical sector to drive demand in the short term…

LPG demand is expected to increase in the coming years. The growth is set to be driven by the petrochemical sector, as plastic consumption (especially in Asia) is projected to increase by almost 25% by 2030. A number of new petrochemical plants are planned to come online in the next three years, significantly increasing the capacity. As most of these plants are located in China, the country's LPG imports could grow by almost 11% annually up until 2026.

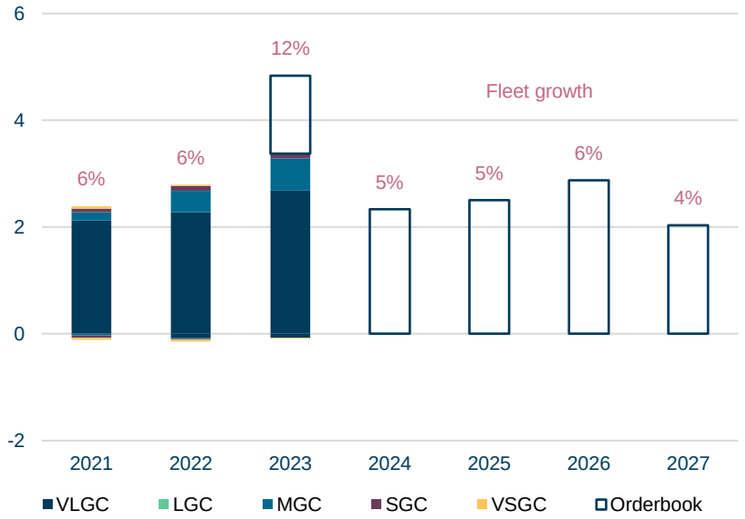
…but uncertainty could quickly shift demand to the downside

Expanding petrochemical capacity does not directly translate into higher LPG demand. Firstly, the petrochemical sector has been suffering from overcapacity for many years and this is only expected to increase further. This could affect margins in the industry negatively, leading to closures and lower utilisation rates. Secondly, the recent high demand from the Chinese petrochemical sector has been driven by favourable LPG prices in the US compared to naphtha. However, the naphtha-LPG price spread is expected to narrow as balance is restored in the oil markets. Thirdly, LPG has also started to compete with ethane as a feedstock, as ethane increases the yield of ethylene. As such, demand could easily be impacted, especially hurting the spot-dependent VLGC market.

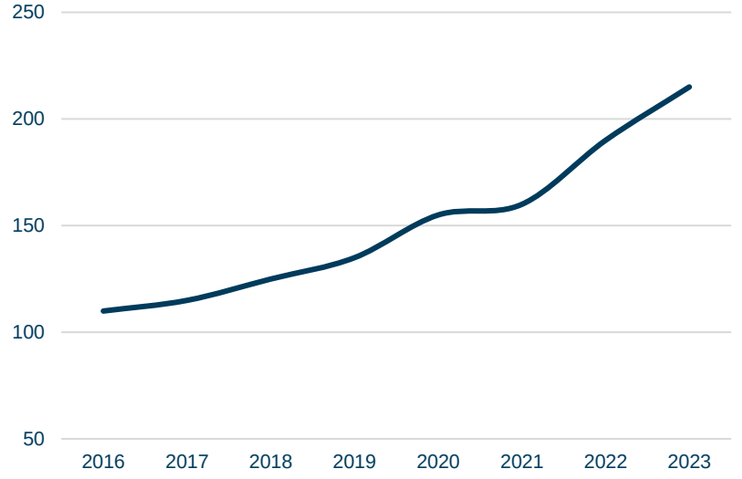
Age distribution of fleet (million cbm)



Fleet development (million cbm)



Estimated overcapacity in the petrochemical sector (mt)



Source: Drewry, AXS Marine, IEA, EIA, ICIS, OECD, Clarksons, Danish Ship Finance

LPG outlook (2/2)

Long-haul trade may absorb fleet growth in the short term, but excess capacity seems inevitable in the coming years

Demand from other sectors expected to stay muted

Demand from the industrial sectors is expected to stay muted in the short to medium term. Weakening economic growth in the EU will limit industrial activity, affecting future LPG imports. Demand from the residential sector is also expected to remain stable. LPG coverage ratios (for cooking and heating) are quite high in Southeast Asian countries and India, where around 70% of all households use LPG for cooking. As such, the potential for further increases is fairly limited, while the switch to natural gas in urban areas may also dampen growth. However, demand from Africa could increase in the long term, as governments are promoting LPG as a clean cooking fuel (see demand deep dive on the next page).

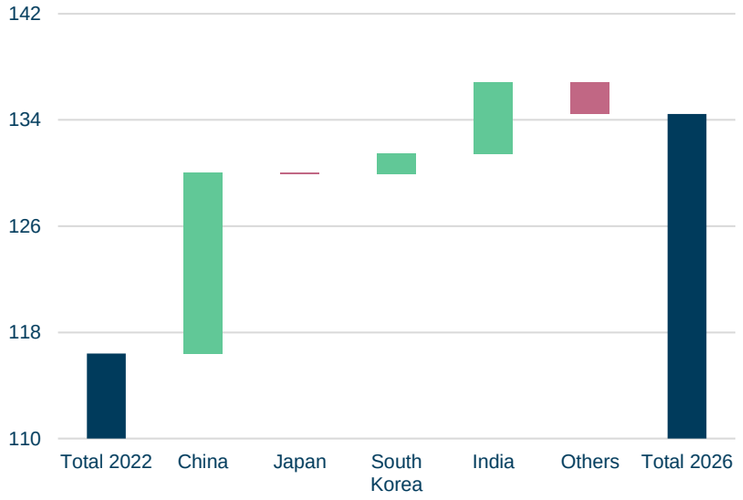
US expected to supply the increasing demand in Asia

