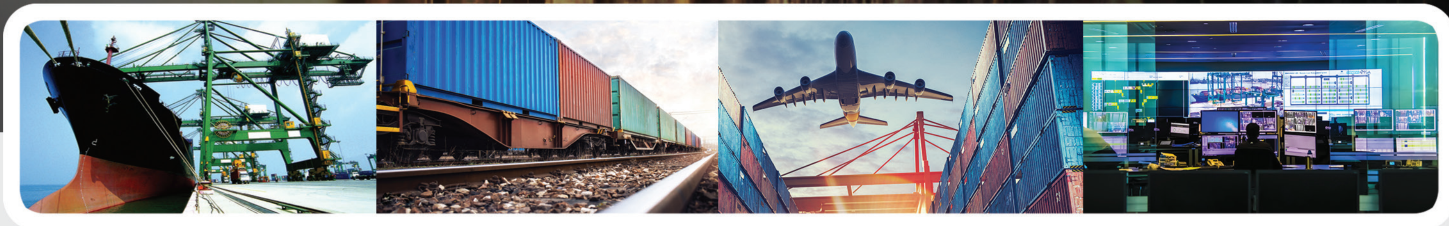
Lloyd's List

Supply chain resilience

A special report



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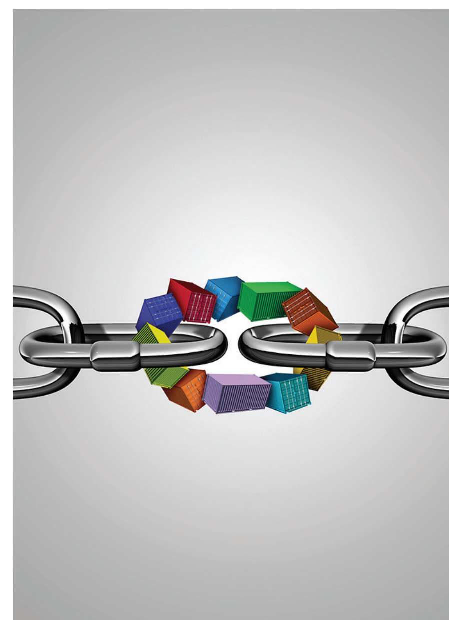
Supply chain resilience

Politicians and businesses promised to strengthen and diversify global supply chains in the wake of recent disruptions — yet even if that was possible or desirable, it would be a costly reorganisation of trade lanes built off cheap, efficient logistics.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Global supply chains have evolved in a way driven almost entirely by production costs that were reliant on cheap, efficient transport.

Supply chain resilience will be difficult and expensive

We tend to consistently underestimate the complexity of supply chains, but that does not mean that changes are not happening, **Richard Meade** reports

The *Ever Given*'s unscheduled Suez Canal mini-break in 2021 ignominiously flagged the fragility of just-in-time freight to an Amazon-dependent population hooked on cheap and immediate access to just about anything.

The Covid-induced supply chain crisis and the rapid reorganisation of trade in the wake of Russia's invasion of Ukraine only served to compound the chaos.

Supply chain resilience became a political imperative as bottlenecks wiped a conservative 1% off global GDP.

Businesses moved from 'just-in-time' to 'just-in-case' procurement, stockpiling billions of dollars' worth of inventories as a form of insurance in an increasingly uncertain world.

Globalisation itself, it seemed, was shifting — and the perennial prediction of near-shoring or reshoring re-emerged as a mainstay of political punditry.

Yet how much of this was a serious reappraisal of supply chain efficiency being weighed against security, resilience and costly redundancies; and how much was just a hiccup in the context of longer-term trends?

Well, amid all the justifiable superlatives being bandied about during the recent box boom, one telling statistic that did not receive too much attention from shipping lines came from the World Bank, which stated that as a percentage of the world economy, international trade last year was less than it was back in 2008.

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The longer-term pattern for almost 15 years now has seen international trade in goods grow more slowly than the world economy — and that is a pattern to which we are already reverting as the container congestion unwinds.

That does not mean trade in international supply chains is going away; it simply serves as a timely reminder that the past few years were an anomaly, rather than a trend.

It also does not mean production is moving 'back home', as the populist wing of political voices never tire of claiming.

According to Unctad research, there is no data-based evidence to indicate systemic changes in the arrangement of global production. Near- or reshoring remains a political myth.

On the contrary, the early success in the economies of east Asia in mitigating the financial impact of the pandemic may have resulted in increased reliance, in global value chains, on manufacturing production originating from that region.

Complexity of global value chains

Much of the discussion on reshoring grossly underestimates the complexity of global value chains and is preoccupied with the location of final assembly plants.

While it is possible that more of the value of finished products could potentially be added locally, should sufficient incentives be put in place, the upstream supply chains through which components and sub-assemblies are sourced remain stubbornly global, regardless of national policy or short-term disruption.

What is true, however, is that these global supply chains have evolved in a way that was driven almost entirely by production costs that were reliant on cheap, efficient transport.

That has been exposed as a fundamental under-pricing of risk — and, regardless of how temporary the supply chain crisis proves to be, the disruption has prompted a reconsideration of redundancies and resilience.

Beyond high freight rates, the crisis also led to historically low schedule reliability, congestion, delays, additional surcharges and vessel redeployment.

Some smaller economies, including small island developing states, have seen their connectivity decline as ships were redeployed to more lucrative markets.

That has rung alarm bells in board rooms and at the highest level of national governments, particularly those desperately searching for non-Russian energy supplies.

Andrii Yalanskyi/Alamy Stock Photo

While it takes time for trade flows to adjust to price changes, the impact of higher shipping costs on prices can be seen relatively quickly.

> *"Amid all the justifiable superlatives being bandied about during the recent box boom, one telling statistic that did not receive too much attention from shipping lines came from the World Bank, which stated that as a percentage of the world economy, international trade last year was less than it was back in 2008"*

The clamour for resilience in response to these shocks could take the form of redundancy or greater inventories — but either way, cost is increasing in exchange for greater insurance against perceived risk. Global trade is getting more expensive.

The latest survey of global chief executives published by consultants EY found that 40% are reconfiguring their company's supply chains.

However, much of this is likely to be short-term shifts to dual sourcing, rather than any fundamental restructuring of global value chains.

The suggestion that companies are shifting from efficiency to resilience is based partly on the vast build-up in precautionary inventories seen in the wake of the supply chain crisis.

