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Trump's tariffs rattle container shipping

A comprehensive revision of the existing transit treaty is urgently needed–one that ensures equitable rights, removes monopolistic practices, and promotes greater participation of Nepal's private sector in logistics and rail freight operations.

The container shipping industry is once again navigating stormy seas–this time stirred by a sudden escalation in US trade protectionism. President Trump's April 2 announcement of a 10 per cent universal import tariff, along with targeted duties exceeding 145 per cent on over $300 billion worth of Chinese goods has thrown global supply chains into disarray.

The impact was immediate. The Port of Los Angeles reported a 35% drop in containerized imports from China within three weeks of the announcement, and over 25 per cent of scheduled ship arrivals were cancelled for May. According to Sea-Intelligence, more than 45 blank sailings have already been declared on the Asia–US West Coast trade lane, with expectations of further service withdrawals through Q2 2025.

Retailers like Walmart and Target reportedly moved quickly to secure goods before the tariffs took full effect, with some absorbing costs temporarily to maintain shelf availability. However, with import prices climbing by 15–25 per cent on affected goods, this strategy may only hold for a short window.

Carriers are feeling the pressure. Drewry estimates that global container volumes will contract by 3.2 per cent in 2025, reversing the modest growth seen in 2024. Spot rates on the China–US West Coast route rose by over 18 per cent in April alone due to shrinking capacity–but uncertainty is undermining long-term contract negotiations and stifling investment sentiment.

While some exporters are rerouting trade to Vietnam, India, and Mexico, the pivot is neither simple nor instant. Infrastructure gaps, capacity mismatches, and regulatory friction persist. In the interim, supply chains are bracing for inventory delays, cost escalations, and operational inefficiencies.

Unlike the pandemic, tariff-led disruption has no clear endpoint. For shipping lines, only diversification, digital visibility, and regional resilience can offer safe passage through this turbulence.

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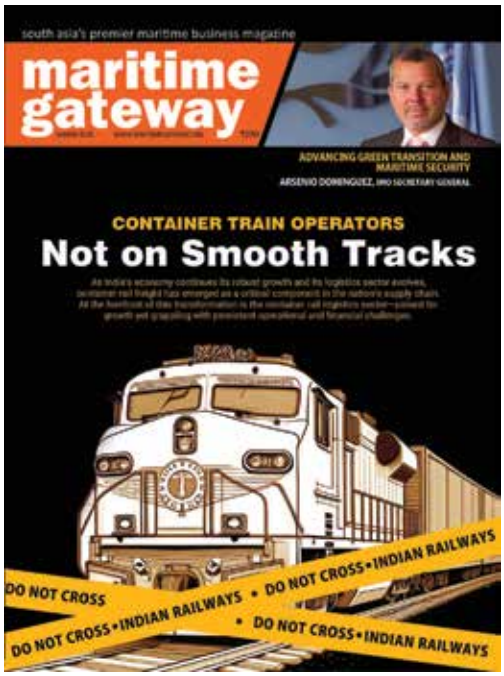

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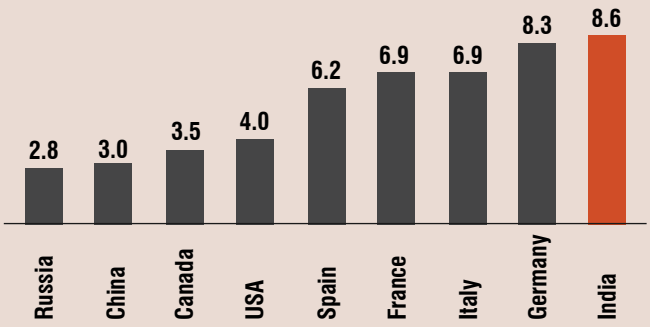
Data

With 16 active license holders, the Container Train Operators including CONCOR have invested approximately ₹10,000 crore in procuring approximately 700 rakes to offer export–import (EXIM) and domestic rail-based container logistics services. Despite investments, the share of freight movement on rail in containerised form has grown marginally from 4 per cent to 5 per cent between 2014 and 2024. FICCI and PwC jointly prepared a report on "Container train operations after 20 years of deregulation." The container train operator (CTO) market was deregulated in 2006. With the first batch of licences up for renewal it is time to assess sector performance and understand key challenges. Below are some of the key performance indicators from the report.

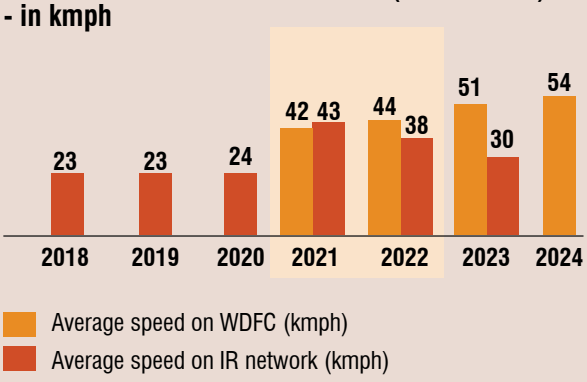
Courtesy: FICC, PwC India and ACTO

Rail freight revenue per tonne-mile, 2021 (INR)



Source: International Comparison of Railway Freight Rates, prepared for Railway Association of Canada (RAC), 2023 (1 USD = 85.9 INR)

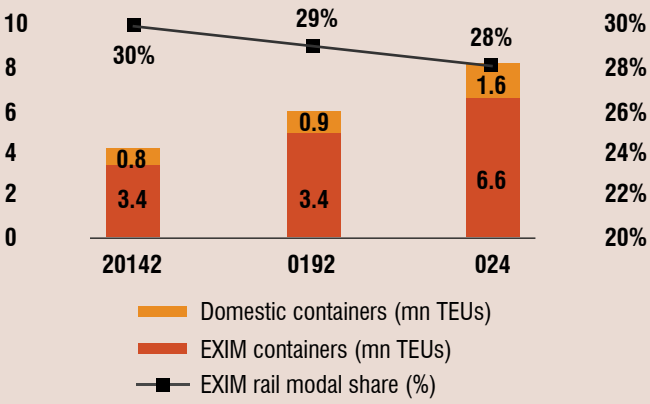
Average speed of freight trains on western and eastern DFCs and the IR network (FY 18-FY24) - in kmph



As passenger train movements were reduced significantly during the Covid-19 pandemic (FY21 and 22), freight trains achieved an average speed of 40–45 kmph on the rail network indicating that freight trains can operate faster when dedicated corridors are developed

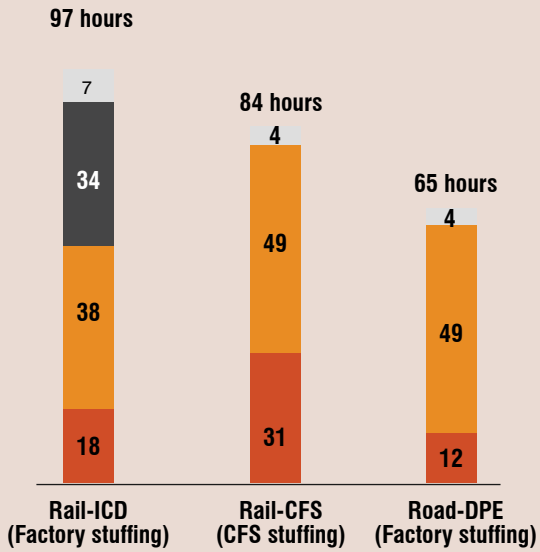
Source: Indian Railways yearbooks & DFCCIL

Growth in EXIM and domestic volumes and decrease in rail share of EXIM containers (FY14-FY24)



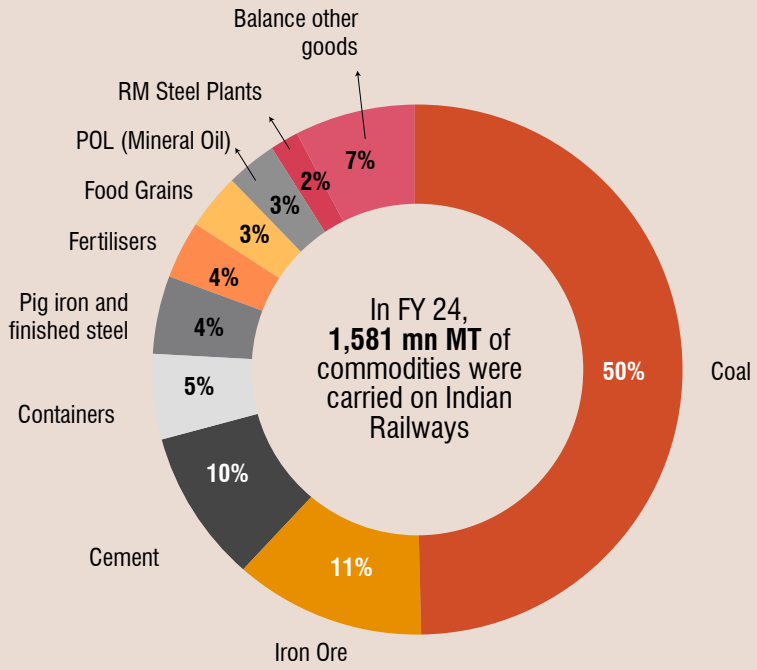
Source: Indian Railways yearbooks; UNCTAD; Shipping Ministry - Basic port statistics

Export container logistics: Component-wise transport



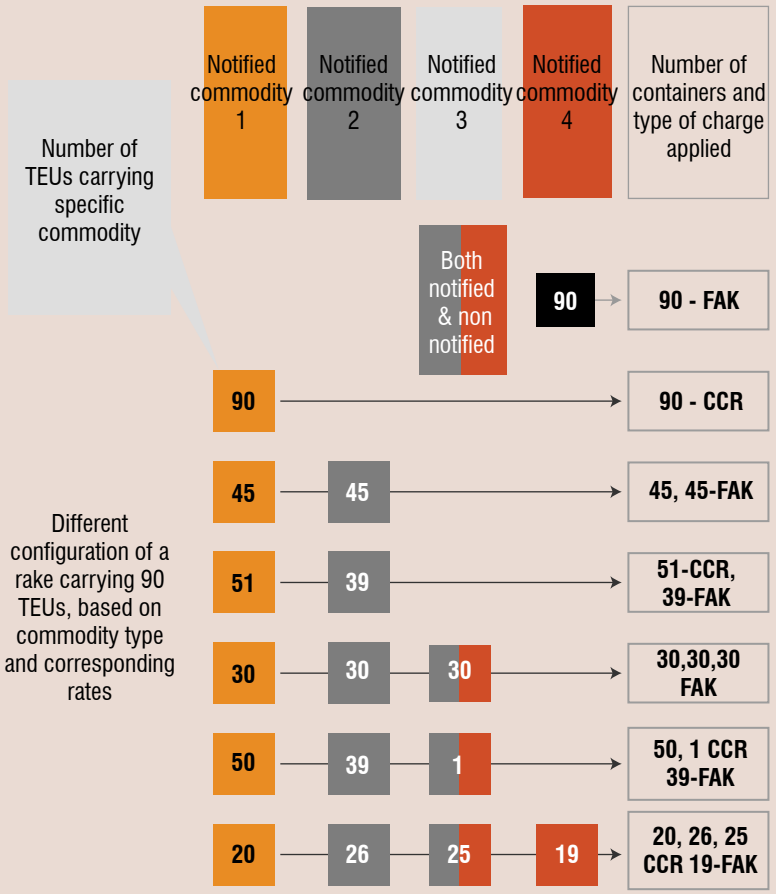
Source: Pwc research and analysis

Commodities carried by Indian Railways



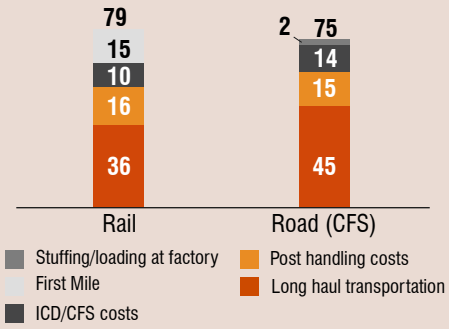
Source: Indian Railways Yearbooks

Scenarios of rake configuration and haulage rate



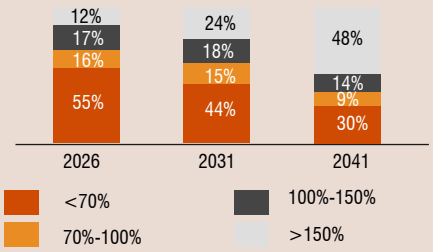
Source: Indian Railways circulars

Logistics cost for inland transportation of 40 feet container loaded with 15 MT from NCR to Mundra (values in '000 INR)

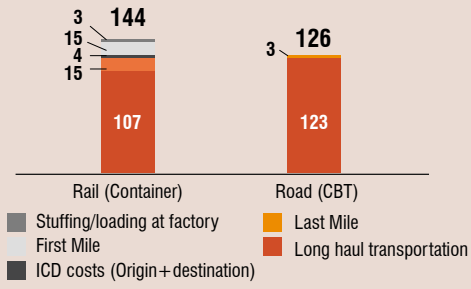


Source: Tariff cars of logistics service providers, primary interactions with industry stakeholders and PwC analysis

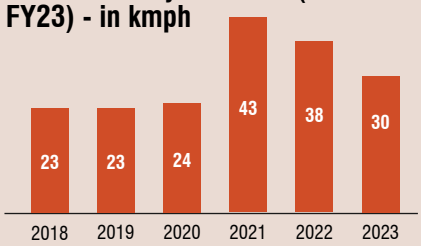
Projected capacity utilisation in the IR network



Logistics cost for inland transportation of 25 MT cargo, from Morbi to Kolkata (values in '000 INR)



Average speed of goods train on the Indian Railways network (FY 18-FY23) - in kmph



Source: Indian Railways yearbooks

Cargo traffic on National Waterways hits record high

The Inland Waterways Authority of India (IWAI) under the Ministry of Ports, Shipping and Waterways reached a significant milestone in cargo movement on National Waterways. For the fiscal year 2024-25, IWAI has successfully achieved record-breaking 145.5 million tonnes of cargo movement, marking an all-time high in the IWT sector. Along with this, the total number of operational waterways has gone up from 24 to 29 during the year. Cargo traffic on National Waterways has increased from 18.10 MMT to 145.5 MMT between FY-14 and FY-25, recording a CAGR of 20.86%. In FY-25, traffic movement registered a growth of 9.34% year-on-year from FY-24. Five commodities i.e. coal, iron ore, iron ore fines, sand and fly ash constituted over 68% of total cargo moved on NWs during the year.