Higher Asian LPG imports are primarily expected to be supplied by the US. Higher oil and gas production, coupled with seven-year-high inventory levels, is expected to bolster exports from the country by 3.5% annually up until 2026. The increasing US-Asia trade will boost total tonne-miles and primarily benefit VLGCs, which account for about 75% of total LPG loadings in the US. Production cuts by OPEC are expected to limit growth in LPG exports from the Middle East. Currently, exports are projected to grow by a little over 2% annually up until 2026 (which should also be seen in relation to a steep fall of 13% experienced during 2020). Middle Eastern exports could weaken further if OPEC cuts continue beyond 2024.

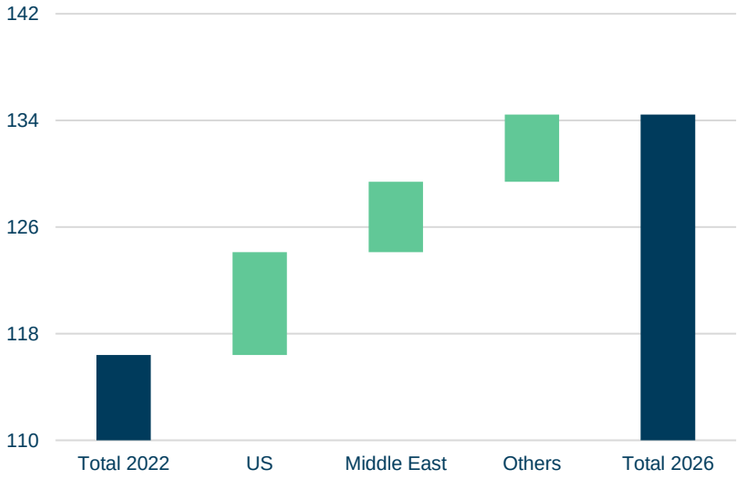
Excess capacity seems inevitable in the coming years

Global seaborne LPG volumes are expected to increase by 6% in 2023, while longer distances (due to higher US-China trade) are projected to add a further 6.5%. As such, the high VLGC fleet growth in 2023 is expected to be absorbed by more long-haul trade. However, demand (in tonne-miles) will likely experience slower growth in the coming years. Weakening margins in the petrochemical sector will likely dampen the industry's demand for LPG. Thus, excess capacity is likely to increase as early as next year, weakening fleet utilisation and pressuring freight rates. Furthermore, the MGC segment could be at risk of cascading effects from older VLGC vessels. To balance out demand and supply, the average scrap age for VLGCs would have to fall from over 40 to 25.

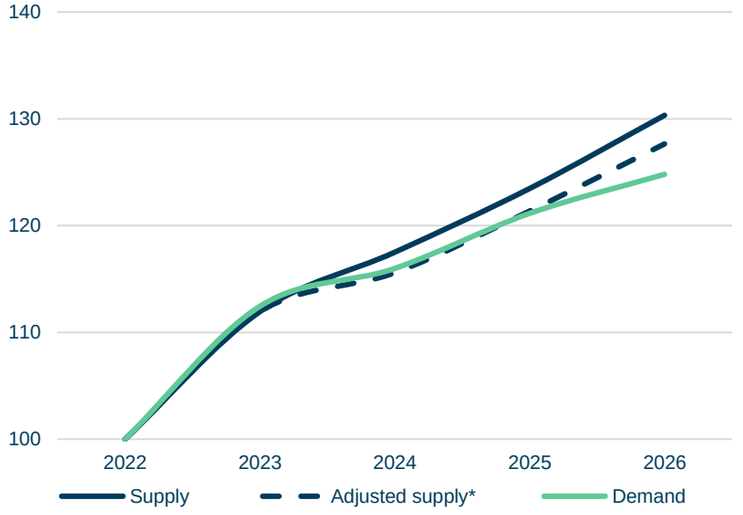
LPG imports (million tonnes)



LPG exports (million tonnes)



Supply-demand balance (2022 = 100)



*Supply growth where VLGCs older than 25 years are scrapped

Source: Drewry, AXS Marine, IEA, EIA, Clarksons, Danish Ship Finance

LPG deep dive: Could Africa become the next driver of LPG demand?

Increasing access to cleaner cooking in Africa could benefit seaborne trade of LPG

Africa could follow in India's footsteps and increase LPG coverage ratios. Should this happen, seaborne imports could increase significantly.

LPG has been a vital component for India

Although LPG is a by-product of oil and gas production, it has many advantages in terms of increasing the population's access to clean cooking in developing nations. These include several environmental and safety benefits compared to charcoal and wood, easy access and scalability. India has benefited greatly from promoting LPG, as the share of the population with access to cleaner cooking increased from 22% in 2000 to 70% in 2022.

900 million Africans have no access to clean cooking

While the share of the population in Africa with cleaner cooking access has been growing, it has not risen fast enough to reduce the absolute number of people without access. Around 600 million people had no access to cleaner cooking in 2000. However, this number increased to over 900 million in 2022. Many African nations have ambitions to follow in India's footsteps and increase the use of LPG to improve the general standard of living in their countries. As such, many countries have set LPG penetration targets of between 75% and 90% by 2030.