The Economist cited reports in July claiming that for the biggest 3,000 firms globally, these have risen from 6% to 9% of world GDP since 2016.

However, these are likely to be temporary changes. The only times in history when inventories reached a similar level were in 1989 and in the late 1970s. In both instances, a deep recession followed as businesses ran down their stockpiles.

Politicians consistently underestimate the complexity of supply chains, but that does not mean changes are not happening.

While it takes time for trade flows to adjust to price changes, the impact of higher shipping costs on prices can be seen relatively quickly.

Research from both Unctad and the International Monetary Fund in early 2022 concurred that consumer prices increased by about 1.5% as a result of higher container shipping costs.

For low-value, high-volume goods, significantly higher, long-distance freight rates can make a difference — and, in the longer term, if freight rates remain elevated, such trade may not remain commercially viable, implying a production shift.

Yet there are also "deep" supply chains within global value chains, where the components that are assembled into a final product in different locations need to be transported several times.

Even if the freight rate is still relatively low, the fact that the final product must go through several shipments during the production process will still lead to a significant increase in the final price.

"In such cases, it can be expected that producers will try to shorten the supply chain, with fewer locations and locations closer to each other," concluded a recent Unctad study.

For other cargo types, too, higher freight costs could lead to a changing geography of trade.

A recent assessment of dry bulk imports into China concluded that a hypothetical increase in shipping costs by 10% to 30% would be equivalent to 1% to 3% of trading prices. This would lead to changing the geography of trade, with raw materials being imported more from sources closer to China.

dpa picture alliance/Alamy Stock Photo

When the containership Ever Given got stuck in the Suez Canal in 2021, it flagged the fragility of just-in-time freight to an Amazon-dependent population.

Energy transition

Beyond the recent and ongoing disruptions, the shipping industry and its clients should also be factoring in the energy transition in maritime transport, which is necessary if the industry is to achieve its goal of significantly reducing greenhouse gas emissions.

This transition goes hand in hand with uncertainty about future fuels, vessel types and impacts on shipping services and networks, which in turn implies a long-term shift in supply chains.

Seaborne trade volumes and cargo flows are, at a basic level, simply mirroring the global economy's interconnected value and supply chains. So, when we begin to change the foundations of the global economy, we begin to recalibrate and reinvent value and supply chains across sectors and industries.

Many seaborne trade volumes may continue to increase alongside GDP growth, global population growth and urbanisation, but fewer vessel segments may benefit amid these long-term shifts, argued a Danish Ship Finance outlook paper earlier this year.

If we assume that larger vessels transporting large quantities of virgin materials or fossil fuels over long distances — currently accounting for around 40% of global seaborne trade — are likely to see demand peak within the next 10 to 15 years, that implies volumes will increasingly shift towards smaller dry bulk volumes, containerised goods and ro-ro cargo.

However, what about carbon capture and storage? Could the future of carbon transport result in a new supply chain for tankers?

Risks and uncertainties remain high for global supply chain operations in the here and now, but long-term trends to shorten supply chains and to diversify suppliers will have a bearing on global value chains and the geography of trade.

Trade over longer distances is expected to be negatively affected by rising transport costs, logistic disruptions and geopolitical frictions. That is a pattern requiring attention from governments and businesses, who will need to prepare for a future where shipping may be less reliable, but more costly and volatile than in the past.

Investment in the resilience of logistics operations is going to require more than political rhetoric, but there is perhaps a positive outcome from the current uncertainty.

The alarms bells ringing as a result of the supply chain crisis, the closure of the Suez Canal and the war in Ukraine have prompted a corporate and political re-appraisal of risk in the supply chain.

If that can catalyse trade facilitation and digital transparency, spur customs reform, strengthen regional trade agreements and a more systematic approach to resilience building in maritime transport and seaports, then perhaps the globalised production and deep supply chains on which we rely will prove sustainable and cost-efficient in the long term.

Unravelling tangled container supply chains

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Container supply chain congestion was a defining feature of the pandemic; meanwhile, rates were driven to astronomical levels.

Containerised freight supported globalisation by offering cheap, reliable transport. The events of the past two years have shown it to be lacking resilience when most needed, **James Baker** reports

For those working at the coalface in containerised supply chains, the period since the onset of the pandemic in early 2020 has been fraught with disruption.

The smooth-running conveyor belt that transported containers around the world cheaply and efficiently ground to a halt.

The glitches in the system have not yet fully worked themselves out, but the worst does appear to be over — at least for now. While some hotspots still exist, globally, port congestion is starting to ease.

With that, greater ship capacity is being freed up to take cargo. And, as economies around the world cool, demand for that cargo is also reducing, pushing freight rates back down towards what was once considered normal.

As the sector looks forward, the focus is now on how to build in resilience to what turned out to be a far more fragile system than expected.

For carriers, this has meant shoring up their networks and capacity so they do not again find themselves in the position of having insufficient tonnage to serve customers.

When ships were stuck outside congested terminals, they were unable to berth, or return empty containers to origin ports, while customers struggled to move their containers on board for delivery, which in turn drove up rates to astronomical levels.

Carriers tried to solve this problem by buying and chartering all the ships and containers they could get their hands on. To a degree, this worked and the equipment shortage was relatively short-lived; but tonnage alone was of little use when it just meant more ships joining a queue for a port.

Instead, carriers looked both to reduce the number of port calls on main lane services to avoid delays at any one port along the route backing up; and to rely more, where possible, on transhipment.

"We have learnt during the past year and a half that it is important to have a robust network," Hapag-Lloyd chief executive Rolf Habben Jansen said recently. "That means you should concentrate transhipment on a limited number of places."

For carriers such as Hapag-Lloyd and CMA CGM, that meant expanding their control over terminal assets too.

Hapag-Lloyd has increased it ports portfolio this year, most recently signing a binding agreement to acquire 10 terminals from South America's Saam for $1bn.

CMA CGM, meanwhile, took back ownership of its Fenix Maritime Services terminal in Los Angeles last year for $2.3bn, having sold it in 2016 for just $817m.

Carriers have also tried to shore up their services by offering end-to-end products, with the aim of being able to better control the supply chain.

Maersk started the process with its 2016 move to become an integrator of global logistics, but others have followed suit.