Sarbananda Sonowal flags off cruise operations from MICT in Mumbai

The Union Minister of Ports, Shipping and Waterways (MoSPW), Sarbananda Sonowal flagged off Cruise Operations from the Mumbai International Cruise Terminal (MICT). The Union Minister also inaugurated renovated Fire Memorial at Victoria Docks as well as renovated two heritage buildings — Fort House Ballard Estate and Evelyn House at Colaba. Sonowal also inaugurated Sagar Upvan Garden along with Shore to Ship Electric Supply under Green Port Initiative. The MICT, developed as per Cruise Bharat Mission, was developed as per latest global standards and is expected to take a pioneering role in developing cruise tourism in India. Spread over a built-up area of more than 4,15,000 Square Feet, the MICT is developed at Ballard Pier. MICT is India's largest world class cruise terminal. Equipped with 72 Check in and Immigration counters spreading over an area of 2,07,000 Square Feet on the first two floors (G+1) while the other two floors (2 + 3) are developed as Commercial Floors. The newly inaugurated MICT is designed to handle 1 million passengers every year with an approximate 10,000 passengers per day. It can also handle 5 ships simultaneously, with 11 meters draft and upto 300 meters length. At the parking space, more than 300 vehicles can be parked simultaneously.

V O C Port Authority launches direct port entry facility

V O Chidambaranar Port Authority, the state-owned entity that runs the port located at Thoothukudi in Tamil Nadu, has started the direct port entry (DPE) facility for e-sealed, factory stuffed export cargo containers. Direct port entry streamlines export processes by allowing factory-stuffed, e-sealed export containers to enter the port terminal directly, bypassing the need for prior clearance at Container Freight Stations (CFSs) located nearby. This 24/7 facility significantly reduces wait times and costs, leading to faster export clearance. DPE, along with Direct Port Delivery (DPD), aims to improve efficiency and reduce cargo dwell time at ports. For providing the facility, V O C Port Authority will charge Rs 135 plus GST for a twenty-foot container and Rs 162 plus GST for more than twenty-foot containers from Custom brokers.

Cochin Shipyard set to deliver new electric hybrid boat

Cochin Shipyard Limited (CSL) is nearing the completion of another vessel for the Kochi Water Metro Limited (KWML). The shipyard had been contracted to build a total of 23 electric-hybrid boats. So far, 18 boats have been handed over, and the rest are scheduled for delivery in the upcoming months. The addition of this new vessel is expected to boost service frequency on high-demand routes and ease congestion at terminals during peak travel hours. At present, Kochi Water Metro Limited (KWML) operates services along six routes linking various parts of the city. The arrival of the new boat will enhance service frequency and help reduce long queues at terminals during busy hours. KWML officials also mentioned that preparations are underway to launch services to Mattancherry and Willingdon Island.

India to launch domestic coastal green shipping corridor in 6 months

India is poised to launch its first domestic coastal green shipping corridor in its bid to decarbonise maritime logistics. The strategic route, connecting Kandla on the west coast with Thoothukudi (V O Chidambaranar Port) in the south, is expected to be operational within the next three to six months, according to the Union Secretary at the Ministry of Ports, Shipping and Waterways T K Ramachandran. The corridor is being jointly developed by the V O Chidambaranar Port Authority and the Deendayal Port Authority in Kandla, in partnership with the state-run Shipping Corporation of India. Senior officials, including Susanta Kumar Purohit and Sushil Kumar Singh — chairpersons of the two participating port authorities — met recently to refine the operational framework. VOC Port is the first port to produce green hydrogen at a small scale while the Kandla port is planning to produce 1 MW of green hydrogen by March next year.

India votes in favour of first global carbon tax on shipping

India and 62 other countries voted in favour of the world's first-ever global carbon tax imposed on the shipping industry by the United Nations' shipping agency. The decision, taken at the International Maritime Organisation (IMO) headquarters in London on Friday after a week of intense negotiations, aims to reduce greenhouse gas emissions from ships and promote cleaner technologies. The move marks the first time a global carbon tax has been imposed on an entire industry. Starting 2028, ships will either have to shift to lower-emission fuels or pay a fee for the pollution they generate. The tax could generate up to $40 billion by 2030. While the agreement is being seen as a breakthrough for international climate policy, it has also drawn criticism for failing to address the climate finance needs of developing countries. All revenues raised from the carbon tax will be ring fenced for decarbonising the maritime sector and will not be allocated to broader climate finance efforts, such as helping countries adapt to climate change or recover from its impacts. Also, carbon pricing is expected to reduce shipping emissions by only 10 per cent by 2030, far short of the IMO's own target of at least 20 per cent.

Kolkata Port reports 45% growth in cargo handling in April

Kolkata Port or Syama Prasad Mookerjee Port (SMP) has reported a record 45.32 per cent year-on-year growth in cargo handling in April 2025, shipping 5.967 million metric tonnes (MMT) compared to 4.106 MMT in April 2024. "This achievement positions SMP Kolkata as the fastest-growing major port in India for the month," SMP chairman Rathendra Raman announced.

According to dockwise performance: Haldia Dock Complex (HDC) handled 4.363 MMT in April 2025, up from 2.993 MMT in April 2024, marking a 45.77 per cent increase and Kolkata Dock System (KDS) managed 1.604 MMT, compared to 1.113 MMT in April 2024, reflecting a 44.12 per cent growth. The surge in cargo handling was driven by significant growth across various commodities in this riverine port, the oldest in the country. In April 2025, SMP Kolkata handled a total of 75,716 Twenty-foot Equivalent Units (TEUs), comprising 62,021 TEUs at KDS and 13,695 TEUs at HDC. This represents a 31.18 per cent increase from 57,717 TEUs in April 2024 (KDS: 48,495; HDC: 9,222).

Indian airports handled 3.7 million tonnes cargo

In the fiscal year 2024–2025 (April 2024–March 2025), Indian airports handled 3.7 million tonnes of cargo, a 10 per cent increase from the previous fiscal year's 3.36 million tonnes. According to figures from the Airport Authority of India (AAI), domestic cargo handled climbed by 6 per cent to 1.39 million tonnes, while international cargo handled increased by 14 per cent to 2.32 million tonnes. The amount of international cargo handled at Bengaluru International Airport (BIAL) increased by 21 per cent to 321,283 tonnes, while Hyderabad International Airport (GHIAL) followed with 98,825 tonnes. Based on available data, major airports like Delhi and Mumbai also experienced strong double-digit increases. Mumbai had an 11 per cent increase in foreign freight at 654,756 tonnes, while Delhi reported a 13 per cent increase at 729,784 tonnes. According to AAI data, smaller international airports like Coimbatore, Kannur, and Nagpur all recorded increases. The only significant international airport to record a major drop was Goa, which saw a 62 per cent drop in cargo at 684 tonnes. In FY2025, however, Goa (Mopa) handled 2,848 tonnes. With a six per cent increase in domestic cargo carried, Delhi led the main international airports with 379,735 tonnes, followed by Bengaluru Airport with 181,225 tonnes, a five percent increase. Mumbai remained constant at 235,143 tonnes.

IWAI signs MoU with Rhenus Logistics for cargo services on national waterways

Inland Waterways Authority of India (IWAI) signs MoU with Rhenus Logistics to operate their barge services in various national waterways in India. Rhenus Logistics is a Germany-based international logistics service provider operating globally in more than 70 countries with an annual turnover of EUR 8.2 billion. The agreement was signed in the presence of Minister of Ports, Shipping and Waterways Sarbananda Sonowal in New Delhi. T.K. Ramachandran, Secretary, MoPSW; Vijay Kumar, Chairman, IWAI, along with other senior officials of the Authority and representatives of Rhenus Logistics India were present at the occasion. Under the MoU, Rhenus Logistics will deploy 100 cargo vessels along with pusher tugs in a phased manner along NW-1, NW-2, NW-16 and the Indo-Bangladesh Protocol (IBP) routes. During the first phase — starting from the third quarter of 2025, about 20 barges and six pusher tugs are expected to be deployed in these waterways. This move will ensure effective utilisation and expansion of waterways infrastructure thereby lowering the operational costs, making IWT sector more competitive and responsive to market demands.

Trade curbs threaten stability

In a sobering new analysis, Drewry Maritime Research has sounded the alarm on the global container shipping outlook, highlighting severe disruptions stemming from escalating US trade restrictions under the Trump administration.

The policy shifts, which are part of a revived "America First" agenda, are taking a chainsaw to long-standing rules governing foreign trade, diplomacy, and logistics operations — leaving container market players scrambling for stability.

Drewry's latest container market forecast paints a deeply uncertain picture, one marked by tariff shocks, ship deployment reshuffles, and structural shifts in global sourcing strategies. The tone is clear: what was once predictable is now volatile, with implications rippling across container flows, freight rates, port calls, and equipment planning.

From pandemic panic to policy paralysis

While the Covid-19 pandemic initially threw the container trade into chaos, the market eventually regained equilibrium as stakeholders adapted to clear, time-bound disruptions. But the new wave of protectionism emanating from Washington offers no such clarity. "At least with the pandemic, the risks were eventually understood," Drewry notes. "Today, under the Trump trade regime, we are in coin-flip territory."

The recent nine-day pause on reciprocal tariffs — set to expire in early July — adds yet another layer of unpredictability. With few clear signals from the administration on long-term trade policy, container carriers, forwarders, and shippers are struggling to make investment and inventory decisions.

Downward revisions: GDP and global trade slowdown

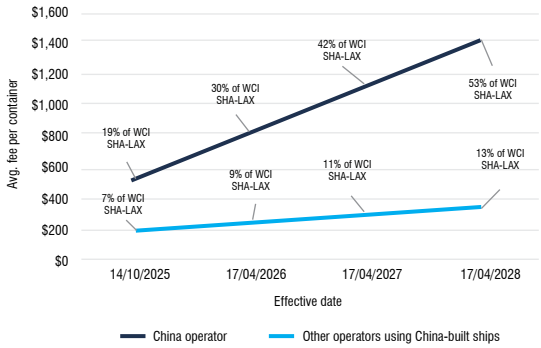
Drewry's outlook aligns with revised macroeconomic projections from the International Monetary Fund (IMF), which recently slashed the US GDP forecast for 2025 from 2.7 per cent

Assumptions:

- Avg. ship capacity: 9,000 teu
- Average NT: 51,000
- Ship only carries 40ft containers
- 85% utilisation
- Voyages per year: 6.5 (capped at 5)
- Drewry World Container Index Shanghai-to-Los Angeles: $2,683/40ft (17 April 2025)

Counting the cost of the USTR proposal

Estimated additional cost on a typical Asia-WCNA container service



Source: Drewry Benchmarking Club of global shippers

Drewry analysts predict a significant distortion in the charter and newbuild markets. Chinese-built ships, particularly those under third-party charter to non-Chinese lines, may become less desirable, thereby suppressing their resale value. Meanwhile, the usefulness and scarcity of non-China-built older tonnage could delay expected fleet rebalancing.

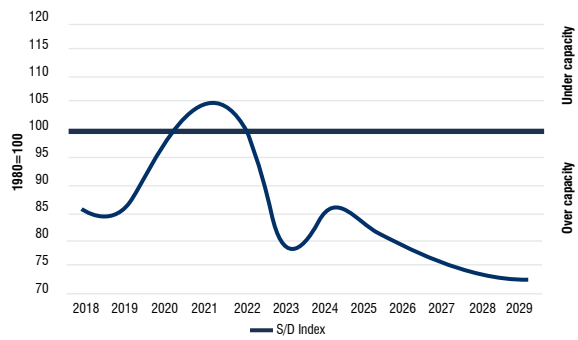
Contracting global demand in 2025 will further reduce carriers' leverage by increasing over capacity in the market.

Movement of ships to new trades expected to lower port productivity, tightening market slightly.

Expect to see much more scrapping and idling to bring the S/D index back up.

Note: assumes ongoing Red Sea diversions through forecast horizon.

Drewry Global Supply/Demand Index



Source: Drewry Container Forecaster (Apr 2025)

to 1.8 per cent, and the global growth forecast from 3.3 per cent to 2.8 per cent. The World Trade Organization (WTO) has similarly downgraded expectations, forecasting a contraction in global container trade by 1 per cent in 2025 — a level not seen since the 2020 pandemic-induced decline.

For the US, Drewry projects a 5.5 per cent drop in container throughput this year, followed by a further 4.6 per cent fall in 2026. China's outbound trade is also expected to take a hit, with a 4.8 per cent contraction in 2025, although recovery is anticipated in 2026 as the country pivots to alternative markets.

Trump's Trade Playbook: A Heavy Blow to Chinese Shipbuilders and Carriers

At the heart of the disruption lies the US Trade Representative's (USTR) revised scheme targeting Chinese-built ships and carriers. Although diluted from the initial proposal, the scheme still introduces hefty levies on vessels built in China that call at US ports. Exemptions are provided for vessels under 4,000 TEU, routes shorter than 2,000 nautical miles, and ships built outside China — particularly in South Korea and Japan.

For Chinese state-owned lines like COSCO and OOCL, the proposed levies could be punishing. If passed on to shippers in full, these fees could amount to $540 per 40-foot container as early as October 2025 — a staggering 20 per cent of the current WCI (World Container Index) spot rate to Los Angeles. By 2028, this surcharge could rise to $1,400 per 40-foot container, or 53 per cent of the WCI rate.

This would effectively price Chinese carriers out of the U.S. trades unless they absorb the fees — a highly unlikely scenario in today's cost-conscious climate.

Strategic realignment: Blank sailings, charter market shifts, and fleet redeployment

To mitigate the fallout, many carriers are initiating blank sailings to US ports and redeploying their China-built vessels to other trades. Non-Chinese-built vessels are now at a premium, as operators shift capacity to stay within regulatory exemptions. This is also likely to trigger a wave of demolitions and an upswing in newbuild orders from South Korean and Japanese yards.

Drewry analysts predict a significant distortion in the charter and newbuild markets. Chinese-built ships, particularly those under third-party charter to non-Chinese lines, may become less desirable, thereby suppressing their resale value. Meanwhile, the usefulness and scarcity of non-China-built older tonnage could delay expected fleet rebalancing.

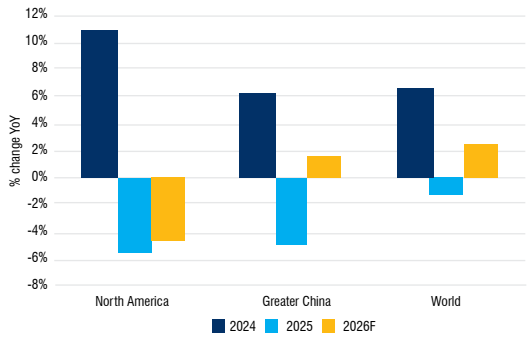
In March 2025, the global fleet included around 3.5 million TEUs of ships aged over 20 years — a segment

From being the fastest growth region in 2024, North America is expected to bring up the rear in 2025.

Greater China will also fall steeply in 2025, but the region is expected to rebound next year as trading flows with other countries are developed.