LPG demand in Africa could hit 40-45 million tonnes…

The IEA estimates in its Sustainable Africa Scenario that for universal access to cleaner cooking to be achieved, around 130 million people in Africa must gain access to cleaner cooking fuels each year up until 2030. LPG is projected to cover one-third of this demand, while biomass, electricity, biogas, etc. will cover the rest. Assuming low annual consumption rates of LPG by households, we could still see total LPG demand in Africa reach 40-45 million tonnes (around 10% of global demand). This is more than double the amount of LPG the continent is consuming today (around 14-16 million tonnes).

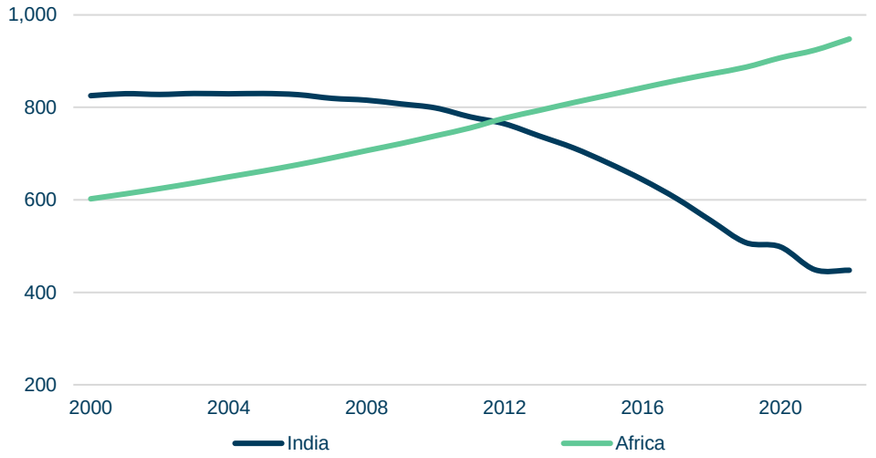
…increasing seaborne imports significantly

LPG production in Africa is quite low and only contributes around 4% of global production. The Dangote Refinery (which is expected to come online at full capacity by mid-2024) will increase domestic production of LPG. However, by how much is still unknown. Should the expected increase in demand materialise, most of the supply will have to be imported. This could boost seaborne African imports by as much as four times the current levels by 2030 (to around 30-35 million tonnes in 2030). African LPG imports have primarily been covered by the US, which in 2022 accounted for over 40% of total imports. The long-haul US-Africa trade primarily benefits larger vessels. However, the port infrastructure in many African countries is not yet sufficient to support dockings of VLGCs. Thus, the MGC segment will likely benefit the most from increased imports into Africa.

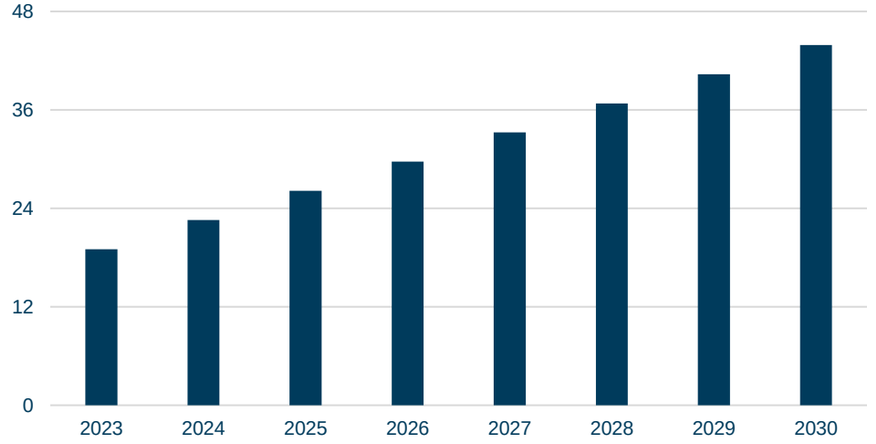
However, many obstacles need to be overcome first

In order for higher coverage rates in Africa to be achieved, prices need to be attractive. In India, domestic LPG consumption is heavily subsidised, which incentivises households to use LPG. This is necessary in Africa too, which may be difficult given the significant amount of investments needed. Furthermore, LPG is still a fossil fuel. As such, it is expected to be a transitory fuel until electrification can be expanded to cover a large proportion of households in Africa.

People without access to cleaner cooking (millions)



LPG demand projections in Africa (million tonnes)



Source: Drewry, AXS Marine, IEA, UNdata, WHO, OECD, IMF, World bank, Clarksons, Danish Ship Finance

LNG Carriers

Shipping Market Review – November 2023

LNG Carriers

High earnings but many new vessels are scheduled to enter the fleet

The market outlook for LNG Carriers is being shaped by the very large orderbook. Surplus capacity is expected to build up towards 2027 unless early retirement of less efficient vessels balances the market. A fleet of steam turbine vessels are considered the most likely scrapping candidates. The demand outlook is largely dependent on Asian demand, with China projected to deliver half the region's growth. The US alone is set to contribute around half of the incremental LNG supply, reinforcing its position as the world's largest LNG exporter. Looking further ahead, we are beginning to see the growing global awareness of the methane leakages related to natural gas increasing costs and structurally reducing the long-term demand potential.