CMA CGM and Mediterranean Shipping Co have both increased their logistics presence, including moving into airfreight, and Chinese giant Cosco also announced recently it would create a new division to focus on "integrated full-chain products and services, digitally empowered smart operations and a global supply chain ecosystem".

Maersk is also looking at the company's wider portfolio to help solve supply chain disruption.

"Supply chain disruption is a constant," said Maersk North America regional managing director Narin Phol.

Traditionally, supply chains had been complex and siloed networks capable of keeping up with capacity demand and optimising for cost, efficiency and scale, he said.

Supply chains had been successful under optimal conditions — but when tested by big, unexpected events, obstacles were introduced.

"To solve these challenges, we focused on helping customers find end-to-end solutions, such as off-dock depots for storage, warehousing and transload facilities. Equally importantly, we invested in landside logistics capabilities to provide the end-to-end solutions."

Ports were the focus of the crisis during the pandemic. As containers piled up, there was no room for additional cargo to be offloaded, leading to ships waiting offshore to berth. At the beginning of 2022, there were 109 ships waiting off San Pedro Bay at its peak.

For ports to resolve this, it meant getting cargo offsite, but this was confounded by labour shortages and by delays and congestion further down the supply chain. Ports such as Long Beach and Los Angeles threatened — but never implemented — swingeing fines on containers not removed from the port.

That seemed to focus attention and helped improve the situation, as did government efforts to break down the silos in the supply chain.

The Freight Logistics Optimisation Works programme was designed to promote the sharing of key freight information between different elements of the cargo supply chain as part of an effort to ease choke points and relieve congestion.

"Flow is designed to support businesses throughout the supply chain and improve accuracy of information from end to end for a more resilient supply chain," the White House said as the programme was launched.

> *We have learnt during the past year and a half that it is important to have a robust network. That means you should concentrate transhipment on a limited number of places*
>
> **Rolf Habben Jansen**
> Chief executive
> Hapag-Lloyd

Federal Maritime Commissioner Carl Bentzel also pushed for better information sharing to clear backlogs. His Maritime Transportation Data Initiative was designed to gather information on how data was shared across the industry and how best to improve the flow of data.

Mr Bentzel said information was available, but not being transmitted or shared effectively.

"We need to do a better job," he said. "Companies know what they are doing in advance and they can make that information available."

Meanwhile, it is not just carriers that are looking to integrate with other parts of the supply chain; even some port operators are looking to widen their reach.

"Years ago, the supply chain used to be a lot simpler," said DP World UK chief executive Ernst Schulze.

"We were a traditional port operator that handled ships and put containers in the yard and someone picked them up. These days, it doesn't work like that. Modern consumer demand has changed and made shipping more complex. That is where our business model is these days; not just the traditional handling of containers, but moving into this end-to-end logistics, from the factory floor to the customer's door."

The wider DP World group owns a feeder operation, logistics companies, and is "slowly but surely" filling in the different elements in the logistics chain.

"The challenge over the next year is integrating those and bringing it all together," Mr Schulze said. "But the portfolio and the possibilities are there."

For those looking to move cargo, the shippers and beneficial cargo owners, resilience also involves looking towards greater flexibility in both supply and services.

A survey by supply chain visibility provider Interos found that organisations plan to make "wholesale changes" to their supply chain footprints amid continued supply chain shocks and rising geopolitical tensions.

"Companies plan to reshore or nearshore an average of 51% of existing contracts," it found.

"Major supply chain disruptions can no longer be considered rare events. Global shocks, such as the US-China trade war, Covid-19 and Russia's invasion of Ukraine, continue to ripple across the world's supply networks. Organisations must adapt to these new realties — and many already are."

Enthusiasm for globalisation, supported by a plentiful supply of cheap labour and low-cost shipping, had waned in many parts of the world, Interos said.

Almost two-thirds of respondents said their organisations planned to make "wholesale changes" to their supply chain footprints. Another one-third expected to make "small changes".

The European Parliament's committee on international trade has also called for the shortening of supply chains, in combination with other instruments, and the relocation to the EU of EU businesses' production facilities in countries outside the bloc.

It has asked member states and the European Commission to start a dialogue with neighbouring countries on the possibility of nearshoring production and increasing regulatory co-operation to boost the security of supply and diversify its sources at the same time.

Shortening supply chains is just one of many ways to secure them, but does come with its own set of issues — not least the cost of production closer to home and the lack of a manufacturing infrastructure on a scale that can match that of China.

Nevertheless, a report from logistics operator DHL indicates that "new poles" of trade growth have been identified in both Southeast and south Asia.

"Trade growth is spread across a wider variety of countries," DHL said. "China accounted for one-quarter of trade growth in recent years and is predicted to continue to have the largest growth, but its share is likely to fall by half, to 13%."

Meanwhile, Vietnam, India and the Philippines were on course to increase trade growth in the years to 2026.

"All three have potential to benefit from efforts by many companies to diversify China-centric production and sourcing strategies," DHL said.

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Vladivostok (pictured), Vostochny and Nakhodka, some of the busiest ports in Russia's east, saw double-digit growth in traffic during the third quarter of 2022.

Suspicious activity rises in Caspian Sea as Russia looks for supply chain alternatives

Moscow is emphasising a new maritime strategy in response to the changing political order and shifting trade patterns, **Bridget Diakun** reports

Russia's supply chains have shown resilience since the invasion of Ukraine, with cargo flows being redirected to 'friendly' countries using transport corridors touted by President Vladimir Putin as long-term priority trade routes.

Sanctions levied against Moscow by countries in Europe and North America have forced the Kremlin to find new trade partners to keep cash flowing, but also suppliers to fill the shortfall left by the departure of major Western businesses.

Russia is prioritising and lifting existing supply chains to reach new markets and strengthen existing relationships with key allies.

"Our centrepiece is the eastern dimension of our infrastructure and the International North-South Transport Corridor, and the ports of the Sea of Asov and Black Sea," said Mr Putin in his address at the Eastern Economic Forum in Vladivostok.

"These will provide Russian companies with new opportunities; they will get access to the markets in Iran, India, the Middle East and Africa, and will facilitate supplies from these countries in return."

Only terminals in Russia's far eastern ports recorded year-on-year growth in commercial departures during the third quarter of 2022.

Vladivostok, Vostochny and Nakhodka, some of the busiest ports in Russia's east, saw double-digit growth in traffic, driven largely by general cargoships and tankers.