Hero to Zero

Selected total container port handling growth forecasts



Source: Drewry Container Forecaster (Apr 2025)

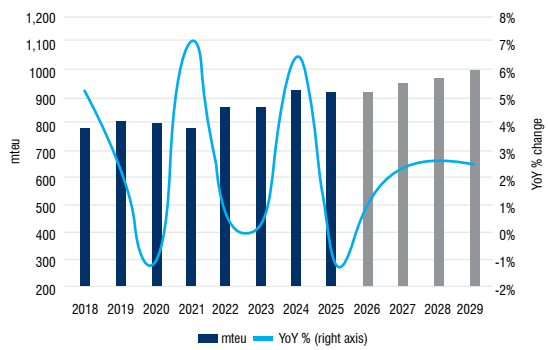
Drewry forecasts that world container port handling (loaded, emties and transhipment) will decrease 1.0% in 2025 as a direct result of US trade policies.

According to Drewry's archive records, global container demand has only decreased in two other years since 1979:

- GFC 2009 (-8.4%)
- Covid 2020 (-0.9%)

Global Container Shipping Demand Outlook

World port throughput 2018-29F



Source: Drewry Container Forecaster (Apr 2025)

often targeted for scrapping. Yet, with only six of these vessels built in China, the expected clean-out may be limited, reinforcing overcapacity pressures.

Impact on alliances and competition risks

The policy shift also raises questions around alliance operations. For example, in the Ocean Alliance (which includes COSCO, OOCL, CMA CGM, and Evergreen), partners may be forced to restructure vessel assignments to minimize cost exposures. This could mean allocating U.S.-bound lanes to non-Chinese partners, while COSCO and OOCL redirect tonnage to Europe and intra-Asia routes.

Such concentration of capacity among fewer carriers on the Transpacific and Transatlantic trades could limit shipper options — and possibly attract antitrust scrutiny if the market becomes too consolidated.

Trade flows recalibrated: Winners and losers

As Drewry and shippers recalibrate sourcing strategies, the big question remains: will tariff-driven demand loss be offset by a relocation of trade? Their current forecast suggests that U.S. imports from China could fall by as much as 40 per cent, or around 4.5 million TEUs, if two-thirds of the proposed tariffs remain in place. This shortfall will prompt sourcing shifts to countries like India, Vietnam, Brazil, and Poland, which are already seeing early gains.

However, Southeast Asian exporters like Cambodia and Vietnam, while benefiting from diverted orders, may face downstream challenges if discretionary U.S. consumption continues to fall. By contrast, Singapore and the Philippines — whose exports skew toward industrial and food sectors — appear more resilient.

Operational advice: Caution, flexibility, diversification

Faced with tariff uncertainty, Drewry outlines three key strategies being adopted by shippers:

1. **Pause and assess:** Many shippers are pausing shipments during April–May to assess the tariff impacts, especially during the 90-day pause on non-China tariffs.
2. **Front-loading:** Some firms are replenishing inventory early to avoid higher duties in H2 2025.
3. **Sourcing diversification:** Growing interest in India and Latin America is prompting many companies to shift supplier bases.

Drewry warns that this disruption will trigger recurring port congestion, blank sailings, equipment shortages, and high-cost volatility — echoing patterns seen during COVID-19.

Conclusion: A fragmented future

The Trump administration's aggressive trade recalibration has injected unprecedented risk into global container logistics. For an industry still recovering from pandemic shocks and overcapacity, the new tariffs threaten to unravel trade lanes and undermine long-term investment plans.

Drewry's bottom line: container shipping faces a future shaped by "limitation, not growth." Carriers must adapt through diversification, cost control, and agile fleet management, while shippers need to build resilience through flexible sourcing and logistics partnerships. The rules of global trade have been rewritten — and survival now depends on how fast the industry can read between the lines.

*This article is summary from the webinar organised and presented by **Simon Heaney,** Senior Manager, Container Research, Drewry **Philip Damas,** Managing Director, Head of Supply Chain Advisors, Drewry*

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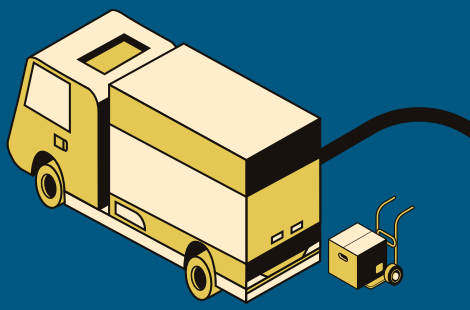
LIFTING INDIA'S TRADE WINGS

S K Pradhan



India's air cargo sector is on a growth trajectory, handling an estimated 3.66 million tonnes (mnt) of cargo in FY2024-25, with international freight accounting for 62 per cent of the total volume. International cargo volumes have surged, reaching approximately 1,95,000 tonnes per month in early 2025, a 13 per cent increase from 2019 levels. This recovery from the pandemic era underscores India's integration into global supply chains. E-commerce has emerged as a dominant force, now constituting one-third of air cargo volumes, up from 10 per cent in 2017, fuelled by consumer demand for rapid deliveries. Pharmaceutical exports, valued at $2.31 billion in 2024, rely heavily on-air transport for time and temperature-sensitive goods, while the UDAN 'Krishi Udan' initiative has boosted perishable goods transport, handling over 2,54,000 tonnes in FY2021-22. These trends highlight a shift toward high-value, time-sensitive cargo, positioning India as a key player in global logistics.

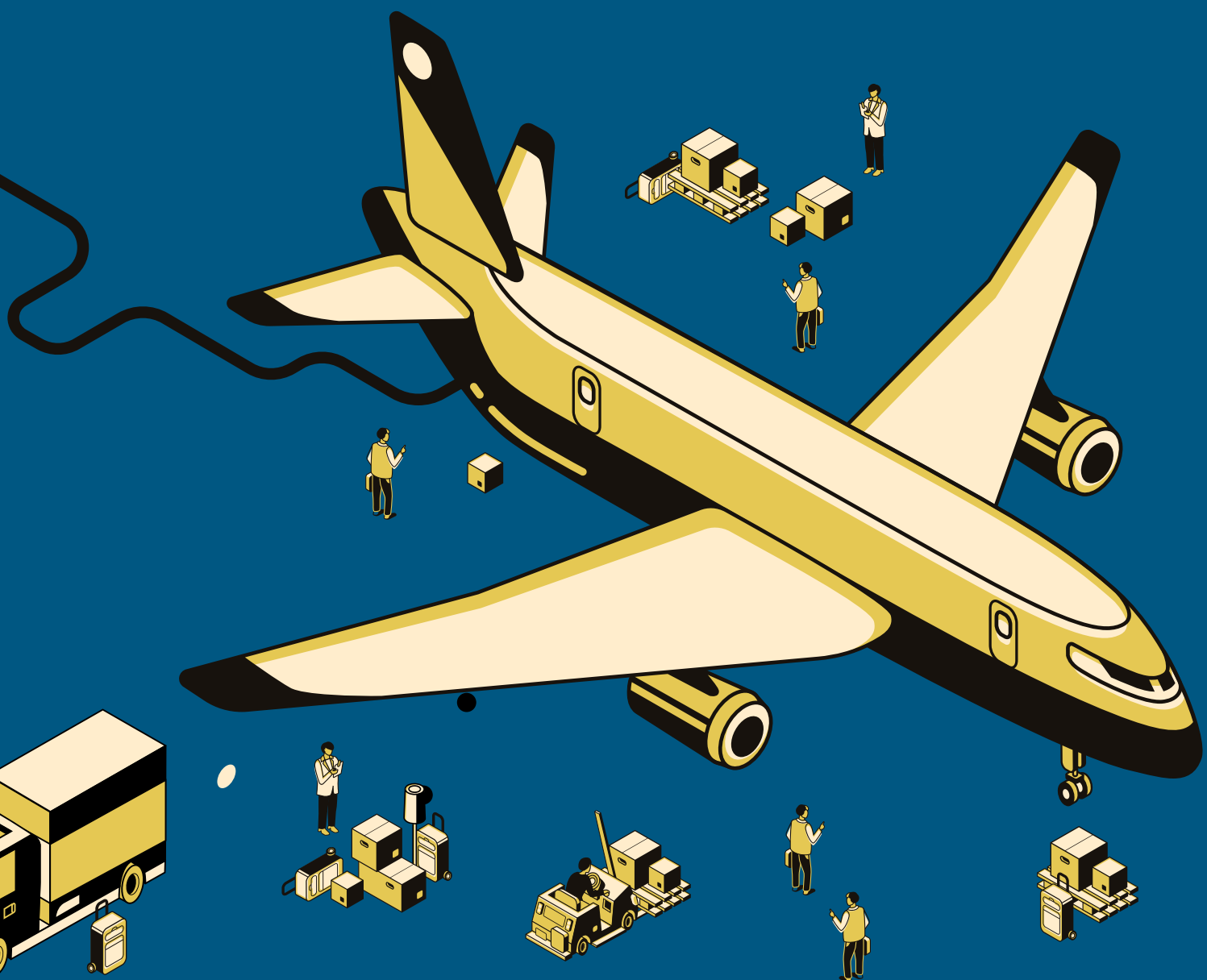
Factors driving growth

The e-commerce boom, driven by increasing internet penetration and consumer expectations for quick delivery, has made air cargo a critical logistics component. Manufacturing growth, particularly in electronics and pharmaceuticals, is supported by government initiatives like the Production Linked Incentive (PLI) scheme, which have spurred electronics exports by 27 per cent to $22 billion in FY2024-25. Infrastructure upgrades at major airports and the expansion of Tier 2 airports under the UDAN scheme have enhanced capacity and connectivity. Government policies, including the National Logistics Policy and PM Gati Shakti, aim to streamline logistics, while the "China plus One" strategy has positioned India as an alternative manufacturing hub, attracting foreign investment and boosting exports. These drivers collectively underscore India's rising prominence in global trade.

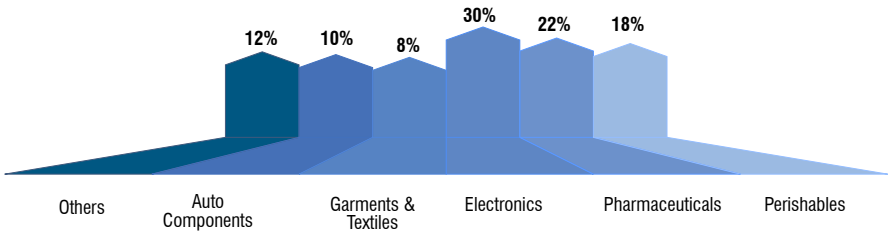
Major cargo hubs in India

India's air cargo operations are concentrated in several key hubs, each specializing in specific kind of cargo. Delhi's Indira Gandhi International Airport (IGIA) leads, handling over 1mnt annually, serving as the primary gateway for international freight. Mumbai's Chhatrapati Shivaji Maharaj International Airport (CSMIA) processed approximately 8,22,963 tonnes, primarily pharmaceuticals

India's air cargo sector is soaring on the back of booming e-commerce, robust manufacturing, and proactive government policies. With volumes hitting record highs and infrastructure rapidly expanding, the industry is emerging as a vital pillar of economic growth, attracting global interest and offering immense opportunities for investors and stakeholders.



India's Air Cargo Growth Drivers - FY 2024-25



and engineering goods. Bengaluru's Kempegowda International Airport (KIA) handled 4,39,495 tonnes, specializing in perishables and electronics, with a 17 per cent growth in 2024. Hyderabad's Rajiv Gandhi International Airport (RGIA) managed 1,49,812 tonnes, known for pharmaceutical exports. Chennai and Kolkata also contribute significantly, with Chennai majorly handles automotive freight and Kolkata is into specialty cargo. Adani Group airports collectively handled over 1mnt, reflecting substantial private investment in infrastructure. Top exporters include electronics and pharmaceutical firms, while importers focus on high-tech components and perishables.

High-performing airports

The major hubs—Delhi, Mumbai, Bengaluru, Chennai, Hyderabad and Kolkata—dominate cargo handling, accounting for nearly 75 per cent of India's air cargo movement. Delhi's IGIA stands out for its advanced facilities and connectivity, while Mumbai benefits from its strategic location as a trade hub. Bengaluru's focus on perishables and electronics, coupled with a 23per cent growth in international cargo in 2024, highlights its rising prominence. Hyderabad's digital customs systems enhance efficiency for pharmaceutical exports. These airports are supported by investments in modern cargo terminals and cold chain facilities, ensuring they meet global standards.

Rise of tier 2 airports

Tier 2 and regional airports are increasingly vital, decentralizing cargo operations and supporting regional economies. Airports like Coimbatore, with a 99.8 per cent growth in cargo volumes, Amritsar (77.8 per cent) and Imphal (59.5 per cent) are emerging as key players, driven by exports of textiles, engineering goods and agricultural produce, among others. The UDAN scheme has improved connectivity, enabling these airports to handle niche and regional cargo, reducing congestion at major hubs. For instance, Coimbatore's textile exports and Amritsar's agricultural shipments benefit from enhanced air links. This decentralization fosters inclusive growth and strengthens India's logistics network, with potential to further boost air cargo volumes.

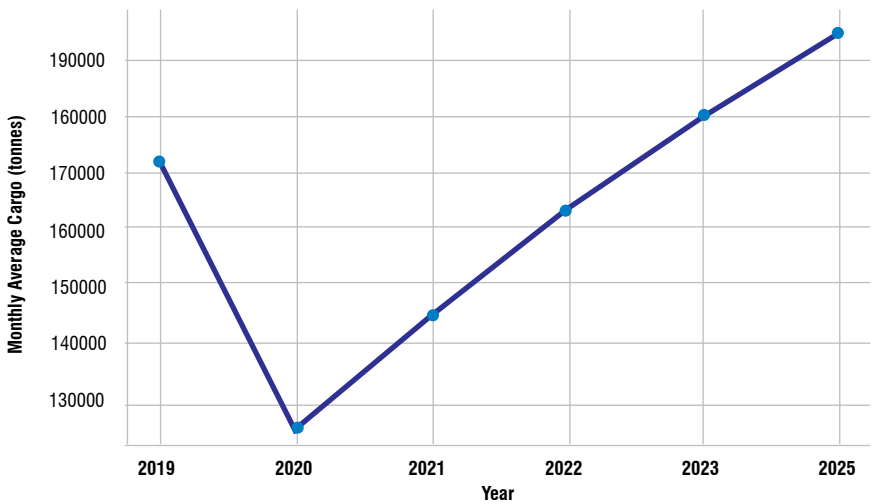
Cargo mix

The cargo mix has shifted significantly, reflecting modern supply chain priorities. Electronics now account for 30 per cent of air cargo, pharmaceuticals 22 per cent and perishables 18 per cent, with traditional bulk commodities on a decline. This shift is driven by the need for just-in-time delivery and high value of these goods. For example, electronics exports under PLI schemes have surged, while pharmaceuticals augmented as these require temperature-controlled transport. Perishables, supported by Krishi Udan, cater to global demand for Indian agricultural products. Future growth potential is strong, with projections estimating cargo volumes could reach 5.8mnt by 2029 and 10mnt by 2030.