The LNG fleet doubled in size between 2011 and 2022, while distance-adjusted demand increased by 60%. US export volumes delivered half the expansion. These volumes are often sold on a spot basis and have therefore enabled greater import flexibility but have also led to higher freight rate volatility. The number of trading routes has exploded, from 179 in 2011 to 365 in 2022. A third of the LNG fleet is currently trading spot. Spot markets are largely populated by new vessels waiting for their long-term cargo contracts and older vessels.

The one-year timecharter rate for a 174,000 cu.m LNG Carrier peaked at an all-time high of USD 260,000 per day in October 2022, only to drop by 61% to USD 102,500 per day in October 2023.

Reduced income but higher prices

The drop in earnings translates into an income loss of approximately USD 50 million for a charter candidate. Still, in the same period the price of a five-year-old vessel increased by USD 40 million to an astonishing USD 245 million, which is only USD 5 million below the highest price observed. The price of a ten-year-old vessel increased by USD 30 million to a record-high USD 165 million.

Lower market activity

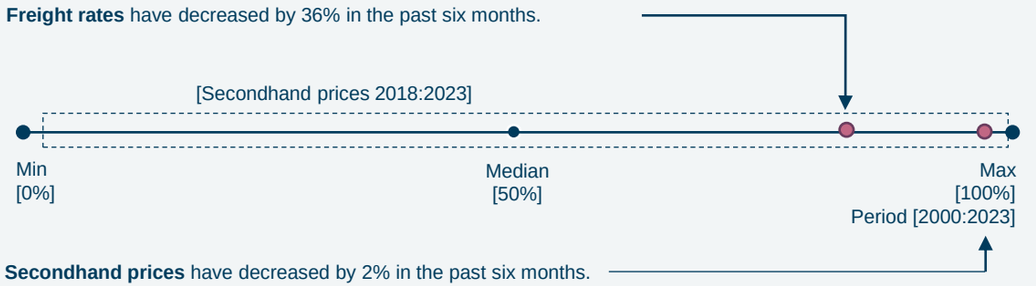
The sale and purchase market has softened considerably in 2023, with only 18 vessels sold with a combined capacity of 2.4 million cbm whereas 35 vessels were sold during the same period in 2022 with a combined capacity of 5.4 million cbm.

Record-high newbuilding price

The appetite for new vessels has also waned. Only 42 vessels were contracted during the first nine months of 2023, compared to 139 in the same period last year. The newbuilding price has increased to USD 265 million, which is the highest price tag on record.

DS:FUNDAMENTALS

MARKET CYCLE POSITION – November 2023



LNG fleet utilisation has deteriorated during 2023, since supply has expanded ahead of demand. Supply has increased by 5.5% in 2023, while distance-adjusted seaborne LNG demand has grown by 4.2%. Volumes have increased by 3.3%. Speed profiles have been adjusted to reflect market conditions: older, less efficient vessels, steam turbines in particular, have reduced speeds, while young, modern tonnage has maintained or slightly increased speeds. This may also reflect an ambition to stay compliant with the pending IMO regulations.

Deliveries are scheduled to increase by close to 2 million cbm to 6.5 million cbm in 2023, only to double in 2024. The 2024 level is expected to be maintained in 2025 and 2026.

Scrapping is beginning to pick up, from only one vessel demolished in 2022 to six in 2023. Demolition activity is expected to increase as the orderbook is delivered.

Contracting has finally slowed. 181 vessels were contracted in 2022, whereas only 42 vessels have been ordered in 2023.

Orderbook: The orderbook-to-fleet ratio has climbed above 50%, with most orders having been placed for the largest LNG Carriers. 77% of orders have been placed at five South Korean yards, while another 22% of orders have been placed among 12 Chinese yards. Newbuilding prices have been settled between only 17 yards, which combined represent 99% of the orderbook.

Demand: Global LNG trade grew by 3% during the first three quarters of 2023. This growth was primarily propelled by the US and Algeria, together accounting for 85% of the incremental global LNG supply. The Asia-Pacific region and Europe led LNG demand growth, increasing their LNG inflows by 2.7% and 2.5%, respectively.

Market dynamics in 2023

Higher export volumes out of the US and Algeria bound for Asia and Europe

Spot rates are highly volatile. Spot markets are largely populated by new vessels waiting for their long-term cargo contracts and older vessels. Spot rates tend to rise sharply during the winter, reaching at least double the annual average.

LNG volumes have increased by 3%

Seaborne LNG volumes expanded by 3% during the first three quarters of 2023. This growth was primarily driven by larger export volumes from the US (+8%) and Algeria (+30%), together accounting for almost 80% of the increased global LNG supply. Asia and Europe led LNG demand growth, increasing their seaborne LNG imports by almost 3% each.

European imports up by 3%

LNG imports into Europe increased during the first nine months of 2023 by close to 3%, despite reductions in gas demand and elevated storage levels (95%) in the third quarter. This increase was primarily fuelled by higher LNG arrivals in the Netherlands, Germany and Italy.

Asian imports up by 2.6%

Asian LNG imports increased by 2.6% during the first three quarters of the year. This was primarily driven by China. After more than 13 months of decline, China's net LNG imports started to recover in March and ended up 13% above the level imported during the first three quarters of 2022.