Containership activity through Russia's Baltic and Black Sea ports plummeted after major lines like Maersk and CMA CGM decided to cut their services.

From March to September 2022, full teu throughput was down 39% compared to 2021, according to data from consultancy Dynamar.

However, volumes in August and September were higher than in 2021 for Russia's far eastern ports.

"In the far east, the situation is more erratic," said Dynamar senior shipping and ports consultant Frans Waals.

"Overall, it seems that more trade capacity is being put into the market there now — albeit those new services are mostly operated by very small ships.

"One of the new services is aiming at intermodal connections via Vladivostok to Moscow."

Increased navigation along the Northern Sea Route is a key component to increasing cargo volumes through Russia's main ports, said President Putin. The aim is to provide year-round navigation through the Arctic route from 2025.

Journeys via the Northern Sea Route have fallen in 2022, driven by an exodus of foreign shipowners.

From January to September, 58 voyages were completed by merchant ships, compared to 99 in 2021, according to Lloyd's List Intelligence vessel-tracking data.

Trips by LNG carriers, bulkers and general cargoships dropped, while there was an unusual uptick in containership activity.

Russian-flagged *Sevmorput* completed three journeys passing along the Northern Sea Route and through the Bering Strait.

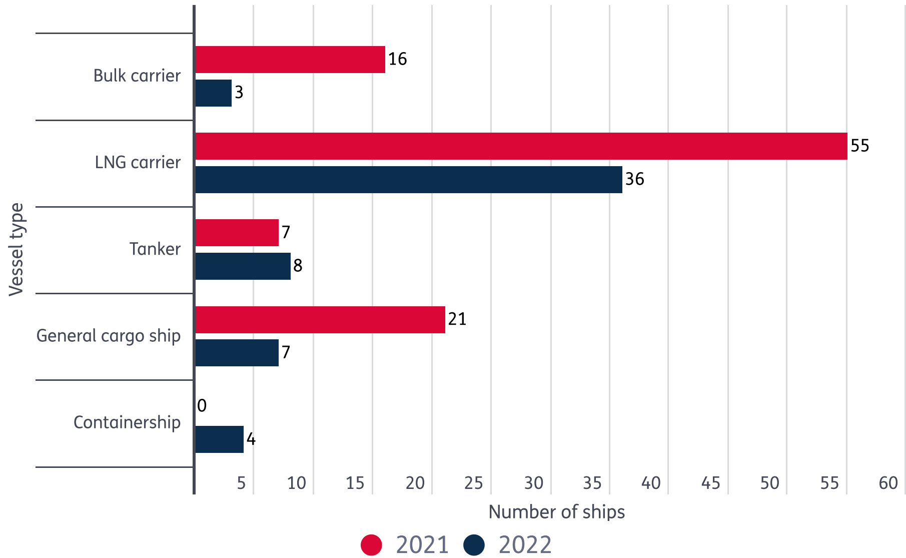
The Russian government is the beneficial owner of the vessel, which is operated by Atomflot Federal State Unitary Enterprise. The latter is a Russian company that operates a fleet of nuclear-powered icebreakers.

The other containership to travel the passage, making one trip, was Russian-flagged *Monchegorsk*.

The vessel is operated by Norilsk Nickel, which is a mining and metallurgical company that owns a terminal in the port of Murmansk.

Containerships made only three voyages through the Northern Sea Route between 2018 and 2020, with none passing through in 2021.

Northern Sea Route voyages (commercial vessels)



Data accurate as of October 11, 2022

Source: Lloyd's List Intelligence

Another avenue for trade

The Kremlin is also promoting the International North-South Transport Corridor as another avenue for trade to reach new markets.

Russia's Caspian Sea ports are less busy this year than last, recording 551 outbound sailings during the third quarter of 2022 compared to 820 in 2021. Azerbaijan, however, reported a 24% year-on-year increase in departures during the third quarter. Outbound sailings from its ports grew 40% from January to September compared to the same period in 2021.

Demand for transportation via Azerbaijan along the Trans-Caspian International Trade Route has increased significantly since the invasion of Ukraine, Khudayar Hasanli, head of strategic planning and development department at Baku International Sea Trade Port, told a local news agency.

The route is being used to move cargo from China and central Asia to Europe and back.

The wider Caspian Sea ports cumulatively have not seen an increase in activity post-invasion, but there has been a spike in vessels travelling for periods with their automatic identification systems off in a behaviour called 'going dark'.

There are several reasons for ships to switch off AIS, including transmission or safety issues, but it is commonly used as a tactic to obfuscate journey origins and destinations, as well as other illicit activity.

Russian-flagged Sevmorput, left, completed three journeys passing along the Northern Sea Route and through the Bering Strait.

AIS gaps in the Caspian Sea totalled 440 in September. This is 37% higher than the number recorded in August, and the most since May 2021.

The spike was driven by Russian and Iranian-flagged tankers and general cargoships.

The increase in AIS correlates with a higher number of what appear to be dark ports calls, where ships are mainly trying to hide journeys to Russia or Iran. Some 48 voyages of this nature occurred in August, rising to 60 in September.

There are two plausible explanations to the increased volume in AIS gaps, according to Martin Kelly, lead intelligence analyst at EOS Risk Group.

The first is attempts to conceal the illegal transhipment of Iranian oil.

"Oil exports are Iran's main source of revenue and have been targeted following the breakdown of the Joint Comprehensive Plan of Action," said Mr Kelly.

"Transporting oil on the high seas in which Western authorities patrol is a huge risk for Iranian exports."

The Caspian Sea is a much safer option for moving risky cargoes, including weaponry, he said.

