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Baltic Exchange

Xinhua-Baltic International Shipping Centre Development Index Report 2026

Xinhua-Baltic
International Shipping Centre Development Index (ISCDI) Report
2026

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Introduction

The Xinhua-Baltic International Shipping Centre Development Index (ISCDI) provides a comprehensive ranking of the world's top port cities and maritime centres, employing a diverse array of metrics. These metrics encompass every facet of a shipping-centred environment, from business elements involving maritime service providers such as lawyers, financiers, and shipbrokers, to port factors including cargo throughput, draught, and container berth length. Additionally, the index evaluates the overall business climate, factoring in customs tariffs and logistics performance.

Since its inception, the ISCDI has become one of the most renowned independent reports for the performance of the world's largest cities that offer port and shipping business services. Alongside our dedicated reports of the top 20 maritime centres in the world each year, the ISCDI details some of the key events, issues and trends impacting the international maritime sector in the previous year.

This year marks the thirteenth anniversary of the ISCDI, which is a testament to the ongoing and productive collaboration between China Economic Information Service, a subsidiary of Xinhua, and Baltic Exchange, one of the maritime industry's most historic and renowned freight data service providers.

For the thirteenth year in a row, Singapore has topped the ISCDI rankings, maintaining the top position since the report was launched in 2014. The city continues to command a strategic position as a global maritime hub in a critical region for international shipping and its maritime industry remains vibrant and critical to its entire economy. Singapore is home to an abundance of maritime companies, many of whom are essential to running the day-to-day operations of commercial vessels, as well as innovating new and exciting technologies that will help shape the industry of tomorrow.

Meanwhile, Shanghai is now ranked in second place in the ISCDI, rising continuously since the index's inception to become the pinnacle of China's maritime centres. Meanwhile, London and Hong Kong's historical legacies in global shipping and their continued importance to maritime services have secured them third and fourth place, respectively, in this year's rankings. Dubai, with its burgeoning maritime cluster, has once again filled out the top five for the ninth straight year.

While this year's ISCDI showcases the same 20 maritime centres as it did last year, there have been some notable movements in the rankings that indicate the changing dynamics of international shipping. Ningbo-Zhoushan has overtaken Rotterdam to become the sixth highest ranked shipping centre, while New York & New Jersey has risen two places to overtake Athens and Hamburg in the rankings.

This year's ISCDI also covers the significant volatility that impacted global trade in 2025, primarily the return of tariff-driven trade policies from the United States and how its trading partners responded. It also discusses the impact that this volatility had on dry bulk, tanker, gas and container markets, all of which had to adjust in real time to shifting trading patterns.

We also look at shipping's continuing drive to decarbonise, including a detailed look at the contentious meeting of the International

Maritime Organization's (IMO's) extraordinary Marine Environment Protection Committee (MEPC) that delayed the adoption of shipping's long-awaited greenhouse gas measures. The report also looks at some of the steps being taken by industry to launch and commercialise cleaner fuel options and vessel efficiency technologies.

In the finance and broking sector, this year's ISCDI looks at the growing offering of green finance from Chinese leasing for shipping, how marine insurance responded to the geopolitical challenges of 2025, and the growing importance of Freight Forwarding Agreements (FFAs) for modern shipbrokers. We also look at some of the developments across flag states and class societies last year, as well as what is going on across the maritime law, shipbroking and shipbuilding sectors.

Digitalisation continues to play a prominent role and reshape how shipping connects and operates on a daily basis. From the growing adoption of Artificial Intelligence (AI) to the impact of cyber security, this year's report covers a wide range of issues that are impacting global shipping players and how many are becoming more resilient to technological headaches.

Finally, this year's ISCDI looks at the biggest challenges affecting global seafarers, including their need to upskill to meet the demands of modern vessels, the growing mental health challenges and how shipping needs to attract the next generation of seafarers that will continue to move our industry forward.

This year's Xinhua-Baltic International Shipping Centre Development Index covers all of these subjects and more as we look to enhance your understanding of ocean-going shipping and its dynamic maritime centres around the world. We extend our gratitude to everyone who made this report possible, and wish to thank all of our contributors for providing detailed and insightful stories about the incredible world of international shipping.

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Message from Xinhua News Agency

The global shipping industry remains the backbone of international trade, carrying around 80 percent of global merchandise trade and underpinning the stability of global supply chains. As the world economy enters a new phase marked by geopolitical uncertainty, trade policy adjustments, accelerating decarbonisation and rapid technological innovation, international shipping centres are facing both unprecedented challenges and new opportunities. Against this backdrop, the Xinhua-Baltic International Shipping Centre Development Index Report (2026) provides an objective assessment of the competitiveness of the world's leading maritime hubs while examining the key trends reshaping the global shipping industry.

Since its launch in 2014, the Xinhua-Baltic International Shipping Centre Development Index has become one of the most influential benchmarks for evaluating international shipping centres. The 2026 edition continues to assess 43 major shipping centres across three key dimensions—port conditions, shipping services and the business environment—supported by 16 secondary indicators. Combining authoritative data with expert insight, the report not only presents the latest global rankings but also offers a comprehensive review of developments across shipping markets, maritime governance, green transition, finance, digitalisation, ports and maritime talent.

The past year has highlighted the resilience of global shipping amid profound change. While global trade continued to expand, geopolitical tensions, tariff adjustments and the reconfiguration of supply chains have reshaped trade flows and shipping networks. Market performance diverged across sectors: dry bulk shipping maintained solid growth, container shipping adapted to a new operating environment following the prolonged disruption in the Red Sea, while tanker and gas carrier markets entered a period of adjustment. These developments once again demonstrated the shipping industry's indispensable role in supporting global economic connectivity.

The industry's transition towards sustainability has also entered a new stage. The International Maritime Organization (IMO) continued to push forward its net-zero framework, while alternative fuels, energy-efficiency technologies, green shipping corridors and sustainable finance moved steadily from policy discussions towards practical implementation. At the same time, ports around the world accelerated their transformation into smarter, greener and increasingly integrated logistics and energy hubs.

Digital technologies are reshaping every aspect of maritime transport. Artificial intelligence, digital twins, data platforms and intelligent port systems are improving operational efficiency and decision-making, while cybersecurity and digital governance have become essential components of maritime resilience. As technology continues to evolve, the ability to integrate innovation with safety, regulation and international cooperation will become an increasingly important source of competitiveness for shipping centres.

People remain at the heart of the maritime industry. Alongside technological progress, greater attention is being given to seafarer training, crew welfare, maritime safety and the development of future maritime talent. Building a modern shipping industry requires not only advanced infrastructure and innovative technologies, but also skilled professionals, effective governance and stronger international collaboration.

As the Xinhua-Baltic International Shipping Centre Development Index enters its thirteenth year, we hope this report will continue to serve as a valuable reference for policymakers, industry leaders and researchers worldwide. By strengthening dialogue, encouraging innovation and promoting sustainable development, we believe the global maritime community can work together to build a more resilient, greener and smarter future for international shipping.

Editorial Board

Xinhua-Baltic International Shipping Centre Development Index Report

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Message from Baltic Exchange

Global shipping has always been vulnerable to the impact of international trade relations, geopolitical frictions and economic uncertainty. Despite the challenges that appeared throughout 2025, shipping continued to show remarkable resilience to ensure the continued flow of goods and commodities amid continued uncertainty.

Our global ports and maritime hubs have played an important role in providing that stability as many continue to adapt to increased demand, onboard new technologies to improve efficiencies and look to make noticeable impacts to reduce their carbon impact.

Most notably, the ascendancy and importance of shipping centres around the world have transformed how global maritime operates, how global trade connects and how global supply chains are structured.

This year's Xinhua-Baltic International Shipping Centre Development Index Report is a reflection of the growth and importance of our global shipping hubs, and a celebration of the achievements of our industry over the past 12 months.

At the forefront once again is Singapore, which tops this year's index's rankings and remains a powerhouse of maritime services and operations, as well as a global leader of innovation and digitalisation across our industry. Shanghai's continued importance to global trade as the world's leading container port, alongside its growing financial services offering, means it has risen to second place in this year's rankings. Meanwhile, London and Hong Kong's preeminent position for key maritime services are once again recognised. In addition, Dubai's growing prominence as the Middle East's leading maritime cluster and a key transshipment hub connecting Asia, Europe and Africa continues to underscore its position as a dynamic bridge for global trade.

The continued resilience and adaption of our global maritime centres to market volatility is a key reason why shipping was able to overcome the challenges that 2025 posed. Despite the impacts to global trade that we saw last year, 2025 reinforced the importance of shipping markets as the backbone of global commerce and an ever-evolving economic landscape.

In that vein, 2025 marked a landmark anniversary for Baltic Exchange as we celebrated 40 years of our global index production for the international shipping industry. Since Baltic Exchange launched the Baltic Freight Index (BFI) in 1985 with 13 dry bulk routes, the later evolved Baltic Dry Index (BDI) has become an economic bellwether of global trade. Today, Baltic Exchange's entire ecosystem of freight rates now publishes more than 200 indices across dry, tanker, gas and container markets, and have become synonymous with transparency, reliability, and freight rate benchmarking excellence.

As we mark the 13th annual Xinhua-Baltic International Shipping Centre Development Index Report, we once again put a spotlight on the achievements, developments and progress being made at key shipping centres around the world. On behalf of Baltic Exchange, I extend my sincere congratulations and gratitude to our international shipping centres that keep our economy moving and keep shipping sailing in the right direction.

Mark Jackson

Chief Executive, Baltic Exchange

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How the rankings are decided

The rankings are based on the following categories:

Port inputs (20% of weighting)

- Container throughput (TEU)
- Dry bulk cargo throughput (tons)
- Liquid bulk cargo throughput (tons)
- Cranes (no. of)
- Container berths (length of)
- Port draught (m)

Sources: Drewry, Shanghai International Shipping Institute

Business services inputs (50% of weighting)

- Shipbrokers, managers, liner & bulker companies (no. of)
- Classification society offices (no. of)
- Maritime legal (no. of lawyers & arbitrators)
- Ship finance (no. of banks)
- Hull underwriting premiums ($)

Sources: Baltic Exchange, International Association of Classification Societies, International Union of Marine Insurers, Dealogic, Legal 500, London Maritime Arbitrators Association, Singapore Chamber of Maritime Arbitration, Alphaliner

General environment inputs (30% of weighting)

- Government transparency
- Extent of e-government and administration
- Customs tariffs
- Logistics performance index

Sources: United Nations For full methodology details, please see Appendix 1.

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Global rankings – 2014 to 2026

#	2014	2015	2016	2017	2018	2019
1	Singapore	Singapore	Singapore	Singapore	Singapore	Singapore
2	London	London	London	London	Hong Kong	Hong Kong
3	Hong Kong	Hong Kong	Hong Kong	Hong Kong	London	London
4	Rotterdam	Rotterdam	Hamburg	Hamburg	Shanghai	Shanghai
5	Dubai	Hamburg	Rotterdam	Shanghai	Dubai	Dubai
6	Hamburg	Shanghai	Shanghai	Dubai	Rotterdam	Rotterdam
7	Shanghai	Dubai	New York/New Jersey	New York/New Jersey	Hamburg	Hamburg
8	Tokyo	New York/New Jersey	Dubai	Rotterdam	New York/New Jersey	New York/New Jersey
9	New York/New Jersey	Busan	Tokyo	Tokyo	Tokyo	Houston
10	Busan	Athens/ Piraeus	Athens/ Piraeus	Athens/ Piraeus	Busan	Athens/ Piraeus

#	2020	2021	2022	2023	2024	2025	2026
1	Singapore	Singapore	Singapore	Singapore	Singapore	Singapore	Singapore
2	London	London	London	London	London	London	Shanghai
3	Shanghai	Shanghai	Shanghai	Shanghai	Shanghai	Shanghai	London
4	Hong Kong	Hong Kong	Hong Kong	Hong Kong	Hong Kong	Hong Kong	Hong Kong
5	Dubai	Dubai	Dubai	Dubai	Dubai	Dubai	Dubai
6	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Rotterdam	Ningbo Zhoushan
7	Hamburg	Hamburg	Hamburg	Hamburg	Athens/ Piraeus	Ningbo Zhoushan	Rotterdam
8	Athens/ Piraeus	Athens/ Piraeus	New York/ New Jersey	Athens/ Piraeus	Ningbo Zhoushan	Athens/ Piraeus	New York/ New Jersey
9	New York/ New Jersey	New York/ New Jersey	Athens/ Piraeus	Ningbo Zhoushan	Hamburg	Hamburg	Athens/ Piraeus
10	Tokyo	Ningbo Zhoushan	Ningbo Zhoushan	New York/ New Jersey	New York/ New Jersey	New York/ New Jersey	Hamburg

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Overall rankings

	Country	City	Compared to 2025
1	Singapore	Singapore	same
2	China	Shanghai	up one
3	UK	London	down one
4	China	Hong Kong	same
5	UAE	Dubai	same
6	China	Ningbo-Zhoushan	up one
7	Netherlands	Rotterdam	down one
8	USA	New York/New Jersey	up two
9	Greece	Athens/Piraeus	down one
10	Germany	Hamburg	down one
11	China	Guangzhou	up one
12	China	Qingdao	up one
13	USA	Houston	down two
14	Korea	Busan	up one
15	Japan	Tokyo	down one
16	Belgium	Antwerp-Bruges	same
17	China	Tianjin	up one
18	China	Shenzhen	down one
19	USA	Los Angeles	same
20	Canada	Vancouver	same

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INTERNATIONAL SHIPPING MARKET REVIEWS

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2.Dry bulk shipping review of 2025

3.Container shipping review of 2025

4.Tanker & gas shipping review of 2025

01

Overview of the 2025 shipping market

Tariff turmoil: how trade policies shook up shipping in 2025

The reinauguration of Donald Trump as President of the United States in January 2025 marked the return of tariff-driven trade policy to the centre of the global economic debate.

The new administration moved quickly to introduce tariffs across a wide range of trading partners, prompting governments and companies to reassess their exposure to the US market as Washington signalled a renewed shift toward protectionism. The goal of the second Trump administration's tariff strategy was clear. By imposing new border taxes on imports to tackle "unfair" trading practices by its partners, the US aimed to make imports more expensive and therefore make domestic products more affordable. However, the tariffs were also used as leverage with other countries. This strategy had already been deployed during Trump's first term, particularly against China, Canada and Mexico to reassert America's dominance on the global stage.

While these tariffs were maintained, and in some cases increased, during the following Biden administration, the introduction of more sweeping tariffs on a global scale in 2025 caused ripples across the wider supply chain as many struggling to cope with the on-again/off-again nature of how they were being implemented.

On 1 February 2025, the Trump administration announced 25% tariffs on Mexico and Canada, its two closest trading partners, as well as an additional 10% on China. However, within a week, the tariffs on its USMCA partners were paused for 30 days, while China retaliated with 15% tariffs on US agricultural products, causing Washington to reassess. In the weeks that followed, the United States reimposed and launched new tariffs on all three countries, all of which ultimately led to a series of escalating tariffs, with the US imposing a 145% tariff on Chinese goods and China imposing a 125% tariff on US goods in response.

This approach ultimately spread to almost all the United States' trading partners, including the European Union, Australia, Japan, South Korea, and India, as well as developing economies in Southeast Asia, such as Vietnam and Indonesia.

The scope of the tariffs was broad. Everything from steel, aluminium and copper to timber, potash and crude oil to cars and all manner of commercial goods were in some way impacted in 2025 by the Trump administration's trade war.

Changing global trade patterns

For global shipping, this introduced a new layer of volatility. Changing trading patterns and a reconfiguration of trading norms meant that almost all involved in commercial shipping faced increased freight costs, port delays, and disrupted routes as they adjusted to shifting policy signals.

However, there were some opportunities for the maritime sector as many countries sought to combat the tariffs by opening up their cargo to new markets.

For example, the European Union accelerated trade negotiations with countries in Asia and Latin America as it sought to diversify its export market to minimise its exposure to US tariffs. Similarly, Canada made steps throughout 2025 to diversify its trade portfolio and pursue more business with countries outside of the US, most notably after the election of new Prime Minister Mark Carney in March 2025. By the end of the

year, Canadian exports to the US had dropped over 10% as it struck new deals with the EU, Latin America and most notably Asia-Pacific markets through the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

China also responded to the escalating tariff environment throughout 2025. Ranked as the third-largest trading partner with the US, China made significant steps to tighten regional trade ties with Vietnam, Malaysia and Cambodia as the Chinese government looked to offset the impact of its trade war with the US. This strategy looked to shore up the relationship with emerging economies in the region as members of the Association of Southeast Asian Nations (ASEAN) were the main recipients of Chinese exports in 2024, with more than US$586 billion of Chinese goods imported.

These types of strategic trade realignments ultimately resulted in a more diversified supply chain to help offset the risk of unstable tariff policies. For nations and businesses, this approach helped to redefine investment opportunities and unlocked new avenues for economic growth, particularly in key sectors like energy, technology and raw materials.

Shipping hedges its bets

For commercial shipping, there were both short and long-term benefits as a result of Washington's tariff approach.

In early 2025, as the US announced or paused tariffs on certain countries, companies rushed to import goods to the US before they took effect. For example, container volumes on the China-US West Coast route surged 18.7% year-on-year in February 2025 as businesses stockpiled inventory and minimised their risk. This created short-term surges in shipping demand throughout the year, resulting in sharp increased freight rates that benefitted carriers and logistics providers. At times throughout the year, this fluctuating consumer demand led to instances of port congestion and capacity inefficiencies.

According to data from the Freightos Baltic Index on this particular route (FBX01), the immediate impact of tariffs in the opening quarter led to container rates reaching more than $5,300/feu. However, this appeared to be the peak of the rates as demand slumped through the year, with rates falling to $3,058/feu in April before falling again to $1,714/feu in November. FBX01 rates did recover slightly in December to $2,217/feu in December but it was notable how much the tariffs impacted key Baltic trading routes.

As a result, carriers adjusted their capacity and routes in response to the tariffs as global demand fluctuated throughout the year. Less profitable routes faced reduced voyage numbers as carriers looked to defend freight rates and optimise their fleet. For example, the Asia-US East Coast route lost 42% of its capacity in May 2025 amid a surge of blank sailings due to new US tariffs on China.

In the dry bulk sector, US tariffs on Chinese steel led to increased demand for iron ore from Australia and Brazil. This cargo was mostly headed to Southeast Asia and India as they looked to capitalise with their own ramped up steel production. As a result, freight rates for Capesize and Panamax vessels were robust in 2025, with rates increasing by nearly 20% year-on-year.

Meanwhile, from a long-term perspective, the fluctuating tariff policy led to increased complexity for commercial shipping.

While spot rates experienced spikes throughout 2025, the overall trend in freight rates in container shipping was largely down as shippers faced the reality of not being able to frontload on a consistent basis. This was compounded by the pressure on capacity easing throughout the year on other fronthaul trades. As a result, carriers and charterers increasingly used index-linked contracts and Forward Freight Agreements (FFAs) in 2025 to lock in more predictable costs and reduce exposure to tariff fluctuations across wet, dry and containerised commodities.

Ports push forward

However, new trade routes and partnerships that opened as a result of the Trump administration's tariff policy meant many ports and terminals faced the need for immediate upgrades to handle the wave of new cargoes and vessels that were soon to arrive. This meant everything from new cranes and dredging projects to the increasing use of digital systems that sought to use AI and automation to offset rising costs. Meanwhile, warehousing and free trade zone investment shot up in 2025 as shippers looked to manage their inventories more flexibly in order to offset the financial impact of Washington's tariffs.

There were several examples of this type of strategy becoming reality in 2025.

In Vietnam, the Port of Cai Mep became a key transshipment hub for cargo heading to the US and Europe, with year-on-year volumes increasing 22% in 2025. In response to increased demand, Vietnam's government invested heavily in port automation, rail links and digitalisation.

In Mexico, container traffic spiked in 2025, with Port of Lazaro Cardenas seeing an increase of 30% last year, as automakers and electronics manufacturers either relocated production to Mexico or sought to use its rail connections to the US Midwest to reduce transit times and costs.

Volatility ahead

Shipping remains an industry that is notorious for its ability to weather a storm in a way that no other industry can. Volatility has remained a near-constant presence for almost a decade across global supply chains when the first Trump administration took office and looked to upend traditional trading norms. In 2025, as the second Trump administration looked to reestablish those same tariff and trade strategies, albeit on a much larger and varied scale, shipping players were able to seize the opportunity and put the pieces in place to overcome risks quickly and effectively.

Tariff disruption is likely to remain a key trend for 2026. With the IMF suggesting that global economic growth will slow to 3.1% in 2026, the global supply chain is bracing itself for more volatility from the United States, while other leading economies are making notable steps to diversify their trading portfolios, forge new partnerships and reduce their exposure to geopolitical risks.

For commercial shipping, it appears as though the tariff and trade policies from the Trump administration in 2025 was yet another hurdle that it was able to overcome, reinforcing the resiliency of the world's most historic industry.

02

Dry bulk shipping review of 2025

Dry bulk market outlook: A tale of two halves

It was another record-breaking year for dry bulk cargo in 2025, with more than 5.71 billion tonnes of cargo moved, up from the previous record-breaking year of 2024 with 5.62 billion tonnes, according to data from AXSMarine. This 1.7% year-on-year (YoY) increase continued the long-standing upward trend of the dry bulk sector over the past decade.

This positive development came despite the dry cargo sector facing a significant level of uncertainty throughout the year due to growing global trade disputes and the impact of new and irregular tariffs from the United States.

Dry bulk carriers continue to take up the lion's share of the global fleet, with about 43% of vessels on the water carrying more than 80% of seaborne trade as of 2025. As a result, how these 14,000 vessels operate and transport dry bulk cargo globally was likely to be significantly impacted by changes to long-standing trade policies.

The implementation of new tariff policies from the Trump administration, particularly on China, at the start of the year dampened the economic outlook for dry bulk cargo amid the uncertainty. Everything from iron ore and steel to coal and grains were affected, with market volatility due to the trade dispute between China and the United States spilling into the global dry bulk sector.

For example, after the US imposed sweeping tariffs on China of up to 20% for various dry bulk cargoes, China responded by targeting the US agricultural industry and imposing a 30.5% tariff on US soybeans and a 26% tariff on wheat and corn. This prompted China diversifying its grain import partners as it increasingly turned to Brazil, Argentina, the European Union, Canada and Australia, as well as increasing domestic production to enhance food security.

This trend was reflected in how the Baltic Dry Index (BDI) reacted throughout 2025. Shifting global trade patterns that impacted demand for Capesize, Panamax and Supramax vessels for all types of dry bulk resulted in an overall increase in freight rates across the year.

The BDI, which celebrated its 40th anniversary in 2025 as the world's leading indicator of cargo demand, started the year off at just 726 in January 2025, a level not seen since January 2023 when the sector had fully recovered from the peaks seen during the pandemic. These low freight rates climbed throughout the year, reaching 1,669 in March, 1,975 in June, 2,259 in September and 2,845 in December as the impact of the new US trade policy began to impact the dry bulk market and new trading norms emerged and took hold.

Despite the regulatory and trading challenges that were evident across 2025 as the world reacted to the Trump administration's adoption of new tariff policies, the overall increase in demand and cargo volumes shows that the dry bulk sector continues to demonstrate resilience and flexibility as the backbone of global trade. With global demand for dry bulk cargo remaining stable throughout the year, many owners sought to put their vessels into new markets and onto new routes to take advantage of higher freight rates.

Iron ore, bauxite and steel

Iron ore shipments reached 1.71 billion tonnes in 2025, up 1.4% YoY, according to data from AXSMarine. Australia remained the global leader of iron ore exports, with nearly 945 million

tonnes moved, while Brazil followed with 391 million tonnes and Canada and South Africa also showed positive gains. China remained the global leader for demand, importing more than 1.28 billion tonnes, up 1.5% YoY. However, iron ore demand declines from Japan and South Korea in 2025 highlighted diverging steelmaking trends across Asia as China continues to cement its position.

There are two primary Baltic routes for iron ore shipments. The first is C3, which is Tubarao in Brazil to Qingdao in China. The second is C5, which is West Australia to Qingdao. Both routes are critical benchmarks for Capesize vessels transporting iron ore cargo and, in recent years, has seen heightened interest in FFA options as they continue to support global benchmark performance.

On the C3 route, more than 16,700 FFAs were bought in 2025, up from just over 11,000 in 2024. Meanwhile, on the C5 route, 195,386 FFAs were traded in 2025, which was down from 243,664 seen in 2024. Despite this downturn, interest in futures on the C5 route remained high, with Freight Investor Services (FIS) facilitated its first-ever C5 option trade on Singapore Exchange (SGX) in January 2025.

Bauxite was one of the strongest growth segments in 2025, with shipments surging nearly 21% YoY to more than 241 million tonnes. Traditionally used to make aluminum, bauxite exports grew in Guinea as it shipped more than 173 million tonnes, while Australia and Brazil also saw modest increases. Demand for bauxite was overwhelmingly concentrated in China as it imported 213 million tonnes, up 24.5% YoY, as it continued to expand its aluminum refining capacity.

Meanwhile, steel products also saw a positive growth story in 2025 as steel and steel-related products rose to 279 million tonnes, up 6.9%.

In other sectors, fertilizer shipments increased 9.7% YoY to 210 million tonnes due to increased demand in China, India and Brazil, while nickel ore climbed 10.7% to just under 60 million tonnes, driven by exports from the Philippines and demand from China and Indonesia.

Coal

Coal markets saw a different story in 2025 as demand softened globally. As a result, coal shipments fell to just below 1 billion tonnes, down 4.8% YoY.

Indonesia, the world's largest exporter, moved just 487 million tonnes in 2025, down 8.4% YoY, becoming the leading reason behind the decline in exports, according to AXSMarine. To offset this, Australia, Russia and South Africa recorded moderate growth last year. However, China's demand for coal fell 12.8% to just 330 million tonnes while India also reduced its imports to just 160 million tonnes. This marked a rare simultaneous decline in coal demand from both China and India as they continue to diversify their power-generation market and welcome cleaner alternatives.

Grain, wheat and corn

Agricultural cargoes saw a mixed story in 2025. Despite the volatility brought by changing global trade policies, soybean trade increased YoY, rising 4.6% to 161 million tonnes. Brazil continued to position itself as the world's leading exporter, moving more than 107 million tonnes in 2025, while Argentina rebounded from a weak 2024 to double its shipments to 9.8 million tonnes. However, the United States saw

its soybean exports fall by 14.4% YoY to just 34 million tonnes as markets moved away from US cargoes due to the implementation of global tariffs. China remained the global importer for soybeans, bringing in more than 107 million tonnes, up 2.3% YoY.

However, other grain cargoes, mainly wheat and corn, declined in 2025, primarily due to a reshaping of global grain patterns. China cut its imports dramatically to just 20 million tonnes, down 57.2%, as it sought to increase domestic production and looked to new markets in response to US tariffs. As a result, Japan became the global leader for wheat and corn imports in 2025, bringing in more than 24 million tonnes last year.

Vessel employment

These changing cargo patterns resulted in fluctuating demand for various bulk carriers, with some experiencing greater demand while others faced contractions.

Panamax vessels played the leading role in 2025's dry cargo trade, moving more than 1.1 billion tonnes of cargo, an increase of 4.6% YoY and the second year in a row that it has broken the 1 million tonne threshold. While coal remained the top cargo for Panamax vessels, data from AXSMarine shows that they were increasingly used for grains, ores and other minerals last year.

Ultramaxes saw significant demand growth in 2025, carrying more than 520 million tonnes, a rise of nearly 11% on 2024. Ultramaxes predominantly moved ores and minerals, followed by grains and coal. However, there was a notable increase in fertilizer shipments, up 22% to 46 million tonnes, as many sought the vessel type due to its flexibility across both industrial and agricultural trades.

Similarly, Handysizes saw notable growth last year, carrying 805 million tonnes, up 2.8%. This vessel type was particularly useful for minor bulk trades last year, such as cement, fertilizer and scrap metal, as well as ores and grains.

However, Supramax vessels faced a difficult 2025 as they moved 5.5% less cargo than the year prior, according to AXSMarine. This was primarily due to reduced coal trade in 2025, while other cargoes sought larger vessels to move greater volumes. Steel growth in 2025 managed to offset some of the losses, but overall Supramaxes faced weaker employment throughout the year.

Capesizes, meanwhile, faced a stable year in 2025, carrying more than 1.57 billion tonnes of cargo, the majority of which was iron ore and bauxite. However, a fall in demand for cargo largely offset these gains, leading to just a 0.9% YoY increase for Capesize employment.

Tale of two halves

2025 was a story of two halves for the dry bulk market. Sharp volatility as a result of new trade policies from the United States led to a more downbeat economic outlook for the dry bulk sector at the beginning of the year but, by December, record cargo volumes and a more stable trade outlook had shown sustained demand for dry bulk commodities.

The industry has had to quickly shift balance across iron ore, coal and agricultural cargoes throughout the year. The dry bulk shipping sector has once again shown its continued resilience and adaptability to changing market trends, reinforcing its position as the backbone of global trade.

03

Container shipping review of 2025

Container market outlook: A strategic realignment

Despite the volatility and uncertainty that plagued the shipping industry throughout 2025, it was another strong year for the container sector in terms of volumes.

Nearly 193 million teu of containerised cargo was transported in 2025, with almost all months reaching beyond 15.5 million teu. March, May, August and December all established new records in 2025, while February fell short due to the traditional seasonal impact of Chinese New Year.

This was another record-breaking year for containerised cargoes as it surged beyond 2024's volumes of 184.3 million teu, according to Container Trades Statistics (CTS).

China was once again the dominant force in the container market as its total throughput rose 6.8% compared to a strong 2024, driven by record volumes at Shanghai, Ningbo-Zhoushan, Shenzhen and Guangzhou.

Shanghai alone handled more than 55 million teu to remain the world's largest container port for the 16th consecutive year, while Ningbo-Zhoushan surpassed 39 million teu and maintained its position as the world's largest port by cargo tonnage for the 17th consecutive year. Meanwhile, Shenzhen reached 30.1 million teu and Guangzhou exceeded 28 million teu, reaffirming China's dominant position as the world's cargo and container gateway.

On a regional level, almost all areas posted year-on-year import gains for containerised cargo. Intra-Asia trade emerged as the largest trade lane of 2025, with an increase of 5% year-on-year. In other regions, the Indian Sub-Continent and Middle East imports were up 9%, Sub-Saharan Africa was up 18%, South and Central America was up 10% and Europe was up 7%. It was only North America that recorded a decline in 2025, with a fall of 2% compared to the year earlier.

This was largely due to a steep decline in container imports from China, which fell 28% year-on-year, alongside stagnation in European exports to North America.

All of this was driven by the uncertainty brought by the United States' move to implement sweeping tariffs on almost all global economies in a bid to make domestic goods more competitive and make containerised cargo, from China in particular, more expensive for US consumers.

Weaker freight rates

In spite of the strong container volumes, global freight rates for containers were much weaker in 2025 compared to the previous 12 months as the sector faced softer demand from the US and trade routes adjusted to new markets.

The year started off strong as the US frontloaded containerised cargo ahead of the implementation of new tariffs as the second Trump administration was sworn in. Data from Freightos Baltic Index (FBX) shows that container rates peaked in January at US $4,290.50 before declining to reach US$2,014.20 in May as the tariffs took effect. Despite a small surge ahead of the summer as some tariffs were lifted, with rates reaching US$3,689.44 in June, the rest of the year was sluggish with container rates falling as low as US$1,546.40 in October as demand slumped, according to FBX data.