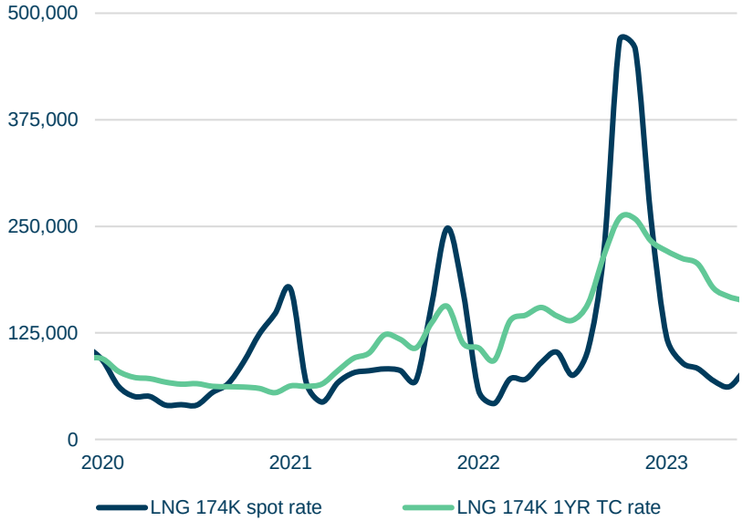
Reduced Japanese imports

Japan's LNG imports declined by 9% during the first three quarters of 2023, as improving nuclear availability and lower electricity demand reduced gas demand. Japan's LNG imports fell to their lowest level for more than 20 years in May (down 19%).

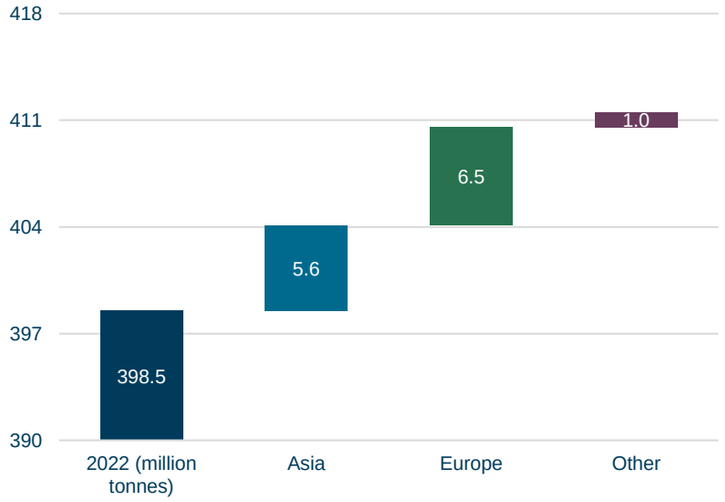
Distance-adjusted LNG demand up by 4.2%

Distance-adjusted seaborne demand is expected to increase by 4.2% in 2023, with longer distances adding almost 1 percentage point to seaborne volumes. The fleet's utilisation has been declining during 2023, owing to the projected increase in supply (5.5%).

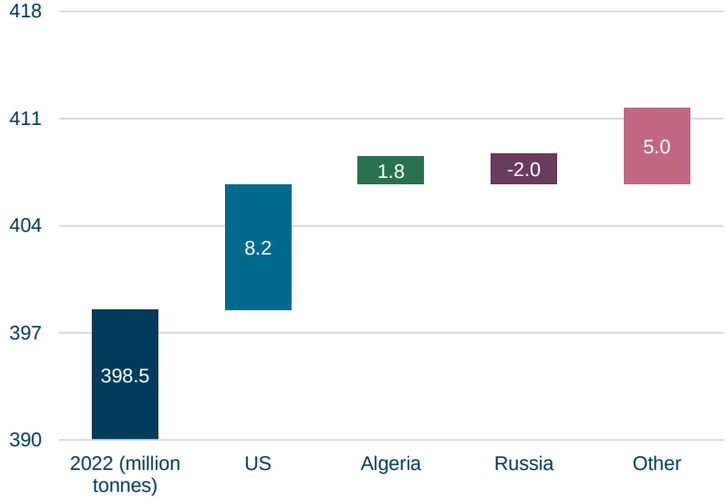
One-year timecharter and spot rates (USD per day)



European and Asian imports have driven LNG volumes in 2023



US export volumes have driven LNG exports in 2023



Source: Clarksons, Danish Ship Finance

LNG fleet outlook

Residual risk is on the rise, massive write-offs could be in the pipeline

The LNG fleet is positioned for massive expansion in 2024, 2025 and 2026, likely resulting in a build-up of surplus vessel capacity. Younger vessels could be laid up, while older vessels could be scrapped to balance the market. The fleet of steam turbine vessels are first in line to be scrapped, but more vessels may need to be demolished.

Fleet renewal

The current fleet numbers 740 vessels, and there are an additional 330 vessels on order. The orderbook-to-fleet ratio average 45% measured by number of vessels but 51% in cbm. The largest vessels have an orderbook corresponding to almost 59% of their fleet and no obvious scrapping candidates.

Massive inflow of new vessels until 2026

The last six LNG orders on record are due to be delivered in 2029 from South Korean yards. A massive inflow of new capacity (42.4 million cbm) is scheduled to be delivered in 2024, 2025 and 2026, resulting in double-digit fleet growth (before scrapping).