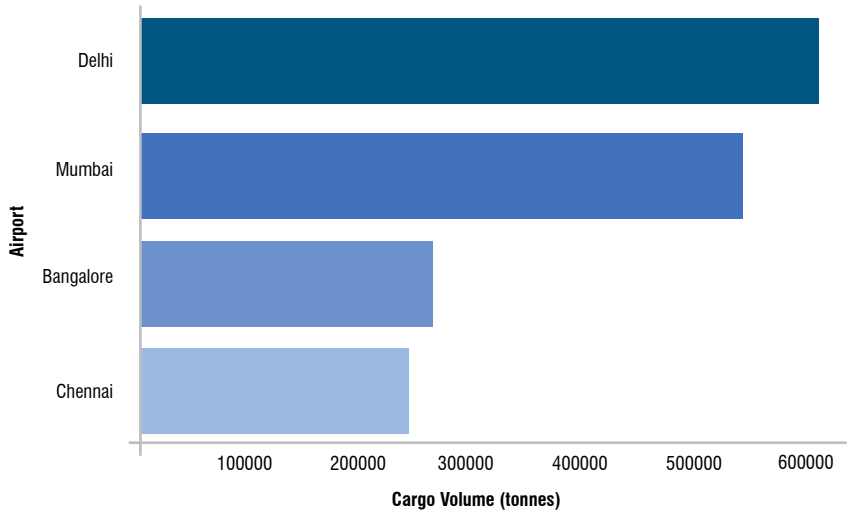
Role of technology

Technology is revolutionising India's air cargo sector. Digital tools like e-Sanchit enable paperless customs clearance and blockchain ensures secure and transparent transactions. Artificial intelligence (AI) boosts predictive analytics for demand forecasting and better preparedness, and the Internet of Things (IoT) facilitates real-time shipment tracking. Sustainability initiatives such as solar-powered cargo terminals and electric ground vehicles address environmental concerns. These advancements enhance operational efficiency and align with global standards, making India's air cargo

India's International Air Cargo Growth (2019-2025)



Top 4 Indian Airports by Cargo Volume (Apr 2024-Jan 2025)



sector more competitive.

Challenges

Despite its growth, the sector faces several challenges. Regulatory inconsistencies across States and agencies complicate operations, delaying clearances. Infrastructure bottlenecks such as limited apron space and aging warehouses hinder efficiency at some airports. Rising carbon emissions pose environmental challenges with pressure to adopt greener practices. Skill shortages in cargo handling and logistics management limit scalability and cybersecurity risks grow with increased digitalisation. Addressing these issues is critical to sustaining growth and meeting global expectations.

Geopolitical impact

Geopolitical tensions, trade disputes and conflicts affecting key shipping routes, and has disrupted global supply chain as a result increasing dependence on air cargo. The Red Sea crisis in 2023 led to an 18 per cent rise in international cargo volumes in H2 FY2024, as shippers sought alternatives to disrupted sea routes. Similar disruptions could drive short-term demand for air freight, though they may also raise costs and complicate logistics planning. Simultaneously, the Russia-Ukraine war and related sanctions have kept global energy prices high, increasing airlines' fuel bills and operating costs. Trade disputes and export controls also add uncertainty for air export volumes.

Delhi's IGIA stands out for its advanced facilities and connectivity, while Mumbai benefits from its strategic location as a trade hub. Bengaluru's focus on perishables and electronics, coupled with a 23 per cent growth in international cargo in 2024, highlights its rising prominence.

Domestic Indian airlines operate very few large freighters, only narrow-body freighters in domestic fleets, limiting belly and cargo-only capacity. In addition, some airports, even big ones, still face slot constraints and incomplete infrastructure such as cargo aprons or warehousing during peak season. Regulatory issues like complex customs procedures on exports and past night-curfew restrictions have improved but not vanished.

Disruptions & future trends

Emerging technologies like drones for last-mile delivery, sustainable aviation fuels (SAF) and advanced air mobility are set to transform the sector. India's strategic location between Europe, Asia and Africa positions it as a potential transshipment hub but this requires significant investments in infrastructure and regulatory alignment. The India Air Cargo Outlook 2025-2029 projects annual growth of 6-9 per cent, with cargo volumes reaching 5-5.8 mn tonnes by 2029. Expanded freighter operations and greener practices will further shape the sector's future.

Ascent as cargo hub

India is strategically positioned to become a global air cargo hub by 2030, leveraging its geographic location and rising economic stature. Key enablers include infrastructure upgrades, regulatory simplification, workforce development, sustainability, and digital innovation. Airports are expanding, cargo terminals are being modernized, and streamlined policies aim to reduce operational friction. Training programs are preparing a skilled logistics workforce, while eco-friendly technologies and Sustainable Aviation Fuel (SAF) initiatives support environmental goals.

Digitalisation is enhancing efficiency and transparency, making Indian operations globally competitive. Policy frameworks like the National Logistics Policy and Free Trade Agreements further strengthen the growth environment.

Looking ahead, transformative trends like Advanced Air Mobility (AAM), with drones and electric Vertical Take-Off and Landing (eVTOL) aircraft, promise to revolutionize last-mile delivery, especially in remote areas. States like Maharashtra and Telangana are leading pilot projects. Blockchain-enabled digital trade lanes will enhance end-to-end supply chain visibility, while AI-powered demand forecasting tools optimize real-time responsiveness. India's emergence as a transshipment hub in the Indo-Pacific, fuelled by China Plus One strategies positions it as a vital link in global trade.

In this exclusive interview **Bernard Lee, Regional General Manager for South Asia & Oceania,** shares insights into how Etihad is redefining air freight in India.

"Strong partnerships and innovation drive our India strategy"

What key factors drive India's importance for Etihad Cargo, and how do you anticipate volumes evolving in 2025–26?

India has been a strategic market for Etihad Cargo for over 20 years, and our footprint now spans 11 cities that collectively represent approximately 90–95% of the nation's GDP. This strong geographic spread, from tier-one metros to tier-two cities such as Jaipur, Calicut and Trivandrum, enables us to serve a wide array of regional economic hubs. Our presence is underpinned by a mix of widebody and narrowbody aircraft. Widebodies cater to major cities, while narrowbodies serve emerging markets, ensuring both optimal capacity and high yield management. India's cargo volumes continue to grow at double-digit rates year-on-year, and we expect this positive trend to persist through 2025–26. This is being driven by rising demand across key verticals such as pharmaceuticals, high-value electronics, perishables and India Post mail shipments. With new business onboarded in these areas and consistently strong load factors across our flights, we forecast robust growth in the coming year. The driving force behind India's continued importance to us is a diverse and high-yielding product mix. Etihad Cargo has developed a suite of specialized offerings, including PharmaLife, SecureTech and FreshForward, that allow us to optimize both revenue and operational efficiency while meeting evolving customer needs.

Handling over 46,000 tonnes annually from India and doubling PharmaLife volumes, how do you address key challenges for India's pharma, electronics, and perishables sectors?

We've made significant progress in strengthening our vertical offerings through customer engagement and regional activation. In the past year, we conducted dedicated PharmaLife roadshows in Hyderabad and Delhi, and will soon expand these to Mumbai, Ahmedabad, and once again Hyderabad. These are complemented by our participation in leading industry forums and direct outreach by our global product leads to educate the market on our capabilities. PharmaLife, in particular, has seen 100 per cent growth over the past two years, and with continued investments, such as cool dollies and the opening of Abu Dhabi's new state-of-the-art terminal, our handling infrastructure has become a strong differentiator. These enhancements ensure temperature integrity and reduce risk across the supply chain. SecureTech has also proven highly effective in handling high-value electronics,

with consistent customer feedback validating the strength of our service. As India ramps up domestic production of electronics, especially in segments like smartphones, we see SecureTech as a major growth engine for Etihad Cargo.

For perishables, we've adapted our strategy to enable uplift via narrowbody aircraft from tier-two and tier-three cities. A recent success was the uplift of over 4,000 kilos of perishables from Kolkata to Abu Dhabi, a record-setting load for a narrowbody from that station. This flexibility has allowed us to maximize our network potential and cater to seasonal and regional demands more effectively.

▶ Can you outline your current and planned capacity or network expansions—such as additional freighter services, belly-hold increases, or new routes—to support India's trade growth over the next two years?

At present, Etihad Cargo does not operate scheduled freighter services to India. However, we remain agile and responsive to market demand through ad-hoc freighter deployments. These are approved based on strong business cases submitted to our network planning team.

We currently operate at least one charter or ad-hoc freighter per month and, for May, we already have multiple freighter flights scheduled. While there are no immediate plans to introduce scheduled freighters, we are closely monitoring market trends and stand ready to scale up as demand stabilizes.

As for new routes, any strategic expansions, whether via freighters or belly-hold capacity, will align with overall demand trends, customer requirements and network priorities. While we cannot disclose specifics at this time, our approach remains flexible, data-led and opportunity-driven.

▶ What key infrastructure upgrades, policy reforms or stakeholder collaborations should India prioritise to transform airports like Mumbai, Delhi and Bengaluru into world-class air cargo gateways?

India's major airports are undergoing transformative upgrades and we are encouraged by the progress. Bengaluru has already begun implementing infrastructure improvements that are streamlining cargo flows, while Mumbai and Delhi are making similar strides.

In parallel, the development of new airports, such as Navi Mumbai and Noida International Airport, is a positive indicator of India's long-term commitment to strengthening its logistics capabilities.

Stakeholder collaboration is also improving. We maintain close ties with airport authorities and ground handlers, which allows us to anticipate and adapt to infrastructure changes. Continued investment in cargo terminals, automation, cold chain infrastructure and multimodal connectivity will be critical for achieving global standards.

▶ Are there any additional key issues or points regarding air cargo movement in the region that you would like to highlight?

India's air cargo ecosystem is currently in a positive, collaborative phase.

We are seeing stronger partnerships with airport authorities and ground handlers such as WFS and Menzies, with a shared focus on operational efficiency and innovation.

Bonded trucking and inter-airport connectivity are also gaining traction, enabling a more seamless cargo experience across the country. The appetite for innovation, combined with a customer-first mindset across the ecosystem, positions India as a rapidly maturing market for global air cargo players like Etihad.

Digital shift for stable solutions

As global supply chains evolve, Lufthansa Cargo continues to strengthen its footprint in key markets like India while prioritizing sustainability. In an exclusive interview, **Stephanie Poehn-Helbig, Head of Region (Middle East, Africa, South Asia & CIS), Lufthansa Cargo,** shares insights on capacity expansion, digital transformation, and the airline's decarbonization roadmap.

Could you tell us about the recent steps Lufthansa Cargo has taken to improve its services on the India-Europe routes, particularly for industries like pharmaceuticals and perishables?

In 2024 we reinstated a weekly Frankfurt–Mumbai–Hyderabad freighter service, and rolled out 100 per cent paperless e-Freight at all five principal Indian gateways— Bangalore (BLR), Mumbai (BOM), Delhi (DEL), Hyderabad (HYD), and Chennai (MAA). That digital shift not only accelerates handling times but also delivers fixed, predictable capacity for pharma exporters, including those using the green channel. Several major stakeholders have already adopted this stable end-to-end solution, enabling them to plan with confidence.

Lufthansa Cargo has been at the forefront of digital innovation in the air cargo industry. How have your digital tools improved the shipping experience for your customers in India?

Since April 2024, all general cargo shipments to and from India are fully paperless—a milestone that significantly cuts handling times and boosts compliance. Tools like DGD. online simplify dangerous-goods documentation, while eBooking and the eServices App empower shippers with real-time tracking and seamless processes. We understand not everyone's fully on board with digital processes yet. To tackle that, we're pushing initiatives like PreCheck, which streamlines pre-shipment checks and keeps the momentum going toward a fully digital future.

Sustainability is a major focus for the aviation industry. What is Lufthansa Cargo doing to reduce its environmental impact, particularly in the Indian market?

Sustainability is at the heart of everything we do. Nearly

99 per cent of our carbon footprint comes from flying, so our biggest impact is in the air. We're tackling this in multiple ways. First, we're modernizing our fleet—our 18th Boeing 777F just joined the ranks, and we've got 777-8Fs on order, which are even more fuel-efficient. Second, Sustainable Aviation Fuel (SAF) is a cornerstone of our strategy. It's the key to decarbonising aviation, and through our 'Sustainable Choice' add-on service, customers can opt in to reduce their emissions using SAF and support climate projects. In 2024, this helped us cut around 8,500 tonnes of CO_2. We're also working on partnerships to bring more SAF to India. Beyond that, our fuel efficiency measures saved 5,700 tonnes of kerosene in 2024 — equivalent to 18,000 tonnes of CO_2. On the ground, we're exploring electrified support equipment to shrink our footprint further. Over the next two years, we'll scale up SAF adoption, deepen market penetration, and tailor sustainability solutions for India's unique needs.

In a landmark move poised to reshape global shipping, the International Maritime Organization (IMO) has approved the world's first industry-wide carbon tax on shipping emissions, a bold step toward decarbonizing a sector responsible for nearly 3 per cent of global greenhouse gas (GHG) emissions.

GLOBAL CARBON TAX: NEW ERA IN DECARBONISATION

The decision, finalised at the IMO's Marine Environment Protection Committee (MEPC) meeting in London, signals a new chapter in climate accountability for maritime transport.

Set to be implemented from 2028, the carbon tax will initially levy $100 per tonne of CO_2 emitted, with additional penalties—up to $380 per tonne—for high-emission vessels that fail to transition to cleaner fuels. The hybrid framework blends a global fuel standard, requiring ships to reduce their fuel's carbon intensity, with a market-based mechanism where excess emissions can be offset through remedial units.

India, alongside 62 nations, voted in favour of this historic regulation, marking a shift in the Global South's approach to maritime climate responsibility. However, the absence of the United States, and resistance from fossil fuel exporters like Saudi Arabia, highlighted deep divisions in global climate diplomacy.

The tax is expected to raise $30–40 billion by 2030, earmarked specifically for decarbonizing the shipping industry—such as funding clean fuel development, retrofitting older vessels, and upgrading bunkering infrastructure. Yet, more than 60 developing nations voiced concerns, demanding a portion of the revenues be directed to broader climate adaptation and equity financing, especially for Small Island Developing States (SIDS) and Least Developed Countries (LDCs), who are disproportionately vulnerable to climate change.

For the maritime sector, this tax adds urgency to shift toward zero- and near-zero-emission fuels like hydrogen, methanol, and ammonia. However, the transition faces hurdles: the current global fleet, averaging 22.2 years in age, lacks compatibility with newer fuel technologies, and infrastructure for alternative fuel bunkering remains limited, especially in developing regions.

The decision is aligned with the IMO's 2023 Revised GHG Strategy, which calls for at least a 20 per cent reduction in emissions by 2030 (compared to 2008 levels), and net-zero emissions by 2050. However, analysts estimate that the new tax, on its own, may deliver only a 10 per cent reduction by 2030—highlighting the need for complementary action and stronger enforcement.

For shipping companies, particularly in emerging economies, the implications are profound. While larger operators may leverage technology and scale to comply, smaller fleets may struggle with retrofitting costs and access to green fuel. This raises concerns over a "two-speed decarbonisation," where wealthy fleets transition faster, leaving others behind.