According to CTS, these lower freight rates, when combined with the higher volume numbers, suggest that the traditional relationship between

volumes and pricing, long governed by supply and demand, is shifting as record volumes no longer translate into higher prices.

This has led to some of the world's largest container lines reporting lower than expected earnings in 2025, with AP Moller-Maersk and Hapag-Lloyd both reporting a fall in fourth quarter earnings despite strong year-on-year volume growth.

An oversupply of container vessels remains a persistent problem for the industry and continues to weigh on freight rates. The expansion of the global container fleet continues to outpace demand growth, with excess supply projected to persist through to 2029.

As a result, container carriers continue to explore strategies to absorb the new tonnage that is expected to hit the water over the next three years. These include reconfiguring services, implementing blank sailing, slow steaming and boosting demolition of older tonnage.

Red Sea issues

Another ongoing issue for the sector is the Red Sea as major container lines continue to avoid the region amid ongoing security risks. Major carriers, including Maersk, MSC, CMA CGM and Hapag-Lloyd, opted to continue rerouting around the Cape of Good Hope on key Asia-Europe lanes in 2025, adding up to 15 days to transit times and increasing the operational costs of major container vessels.

Despite the occasional temporary ceasefire in 2025, most major carriers remained cautious of any return as they prioritised crew, vessel and cargo safety, which ultimately increased running costs for vessels and reduced potential profits.

For many in the container sector, 2025 was a year of clear uncertainty. Heading into the new year, many knew that it was about to be a gamechanger for some of the world's biggest container lines.

New container alliances emerge

The biggest shift of the year saw the world's largest container lines realign their long-standing alliances to form new strategic partnerships and service networks better suited to current market conditions.

Container lines have traditionally preferred these types of partnerships as they help improve service coverage. By pooling resources, such as vessels and port call slots, container lines are able to reduce operational costs, offer a greater number of calls on key routes and enable them to be more competitive.

Going into 2025, there were three long-standing container carrier alliances that had been in place since 2018. These were 2M Alliance, consisting of MSC and Maersk; THE Alliance, made up of Hapag-Lloyd, HMM, ONE and Yang Ming; and Ocean Alliance, consisting of COSCO, OOCL, CMA CGM and Evergreen.

However, the dissolution of 2M Alliance meant that, as of February 2025, there are now four main factions competing on the major container trade lanes.

The first is Gemini Cooperation, a new alliance between Maersk and Hapag-Lloyd. With a total combined capacity of more than 3.7 million teu across more than 340 vessels, the alliance will focus on key transatlantic and East-West trade routes, using a 'hub-and-spoke' model to consolidate shipments and service smaller ports.

The next is Premier Alliance, a reformatted THE Alliance consisting of HMM, ONE and Yang Ming. This partnership, which leverages more than 3.8 million teu across 300 vessels, is designed to play a key role in intra-Asia and trans-Pacific trades as it looks to support high-volume regions.

Unchanged is Ocean Alliance, with COSCO, OOCL, CMA CGM and Evergreen all remaining in partnership. With a collective control of nearly 29% of global container shipping capacity, this alliance remains the heavyweight of global container trade.

However, the biggest move as part of the restructure is MSC's decision to operate entirely independently. This was primarily due to MSC no longer relying on partners to provide vessels or support their global coverage. As the world's largest container carrier, MSC alone controls about 20% of global capacity and is now set up to operate mainlines without the need of an alliance.

This strategic realignment between the world's 10 largest container lines is one of the biggest shake-ups to the container industry in nearly eight years. While all container lines have opted for partnerships that ensure they can remain competitive, all the alliances have somewhat different strategic priorities.

Varying strategies

As the biggest player in the market, MSC is focused on using the biggest container vessels, not to mention their substantial orderbook, to call at the world's biggest ports, utilising their scale of operations to offer lower costs and enhance efficiency. However, Gemini Cooperation is offering an alternative that offers very few direct port calls from ultra-large container vessels and choosing to serve smaller ports with feeder ships.

There is also an emphasis on each operator's environmental approach. Some carriers, like MSC, are looking for an LNG-powered fleet while Evergreen and Maersk are putting greater emphasis on methanol. Gemini Cooperation also has more ambitious net-zero plans that their competitors, with Maersk aiming for net zero by 2040 and Hapag Lloyd by 2045.

This means that the new container alliances that came into force in 2025 are ideally placed to offer more tailored solutions for global shippers, enabling them to prioritise certain carriers or alliances based on their own supply chain objectives and environmental targets.

Turbulence remains

2025 was a year characterised by trade policy turbulence, high uncertainty and volatility that is expected to continue. However, the current strength in trade volumes and China's continued domination of global container means that global supply chains have remained resilient in spite of the downward pressure on rates and economic dynamics.

The establishment of new container alliances, however, offers an opportunity to create a container sector that is built for the future and one that can continue to manage the instability of modern global trade.

04

Tanker & gas shipping review of 2025

Tanker & gas market outlook: A mixed message

The tanker and gas shipping sectors are renowned for their exposure to volatility and 2025 was no different as geopolitical challenges and a shifting supply chain led to a year of disruption for both industries. However, the outcomes diverged for tanker owners and operators who found themselves benefiting from surging freight rates, while the gas sector continued to battle with vessel oversupply and persistently low spot rates.

Tankers reach new heights

There were multiple issues facing the tanker sector last year, all of which supported freight markets. One of the biggest headings into 2025 was the historically low orderbook for new vessels, which elevated freight rates throughout the year. According to classification society DNV, tanker capacity utilisation exceeded 90% in 2025. This limited capacity was compounded by the new and irregular tariffs from the United States that fundamentally disrupted traditional global trade routes, with a particular focus on China that caused uncertainty in supply chains.

The Red Sea remained a disruptor in 2025 as many tanker vessels continued to opt to reroute around the Cape of Good Hope to avoid ongoing security risks to commercial vessels. This continued the trend from 2024 as many VLCCs transiting from the Middle East westward took the longer route around Africa, which also improved tonne-mile demand for tankers.

Sanctions on Russian crude and refined products also supported freight rates in 2025 as changing trade patterns created a complicated environment for tankers, with traditional short-haul routes being replaced by longer ones. For example, China and India opted to source more crude oil from the Middle East and the Atlantic basin instead of Russia, which resulted in vessels covering more distance and pushing tonne-mile demand over the course of the year.

By the end of 2025, tanker freight rates had reached new heights as demand from the global oil market remained resilient.

Part of the reason for surging demand was due to the low price of oil. At the start of the year, crude oil supplies were expected to be at about 1.8 million barrels per day, but demand was just one million barrels per day. This led to OPEC+ announcing production cuts during the year to avoid a market imbalance of resilient supply and soft demand.

This meant many major oil importers, such as China and India, chose to stockpile oil cargoes while they were cheaper, which ultimately boosted demand for major tanker vessels operating from the Middle East Gulf to Asia routes.

China alone imported more than 557 million tonnes of crude oil in 2025, up 4.4% from the year earlier, as it sought to stockpile amid rising geopolitical tensions, while the United States and India also remained major buyers of both crude and refined products.

These trends were ultimately reflected in the freight rates seen across all tanker types in 2025. According to data from Baltic Exchange, global timecharter equivalent rates for VLCCs started the year somewhat subdued at around US$25,000 per day before climbing to about US$60,000 per day by June. Increased demand for crude oil products, particularly from buyers in Asia, in the

second half of 2025 then resulted in rates surging to reach just over US$118,000 per day, which was at a level not seen since the first impacts of the pandemic in 2020.

It was a similar story for the Suezmax sector as rates climbed from just under US$20,000 per day in January to reach US$60,000 per day in April before climbing again to reach about US$95,000 per day in November. Aframax vessels also saw the same pattern, starting the year at about US$25,000 per day before reaching US$62,000 per day in December.

These increasing rates meant that, despite a general push towards energy decarbonisation efforts more broadly, oil demand remained bullish in 2025 as oil prices remained low and tanker owners took advantage of a favourable market.

For many owners, this meant that they opted to keep their older tonnage on the water for longer than usual. Higher freight rates and weak demolition prices delayed retirements in 2025, which resulted in the average age of a tanker vessel reaching more than 14 years for the first time last year. According to data from AXSMarine, the number of tankers over 21 years has tripled since 2018, while middle-aged vessels now dominate the global fleet.

Combined with the historically weak orderbook for new tankers, this could put pressure on the tanker sector in the near future due to increased risk to maritime safety, operational efficiency and the overall cost of transporting crude oil to market, with older vessels facing higher maintenance and operational costs than younger tonnage. New tankers have not been entering the market fast enough to replace ageing vessels, which typically lose about 10% of their utilisation capacity each year, leading some to be cautious about the global make-up of the tanker fleet moving forward.

Subdued LNG market

Global demand for LNG continues to grow each year and for 2025 it was no exception as countries around the world gave the green light to new LNG production projects to increase local energy security and enrich the global energy mix.

New projects coming online in North America resulted in global exports of LNG rising 4% year-on-year to 429 million tonnes. The United States became the first ever country to export more than 100 million tonnes in 2025 as it looks to double its output by 2030, bringing down gas prices for Asia and Europe. As a result, China and Japan remained the world's largest importers in 2025, although Chinese imports were down 15% year-on-year, while Egypt interestingly became a net importer of LNG as it tripled its imports compared to 2024.

Appetite from Asia for LNG remains one of the key drivers of the market, with the region already accounting for 65% of global imports, a figure that is likely to rise to 70% by 2040 as their economies move away from coal and towards cleaner sources.

All of this continues to drive demand for

LNG vessels. However, the sector's continued oversupply of vessels meant that spot charter rates remained weak throughout 2025. In practical terms, too many vessels were chasing too few cargoes.

While full-year rates were at historic lows, the surge in demand in October and November ahead of winter, particularly in Europe, reversed much of this trend. Increased trade on the US-Europe routes absorbed a lot of capacity towards the end of 2025, while rates in the Pacific remained subdued. Despite this more positive story for LNG freight rates last year, it did little to mitigate the sector's tonnage oversupply issue.

By 2025, the global LNG carrier fleet had exceeded 700 vessels as new vessels hit the water in quick succession. This led to stories where, in July 2025, about 60 LNG carriers were reported idle as rates stayed low due to falling global demand. This was largely brought about by a stronger than expected supply of LNG from the Atlantic basin to Europe, limiting long-haul trade. In addition, demand for LNG carriers to be used as floating storage in Europe almost disappeared after the summer winter contango normalised.

Compounded by lower-than-expected demand from Asia, due in part to the uncertainty brought about by the new tariff policies from the United States on global trade, the LNG sector, as of December 2025, will have seen nearly 18 months of historically low short-term charter rates. With 2026 expected to be another strong year for new vessels coming online, many are preparing for more of the same.

However, there are suggestions that the tide may turn into a not too distant future. New large-scale LNG projects will come onstream heading into the 2030s, which was largely supported by final investment decisions in 2025. Given that much of this new capacity will be in the United States, where LNG trades on a free-on-board basis, LNG trade patterns are expected to be less direct, creating a market that is more inefficient and will require additional shipping capacity for accommodate.

According to energy analytics firm Wood Mackenzie, more than 650 new LNG carriers with an equivalent of 174,000 m3 will be needed by 2040 if global supply targets are reached. While the current orderbook supports the current trade levels through to 2030, limited newbuilding investment today means that by 2040, many of the LNG vessels will be near retirement or will be operating in a less efficient and less economical fashion.

The global LNG sector is entering its next phase and while the global shipping industry looks ideally positioned today to accommodate the growing number of supply options coming online, there are concerns that this level of capacity could soon come to a close. The sector is preparing for the future and one that is in line with global energy markets as more countries look to LNG as a cleaner and more efficient part of their energy mix.

III

SHIPPING CENTRE RANKING ANALYSIS

1.1st to 10th shipping centres

2.11th to 20th shipping centres


HMM
COSCO
OOCL

Singapore reigns supreme for thirteenth consecutive year

Singapore's grip on the summit of the Xinhua-Baltic International Shipping Centre Development Index showed no signs of loosening in 2025 as the city-state delivered a year of record-breaking performance across virtually every measure of maritime activity to once again take the top spot in this year's rankings.

The Port of Singapore posted its strongest container throughput figures on record, with volumes rising 8.6% to 44.66 million TEU, comfortably cementing its position as the world's second busiest container port behind Shanghai. Vessel arrival tonnage also set a new high of 3.22 billion gt, up 3.5% on 2024, as sustained global trade flows drove traffic through one of the world's most strategically vital waterways.

Bunkering, long one of Singapore's defining strengths, delivered another record year. Total marine fuel sales reached 56.77 million tonnes, reinforcing the port's position as the world's largest refuelling destination for ships.

Beneath that headline figure, the fuel mix continued to shift meaningfully, with sales of alternative marine fuels climbing to 1.95 million tonnes as biofuel blends, LNG and methanol all grew their share. August marked a further milestone when Singapore became the first port in the world to fully mandate digital bunkering, with all suppliers now issuing electronic bunker delivery notes as standard.

In addition, the Maritime & Port Authority of Singapore (MPA) awarded new bunkering licenses for methanol and began engineering studies on ammonia to continue the push towards cleaner fuel options for shipping.

The Singapore Registry of Ships produced perhaps the year's most striking single statistic, with total registered tonnage surging 27% to a record 137.46 million gt and propelling Singapore from fifth to fourth in the global flag state rankings. While that kind of leap is unusual for a registry of SRS's standing, it reflected growing confidence among international shipowners in Singapore as a quality flag of choice.

Meanwhile, 2025 was also a year in which Singapore staked a credible claim as the maritime world's most ambitious technology hub.

March saw the simultaneous launch of two genuine world firsts: the city-state's first Maritime Digital Twin, a virtual model of the port that integrates real-time data from vessels, operations and environmental sensors to enhance decision-making and support emergency response planning; and MariOT, the world's first industrial-grade maritime cyber-security testbed, commissioned at the Singapore University of Technology and Design to simulate threats across shipboard propulsion, navigation and power systems.

With these two innovation launches in just one week, Singapore cemented its intent to continue leading the way when it comes to innovation and development across maritime.

More than 35 maritime companies opened or expanded operations in Singapore in 2025, bringing the total number of international shipping groups headquartered in the city-state to over 200, collectively contributing an estimated S$5 billion in annual business spending to the economy. Across shipping, legal services, insurance and marine technology, the breadth of that ecosystem is arguably Singapore's most durable competitive advantage. The innovation pipeline showed similar momentum, with Singapore's annual PIER71 Smart Port Challenge drawing a record 288 submissions from 35 countries last year.

Singapore's challenge heading into the latter part of the decade is less about defending its position as a leading shipping hub but about continuing to distinguish itself from other leading maritime cities across Asia. On the evidence of 2025, it is doing exactly that.

Shanghai remains the global container giant

Shanghai officially overtook London to be the world's second most important shipping centre according to the 2026 Xinhua-Baltic International Shipping Centre Development Index Report. Since the index was launched in 2014, where it was ranked in seventh place, Shanghai's continued growth and importance to global shipping has meant it has steadily risen as a reflection of China's dominance in international maritime markets.

This was reflected in 2025 as Shanghai's container port maintained its position as the world's busiest. It recorded an annual throughput of 55.063 million TEU, an increase of 6.9% on 2024 and its sixteenth consecutive year at the summit of global throughput rankings. Notably, the port reached the 50 million TEU mark on 26 November, four weeks ahead of when the same milestone was achieved in 2024.

The Yangshan Deepwater Terminal Complex was the primary source of that growth. The world's largest automated container terminal accounted for 52.1% of the port's total container volumes, with throughput up 10.4% year-on-year. International transhipment activity grew to 7.91 million TEU, a 10.6% increase on 2024, and the Phase III terminal topped 10 million TEU for the first time, a milestone that leaves little doubt about Yangshan's place at the heart of Shanghai's global operation.

Outside of containerised trade, bulk and general cargo throughput contracted, falling 6.5% to 81.607 million tonnes, reflecting both the shift in trade composition due to the United States' implementation of tariffs and the increasingly dominating nature of container volumes at the Port of Shanghai.

Meanwhile, Shanghai became the world's first port to bunker domestically produced green methanol for internationally trading vessels in 2025. Shore power coverage continued to expand, leading to both Yangshan Shengdong and Guandong International Terminals being awarded five-star Green Port status. Shanghai also signed a green corridor deal with the Port of Barcelona in August as it continues to invest in digital and environmentally friendly port infrastructure.

In November 2025, container shipping giant Maersk opened its flagship logistics centre in Shanghai's Lin-gang Special Area. The facility sits close to Yangshan to boost international and cross-border e-commerce services at the terminal.

Outside of the port, the city of Shanghai continued to elevate its high-end shipping services throughout the year.

The North Bund International Legal Service Port launched in May, bringing together arbitration, legal advisory, and transactional services under one umbrella that now counts more than 4,600 shipping-related businesses.

Meanwhile, the International Chamber of Shipping opened a representative office in Shanghai last year, while China Classification Society established an international ship inspection operations team in the city, and marine insurer London P&I Club became the first in the International Group to open a representative office in Shanghai.

Framing these developments was the publication of a draft five-year plan by the Shanghai Municipal Transportation Commission, setting out six goals for the city's development as a leading international shipping centre.

Alongside infrastructure and logistics, the plan places explicit emphasis on high-end maritime services including insurance, arbitration, finance, and information consulting. Analysts have noted consistently that this is where the gap between Shanghai and other established centres such as Singapore and London remains most visible, and where sustained progress will determine how Shanghai's global maritime standing develops through the decade.

London continues to shape shipping's green future

Although it fell one place in this year's rankings, London remains one of the most influential centres for maritime professionals and regulatory activity.

Despite facing strong competition from global competitors, London's foundational strength and unique historical advantages means it is home to some of the biggest and most renowned names in professional shipping.

This includes Baltic Exchange, the International Maritime Organization, major shipping lines and shipbrokers, maritime insurers such as P&I clubs and Lloyds of London, and important classification societies including DNV and Lloyds Register. In addition, London remains the world's pre-eminent centre for maritime law and finance, with the city continuing to be an attractive location for debt and equity financing in shipping that aligns closely with global regulatory requirements,

Overall, the UK maritime sector contributes £116 billion to the national economy and supports 1.1 million jobs, ahead of both rail and aviation combined, with Westminster continuing to show significant support for the UK's maritime sector.

On the opening day of London International Shipping Week 2025, the UK government and private sector jointly committed £1.1 billion to the maritime sector: £700 million in private investment directed at major ports and industry participants, and nearly £450 million in public funding allocated to the UK SHORE programme, which supports research and development in clean maritime technologies including electric, hydrogen, ammonia, and methanol propulsion.

Furthermore, the UK government released its new Maritime Decarbonisation Strategy in March, setting out a path to reduce carbon emissions from maritime transport to net-zero by 2050.

Last year also marked the 25th anniversary of the UK's push for offshore wind, which has benefitted the wider maritime industry with new and ambitious projects. After a quiet 2024, last year saw two of the world's largest offshore wind farms come online, adding 1,330 MW of renewable energy. Several new projects are in the pipeline for 2026 and beyond as the North Sea continues to be a hotly contest region for maritime and energy projects.

London also played host to one of the year's most consequential regulatory moments.

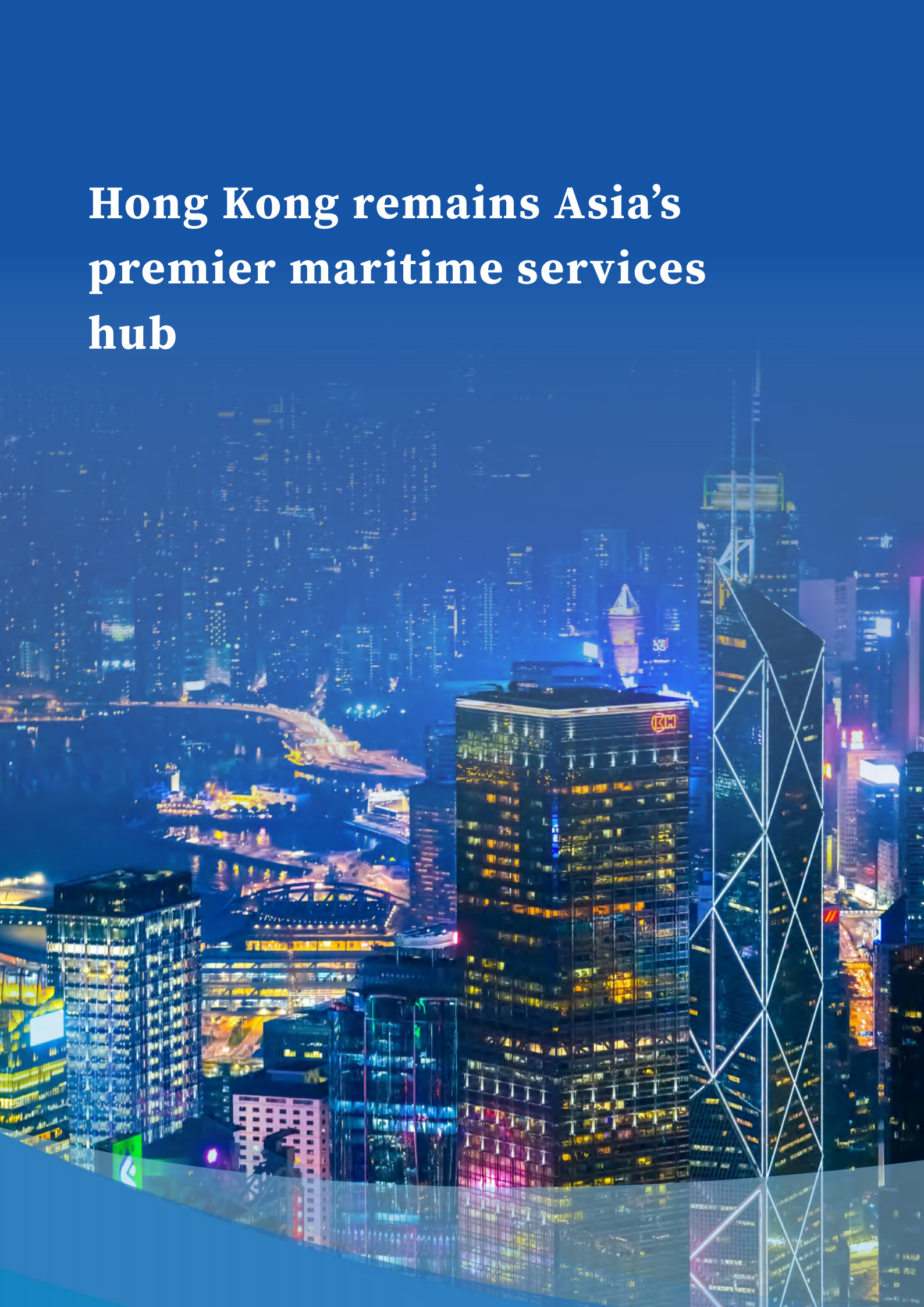
The IMO's Marine Environment Protection Committee convened an extraordinary session in October to formally adopt the Net-Zero Framework, a set of regulations approved at MEPC 83 in April that would have introduced a global fuel intensity standard and a greenhouse gas pricing mechanism for large ocean-going vessels. The session controversially ended without adoption and member states agreed to adjourn the decision for 12 months, with talks set to resume in October 2026.

Looking at London's ports, DP World's London Gateway terminal recorded its strongest year yet in 2025, handling more than 3 million TEU, a rise of over 52% on the 1.9 million TEU processed in 2024.

Two developments drove the jump: the commissioning of a fourth berth and the Gemini Cooperation's decision to route its Asia-Europe services through the port. Meanwhile, container giant MSC also redirected one service through the port that helped to shift significant volume away from competitors.

A second rail terminal at London Gateway came into service during the year, adding intermodal capacity as volumes continue to build. Construction is underway on two further all-electric berths as part of DP World's £1 billion expansion programme, which will take the total berth count to six when complete. A separate £170 million investment in a BOXBAY automated container stacking system is scheduled over the next two years.

Hong Kong remains Asia's premier maritime services hub



Once again sitting in the fourth position, Hong Kong retained its position among the world's leading maritime centres in 2025, reflecting the enduring depth of its high-value shipping services ecosystem as much as the performance of its port.

Container throughput at the Port of Hong Kong came in at 12.909 million TEU for the full year, a decline of 5.7% on 2024, as the rerouting of trade flows and broader regional competition continued to reshape transhipment patterns across Asia. The result was not unexpected given the headwinds facing the wider region, and the port's underlying infrastructure and operational efficiency remain intact. The Kwai Chung-Tsing Yi terminals handled approximately 9.7 million TEU, representing around 74% of total throughput, while outward port cargo showed signs of recovery in the final quarter, rising 12.3% year on year.

The Hong Kong Shipping Registry navigated a more turbulent passage as its registered gross tonnage fell to close the year at around 112 million gt.

However, the government has moved quickly to reinforce the registry's attractiveness, introducing a block registration incentive in February and continuing its CII-based green incentive scheme for vessels attaining A or B ratings. Planned amendments to the Merchant Shipping Registration Ordinance to modernise and digitalise the registration process signal that the longer-term ambition for the registry remains firmly intact.

Despite a difficult year in throughput, Hong Kong's strength continued to be in its services cluster, which sets it apart from almost every other maritime centre in the world.

Eleven of the twelve members of the International Group of P&I Clubs maintain a presence in Hong Kong, the largest concentration outside London. Meanwhile, five of the world's top ten ship management companies have a business presence in the city, three of them headquartered there, and eight of the world's top ten ship finance bookrunners operate out of Hong Kong, matching London.

In addition, as one of only four BIMCO-designated arbitration venues globally, the city's legal and dispute resolution offering remains a powerful draw for maritime businesses with China-related interests, offering the unique combination of common law jurisdiction, international enforceability and direct access to mainland Chinese courts for interim measures.

The government reinforced its commitment to the sector through its 2025 Policy Address, which proposed new tax concessions for commodity traders, enhanced marine insurance measures, and the establishment of partner port relationships with Guangxi, Dalian and San Antonio in Chile.

The launch of the Green Maritime Fuel Bunkering Incentive Scheme in June added a sustainability dimension, offering meaningful financial incentives to first-mover green fuel operators choosing Hong Kong as their base. Meanwhile, new shore power and port electrification deals were signed in 2025 to further the provision of clean electricity for cold ironing and propulsion at the port.

Hong Kong's maritime presence has always focused on the quality and breadth of its maritime services rather than on cargo volumes alone. In 2025, that focus was reinforced.

Dubai retains place as undisputed leader of Middle East shipping

Dubai retained its position in the top five of the rankings in 2025, maintaining its status as the undisputed maritime capital of the Middle East and a top-five global shipping centre for the eighth consecutive year.

At the heart of that standing is Jebel Ali Port, and 2025 delivered another strong performance. The port handled approximately 15.6 million TEU across the full year, nudging ahead of 2024's record 15.5 million TEU and sustaining the highest throughput levels seen at the facility since 2015.

Origin and destination volumes grew around 9% year on year, reflecting deeper trade integration between Dubai and its global partners rather than pure transhipment flows. Non-containerised cargo told an equally positive story, with a record 1.5 million vehicles handled across Dubai's terminals, up 18%, and breakbulk volumes reaching 5.67 million metric tonnes.

DP World's full year financials confirmed the scale of what is being built in Dubai. Revenue hit a record US$24.4 billion, up 22%, with profits rising 32% to US$1.96 billion and capital expenditure climbing to US$3.1 billion as the company expanded capacity at Jebel Ali, Drydocks World and across its global network.

The sustainability story at Jebel Ali was particularly compelling. In March, DP World launched an electric freight operation in partnership with Swedish technology company Einride, and by October the electric internal terminal vehicle fleet had expanded from 14 units at the end of 2024 to 146 units. The initiative is projected to reduce carbon emissions by over 14,600 tonnes annually, roughly equivalent to removing more than 2,200 cars from Dubai's roads each year. When fully deployed in 2026, the fleet will represent the largest electric autonomous freight operation in the Middle East. Across its global network, DP World also reduced Scope 1 and 2 emissions by 14% against a 2022 baseline, with 67% of electricity now sourced from renewables.

Dubai's international standing was further reinforced in September when the UAE hosted the 2025 World Maritime Day Parallel Event in collaboration with the IMO, under the theme "Our Ocean, Our Obligation, Our Opportunity." The gathering drew government ministers, the IMO Secretary-General and senior industry leaders to discuss decarbonisation pathways, alternative fuels and climate-resilient port development. Earlier in May, Seatrade Maritime UAE drew over 9,000 attendees, making it the largest maritime and logistics event ever held in the MENA region.

With Jebel Ali's expansion programme continuing, Drydocks World investing in new capacity, and a broader maritime ecosystem spanning insurance, arbitration, finance and ship management, Dubai remains in a position of considerable strength and with an appetite to close the gap on the centres above it.

While the opening months of 2026 brought an unexpected test as regional conflict temporarily reduced vessel traffic through the Gulf, Dubai continues to showcase how its maritime ecosystem has both the depth and the resilience to adapt to volatility and remain the crown jewel of the Middle East's maritime sector.

Ningbo-Zhoushan continues to go from strength to strength

Rising one place to overtake Rotterdam in this year's rankings, Ningbo-Zhoushan recorded cargo throughput of more than 1.4 billion tonnes in 2025, extending its run as the world's busiest port by overall volume to seventeen consecutive years.

Container throughput reached 43 million TEU, consolidating the port's position as the third largest container port globally and welcoming hundreds of ultra-large container vessels throughout 2025.

The port's network continued to expand, reaching 309 container shipping routes by year end, connecting more than 700 ports across over 200 countries. The Gemini Alliance was among the key services active at Meishan Port Area, contributing 263 vessel calls and 1.68 million TEU in the first half, accounting for 22.6% of that port area's total container volume. A new CMA CGM East Africa Express Line launched from Jintang Port Area in August, strengthening links with Kenya and Tanzania and reflecting the port's implementation of the Belt and Road initiative.

Infrastructure investment kept pace with volume growth. Five large-scale container berths with a combined annual capacity of 10 million TEU completed construction during the year, alongside three bulk cargo berths adding 100 million tonnes of capacity. The ore terminal was upgraded to allow the simultaneous berthing and unberthing of two 400,000-tonne carriers, and the Tiaozhoumen Waterway entered a dual-channel configuration that increased ultra-large vessel capacity by 50%.

Total import and export volume through the port reached 2.67 trillion yuan in 2025, a 5% year-on-year increase and a new all-time record. Export volume crossed 2 trillion yuan for the first time, rising 8.1% to 2.02 trillion yuan, while imports contracted 3.4% to just over 650 billion yuan.

While US-bound trade fell 17.1%, with its share of total port trade dropping to 13.7%, trade with the EU rose 11%, ASEAN grew 19.3%, and Belt and Road partner countries rose 11.5%. Together, EU and ASEAN trade accounted for nearly 30% of the port's total volume and contributed 76.6% of overall trade growth.

Meanwhile, electric vehicle exports grew 305.8% and lithium-ion battery shipments rose 129.1%, reflecting both surging global demand and Ningbo's growing role as a gateway for China's expanding clean technology industries. Private enterprises drove the overall picture, accounting for 77% of total trade and growing at 8%, ahead of the port's overall rate.