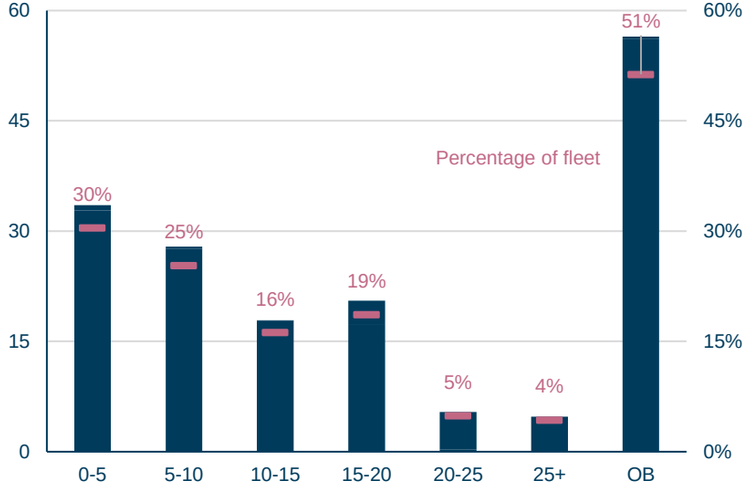
Young fleet and few retirement candidates

The age profile of the fleet does not leave much room for an ordinary retirement plan. However, the combination of new environmental regulations and technological innovation in the past decade is likely to reduce the economic lifetimes of vessels on the water today. The fleet of 240 steam turbine vessels, with a combined capacity of 33.6 million cbm, are likely to be the first retirement candidates to cushion the blow from the 56.5 million cbm orderbook. It remains to be seen how much demolition activity will be needed to balance supply and demand.

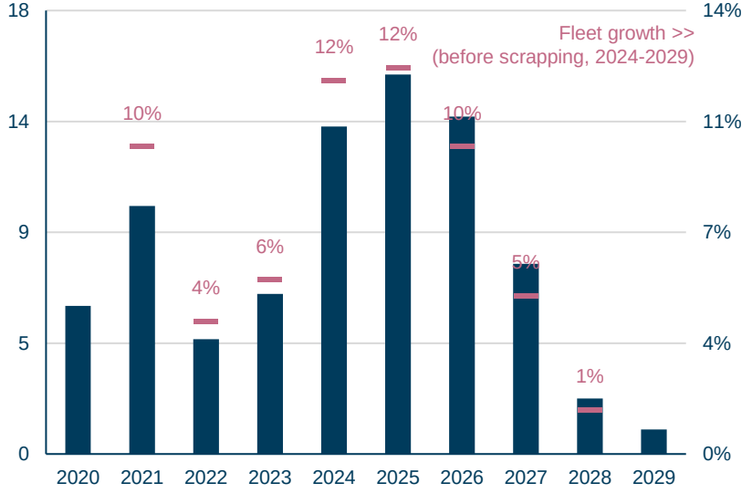
Large residual risk

There is large residual risk mounting in secondhand prices. A large group of younger vessels will need to be scrapped when surplus vessel capacity builds, as early as 2024. This is likely to have a material impact on secondhand prices. The situation will only become worse if surplus vessel capacity continues to increase after the last steam turbine vessel has been scrapped.

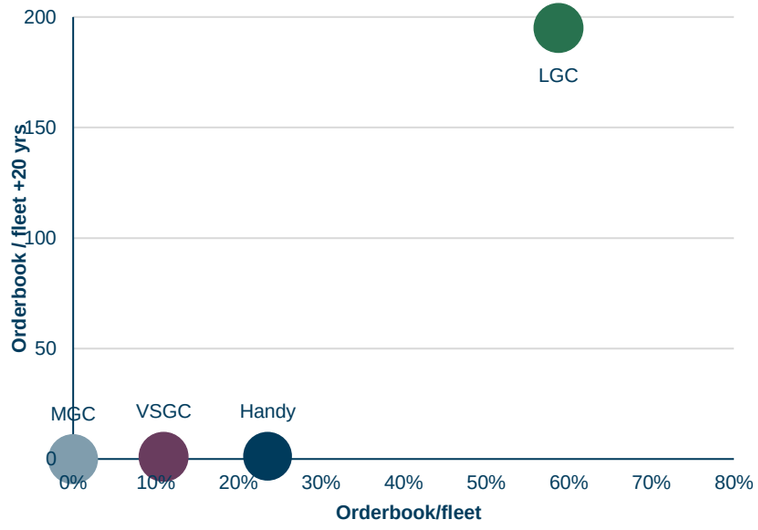
Age distribution of fleet (million cbm)



Annual delivery and fleet growth (million cbm)



Fleet renewal potential (cbm)



Source: Clarksons, Danish Ship Finance

LNG demand outlook

Strong demand in 2024 and 2025 but hardly a match for the massive fleet expansion

Seaborne LNG volumes are predicted to increase by 11% between 2023 and 2025. Strong growth in US gas exports bound for Asia will drive the market dynamics over the next two years. Asia has imported 63% of global seaborne LNG volumes in 2023. This ratio is expected to increase to 65% by 2025. 80% of the combined growth in seaborne volumes is predicted to be imported by Asian countries, with China accounting for half of the Asian growth.

Higher US exports are leading the seaborne expansion

Growing US exports of LNG are predicted to contribute 44% of the increase in seaborne volumes between 2023 and 2025, and African and Russian exports are expected to deliver 14% and 15%, respectively. These three regions account for almost three-quarters of the projected growth, while the Middle East is expected to maintain output levels.