Despite these challenges, the IMO's decision marks a transformative milestone. For the first time, a global carbon price will directly influence operational costs in shipping, forcing market behaviour toward cleaner alternatives. If implemented equitably, this levy can be a cornerstone for a sustainable maritime future—anchored not just in emissions reduction, but also in climate justice and inclusive growth across the global value chain.

A STORY OF TRUST, TRANSITION, AND TRANSFORMATION

When two of India's respected logistics houses—JBS group and Jeena & Company—decided to merge in April 2024, the industry took notice. Not just because of the size and legacy of the firms involved, but because the merger was not born in a boardroom full of lawyers, but in a casual conversation laced with trust, shared values, and mutual vision.

Now, a year later, their story offers rich insights for an industry at the crossroads of transformation—highlighting how synergies must go deeper than spreadsheets, and how culture, clarity, and continuity matter as much as capital.

A casual conversation becomes a strategic milestone

The seeds of the merger were sown not in a formal pitch, but during a chance exchange at an industry event in New Delhi.

"It started as a casual chat between old friends," recalls Samir J Shah, the patriarchal figure at JBS. "I mentioned to Cyrus Katgara, co-owner of Jeena & Company, that I was starting to think seriously about the future of our firm."

At the time, JBS—a nearly 70-year-old company—was facing a common succession challenge. With daughters choosing careers in medicine; teaching etc, and long-standing clients and staff asking, "What happens after you?", Samir needed to secure not just a legacy, but a future.

Enter Sam Katgara, Cyrus's brother and co-leader at Jeena & Company.

"We've known Samirbhai for over 40 years," says Sam. "What stood out was his clarity, the loyalty his clients and team had for him, and how closely our value systems aligned. It just felt right."

And so began what both men describe as a handshake-first, paperwork-later journey—where trust, cultural synergy, and mutual respect laid the foundation for one of the most significant logistics mergers in recent years.

From handshake to integration: Beyond the legalities

What followed was not the typical merger process filled with layers of consultants and prolonged negotiations.

"In fact," laughs Sam, "this was the first deal I insisted should be based on a handshake. We only signed the documents after we'd looked each other in the eye."

That doesn't mean the integration lacked structure. Once the decision was made, due diligence, compliance checks, and operational planning followed. But the leadership ensured that cultural fit remained the north star—a principle that would guide not just the merging of systems, but also of people.

Key steps in the transition:

Unified Operations: The teams quickly found a new headquarters—JBS Jeena House in Ahmedabad—which became a symbolic and operational home for the combined entity.

Systems Integration: Jeena's technology-driven backend was adopted across the board, while JBS's customs clearance systems were scaled to benefit Jeena's national operations.

Employee Assurance: The merger was positioned not as a consolidation, but as a growth opportunity, with no layoffs and minimal disruption. "People didn't leave because of the merger," says Samir. "Those who moved on would have done so anyway."

Synergies in Action: Customers, Capabilities, and Complementarity

From the outside, JBS and Jeena may have looked similar—both are legacy Indian logistics companies—but their operational strengths were deeply complementary.

"JBS was extremely strong in customs clearance," says Sam, "while Jeena's strengths lay in international freight forwarding and multimodal logistics. Together, we filled each other's gaps."

This synergy wasn't just internal—it brought immediate gains for customers:

Deeper service offerings: Clients previously using JBS only for clearance could now access end-to-end freight

> **"This was the first deal I insisted should be based on a handshake. We only signed the documents after we'd looked each other in the eye."**
>
> SAM KATGARA
> PARTNER, JEENA & COMPANY

solutions through Jeena's global network.

Trust-led transitions: Long-time clients, some with 30-40 year relationships, expressed confidence that Samir's judgment in the merger would benefit them. Not a single major account was lost.

Best-of-both SOPs: Forwarding operations followed Jeena's framework, while clearance activity retained JBS's local expertise, creating a hybrid operating model.

Post-merger priorities: New verticals and national ambitions

While most mergers take a year or more to stabilise, JBS and Jeena used the integration period to accelerate growth.

"We didn't just merge teams, we built something new," says Sam. "In two months, we had a new office, merged our systems, and launched new service lines."

Key post-merger initiatives:

Cold chain expansion: A new vertical focused on pharmaceutical and temperature-sensitive logistics, including owned facilities in Andhra Pradesh, has positioned the merged entity as a leader in the cold chain segment.

We have our own facilities in Mumbai, Delhi, Ahmedabad and Bangalore

Defense Logistics: The team is exploring opportunities in defense and government contracts, aligning with India's push for indigenous manufacturing and secure supply chains.

Value-Added Services: A new customs consultancy vertical is helping clients navigate evolving compliance challenges, including FTAs, GST structures, and Authorized Economic Operator (AEO) schemes.

"We're not just moving boxes anymore," says Samir. "We're advising clients on how to survive and thrive in a complex trade environment."

Lessons from the Frontline: What Makes a merger work?

Both leaders agree: culture makes or breaks a merger.

"Forget the financials for a second," says Samir. "If the culture doesn't align, the teams won't align. And if the teams don't align, nothing else will matter."

So, what made this merger work?

Key Lessons from the JB Shah–Jeena Story:

Clarity of purpose

Samir knew what he wanted: continuity for clients, security for staff, and relevance for the company post-retirement age. That clarity anchored the process.

Mutual respect between leaders

The trust between Sam and Samir was visible to teams, clients, and vendors. "Our teams saw how we respected each other, and that shaped how they trusted the process," says Samir.

People-first integration

Instead of job cuts or power struggles, the focus was on retaining people, simplifying reporting, and harmonising structures through dialogue, not diktat.

Best-of-both operating model

Rather than forcing one system over the other, the merged entity adopted the best practices from each, building a more agile, efficient operation.

Shared vision for growth

The leaders are aligned on where the business is headed, including tech integration, sustainability, and cross-border expansion.

"We were two companies, but one family by values," Samir reflects. "That's what made the difference."

Looking ahead: From family legacy to industry leadership

One year on, the merger has not only met expectations, it's exceeded them. But the journey is far from over.

Jeena & JBS are now:

- Expanding to new cities through shared infrastructure and cross-trained teams.
- Standardising customs practices across India, leveraging JB Shah's Gujarat strength.
- Training the next generation, including launching a logistics learning program, a long-held dream of the Katgara family, now spearheaded by Samir.

"This is personal," Sam says. "We're not just building a business, we're fulfilling a promise made by our father, to give back to the industry through training and development."

A blueprint for the future of Indian logistics

In an era of global turbulence and supply chain rethinking, India's logistics sector is poised for massive growth. With government focus on manufacturing, exports, and multimodal infrastructure, the stakes, and the opportunities, have never been higher.

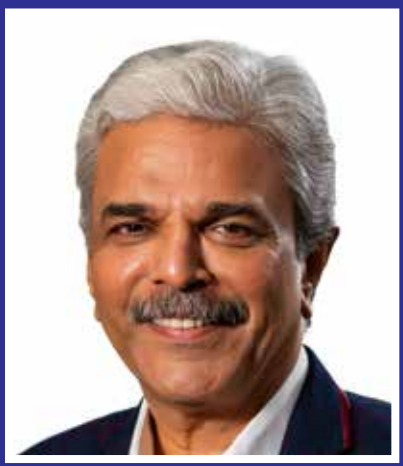
The JBS–Jeena merger offers more than a case study in business integration. It's a blueprint for how Indian logistics companies can future-proof themselves, not just through tech and scale, but through people, trust, and shared purpose.

As Samir puts it:

"This is not an industry for financiers, it's for people who know their business inside out."

"This is not an industry for financiers—it's for people who know their business inside out. The companies that succeed will be those who turn that expertise into long-term relationships, not just short-term profits."

SAMIR J SHAH
OWNER, JBS GROUP OF COMPANIES



Riding the storm

In an era where geopolitical disruptions have thrown global shipping into uncertainty, feeder operators have found unexpected tailwinds. Particularly for X-Press Feeders, the Red Sea crisis and shifting global trade dynamics have opened new lanes of opportunity.

Turning Challenges into Opportunities: X-Press Feeders' Red Sea Strategy

Capt. J.S.Gill, a senior leader at X-Press Feeders, offers an insider view: "The Red Sea crisis and the geopolitical situation have actually benefited the feeder operators to a certain extent. We limited our risks smartly and started servicing areas where the main lines are no longer going."

Even before the Red Sea disruptions escalated, X-Press Feeders had been preparing to strengthen its presence in the region. This preparation proved invaluable as major shipping lines began avoiding the Red Sea route due to safety concerns.

Seizing the moment, X-Press Feeders launched two key services into the Red Sea region:

- A Joint Service with Unifeeder and Monheim connecting Gujarat, India to Jeddah, Sokhna (Egypt), and Aqaba (Jordan).
- An Independent Service directly linking Gujarat to Red Sea ports, focusing particularly on Jeddah, Sokhna, and Aqaba.

These services were built carefully with a strong focus on schedule stability — a crucial factor in an unpredictable environment. "The stability of the services has been very good," Capt. Gill explains. "We provide connections on a daily basis to these locations, and the vessels are running 90–100 per cent full."

To support this, X-Press Feeders deployed their own vessels — two ships on the Indian Red Sea Express (IRX) service, and four ships (a mix of owned and chartered) on the IRX-2 service.

Additionally, X-Press Feeders set up dedicated window services at key Indian terminals like Mundra and Nhava Sheva (Nava Sheva), ensuring predictable and efficient port calls.

Red Sea Rates and the "Dream Run" — Will It Last?

When the Red Sea disruption began, freight rates surged to attractive levels — between $1,000 to $1,400 per TEU for Red Sea destinations. However, rates have now corrected, hovering around $600 to $700 per TEU to Jeddah and Sokhna. Despite the price correction, demand remains strong, and vessel utilization has remained at nearly full capacity.

But how sustainable is this golden period for feeder operators?

Capt. Gill tempers expectations: "It all depends on how the Red Sea crisis continues. Once it ends, the focus may shift to redevelopment in Syria, Ukraine, and other regions. If that happens, some of the attention on Red Sea services could dilute."

Yet, customer habits are hard to change once they find reliable partners. "When customers experience stable services and end-to-end cargo movement without issues, they don't switch easily," he notes, hinting that at least some Red Sea services could remain viable in the medium term even after normalcy returns.

US Trade Restrictions: Shifting Global Flows, Favoring India

Adding another layer to the shipping story are the growing US trade restrictions, particularly on China. For feeder lines like X-Press Feeders, this shift is creating new trade patterns.

"India-US trade is largely export-dominated," explains Capt. Gill. "With China facing export hurdles into the

US, Chinese manufacturers must find alternative markets — and India, with its huge consumer base, is a natural target."

This scenario is already fueling greater cargo movement from the Far East to India, supporting feeder volumes. Furthermore, India's own exports to the US are expected to stabilize and even grow marginally once ongoing trade negotiations conclude.

However, despite the opportunity, cautious optimism rules. Overcapacity is a risk, especially as Far East-India shipping routes are already highly competitive. As Capt. Gill puts it: "Nobody can take a risk of bringing new services easily; capacity is already stretched, and the market remains contested."

No Easy Entry: Why New Players Are Hesitant

Given the favorable trading scenario, one might expect new feeder operators to jump into the fray. However, high ship charter rates are acting as a strong deterrent.

Today, medium-sized vessels (1,200–2,500 TEU capacity) have seen charter rates soar from $15,000 to $18,000 per day. Charterers now also demand shorter charter periods, increasing market volatility.

Capt. Gill candidly outlines the risks: "Any new operator coming into the market at today's charter rates will run into huge losses. Even for us, with our own tonnage, we are cautious about chartering high. We are very conservative about our bottom line."

In short, existing players with owned tonnage and established networks like X-Press Feeders are best placed to ride out market fluctuations. The barriers to entry for new competitors remain high.

Indian Container Terminals: At Breaking Point

A major constraint for the feeder and mainline operators alike is India's port congestion. With almost 100% berth occupancy at major ports on the West Coast, options for expansion are severely limited.

"Any new operator coming into the market at today's charter rates will run into huge losses. Even for us, with our own tonnage, we are cautious about chartering high. We are very conservative about our bottom line."

CAPT JS GILL
MANAGING DIRECTOR, X-PRESS FEEDERS

"At Mundra, once we miss our window schedule, there's a two to three days waiting period," reveals Capt. Gill. "JNPT is facing a similar situation. Although NSFT and BMCT are adding some capacity, even that is quickly getting absorbed."

The situation is hardly better on the East Coast. While ports like Chennai, Kattupalli, and Visakhapatnam have some breathing room, operational constraints like draft limitations (especially at Vizag) limit their scalability.

Even new capacity coming online — such as Adani's CG5 terminal — is facing immediate demand pressure. As Capt. Gill warns, "We are in a difficult situation for at least the next two years until substantial new capacity is created."

2025-26 Plans: Scaling Up, Growing Indian Operations

Key Initiatives

Deploying larger vessels: Upgrading from **7,000 TEU** ships to **11,000 TEU** ships on select India trades.

Enhancing Gulf Services: Increasing vessel size on India-Gulf services from **2,800 TEU** to **4,200 TEU** capacity.

Contract Growth: Expanding fixed-slot and service contracts with major liner customers.

Despite port challenges, X-Press Feeders has ambitious expansion plans for India. India already accounts for 25% of their global revenues, and they intend to grow Indian trade volumes by 15-20 per cent in the next financial ar.

"We intend to increase capacity and volume production for India significantly in 2025-26," confirms Capt. Gill.

Importantly, X-Press Feeders believes that maintaining service stability is crucial to sustaining volume growth. "We put in the ship with apprehension — we were 60% full initially — but once customers saw stability, the ship filled up completely within two cycles," he shares.

Conclusion

Feeder operators like X-Press Feeders have turned geopolitical and trade headwinds into a springboard for growth. By acting early, focusing on service reliability, and maintaining a conservative financial strategy, they have positioned themselves strongly amidst global uncertainty.

While challenges remain — from volatile rates to port congestion — the overall trajectory for feeder operations in India and the Red Sea corridor remains positive, at least for those with the foresight and discipline to navigate the complex tides ahead.

Agility amid crisis: Serving customers in a world of uncertainity

Amid volatile trade routes, geopolitical tensions, and shifting customer expectations, Maersk is redefining logistics with a focus on customer-centricity, operational agility, and global collaboration. Maersk's global supply chain operates seamlessly around the clock, thanks to the dedication and expertise of its diverse workforce spread across numerous countries. Among the exceptional leaders at A.P. Moller-Maersk is **Prithwijit Maitra, Director, Head of LTA Process Europe and IMEA** who has played pivotal roles both in Copenhagen and India. Maitra is known for driving transformative growth across complex supply chains. With deep expertise in global operations and strategic execution, Maitra has led impactful innovations across geographies. Passionate about simplyfying processes, he is a trusted advisor and change-maker shaping the future of integrated logistics.

From fronting face to face negotiations with Global reefer customers in Copenhagen to delivering best in class customer experience whilst driving improvements in process efficiency in India's Global Service Centres (GSC), Prithwijit's journey offers a window into how Maersk is reimagining customer service to stay resilient and responsive in turbulent times.