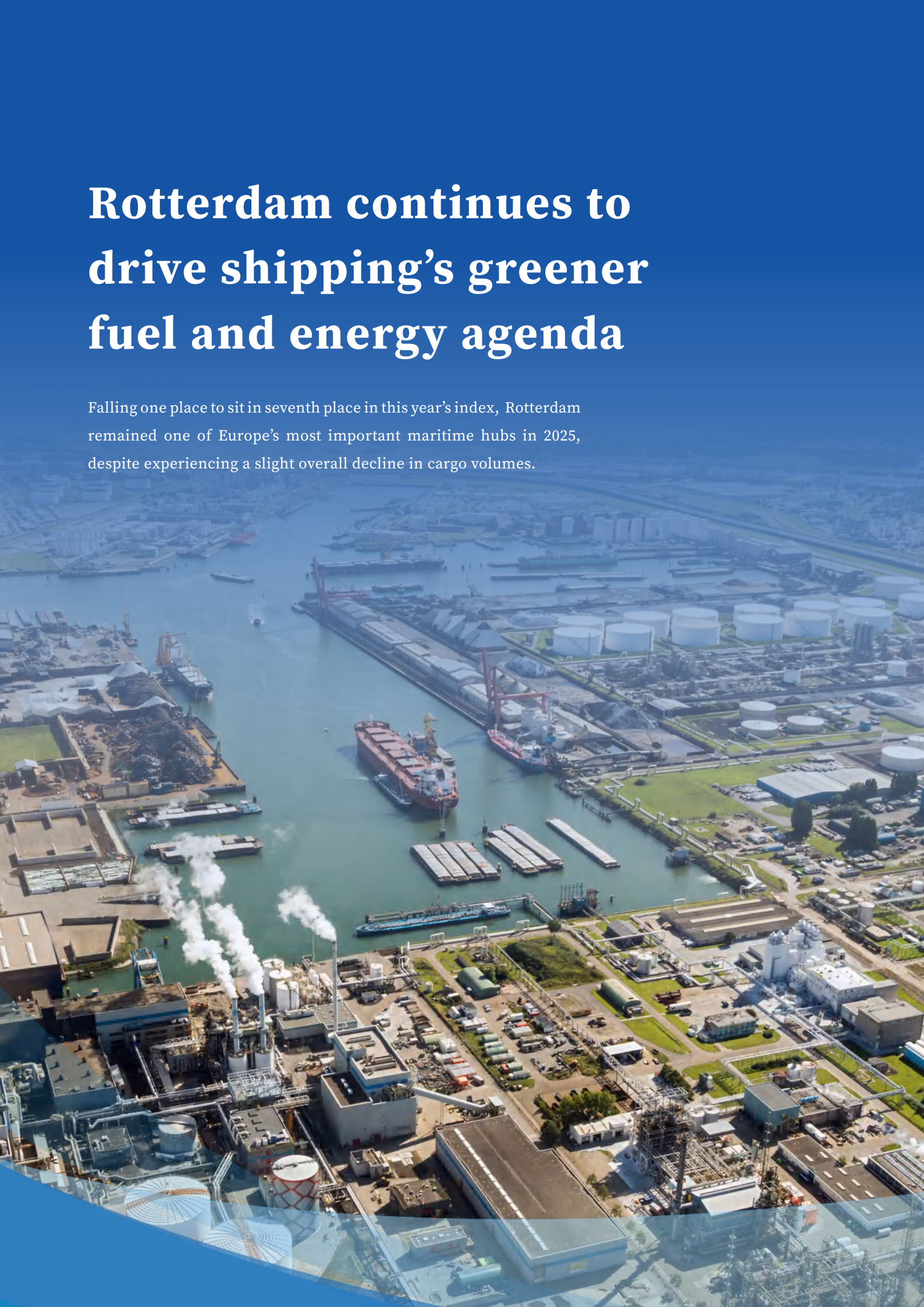
Ningbo-Zhoushan made notable progress on its green fuel transition during 2025. Annual LNG bunkering volume reached more than 250,000 cubic metres by year end, placing the port among China's three largest LNG bunkering hubs. The port also conducted China's first biofuel bunkering for a container ship at sea and has since rolled out full biofuel bunkering services across its major terminals, with green methanol capability under active development.

On renewable energy, Zhejiang province's first integrated wind, solar, and storage terminal came into full operation at the Meishan Low-Carbon Terminal, supplying over 26 million kilowatt-hours to the port area.

Ningbo-Zhoushan's results were achieved against a difficult backdrop of slowing global trade growth, geopolitical uncertainty, and the disruption to US trade flows caused by tariff measures. The diversification of routes and markets was a deliberate response to those pressures that continued to place the port amongst the most critical to global trade.

Rotterdam continues to drive shipping's greener fuel and energy agenda

Falling one place to sit in seventh place in this year's index, Rotterdam remained one of Europe's most important maritime hubs in 2025, despite experiencing a slight overall decline in cargo volumes.



Total throughput fell by 1.7% to 428.4 million tonnes, driven by weaker performance in bulk cargo, even as container traffic continued to grow and show resilience.

The most significant drop was seen in dry bulk cargo, which declined by 6.5% over the year. This was largely due to reduced demand for key industrial materials such as coal and ores. These trends were linked to ongoing changes in Europe's energy system and industrial activity as the region continues shifting away from traditional fossil fuel based inputs. Liquid bulk volumes remained relatively stable during the year, but this stability was not enough to balance with the sharper fall in dry bulk shipments.

In contrast, container traffic was a strong positive for the port. Volumes increased by 3.1% in 2025, reaching 14.2 million TEU. This growth reinforced Rotterdam's role as a major European container hub. The increase was supported by efficient terminal operations and strong international trade flows, particularly on key Asia-Europe shipping routes.

Total revenue at Rotterdam increased by 6.6% to €940.4 million, supported by higher tariffs and consistent commercial activity across major business areas. However, net profit declined to €266 million due to higher depreciation costs linked to long term infrastructure investments, as well as a one-off impairment charge. Despite the drop in profit, Rotterdam maintained a solid financial position and continued to fund major development projects.

Rotterdam invested €291.4 million in infrastructure and development. A large share of this was directed towards supporting the energy transition and strengthening the port's long-term capacity. One of the most important projects continued to be the Porthos carbon capture and storage initiative, which is designed to transport carbon emissions from industrial facilities and store them under the North Sea, helping reduce emissions in the region.

Rotterdam continues to also be a major hub for greener energy options for shipping. In 2025, the port bunkered 9.8 million tonnes of bio-LNG, nearly six times the amount moved in 2024. Meanwhile, biomethanol bunkering almost tripled to 12,000 tonnes from 4,000 tonnes a year earlier. The port also recorded its first ever ship-to-ship ammonia transfer in April 2025 as part of its preparations to adopt green ammonia as a viable option for commercial vessels.

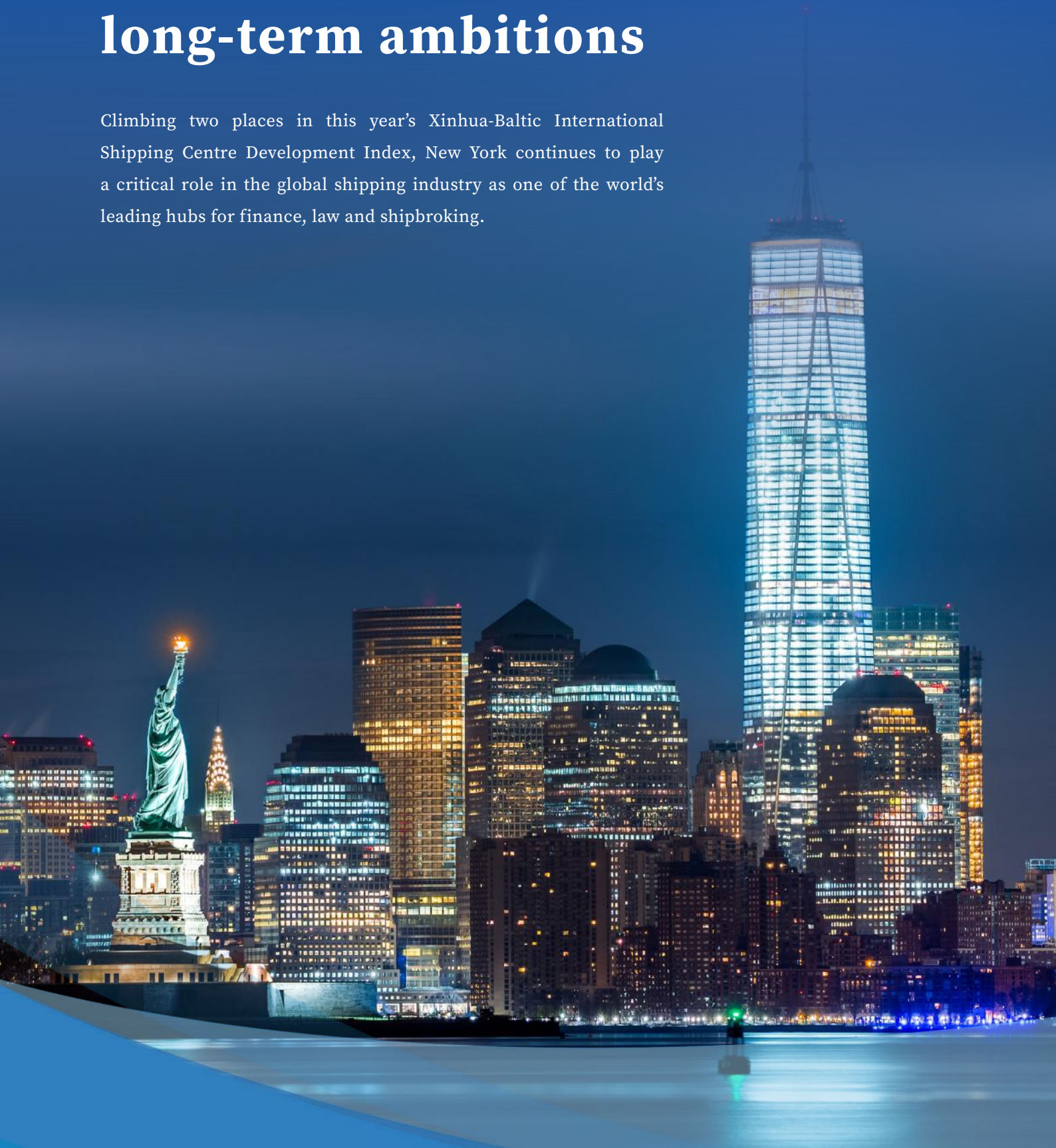
Alongside energy transition projects, investment was also directed toward improving digital systems and logistics efficiency. These upgrades are aimed at improving links between terminals, inland shipping, rail and road transport and help to maintain Rotterdam's position as a logistics hub serving the wider European market.

Rotterdam also expanded its focus on social and educational initiatives. Programmes such as the Youth Education Fund supported training in maritime and technical fields, helping to develop future skills for the industry.

Overall, 2025 represented a transitional year for the Port of Rotterdam. While total cargo volumes declined slightly, strong growth in container traffic, stable revenues and continued investment in infrastructure and sustainability projects reinforced its long term importance. The results reflect broader changes in global trade and energy systems, with the port adapting to shifts in demand while strengthening its role as one of Europe's leading logistics and energy hubs.

New York & New Jersey resurges as it furthers long-term ambitions

Climbing two places in this year's Xinhua-Baltic International Shipping Centre Development Index, New York continues to play a critical role in the global shipping industry as one of the world's leading hubs for finance, law and shipbroking.



The New York Stock Exchange remains home to several key shipping lines as they seek out the United States' capital-intensive industry to expand their fleets, build new services and help whether economic downturns.

It also remains the epicentre for private equity, bonds and alternative financing. Similar to London and Athens, New York is home to key financial institutions, law firms, insurance houses, brokerage firms, and arbitration services that are crucial to the successful running of the maritime industry.

The Port of New York and New Jersey, meanwhile, handled 8.9 million TEU in 2025, a 2.3% increase on the previous year and the port's third-busiest year on record.

The figures place it behind only the exceptional volumes of 2021 and 2022, which were defined by pandemic-era demand surges, and confirmed its position as the busiest container gateway on the US East Coast. On loaded tonnage specifically, the port recorded just under six million teu, edging out Long Beach for second place nationally behind Los Angeles.

The year's performance was shaped in part by the tariff decisions of the US administration. Following the announcement of sweeping import tariffs in April, shippers moved to accelerate inbound cargo, pushing July and August to the highest monthly volumes of the year. Despite that distortion in the seasonal pattern, throughput held broadly consistent across both halves, averaging close to 750,000 TEU per month.

Growth in exports was more significant than in any recent year, with loaded outbound volumes rising 6.5% to 1.4 million TEU. Wastepaper, food products, and iron and steel all contributed, while exports of railway and tramway stock jumped from 5,000 TEU in 2024 to 32,000 TEU in 2025. Export destinations also shifted, with the UAE, Singapore, Thailand, Belgium, and Turkey emerging as stronger markets as shipments to mainland China declined.

The structural story of 2025 at NY/NJ was one of long-term positioning. A harbour deepening project completed during the year brought channel depth to 55 feet, allowing the port to accommodate larger container vessels across its full complement of berths.

Two major lease extensions confirmed private sector confidence in the port's future. In March, APM Terminals Elizabeth agreed a 33-year extension through December 2062, opening the way for significant infrastructure investment at the second-largest terminal in the complex. In December, Maher Terminals, the port's largest facility secured an extension running through September 2063. Under the terms, Maher will take full responsibility for wharf and berth rehabilitation by 2030 and has committed to working toward net-zero operations in line with the Port Authority's 2050 target.

The port also received $347 million in federal funding through the Clean Ports programme, directed at zero-emissions operations across port facilities.

In December, the Port Authority Board of Commissioners approved a record $45 billion capital plan covering the decade from 2026 to 2035, spanning the broader transportation network across the region. The port's Master Plan 2050, which underpins the investment framework for the lease extensions, projects that cargo volumes through the complex could double or triple by the middle of the century.

Athens-Piraeus shows resilience as Greek powerhouse strengthens

Although it dropped one place to sit in ninth in this year's rankings, the Port of Piraeus delivered another year of strong financial and operational performance, underlining its growing influence as one of Europe's leading maritime and logistics centres.

Located in Athens and closely tied to Greece's long maritime tradition, the port remains central not only to the national economy but also to international trade flows connecting Europe, Asia and the wider Eastern Mediterranean.

Total revenue at the Port of Piraeus reached €250.8 million in 2025, representing an increase of 8.6% compared with the previous year. EBITDA rose to €132.3 million, up 2.2%, highlighting the port's ability to maintain strong operating performance even amid changing market conditions.

One of the more notable aspects of the 2025 results was the resilience shown despite weaker performance in the ferry segment. Revenue from ferry operations declined by 28.4% during the year, largely due to reductions in port fees. Even so, the broader business remained strong thanks to continued activity across container shipping, logistics, and cargo handling operations. In FY 2025, Piraeus Port Authority recorded a total throughput of 664,581 teu, its highest ever total in a fiscal year. This growth demonstrated the port's diversified structure and its growing importance beyond traditional passenger traffic. Piraeus continues to benefit from its strategic geographic position at the crossroads of major international shipping routes. As one of the first major European ports reached by vessels travelling from Asia through the Suez Canal, it has become an increasingly important gateway for trade entering Southern and Central Europe. This role has supported ongoing growth in trans-shipment activity and strengthened the port's position within the wider Mediterranean region.

Since COSCO Shipping became majority stakeholder in Piraeus in 2016, the port and the city of Athens has also become a key part of China's Belt and Road Initiative to speed up the trade of Chinese goods into Europe.

The port also remains closely linked to Greece's historic strength in global shipping, particularly in dry bulk and tanker ownership. Greek maritime interests continue to dominate large parts of the international dry bulk market, and Piraeus serves as a natural commercial and operational centre for many shipping companies. This connection reinforces the city's status as one of the world's leading maritime capitals, combining port operations with shipping finance, brokerage, management and logistics services.

Investment in infrastructure remains a major priority for the Port of Piraeus as it seeks to expand capacity and improve efficiency. Ongoing development projects are aimed at strengthening cargo handling capabilities, modernising port facilities and enhancing connectivity with rail and inland transport networks. These investments are designed to support long term growth while increasing the port's role within European supply chains.

Overall, 2025 highlighted the continued importance of the Port of Piraeus as a major European and Mediterranean shipping hub. Its strong revenue growth, resilient operations and sustained investment activity proved the port's ability to adapt to changing market conditions while reinforcing its long term strategic importance within both Greek and global maritime trade.

Hamburg overcomes uncertainty as container growth drives recovery

Remaining in the top 10 of the Xinhua-Baltic International Shipping Centre Development Index Report, the Port of Hamburg delivered a solid performance in 2025, reinforcing its position as Germany's largest seaport and one of Europe's most important logistics hubs. Despite economic uncertainty, changing trade patterns and a legal dispute linked to ownership issues at one of its major container terminals, the port recorded growth in both cargo and container volumes, demonstrating its resilience and continued importance to global trade.

Total throughput reached 114.6 million tonnes in 2025, an increase of 2.6% compared with the previous year. The main driver of this growth was the container sector, which continued to perform strongly throughout the year. Hamburg handled 8.3 million teu in 2025, up 7.3% year-on-year, while container throughput by tonnage increased by 4.6%.

Hamburg remains one of Europe's most important gateway ports. Located on the River Elbe, it serves as a major link between international shipping routes and inland markets across Germany and Central Europe. The port is also Europe's largest rail port, with extensive connections that allow goods arriving by sea to move quickly to destinations across the continent. This strong network remains one of Hamburg's key advantages and continues to support its role in international supply chains.

Trade with Asia was a major factor behind the port's growth in 2025. Container traffic with China increased by 6.5%, maintaining Hamburg's position as one of Europe's leading hubs for Chinese trade. The port also recorded particularly strong growth with Malaysia, where volumes rose by 84.3%, while trade with India increased by 49.2%. These results reflected growing demand across several Asian markets and highlighted Hamburg's importance as a gateway for European imports and exports.

The Northern Europe trade lane also performed well, recording growth of 21.2% during the year and contributing to higher transhipment. However, not every market showed positive results. Trade with the United States declined by 25.6%, largely due to the impact of US tariff measures and changing trading conditions.

Earlier in the year, the port had already shown encouraging signs of growth. During the first half of 2025, total throughput reached 57.8 million tonnes, up 3.6% compared with the same period in 2024, while container volumes increased by 9.3% to 4.2 million teu. These figures provided a strong foundation for the port's performance throughout 2025.Meanwhile, the Port of Hamburg announced plans to invest more than $1.3 billion to enhance its harbour approach and additional terminal yards. Hamburg Port Authority said the new land will create additional capacity, expand terminal yards and modernise container throughput operations at the port, with works set be completed by the mid-2030s.

Overall, 2025 was a positive year for the Port of Hamburg. Growth in container volumes, strong trade with key Asian markets and the port's established role as a major European logistics gateway allowed it to navigate a challenging trading environment while strengthening its position within the European port sector.

Guangzhou builds on a record year of growth and innovation

Rising one place in this year's index, Guangzhou delivered a strong 2025, with record throughput growth, landmark green shipping milestones and continued technological advancement at its flagship Nansha Port terminal cementing its reputation as one of Asia's most important and fastest-growing shipping hubs.

Guangzhou Port handled more than 696 million tonnes of cargo in 2025, with container throughput surpassing 28 million TEU, keeping it firmly among the world's top six container ports by volume and confirming its status as China's fifth busiest container port by throughput for the fourth consecutive year.

Foreign trade container volumes were the standout performer, rising nearly 20% year on year, with the Nansha port area achieving a 25.5% growth rate in foreign trade containers, outpacing all other major coastal port areas in China.

The automation story at Nansha was equally significant. Phase 4 of the terminal saw the full deployment of 158 domestically produced automated guided vehicles, forming the largest autonomous horizontal transportation fleet in China. The scale of that achievement positions Nansha alongside the most technologically advanced container terminals anywhere in the world, and directly underpins the efficiency gains that have driven Guangzhou's foreign trade growth well ahead of the national average. With the port targeting annual throughput of over 22 million TEU at Nansha alone by 2027, the infrastructure investment pipeline shows no signs of slowing.

Eight new international shipping routes were added during the year, bringing the total to over 200 routes connecting more than 310 ports worldwide. Belt and Road Initiative destinations accounted for over 85% of foreign trade route coverage, and in April Guangzhou opened a direct service to Peru's Chancay Port, the newly opened deep-water port on South America's Pacific coast. The connection extended Guangzhou's reach directly across the Pacific and reflects the port's growing ambition to anchor trade flows between southern China and emerging markets across Latin America.

The most vivid story of 2025, however, came from Nansha's auto terminal in May. The Yuan Hai Kou, built by Guangzhou Shipyard International and operated by COSCO Shipping, undertook its maiden voyage as the world's first pure car and truck carrier combining LNG dual-fuel propulsion with rooftop solar photovoltaic power generation. The vessel, which is capable of carrying 7,000 vehicles, departed fully laden with Chinese-manufactured cars, over 90% of which were new energy vehicles, bound for Greece, Turkey, Italy and Tunisia via the China-Mediterranean corridor. The image of a green ship carrying green cars from Guangzhou to Europe is one of the more powerful symbols of China's shifting maritime and industrial identity.

Guangzhou Shipyard International reinforced that theme in December, unveiling eight independently developed new vessel designs spanning the full spectrum of next-generation vessel types, from methanol fuel-cell passenger ships and polar-class container vessels to LCO2 carriers and hybrid-powered tankers. Among the designs, the 135,000 dwt crude/product oil tanker received dual approval in principle from both the China Classification Society and Lloyd's Register.

With record foreign trade volumes, a world-first green vessel and one of China's most automated terminals, Guangzhou continues to build its significance as a major shipping hub within an increasingly competitive Asian maritime landscape.

Qingdao turns to automation to tackle throughput records

Qingdao Port continued to showcase its capabilities to support both dry bulk and containerised trade in 2025 as it rose one place to sit in 12th place in this year's Xinhua-Baltic International Shipping Centre Development Index Report.

More than 740 million tonnes of tonnes of dry bulk cargo in 2025, while its container throughput reached 32.89 million TEU over the full year, a rise of more than 6% on 2024, placing Qingdao among the world's top five busiest container ports.

Its dominance in ore cargo imports remained one of Qingdao's leading strengths. In October 2025, it officially opened its new 400,00 tonne ore terminal become the first port in northern China with dual 400,000 tonne ore terminals and the first in China to operate a smart dry bulk terminal of this scale.

The new terminal will increase the port's total ore handling capacity to more than 56 million tonnes annually, and will go a long way to enhance China's ore resource and energy security.

Meanwhile, the port also added 20 new container services in 2025, bringing its total route network to nearly 240 services connecting more than 700 ports across over 180 countries. A new FM1 Middle East service was among the additions, alongside direct links to Southeast Africa and South America. Cargo volumes on the Africa express service grew 30-fold year on year in the first half on 2025, with 60% of Qingdao's services connecting with Belt and Road Initiative and RCEP countries. Sea-rail combined transport volumes reached 2.625 million TEU in the first eleven months, up 11%, a position the port has held at the top of the national coastal ranking for 10 consecutive years.

In May, Qingdao's automated terminal once again set the world record for container handling efficiency for the thirteenth time, when it achieved an average single-crane productivity of 62.62 TEU per hour, the highest figure ever recorded at an automated facility, as it unloaded the Cap San Lazaro container vessel.

Qingdao has also deployed its first vacuum-based automated mooring system for commercial operations. Thirteen units generating 2,600 kilonewtons of suction force reduce vessel securing time from up to 30 minutes to under 30 seconds, removing workers from the mooring line danger zone and saving an estimated 200 hours of berthing time per berth annually.

In sustainability efforts, Qingdao announced plans to establish a green shipping corridor with Port of Hamburg in Germany. The port also launched its first-ever hydrogen-electric tugboat to further cut carbon emissions while still providing the manoeuverability needed for modern port operations.

More than 77 billion yuan in infrastructure projects are committed or under development at the port. Among the major schemes are a second ore berth, which will allow simultaneous berthing and unberthing of large bulk carriers, and a 450,000-tonne LNG terminal that will significantly expand the port's alternative fuel bunkering capacity.

Together with the automation programme already under way, the investment pipeline reflects the scale of Qingdao's ambition to cement its position as the leading maritime gateway in Northeast Asia.

Houston remains energy gateway for the United States

Falling two places to sit at 13th in this year's Xinhua-Baltic International Shipping Centre Development Index, Port Houston closed the year with the strongest performance in its history and reaffirming its status as the United States' pre-eminent energy and trade gateway on the Gulf Coast.

Container volumes reached a record 4.3 million TEU, up 4% on 2024, with loaded energy and petrochemical exports performing particularly strongly, rising 7% across the year driven by robust demand for petrochemicals, resins and energy-related cargo.

Total tonnage across public terminals hit 54.5 million short tons, a 3% increase and another all-time high that reaffirmed Houston's strong mix of cargoes and supply chain resilience.

In tanker movements, Houston averaged nearly US$27.7 billion in crude petroleum exports across 2025, handling roughly 1.2 million barrels per day. Meanwhile, the port complex exported about US$26.9 billion in refined petroleum products and US$13.8 in petroleum gases.

Infrastructure investment drove much of that performance. Port Houston completed Wharf 7 at Bayport Container Terminal, adding 1,000 feet of berth space and more than 500,000 TEU of additional annual capacity. Equally significant was the full implementation of RTG-O, an automated operating system for the port's rubber-tired gantry crane fleet, rolled out across both Bayport and Barbours Cut terminals during the year.

Meanwhile, the US Army Corps of Engineers and Port Houston finalised the final segment of the Houston Ship Channel Expansion to allow for much safer navigation and smoother two-way traffic of large tankers and energy carriers looking to access the port.

On sustainability, 2025 brought a development that speaks directly to Houston's broader ambition to lead the global energy transition from within.

It secured a US$25 million federal grant for the development of the Bayport Hydrogen Refuelling Station, a pipeline-based hydrogen fuelling facility for heavy-duty trucks, to be designed, built and operated by industrial gases leader Linde in partnership with GTI Energy and Argonne National Laboratory. The project supports the port's Sustainability Action Plan and its target of net-zero emissions by 2050, and builds on Houston's selection as the site of the Gulf Coast HyVelocity Hydrogen Hub, a federally backed regional clean hydrogen ecosystem.

For the world's energy capital, these developments are part of a deliberate strategy to ensure Houston leads the next chapter of the energy story as confidently as it has led the last.

The port's economic footprint remains vast. Port Houston supports 1.54 million jobs in Texas and 3.37 million jobs across the United States, generating US$439 billion in economic activity within the state and nearly US$1 trillion nationwide. The Houston Ship Channel, the busiest waterway in the nation by vessel movements and waterborne tonnage, processed 8,099 vessel arrivals during the year alongside more than 209,000 barge movements.

With continued infrastructure expansion planned, a growing clean energy ecosystem taking shape, and an export-driven cargo mix that has proven resilient through shifting global trade conditions, Houston continues to build considerable momentum and a clear sense of where it is heading.

Busan remains Northeast Asia's premier transshipment hub

Rising one place to sit in 14th place in this year's rankings, Busan delivered another year of solid growth in 2025, with the port handling 24.8 million TEU across the year, a 2% increase on 2024 and the third consecutive year of throughput growth.

Transshipment cargo was the primary engine of that performance, rising 4.4% to 14.1 million TEU and accounting for 57% of total volumes. The result consolidated Busan's standing as the world's second largest transshipment hub after Singapore, with approximately 80% of transshipment cargo handled by foreign carriers, underlining the port's appeal well beyond Korea's domestic trade base.

Import and export volumes came under pressure from shifting global trade conditions during the year, but the port successfully offset that headwind through transshipment growth, a pattern that reflects both the flexibility of Busan's hub model and the continued strength of cargo flows across Northeast Asia.

The South Korean government moved decisively during the year to back Busan's longer-term ambitions. The Ministry of Ocean and Fisheries unveiled a Global Hub Port Development Strategy with an explicit target of establishing Busan among the world's top three ports, backed by a KRW 500 billion fund dedicated to smart port development. Green ship fuel infrastructure covering methanol and ammonia is included in the plan, alongside carbon-neutral cargo handling equipment and a renewable energy target of 25% by 2032 rising to 100% by 2050.

Digital innovation is also central to that ambition. Busan Port Authority has explicitly cited technology investment as the primary mechanism through which Busan will grow its transshipment market share. The KRW 500 billion smart port fund will support the development of AI-driven cargo management systems, automated berthing and vessel scheduling platforms, and expand deployment of the autonomous terminal technologies already operational at Busan New Port's West Container Terminal, Korea's first fully automated terminal.

Central to that vision is the integration of Busan Port with the planned Gadeokdo New Airport, which is due to open in 2030. Situated on Gadeokdo Island adjacent to Busan New Port and designed as a 24-hour international hub for both passengers and cargo, the airport will feature a 3,500-metre runway with dedicated rail and highway connections. When operational, it will position Busan as one of the few port cities in Asia capable of offering a fully integrated land, sea and air logistics proposition.

Meanwhile, the transformation of Busan's historic North Port continued to progress. The US$13 billion redevelopment project will replace the former working port with a passenger terminal, marina, hydrophilic park and cultural facilities. It is the kind of investment that signals a city confident in its maritime future and intent on reimagining its maritime past.

Busan continues to build its case as Northeast Asia's dominant transshipment hub, backed by a government growth strategy, a major new airport under development and a port model that has proven its resilience through one of the more turbulent years in recent global trade history.

Tokyo continues to advance green ambitions

Dropping one place to sit in 15th place in this year's Xinhua-Baltic International Shipping Centre Development Index Report, Tokyo Port continues to serve as Japan's busiest container port and the principal maritime entry point for the Greater Tokyo Area, the most heavily populated urban region on Earth.

The port operates three major container terminals at Oi, Aomi, and Shinagawa, alongside facilities for vehicles, bulk cargo, refrigerated goods, and general cargo including timber and construction materials. Tokyo has an annual throughput of approximately 4.7 million TEU and remains a key gateway for foreign and domestic shipments.

All major global shipping lines call the port, with routes connecting to key markets across East Asia, North America, and Europe. Domestic connectivity is supported by direct links to Yokohama, Nagoya, Osaka, and Kobe, and by integration with the Kanto region's road and rail network.

Like other ports across Asia, Tokyo faced a challenging 2025 as it responded to evolving global trade patterns. While imports from China and Vietnam increased, exports to the United States declined, primarily due to tariffs imposed by the US administration.

The port made meaningful progress on its green transition during the year. In July, Sumitomo Heavy Industries began delivery of 26 automated rubber-tyred gantry cranes to the Aomi Container Terminal, the first of their kind at Tokyo Port. The initial eight units were installed in the first phase, with full delivery scheduled by February 2030. Each crane uses a hybrid battery and small engine system that reduces CO2 emissions by 70% against conventional equipment, and has been built to accept conversion to hydrogen fuel cell power as supply infrastructure develops.

In September, a consortium led by NX Shoji received a Tokyo Metropolitan Government subsidy to operate a ship-to-ship biofuel bunkering scheme at the port, supplying B24 fuel to vessels on call as part of the city's Zero Emission Tokyo strategy. The following month, the Tokyo Metropolitan Government became the first issuer anywhere in the world to achieve certification under the Climate Bonds Resilience Taxonomy, for its TOKYO Resilience Bond. Among the projects the bond will finance is the development and upgrading of coastal protection infrastructure at Tokyo Port and its surrounding islands.

Tokyo's most significant infrastructure development of the year came in the cruise sector. The Harumi Passenger Ship Terminal, the port's dedicated cruise gateway, completed an extensive reconstruction programme and fully reopened in November, welcoming the Australian expedition vessel Coral Geographer as its first call.