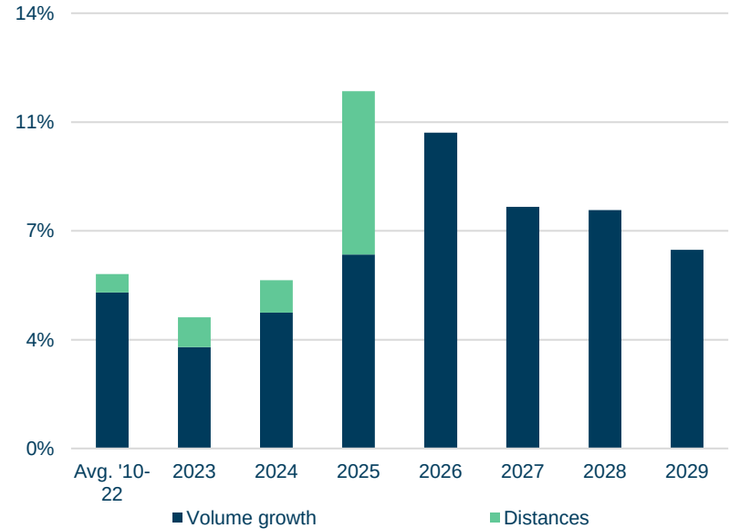
LNG flow is predicted to increase by 5.4% in 2024

Global LNG volumes is forecast to increase by 4% in 2024, but longer travel distances are likely to lift distance-adjusted seaborne demand to 5%. Asia is expected to import 72% of the expanding volumes, while Europe is likely to import 18%. China is set to be the largest growth contributor in 2024. A slowdown in economic growth in China would therefore have huge implications for seaborne LNG demand.

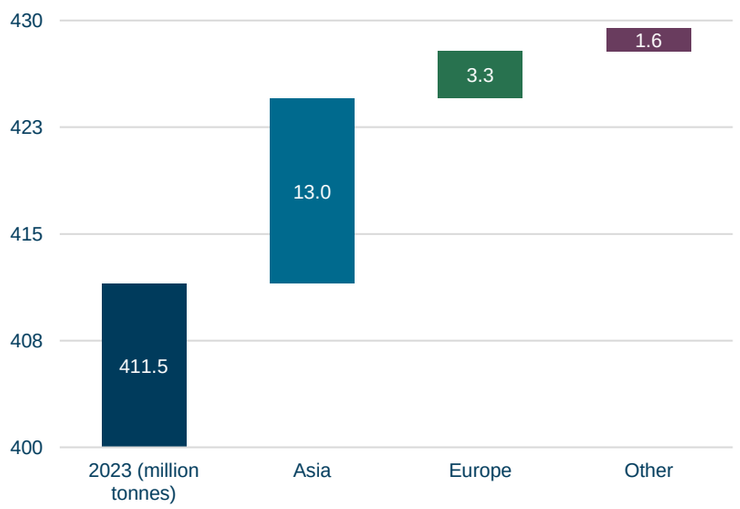
LNG volumes are set to increase by 11.5% in 2025

In 2025, volumes are forecast to increase by 6%, with longer travel distances lifting distance-adjusted demand to 11.5%. Asian imports (set to grow by 8%) are predicted to deliver 85% of the volume growth, whereas European imports are only predicted to increase by 2%, delivering 11% of the volume growth. Increased US gas exports (+16%) will contribute 57% of the additional LNG export volumes, and increased gas exports out of Africa (+12%) will deliver 11%.

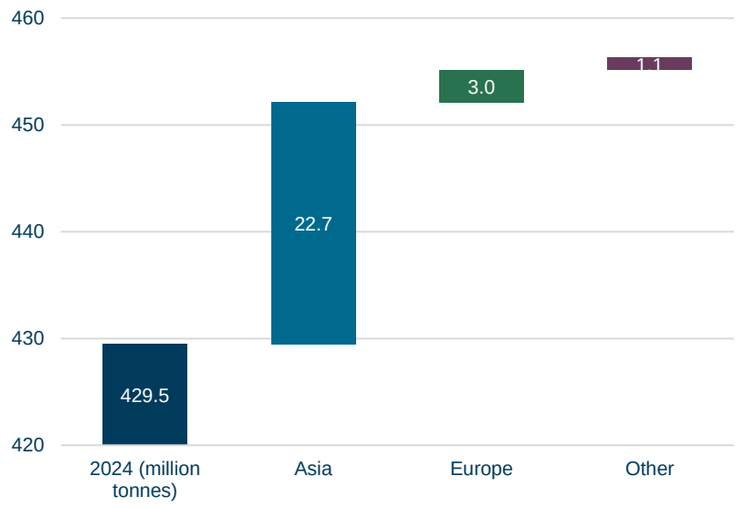
Demand outlook: Growth in seaborne LNG volumes



Asian import growth will drive LNG demand in 2024…



…and will continue to do so during 2025



Source: Clarksons, Danish Ship Finance

LNG fleet utilisation outlook

Surplus vessel capacity is likely to build up towards 2027

Seaborne LNG volumes are predicted to increase by 51% between 2023 and 2029. The new vessels in the orderbook scheduled to be delivered during this period correspond to 51% of the fleet. This indicates a market in balance, even without steam turbine vessels being phased out, but it may not necessarily be a smooth ride.

Surplus vessel capacity is likely to build towards 2026

The orderbook is front-loaded. The fleet is scheduled to grow by 41% (before scrapping) by the end of 2026, while seaborne LNG volumes are only expected to increase by 22% in this period, which indicates that surplus vessel capacity is likely to build. Longer-travel distances may absorb some of the surplus, but it seems inevitable that demolition, reduced speeds and lay-ups will be necessary to support freight rates and secondhand prices.