A strategic seat in Copenhagen

Prithwijit's global influence began in Copenhagen, where he headed the Far East Middle East trades. He was responsible for mapping services and deploying the network for these trades. This role required him to negotiate directly with key global customers across industries such as automotive and technology.His next role in Copenhagen was 'Global Product Head for Reefers". From this vantage point, he oversaw pricing strategies for verticals such as reefer cargo, with responsibility stretching across fish, poultry, and perishable goods moving from any global origin to any destination. Sitting in Copenhagen, his desk was not just about numbers but about decisions that shaped trade routes and customer confidence. It meant greater consistency, faster responsiveness, and a global view that enabled optimised decisions. Prithwijit, with his global mandate, could see the full picture and balance commercial viability with strategic continuity. This broad vision enabled the development of tailored solutions for every corridor, regardless of its immediate profit potential.

GSC's transformation: From transactional to strategic

Following his international tenure, Prithwijit returned to India, joining the Global Service Centres also known as GSC. At the Chennai and Mumbai centres, his role expanded significantly—he now led teams servicing Europe, Middle East, Africa, and India.

"The GSC is no longer a transactional hub. It is a strategic engine that supports the entire commercial lifecycle," he says.

For example, when a customer disputes an invoice—say, claiming the rate was $1,200 instead of $1,300—the GSC steps in. Teams coordinate with sales, stakeholders validate the rate filings, investigate discrepancies, and resolve the issue—all while keeping the customer informed. "It's not just about settling a bill; it's about preserving relationships and trust," he adds.

The GSC, far from being a simple back-office setup, had evolved into a strategic operations engine. Prithwijit oversees a team of over 900 well trained professionals. From filing contractual rates, resolving freight disputes to tracking surcharges and penalties, his team handles complex, sensitive issues with precision. A customer disputing a $100 freight variance could trigger a chain of verifications, internal fact finding and reconciliations—all managed seamlessly by the GSC team.

One of the most pressing challenges Prithwijit contends with is the impact of geopolitical disruptions on shipping contracts and customer trust. From the pandemic-era chaos to the Red Sea crisis, and now the tariff wars and route recalibrations, the operating environment has grown increasingly unpredictable.

Yet for Maersk, these crises are not just hurdles—they're opportunities to demonstrate reliability and agility to its customers.

"When disruption strikes, we don't just reroute ships—we activate cross-functional task forces," Prithwijit explains. His team plays a key role in preparing data, enabling surcharge communication, and advising customers in real-time on rerouting options, service schedules, and

contingency plans.
Sometimes, a new surcharge or routing needs to be implemented overnight. "That's where our ability to operate around the clock across time zones adds value," he adds. The GSCs act as the rapid response unit, coordinating seamlessly with commercial and operations teams to deliver on customer commitments.

The Rise of the knowledgeable customer

One of the biggest shifts Prithwijit has observed is the evolution of the customer. "Today's customer is more informed, more demanding—and rightfully so," he says. In the past, clients signed annual freight contracts and moved on. Now, they ask for real-time intelligence, dynamic pricing models, and end-to-end supply chain visibility.
Prithwijit notes that modern shipping executives must act as consultants, guides, and solution architects—not just logistics providers. They need to advise clients on optimal routes, contract structures, inventory planning, and even alternate sourcing geographies. The customer's problems are no longer just logistical—they are strategic and existential.

Contracting trends: The new short-term norm

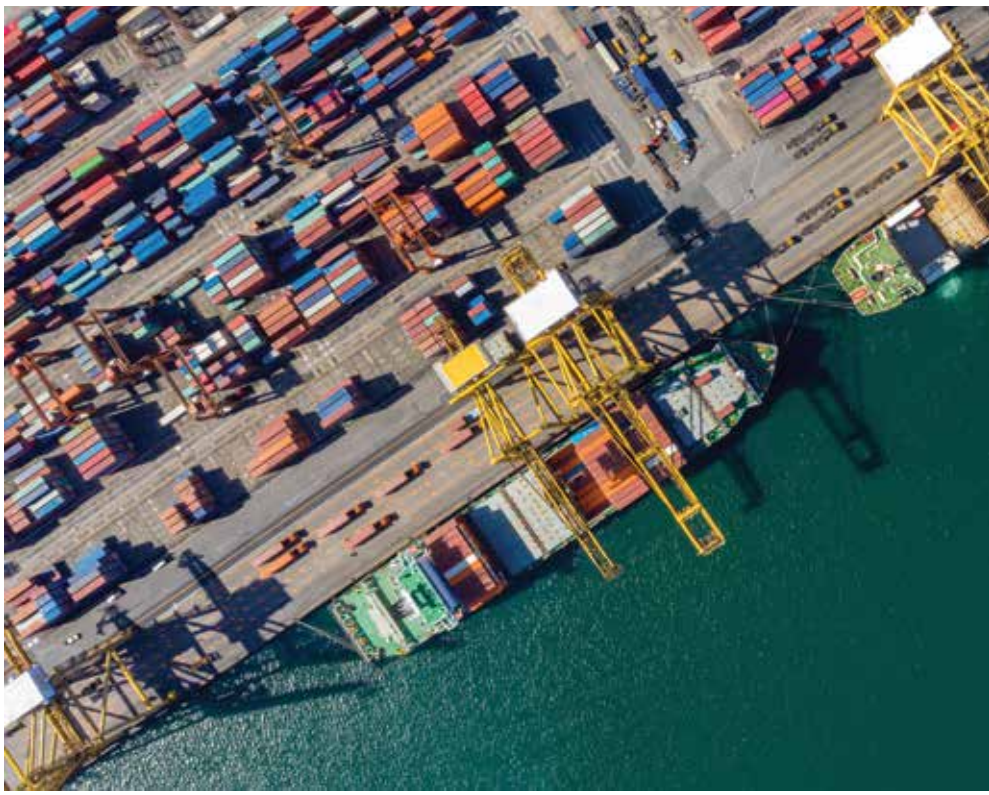
With rates swinging and disruptions rampant, customers are cautious about committing to long-term deals. "We now see more quarterly or half-yearly contracts, especially in volatile corridors like Asia to Europe or Asia to US," notes Prithwijit.
Maersk adapts by offering flexible contracts that balance risk and reward, helping customers hedge against uncertainty while locking in service continuity. The focus is on long-term relationships with short-term flexibility.

Driving the future of global service centres

In his current role, Prithwijit is not just managing operations but driving continuous improvements. From initiating process automation projects to reducing manual interventions and accelerating decision cycles, he is championing a tech-enabled future for the GSCs. From AI-enabled invoice processing to smart rate validations, the aim is to reduce errors, accelerate cycles, and free up teams to focus on customer-centric innovation.

"The days of back offices just issuing invoices are gone, we have transformed into Capability Centres—delivering not just efficiency, but also intelligence and foresight".

"The days of back offices just issuing invoices are gone," says Prithwijit. "We have transformed into Capability Centres—delivering not just efficiency, but also intelligence and foresight."
As organisations centralise more functions for cost and efficiency gains, leaders like Prithwijit are critical in ensuring these centres evolve into innovation hubs, capable of supporting volatile global supply chains and rising customer expectations. They do this diligently by constantly improving processes, eliminating inefficiencies and ensuring reliable execution thereby creating the foundation for delivering seamless and scalable customer experience.
In an industry where volatility is the new normal, professionals like him don't just keep the wheels turning—they redefine how the industry moves forward.
Prithwijit's experience—spanning boardrooms in Copenhagen and Global Service Centres in India—reflects how Maersk is building resilience with empathy, agility with intelligence, and operational scale with strategic precision. As the global shipping industry continues to evolve, Maersk's ability to listen, adapt, and thereby being Customer Centric is what will continue to win customer trust worldwide.



New ports, tariff troubles, and trade ambitions

Vietnam's ascent as a pivotal player in global trade is underscored by its evolving port infrastructure, dynamic logistics sector, and an increasingly complex relationship with the global tariff regime.

With sweeping developments along its coastline and a growing portfolio of deep-water terminals, Vietnam is not only expanding its trade capacity but also preparing itself for a more central role in regional and international commerce. Amidst this, the country navigates rising tensions with key trade partners like the United States, where tariff threats now intersect with strategic growth ambitions.

The recent inauguration of the Hateco Haiphong International Container Terminal (HHIT) is emblematic of Vietnam's maritime resurgence. Developed through a strategic collaboration between Vietnam's Hateco Group and global port operator APM Terminals, the HHIT facility at Lach Huyen Port in Haiphong represents a new chapter in the country's port modernisation. The terminal, completed in just 30 months, offers two new deep-water berths capable of accommodating ultra-large container vessels of up to 18,000 TEUs. Its inclusion in the Gemini Cooperation network, a new East-West maritime corridor spearheaded by Maersk and Hapag-Lloyd, further signifies the strategic importance of this investment.

On the same day of the terminal's launch, Hateco and APM Terminals signed a memorandum of understanding to deepen their partnership, signalling plans to expand their collaboration to other logistics hubs across Vietnam. This partnership is anchored in modern port practices, with a focus on safety, automation, artificial intelligence, and decarbonization. HHIT is set to become Vietnam's first smart port, employing a truck appointment system (TAS) and semi-automated operations to enhance cargo flow and reduce delays.

The port's operational start is timely, as Haiphong continues to register robust cargo growth. In 2024, Haiphong ports handled 190 million tons of goods, and this figure is expected to reach 212 million tons by the end of 2025. The Lach Huyen port complex, where HHIT is located, is designed to accommodate container ships, bulk carriers, and even large cruise vessels. These capabilities position northern Vietnam as a significant maritime gateway for both international trade and domestic supply chains.

Meanwhile, the logistics sector in Vietnam is riding a parallel wave of transformation. Valued at $48 billion in 2024, the logistics market is expanding at an annual rate of 14 to 16 per cent, more than twice the global average. By 2030, forecasts suggest it could reach $71 billion, driven by digital transformation and infrastructure investments. Companies like Saigon Newport Corporation (SNP) are leading the charge. SNP manages a network of 26 ports and commands over 90 per cent of southern Vietnam's container import-export market. With innovations such as real-time container tracking, AI-powered virtual assistants, and electronic documentation systems, SNP has significantly optimised port operations and minimised processing time.

Viettel Post, another logistics

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pioneer, has deployed smart sorting technologies using autonomous guided vehicles (AGVs) and advanced sorting systems, elevating processing capacity to 4 million parcels per day. These innovations position Vietnam's logistics ecosystem as one of the most tech-adaptive in the region, despite persisting challenges in infrastructure and labour capacity.

However, Vietnam's rapid trade and logistics expansion has not gone unnoticed by the global powers it trades with. The United States, Vietnam's largest export market, has imposed a steep 46 percent tariff on Vietnamese imports as part of a broader campaign to balance bilateral trade deficits. With Vietnam's trade surplus exceeding $123 billion last year, US officials have expressed dissatisfaction with what they perceive as Vietnam's insufficient reciprocal trade and the use of non-tariff measures.

To pre-empt punitive measures, Vietnam has offered significant concessions. Tariffs on American LNG, automobiles, ethanol, and various agricultural products have been slashed, in some cases by nearly half. These actions are intended not only to improve trade balances but also to signal Hanoi's willingness to cooperate with Washington. Despite these efforts, the Trump administration remains sceptical. Senior U.S. officials, including Trade Advisor Peter Navarro and Commerce Secretary Howard Lutnick, have accused Vietnam of "non-tariff cheating," citing its value-added tax regime and the alleged rerouting of Chinese goods through Vietnamese ports to circumvent existing U.S. tariffs.

Vietnam, however, is adamant about maintaining its economic momentum. Prime Minister Pham Minh Chinh has reaffirmed the nation's GDP growth target of 8 per cent for 2025, framing the current trade tensions as a catalyst for economic restructuring and diversification. During a high-level cabinet meeting, Chinh emphasized the urgency of developing new markets, expanding domestic production capabilities, and strengthening local supply chains. The formation of a dedicated task force to address the tariff situation reflects the government's proactive approach.

At the heart of this transformation lies a vision to reposition Vietnam as a regional logistics powerhouse. The government has been actively supporting new port developments, such as the Lien Chieu-Da Nang deep-water port in central Vietnam, where Danish logistics giant Maersk is exploring investment opportunities. Maersk, already involved in the Cai Mep-Thi Vai port and the HHIT project, sees Vietnam as a strategic logistics base for Asia.

Finance Minister Nguyen Van Thang has highlighted Vietnam's commitment to green, smart, and connected infrastructure, urging global investors to participate in large-scale projects like Danang's planned free trade zone. These developments are not only aimed at reducing logistics costs, which currently stand at 17 per cent of GDP, but also at enhancing Vietnam's global trade competitiveness.

While Vietnam's average logistics performance index (LPI) score remains modest at 3.3 out of 5, recent initiatives point to a clear upward trajectory. Nonetheless, the road ahead is complex. The success of Vietnam's logistics and maritime ambitions will depend on its ability to balance external pressures with internal reforms, invest in digital capabilities, and foster sustainable growth models.

For Vietnam, the challenge is not merely navigating today's tariff turbulence but building resilience for tomorrow's global trade realities. The progress made at HHIT and other logistics nodes marks a promising start. The next step is to ensure that these advancements translate into long-term economic strength, regional influence, and global integration.

Hai Phong Port - Key Data

Channel Depth: -**5.5 to -7.2** meters

Vessel Capacity:

Alongside wharf: Up to **10,000 DWT**
Lighterage area: Up to **40,000 DWT**

Storage Capacity:

Total: **220,000** metric tons (MT)
Container Yard (CY): **21,000** TEU

Africa's rising star in global logistics

Kenya is fast becoming a linchpin in global trade and logistics, driven by strategic location, robust investments in infrastructure, and deepening international partnerships. As the East African nation modernises its ports, expands its air cargo capacity, and strengthens trade ties with global markets, it is emerging as a vital logistics hub connecting Africa with Asia, the Middle East, and Europe.

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Positioned along the Indian Ocean and at the crossroads of major trade corridors, Kenya is leveraging its geographic advantage to transform its economic future. The Port of Mombasa, the largest in East Africa, serves as a critical gateway for regional trade, enabling cargo movement across Uganda, Rwanda, Burundi, South Sudan, and the Democratic Republic of Congo. Investments in port upgrades, alongside the Standard Gauge Railway linking Mombasa to Nairobi, have significantly reduced freight time and costs, enhancing trade competitiveness.

Maritime Momentum: Mombasa and Lamu drive East Africa's trade future

Kenya's port infrastructure is experiencing a historic transformation, led by record-breaking cargo volumes, booming transhipment activity, and major investments aimed at reinforcing its position as a regional trade and logistics powerhouse. The Port of Mombasa, East Africa's largest and busiest seaport, has achieved unprecedented growth in 2024, underlining Kenya's growing stature in global supply chains.