The terminal had partially reopened in June for smaller and mid-size vessels, with the completion of a vehicle waiting facility in November marking full operations.

The physical constraints of Harumi's location, which sits inland of the Rainbow Bridge with its 52-metre clearance limit, mean it will focus on smaller and mid-size ships, while the Tokyo International Cruise Terminal handles larger vessels. Together, the two berths form a dual-terminal system designed to reduce scheduling conflicts, accommodate more calls during peak cruise season, and limit the number of reservations the port has had to turn away in previous years.

The visit was a reminder that Tokyo Port, as the maritime face of the world's most populous metropolitan region, serves purposes well beyond the movement of cargo.

Antwerp-Bruges remains steady despite turbulent trading conditions

Few ports faced as many external challenges throughout 2025 as the Port of Antwerp-Bruges as it once again claimed 16th place in this year's Xinhua-Baltic International Shipping Centre Development Index Report.

Against a backdrop of geopolitical tensions, economic uncertainty and operational disruption, Europe's second-largest port by cargo volume was forced to navigate a particularly difficult trading environment. Despite these pressures, the port demonstrated resilience, maintaining stable container volumes and preserving its position as one of the continent's most important maritime gateways.

Total maritime throughput reached 266.5 million tonnes during 2025, reflecting a decline of 4.1% compared with the previous year. While overall volumes were lower, the result reflected broader market conditions rather than any significant weakening of the port's competitive position.

Container traffic remained one of the strongest areas of performance. The port handled 13.6 million teu during the year, with container volumes remaining largely stable despite ongoing disruption across global shipping networks. This stability highlighted the continued confidence of shipping lines and cargo owners in Antwerp-Bruges as a major European logistics hub.

The port occupies a critical role within European trade, with Antwerp-Bruges combining one of Europe's largest container gateways with extensive capabilities in energy, chemicals, breakbulk and vehicle handling. Its location in the heart of Western Europe provides direct access to some of the continent's largest consumer and industrial markets, supported by strong road, rail and inland waterway connections.

Trade with the United States was a notable success story during 2025. The US became the port's largest trading partner, accounting for 31.3 million tonnes of throughput over the year. Growth was supported by increased imports of liquefied natural gas, reinforcing the port's importance within Europe's evolving energy supply chain. The result also reflected the increasingly significant economic relationship between Europe and North America at a time of continued uncertainty in other global markets.

Meanwhile, container imports from China increased 3.8% while the ro-ro throughput rose 3%, showcasing Europe's continued push for containerised goods and vehicles from Asia.

However, liquid bulk throughput declined 19% due to lower gasoline exports to West Africa and reduced diesel imports, while ongoing pressure on Europe's chemical sector also played a role. Dry bulk volumes also fell 12.1% due to lower volumes of fertilizers, coal and sand.

Despite this, operational challenges weighed on performance throughout the year. Shipping schedules remained disrupted in several regions, while cargo flows were affected by rerouting linked to wider geopolitical tensions. Industrial action also created additional difficulties, with the port estimating that approximately 2.4 million tonnes of cargo were lost as a result of strike-related disruption in 2025.

The port also continued to face capacity pressures. Its market share within the Hamburg-Le Havre range declined to 29.3% during 2025. However, this reduction was largely attributed to congestion constraints rather than a fall in customer demand, underlining the continued need for infrastructure investment and operational improvements across the wider supply chain.

While overall throughput declined, the Port of Antwerp-Bruges continues to play a key role as a maritime gateway to Europe and global trade. Stable container volumes, strong transatlantic trade and its central position within European logistics networks helped offset the impact of a difficult operating environment.

Tianjin improves smart capabilities as port expansion continues

Rising one place to sit in 17th place in this year's index, Tianjin Port closed 2025 with container throughput of 20.81 million TEU, a 1.66% rise on 2024. Total cargo across all categories reached 457 million tonnes, up 0.88% year on year. The listed entity, Tianjin Port Co., grew operating revenue by 5.98% to 127.92 billion yuan, with total profit climbing 7.52% to 20.54 billion yuan. Port logistics was the commercial story of the year, with revenue up 30.33% to 25.81 billion yuan, well outpacing the cargo handling segment's 5.97% growth to 77.99 billion yuan.

This significant growth came as a result of Tianjin's continued development of green and smart port upgrades, including the implementation of smart container terminal operating systems and the adoption of AI to enhance the resilience of port operations. In addition, cranes, trucks and container sorting facilities at Tianjin are all now equipped with high-quality technology, making the port one of the most advanced logistics centres in the world.

As a result, in September, Tianjin's automated terminal recorded a new benchmark when it handled 23,534 TEU from the MSC Irina in a single voyage call, the highest single-voyage figure achieved at any Chinese automated terminal.

At year end, the port maintained 150 container liner routes, with connections running to more than 500 ports across over 180 countries. Sixty-nine of those routes serve Belt and Road Initiative partner countries, a network that reflects Tianjin's long-established role as the primary maritime gateway for northern and northwestern China. The port is also the only facility in the country with connections to all three of the main Eurasian land bridge corridors, giving it a cross-border rail and road reach that few ports anywhere can match.

Tianjin's most internationally recognised asset is its smart and zero-carbon terminal, the first of its kind to have been built and operated anywhere in the world.

The facility runs on a modern network of renewable energy sources, with wind and solar generation accounting for 70% of total electricity consumed in 2024. In the first nine months of 2025, the port produced 136 million kilowatt-hours of clean energy, reducing carbon output by 120,900 tonnes. Container transfers across the port have reached 100% clean transport, with a target of full green power coverage set for 2030.

In March, Tianjin released a development plan targeting 35 million TEU in annual container capacity by 2035, up from 23 million TEU in 2024. The plan centres on expanding the port's ability to handle the largest vessels, with five new navigation channels planned, the most capable of which will accommodate 300,000-tonne ships. Twenty-one construction projects were active across the port in 2025, covering terminal upgrades, yard expansion, and waterway works, with a combined investment of approximately 19.5 billion yuan.

The broader ambition is to move the port beyond its traditional transit function and build it into the commercial and industrial structure of the wider Tianjin city region.

Tianjin's development has set new standards for port logistics and it continues to set the bar for international shipping and port operations worldwide.

Shenzhen accelerates its green and smart port transformation

Although it fell one place to sit in 18th place in this year's Xinhua-Baltic International Shipping Centre Development Index Report, Shenzhen delivered a landmark year in 2025, with container throughput surpassing 35 million TEU for the first time in the port's history, a year-on-year increase of more than 5% and a new record since the port opened.

The result confirmed Shenzhen's standing as China's third busiest container port by volume and one of the busiest in the world, with its 295 international shipping routes connecting more than 300 ports across 100 countries and regions.

Foreign trade container volumes reached 33.16 million TEU, up 6.41% and another record high. As the primary export gateway for the Pearl River Delta's vast electronics and manufacturing base, Shenzhen's throughput growth reflects both the sustained global appetite for high-value Chinese goods and the port's deepening integration with the wider Greater Bay Area logistics network.

The green transformation at Shenzhen Port accelerated meaningfully during the year. LNG bunkering volume surpassed 510,000 cubic metres, a 79% increase on 2024, with full coverage across all three major container port areas achieved for the first time. In December, Shenzhen Port completed its first green methanol bunkering trial, supplying domestically produced green methanol to a dual-fuel container vessel at Yantian, marking the first such operation in the Greater Bay Area.

Shore power facility coverage exceeded 90% of berths, with annual shore power consumption breaking 44 million kWh, also a new record. Inside the terminals, clean energy tractors now account for 60% of the port's internal haulage fleet, with Dachan Bay terminal achieving 100% clean energy for all internal operations. At Mawan Smart Port, automated gantry cranes and autonomous trucks operate throughout, supported by full 5G network coverage across the entire facility.

The most striking commercial story of 2025, however, was the emergence of new energy vehicle exports as a significant growth engine.

Sea-borne vehicle exports from Shenzhen reached more than 140,000 units in the first eleven months of the year, up 37% year on year. In July, BYD's dedicated ro-ro vessel, the Shenzhen, completed a landmark voyage from Xiaomo International Logistics Port carrying 6,817 new energy vehicles to Europe. The shipment demonstrated the port's "out of factory, straight onto the ship" model, with vehicles driven directly from BYD's adjacent production facility and loaded in under five minutes. Three new ro-ro routes to Africa, Australia and Italy also opened from Xiaomo during the year, extending Shenzhen's reach as a dedicated NEV export hub.

The port's international connectivity continued to broaden in parallel. A sister port agreement was signed with Turkey's Kumport, bringing Shenzhen's total network of sister ports to 29, with Belt and Road Initiative partner ports forming the backbone of its growing global relationships.

Shenzhen's story is one of a port that has long understood its role as China's technology export gateway and is now building, with considerable pace, the green and smart infrastructure to match that identity for the decades ahead.

Port of Los Angeles faces rollercoaster year

Retaining its position in 19th place in this year's rankings, the Port of Los Angeles maintained its positive momentum in 2025, recording another year of exceptionally strong cargo volumes despite a more uncertain global trading environment. As the busiest container port in the United States, it demonstrated the resilience of its operations and its importance to transpacific trade.

By the end of November, the port had processed 9.45 million teu, a 1% increase compared with the same period in 2024. November volumes totalled 782,249 teu, down 12% year on year as retailers slowed imports after bringing forward shipments earlier in the year. Even so, it was reported that the port handled 10.2 million teu by the end of 2025, making it one of the three busiest years in its history. Throughout the year, cargo moved efficiently through the port with no vessel backlogs or ships waiting at anchor, reflecting continued improvements in operational performance and the lack of port worker strikes that had plagued 2024.

Much of the year's activity at the Port of Los Angeles was shaped by changing US trade policy. During the first half of 2025, importers accelerated shipments in anticipation of higher tariffs, boosting cargo volumes and contributing to several record months. As the year progressed and new tariffs came into effect, import activity moderated and monthly volumes eased from their earlier highs. Port of Los Angeles Executive Director Gene Seroka noted that from accelerated dips in volume to record highs, 2025 truly was a roller coaster.

Nevertheless, overall throughput remained strong, demonstrating the ability of the port and its customers to quickly adapt to changing market conditions.

The Port of Los Angeles continued to benefit from its role as the leading gateway for trade between the United States and Asia. Supported by extensive rail connections, terminal capacity and distribution networks across Southern California, the port remained central to the movement of consumer goods and manufactured products throughout North America. Close collaboration between terminal operators, shipping lines, rail providers and trucking companies also helped ensure cargo flowed smoothly despite market volatility.

Alongside strong operational performance, 2025 also saw continued progress on plans to strengthen the port's long-term competitiveness. City leaders reaffirmed support for major infrastructure and expansion projects aimed at increasing capacity, modernising facilities and advancing environmental goals. These investments are intended to improve freight efficiency while preparing the port for future growth and supporting its transition towards cleaner operations.

Overall, 2025 was another successful year for the Port of Los Angeles. Near record cargo volumes, efficient operations and continued investment in future infrastructure enabled the port to navigate a changing trade environment while maintaining its status as one of the world's leading container gateways and retaining its place among the top international shipping centres.

Vancouver strengthens global trade role following record-breaking year

Rounding out the top 20 global maritime centres and retaining its place from last year, the Port of Vancouver reached new heights in 2025, handling more cargo than ever and reinforcing its position as Canada's leading gateway for international trade. Strong demand for Canadian exports, growing container traffic and rising vehicle imports combined to deliver a record year for the port, highlighting its importance to both the national economy and global supply chains.

Total cargo volumes reached 170.4 million metric tonnes in 2025, surpassing the previous record set in 2024 and representing growth of almost 8% since then. The result reflected strength across multiple cargo sectors and demonstrated the port's ability to accommodate rising demand despite ongoing challenges facing international trade and transportation networks.

A key contributor to this performance was Canada's export sector. Strong shipments of grain, crude oil and potash, predominantly to China and other Asian economies, helped drive volume growth throughout the year, reflecting continued global demand for Canadian natural resources.

Crude oil exports were a major success story for Vancouver in 2025, with exports doubling to a record 24.4 million metric tonnes. The expansion of the Trans Mountain pipeline last year and its direct connection to the port enabled Canada to export greater volumes of crude oil to China and South Korea along the newly established Baltic TD28 and TD29 routes.

The port's position on Canada's west coast gives it a unique strategic advantage. Serving as the country's primary gateway to Asia-Pacific markets, Vancouver connects Canadian businesses to more than 170 international markets around the world and serves as a critical link between North America and the rapidly growing economies of the Indo-Pacific region.

As a result, international trade volumes through the port increased by 11% in 2025, with more than three quarters moving to or from Indo-Pacific countries. This was largely a result of Canada's drive to diversify its trading portfolio amid the uncertainty of the United States tariff policies in 2025 that took aim at Canadian exports.

Container traffic also contributed to the record performance, supported by strong consumer demand and expanding trade activity. Vehicle imports from China increased during the year, adding further momentum to overall cargo growth. The broad mix of commodities and cargo types continues to provide Vancouver with resilience against fluctuations in individual market sectors.

Alongside its operational performance, the port continued to focus on long-term capacity expansion. Major infrastructure projects remained a priority throughout 2025, including the Roberts Bank Terminal 2 project and dredging work at Second Narrows. These investments are designed to increase capacity, improve efficiency and ensure the port can meet future demand as Canadian trade continues to grow.

The projects also align with wider national efforts to strengthen Canada's export capabilities and improve supply chain resilience. By expanding capacity and enhancing connectivity, the Port of Vancouver is positioning itself to support the country's long-term trade ambitions while creating greater opportunities for Canadian businesses to access international markets.

For Vancouver, 2025 was not only a record breaking year but another step in its evolution as a leading global trade gateway. Strong cargo growth, rising international trade volumes and continued investment in infrastructure reinforced the port's strategic importance, ensuring it remains at the centre of Canada's trading future.

IV

DECARBONISATION AND REGULATIONS

1.Extraordinary MEPC session exposes divisions over shipping's net-zero pathway

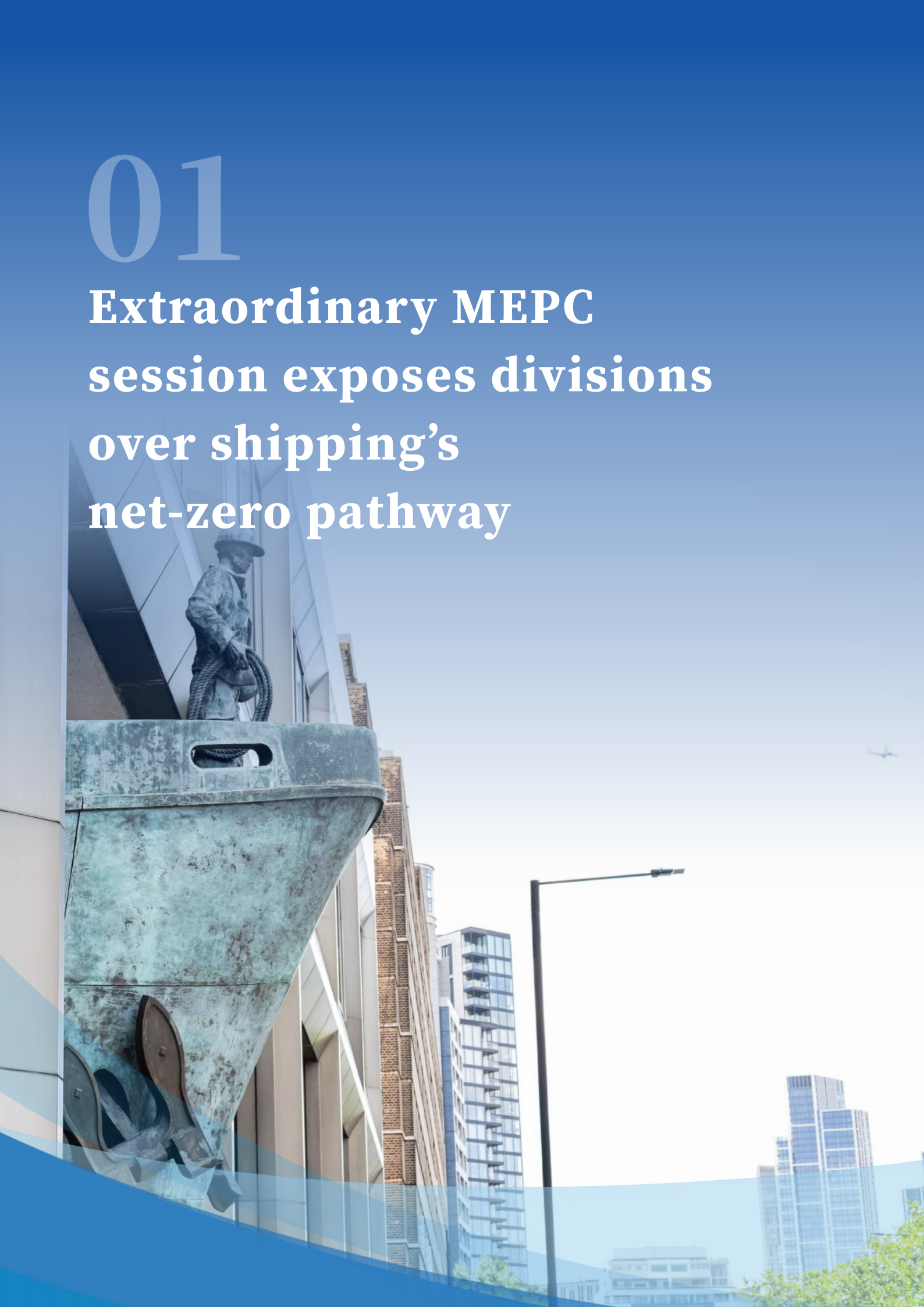
2.Fuel transition continues to diversify maritime energy mix

3.Vessel efficiency looks to support net-zero push

4.Accelerating progress on green shipping corridors

01

Extraordinary MEPC session exposes divisions over shipping's net-zero pathway



The International Maritime Organization's (IMO's) extraordinary Marine Environment Protection Committee (MEPC) session in 2025 ended without agreement on the organisation's proposed Net-Zero Framework, delaying the adoption of shipping's long-awaited mid-term greenhouse gas (GHG) measures.

Delegates gathered in London expecting to finalise the framework that would translate the IMO's 2023 climate strategy into concrete regulatory requirements for the global fleet. Instead, negotiations collapsed after member states failed to agree on the structure of the proposed policy package.

A procedural vote brought the meeting to an abrupt conclusion. By 57 votes to 49, member states decided to adjourn the session for one year, pushing further negotiations on the framework into 2026.

For an industry already navigating regulatory uncertainty, the decision leaves a major gap in the timeline for global climate regulation.

The framework under debate

The Net-Zero Framework is intended to implement the IMO's commitment to reach net-zero greenhouse gas emissions from international shipping by around mid-century.

The proposal combines two regulatory mechanisms.

The first is a global GHG fuel intensity standard, designed to reduce the emissions profile of marine fuels over time. Ships would be required to meet progressively tighter emissions benchmarks linked to the lifecycle carbon intensity of the fuels they consume.

The second component introduces an economic mechanism tied to emissions performance. Under the proposals discussed at the extraordinary session, ships exceeding emissions thresholds would face financial penalties, while those using lower-emission fuels would benefit from incentives or credit mechanisms.

The intention is to create a regulatory system capable of driving investment in alternative fuels such as methanol, ammonia and hydrogen.

But turning that ambition into policy proved difficult.

Disagreement over carbon pricing

The most contentious issue in the negotiations centred on the economic element of the framework.

Several countries supported a strong global carbon pricing mechanism for shipping. Proponents argued that a meaningful price signal is essential if shipowners are to invest in the infrastructure required to produce and supply zero-carbon fuels at scale.

Other member states opposed the proposal or sought weaker mechanisms. Some delegations warned that carbon pricing could increase transport costs and place disproportionate pressure on developing economies that depend heavily on maritime trade.

These differences exposed a fundamental tension within the negotiations: how to balance environmental ambition with economic impact.

The debate also reflected wider geopolitical realities. The IMO's 175 member states represent a diverse range of economies, many with sharply different priorities when it comes to climate policy and industrial competitiveness.

Structural challenges within the IMO process

Negotiators also struggled with the technical complexity of the framework itself.

Questions emerged about how the measures would fit within the existing structure of the MARPOL convention, which governs international pollution regulations for shipping. Delegates also raised concerns about the administrative burden of monitoring emissions performance and distributing funds generated through the economic mechanism.

The vote to adjourn the meeting after it became clear that consensus had become impossible effectively reset the timetable for shipping's climate regulation.

Industry reaction

The outcome prompted strong reactions across the maritime industry.

Shipping companies and industry organisations have repeatedly warned that long-term investment decisions depend on clear regulatory signals. New vessels ordered today will still be operating well into the 2040s, meaning that shipowners must anticipate how future climate policies will affect fleet operations.

Several industry groups expressed disappointment that the meeting ended without a decision.

A coalition of major shipping companies released a public statement criticising aspects of the proposed framework. The group argued that the current design risks imposing financial penalties on existing vessels without providing realistic compliance pathways if alternative fuels remain scarce.

Shipowners also raised concerns about the pace of proposed emissions reductions and the limited availability of scalable fuel alternatives.

At the same time, many organisations stressed that global regulation remains essential.

Reaffirming support for global regulation

Despite the divisions exposed during the meeting, industry organisations quickly reiterated their support for the IMO as the central forum for regulating shipping's climate transition.

Following the session, the Tripartite Forum of shipbuilders, shipowners and classification societies issued a statement backing the IMO's multilateral approach to climate policy. The forum includes major industry organisations such as BIMCO, INTERCARGO, INTERTANKO and the International Chamber of Shipping.

For many stakeholders, the alternative to a global system would be a patchwork of regional regulations.

Such fragmentation is already emerging in some areas. The European Union has introduced its own maritime emissions trading system and fuel regulations, while other jurisdictions are exploring similar measures.

As a result, a unified framework developed through the IMO remains the preferred option for most industry participants.

The implications for the energy transition

While the failure to reach an agreement does not alter the long-term direction of travel, the IMO's GHG strategy still calls for emissions reductions of at least 20% by 2030, with a longer-term objective of reaching net-zero emissions around 2050.

What remains uncertain is the regulatory pathway to reach those goals.

Without a clear framework, shipowners face continued uncertainty when planning fleet investments and fuel strategies. Shipyards and fuel suppliers must make similar decisions about infrastructure and technology development.

At the same time, the energy transition in shipping continues to gather momentum.

Orders for dual-fuel vessels capable of running on methanol, LNG or ammonia have increased sharply in recent years. Shipowners are experimenting with multiple technological pathways, even in the absence of finalised global regulation.

Looking ahead

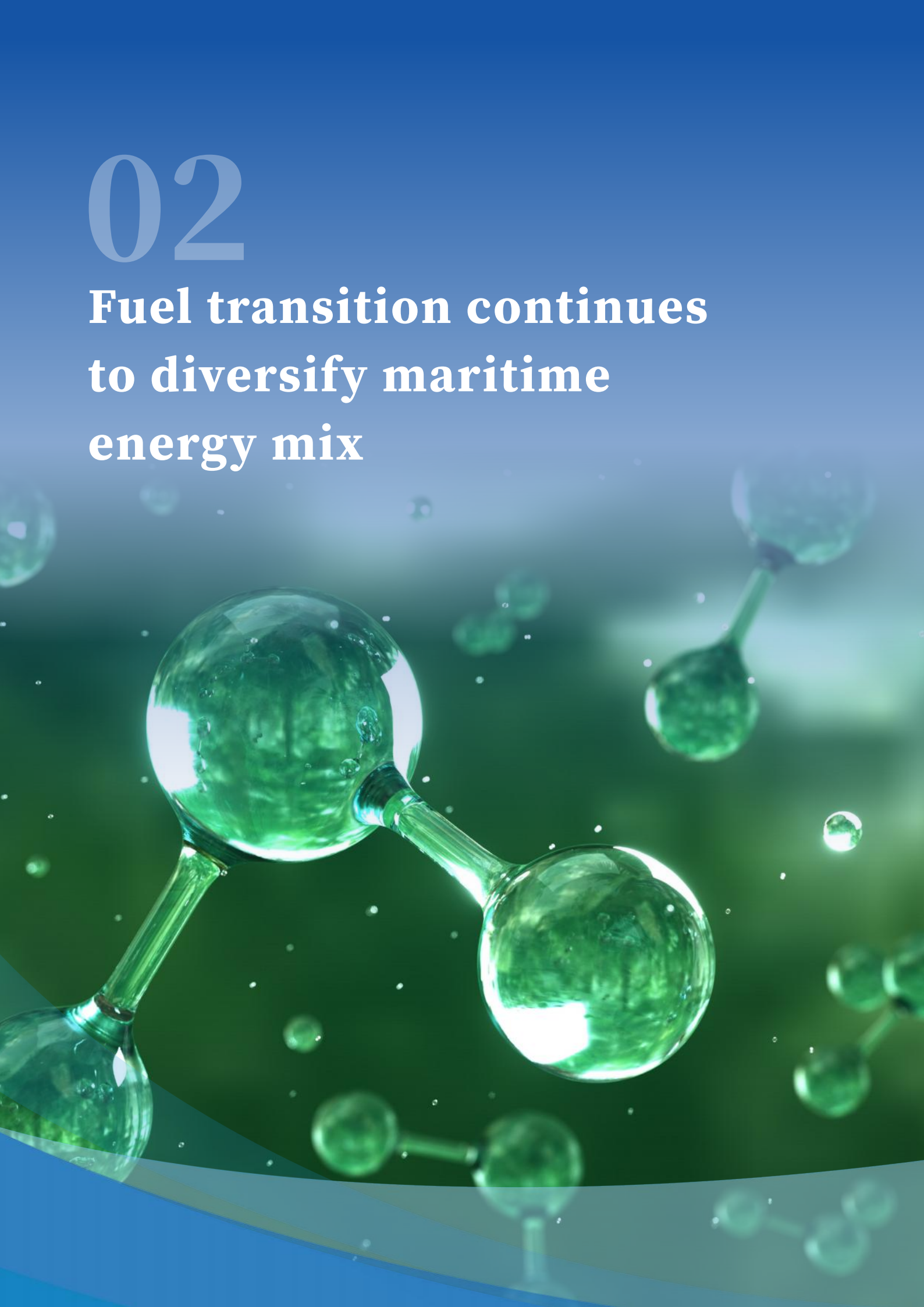
Negotiations on the IMO's Net-Zero Framework will now continue through intersessional working groups and future MEPC meetings.

Delegates will need to bridge divisions over carbon pricing, emissions targets and financial mechanisms designed to support developing countries so it is widely expected that reaching an agreement will not be easy. The extraordinary MEPC session demonstrated the scale of the challenge facing global maritime governance. Shipping is attempting to decarbonise a fleet of more than 60,000 vessels, operating across international trade routes and governed by a regulatory system that requires consensus among dozens of competing national interests.

While MEPC did not produce the framework the industry expected, it instead revealed the complexity of designing a climate policy capable of guiding one of the world's most globalised industries through the largest technological transition in its history.

02

Fuel transition continues to diversify maritime energy mix



The maritime sector continued to advance its energy transition in 2025, with shipowners, fuel suppliers and regulators navigating a growing range of alternative fuel options. While conventional fuels still dominate global consumption, investment in lower-carbon and zero-carbon solutions continues to grow, supported by regulatory pressure and shipping's long-term decarbonisation targets.

Rather than converging on a single solution, the industry is increasingly characterised by a multi-fuel approach, with different technologies developing at varying speeds depending on availability, cost, infrastructure and regulatory certainty.

Methanol gains traction

Methanol continues to be one of the most prominent alternative fuels under consideration. Its relative ease of handling and compatibility with dual-fuel engines have supported growing adoption, particularly in the container segment. Several operators have committed to methanol-capable vessels, while retrofitting projects are beginning to emerge. As of the end of 2025, more than 450 methanol-capable vessels were either on the water or on order.

Alongside vessel uptake, progress is also being made on the supply side. In 2025, Singapore announced plans to establish a green methanol bunkering market, including the issuing of licences to selected suppliers to begin operations. Bunkering could begin as early as 2026, with volumes expected to scale over time as production and demand increase. As the world's largest bunkering hub, Singapore's developments are significant, given that fuel availability remains one of the main constraints to wider adoption.

However, growth has moderated compared with previous expectations. New methanol-fuelled vessel orders declined in 2025, reflecting uncertainty around fuel availability and long-term pricing. The scalability of green methanol remains a key constraint, with production still limited and dependent on the expansion of renewable energy and carbon capture infrastructure.

Electrification expands in short-sea and port operations

Battery and hybrid-electric solutions continue to gain traction, particularly in short-sea shipping, transshipment, ferries and port operations. Ongoing improvements in battery technology and the expansion of shore power infrastructure have supported adoption in segments with shorter voyage distances. This growth is reflected in market projections, with the electric ship sector expected to expand from approximately US$4.85 billion in 2025 to US$18.39 billion by 2032.

One of the most notable developments in 2025 was the launch of the world's largest battery-electric vessel by Australian shipbuilder Incat. The Hull 096 ferry is designed to carry up to 2,100 passengers and 225 vehicles, and will operate between Argentina and Uruguay. Powered by more than 250 tonnes of batteries delivering over 40 MWh of energy storage, the vessel represents the largest battery-electric propulsion system ever installed on a ship and demonstrates the growing technical capabilities of large-scale electrification in maritime transport.

Electric propulsion offers zero emissions at the point of use, making it well suited to emissions control areas and urban port environments. Hybrid systems are also being deployed to

improve efficiency and reduce fuel consumption.

However, energy density limitations mean electrification is unlikely to provide a standalone solution for deep-sea shipping. Instead, it is expected to play a complementary role within wider energy systems for both vessels and ports.

LNG maintains its position as a leading transition fuel

LNG remains the most widely adopted alternative fuel in shipping, supported by established infrastructure and mature engine technology. In 2025, LNG-fuelled ships led the alternative-fuel newbuilding market with around 188 new orders during the year, representing roughly 31% of total gross tonnage ordered. Within the container segment LNG accounted for 58% of new alternative-fuel tonnage, reflecting continued preference for the fuel among large container vessel orders.

Around 590 ships ordered during the year were designed to operate on alternative fuels, bringing the combined global fleet and orderbook of such vessels to over 4,500 ships. Within this group, LNG-capable vessels continue to form the largest share, highlighting its role as the most established alternative fuel currently available to shipowners. Lloyd's Register's Fuel for Thought report notes that LNG represents one of the most readily available pathways for reducing emissions while the industry works to develop and scale up zero-carbon fuels.

However, its long-term role remains uncertain due to concerns around methane slip and lifecycle emissions. Methane, the main component of LNG, has a far greater warming effect than carbon dioxide, meaning even small leaks can significantly reduce the environmental benefits if not properly controlled. As regulation tightens and greater attention is placed on full lifecycle emissions, LNG is increasingly seen as a stepping-stone fuel that can support the industry's transition.

Ammonia advances, but remains at an early stage

Ammonia continues to attract attention as a potential zero-carbon fuel, particularly for deep-sea shipping. Progress in 2025 included

developments in engine design, pilot projects and regulatory frameworks, alongside growing interest in ammonia-ready vessels. Engine manufacturer MAN Energy Solutions reached a key milestone in the development of its ME-LGIA two-stroke ammonia engine in 2025, successfully running the engine at 100% load during testing, demonstrating the potential for ammonia propulsion in large ocean-going vessels.