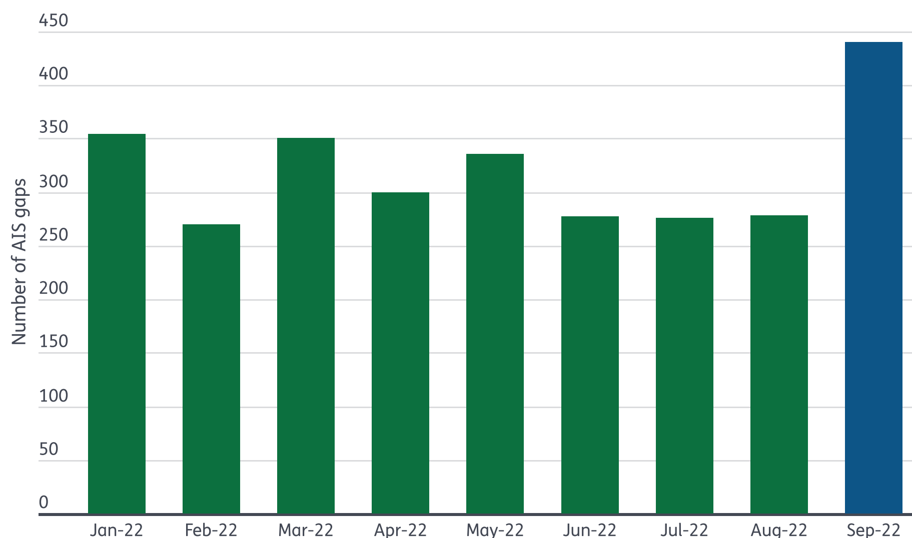
Reports from Ukraine indicate that Russia is likely to be using Iranian drones against Ukrainian targets.

Further, Iranian officials have confirmed that they will be supplying Russia with two types of ballistic missiles, according to Mr Kelly.

"The shortest route for the missiles to reach Russia, with the largest lift capability, and less chance of seizure, would be via the Caspian Sea," he said.

The government of Iran, through a private company, recently invested and carried out improvements to Russia's Caspian Sea port of Astrakhan.

AIS gaps Caspian Sea (commercial vessels)



Data accurate as of October 21, 2022 *Source: Lloyd's List Intelligence*

The purpose of this was so Iran could find alternative ways of exporting via Russia, according to Yörük Işık, a geopolitical analyst from the Istanbul-based consultancy Bosphorus Observer.

"This has become a key investment because Russia is now using Astrakhan for access to Iranian ports," said Mr Işık.

Black Sea routes

Russia's traditionally busy maritime trade routes in the Black Sea continue to play an important role in moving cargo, but especially in its growing relationship with Türkiye.

Kavkaz Anchorage, located in the Kerch Strait, is a critical area for Russian exports, especially grain.

Smaller vessels travel down to the anchorage through the Sea of Azov, where they conduct ship-to-ship transfers with larger vessels, which move the cargo to the next destination.

> *This increasing trade relation [with Türkiye] has a deadline. Russia is on a very self-destructive path and is not changing its direction on the Ukraine front*
>
> **Yörük Işık**
> Geopolitical analyst
> Bosphorus Observer

Departures from the anchorage have been falling throughout the course of the war with Ukraine.

The opposite trend is seen with Türkiye, though. During the second quarter of 2022, the country accepted 203 vessels travelling from this location, up from 99 during the same period in 2021.

During the third quarter of 2022, preliminary numbers show this figure grew to 317 ships.

Türkiye plays a dual role in the war, supporting Ukraine while also lifting Russia economically.

"This increasing trade relation has a deadline," said Mr Işık.

"Russia is on a very self-destructive path and is not changing its direction on the Ukraine front.

"It is impossible to imagine that Turkish trade in the long term can continue increasing because everything is going to come under sanctions, and everything Türkiye produces in one way or another touches European trade."

It is difficult to know for certain whether Moscow can maintain or scale up its seaborne trade with "friendly" countries, even if the trade lanes exist for it to do so.

"Geopolitics has a big role to play," said professor of operations and supply chain management Samir Dani of the Keele Business School.

"There is an alliance against Russia, but there are individual countries that continue to be on good terms and keep up trade relationships.

"At the end of the day, it is about the longevity of the war. Governments change and so do policies, and we do not know what is going to happen."

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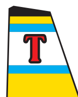

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The port of Ningbo has been badly disrupted by a Covid outbreak, with blocked roads, closed warehouses and stranded truck drivers.

Search for resilience as China's 'world factory' position weakens

Fears over continued lockdowns in China and geopolitical tensions are driving more companies to diversify their supply chains, where shipping play an important role , **Cichen Shen** reports

An ancient Chinese philosopher once said: "You can't have fish and bear paw at the same time." Put simply, people sometimes have to give up one benefit to gain the other.

The US and its allies are now forcing China to make a choice: either work with us, or without us.

Beijing wants both. It has drawn up an ambitious plan, announced by President Xi Jingping during the recent party congress, aimed at modernising China in its own way.

To further modernise the Middle Kingdom requires continued access to the global market and technologies from the developed world; the Chinese style is a manifestation of the denial of adopting the Western system, from the way it handles the coronavirus pandemic to how it elects its political leader.

One of the results of this paradox, according to some industry experts, is the acceleration of the supply chain reconfiguration, where shipping plays an important role.

The super-strict virus-control rules continue to test the patience of manufacturers in China and their foreign partners.

The European Union Chamber of Commerce said in September that China's "inflexible and inconsistently implemented" Covid policy was crippling business operations and warned that companies were losing confidence in the country as an investment destination.

Recent news of workers fleeing to their hometowns from the country's largest iPhone factory in Zhengzhou city would have done little to help sway sentiment.

Beijing has doubled down containment efforts amid surging domestic infections in recent weeks.

According to the latest estimate by Normura, 28 Chinese cities were under varying degrees of lockdown, with more than 200 million people affected in regions covering about Yuan25.6trn ($3.6trn) of China's gross domestic product, as of October 24.

The recent Covid outbreak in Ningbo provided yet another stark reminder of how shipping and logistics can fall victim to the heavy-handed measures. With blocked roads, closed warehouses and stranded truck drivers comes disrupted container transport and reduced terminal efficiency.

Companies are no stranger to such disruptions that have occurred numerous times across Chinese cities over the past few years and are now regarded as the 'new normal'.

"In the US, people might feel they have entered the post-pandemic era, but in China, we have never thought so; nor did the party congress send any signals that this will end any time soon," said a Chinese container shipping executive.

"So, production and exports here will likely be constantly disrupted."

Flexibility in port calls is a critical requirement for carriers, he said. Many shipping lines are also dispersing equipment into different inland ports from just a few coastal hubs to spread the lockdown risks, despite the cost.

Migration of manufacturing capacity and supply chains has increasingly become an option. A lower labour cost was the largest catalyst. It is now being replaced by the risk of deglobalisation and decoupling, highlighted by the escalated US curbs on Chinese electronic chipmakers.