In 2024, the Port of Mombasa handled an all-time high of 41.1 million tonnes of cargo, up 14.1 per cent from 35.98 million tonnes in 2023. This surge was driven by increased import volumes, which rose by 7.2 per cent, and exports, which saw a 6.6 per cent uptick. Container traffic also surged to a record 2,005,076 TEUs (twenty-foot equivalent units), marking a 23.5 per cent increase over the previous year. This milestone marks the first time the port has surpassed the 2 million TEU threshold in over a decade.

Kenya Ports Authority (KPA) Managing Director Captain William Ruto attributed this success to a combination of factors, including operational efficiency, infrastructure upgrades, and Mombasa's rising role as a transhipment hub. "Our performance was enhanced by growth in containerized and bulk cargo volumes, supported by transhipment traffic as major shipping lines selected Mombasa as their regional hub," Ruto said.

Transhipment traffic, in particular, witnessed a dramatic rise, soaring by 132.9 per cent to reach 491,666 TEUs. The port's strategic location, coupled with regional instability in the Red Sea, led to vessel diversions that redirected cargo through Mombasa. Improved turnaround times and increased feeder services allowed the port to serve destinations across Eastern and Southern Africa and Indian Ocean island nations.

Uganda continues to be the largest transit cargo destination, accounting for 65.7 per cent of total transit volumes. In 2024, Uganda-bound cargo grew by 23.8 per cent to 8.8 million tonnes. Other key regional partners include South Sudan, the Democratic

Republic of Congo, Rwanda, and Tanzania. Transit cargo volumes overall grew by 17.4 per cent, reaching 13.4 million tonnes.

Looking ahead, KPA has unveiled ambitious plans to further expand and modernize Mombasa's capacity. Upgrades to the Terminal Operating System (TOS) are already underway to improve digitization and operational speed. In January 2025, work will begin on the new Berth 19B, which will add a 240-metre berth with capacity for 300,000 TEUs. Plans are also progressing for Berth 23, a 300-metre extension with an estimated yard capacity of 500,000 TEUs, to be funded through the Japan International Cooperation Agency (JICA).

In addition to container terminal expansion, significant infrastructure projects are reshaping the Mombasa port complex. These include the KSh40 billion Kipevu Oil Terminal, KSh32 billion second container terminal phase, and a new cruise ship terminal. A recently completed six-lane concrete road at Kipevu and the acquisition of new gantry cranes worth USD 31.5 million are aimed at streamlining cargo movement and enhancing productivity.

"Lamu and Mombasa together will anchor Kenya's maritime strategy, supported by ongoing investments in infrastructure and intermodal connectivity. "

BENJAMIN TAYARI
CHAIRMAN
KENYA PORTS AUTHORITY

"Our performance was enhanced by growth in containerised and bulk cargo volumes, supported by transhipment traffic as major shipping lines selected Mombasa as their regional hub."

CAPTAIN WILLIAM RUTO
MANAGING DIRECTOR, KENYA
PORTS AUTHORITY

Alongside Mombasa, the Port of Lamu is beginning to emerge as a complementary trade gateway. Developed under the LAPSSET Corridor initiative, Lamu offers deep-water berths with a 17.5-metre draft, capable of hosting some of the world's largest container ships. In 2024, Lamu welcomed its first transhipment vessels, including the MV Derby D, which loaded 371 TEUs for Dar es Salaam.

The Lamu Port's potential lies in its role as a future logistics hub for South Sudan and Ethiopia. Once fully operational with 32 planned berths, the port will complement Mombasa's operations and help relieve congestion, while facilitating trade with landlocked neighbours.

Kenya Ports Authority Chairman Benjamin Tayari emphasised that Kenya's long-term vision involves developing multiple strategic ports to cater to different market segments. "Lamu and Mombasa together will anchor Kenya's maritime strategy, supported by ongoing investments in infrastructure and intermodal connectivity," Tayari said.

KPA is also investing in process modernisation to boost efficiency. The authority plans to automate waiver requests, streamline cargo approvals, and improve transparency through enhanced system integration. These digital upgrades, combined with new equipment—including ten rubber-tyred gantry cranes and twenty terminal tractors—will reduce turnaround times and cut operational costs.

Despite concerns raised about potential congestion, KPA has dismissed such fears, pointing to available cargo handling capacity. However, challenges do remain, particularly in managing increasing traffic and maintaining service levels as trade volumes rise. Continued coordination with stakeholders, including shippers, logistics providers, and regional governments, remains critical.

Kenya's strategic location along the Indian Ocean continues to be a major advantage. As supply chains diversify and shipping lines seek alternative ports amid global disruptions, Mombasa and Lamu offer reliable options for cargo movement. Moreover, Kenya's broader logistics ecosystem, including the Standard Gauge Railway and enhanced road networks, links the ports to key economic corridors across East and Central Africa.

Transit challenges and the way forward

Nepal, a landlocked nation wedged between two economic giants—India and China—relies overwhelmingly on India for trade and transit. Despite a traditionally close commercial relationship with its southern neighbour, Nepal continues to face persistent and costly transit hurdles that hinder its trade efficiency and economic potential.

The Indo-Nepal transit arrangement, though grounded in open borders and historical ties, is marred by regulatory bottlenecks, outdated infrastructure, and systemic inefficiencies. A major challenge is the monopolistic nature of logistics services. For example, the Electronic Cargo Tracking System (ECTS) mandated by the Indian authorities is operated by a single supplier, restricting competition and increasing costs for Nepalese traders. Additionally, Nepalese importers are compelled to use Indian clearing agents and shipping lines, a stipulation that raises the cost of doing business and limits autonomy.

Nepalese logistics providers face severe limitations in participating in freight movement, with dry port engagement constrained by complex stakeholder management and high bid thresholds. The lack of dedicated railway lines for Nepal-bound cargo, coupled with the underdevelopment of inland waterway options, adds to transit delays and inefficiencies.

A comprehensive revision of the existing transit treaty is urgently needed—one that ensures equitable rights, removes monopolistic practices, promotes greater participation of Nepal's private sector.

Infrastructure projects like Integrated Check Posts (ICPs), though commendable in concept, have not yielded full benefits due to the absence of coordinated customs inspections and real-time data sharing. Additionally, restrictions on Nepalese vehicles in Indian territory and disproportionately high port handling charges increase overall logistics costs.

Another significant issue is the lack of alignment between the infrastructure development plans of both countries. Poor coordination leads to mismatched logistics systems, missed connectivity opportunities, and vulnerability to disruptions from security threats and informal trade. Bureaucratic red tape, non-harmonized documentation, and inadequate dispute resolution mechanisms further compound delays and increase costs.

Despite these challenges, the way forward presents a compelling opportunity for transformation. A comprehensive revision of the existing transit treaty is urgently needed—one that ensures equitable rights, removes monopolistic practices, and promotes greater participation of Nepal's private sector in logistics and rail freight operations.

Establishing joint dispute resolution systems and improving cross-border coordination through single-window customs and shared infrastructure planning would significantly boost efficiency.

Nepal must also be granted the autonomy to choose its transit routes, shipping lines, and port preferences, including inland waterways.

In the broader context, India's support in addressing these transit inefficiencies not only benefits Nepal but aligns with its own subregional connectivity goals under initiatives like BBIN (Bangladesh, Bhutan, India, Nepal). By resolving longstanding transit issues and cultivating a spirit of partnership, India and Nepal can convert logistical roadblocks into corridors of shared prosperity and regional integration.

The article was written by Rajan Sharma, former President of the Nepal Freight Forwarders Association (NEFFA).

Sustainability is a competitive differentiator

In this interview **Aashish Agrawal , Head, Cold Chain and Healthcare Sales – South Asia, A.P. Moller – Maersk** explains how cold chain logistics industry in India is experiencing rapid transformation, driven by technology adoption and a focus on sustainability.

How do you see the cold chain logistics industry evolving in India over the next five years, particularly in terms of technology adoption and sustainability practices?

The cold chain logistics industry in India is poised for transformative growth over the next five years, driven by significant technological advancements and sustainability innovations. At Maersk, we're seeing increased demand for end-to-end visibility that extends well beyond traditional sea voyage tracking. Our development focus is on solutions that provide comprehensive visibility across the entire supply chain, particularly enhancing the tracking of inland container movements and monitoring critical parameters within the cold chain itself.

The fresh produce sector presents exciting opportunities as Indian exporters actively explore new international markets. These emerging trade lanes often require specialised solutions like controlled atmosphere containers, and we're collaborating closely with customers to develop tailored approaches that can unlock these valuable new market opportunities.

Sustainability is becoming a competitive differentiator in cold chain logistics. We're proud to partner with forward-thinking companies on green fuel initiatives, having already secured our first customer in this space. Additionally, we see tremendous potential in rail transportation for refrigerated cargo as a sustainable alternative that simultaneously reduces logistics costs and carbon footprint.

Companies that fail to embrace these technological and sustainability advances risk being left behind as the industry rapidly evolves toward more connected, efficient, and environmentally responsible cold chain solutions.

Could you elaborate on the advanced reefer facilities offered by A.P. Moller-Maersk in India, particularly in terms of their capabilities for maintaining temperature-sensitive cargo and ensuring end-to-end cold chain integrity?

A.P. Moller-Maersk in India offers advanced reefer facilities for temperature-sensitive cargo and end-to-end cold chain integrity. With 80 per cent of its cold chain logistics fleet compliant with Reef Container Monitoring (RCM), the company ensures the efficacy and safety of medicines throughout transportation. RCM feeds essential data into the Captain Peter application, a digital visibility assistant that allows customers to oversee their cargo conditions. The Captain Peter system operates under a specific access structure, with primary access for the Price Owner of a shipment.

What are the key strategies A.P. Moller-Maersk is implementing to expand its cold chain logistics and healthcare business in India?

The healthcare industry has shown strong interest in our integrated Pharma Cold Chain management solution, which includes Hypercare as a critical component. What resonates most with our customers is the enhanced temperature integrity we can ensure through our end-to-end asset ownership. This is particularly crucial for maintaining product quality and, ultimately, patient safety in the case of pharmaceuticals. Because of these capabilities, we have strengthened our commitment to our customers and thus deliver value to their supply chains.

The rise of hyper local tech-driven cold chains

In India's rapidly evolving air cargo sector, reliable cold-chain logistics are vital for industries such as pharmaceuticals. **Sreenivas Rao Nandigam, Senior VP – Head Global Supply Chain, Sun Pharmaceutical Industries,** shares insights on leveraging air cargo to safeguard product integrity, accelerate deliveries, and meet stringent regulatory demands worldwide.

With AI, blockchain, and automation advancing rapidly, what do you foresee as the biggest trends shaping the future of pharmaceutical air and cold chain management?

Technology is the disruptive force. AI, blockchain and automation together form a powerful trio. As IoT sensors proliferate, AI will analyse that real-time data to predict route deviations or initiate corrective steps, cutting temperature-related waste by up to 30 per cent. Blockchain's decentralized and immutable ledger will guarantee end-to-end traceability, stamping out counterfeits and easing GDP-compliance audits. It strengthens compliance with standards like GDP, enables smart contracts, and supports sustainable packaging innovations—a market projected to reach $125 billion by 2026. Meanwhile, warehouse automation and robots in refrigerated hubs, will slash picking errors and energy use while speeding up processes. The pharma warehouse automation market is set to exceed $8.2 billion by 2027, driven by robotics in temperature-controlled environments. To me, the imperative is clear: build a technology roadmap today so your cold chain becomes intelligent, resilient and cost-efficient tomorrow.

Global and local regulations keep tightening. How should companies stay ahead of compliance?

Regulations (from the EU's GDP guidelines to the US DSCSA and India's new data-logging mandates) demand unit-level traceability, digital records and airtight temperature control. You can't remain reactive. You must embed compliance in every process. Start by deploying IoT-powered temperature and humidity monitors, backed by cloud-based record-keeping and blockchain for tamper-proof audit trails. Harmonise global SOPs yet allow local customization. Conduct frequent internal audits, and use AI-driven training modules so every handler knows the latest rules. In my view, firms that invest in a holistic compliance framework now will avoid disruptions and secure uninterrupted market access.

Are there international cold-chain models India should emulate?

The EU's integrated cold chain, with real-time temperature monitoring, minimizes deviations. India could adopt similar practices for rural distribution. Japan's hyper-cold chain model, using GDP-trained partners for last-mile delivery, suits Tier 2/3 cities. Switzerland's Skycell containers, ensuring 99.9 per cent temperature compliance via telemetry, could safeguard high-value biologics. The US emphasis on warehouse automation and IoT-driven visibility offers a blueprint for handling volume surges. Indian operators should invest in real-time monitoring, forge sustainable partnerships, and tailor global models to local realities.

E-commerce and direct-to-patient models demand speed and flexibility. How is the pharmaceutical air and cold chain adapting?

Dark-store micro-fulfillment is emerging fast. These refrigerated nodes, tied to a central warehouse, reduce last-mile cost by about 31 per cent and extend service radii beyond 3 km. Temperature-controlled vehicles, advanced passive packaging and real-time route-optimisation platforms are becoming standard. We're building decentralised networks with automated inventory replenishment so you can deliver a temperature-sensitive drug as swiftly as a book. In short, cold chains are becoming hyper-local, technology-driven and customer-centric without compromising safety or compliance.

With rising global temperatures and shifting regulations, what remains the biggest challenge?

Infrastructure gaps and training shortfalls top the list. Many regions still lack reliable refrigerated storage or vehicles, and workforce turnover makes consistent SOP adherence difficult. Legacy packaging materials are ill-suited to erratic weather, yet greener alternatives carry higher costs. And while regulators demand 24/7 monitoring and traceability, designing cost-effective solutions for diverse geographies is still a work in progress. My advice is combine digital investments (IoT, analytics, automation) with continuous training and sustainable packaging strategies. That holistic approach is the only way to keep your cold chain robust, compliant and future-ready.

What is powering the next leap in cold chain?

With global supply chains becoming more temperature-sensitive than ever, the cold chain logistics sector is seeing unprecedented growth. In this exclusive interview, **Gubba Kiran, CEO, Gubba Logistics,** shares his insights on regional trends, industry drivers, and the company's forward-thinking strategies.

Which regions or industries are witnessing significant expansion in cold chain facilities, and what are the primary forces behind this growth?

Several regions are rapidly scaling their cold chain capabilities:

- In the Asia-Pacific, India is leading investments in pharmaceutical cold storage, vaccine logistics, and perishable food exports. China is expanding to meet e-commerce-driven demand for fresh food, while Southeast Asia is upgrading infrastructure for regional food trade.
- MENA countries like the UAE and Saudi Arabia are investing in cold chains to support food security and pharmaceutical imports, with Dubai emerging as a central cold logistics hub between East and West.
- North America is expanding its cold storage footprint due to rising demand for biologics, frozen foods, and rapid grocery delivery. Automation and warehouse robotics are key drivers here.
- Latin America is boosting cold storage near ports in countries like Brazil and Mexico to support high-value agrifood exports like fruits and seafood.

The main forces behind this expansion include:

- A boom in perishable exports and food e-commerce
- Growing demand for vaccines, biologics, and cell therapies
- Tighter regulatory compliance on temperature-sensitive goods
- Incentives like FDI support and infrastructure subsidies

What are the key factors driving the growth of cold chain facilities in the next 1–3 years?