Pilot projects have also begun to demonstrate how the fuel could operate in practice. The Fortescue Green Pioneer, the world's first dual-fuel ammonia-powered vessel, began trials in Europe in 2025. The vessel is equipped with a 20-tonne ammonia fuel tank and is testing safety procedures, fuel handling and operational requirements for ammonia propulsion.

Commercial interest also emerged. Mining company BHP signed charter agreements with COSCO Shipping for two ammonia dual-fuel Newcastlemax bulk carriers, which aim to reduce carbon emissions by 50–95% per voyage when using ammonia.

Despite this progress, ammonia remains at an early stage of development. By mid-2025, around 39 ammonia-capable ships were on order globally, indicating growing interest but still a small share of the global fleet.

A multi-fuel future takes shape

Despite an overall slowdown in ship ordering activity in 2025, investment in alternative-fuel capable vessels remained significant. Shipowners continued to explore multiple fuel pathways as the industry works towards long-term decarbonisation targets.

However, the pace of adoption across fuels remains uneven, shaped by challenges around availability, infrastructure development and regulatory uncertainty. As a result, many shipowners are prioritising dual-fuel and fuel-ready vessels to maintain flexibility amid maritime's transition.

03

Vessel efficiency looks to support net-zero push

The maritime sector's push toward decarbonisation continued to gather pace in 2025, with innovation focused not only on alternative fuels but also on a variety of propulsion efficiency solutions. These non-fuel-based technologies are playing a critical role as shipowners work toward the International Maritime Organization (IMO) target of net-zero emissions by 2050.

One of the most notable developments has been the continued growth of Wind-Assisted Propulsion Systems (WAPS). Unlike traditional sails, these modern systems include rotor sails, suction wings and rigid wing sails that use wind to provide supplementary propulsion to vessels, enabling them to reduce their reliance on the main engines. A 2025 white paper from DNV showed that installation of WAPS is increasing quickly across bulk carriers, tankers and Ro-Ro vessels, with strong growth expected through to 2030.

Shipowners are turning to WAPS because they can cut fuel use by around 5% to 20%, depending on the ship and the route, and often pay for themselves within a few years. Support from regulators has also improved over the past year, with Lloyd's Register introducing new global WAPS rules on design, installation and crew safety in 2025. These changes are helping to make the technology easier and safer for shipowners to adopt. A number of high-profile retrofits and newbuild projects in 2025 reflect that WAPS are now moving into the mainstream.

Hull performance has also been a major topic, with advances in coatings delivering small but meaningful efficiency gains. Modern hull coatings are engineered to reduce friction between the ship and water while preventing biofouling (the accumulation of marine organisms on the hull that increase drag).

In 2025, Hempel launched its first silicone-based hull coating, designed specifically for newbuild vessels during the construction phase. This type of coating is ideal to help cut fuel consumption throughout a vessel's lifespan, meaning owners are increasingly adopting efficiency solutions from the outset in order to gain the best possible return on investment. However, while offering long-term savings, high-performance coatings also often come with higher upfront costs and require precise application and maintenance. This has led to a broader industry conversation about lifecycle value versus initial costs.

Alongside coatings, there is also a growing focus on regular, proactive hull maintenance. The Clean Hull Initiative, led by environmental group Bellona, is encouraging more frequent in-water cleaning and inspections to help ships stay efficient in day-to-day operations. As the initiative highlights, "combating biofouling on hulls can potentially save 9% of global fuel consumption." The initiative acknowledges that even the best coatings wear down over time, so regular upkeep is needed to keep ships moving smoothly and using less fuel.

Digitalisation is another important part of improving propulsion efficiency. AI-powered route planning systems are now being used more widely to help ships choose the most efficient course by analysing weather, currents, traffic

and considering vessel performance in real time.

In 2025, a partnership between Weathernews and Toqua combined advanced performance models with weather routing tools, allowing for more accurate planning. These systems can cut fuel use by avoiding difficult conditions and selecting the right speed, often reducing emissions without any physical changes to the ship.

Additionally, research into hull design is also opening up new possibilities. A study from the Massachusetts Institute of Technology (MIT) showed how new hull modifications and onboard systems could reduce drag by changing how water flows around the vessel. Early results suggest that these ideas could lead to significant fuel savings if they are developed for wider commercial use.

Together, these developments highlight a broader shift in the maritime industry. While alternative fuels are still key for long-term decarbonisation, technologies focused on efficiency can also offer practical solutions that can be used today. By combining wind assistance, advanced coatings, smarter routing and improved hull designs, shipowners can cut emissions and improve performance, helping to move the industry closer to its 2050 net-zero goal.

04

Accelerating progress on green shipping corridors

By Anna Rosenberg, Project Manager, Global Maritime Forum

Over the last five years, green shipping corridors have increasingly been seen as a key transitional tool for decarbonising the maritime sector, acting as spaces for both industry leaders and governments to test solutions and accelerate system-wide change across the shipping value chain. During this time, the Global Maritime Forum has produced an Annual Progress Report on Green Shipping Corridors to analyse the development of the global green corridor landscape.

The 2025 edition of the report, which drew on data from 84 active green corridor initiatives worldwide, confirmed that momentum continues to build. The number of new initiatives is still on the rise, with eleven announced in China alone in 2025. Yet alongside this growth comes increasing uncertainty about where to steer these initiatives next. Persistent structural barriers, including policy delays and the prevailing cost gap between conventional and alternative fuels, continue to pose challenges to tangible progress.

For the first time, the 2025 progress report also turned its attention to the impact that green shipping corridors have had to date by introducing a framework that assesses performance across five key areas: investments, initiatives, connections, knowledge, and awareness.

The report's central finding was that green shipping corridors make their greatest contribution to maritime decarbonisation not through immediate commercial deployment, but by fostering collaboration and prioritising harder-to-deploy e-fuels over more readily available solutions. With some green corridors initiatives having drifted from these original principles, the report encouraged involved stakeholders to differentiate green corridors from other initiatives so that the movement maintains momentum and focus, both in terms of scope and ambition.

One initiative that exemplifies this approach is the Australia-East Asia iron ore green corridor, coordinated by the Global Maritime Forum. Since its initiation in 2022, the corridor has remained focused on clean ammonia (one of the harder-to-deploy e-fuels) and has pursued a collaborative, programmatic model of stakeholder engagement. Structured around an industry task force of 14 companies spanning the full value chain, the corridor brings together players united by the common objective of decarbonising iron ore bulk carriers operating between Western Australia and East Asia.

The 2025 report characterised this corridor (as well as three others in Northern Europe) as being in the 'realisation' stage, the furthest along in its classification system. This reflects years of work

to establish and sustain industry momentum, convene stakeholders around shared pre-commercial challenges, identify viable paths forward, engage with policymakers in Australia, and raise awareness among key actors in East Asia.

While the corridor faces the same structural headwinds as others in the space (most notably the cost gap between clean ammonia and conventional fuels), 2025 saw meaningful progress among individual task force members. This included ordering clean ammonia-powered dual-fuelled vessels, signing chartering agreements, and launching the Pilbara Ports Clean Fuel Bunkering Hub Strategy. Taken together, these developments mark a tangible shift from planning to action and bring the corridor closer to realisation.

The collaboration, curiosity, and interest shown in exploring corridor opportunities over the last five years, compounded by the fact that real investments are now beginning to materialise, serve as compelling testaments to the role green shipping corridors can play in advancing maritime decarbonisation. Their most lasting impact lies in the sustained process of knowledge sharing and coordination across value chain members.

As the green corridor landscape matures and the pressure to demonstrate real-world results intensifies, the Australia-East Asia corridor stands as a model for how focused, collaborative, and long-term-oriented initiatives can move the needle—not just in building awareness, but in laying the commercial and operational groundwork for a zero-emission maritime future.

V

FINANCE, INSURANCE AND RISK

1.Chinese leasing gains ground as ship finance continues to go green

2.Geopolitical tensions impacting marine insurance risk landscape

3.FFA market remains on course for major growth

4.Shipping investors ride wave of improved vessel earnings market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01

Chinese leasing gains ground as ship finance continues to go green

As Western banks and private equity continue to scale back their shipping portfolios, Chinese leasing companies have expanded their presence in the market by providing leasing solutions tailored to the needs of modern shipping companies.

By offering higher loan-to-value ratios and longer amortisation periods than traditional banks, Chinese lessors are now offering competitive access to capital that is largely sought by owners looking to finance newbuilding projects that have significant environmental benefits and green credentials. This method of accessing capital is increasingly being sought by owners that are modernising their fleets while also supporting China's domestic shipbuilding capabilities.

As a result, the outstanding value of shipping portfolios held by Chinese leasing companies reached US$99.3 billion by the end of 2024, which accounts for more than 15% of the global ship financing market, according to statistics from Clarksons.

Commitment from China

One of the biggest players in the market remains the Export-Import Bank of China (CEXIM), which is now the world's second-largest ship financier, behind French bank BNP Paribas, and with a portfolio worth more than US$19 billion. CEXIM has extended more than US$140 billion in shipbuilding credit since 1994, supporting the delivery of more than 10,000 vessels. It has backed several landmark projects, all of which demonstrate China's commitment to supporting lower-emission vessel development. These include China's first large cruise vessel, its first 174,000 m3 dual-fuel LNG carrier, and its first 24,000 teu containership,

It has also supported Singapore's Eastern Pacific Shipping with cross-border yuan financing for ammonia and ethane carriers built at Chinese yards, marking the first such arrangement for an international shipowner, while also financing the world's first ammonia-powered bulk carriers for Belgian shipowner CMB. Tech and the first LNG dual-fuel product tanker fitted with a triple-wing rigid sail system for UK-based Union Maritime.

Poseidon Principles

Regulatory pressures, particularly surrounding environmental considerations for vessels, are driving green financing initiatives as maritime players shift towards sustainability. However, there continues to be uncertainty for banks and investors looking to move into green financing within a traditionally fragmented industry structure.

The Poseidon Principles, a global framework launched in 2019, are helping to reshape green shipping finance. Representing about 80% of global ship finance, the initiative, which includes global banks, major shipping lines and institutions, and other leading sustainability non-profit organisations, encourages financial institutions looking to invest in maritime, either through credit, mortgages or leases, to align their portfolios with the sector's decarbonisation goals. As of the end of 2025, 36 leading banks from 14 countries had joined.

According to its 2025 Annual Disclosure Report, lending portfolios are moving closer to alignment with the IMO's decarbonisation trajectories, with average scores against the 'minimum trajectory' improving by 8% compared to 2024.

The report, which highlighted increased

transparency from banks in recent years, showed that emissions data in maritime is increasingly informing credit decisions and innovative financial products, such as sustainability-linked loans. Operational efficiency, retrofits, and emerging fuel pathways were noted as key improvements in 2025.

In particular, the cargo and passenger segments saw a notable year-on-year improvement in 2025, showcasing how there had been greater advancements in vessel efficiency and uptake in low-emission and dual-fuel vessels across global fleets.

Shipping lines lead from the front

Major shipping lines are also seeking green financing structures to support fleet renewal and long-term decarbonisation strategies.

In February 2025, German container major Hapag-Lloyd finalised a US$4 billion green financing deal for 24 modern container ships to support its long-term decarbonisation goals. The financing package, structured in accordance with the Green Loan Principles of the Loan Market Association (LMA), includes US$1.1 billion from China Export & Credit Insurance Corporation (Sinosure) and US$1.8 billion in sale and leaseback agreements.

The vessels, which will be built in China and equipped with ammonia-ready dual-fuel engines, illustrate how structured green financing is supporting the transition to cleaner maritime fuels and technologies within the container sector.

Last year saw several major developments in the green financing space. While there remains caution over the long-term viability of these types of investments, significant moves made by Chinese lessors and major shipping lines are contributing to the alignment of ship finance with the IMO's 2050 decarbonisation objectives.

02

Geopolitical tensions impacting marine insurance risk landscape

The marine insurance market in 2025 has been increasingly shaped by geopolitical developments, with underwriters facing a more complex and uncertain operating environment.

The global marine insurance market was valued at roughly US$31.8 billion in 2025, reflecting the scale of financial exposure tied to global maritime trade. Despite the challenging environment, the sector continues to expand gradually and is projected to grow to over US$42 billion by 2035, supported by steady growth in cargo volumes and vessel activity.

However, rising geopolitical tensions are changing the nature of the risks insurers must cover. Ongoing conflicts, trade disputes and sanctions regimes have altered shipping patterns, introduced new potential exposures and challenged traditional approaches to underwriting. As global trade routes adjust to geopolitical pressures, marine insurers have had to reassess their risk models, pricing structures and coverage terms.

The result has been a market characterised by heightened volatility, rising premiums in high-risk regions and a stronger focus on managing operational and geopolitical risk across the global fleet.

Conflict zones drive rising war risk exposure

One of the most significant developments in 2025 has been the continued instability in key maritime corridors. Areas such as the Red Sea, the Black Sea and parts of the Middle East have seen persistent security risks, including attacks on vessels, detentions and disruption to commercial shipping. For an industry that relies heavily on predictability and stable trade routes, this ongoing uncertainty presents a growing challenge.

Several high-profile incidents in 2025 illustrated how serious these risks remain. In July, the Liberian-flagged bulk carrier Magic Seas was attacked in the Red Sea using missiles, sea drones and small-arms fire, forcing its 22-person crew to abandon the vessel before it later sank. Just a day later, the bulk carrier Eternity C was targeted in a similar attack involving drones and rocket-propelled grenades, also sinking the vessel and resulting in crew casualties.

In response, many shipowners have continued to reroute vessels to avoid the most exposed areas. While this has helped reduce the immediate security risk, it comes with additional operational costs, including longer voyages, higher fuel consumption and increased insurance premiums. As a result, operators are increasingly weighing the trade-offs between safety, economics and exposure when planning voyages through sensitive regions.

These escalations have had a direct impact on insurance costs in recent years. War risk premiums have risen sharply in areas exposed to conflict. In the Red Sea, insurance rates increased sharply following a series of attacks on commercial shipping in mid-2025. War risk premiums for vessels transiting the region rose from roughly 0.3% of a ship's value to around 0.7% in some cases, meaning a US$100 million vessel could face an additional US$700,000 in insurance costs for a single voyage. Some insurers also began requiring additional risk assessments before issuing cover for voyages

through the area.

Similar pressures have been seen in other key maritime corridors, including the Strait of Hormuz. While war risk cover is typically assessed on a voyage-by-voyage basis, insurers have increasingly priced in higher geopolitical risk across key trade routes.

Sanctions and shadow fleet add complexity

Sanctions developments added another layer of complexity for marine insurers in 2025. Restrictions on trade with certain countries contributed to the growth of so-called "shadow fleets", vessels operating outside traditional regulatory frameworks.

These ships often lacked transparent ownership structures and, in some cases, sailed without standard insurance cover, raising concerns for both safety and environmental protection. Unclear or falsified documentation also made it more difficult for insurers to verify vessel history and ownership.

The expansion of these fleets also affected behaviour in tanker markets. According to data from Kpler, 562 tankers loaded Russian oil in the past year, accounting for 57% of vessels involved in these shipments and carrying around 2.3 million barrels per day of crude exports. At the same time, sanctions enforcement actions have targeted vessels involved in these trades. In December 2025, the United States' seizure of a supertanker carrying Venezuelan crude highlighted the risks facing operators, with more than 30 sanctioned ships identified as operating in Venezuelan waters and more than 80 tankers waiting offshore to load oil.

These developments have increased scrutiny across tanker trades and strengthened the need for careful compliance checks by insurers.

An uncertain outlook

The marine insurance market in 2025 reflected a sector adapting to a more complex geopolitical environment. Conflict, sanctions and trade disruption have increased risk exposure while also driving higher premiums and changes in underwriting practices across global shipping markets.

At the same time, insurers are facing a broader range of emerging risks beyond immediate security threats. Environmental liabilities, regulatory developments and the increasing complexity of cargoes are all influencing how risk is assessed.

Decarbonisation efforts are also beginning to shape underwriting considerations. As alternative fuels, such as ammonia and hydrogen, move from pilot projects towards commercial deployment, insurers must evaluate new safety, operational and regulatory risks linked to these technologies.

Geopolitical developments are expected to remain a central influence on marine insurance. Continued instability across key trade routes, combined with evolving regulatory and technological risks, is likely to keep pressure on underwriting models and risk pricing.

03

FFA market remains on course for major growth

As volatile global conditions and geopolitical events continue to make the shipping market more volatile, Forward Freight Agreements (FFAs) have become an increasingly important tool for market participants seeking to hedge against freight rate fluctuations and navigate the market with more predictability and confidence.

FFAs are typically brokered through shipbrokers with specialist futures desks. Companies, including Clarksons, SSY, Freight Investor Services, Braemar and Arrow, have teams in financial centres such as London, Singapore, Dubai and New York that focus on this market, often alongside carbon, iron ore, oil brokerage and other specialist areas.

FFAs enable shipping companies to complement their physical market positions. Shipowners traditionally sell FFAs to charterers in order to lock in forward earnings ahead of any potential declines in freight rates, while charterers look to purchase FFAs from owners in order to hedge against possible rate increases. As a result, FFAs are used as a structured risk management tool across the shipping landscape, which frequently experiences fluctuations in freight rates due to factors like oil prices, supply/demand changes, route changes and wider macroeconomic developments.

Adoption of FFAs is most common in the dry bulk sector, with about 50% of FFAs coming from dry bulk, followed by 30% in tankers and roughly 10% in containers.

This tool is also increasingly being used by financial players outside of the shipping industry. Hedge funds and traders that speculate on future freight rates without owning or chartering vessels are using FFAs to inject liquidity to the market and support price discovery.

This increasing level of FFA trading supports overall benchmark pricing, providing a greater look ahead of freight rates to boost transparency across the shipping industry and beyond.

2025 on the rise

Figures published by Baltic Exchange show that, once again, demand for FFA rose year-on-year as more shipping players look to hedge against potential risks that could limit profitability.

In the dry bulk sector, more than 3,329,000 FFAs were traded in 2025, up from 3,047,000 in 2024. This continued high level of activity underlines the importance of FFAs to the dry bulk sector, which remains the most liquid sector in the maritime space. It also reflects the scale and global significance of dry bulk commodity trades, particularly those linked to China.

Meanwhile, in the tanker sector, more than 1,094,000 FFAs were traded, up from the 885,000 FFAs that were traded across both dirty and clean tanker sectors and the first time in history that this broke the one million mark.

Meanwhile, although container FFA volume numbers are not publicly disclosed, there continues to be growing interest in adopting FFAs in the container sector. Since February 2023, Singapore Exchange (SGX) has offered container freight contracts that reference the Freight Baltic container index on four key East-West trade routes: from China/East Asia to US West Coast, US East Coast, North Europe and Mediterranean.

More recently, Clarksons launched a dedicated

container FFA desk in July 2025 to help shipping players hedge against container freight volatility through futures contracts. The development signalled a greater push for liquidity in the container FFA market.

The increasing shift in demand for FFAs to hedge against volatility throughout 2025 was predominantly driven by traders reacting to short-term changes to global sanctions and tariffs from the United States.

During a discussion at Baltic Exchange's Dry FFA Forum in Geneva in November 2025, traders highlighted that the dry bulk market had become particularly reactive to rapidly changing headlines that were being absorbed more quickly throughout the year. However, it was also noted that many believed traders were becoming more mature to changing headlines and making sensible FFA trades as a result.

The Future of FFAs

According to Ben Goggin, FFA assessor at the Baltic Exchange, the market size towards the end of 2025 was about US$100 billion for FFAs and US$90 billion for the physical market. This relative scale highlights the expanding role of derivatives within maritime risk management.

Ardalan Sappino, an FFA trader at Swissmarine, highlighted during an FFA discussion at the 2025 Geneva Dry Forum that FFA volumes over the past five years have increased significantly, providing greater liquidity to the market and giving non-shipping investors the opportunity to invest in a virtual ship by looking at the forward price curve.

Meanwhile, Indian traders are looking like they may play an increasingly important role in the FFA market, with many already using Baltic Exchange's daily freight indices and assessments, and becoming increasingly exposed to the overall FFA sector. This potential development comes amid strong growth in India's maritime industry, with an increasing number of Indian-flagged vessels joining the market and reflecting the need for more Indian shipping players to hedge against market risks.

FFAs remain a vital tool for all shipping players to ensure they have a sense of certainty and stability in a volatile market. Crucially, for investors, they are principal tool to help guide investment decisions and hedging strategies to protect against potential losses.

04

Shipping investors ride wave of improved vessel earnings market

In 2025, the global shipping investment landscape experienced a notable shift compared with 2024, shaped by economic pressures, geopolitical uncertainty and evolving trade patterns.

After record highs the previous year, the cost of acquiring both new and second-hand vessels fell for both dry bulk and tanker vessels, while vessel daily earnings surged. This combination created a more favourable environment for shipowners and investors, offering opportunities for stronger returns despite ongoing global challenges.

One of the defining trends in 2025 has been the modest decline in newbuilding prices. Following a period of elevated costs in 2024, average newbuilding prices fell slightly year-on-year across all vessel types.

According to Baltic Exchange Investor Indices (BII) data, the price of a new Capesize vessel declined from US$73.5 million in January 2025 to US$71.2 million by January 2026. Panamax vessels fell from US$37.5 million to US$35.39 million, Supramax from US$34.83 million to US$33 million and Handysize from US$30.83 million to US$29.25 million.

BII data also noted that, in the tanker sector, VLCCs dropped from US$120.67 million to US$117.88 million, Suezmax from US$82.83 million to US$81 million, Aframax from US$69.33 million to US$67.25 million and Medium-Range tankers from US$45.33 million to US$43.44 million.

These price changes reflect a combination of slower investment in the first half of 2025, driven by US tariffs, pressures caused by inflation and broader global economic uncertainty, alongside ongoing disruptions in key shipping routes such as the Red Sea and evolving environmental regulations. Many shipowners chose to extend the life of existing vessels rather than commit to new purchases, providing flexibility while the market stabilised. By the second half of the year, market conditions had improved, limiting the overall decline in newbuilding costs.

The second-hand vessel market largely mirrored these trends, with one key exception. While prices for most five-year-old vessels declined,

Capesize and VLCC vessels increased in value due to stronger earnings in the second half of the year and fleet expansion strategies.

BII data shows the price of a five-year-old Capesize rose from US$59.19 million to US$63.98 million and a five-year-old VLCC from US$109.64 million to US$117.54 million in 2025. In contrast, the value of a five-year-old Panamax fell from US$34.25 million to US$33.09 million, Supramax rose slightly from US$27.61 million to US$31.90 million and Handysize declined from US$26.72 million to US$25.79 million. Meanwhile, the value of a five-year-old Suezmax decreased from US$80.94 million to US$79.29 million, Aframax from US$71.05 million to US$65.69 million and Medium-Range tankers from US$45.58 million to US$42.42 million.

While vessel acquisition costs fell, profitability soared. The Baltic Exchange Health of Earnings Index, comparing revenue to operating costs, highlighted dramatic improvements across both dry bulk and tanker segments.

Dry bulk vessels, including Capesize and Panamax, saw substantial gains, with Capesize earnings rising from US$634 per day to US$3,624 and Panamax from US$713 to US$1,150. Supramax earnings increased from US$847 to US$1,725 and Handysize from US$1,015 to US$1,490. Tanker vessels saw even stronger growth, with VLCCs rising from US$2,161 to US$6,749, Suezmax from US$2,841 to US$11,263, Aframax from US$4,406 to US$7,653 and Medium-Range tankers from US$2,481 to US$3,030.

The combination of lower vessel prices and sharply higher earnings created a favourable environment for shipping investment in 2025. Data-driven decision-making, supported by the Baltic Exchange Investor Indices, helped shipowners and investors navigate asset values, earnings potential and market trends. Overall, 2025 marked a turning point. Costs stabilised, earnings made a strong comeback, and the sector demonstrated resilience despite ongoing global uncertainty.


RESCUE ZONE

VI

MARITIME INDUSTRY DEVELOPMENTS

1.ABS overtakes DNV as flag states and class societies reshape maritime oversight

2.London remains global hub for maritime arbitration

3.Shipbrokers expand their role amid a turbulent shipping market

4.Global orderbook highlights China's industrial lead

01

ABS overtakes DNV as flag states and class societies reshape maritime oversight

Two pillars underpin the governance of the global fleet: flag administrations and classification societies. One holds legal authority over ships. The other certifies their technical integrity. In 2025, both sides of that system shifted in visible ways.

The most notable development came in the classification sector. The American Bureau of Shipping (ABS) overtook DNV to become the world's largest classification society by gross tonnage in service. The move ended more than a decade in which DNV had occupied the top position.

ABS's growth reflects the scale of fleet expansion in several key segments, including LNG carriers, tankers and large container vessels. The society has also deepened its involvement in technical advisory work linked to decarbonisation and alternative fuel adoption.

Regardless, DNV remains one of the most influential organisations in maritime regulation. Its research on the energy transition continues to shape industry debate around fuel pathways and vessel design. However, the change at the top of the rankings signals a broader shift in the balance of the classification sector.

Class societies move deeper into the energy transition

Classification societies no longer limit themselves to surveying ships and issuing certificates.

They now sit at the centre of technical development in shipping. New fuel systems, digital ship design, safety standards for emerging propulsion technologies and regulatory interpretation all fall within their scope.

ABS has been active in areas such as nuclear propulsion concepts, ammonia fuel systems and digital vessel design. These projects place classification societies directly inside the technological transition now underway in shipping.

The Korean Register provides another example of how class societies have moved into technology development. Working closely with South Korea's shipyards, KR has focused on safety standards and engineering requirements for vessels designed to operate on ammonia and other alternative fuels.

South Korea remains one of the world's largest shipbuilding centres. Close cooperation between shipyards and classification societies therefore plays an important role in shaping the technical standards of the next generation of ships.

Meanwhile, China Classification Society saw a major leadership transition in 2025 when Zhao Yan became chairman and president, amid its continued emphasis on decarbonisation research and digital ship technologies. One of its notable projects involved classification support for the first methanol dual-fuel low-speed marine engine designed for a very large crude carrier (VLCC).

Elsewhere, classification societies including ClassNK, Lloyd's Register, Bureau Veritas and Rina continue to expand advisory services in areas ranging from alternative fuel certification to digital fleet monitoring and regulatory compliance.

The classification sector now operates less as

a group of survey organisations and more as a network of technical authorities shaping the architecture of the future fleet.

In essence, class societies have moved from surveying ships to shaping them.

Flag states remain the legal backbone of shipping

While classification societies provide technical oversight, flag states hold legal responsibility for enforcing international maritime rules.

The structure of the global registry system remained stable in 2025, with a handful of major flags dominating the world fleet.

Liberia retained its position as the largest flag state. It now represents more than 290 million gt of commercial tonnage, extending its lead over Panama that it secured in 2023.

Panama remains the second-largest flag, though its fleet size has gradually declined from earlier peaks as shipowners diversify registration choices. Meanwhile, the Marshall Islands registry ranks third globally, with fleet tonnage approaching 200 million gt.

Singapore climbs the rankings

The most notable movement among the leading registries came from Singapore.

The Maritime and Port Authority of Singapore reported that its registry surpassed 100 million gt in 2025, pushing the flag into fourth place globally. In doing so, Singapore overtook Hong Kong in the rankings.

The growth reflects several factors. Singapore offers strong regulatory oversight, proximity to major Asian shipping routes and close links to one of the world's largest bunkering hubs. Shipowners also value the stability of its regulatory framework.

Hong Kong, by contrast, saw some reduction in fleet size during the year. The registry remains a major maritime centre and still performs strongly in port state control rankings, particularly within the Tokyo MOU region.

Malta maintained its position as the leading European flag state. The registry has built a substantial fleet over the past decade, combining European Union regulatory status with a large international customer base.

Japan also moved slightly higher in the global rankings as its national fleet expanded.

Measuring flag performance

Fleet size alone does not determine the quality of a flag administration.

The International Chamber of Shipping Flag State Performance Table tracks compliance indicators across several areas, including port state control records, treaty ratification, reporting obligations and participation in IMO governance.

The framework compiles publicly available data rather than producing a single ranking. Shipowners use it as a benchmark when evaluating registry performance and regulatory reliability.

The indicators also reflect the close relationship between flag administrations and classification societies. Under the IMO's Recognized Organization Code, flag states often delegate technical survey work to classification societies while retaining legal responsibility for compliance.

In practice, the two systems now operate as a single regulatory framework.

Governance during a period of transition

The maritime sector continues to face a regulatory and technological transition unlike any in its modern history.

Decarbonisation requirements are reshaping ship design, digital technologies are transforming fleet monitoring and operational management, and new fuels such as methanol and ammonia are introducing unfamiliar engineering and safety challenges.

As a result, classification societies and flag administrations have had to adapt to these changing dynamics.

Class societies are expanding technical research and certification work to support new propulsion technologies, while flag states must integrate these developments into the international regulatory framework established through the IMO.

The events of 2025 illustrate how these institutions continue to evolve. While shipping's governance system has not fundamentally changed, they are facing renewed pressure to ensure they continue to adjust to the global changes that are emerging.

02

London remains global hub for maritime arbitration

London continues to hold its position as the leading global hub for maritime arbitration, reinforced by its long-standing reputation for legal expertise, consistency and trust amongst international shipping stakeholders.

The London Maritime Arbitrators Association (LMAA) continues to handle the vast majority of global cases, with a substantial increase in numbers compared to 2024. According to LMAA figures, in 2025 a total of 3,469 appointments were called on LMAA Terms and Procedures, with an estimated 2,015 references. This is compared to 2024 when just 1,818 new maritime arbitrations were seated in London. In addition, arbitrators made a total of 563 awards in 2025, of which 83 awards were made after oral hearings.

Despite London's continued dominance, the broader arbitration landscape is becoming increasingly competitive. In particular, Asia's key centres; the Singapore Chamber of Maritime Arbitration (SCMA) and the Hong Kong International Arbitration Centre (HKIAC); are firmly established as joint second-tier hubs and continue to build momentum. Both benefit from their proximity to major shipping markets, modern arbitration frameworks and strong institutional support. SCMA saw a sharp rise in activity in 2024, handling 95 new cases, up 73% from 2023, while Hong Kong's HKMAG recorded a 36% increase in arbitral appointments over the same period.

Singapore has continued to position itself as a forward-looking arbitration hub, investing in innovation, flexibility and complementary services such as mediation. Its appeal lies in efficiency, neutrality and its alignment with the needs of a growing maritime sector in the surrounding area. Similarly, Hong Kong maintains its strength as a gateway between Mainland China and the international legal community. Its developed legal infrastructure and unique ability to facilitate enforcement measures involving Chinese parties remain key advantages, particularly when addressing disputes with a cross-border element.

In China, arbitration is also expanding rapidly. The China Maritime Arbitration Commission (CMAC) reported 239 filings in 2024, with nearly 39% involving foreign parties, highlighting China's growing influence in global maritime arbitration.

Beyond London and Asia, other regions are also evolving. Dubai is reinforcing its position as an emerging arbitration centre, leveraging its geographic location between the Europe and Asia. In 2024, the Dubai International Arbitration Centre (DIAC) administered 262 arbitrations, with 12 in the maritime and shipping sector, reflecting a gradual increase in international engagement.

In the United States, maritime arbitration remains active but more fragmented. The Society of Maritime Arbitrators (SMA) in New York recorded 155 arbitral appointments in 2024, an 18% increase from 2023, although this remains only about 5% of London's LMAA caseload, illustrating the relative scale of the US sector.