An EY survey of chief executives earlier this year found 79% of them globally were proactively reconfiguring their operations and supply chains in response to geopolitical and trade tensions.

This figure exceeded 90% when focusing on those in major Asian economies, such as Australia, Japan, China and Singapore.

Will it be the new entrants, whether digital forwarders or large retailers, that end up dominating?

Steve Saxon
Maritime expert
McKinsey

The China Plus One strategy, which encourages companies to diversify their investments and supply chains outside of China, is prevailing, according to Atul Chandna, who leads EY Asia-Pacific's supply chain segment. And countries in Southeast Asia appear the largest beneficiaries by far.

Mr Chandna said one of his clients, a consumer goods company, has moved out of Hong Kong and split its operations, establishing Shanghai as its China-for-China hub and Singapore as its headquarters for the rest of the global market.

Another client, a tyre manufacturer, said it was looking for a space almost three times the size of its largest existing factory, in member states of the Association of Southeast Asian Nations. The firm wants to tap into the fast-growing electric vehicle market, where China has become the world's largest exporter.

One implication for shipping is that the supply chain shift to the Asean countries will give rise to the development of smaller tier-two ports, which connect the scattered markets in the region crisscrossed with a network of waterways, said Mr Chandna: "Tier-two ports are probably the answer in future to meet customer demand."

And, as the supply webs get increasingly stretched from a single world factory to multiple manufacturing hubs, integrated logistics services empowered by technological readiness are gaining traction, he added.

Companies demand trusted end-to-end solutions to help them navigate the increased layers of logistics operations so they can focus on the product and customer experience, he said. "Supply chains are going down that route."

That is perhaps why more container shipping companies are buying logistics assets to expand their service arsenal.

A recent Moody's report showed that leading carriers Maersk, CMA CGM and Hapag-Lloyd have collectively purchased transportation and logistics assets worth around $14bn since January 2020, mainly in port terminals, contract logistics and air freight.

Cosco Shipping also recently launched a new supply chain division to focus on a one-stop logistics product — combining warehousing, container trucking, delivery, river and rail transport, customs clearance, air freight and container load business — having enhanced the ties between its container shipping, port and logistics arms.

Yet it is not just the shipping operators that are being pushed towards the avenue of integration.

The jury is out on whether the future

Tier-two ports are probably the answer in future to meet customer demand. Supply chains are going down that [end-to-end solutions] route

Atul Chandna
Asia-Pacific supply chain leader
EY

will be dominated by carriers that innovate and own the end-to-end value chain, or traditional freight forwarders that digitalise themselves and become the leaders in the new era, said Steve Saxon, a maritime expert at McKinsey.

"Or will it be the new entrants, whether it's digital forwarders or large retailers, that end up dominating?" he said.

Mr Chandna said two of his clients in the retail industry, one in Thailand and another in the Philippines, are seeking EY's advice on how to set up their respective logistics arms.

"More and more companies are looking at logistics as a spin-off business and a service from an end-to-end provider perspective," he said.

In China, the ambitious expansion plan by Transfar Shipping, an emerging container shipping line backed and invested in by e-commerce giant Alibaba, has commanded attention.

Rather than an ocean shipping carrier, Transfar positions itself as an integrated end-to-end logistics provider for thousands of Chinese small and medium-sized cross-border e-commerce firms, according to chief operating officer Li Xiaobing.

"That is why, in addition to containers and vessels, we have also invested in shoreside assets, such as trailers, trucks and storage yards, on the US side."

Transfar is seeking to order five or six methanol dual-fuel boxships, possibly with a capacity of 8,000 teu each, for delivery between 2025-2026.

"We are still in talks with yards about the specific size and design," said Mr Li.

"We know ship prices are high at the moment, but new orders and ship capacity are the result of great deliberation backed by a growing demand for cross-border e-commerce logistics."

Using green methanol as fuel will allow the company to keep providing well-received fast-boat transpacific service while complying with stricter global emission rules, he added.

Mr Li believes online trade between China and the US will continue to grow, despite bilateral tensions. However, he is not turning a blind eye to shifting supply chains, either.

Transfar has started to extend its networks to Southeast Asian ports including Singapore, Jakarta, Ho Chi Minh City and Laem Chabang, he said.

"Especially in Thailand and Vietnam, we can almost ensure a direct service to the US every three weeks."

The trend of going south from China is continuing to accelerate, said Mr Saxon.

"As different fears arise about China, whether it's further lockdowns because of the continued zero-Covid policy, or whether it's other geopolitical risks, every manufacturer I talked to has got a China-plus-one strategy," he said.

"Often it is the Chinese manufacturer who is going to set up a factory abroad."

This bodes well for container shipping as the fragmentation of supply chains are expected to increase cargo demand. with many intermediate goods still being made in China, he further argued. "You've got a move from China to Vietnam, and you've got final assembly in Vietnam and then it moves to the export market. So, one container movement has now become two."

The real challenge may lie in the efforts being stepped up by developed consumer countries to bring manufacturing capacities — at least the high-end ones — back home.

The sprawling $280bn bill signed by President Joe Biden to bolster the US chip-making industry has, in fact, revealed a painful irony: Washington is now replicating Beijing's industrial policy — which it has been slamming — with massive incentives and subsidies.

"When [President] Biden looked at Beijing's Made in China 2025 strategy, he realised that he could do the same," said a Hong Kong-based US trade official.

This has become a concern over unfair competition shared by German chancellor Olaf Scholz and French president Emmanuel Macron during their recent lunch meeting in Paris, according to a report from Politico.

Citing anonymous sources, the American, German-owned political newspaper said if the US does not scale back, the EU will have to hit back with similar incentive schemes for companies to regain the ground lost.

However, for now, at least, the sharp correction of freight rates from the pandemic-led apogee are putting a dampener on reshoring or near-shoring initiatives, said Mr Saxon. "At a time when freight rates were $10,000 to move a box, that looked very smart. But if rates are at 2019 levels, then the business case doesn't make sense."

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Vehicle carriers profit from capacity constraints

Oliver Hoffmann/Alamy Stock Photo

Vehicle carriers are facing severe landside disruptions due to numerous factors, mainly shortages of stevedores and strike action.

Landside labour shortages have created inefficiencies in the vehicle supply chain, but with it improved earnings for owners and operators of pure car and truck carriers, **Rob Willmington** reports

Port congestion, growing trade imbalances and instabilities in the supply chains of auto parts are creating a perfect storm for the global vehicle carrier sector that shows no sign of abating.