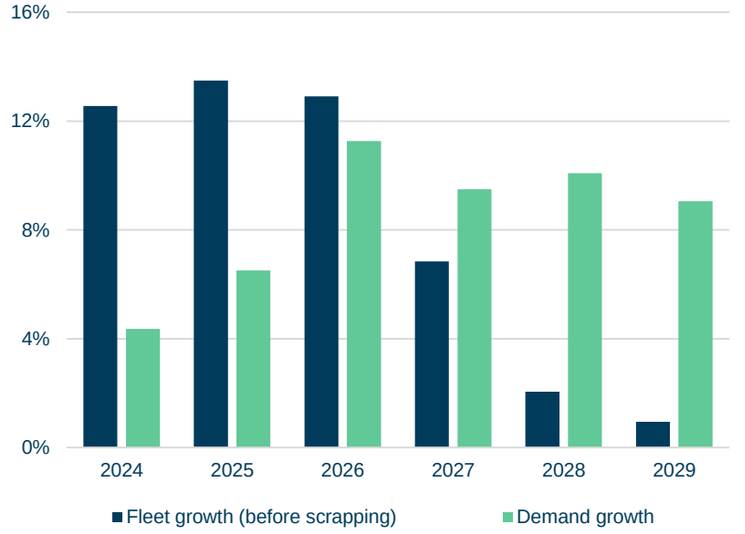
Closing the gap between 2027 and 2029

Long-term forecasting of fossil fuel demand is a challenging exercise, not least in the age of global decarbonisation. Still, current estimates suggest that demand will catch up with supply during the period 2027-2029. Assuming no further vessels are ordered, the fleet is only expected to expand by an additional 10%, while seaborne LNG volumes are projected to increase by 29% in the same period. In this scenario, fleet utilisation will increase, supporting higher freight rates and secondhand prices.

Another high market before the end of the decade

The fleet of steam turbine vessels are likely to be phased out by 2029. If the majority of these vessels are phased out before 2027, market participants may experience another period of high freight rates and increasing secondhand prices.

LNG supply and demand balance



Source: Clarksons, Danish Ship Finance

LNG deep dive: Long-term demand outlook for LNG

The price on methane may help close the green premium and reduce the long-term demand outlook for LNG Carriers

The long-term demand outlook for natural gas is weakening. Global gas demand is on course to grow by an average of 1.6% a year between 2022 and 2026, down from an average of 2.5% a year in the period 2017 and 2021, according to the IEA.

Reduced dependence on fossil fuels

The increased geopolitical tensions that have propelled energy security back to the top of global agendas have made reducing dependence on fossil fuels even more urgent. The fossil fuel price crisis has accelerated the competitiveness of renewable energy. Around 86%, or 187 gigawatts, of newly commissioned renewable capacity in 2022 had lower costs than fossil fuel-fired electricity, according to a recent study by IRENA. Domestically produced renewable energy has the additional benefit that it is more challenging to disrupt or weaponise than its imported alternatives.

Gas as a transition fuel?

Nonetheless, natural gas is considered to have a vital role to play in the energy transition, not least in power generation, where it can act as a back-up for variable renewable energy sources. The climate impact of using natural gas instead of coal, for example, is not straightforward, even though coal emits twice as much CO_2 than gas. Coal and gas also leak methane at the mines and through the supply chain, respectively. Methane emissions occur in all segments of the natural gas industry, from production (including flaring), to processing and transmission, and distribution (including LNG transportation).

Methane is 85 times more potent than CO_2

Methane is a greenhouse gas that is 85 times more potent than CO_2 over a 20-year timeframe and is estimated to be responsible for half of the oil and gas sector's GHG emissions. By considering gas and coal life-cycle emissions from a global perspective, it is possible to estimate the parity between gas and coal emissions at varying methane leakage rates.

Natural gas can cause as much climate damage as coal

Many studies have examined the climate impacts of gas compared to coal. These studies have found that if 2-5% of natural gas produced leaks along supply chains, natural gas has a similar climate impact to coal over a 20-year timeframe.

There is a great risk that we have not done much to reduce greenhouse gas emissions if we are replacing domestically produced coal, mined in Liaoning province of China, with Permian-produced gas from Texas.

High methane leakage rates

The methane intensities of traded natural gas differ greatly depending on where the natural gas has been extracted and how it has been transported. Recent surveys of US oil and gas production basins have found wide-ranging natural gas leakage rates from 0.65% to 66.2%, with similar rates detected worldwide.

Satellites and sensors are becoming important

The problem is that we cannot manage what we do not measure. We need to make the previously invisible emissions visible. A growing network of satellites and sensors are becoming important tools for gauging global emissions. Once identified, many leaks can be addressed quickly and cost-effectively.

A price on methane

The International Energy Agency has concluded that tackling methane emissions is the single most important measure for oil and gas operators. In the US, policymakers are putting a price on methane. Under the Inflation Reduction Act, a facility's emissions (in excess of 25,000 metric tonnes of carbon dioxide equivalent ("CO_2e")) will be priced at USD 900 per metric tonne of methane emitted in 2024, and the price will increase to USD 1,200 in 2025 and USD 1,500 in 2026.

Fossil fuels are becoming increasingly unattractive

The price on methane will clearly contribute to reducing leakages but will also help close the green premium and thereby reduce the attractiveness of natural gas in the energy mix. Time will tell how quickly the price on methane translates into lower LNG shipments, or shorter voyages.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