A significant development over the past year has been the introduction of the English Arbitration Act 2025, which received Royal Assent in 2025. This legislation represents an important step in reinforcing London's position as a leading centre of legal excellence. The Act introduces

a number of updates aimed at improving clarity, efficiency and procedural certainty in arbitration proceedings. For the maritime sector, these changes are expected to enhance confidence in London as a dispute resolution forum, particularly at a time when competition from other jurisdictions is increasing.

Overall, the global maritime arbitration landscape reflects a balance between continuity and change. London remains the dominant force, supported by its depth of expertise and established legal framework. At the same time, Singapore and Hong Kong are continuing to grow in prominence, while other regions such as China and Dubai are actively developing their capabilities.

As maritime trade becomes increasingly complex and geographically diverse, arbitration remains a cornerstone of dispute resolution. The availability of multiple, credible centres offers parties greater choice, while also driving innovation and improvements across jurisdictions. In this evolving environment, London's challenge will be to maintain its leadership while adapting to the shifting dynamics of global trade and dispute resolution.

03

Shipbrokers expand their role amid a turbulent shipping market

Shipbrokers have continued to operate in a complex and dynamic trading environment. Geopolitical tensions, sanctions regimes and shifting trade routes over the past few years have maintained a level of uncertainty that continues to affect chartering markets, vessel transactions and investment decisions across the shipping sector.

Instability in several regions continued to reshape global shipping patterns in 2025. Security risks in the Red Sea forced many vessels to reroute around the Cape of Good Hope, increasing voyage distances and altering vessel supply across multiple sectors. At the same time, sanctions on Russian and Iranian exports and broader political tensions contributed to volatility in tanker markets.

As shipping markets became more complex, shipbrokers played a wider role for their clients. The growing complexity of global shipping markets also increased demand for specialised expertise. Traditionally focused on chartering and sale and purchase transactions, many brokers have expanded their services as they adapt to changing demand. Chartering negotiations, financing and risk management increasingly required detailed market insight, particularly as geopolitical developments and sanctions regimes reshaped trade flows.

2025 unfolded as a year of two distinct halves. Activity slowed across many shipping sectors during the early part of the year before markets strengthened in the third quarter, helping support improved momentum towards the end of the year. Despite this turbulence, the global market was valued at roughly US$1.45 billion in 2025 and is projected to reach about US$1.51 billion in 2026, reflecting steady expansion despite ongoing challenges.

Clarksons maintains its global leadership

Clarksons remained the world's largest shipbroker in 2025, with its shipbroking division, which includes more than 1,300 shipbrokers, continuing to represent the majority of group revenues. During the first half of the year, shipbroking generated around £222 million of revenue, or about 75% of total group income.

The company experienced a more challenging market environment compared with the previous year. In 2025, Clarksons reported underlying profit of £90.6 million, down from the record-setting £115.3 million in 2024. Despite this, the group maintained a strong financial position, marking its 23rd consecutive year of dividend growth.

The firm also continued to expand its global footprint. Clarksons strengthened its presence in the United States through the acquisition of Euro-America Shipping & Trade in March 2025, giving the company improved access to US government freight contracts. The group also expanded its operations in Brazil and broadened its freight and commodity derivatives activities.

SSY expands into new markets

SSY continued its expansion strategy during 2025, combining organic growth with targeted acquisitions and recruitment.

The London-headquartered firm entered the

nuclear energy sector through the acquisition of US-based brokerage Uranium Markets, extending its commodities coverage beyond traditional shipping markets. The company also attracted senior brokers from competing firms, strengthening its presence across several sectors.

Digitalisation was another area of focus. SSY joined forces with other leading brokers, including Arrow, Gibson, Howe Robinson, and Ifchor Galbraiths, to launch Ocean Recap, a platform designed to streamline the management of charterparty agreements and recaps. The initiative aimed to improve efficiency and bring greater structure to the chartering process.

Operationally, SSY's dry cargo division reported stable market conditions during the year, with freight rates broadly in line with 2024 averages. The tanker market experienced greater volatility, particularly following new sanctions targeting Russian and Iranian oil later in the year.

The company continued to expand its international footprint, opening new offices in Aberdeen and Rotterdam, while strengthening its presence in key maritime centres including Dubai, Shanghai, Hong Kong and Tokyo.

Braemar restructures amid challenging markets

Braemar experienced a more difficult start to 2025 as softer freight rates and broader market volatility weighed on performance. Revenue for the first half of the year declined compared with the previous year, reflecting weaker tanker and dry cargo markets.

The company also faced operational challenges following the departure of several brokers from key tanker and dry cargo desks. In response, Braemar moved to rebuild its teams and appointed a new global head of tanker operations.

Despite these setbacks, the firm continued to invest in its future capabilities. Braemar expanded its global network with a new office in Cape Town, bringing its network to 19 offices across 13 countries. It also strengthened its broker training programme, welcoming a new intake of 17 trainees in 2025.

BRS invests in digital intelligence

BRS continued to develop its technology and data capabilities as part of a wider strategy to support clients navigating complex shipping markets.

The Geneva-based group launched a dedicated data intelligence department designed to strengthen market analysis and provide more detailed insights for clients. The initiative reflects a broader trend among shipbroking firms towards integrating technology and analytics with traditional brokerage services.

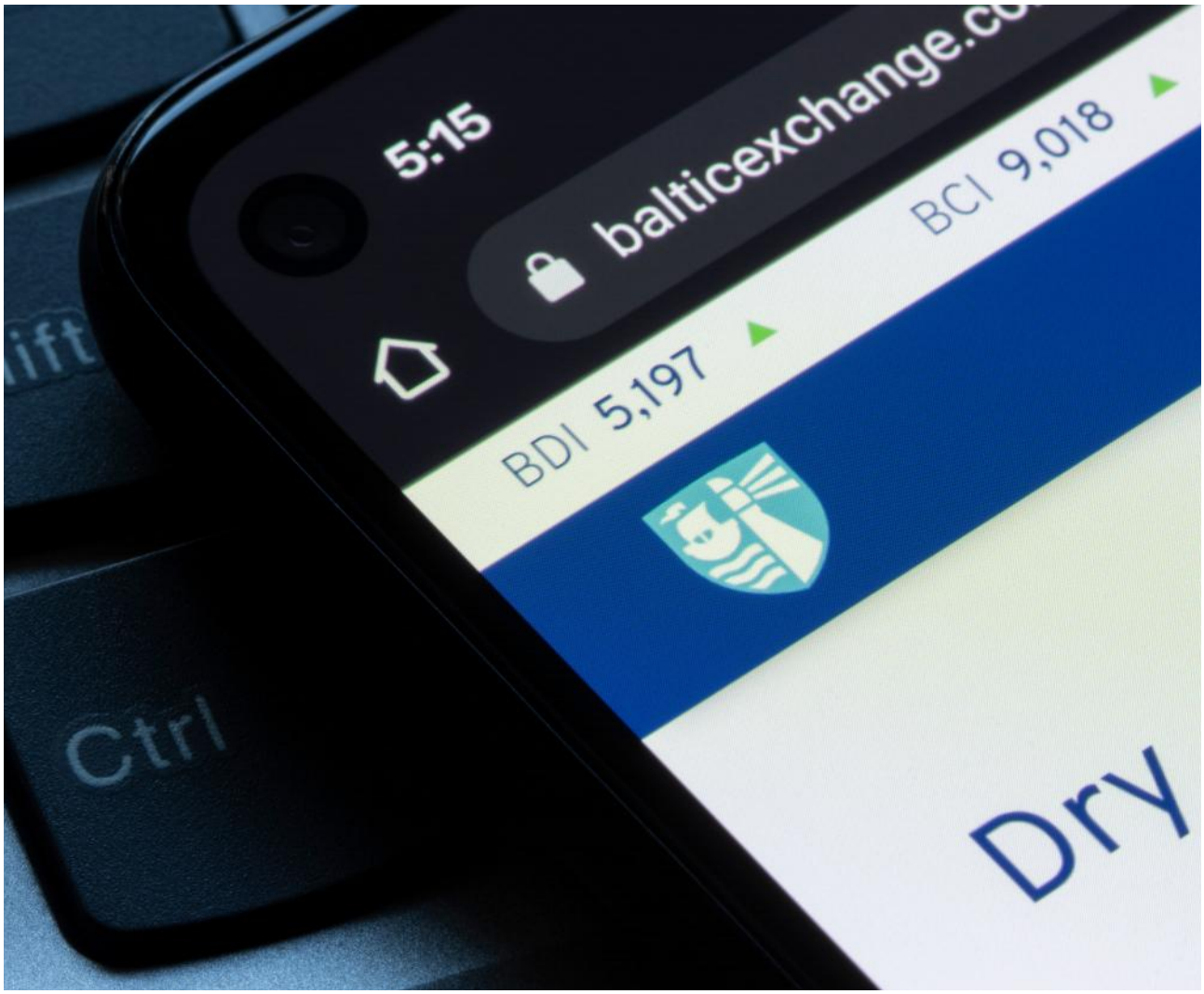
BRS's diversified business structure remained a key factor in maintaining stability. In 2025, dry cargo accounted for 39% of revenues, followed by tankers at 34% and asset transactions at 19%. Other activities, including offshore and renewables, liner shipping, gas and carbon trading, contributed a further 8% of group revenues

Arrow strengthens its diversified services

Privately owned broking group Arrow marked its 35th anniversary in 2025 as it continued to expand across multiple shipping and energy markets. Its longstanding relationships with shipbuilders in Japan, South Korea and China have helped support its activity in vessel contracting and asset transactions.

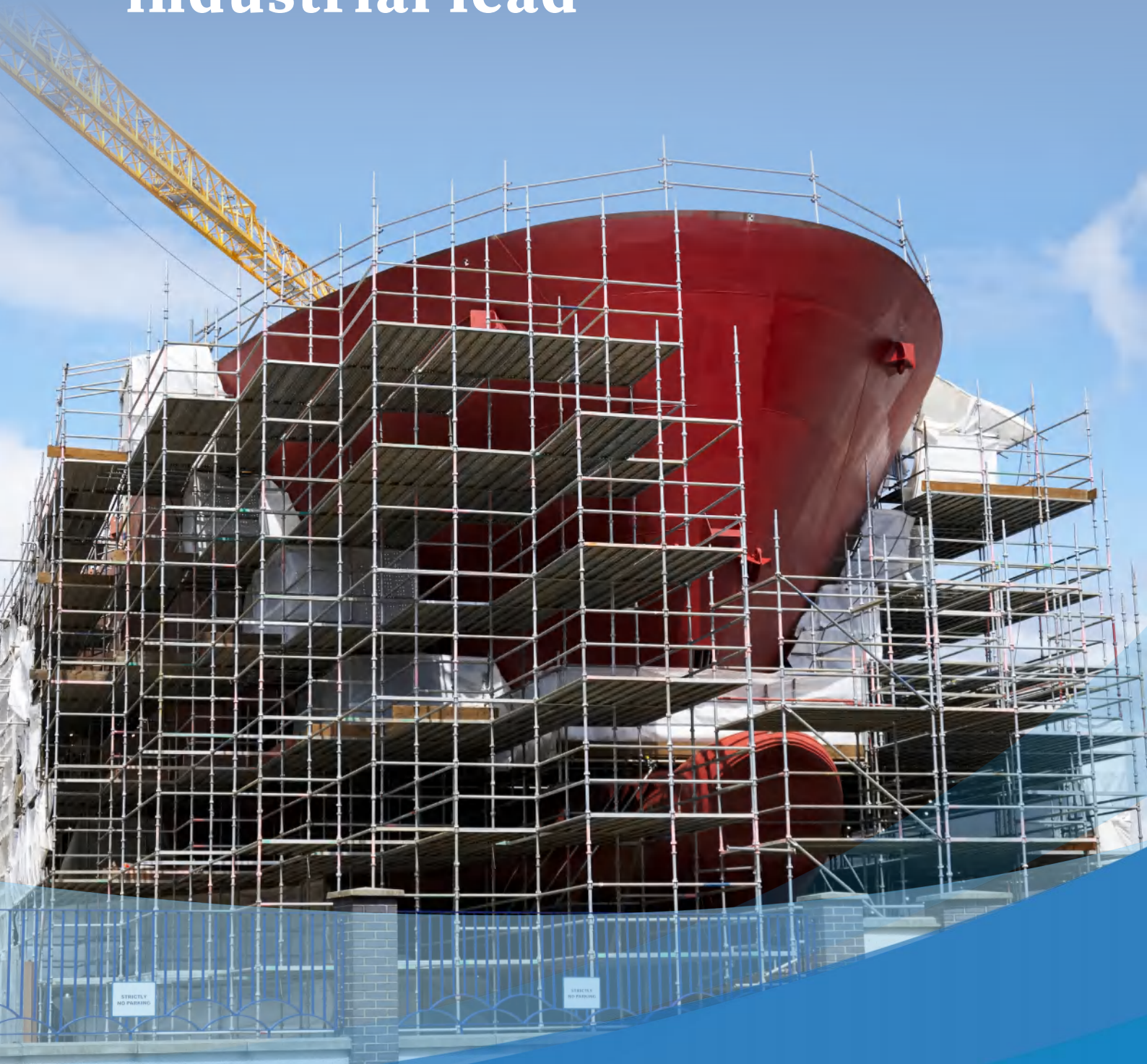
Arrow has also expanded its presence in financial markets. Launched in 2024, its energy trading arm, Arrow Energy Markets, has become an active participant in over-the-counter crude and refined product swaps. Its daily trading volumes exceeding 40 million barrels in 2025.

Alongside physical broking services, the company continues to develop its derivatives and financial advisory capabilities. Arrow's dry freight derivatives division has become one of the most experienced in a market that has grown rapidly in recent years. The team works to interpret freight market movements and support clients trading and hedging decisions.



04

Global orderbook highlights China's industrial lead



The global shipbuilding orderbook in 2025 remained dominated by Chinese yards.

China secured 107.82 million dwt of new ship orders during the year, representing around 69% of global contracting activity. Ship completions reached 53.69 million dwt, equivalent to 56.1% of global output, while the national orderbook expanded to 274.42 million dwt, or 66.8% of the global total.

The scale of these figures reinforces China's position at the centre of global shipbuilding. Chinese yards have now led the world across all three key industry indicators – completions, new orders and orderbook size – for more than a decade.

South Korea retained its position as the second-largest shipbuilding nation. Korean yards captured roughly 20% of global orders in 2025, maintaining a strong presence in technically complex vessel types such as LNG carriers and large gas tankers.

Japan remained the third major shipbuilding nation. Although its market share is smaller than in previous decades, Japanese yards continue to specialise in bulk carriers and a range of niche vessel segments where operational efficiency and construction quality remain competitive advantages.

Together, these three countries account for the overwhelming majority of global shipbuilding capacity, reinforcing Asia's dominance in building new tonnage.

Orderbook strength after the post-pandemic surge

The size of the global orderbook reflects the surge in newbuilding activity that began in 2021 and accelerated through 2023 and 2024.

During those years, shipowners placed a large number of orders across multiple sectors, responding to strong freight markets, rising fleet utilisation and the need to modernise ageing tonnage.

By 2025, the result was a historically strong orderbook stretching well into the second half of the decade.

Lead times at major shipyards now extend three to four years for many vessel types. In some specialised segments, including LNG carriers and large container vessels, delivery slots are effectively sold out until the end of the decade.

For shipbuilders, this backlog provides exceptional visibility of future workloads, while for shipowners, limited yard availability potentially means longer wait times, higher construction costs and increased competition with other owners.

Slower contracting, but a large backlog

Despite the strength of the orderbook, new orders slowed during 2025 compared with the exceptional levels recorded in the previous two years.

One leading reason was uncertainty in global freight markets, particularly container shipping following the unwinding of pandemic-era disruptions. Financing conditions also tightened in parts of the maritime sector, while shipowners continued to evaluate the long-term implications of the energy transition.

Meanwhile, uncertainty surrounding fuel regulations and the development of cleaner alternatives has led to some shipowners hedging their bets when it comes to propulsion. As a result, many vessels ordered during the current cycle are being designed with dual-fuel capability or future fuel conversion options. Methanol-ready and ammonia-ready designs have become increasingly common as shipowners attempt to maintain flexibility while regulatory frameworks continue to evolve.

Energy transition shapes the next generation of ships

Environmental regulation is now one of the most important drivers behind newbuilding decisions.

International shipping is moving towards stricter emissions targets, while regional regulations such as the European Union's Emissions Trading System and FuelEU Maritime rules are already influencing operational economics.

Ships entering service in the late 2020s and early 2030s will therefore operate under a very different regulatory environment from the one that existed when many of today's vessels were ordered. As such, the current orderbook reflects that shift.

Alternative fuel capability is increasingly built into vessel design, while improvements in energy efficiency have become a core requirement rather than an optional upgrade.

In practice, shipowners are now effectively ordering ships for a regulatory future that is still taking shape.

A fleet designed for the 2030s

The vessels currently on order will define the structure of the global fleet for decades.

Many ships being contracted today will still be operating in the 2040s and beyond, meaning that design decisions made now will influence the industry's emissions profile for a generation.

That reality explains why shipowners are approaching newbuilding decisions cautiously, even while the orderbook remains large and, crucially, diverse.

The 2025 orderbook therefore offers a clear snapshot of how the global shipping industry is preparing for its next phase of development: a period defined by technological change, regulatory pressure and the long-term transition to lower-emission maritime transport.

VII

DIGITAL DEEP DIVE

1.Digital technologies continue to reshape modern maritime operations

2.What the maritime industry really thinks about AI and where it's working

3.Cybersecurity moves from theory to practice

4.IMO moves to bring maritime digitalisation under a single global strategy

01

Digital technologies continue to reshape modern maritime operations

The maritime industry continued to accelerate its digital transformation in 2025, as shipowners, ports and technology providers expanded the use of artificial intelligence, data platforms and advanced analytics across a variety of shipping operations. This approach has become an increasingly important part of the sector's efforts to improve efficiency, reduce fuel consumption and manage increasingly complex global supply chains.

For years, digital systems have been used to support voyage optimisation, predictive maintenance and cargo management. Meanwhile, emerging technologies such as digital twins and AI-powered decision support systems are coming online to enable shipping companies to simulate vessel performance, analyse operational data and identify efficiency improvements before problems arise.

This shift reflects digitalisation's increasing role in supporting the long-term fleet management of owners, particularly those looking to reinforce decarbonisation strategies and improve operational effectiveness.

AI expands across shipping operations

AI has become one of the most prominent technologies shaping maritime operations. Shipping companies are increasingly using AI-driven systems to analyse large volumes of operational data, enabling faster decision-making and improved operational efficiency.

One area where AI has begun to play a growing role is voyage optimisation. Digital navigation and weather-routing platforms can now analyse large datasets, including ocean conditions, weather forecasts and vessel performance data, to identify more efficient routes. These systems help operators reduce fuel consumption and emissions while maintaining reliability.

AI is also being deployed to improve safety and cargo management. In 2025, the World Shipping Council launched an AI tool to detect misdeclared dangerous cargo in container shipping. The system scans millions of booking records in real time, identifying patterns associated with hazardous goods that may have been incorrectly declared. Carriers representing around 70% of global container capacity joined the initiative, illustrating the industry's growing reliance on digital solutions to address operational risks.

Alongside cargo management, AI is also supporting the development of autonomous and remotely operated vessels. In July 2025, South Korean shipping company Hyundai Glovis announced plans to deploy AI-assisted autonomous navigation systems on several large Pure Car and Truck Carriers (PCTCs). The system, developed with HD Hyundai's technology arm Avikus, allows partial remote control and AI-supported route optimisation on vessels capable of carrying up to 7,000 vehicles. The initiative marked one of the largest commercial deployments of AI-based navigation technology in the shipping industry to date.

Digital twins gain traction

Digital twin technology has also gained attention across the maritime industry during 2025. A digital twin is a virtual model that replicates the behaviour and performance of a physical asset, such as a vessel or port facility, using real-time operational data.

In addition to vessel monitoring, digital twins

are increasingly being used in ports and logistics networks. In the United States, the Port of Corpus Christi in Texas introduced the AI-powered Overall Port Tactical Information System (OPTICS). The system created a real-time 3D model of port activity using sensor data, vessel tracking information and machine-learning algorithms. The platform allowed port authorities to monitor vessel movements, predict traffic patterns and simulate emergency scenarios to improve overall planning and safety across its terminals.

Digital twin systems are also being applied across broader logistics networks, allowing shipping lines and logistics providers to model supply chains and identify potential disruptions. By combining data from vessels, ports and land transport systems, these platforms are providing more accurate forecasts of cargo arrival times and help operators manage congestion more effectively.

Cybersecurity emerges as a growing concern

Behind many of these developments is the rapid expansion of maritime data infrastructure. Satellite connectivity, cloud computing and the growing use of onboard sensors have enabled shipping companies to collect and analyse far greater volumes of operational data than in the past.

These technologies form the backbone of modern digital shipping platforms. Data gathered from sensors installed across engines, hull structures and navigation systems can now be transmitted to shore-based control centres, where it is analysed using advanced software tools.

However, as shipping becomes more digitally connected, cybersecurity has emerged as a growing challenge for the maritime industry. The number of reported maritime cyberattacks rose from 408 incidents in 2024 to 828 incidents in 2025, representing an increase of 103% year-on-year. These attacks included malware infections, ransomware incidents and distributed denial-of-service attacks targeting both vessels and shore-based systems.

In several cases, cyberattacks focused on supply-chain vulnerabilities, allowing attackers to gain access to fleet-wide systems through compromised service providers. Researchers have warned that cyber intrusions could potentially interfere with systems such as electronic chart displays or ballast control systems if left unaddressed.

The growing number of incidents has also reinforced the importance of stronger regulatory

frameworks. From 2025, shipping companies were required to demonstrate compliance with the IMO's cyber risk management requirements under the ISM Code during safety management audits. These regulations require shipowners to integrate cyber risk management into their operational procedures, reflecting the increasing recognition that cyber threats now represent a significant operational risk for modern vessels.

Digitalisation supports maritime decarbonisation

Digital technologies are also playing an increasingly important role in the maritime sector's efforts to reduce emissions.

Digital monitoring platforms enable operators to track fuel use and emissions across entire fleets, providing insights into operational performance and compliance with environmental regulations. For example, Wärtsilä's Fleet Optimisation Solutions combined voyage planning, performance analytics and real-time vessel data to help operators identify more efficient routes and operating speeds. In one deployment, the system was implemented across 31 vessels, resulting in fuel savings of around 5–7% and a reduction of approximately 600 tonnes of CO2 emissions.

Digital technologies are also supporting the introduction of alternative fuels and new propulsion technologies. As the maritime sector continues to pursue long-term decarbonisation targets, digital technologies are expected to remain central to efforts to optimise vessel performance and manage increasingly complex operational environments.

Digital continues to evolve

The developments seen throughout 2025 illustrate how digital technologies are becoming increasingly embedded in maritime operations. AI, digital twins and advanced data platforms are reshaping how shipping companies manage vessels, cargo and supply chains, while also supporting wider industry goals around efficiency and emissions.

At the same time, the rapid expansion of digital infrastructure has highlighted the importance of strengthening cybersecurity resilience and regulatory oversight as vessels and port systems become more connected.

Balancing how to embrace new technologies that are now vital to modern operations with the associated cyber risks will be vital for shipping as it heads towards a more interconnected and digital future.

02

What the maritime industry really thinks about AI and where it's working

By Janani Yagnamurthy, SVP, Product, Strategic Growth at Marcura

Artificial intelligence has become one of the most talked-about topics in maritime, but also one of the most misunderstood. 2025 saw conversations shift from curiosity to intent. AI is now firmly on the boardroom agenda, seen as a strategic lever for improving efficiency, reducing risk, and supporting decision-making across operations.

But what does the industry actually think about AI in practice? And more importantly, where is it delivering real value?

Marcura's report with Thetius, "Beyond the Hype: What the Maritime Industry Really Thinks About AI and Where They're Making It Work," surveyed more than 130 maritime professionals globally. The findings reveal an industry that is optimistic but not yet fully ready.

While 82% of respondents believe AI can improve efficiency, only 23% say their organisations are actively training staff to use it. And although 81% of companies are piloting AI solutions, just 11% have established the governance and policies needed to scale them.

This is the defining challenge for maritime today: not whether AI works, but how to make it work consistently across complex, real-world operations.

From experimentation to execution

The gap between ambition and execution is not unique to maritime, but it is particularly pronounced. Shipping operates across fragmented systems, variable data quality, and highly specialised workflows. Introducing AI into this environment requires more than deploying new tools, it requires organisational change.

Many AI initiatives begin as pilots with loosely defined goals. Scaling them, however, demands clarity of purpose, investment in data quality, and a structured approach to governance and training. Without these foundations, even promising solutions struggle to move beyond isolated use cases.

This is why the industry's current phase can best be described as experimental maturity: companies are actively testing AI, but are still building the capabilities needed to embed it into daily operations.

Where AI is already delivering value

Despite these challenges, the research highlights clear areas where AI is proving effective.

The strongest consensus is around reducing manual, repetitive work. Nearly all respondents see value in using AI to streamline workflows, particularly in document-heavy processes that have traditionally required significant human effort.

Charter party analysis is a good example. Reviewing contracts is time-consuming and detail-intensive, with material financial implications if risks are missed. AI can now scan these documents in seconds, flagging potential issues and surfacing relevant clauses. Importantly, it does not replace the operator's judgment, it enhances it, allowing experienced professionals to focus on negotiation and decision-making rather than line-by-line review.

Similarly, AI is being used to automate operational documentation, generate voyage instructions, and support back-office processes. These are not headline-grabbing applications, but they deliver tangible efficiency gains and free up time for higher-value work.

What these use cases have in common is specificity. The most successful implementations are not generic AI tools adapted for maritime, but systems designed with a deep understanding of maritime data, terminology, and workflows.

The human factor

One of the most consistent themes in the research is the importance of human oversight.

Two-thirds of respondents expressed concern that overreliance on AI could weaken critical skills and judgment. In an industry where decisions carry significant financial and safety consequences, this concern is well-founded.

At the same time, there is broad agreement on the role AI should play. Around 70% of respondents of the survey believe AI should recommend actions, with humans making the final decisions.

This "human-in-the-loop" model reflects the reality of maritime operations. Trust, experience, and contextual judgment remain central, particularly in regions where business relationships and local knowledge are critical to how deals are done and operations are managed.

Rather than replacing human expertise, the most effective AI systems are those that augment it, providing speed, consistency, and insight, while leaving accountability with the operator.

What comes next

As the industry moves forward, the focus must shift from experimentation to implementation.

This means starting with clearly defined problems, investing in training and organisational readiness, and adopting governance frameworks that ensure transparency and accountability. It also means selecting solutions that are purpose-built for maritime, rather than relying on generic models that may struggle with the sector's complexity.

The pace of AI adoption is accelerating, compressing what would traditionally be a decade-long technology cycle into just a few years. For leading shipping centres across Asia, Europe, and beyond, this presents both an opportunity and a challenge: to build the capabilities needed to translate AI ambition into operational reality.

The industry is no longer asking whether AI matters. The question now is how effectively organisations can bridge the gap between vision and execution, and turn potential into performance.

03

Cybersecurity moves from theory to practice

The maritime industry faced growing cybersecurity challenges in 2025, as increased digitalisation across vessels, ports and supply chains exposed new vulnerabilities. As shipping companies continued to adopt more connected systems, remote monitoring tools and data-driven platforms, the sector has continued to become more exposed to cyber threats that can disrupt operations, compromise safety and impact global trade.

According to findings from Thetius, in collaboration with CyberOwl and HFW, in their paper 'The Lifecycle Dilemma' 43% of maritime stakeholders reported experiencing a cyber incident, whilst a further 17% were unsure whether an incident had occurred, underlining gaps in visibility and detection across the sector.

A growing disconnect

One of the most significant findings from 2025 was the growing disconnect between digital transformation and cybersecurity preparedness within shipping. While digital adoption has accelerated, only 32% of organisations said cybersecurity was fully integrated into their digital strategies, suggesting that many companies were still treating security as a secondary consideration.

In practice, this meant cybersecurity was often introduced after systems had already been deployed, with 55% of respondents indicating that cyber risk was addressed later in the project lifecycle, rather than at the design stage. This approach increases both cost and complexity, particularly as vessels become more dependent on interconnected systems.

Cybersecurity challenges in maritime operations extend across the entire lifecycle of a vessel, from design and construction through to operation and maintenance. Only 17% of organisations considered cybersecurity during the vessel design phase, despite the increasing integration of digital systems at this stage, creating vulnerabilities that can persist throughout a vessel's operational life.

Once vessels enter service, the challenge becomes more complex. Ships rely on a combination of onboard systems, third-party software and shore-based networks. Around 46% of respondents identified operational systems as their primary area of cyber risk, reflecting the growing exposure of day-to-day vessel operations.

Meanwhile, as vessels are retrofitted with new digital technologies, ensuring compatibility and cybersecurity across legacy and modern systems becomes more difficult. In some cases, older systems were not designed with cybersecurity in mind, increasing their vulnerability to attack.

Expanding ecosystems increase exposure

A key theme that emerged from 2025 was the growing importance of supply chain risk in maritime cybersecurity. Shipping operations depend on a wide network of suppliers, including equipment manufacturers, software providers and service companies.

The report found that 67% of respondents viewed third-party access as a significant cybersecurity risk, highlighting the challenges of managing security across complex supplier networks. At the same time, only 38% said they had full visibility over their supply chain cyber risks, suggesting that many organisations lack a clear

understanding of their exposure.

This creates opportunities for attackers to exploit weaker points in the system. If a third-party system is compromised, it can provide access to vessel systems or operational networks, even where the shipowner's own defences are relatively strong.

Despite advances in technology, human factors continued to play a central role in maritime cybersecurity incidents. Crew members and shore-based staff remain both a key line of defence and a potential source of vulnerability.

The report indicated that over 60% of cyber incidents involved some form of human error, including weak password practices, phishing attacks or failure to follow procedures. At the same time, only around one-third of organisations reported providing regular cybersecurity training to crew, highlighting a gap between risk awareness and practical preparedness.

Phishing and social engineering attacks have become increasingly sophisticated, making them harder to detect. Without consistent training and awareness, crews may struggle to identify threats, particularly in high-pressure operational environments.

Regulation raises standards but gaps remain

As a result of these continued issues, maritime's regulatory frameworks are playing an important role in raising awareness. Requirements linked to the International Safety Management (ISM) Code are encouraging shipping companies to incorporate cyber risk management into their safety management systems.

However, compliance alone has not resolved the challenges facing the industry. While 83% of organisations reported having some form of cybersecurity policy in place, only around 46% said they were confident in their ability to respond to a cyber incident.

This gap between policy and capability reflects the complexity of modern cyber threats. As vessels become more connected and systems more integrated, rigid compliance measures are often insufficient to address evolving risks.

As a result, industry stakeholders have increasingly recognised the need for more proactive approaches, including continuous monitoring, regular testing and closer collaboration across the maritime ecosystem.

04

IMO moves to bring maritime digitalisation under a single global strategy

The International Maritime Organization (IMO) moved to bring maritime digitalisation under a single global strategy in 2025, marking a shift from a series of technical initiatives towards a coordinated framework for how data, systems and processes operate across the global shipping system.

Agreed at the 49th session of the Facilitation Committee (FAL 49) in March, the work plan sets a clear timeline. A strategy will be developed over the next two years and submitted to the IMO Assembly by the end of 2027.