"We have seen limited growth in the sales of cars in 2022 compared to 2021, but vehicle carrier operators are in a far more extreme situation, in terms of cargo capacity shortages, than last year," Oskar Orstadius, chief sales officer at Höegh Autoliners, told Lloyd's List.

"Our outlook is positive, and volumes are expected to grow far higher in 2023."

The extreme situation referred to by Mr Orstadius started to be felt in the fourth quarter of 2021, when burgeoning volumes of new car exports started to take off from China. Tied to increasing delays at major ro-ro terminals in Europe, Asia and the US, due to labour shortages and strike action, these factors have had a knock-on effect in driving out capacity availability of the global vehicle carrier fleet.

Port delays have reached critical levels, with recent reports of a 7,000-car capacity pure car and truck carrier having taken 11 days to complete cargo operations in Bremerhaven. In more normal times, this would have been achieved in two days.

It prompted the vessel's operator, Wallenius Wilhelmsen, to suspend all export bookings for October and November voyages from Europe, with the intention that its ships would ballast to Asia in an effort to return to some kind of fixed schedule.

"There are numerous factors that are creating port congestion. These include stricter regulations for Covid-19 testing for stevedores, which are starting to ease, while some ports are also struggling with proper workforce planning due to labour shortages," said Mr Orstadius.

With the discharge and loading of a typical large PCTC requiring a gang of up to 60 stevedores in multiple shifts, any shortage in labour can quickly delay port operations.

"Due to the disruption in vessel schedules, terminals are also flooded with cargo, which delays the port operation due to the need to double-handle cars.

"Also, if a vessel is delayed and then has to change port rotation, this also has issues for the planning of cargo and landside personnel," noted Mr Orstadius.

Global sales of new cars are expected to grow by around 4.6% in 2023, according to data provided by Wards Intelligence/ LMC Automotive.

While inflation and rising interest rates could curtail this growth, the capacity outlook for the carriage of vehicles on PCTCs is still expected to be very tight.

High and heavy and breakbulk cargoes, which can make up 30% of a typical load of a PCTC, have grown strongly over the past two quarters.

However, high demand for construction, mining and agricultural equipment has been slowed by similar issues faced by the car industry in the supply chain — in particular the shortage of semiconductors — since these sectors are also being driven towards increased electrification.

Although the vehicle carrier sector has been particularly affected this year, similar labour challenges faced at ports are also being seen by the trucking and rail sectors.

In addition to the shortage of semiconductors used in car production, auto parts shipped by containerships have been held up by port congestion in 2022, thus affecting car production outputs.

Meanwhile, there remains a shortage of new cars to meet current demand.

Most car manufacturers appear to have given up on producing cars for dealer stock — and, as such, inventory levels at dealerships are at record lows, while lead times for popular cars, from order to delivery, are typically around nine months presently.

"When we talk to car manufacturers, there is no intention to build up inventory levels; instead, they are only building cars to order. The long waiting times for new cars is a good indicator of the pent-up demand for them," said Mr Orstadius.

"At the same time, there are a lot of new model launches happening at the moment. Some have been postponed due to material or semiconductor shortages, and this creates an extra spike in shipments as rivals compete for space on ships."

As a consequence of the shortage of vehicle carrier capacity, charter rates for PCTCs have reached record levels.

VesselsValue reported that in August, Nissan extended the charter of the 6,178-car capacity *Lake Geneva* for $100,000 per day, which was 174% higher than the prevailing rate for similar ships in January — and up by a colossal 488% compared to December 2019.

"The lack of capacity in the market could see charter rates hit $150,000 per day, but this is not sustainable in the long run," said Mr Orstadius.

"Back in the old days, before 2020, it was difficult for a tonnage provider to earn $20,000 per day, due to the low rates being paid for freight."

Meanwhile, reported earnings by the major listed vehicle carrier operators have been in very positive territory since the turn of the year.

Höegh Autoliners itself reported a 31% improvement in 2022 first-half revenue year on year, on the back of improved freight rates of 8.4%, while PCTC tonnage provider Gram Car Carriers recorded a 26% improvement in second-quarter profits compared to the first quarter of 2022.

With only a handful of newbuildings having entered the fleet this year, or expected in 2023, further pressure will be added to fleet capacity when Carbon Intensity Indicator regulations begin to come into force from January 2023.

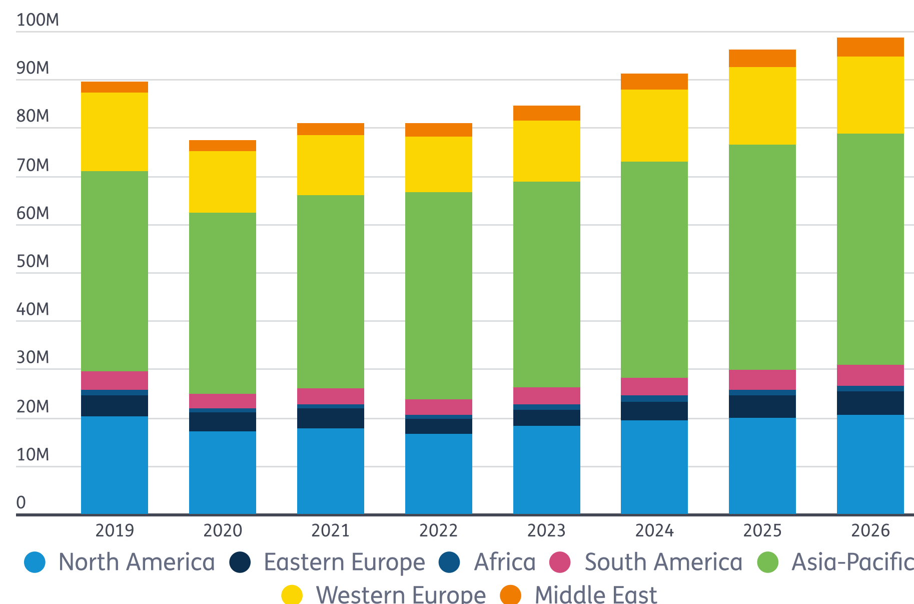
VesselsValue estimates that up to 10% of current fleet capacity could be cut due to the need for older, less-efficient ships to reduce service speeds to remain compliant with regulations.

More positively, most major operators have been investing in newbuildings this year, either via owned tonnage or through long-term charter deals with non-operating tonnage providers.

However, most of this capacity will not be coming on stream until the second half of 2024 and therefore will not help the current woes being faced by vehicle original equipment manufacturers.

Furthermore, not all of the tonnage on order is optimised for heavy sports utility vehicles, which appear to have become the standard car of choice for many car buyers.

Global light vehicle sales forecast by region



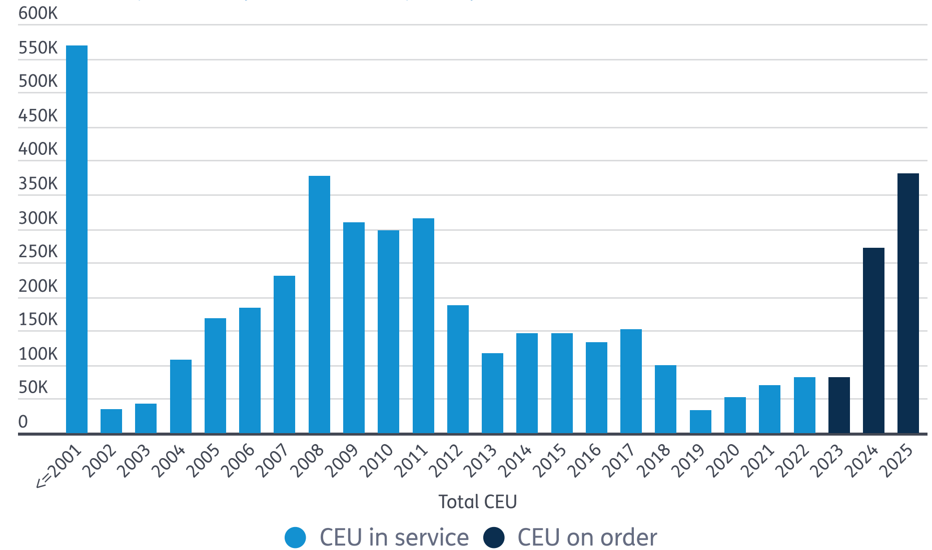
Source: *Wards Intelligence/LMC Automotive*

> *We have seen limited growth in the sales of cars in 2022 compared to 2021 but vehicle carrier operators are in a far more extreme situation, in terms of cargo capacity shortages, than last year*

Oskar Orstadius
Chief sales officer
Höegh Autoliners

With only a handful of newbuildings having entered the fleet this year, or expected in 2023, further pressure will be added to fleet capacity when Carbon Intensity Indicator regulations begin to come into force from January 2023

PCTC age profile by total car capacity (CEU)



Source: Lloyd's List Intelligence

Höegh Autoliners' programme of eight 'Aurora-class' newbuildings, with options for a further eight, is the only PCTC order to have been placed so far for ships that can utilise ammonia or methanol as the main propulsion fuel.

Other operators have opted for liquefied natural gas propulsion. This could ultimately prove a mistake, given both the cost of LNG fuel and the recent backlash against it due to methane slip.

Numerous operational considerations, from a cargo perspective, were considered in the design of the Aurora class that will not be included in most of the standard, shipyard-designed vessels ordered by other owners recently.

"With our newbuilding programme, we took into consideration the fact that SUVs have a lower ground clearance than standard cars when being loaded over internal vehicle deck ramps — therefore the ramps on our new ships will have a reduced angle to speed up the loading process," said Mr Orstadius.

Electric cars are also heavier than internal combustion engine cars. As such, Höegh Autoliners' newbuildings will be fitted with stronger car decks than previous generations of ships.

"We are building vessels for the future," added Mr Orstadius.

The PCTC newbuilding orderbook

Owner/operator	Vessels	Shipbuilder	Car capacity	Order date	Delivery	Dual fuel	Class
Atlas Maritime	2	CIMC Raffles	7,000	Q2 2022	2025	Yes	DNV
Cosco	6	Fujian Mawei	7,000	Q2 2022	2024/5	Yes	CCS
Cosco	6	Guangzhou Shipyard	7,000	Q2 2022	2024/5	Yes	CCS
Cosco	3	Shanghai Waidaoqiao	7,000	Q2 2022	2024/5	Yes	CCS
Cosco	6	Xiamen Shipbuilding	7,000	Q2 2022	2024/5	Yes	CCS
Eastern Pacific Shipping	15	China Merchants Weihai	7,000	2021-2022	2023-2025	Yes	DNV
H-Line Shipping	2	Guangzhou Shipyard	7,000	Q1 2022	2024-2025	Yes	KR
Höegh Autoliners	8	China Merchants Jiangsu	9,100	Q1/2 2022	2024-2025	Yes	DNV
Hyundai Glovis	2	Guangzhou Shipyard	7,000	Q3 2021	2024	Yes	KR
K-Line	3	Tadotsu Shipyard	7,000	Q1 2021	2023	Yes	NK
MOL	4	Shin Kurushima	7,000	Q2 2021	2024	Yes	NK
MOL	4	Nihon Shipyard	7,000	Q2 2021	2024-2025	Yes	NK
NYK	4	China Merchants Jinling	7,000	Q1 2021	2023	Yes	DNV
Ray Car Carriers	4	Hyundai Samho	8,000	Q2/3 2022	2024-2025	Yes	DNV
SAIC Anji Logistics	7	Jiangnan Shipyard	7,000	Q1/2 2022	2023/4	Yes	CCS
SFL Corp	4	Guangzhou Shipyard	7,000	Q3 2021	2023-2024	Yes	DNV
Wallenius/VW Group	2	CIMC Raffles	6,000	Q2 2021	2023	Yes	LR
Yard account	1	3 Maj	7,000	Q2 2014	TBC	No	BV
Zodiac Maritime	8	CIMC Raffles	7,000	2021-2022	2023-2025	Yes	LR

Source: Lloyd's List

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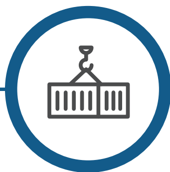

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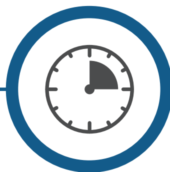

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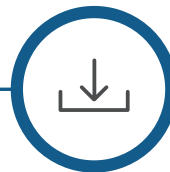

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