This step reflects a simple reality. Shipping already depends on digital systems that do not fully connect. Ships submit information to ports, ports pass that information to authorities, and documentation moves across multiple platforms. Much of this works, but it does not operate as a single system.

With this latest move, the IMO is now attempting to define that system.

Aligning existing systems

Digitalisation in shipping has developed in stages. Maritime Single Window (MSW) requirements introduced structured data exchange between ships and ports. Electronic certificates reduced reliance on paper documentation. The IMO Compendium on Facilitation and Electronic Business established common data definitions across systems.

FAL 49 brought these elements together.

A Correspondence Group has been tasked with defining how these systems connect and operate across jurisdictions. Its role is not to introduce new technology, but to set the structure for how existing and emerging systems interact.

The updates agreed during the session show how this alignment is beginning to take shape.

Revised MSW guidelines introduce verification functions to improve data accuracy and reduce duplication. Updates to the IMO Compendium expand standardised data sets, including electronic bills of lading and dangerous goods information. Guidance on electronic certificates strengthens the basis for recognising digital documentation across different administrations.

However, while these are just incremental changes, together they form the foundations of a more integrated digital environment.

The challenge of implementation

While the technical direction is clear, its implementation is more uneven.

In his remarks to the Committee, IMO Secretary-General Arsenio Dominguez pointed to both opportunity and risk. Digital tools such as artificial intelligence and autonomous systems can improve logistics and vessel performance. At the same time, cybersecurity exposure is increasing, and digital capability varies widely across regions. Closing this gap has become vital for an industry that has become increasingly interconnected and looking for digital tools to drive efficiencies.

That is because while some ports already operate advanced digital systems with integrated data flows, others still rely on manual processes or

fragmented platforms. A global framework has to accommodate both.

That raises practical questions. How are standards applied where infrastructure is limited? How are systems secured where cybersecurity capacity is uneven? How is data shared across administrations operating under different regulatory conditions?

These constraints will shape how far and how quickly the strategy can be implemented.

What this means for shipping

For ship operators and port authorities, digitalisation already affects day-to-day operations. Port calls depend on accurate and timely data submission. Clearance procedures involve multiple authorities accessing the same information. Cargo documentation increasingly exists in digital form rather than paper.

The IMO's strategy does not change these processes immediately. It instead sets a direction for how they will develop.

Over time, the emphasis shifts from individual systems to how those systems connect. Delays caused by duplicated submissions or inconsistent data become harder to sustain. Systems that do not align with common standards create friction in trade flows.

The challenge is not whether digitalisation continues.

It is whether it develops as a coordinated system or remains a collection of partially connected platforms.

The next phase

The Correspondence Group will report back to the Facilitation Committee in 2026, before the strategy is finalised for adoption in 2027.

Between now and then, the focus will shift from defining structure to resolving constraints.

The IMO has set out the framework. The next phase will test whether it can be applied across a global industry that operates with uneven digital capability, growing cybersecurity exposure and differing regulatory systems.

That will determine whether maritime digitalisation delivers consistent gains across the network or continues to develop unevenly from one port and administration to the next.

VIII

PORTS AND OCEANS

1.China continues to lead on smart and green port development

2.Container lines continue to tackle Red Sea uncertainty

3.As new opportunities for technologies emerge, ports must prioritise cyber-resilience

4.Multi-energy ports and move from ambition to delivery

01

China continues to lead on smart and green port development

China's maritime sector continued to invest heavily in port modernisation and sustainability in 2025, with a growing focus on automation, digital infrastructure and greener shipping operations. Across the country, China's ports have ensured that their ports are introducing new technologies and operational models to improve efficiency while supporting the broader transition towards lower-carbon maritime transport.

These developments form part of a wider strategy to modernise the country's shipping infrastructure and maintain the reliability of its port network within increasingly challenging global supply chains.

With many of the world's busiest container hubs located along its coastline, China has placed particular emphasis on improving both operational efficiency and environmental performance across its maritime gateways. The result is a growing network of smart, green container ports that combine large-scale cargo handling capacity with increasingly sophisticated digital and automated systems.

Automation supports rising container demand

One of the most significant developments in recent years has been the rapid expansion of automated port operations. China now operates around 60 automated container terminals, more than any other country, reflecting the pace at which it has embraced smart port technologies.

This expansion has been driven in part by the continued growth in cargo volumes moving through the country's ports. China's ports handled record container throughput of around 310 million TEU in 2025, alongside total cargo throughput exceeding 17 billion tonnes, highlighting the scale of activity across the national port network.

As container volumes continue to increase, port operators have been accelerating the deployment of automation and digital systems to maintain efficiency and manage rising demand. Many Chinese ports are integrating 5G connectivity, cloud computing and big data platforms into their operating systems, allowing port authorities to analyse vessel schedules, cargo flows and logistics operations more effectively.

Automated systems have been deployed across major facilities including Qingdao, Shanghai and Tianjin. These ports have introduced a combination of automated quay cranes, driverless container trucks and intelligent yard management systems to improve the flow of cargo across terminals. By reducing manual handling and improving coordination between terminal equipment, these technologies help ports process larger container volumes while maintaining stable operations across increasingly busy terminals.

Ports adapting to a changing maritime landscape

Port infrastructure has continued to expand in response to greater cargo demand. Improvements to shipping routes, port facilities and inland transport connections have strengthened links between coastal ports and logistics hubs across the country.

A prominent example of this development is the US$20 billion Shanghai's Yangshan Deep-Water Port, located around 30 km offshore in the East China Sea. Built to overcome the shallow waters near Shanghai's coastline, the

port was designed to accommodate the growing size of modern container vessels. Since its development, Yangshan has become one of the most technologically advanced port facilities in the world, combining deep-water berths with highly automated terminal operations. Its importance became clear in 2025 as it topped the Global Port Performance Index for the third year in a row with an annual throughput of 28.7 million teu.

New container services and logistics routes have helped strengthen connections between Chinese ports and trading partners across Asia, Europe and the Americas, supporting the steady movement of goods along global trade routes.

These developments are all closely linked to China's Belt and Road Initiative (BRI), which continues to support port and logistics infrastructure projects aimed at strengthening international trade connectivity. Investment in BRI transport projects remained significant in 2025, with ports and maritime infrastructure continuing to play an important role.

It is also expected to shape future policy planning. Chinese authorities have signalled that smarter and greener port infrastructure will form part of the country's 15th Five-Year Plan for 2026–2030, reflecting the growing importance of digitalisation and environmental performance in the next phase of maritime development.

Green initiatives gain momentum

Alongside efforts to improve efficiency and digitalisation, China has also placed increasing emphasis on the environmental performance of its maritime sector. In 2025, the Ministry of Transport launched the Initiative for International Cooperation on Green Shipping Corridors, aimed at promoting collaboration on low-carbon maritime routes. The initiative encourages the development of cleaner shipping corridors supported by alternative fuels, improved port infrastructure and closer cooperation between governments, shipping companies and port authorities.

Green shipping corridors are designed to support the gradual transition towards lower-emission maritime transport by concentrating the early deployment of new technologies along specific trade routes. One example is the corridor between Qingdao Port and the Port of Hamburg, which aims to test cleaner fuels, digital monitoring systems and more efficient port operations.

During 2025, several additional corridors linking China with European ports were announced, including routes connecting Shanghai with the Port of Rotterdam, Shanghai with the Port of Hamburg, and Shenzhen's Yantian Port with the Port of Antwerp-Bruges. These initiatives reflect growing cooperation between China and Europe to develop lower-emission shipping routes along some of the world's busiest trade routes.

Many of these corridors focus on container and roll-on/roll-off (ro-ro) traffic, which play a central role in trade between China and Europe. The routes are expected to support the transport of goods such as vehicles, machinery and manufactured products, allowing participating ports and shipping companies to test cleaner fuels

and operational practices while maintaining the efficiency required for high-volume trade.

Chinese ports are also investing in wider sustainability measures. One area of focus has been the expansion of shore-power systems, which allow ships to connect to the local electricity grid while berthed rather than running auxiliary engines. Now, more than 90% of specialised berths at major Chinese ports have access to shore-power facilities, reflecting a broad rollout of onshore electricity infrastructure across the country's port network.

Individual ports have also reported increased usage of these systems. Shanghai Port achieved nearly full shore-power coverage in 2025. From June to July, ships connected to shore power for 38.7 million kilowatt-hours, meaning a massive reduction of fuel use and carbon emissions from vessels while alongside.

Other ports have also accelerated the development of cleaner maritime fuels and supporting infrastructure. Dalian Port, for example, expanded its work on alternative fuel supply chains during 2025, including the development of facilities to support methanol, ammonia and other emerging green fuels. These initiatives are aimed at preparing ports for the next generation of low-emission vessels as shipping companies begin exploring alternative propulsion technologies.

At the same time, ports are combining these fuel initiatives with wider digital and electrification upgrades. Projects in ports such as Dalian have integrated 5G-enabled logistics systems, electrified port equipment and smart energy management platforms, allowing port operators to monitor energy use and cargo flows more efficiently.

Ports adapting to a changing maritime landscape

The developments seen during 2025 highlight how China's ports are continuing to adapt to changing demands in global shipping. Rising cargo volumes, evolving trade routes and increasing environmental expectations have encouraged port operators to invest in automation, digital infrastructure and cleaner energy solutions.

Through a combination of smart port technologies and sustainability initiatives, Chinese ports are working to build operational efficiency while supporting the broader transition towards a lower-emission transport network.

02

Container lines continue to tackle Red Sea uncertainty

Following on from a challenging 2024, the Red Sea continued to dominate headlines throughout 2025 as the threat of Houthi-led attacks meant many container lines chose to continue rerouting their vessels and adapting to the industry wide disruption that resulted in significantly fluctuating freight rates.

For many in 2025, the disruption in the Red Sea was no longer treated as a temporary shock but as a new market condition. Most Asia-Europe services continued to reroute around the Cape of Good Hope last year, increasing transit times by up to 14 days and adding additional insurance, fuel and operating costs for shipping companies.

There was a brief period of optimism in January 2025 as a ceasefire was agreed, offering an opportunity for commercial vessels to return to the region. However, container lines remained cautious, with many choosing to continue rerouting to avoid any potential risks to their vessels and crews. The ceasefire ultimately only lasted two months, resulting in persistently low traffic through the Suez Canal throughout the year.

Security concerns remained elevated in 2025, with two major incidents taking place in July 2025. Bulk carriers MV Magic Seas and Eternity C were attacked by Houthis, with several crew members losing their lives and many more taken hostage. Both incidents reignited the risks of transiting through the Red Sea, reinforcing many shipping lines' decisions to continue rerouting.

Container lines ultimately decided that the additional costs and time to reroute their vessels were worth it to provide more stability to their business and the wider market. However, the ongoing crisis had an interesting impact on global freight rates.

According to the Freightos Baltic Index, while container rates spiked in mid-2024 on East-West routes hitting highs of up to US$9,000/FEU due to the geopolitical challenge, rates fell sharply at the start of 2025 and largely remained flat throughout the year despite stronger volumes year-on-year. This was largely due to an influx of new box vessels entering the market throughout 2025, resulting in a sector that has become significantly oversupplied and providing additional capacity to the market to alleviate the absorbed capacity that resulted from the Red Sea crisis.

Towards the end of 2025, there were signs that container shipping could be eyeing up a cautious and phased return to the Red Sea.

Following another ceasefire deal in October 2025, several major container lines including Maersk, CMA CGM and Zim all announced that they would be testing routes through the Red Sea as conditions allow.

Despite the potential of a return to normalisation across the container market, as well as other trades, an immediate return to the Red Sea would not automatically erase the new market conditions that had formed over the past two years.

An influx of new capacity in the container sector, which would be freed up by shorter transit times

if passing through the Red Sea, could result in severe port congestion as routes and networks readjust, most notably in Europe. This would also put further downward pressure on freight rates, which may lead to an increase in idle tonnage and vessel scrapings.

While 2025 marked a year of continued adjustment for shipping lines, there remains a significant risk for those looking at a quick return to the Red Sea. Many have cited that a lot of effort was made to make the Cape of Good Hope route operationally viable, so there remains some skepticism about making the switch back so soon.

As it enters its third year of disruption, the legacy of the Red Sea crisis continues to loom large over the shipping industry, not only highlighting the route's importance to global shipping but also the operational and economic risks taken by shipping lines to maintain stability across the wider supply chain.

03

As new opportunities for technologies emerge, ports must prioritise cyber-resilience

By Patrick Verhoeven, Managing Director, International Association of Ports & Harbors

Digitalisation is an ongoing stress test for global supply chains. On the one hand, it can improve the flow of information among stakeholders, but on the other, increased digital integration makes the entire digital infrastructure vulnerable. As a result, the industry is experiencing growing risks from cyber threats that can disrupt operations, compromise sensitive data and threaten security.

The International Association of Ports & Harbors (IAPH) has been the voice of global ports for more than 70 years. The increasing challenges posed by cybersecurity are reflected in the sentiments of our membership. In a recent comprehensive survey of our members, the respondents – in this case, a sample size that handles more than 8.6 billion tons of maritime cargo and 372 million teu – identified cybersecurity threats as the most crucial risk factor facing port authorities, by a wide margin. The figure was well above the next categories, including natural disasters and climate change.

That survey was undertaken before the recent outbreak of hostilities in the Middle East, but is still reflects the degree to which – as ports increasingly rely on digital systems, automation, and Internet-of-Things (IoT) technologies – their exposure to cyber intrusions, data breaches, and operational disruptions continues to grow. No fewer than 61% of respondents classified cyberattacks as a 'high risk'.

This figure did not come as a surprise. IAPH has continued to keep pace with the concerns of the global ports and supply chain sector, working with members of its Data Collaboration Committee – as well key partners such as the World Bank and the World Customs Organization to produce and disseminate tools and expert guidance to support the industry's transition to safer and more secure digital workflows.

Following a 2020 report on Port Community Cybersecurity which dealt with this topic in detail for the first time specifically for ports, in 2021 the IAPH Cyber Security Guidelines for Ports and Port Facilities were published, addressing a fundamental issue: the importance of managing cyber risk at the top level of a port organisation. Aimed at C-level executives, the guidelines were developed to be consistent with the IMO's Guidelines on Maritime Cyber Risk Management and are recognised within them following the IMO FAL 46 committee meeting in 2022.

But to ensure future success, ports must set their course for the coming decades. That's why, last year, IAPH examined the solutions in place to protect the maritime supply chain's digital infrastructure from cyber-attacks, leading to

the publication of the IAPH Cyber Resilience Guidelines for Emerging Technologies in the Maritime Supply Chain.

Co-authored by 28 experts hailing from IAPH regular members and associate members, as well as partners the World Bank and the World Economic Forum, the guidelines were developed following a survey of the port community that identified and prioritised those technologies being positively adopted at ports.

These guidelines, which are available both in English and Spanish, aim to encourage ports to embrace technologies that have immense potential to innovate, advance digitalisation and bring about a more efficient, sustainable and predictable flow of cargo through the world's ports and the wider maritime supply chain.

The main principles described in these guidelines, for achieving a cyber-secure implementation of emerging technologies in the maritime supply chain are:

1.Integrate cybersecurity aspects in the early stages of emerging technologies planning, implementing "cybersecurity by design".

2.Assess cybersecurity risks and vulnerabilities introduced by emerging technologies, even if those technologies are not planned to be implemented within the organisation.

3.Avoid the misconception that non-IT systems do not require cybersecurity assessments.

4.Recognise the potential physical impact of cyberattacks.

5.Conduct a holistic cybersecurity assessment when integrating multiple technologies.

6.Implement technology-specific protection, detection, and mitigation measures, in addition to general cybersecurity measures outlined in the "IAPH Cybersecurity Guidelines for Ports and Port Facilities".

7.Look for new cybersecurity solutions that are enabled by emerging technologies.

8.Training and education is an important tool to ensure "cybersecurity by design" implementation of emerging technologies in the maritime supply chain.

9.Engage in efforts to update national and international legislation to adapt the existing requirements, for a cyber-secure implementation of emerging technologies in the maritime supply chain.

IAPH believes that cyber-secure implementation of emerging technologies is essential to ensure their contribution to a resilient, efficient and sustainable maritime supply chain. As interconnected as we are, we are only as strong as our weakest link.

04

Multi-energy ports and move from ambition to delivery

There was a notable shift in how the maritime sector is approaching port sustainability and green shipping corridors in 2025 as many shipping hubs moved from early-stage ambition towards a more complex phase of implementation.

At a global level, momentum remains clear. Ports are investing in infrastructure to support alternative fuels, electrification and more efficient operations, while green corridor initiatives continue to expand across major trade routes. In practice, however, progress is becoming more uneven. Some initiatives are advancing towards implementation while others remain at earlier stages of development.

The 2025 edition of UNCTAD's Review of Maritime Transport highlights how ports are increasingly being drawn into the wider energy transition. As shipping lines move towards alternative fuels, ports are responding by developing bunkering capacity and related infrastructure. Almost 200 ports were already offering LNG bunkering services by 2024, a figure that reflects steady growth over recent years and is expected to increase further as more locations invest in fuel supply capabilities to remain competitive within evolving global shipping networks.

This shift is not only environmental but also commercial. Ports that can support a wider range of alternative fuels are more likely to attract a greater number of vessel calls and strengthen their position within global shipping networks.

That pattern is particularly visible in Asia. UNCTAD data shows the region accounting for around 60% of global container ship port calls, with China, Singapore and the Republic of Korea among the most connected nodes in the system, reflecting both scale and sustained investment in capacity over time rather than any single step change.

At the same time, the report points to operational pressures that complicate this transition. Container ship port calls remained broadly stable through 2024, yet congestion and longer handling times increased in several regions, reflecting the strain placed on infrastructure by disrupted trade patterns, rerouted traffic flows and, in some cases, the limits of existing port capacity to absorb sustained volatility.

A separate study published in 2025 by the New Energies Coalition provides a more detailed view of what decarbonisation looks like at port level. Drawing on case studies from locations including Los Angeles, Singapore and Le Havre, it finds that ports are beginning to evolve into multi-energy platforms, combining electrification, renewable generation and fuel infrastructure within a single operating model.

Examples of this approach can also be seen in major port markets, including China, where shore power infrastructure has been deployed across major ports, enabling a high proportion of public vessels to use shore power while at berth.

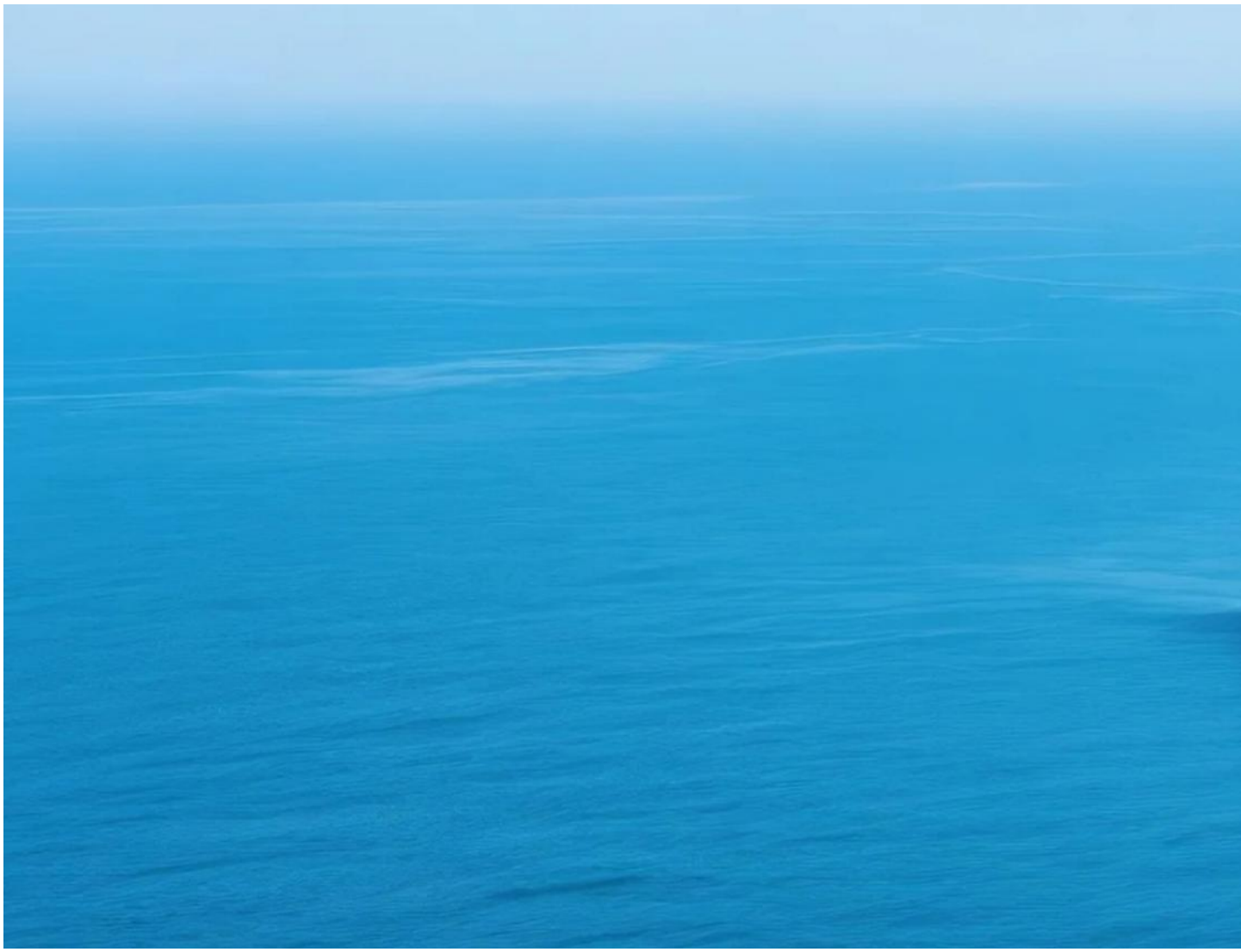
The same study also underlines the scale of the challenge. Ports face a combination of technological, financial and regulatory barriers that slow implementation, even where solutions are already available, particularly where infrastructure investment must be made ahead of demand and coordinated across multiple

actors with different timelines and incentives.

Ports are therefore having to make long-term infrastructure decisions while multiple fuel pathways continue to develop. Electrification, hydrogen, ammonia and other alternatives are all advancing, but none has emerged as a single dominant solution.

This complexity is also reflected in the development of green shipping corridors. While the number of initiatives continues to grow globally, many remain at early stages of development. Moving towards sustained operation requires alignment across ports, shipowners, fuel suppliers and regulators, often across multiple jurisdictions.

At the same time, regulatory timelines are becoming more defined. In Europe, ports are expected to provide shore-side electricity to vessels at berth by 2030, requiring significant upgrades to grid capacity, infrastructure and operational systems, particularly where existing networks were not designed to support sustained



high-load electrification across multiple berths. Similar expectations are emerging in other regions.

Investment is already underway. Nearly 200 ports worldwide are now able to offer LNG bunkering services, and that number continues to increase as ports position themselves for the next phase of fuel transition. Ports that provide these services are more likely to be included in shipping routes, reinforcing the link between decarbonisation capability and commercial competitiveness.

The shift from ambition to delivery is therefore no longer theoretical. It is being shaped by infrastructure decisions, regulatory deadlines and competition between ports to secure their place in evolving global trade networks.

IX

PEOPLE AND PROTECTION: CREW WELFARE AND MARITIME SAFETY

1.Training seafarers for the alternative fuel era

2.Attracting the next generation to shipping: Start local, think global

3.Maritime pressures rise: The human cost of shipping in 2025

4.Dry bulk fleet boasts better safety records

01

Training seafarers for the alternative fuel era

By 2025 the transition to alternative fuels had moved beyond research programmes and pilot projects as orders for vessels capable of operating on methanol, ammonia and other low-carbon fuels were steadily entering the global fleet pipeline. Engine manufacturers were bringing new fuel concepts to market, while ports and fuel suppliers began preparing the infrastructure needed to support them.

Yet one element of the transition has received far less attention than propulsion technology or fuel supply: people.

As ships begin operating with unfamiliar fuels, the readiness of the maritime workforce has become a central question. The safe handling of ammonia, methanol and hydrogen introduces operational challenges that fall outside the experience of most seafarers currently at sea.

In 2024, the Maritime Just Transition Task Force (MJTTF) helped quantify the scale of that challenge. By 2025, the focus shifted to a more practical issue: how those new competencies should actually be taught.

The answer is beginning to take shape through the training frameworks and instructor handbooks developed under the MJTTF's Baseline Training Framework for Seafarers in Decarbonisation project. The initiative, supported by the International Maritime Organization and Lloyd's Register Foundation, represents one of the first attempts to translate the industry's energy transition into a structured training architecture.

The framework's initial focus is on the three fuels expected to play a significant role in shipping's decarbonisation pathway: ammonia, methanol and hydrogen. Each presents a distinct operational profile.

Ammonia introduces acute toxicity risks that require specialised handling procedures and strict safety protocols. Methanol is highly flammable and demands different fire detection and suppression arrangements. Hydrogen brings additional engineering challenges associated with storage conditions, leak detection and ventilation.

These differences mean that conventional marine engineering training cannot simply be extended to cover new fuels so the crews of today and tomorrow need dedicated competencies if these fuels are to be stored, handled and used safely.

The MJTTF framework establishes a baseline competence structure that maritime education and training institutions can use when developing alternative fuel courses. Rather than prescribing a single global curriculum, the framework defines the knowledge areas, operational skills and safety procedures required for personnel working with these fuels.

Importantly, the training challenge extends well beyond engineering departments.

The familiarisation guidelines developed alongside the training frameworks emphasise that all onboard personnel require some level of preparation when vessels operate on alternative fuels.

The depth of training varies by role, but the underlying principle is clear: alternative fuels are reshaping the operational environment across the entire vessel.

Senior engineering officers require advanced technical competencies covering fuel system

design, safety systems and emergency procedures. Operational crew involved in bunkering or maintenance require practical training in handling and monitoring fuel systems. Even personnel without direct watchkeeping responsibilities must understand the basic hazards associated with the fuels carried on board.

This layered approach reflects the reality that alternative fuels affect multiple shipboard systems simultaneously. Fuel storage arrangements, gas detection equipment, ventilation systems and emergency response procedures all interact with day-to-day operations.

Moving from theory to practice

One of the most significant insights from the MJTTF work is the importance of practical training environments.

Classroom instruction alone cannot prepare crews for operating vessels powered by alternative fuels. Training programmes must incorporate simulator exercises, practical demonstrations and supervised operational training.

As a result, simulators are expected to play a particularly important role. They allow trainees to experience abnormal operating conditions and emergency scenarios in a controlled environment, enabling them to develop operational judgement alongside technical knowledge.

Training programmes must also reflect the operational realities of fuel handling on board. The MJTTF guidance recommends that practical exercises involve the same categories of equipment used in shipboard fuel operations, including portable gas detectors, breathing apparatus, multi-gas monitoring systems and protective clothing designed for hazardous environments. Trainees should also become familiar with detection technologies used to monitor flammable or toxic vapours, as well as emergency equipment such as oxygen resuscitators and fixed dry chemical powder firefighting systems.

Exposure to this equipment during training is intended to replicate the conditions crews will encounter in service that will boost crew member's technical knowledge and operational confidence when responding to abnormal situations.

Training facilities must also provide access to specialised equipment used in fuel operations. Recommended tools include gas detection instruments, breathing apparatus, protective clothing and firefighting systems designed to address low-flashpoint fuel hazards.

In many cases, existing maritime training infrastructure will require modification to support these exercises. Firefighting facilities originally designed for conventional fuels may need to be upgraded to allow safe demonstrations involving methanol, ammonia or hydrogen fire scenarios.

Instructor expertise presents another constraint. Teaching staff must combine seagoing experience with specialised knowledge of alternative fuel systems, skills that are still relatively rare across the maritime sector.

The frameworks also suggest that practical training should be delivered in smaller groups than traditional classroom courses, reflecting the complexity and safety considerations associated with alternative fuel operations.

These requirements imply a significant expansion of maritime training capacity in the coming years.

The MJTTF frameworks also feed into the regulatory process. Proposed competencies developed through the project have already been submitted to the IMO Sub-Committee on Human Element, Training and Watchkeeping as part of the broader review of global seafarer training standards.

This type of regulatory development will take time. In the interim, the frameworks provide maritime education institutions with a starting point for developing courses before formal international standards are finalised.

That bridging role may prove critical. As alternative fuel vessels enter commercial service, the readiness of the maritime workforce will become increasingly visible.

Discussions about shipping's decarbonisation often focus on fuels, engines and infrastructure. Yet every propulsion system ultimately depends on the competence of the crew operating it.

The transition to alternative fuels is therefore not only a technological shift but a human one as well.

02

Attracting the next generation to shipping: Start local, think global

By Carl King, Founder of Seafarer Social

Shipping has never operated on a single labour market. It runs on a globalised workforce with very different motivations depending on where a seafarer comes from. The reasons a Filipino cadet joins are not the same as those driving a Croatian deck officer. The financial pressures are different. The family dynamics are different. The sense of what the job means is different. If we keep treating recruitment as one universal challenge, the industry risks building solutions that only work for a narrow slice of the workforce.

There isn't one why

In my work listening to seafarers across ranks, flag states and vessel types, the strongest drivers are consistent as themes but different in how they show up locally.

Family is the big one. For many Filipino seafarers the job is inseparable from responsibility: being the provider, paying for a sibling's education, building something better back home. The career is measured through family outcomes, not job titles. Financial security runs alongside it. Reliable remittances, a house, a plan. In parts of Europe you'll hear more emphasis on structured progression, maritime tradition, the craft of seamanship. In some markets, time away is the central concern; in others it's training quality or whether you can build a life onshore later.

And then there's professional dignity. A pride in the uniform, in the craft, in doing something that carries weight. That one is universal, but how it's expressed varies enormously. In countries with deep maritime heritage, the status is built in. In others, shipping is invisible until someone's child is already onboard.

So the first step is simple, even if the execution is not: stop running one "next generation" playbook. Companies, unions and shipping centres should be building country-specific strategies rooted in what each workforce actually values. Not a branding exercise. More like product-market fit.

Make the career proposition credible

One consistent question raised younger seafarers, regardless of where they're from: 'Will I be safe? Will I develop? Will I be treated with respect?' They're not expecting perfection. They're looking for a credible answer.

Shipping is going through multiple transitions: decarbonisation, alternative fuels, digital systems, tighter compliance. That can scare people off or become the strongest recruitment message the industry has. High-responsibility work at the centre of global trade, modernising in real time. But only if the pathway is visible. Cadet-to-officer progression that is properly supported. Future-facing skills like alternative fuels, energy efficiency and cyber hygiene introduced early in training. And sea-to-shore transition is treated as a feature, not something

you do when you've had enough.

Digital identity is not a threat

This is an issue the industry needs to get ahead of. Young people document their lives. They build identity publicly. They want to show their work and stature, and shipping has often treated that instinct as a problem rather than an opportunity.

I understand why. This is a heavily regulated, safety-critical industry. Confidentiality, security and operational discipline matter. But there is a middle path. Clear, practical social media guidance (what's allowed, what's not, and why) rather than blanket silence. Opt-in storytelling that lets seafarers share the reality of the job without compromising safety. Branding built with seafarers, not imposed on them, because authenticity is the only currency that works with younger audiences.

Done properly, this becomes a retention tool. People stay where they feel proud, seen, and part of something that matters.

Culture is the baseline

None of this works if shipboard culture is stuck in the past. If we're honest, younger seafarers will not tolerate toxic leadership, harassment being minimised, or fatigue normalised as "just the job." The regulatory direction is clear. The IMO's focus on fatigue, harassment and mandatory training from 2026 confirms it. The simplest retention strategy is also the hardest: build ships where professional dignity is protected, reporting is safe, and respect is non-negotiable regardless of rank or nationality.

The point

Attracting the next generation is not about selling shipping. It's about earning trust in multiple markets at once. Go local with talent strategy, country by country, while staying consistent on the fundamentals: safety, dignity, progression and connection. That's how you build a workforce that joins for the right reasons and stays.

03

Maritime pressures rise: The human cost of shipping in 2025

Throughout 2025, a series of seafarer incidents once again placed the human element of maritime operations under scrutiny. While individual events varied in scale and location, many of the year's most widely reported incidents highlighted the vulnerability of crews operating within a global industry that continues to face regulatory and welfare challenges.

Several high profile casualties during the year drew attention to the risks faced by seafarers. In the North Sea, the collision between the container vessel Solong and the oil tanker Stena Immaculate in March 2025 highlighted the importance of crew vigilance during maritime operations. Although emergency response procedures helped limit the loss of life, the incident reinforced concerns about navigational pressure and fatigue among crews managing increasingly complex routes.

Elsewhere in Asia, the sinking of the Indonesian passenger vessel KMP Tanu in July 2025 resulted in a major rescue operation and debate about safety oversight and crew training standards in regional ferry operations. Such vessels continue to account for a significant share of maritime casualties, often operating under demanding conditions with high passenger volumes, ageing vessels and unpredictable weather.

Fire remained a recurring hazard in container shipping during 2025. A major fire onboard the MV Wan Hai off the coast of Kerala, India, required extensive firefighting efforts and the evacuation of several crew members. Fires involving container cargo are some of the most challenging emergencies that crews can face at sea, often spreading rapidly through the cargo and requiring sustained response efforts while the vessel remains far from external assistance.

While these incidents differed in their causes and outcomes, they highlight ongoing concerns within the maritime sector about the conditions under which seafarers are operating. Investigations into accidents continue to reference familiar contributing factors of fatigue, communication breakdown, and the pressures placed on crews managing increasingly large and complex vessels.

One of the most significant welfare concerns reported during 2025 was the continuing rise in seafarer abandonment cases. According to data from the International Transport Workers' Federation and the joint International Maritime Organization (IMO) and International Labour Organization (ILO), more than 6,200 seafarers were abandoned across 410 vessels during the year. This represented the highest figure ever recorded and marked a substantial increase compared with 2024, with a 32% increase in seafarer abandonment, and a 31% increase in ship abandonments.

In many cases, crews were left stranded aboard ships for months without pay, with total unpaid wages estimated at more than US$25 million. A large proportion of these vessels operated under Flags of Convenience, highlighting ongoing regulatory gaps in oversight and enforcement.

The geopolitical environment also continued to shape the welfare of seafarers. Ongoing attacks on commercial vessels in the Red Sea meant that many crews were operating in war-

risk zones, exposing them to missile and drone strikes, hijacking threats and extended voyages as ships diverted around the Cape of Good Hope. For many seafarers, particularly those from the Philippines, who make up a quarter of the global maritime workforce, these risks brought new psychological pressures and concerns about personal safety.

International regulators and industry bodies continue to examine the treatment and working conditions of crews. During 2025, the IMO advanced discussions on the fair treatment of seafarers involved in maritime incidents, with updated guidelines designed to prevent the unnecessary detention or criminalisation of crew members during accident investigations. The issue has gained traction in recent years as seafarers have found themselves caught in lengthy legal proceedings following incidents.

Mental health has also become a central topic in maritime policy discussions. Studies continued to highlight the impact of limited shore leave and extended periods of isolation at sea. Although connectivity on board vessels has improved in many fleets, inconsistent access to communication with family and support networks remains a challenge. At the same time, reports such as the Seafarers Happiness Index have pointed to fatigue and long working hours as persistent concerns, particularly on vessels operating with reduced crew numbers.

When discussing crew welfare, it is often acknowledged that the industry's culture of perseverance can sometimes overshadow strict adherence to safety, particularly regarding working hours or rest periods. While this perseverance reflects the reality that seafarers endure long hours and challenging conditions for their pay, it can also contribute to situations where fatigue and stress accumulate over longer voyages.

Together, the events and reports of 2025 demonstrate that while technological advances continue to reshape global shipping, the human element remains central to maritime safety. From accident investigations and regulatory reforms to renewed focus on mental health and working conditions, the industry's challenge moving forward will be ensuring that the welfare of seafarers can keep up with the scale and complexity of modern maritime trade.

04

Dry bulk fleet boasts better safety records

The global dry bulk carrier fleet continued to improve its safety record in 2025, extending a long-term downward trend in vessel losses that reflects sustained progress across ship design, crew training and regulatory compliance.

INTERCARGO's Bulk Carrier Casualty Report 2026, covering the 10-year period from 2016 to 2025, recorded 17 bulk carriers of 10,000 dwt or above as total losses. Those losses represent 1.63 million dwt and the deaths of 71 seafarers. The rolling 10-year average of annual vessel losses has continued to fall throughout the period.

The scale of that improvement is better understood alongside the growth of the fleet itself. The global bulk carrier fleet expanded from approximately 10,400 vessels in 2013 to 13,669 by December 2025. A reduction in absolute loss numbers against a substantially larger fleet represents a meaningful shift in the sector's underlying safety performance.

While headline figures have improved, the causes of the most serious incidents have remained consistent across the decade.

Cargo liquefaction continues to be the single greatest cause of seafarer fatalities in the dry bulk segment. Of the 71 lives lost over the period, 37 were attributable to liquefaction incidents, accounting for more than half the total. The concentration of risk within a specific vessel size range is notable: bulk carriers in the 50,000 to 59,999 dwt category account for just four of the 17 losses recorded, yet those four casualties cost all 37 of those lives. The pattern is linked closely to the carriage of nickel ore and other high-risk cargoes on routes where moisture testing and cargo declaration practices remain inconsistent.

Groundings remain the leading cause of vessel losses, accounting for seven of the 17 casualties. Analysis by vessel age shows a concentration of grounding incidents among ships aged 15 to 19 years, underlining the importance of navigational discipline and passage planning as fleets age. Flooding incidents, while fewer in number, account for 34 of the 71 lives lost, a disproportionate share of the human cost.

INTERCARGO and its members continue to work with flag and port state authorities, shippers and terminal operators to strengthen implementation of the International Maritime Solid Bulk Cargoes (IMSBC) Code. The focus includes clearer requirements for moisture testing and cargo declaration, and more targeted enforcement for high-risk commodity types.

The period from 2024 to 2025 also brought into focus the extent to which the risk environment for bulk carriers has changed.

Five bulk carrier casualties in the Red Sea and Gulf of Aden were linked directly to missile, drone and uncrewed vessel attacks. These incidents, which resulted in seafarer fatalities

and injuries, are recorded separately from the statistical analysis in the INTERCARGO report, reflecting their fundamentally different character from operational casualties. They nonetheless reflect a security challenge now embedded in the operating reality for vessels on certain trade routes.

INTERCARGO has reiterated its support for the principle of freedom of navigation and the protection of seafarers working in affected regions. The report notes increasing crew recruitment challenges associated with voyages through those areas, with longer-term implications for the availability of experienced personnel willing to serve on such routes.

The long-term reduction in dry bulk carrier losses reflects collective effort across the industry. That commitment was evident in May 2025 when

INTERCARGO held its semi-annual meetings in Guangzhou, hosted by COSCO Shipping Bulk. It was the first time the association had convened such an event in China. Safety, decarbonisation and the evolving regulatory agenda formed the core of the discussions, alongside operational topics including digitalisation, cyber risk and terminal operations.

With the global dry bulk fleet continuing to expand and the operating environment growing more complex, the industry's ability to sustain its safety trajectory will depend on maintaining the same standards of discipline and collaboration that have driven progress over the past decade.

Appendix

Methodology for International Shipping Centre Development Index

1. The General Rationale

The research process for the Xinhua-Baltic International Shipping Centre Development Index consists of 7 steps:

Step 1

Theoretical research on index: Collate and study relevant literature to achieve a comprehensive understanding of the theoretical foundation of international shipping centres and the current state of development. Conduct in-depth interviews with government organisations, university academia and professional experts to collate their expertise and suggestions on the rationale for selecting indicators and the methodology for index computation.

Step 2

Index system design: The Xinhua-Baltic International Shipping Centre Development Index system is jointly developed by the China Economic Information Service and the Baltic Exchange, which is authenticated by an expert committee.

Step 3

Data collection and processing: Initial data for indicators is collected through two channels: China Economic Information Service and the Baltic Exchange. This data has then gone through a normalisation process to form the relevant indicator data.

Step 4

Index model construction and computation: Based on earlier theoretical research and in accordance with correlations between indicators, an index model is constructed. Subsequently an index is computed using the model.

Step 5

Index report writing: A report about the creation of the index is produced under the guidance of the index expert committee.

Step 6

Organise an expert team to ascertain the scientific foundation of the research and confirm the final result.

Step 7

Announcement of index results.

2. Index System

Indicator system and associated weightage for Xinhua-Baltic International Shipping Centre Index

Primary Tier		Secondary Tier
Name	Weight	Name
Port Factors (A1)	0.20	Container throughput (B_1)
		Dry bulk cargo throughput (B_2)
		Liquid bulk cargo throughput (B_3)
		Number of cranes (B_4)
		Total length of container berths (B_5)
		Port draught (B_6)
Shipping Services (A2)	0.50	Ship brokerage services (B_7)
		Ship engineering services (B_8)
		Shipping business services (B_9)
		Maritime legal services (B_{10})
		Shipping finance services (B_{11})
General Environment (A3)	0.30	Government transparency (B_{12})
		Extent of e-government and administration (B_{13})
		Customs tariff (B_{14})
		Ease of doing business index (B_{15})
		Logistics performance index (B_{16})

A_1 Port Factors

This refers to the infrastructures of the port city and the throughput of various types of cargo.

A_2 Shipping Services

This refers to the level of shipping services provided by the port city.

A_3 General Environment

This refers to the business and economic environment together with government policy measures to support the development of the port city.

B_1 Container throughput

Container throughput is an important indicator of the size of the port. It refers to the number of containers passing through the boundary of the port via its waterway for loading or unloading within the reported period. The computation unit is "10,000 TEU".

Source of data: China Economic Information Service Database

B_2 Dry bulk cargo throughput

This refers to the quantity of dry bulk cargo passing through the boundary of the port via its waterway for loading or unloading within the reported period. The unit is "ton".

Source of data: China Economic Information Service Database

B_3 Liquid bulk cargo throughput

This refers to the quantity of liquid bulk cargo passing through the boundary of the port via its waterway for loading or unloading within the reported period. The unit is "ton".

Source of data: China Economic Information Service Database

B_4 Number of cranes

Cranes are machinery for loading and unloading containers in the wharf area. The operating capacity of cranes can determine the cargo handling capacity of a wharf.

Source of data: Drewry

B_5 Total length of container berths

Berths refer to locations within the port where ships can dock. A single location equipped with berthing facilities to accommodate a single ship is called a berth. The length of a berth is determined by the length of ships it plans to accommodate and the safety distance required for two adjacent ships. These include quayside berths, pontoon berths and anchorage berths.

Berthing facilities are an important indicator reflecting the ability of a port to accommodate berthing ships. It is one of the basis for measuring the size and capacity of the port. Total length of container berth refers to the actual length of berth available – including various types of fixed or floating wharf – for berthing of ships for loading and unloading of containers within the reported period. The unit of computation is "metre".

Source of data: Drewry

B_6 Port draught

The draught of a ship refers to the maximum depth of the ship that is under the water line. Different ships have different draught. Moreover, the draught of a ship may even differ depending on its load and the salinity of water in the region. Port draught is an important indicator that reflects the deadweight of a ship that can be accommodated by the port. Port draughts in this report refer to water depth statistics of the deepest container berth in the port.

Source of data: Drewry

B_7 Ship brokerage services

An important component of shipping services, shipbrokers provide professional agency, brokerage and consultancy services covering a gamut of industries including transportation, insurance, financial and commerce, which facilitate shipping development.

In this report, shipping brokerage services is assessed based on the number of shipbrokers in each port city.

Main source of data: The Baltic Exchange

B_8 Ship engineering services

Ship engineering service enterprises are companies with marine engineering professionals having the ability to provide ship engineering technology and related services. The sector also provides training on basic theory and technical skills in seamanship and transportation that comply with relevant occupational certification by the authorities; as well as training of professionals on advanced applied technologies to enable them to navigate vessels.

In this report, ship engineering service are assessed based on the number of shipping companies available in the port city. Services offered by ship engineering companies include ship engineering, repairs, quantity surveying and ship classification.

Main source of data: International Association of Classification Societies (IACS)

B_9 Shipping business services

A shipping company may manage its own vessels or vessels commissioned by other owners. In this report, shipping business services consist mainly of the following three indicators: the number of ship management companies operating in the port city, the number of branches of top 100 container shipping companies and top 100 bulk carrier companies.

Main source of data: Lloyd' s List

B_{10} Maritime legal services

In this report, the overall level of maritime legal services is assessed from the two perspectives of maritime arbitration services and total number of partners practicing in legal offices. Maritime arbitration refers to the agreed system whereby any dispute shall be arbitrated in an agreed arbitration institution in accordance with the arbitration agreement (terms) established before or after the dispute event.

In this report, maritime arbitration service are assessed based on the number of arbitrators located in international arbitration centres in London, Singapore and New York. The number of partners in law firms is assessed based on data from the Legal 500 Law Firm Index, Chambers and law firm websites.

Main source of data: London Maritime Arbitrators Association, Singapore Chamber of Maritime Arbitration, Society of Maritime Arbitrators, Legal 500, Chambers

B_{11} Shipping finance services

The scope of shipping finance services cover four areas: namely ship financing, capital settlement, maritime insurance and maritime financial derivatives.

Ship financing includes syndicate loans, debt capital markets and equity capital markets. Maritime insurance refers to insurance taken out on cargo or ship against the potential risks of loss or unforeseen expenses during the sea journey. The types of maritime insurance include cargo insurance, ship insurance, freight and P&I insurance. Statistical collation by IUMI includes maritime insurance premiums for ship insurance, cargo insurance, maritime liability insurance and offshore energy insurance.

In this report, shipping insurance service is assessed based on maritime insurance expenses of the port city. Shipping insurance services are assessed based on maritime insurance premiums associated with each port city. To derive this figure, the total ship and cargo insurance premiums for each country is calculated and then allocated to each port city based on their respective port' s cargo throughput.

Source of data: Marine Money, International Union of Marine Insurance (IUMI)

B_{12} Government transparency

Government transparency related to publicised rules, plans, processes and operations so that the general public understand the why, how, what and how much of policies. Transparency can ensure that the conduct of public officials, civil servants, administrators, are transparent. Reports can also be made against them so that they would be held accountable for their conduct. This is the most reliable way to prevent corruption.

Source of data: Transparency International

B_{13} Extent of e-government and administration

e-Government and administration refers to the government' s willingness and ability to implement information technology in the provision of public services. Ability, as used here, refers to the extent of support provided by the government towards national finance, infrastructure, human resources, management, administration and system function.

Source of data: United Nations
e-Government Development Database

B_{14} Custom tariff

Custom tariffs refer to the rate applicable to computation of tax on targeted taxable goods stipulated in custom regulations.

Source of data: "Wall Street Journal" and The Heritage Foundation,
Index of Economic Freedom Report

B_{15} Ease of Doing Business Index

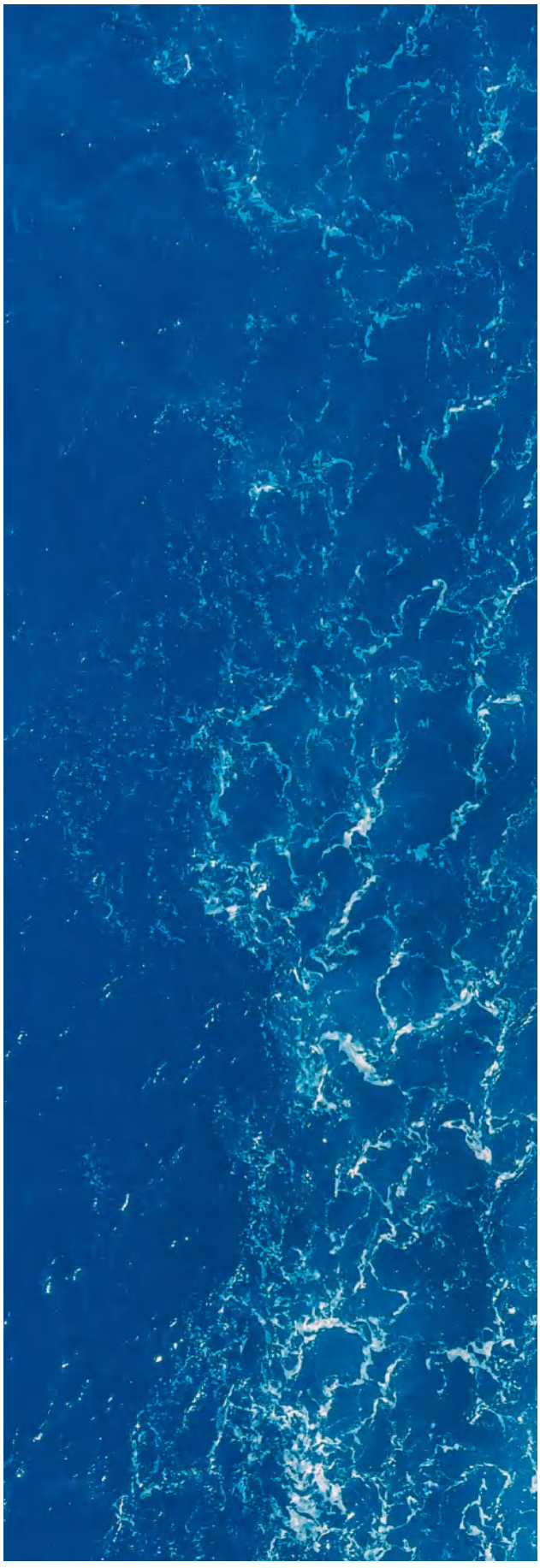
Economies are ranked on their ease of doing business, from 1 to 189; 1 being the best. A higher rank means the regulatory environment is more conducive for doing business. The index is derived from simple averages of national ranking by percentage scores on 10 themes under the Doing Business ranking by the World Bank.

Source of data: World Bank Database

B_{16} Logistics performance index

Logistics performance index is a score that reflects the following logistics attributes of a country: The efficiency of customs clearance process; quality of trade and transport related infrastructures; the ease of arranging competitively priced shipments; quality of logistics services; ability to track and trace cargo; and the frequency with which a shipment reaches the recipient within the expected delivery schedule. The index ranges from 1 to 5; a higher score means better logistics performance. The data is derived from the Logistics Performance Index Survey, which is conducted by the World Bank in cooperation with academic institutions, international organisations, private enterprises and international logistic professionals.

Source of data: World Bank Database



3.Data Processing

Data for secondary indicators required for the Xinhua-Baltic International Shipping Centre Development Index is mainly sourced from authoritative organisations such as the United Nation, Drewry, and World Bank.

Due to the differing nature of various indicators (size, ranking, ratio, etc.), if the raw values of these indicators are used directly in analysis, then indicators with large quantitative values may weaken the effects of indicators with smaller quantitative values; thus resulting in unequal contribution of each indicator to the computation. To avoid such phenomenon, each indicator is normalised – through relative processing to make its statistical variables dimensionless – before using it in index computation.

The raw data is divided into two categories: The first comprises indicators with score values ranging from 1 to 100. This category of indicators is used directly for computation. The second category comprises indicators with absolute score values. These indicators are normalised by applying the standard deviation approach on data distribution.

(1) Determining sample mean and standard deviation

Supposing that the data distributions of secondary indicators are all normal distributions, bootstrap resampling is applied to these samples. After 500 resampling, the mean value and standard deviation are computed from the normal distribution of each indicator.

$$mean_{l,m} = \frac{1}{a}\sum_{i=1}^{a} \bar{x}_{l,mi}, sd_{l,m} = \frac{1}{a-1}\sum_{i=1}^{a} (\bar{x}_{l,mi} - mean_{l,m})^2$$

Where, $m = 1,2,\cdots,6$, $m = 1,2,\cdots,6$, $x_{l,mi}$ is sample mean of each sampling of the m-th indicator, $a = 500$ =500 indicates a total of 500 resampling, $mean_{l,m}$ is the mean value obtained after bootstrapping the m-th secondary indicator, and $sd_{l,m}$ is the standard deviation obtained after bootstrapping the m=th secondary indicator.

(2) Computing the score for secondary indicators of sample cities

Based on the mean value and variance of each indicator, the indicator' s quantile is computed for each city.

The quantile score of the m-th indicator for the p-th city is computed with the following formula:

$$y_{l,mp} = \phi\left(\frac{x_{l,mp} - mean_{l,m}}{sd_{l,m}}\right)$$

Where, $y_{l,mp}$ is the quantile score of the m-th secondary indicator for the p-th city, $x_{l,mp}$ is the indicator value of the m-th secondary indicator for the p-th city, and $\phi(\ )$ is the distribution function of standard normal distribution.

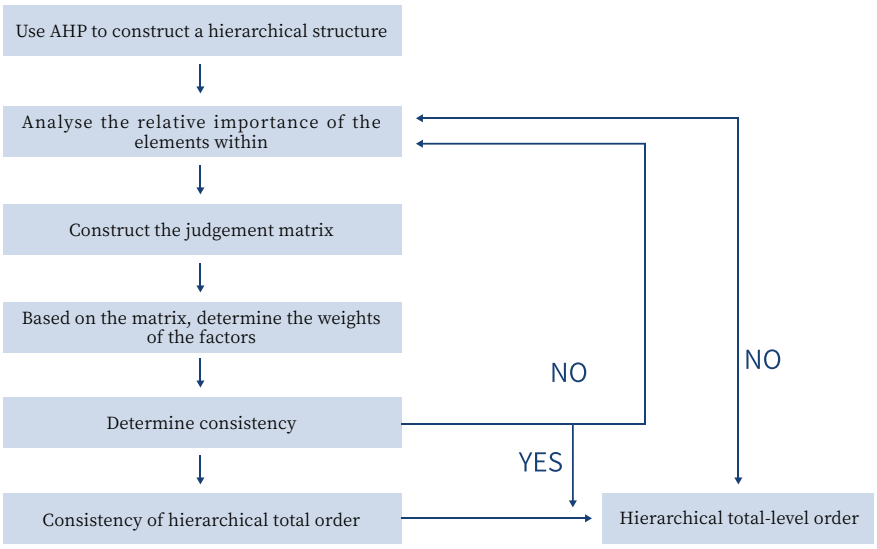
4. Model Computation

(1) Design of weighting system

The design of the weighting system for the Xinhua-Baltic International Shipping Centre Development Index employs an analytic hierarchy process (AHP algorithm).

The basic principle of AHP is to break down the problem into a hierarchical structure consisting of goals, sub-goals (guidelines), constraining criteria and departments to analyse the various factors. From the hierarchical structure, apply pair-wise comparison to determine the judgement matrix. Derive the components of the eigenvector corresponding to the largest eigenvalue of the matrix. These components represent the corresponding coefficients that will be used to compute the weight of each factor (degree of priority).

AHP algorithm can be broken down into the following 6 basic steps:



Basic processes of AHP algorithm

(1) Defining the problem: Clarify the problem in terms of scope, contributing factors and the relationship between different factors in order to have sufficient understanding of the problem.

(2) Construct a hierarchical structure: In this step, the factors are assigned to different hierarchical levels. It comprises the goal at the top level (goal level), several intermediate levels (guidelines levels) and the bottom level (solutions level). If an element is linked by all elements from the next level immediately below it, this element is said to have complete hierarchical relationship with the next level. If an element is linked by only some elements from the next level immediately below it, this element is said to have incomplete hierarchical

relationship with the next level. A sub-level can be inserted between two hierarchical levels. This sub-level is subordinate to one element on the main level. The elements of the sub-level may be linked with the next level, but the sub-level may not constitute an independent level.

(3) Construct judgement matrix: This is the critical step in AHP. The judgement matrix defines the relative importance of relevant elements within a hierarchical level that is linked to an element in a higher level. For n indicators, $\{A_1, A_2, \cdots, A_n\}$, a_{ij} is the judgement value that signifies the importance of A_i relative to A_j . a_{ij} is generally assigned a 5-grade rating scale of 1, 3, 5, 7, 9. A rating value of 1 means A_i and A_j are of equal importance; 3 means A_i is slightly more important than A_j ; 5 means A_i is relatively more important than A_j ; 7 means A_i is significantly more important than A_j ; and 9 means A_i is extremely more important than A_j . The mid values of 2, 4, 6, 8 may also be used for intermediate judgement, especially when five grades become insufficient to represent the level of importance.

(4) Single-level order: The purpose of single-level order is to sort elements in the current level in order of their importance with respect to a linked element in a higher level. It is the basis for ordering all the elements in the current level in terms of importance with respect to an immediate higher level.

If we take the weight vector,
$W = [w_1, w_2, \cdots, w_n]^T$, then we have : AW=λW
If λ is the largest eigenvalue of A, then W is the eigenvector of A with respect to λ. Hence, single-level order process can be achieved by solving the judgement matrix for the values of λmax and its corresponding eigenvectors to obtain the relative weighting of this group of indicators.

In order to test the consistency of judgement matrix, we need to calculate its consistency index:

$$CI = \frac{\lambda_{\max} - n}{n-1}$$

When CI =0, judgement matrix is complete consistency; conversely, a larger CI value indicates lesser consistency in judgement matrix.

(5) Hierarchical total-level order Using the results of single-level order of all the levels with respect to the same level, we can compute the weight values representing the importance of all elements in this level with respect to the immediate higher level. This is known as total-level order. Total-level order must be carried out layer by layer from top to bottom. For the highest level, its single-level order is the same as total-level order.

If total-level order for all elements $A_1, A_2, \cdots, A_m$ of a higher level is completed, and the corresponding weight values $a_1, a_2, \cdots, a_m$, a_j are obtained, then the results of single-level order for $B_1, B_2, \cdots, B_n$ corresponding to elements in the current level are. Now, if B_i is not linked to A_j , then $b_i{}^j$ =0, and total-level order is achieved.

(6) Analyse consistency Similar to single-level order, we need to assess the consistency of the results of total-level order. Therefore, we perform consistency check as follows:

$$CI = \sum_{j=1}^{m} a_i CI_j$$

$$RI = \sum_{j=1}^{m} a_j RI_j$$

$$CR = \frac{CI}{RI}$$

CI is the consistency index for total-level order; CI_j is the consistency index of judgement matrix a_j corresponding to level B; RI is the random consistency index of judgement matrix RI_j corresponding to level B; and CR is the ratio of total-level order consistency index to random consistency index. Similarly, when CR<0.10, the consistency of computation results of total-level order is deemed to be satisfactory; otherwise, the judgement matrices for the current level need to be adjusted until satisfactory consistency is obtained for total-level order.

(2) Model for Index Computation

Specific computation formulae for the Xinhua-Baltic International Shipping Centre Development Index are as follows:

Use weighted sum method to compute the primary index:

$$y_{lp} = \sum_{m=1}^{l_m} y_{l,mp} * w_m = \sum_{m=1}^{l_m} \phi\left(\frac{x_{l,mp} - mean_{l,m}}{sd_{l,m}}\right) * w_m$$

Where, w_m are the weights of m secondary indicators; and y_{lp} is the score of the l -th primary indicator of the p -th city.

The computation formula for comprehensive score of the sample cities is:

$$y_p = \sum_{l=1}^{3} y_{lp} * w_l = \sum_{l=1}^{3} \left(\sum_{m=1}^{l_m} y_{l,mp} * w_m\right) * w_l = \sum_{l=1}^{3} \left(\sum_{m=1}^{l_m} \phi\left(\frac{x_{l,mp} - mean_{l,m}}{sd_{l,m}}\right) * w_m\right) * w_l$$

Where, w_l is the weight of l -th primary indicator; and y_p is the score of the p -th city.

5.Survey Questionnaire

Dear experts,

Greetings! China Economic Information Service and the Baltic Exchange have embarked on a joint research to develop the Xinhua-Baltic International Shipping Centre Development Index. The aim is to produce an objective, impartial and scientific review and assessment of the competitiveness of cities with international shipping centres. The main purpose of this questionnaire is to obtain some fundamental information regarding weight assessment for analytic hierarchy process (AHP). Your response is of utmost importance to this research. Therefore, we sincerely seek your support to fill out the questionnaire carefully. Thank you for your support!

(1) Explanation for scoring

his questionnaire uses scoring rules based on the 1-9 scoring scale method of AHP:

- 1 means elements i, j are equally important;
- 3 means element j is slightly more important than element j ;
- 5 means element i is relatively more important than element j ;
- 7 means element i is significantly more important than element j ;
- 9 means element i is extremely more important than element j ;

The values 2, 4, 6, 8 may also be used as mid value judgement for 1-3, 3-5, 5-7, 7-9 respectively.

An example is shown below (vertical column represents element i , while horizontal row represents element j):

Technological innovation capability (A)	B_1	B_2	B_3
Innovative output capability (B1)	—	(3)	5
R&D capability (B2)	—	—	2
Innovation management capability (B3)	—	—	—

In the above table, the value 3 (2nd row and 3rd column) means that for Technology Innovation Capability (A) on the target level, Innovative Output Capability (B_1) is slightly more important than R&D Capability B_2).

(2) Scoring by experts

1. Scoring for primary indicators

Please fill in the value of importance between the primary indicators (A_1-A_3) with respect to the ultimate indicator (D). The shaded areas need not be filled (same for all tables below).

Xinhua-Baltic International Shipping Centre Development Index（D）	A_1	A_2	A_3
Port Factors（A1）	—		
Shipping Services（A2）	—	—	
General Environment（A3）	—	—	—

2. Scoring for secondary indicators

(a) Please fill in the value of importance between the secondary indicators (B_1-B_6) with respect to the primary indicator (A_1).

Port Factors（A1）	B_1	B_2	B_3	B_4	B_5	B_6
Container throughput（B1）	—					
Dry bulk cargo throughput（B2）	—	—				
Liquid bulk cargo throughput（B3）	—	—	—			
Number of cranes（B4）	—	—	—	—		
Total length of container berths（B5）	—	—	—	—	—	
Port draught（B6）	—	—	—	—	—	—

(b) Please fill in the value of importance between the secondary indicators (B_7-B_{11}) with respect to the primary indicator (A_2). Shaded areas need not be filled.

Shipping Services（A2）	B_7	B_8	B_9	B_{10}	B_{11}
Shipping brokerage service（B7）	—				
Ship engineering service（B8）	—	—			
Shipping business service（B9）	—	—	—		
Maritime legal service（B10）	—	—	—	—	
Shipping finance service（B11）	—	—	—	—	—

(c) Please fill in the value of importance between the secondary indicators (B_{12}-B_{16}) with respect to the primary indicator (A_3). Shaded areas need not be filled.

General Environment（A3）	B_{12}	B_{13}	B_{14}	B_{15}	B_{16}
Government transparency（B12）	—				
Extent of e-government and administration（B13）	—	—			
Customs tariff（B14）	—	—	—		
Ease of doing business index（B15）	—	—	—	—	
Logistics performance index（B16）	—	—	—	—	—

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