Three core elements will shape growth in the near term:

- Temperature integrity – Ensuring consistent and reliable thermal conditions end-to-end.
- Inventory management – Enhancing real-time tracking and accuracy.
- Quality systems – Strengthening compliance and safety across sectors like pharma and food.

What initiatives is Gubba Logistics currently undertaking in the cold storage sector, and what are its strategic plans for future development?

One of our key initiatives is the implementation of GPRS-enabled tracking systems across our cold storage operations. This technology allows for real-time monitoring of temperature and location, ensuring end-to-end visibility and control over product integrity.

By integrating GPRS into our facilities and transport systems, we are enhancing transparency, improving compliance, and reducing risks associated with temperature excursions. Looking ahead, we plan to expand GPRS coverage across all storage units and distribution points, making it a core part of our digital cold chain strategy.

What strategies and innovations are essential for ensuring sustainable growth in the cold storage facilities industry?

Sustainable growth in the cold storage industry relies heavily on infrastructure, automation, and adaptive systems. Our focus areas include:

- Automated Storage and Retrieval Systems (ASRS) – enabling vertical optimization, faster turnaround, and minimized human error.
- Radio shuttle technology – facilitating high-density storage and automated pallet movement within racking systems.
- Modern Material Handling Equipment (MHE) – improving operational speed, safety, and energy efficiency.
- Smart racking systems – allowing more flexible and space-efficient storage layouts.

By adopting these innovations, cold storage facilities can scale efficiently, reduce environmental impact, and maintain consistency in temperature-sensitive operations. The future is e-warehouse driven—automated, scalable, and built for compliance, sustainability, and speed.

Leasing Stalls, Shipper-owned Tanks Rebound

The International Tank Container Organisation (ITCO) released its Global Tank Container Fleet Survey for 2025. The report indicates that while the global tank container fleet has expanded, the pace of this growth has diminished.

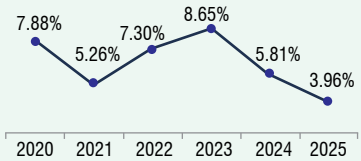
At the start of the year, the survey estimates that the fleet experienced a growth rate of 3.96 per cent, reaching a total of 882,023 tanks, compared to 848,400 in 2024.

As illustrated in Chart A1 below, the robust growth rate observed since 2021 has been succeeded by a gradual decline over the past two years, dropping from 5.81 per cent to 3.96 per cent. This slowdown can be attributed to the downturn in the global chemical sector. This trend is notably evident in new tank container manufacturing (Chart A2), alongside the substantial number of new tank containers that have been deployed since 2022 and 2023.

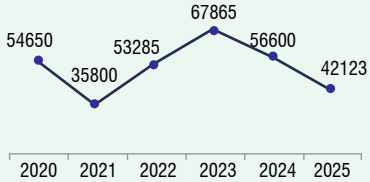
Major tank container operators and leasing companies continue to dominate the global industry. According to the survey data, both operators' and lessors' fleets are still experiencing growth (Chart A3), albeit at a slower pace. Specifically, the growth of lessors' fleets has been marginal and nearly stagnant. In contrast, the total fleet owned and leased by shippers and other entities has exhibited a different trend in recent years. Following a surge in 2022, this segment saw a decline over the next two years, but in 2024, it rebounded to levels comparable to those of 2022 (Chart A4).

The gathered data reveals that the top 10 operators control over 301,750 tanks, accounting for nearly 50 per cent of the global tank container fleet, which totals 619,741 tanks. Leading the pack is the British company Stolt Tank Containers, which holds 52,200 units and has experienced a 2.6 per cent increase compared to the previous year. In contrast, the German Hoyer Group has seen a slight decrease of 0.2 per cent in its fleet size. Newport and China Railway Logistics, ranked 3rd and 5th respectively, reported no changes in their quantities. Similarly, Bulkhaul and Intermodal Tank Transport, in 7th and 9th places,

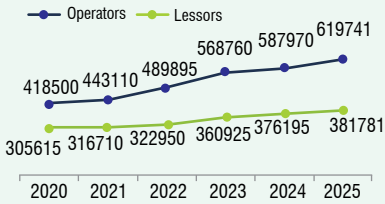
A1: Annual growth in quantities (global tank containers)



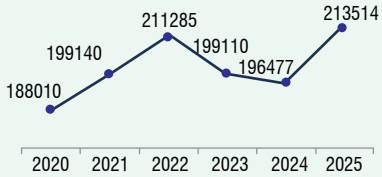
A2: New tank containers)



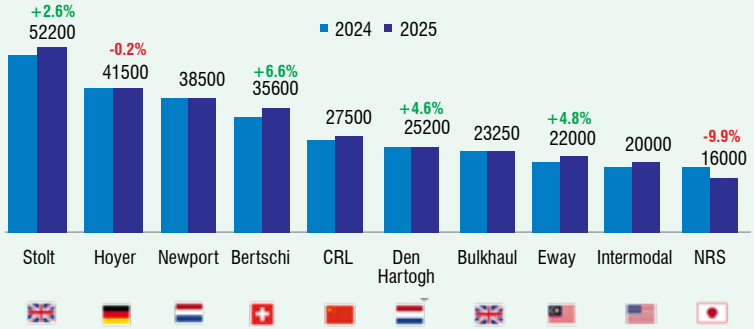
A3: Operators and lessons fleet



A4: Owned and leased (shipper and others

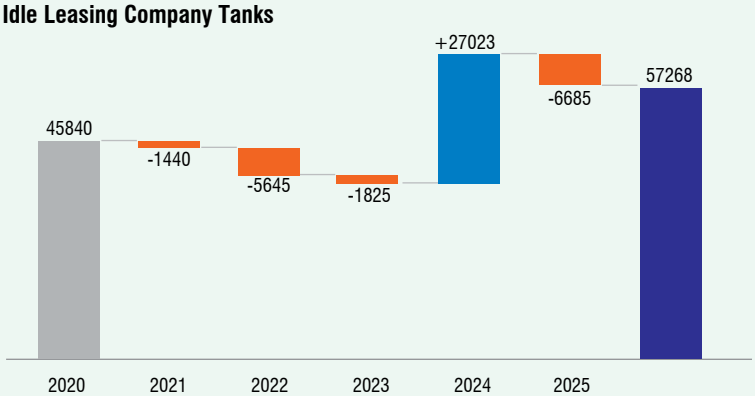


Top 10 Tank Container Operators, 2025



Top 10 Tank Container Lessors, 2025

Idle Leasing Company Tanks



also showed no variation. The Swiss company Bertschi Group, ranked 4th, achieved the highest growth among the top 10 with an increase of 6.6 per cent. Both Den Hartogh and Eway reported approximately 5% growth in their volumes. Despite a decline of about 10 per cent, NRS Ocean Logistics, which focuses on sustainability, has managed to retain its 10th position.

The top 10 lessors control a total of 322,733 tanks, which represents approximately 84 per cent of the overall leasing fleet of 381,781 tanks. The American company EXSIF Worldwide maintains its position as the leader, benefiting from a significant advantage in fleet size. The French firm Eurotainer has not experienced any changes in its ranking or volume. Similarly, Singaporean companies Seaco Global and Raffles Lease, ranked 3rd and 5th respectively, also reported no changes. In 4th place, CS Leasing demonstrated a more aggressive approach with a growth rate of 6.2 per cent. Dutch companies Trifleet Leasing and Peacock Container, occupying the 6th and 7th positions, reported growth rates of 3.1 per cent and 4.9 per cent, respectively. Triton International is the only company among the top 10 lessors to report a decline, with a negative growth of 5.9 per cent. In contrast, American International Equipment Leasing achieved an impressive annual growth rate of 7%, marking the highest increase among the top 10.

At the start of 2025, the number of idle tank containers within the lessors' fleet reached 57,268 units. In this expanding industry, the expectation is that the number of idle units will continue to decline. Using the figures from 2020 as a baseline, the number of idle units had been steadily decreasing until 2023. However, following the pandemic, fluctuations in chemical demand and various geopolitical events led to a significant increase in idle tank containers in 2024.

*The article was written by LI Xu, Adjunct Associate Professor, Senior Scientist, Institute of Materials Research and Engineering, The Agency for Science, Technology and Research (A*STAR), Department of Food Science & Technology.*

Mega dry dock with global ambitions

Home to India's largest drydock, one of the largest offshore yard and fabrication facilities, SDHI is strategically positioned to meet growing demand for shipbuilding and heavy engineering infrastructure, say's **Vivek Merchant, Director, Swan Defence and Heavy Industry Limited (SDHI).**

SDHI boasts the largest dry dock in India and other advanced facilities. How has this infrastructure enabled the shipyard to take on complex projects?

The shipyard of Swan Defence & Heavy Industries (SDHI) is home to India's largest dry dock, measuring 662 m in length and 65 m width, capable of accommodating vessels up to 400,000 DWT. This makes it one of the largest dry docks in the world. Our shipyard is designed to handle diverse range of vessels, from VLCC to smaller vessels such OSVs and tugs. Our state-of-the-art fabrication facility and infrastructure enables the shipyard to efficiently execute complex shipbuilding and ship repair/maintenance projects.

Aligned with our vision to establish SDHI as a leading global player in ship building and ship repair within the Asia-Pacific region, we are investing heavily in modernising our facilities by integrating advanced automation and digital twin technologies, as well as expanding our fabrication capabilities to support specialised offshore engineering projects.

Additionally, our strategic location coupled with world-class infrastructure guarantees smooth service for both domestic & foreign clients, strengthening the region's position as a key

marine hub.

As the first private Indian shipyard, what challenges and opportunities do you encounter in this segment? How do you plan to expand your contributions to India's defence capabilities?

As the first private Indian shipyard to construct warships for the Ministry of Defence, we recognize the strong foundation laid by the previous ownership. Moving forward, we anticipate both challenges and opportunities in expanding our role within this segment. Ensuring seamless continuity while upgrading infrastructure and adopting advanced technologies will be critical. Additionally, meeting the stringent quality, security, and compliance requirements of defence contracts remain a key focus.

We plan to build upon this legacy by enhancing our production capabilities, investing in cutting-edge shipbuilding technologies, and strengthening our collaborations with global defence partners. Our aim is to support India's self-reliance in naval defence by developing next-generation warships, incorporating advancements in automation, stealth, and sustainable maritime solutions.

To expand our contributions, we will explore opportunities to manufacture a wider range of naval vessels, establish strategic partnerships for technology transfer, and invest in skill development. By aligning with the Make in India and Aatmanirbhar Bharat initiatives, we aim to play a key role in strengthening India's maritime defence capabilities in the years to come.

With rapid advancements in digital twin technology, automation, and materials science, how does SDHI integrate these innovations to stay competitive?

Technology is a key differentiator in today's shipbuilding industry, at SDHI, we are actively exploring digital twin technology for real-time monitoring and optimization of ship building. Our new generation of automation-driven manufacturing accelerates production timelines, maximises operations efficiency, reduces turnaround times, and improves efficiency. Additionally, we are also exploring the use of advanced materials such as lightweight composites and high-strength steel to enhance fuel efficiency and durability. With these innovations, India's shipbuilding industry is poised to lead the future of next-generation maritime technology, shaping the global commercial and defence naval landscape. By combining these technologies, we hope to maintain the highest standards of sustainability and quality while continuing to lead the commercial and naval shipbuilding markets.

How is SDHI addressing global environmental concerns and transitioning toward sustainable shipbuilding?

Sustainability is at the core of the Swan Defence and Heavy Industries (SDHI) shipbuilding strategy. In response to the global maritime industry's shift towards sustainability, we are prioritizing the development of eco-friendly ships equipped with hybrid propulsion systems. Our shipyard is committed to follow green manufacturing practices, including optimised energy consumption, waste reduction, and emission control measures. Apart from focusing on building eco-friendly ships, we are actively exploring next-generation propulsion technologies and alternative fuels such as methanol and ammonia. Our ultimate goal is put India at the forefront of green shipbuilding and spur innovation for a cleaner maritime future while maintaining a laser-like focus on global decarbonisation goals.

"With unmatched scale and technical capabilities, SDHI stands apart as the only Indian shipyard with a dedicated offshore yard capable of fabricating and assembling up to 10,000 tons of structures monthly. Its 662m x 65m dry dock accommodates vessels up to 400,000 DWT, making it one of the largest and advanced shipyards in the world."

VIVEK MERCHANT
DIRECTOR, SWAN DEFENCE AND HEAVY INDUSTRIES LIMITED.

Given the shipyard's history of delivering diverse vessels, how do you adapt to changing market demands for commercial and naval vessels?

The dynamics of the shipbuilding industry, both commercial and defence, are undergoing rapid transformation, driven by advancements in next-generation technologies such as automation and artificial intelligence, as well as increasingly stringent environmental regulations. The development of alternative-fuelled engines is further accelerating this transformation.

To stay ahead and to remain relevant in the market, we have embraced a modular approach to shipbuilding, allowing us to tailor ship designs to precise client needs, whether for commercial shipping, offshore energy, or defence applications. The dry dock capacity gives us an edge and helps us cater to both large and small vessels. For vessels up to 600 DWT, we can construct them on the pre-erection berth (PEB) and launch them directly using the Goliath Cranes. Besides this, we also keep an eye on global trends such as the emerging demand for larger, more fuel-efficient ships and specialised offshore support ships. By leveraging our expertise, infrastructure, and skilled workforce, we ensure that our shipyard remains versatile and responsive to market needs.

How fuel choices are steering marine engine development

In a maritime landscape increasingly defined by climate imperatives, tightening regulations, and the pursuit of operational efficiency, the question of "which fuel to use?" has become both urgent and complex.

No longer dictated by a one-size-fits-all solution like heavy fuel oil, today's fuel decisions are pivotal to newbuilding strategies, retrofit investments, and engine development. At the heart of this multifaceted transformation is the recognition that the marine industry must adopt a flexible, multi-fuel future.

This evolution is reshaping not only vessel designs but also the very engines that power them. Engine manufacturers like MAN Energy Solutions are at the forefront, designing propulsion systems tailored to meet varying fuel capabilities—from LNG and methanol to ammonia. Understanding how fuel choices are made today requires a deep dive into technical feasibility, fuel availability, regulatory compliance, safety considerations, and long-term cost effectiveness.

The Complexity of fuel choices

According to Dr. Uwe Lauber, CEO of MAN Energy Solutions, the shipping industry is entering an era of complexity, where "a one-size-fits-all strategy" is no longer viable. Owners, operators, and shipbuilders must now weigh a matrix of factors to determine the best fuel fit for their fleet and operations.

Key influencing factors include:

- Fuel availability and supply infrastructure: Some fuels like LNG benefit from an established global supply chain. Others, like e-methanol and green ammonia, are still in the ramp-up phase.
- Safety considerations: Particularly crucial for ammonia due to its toxicity and handling risks.
- Emission targets and regulatory pressures: The IMO's goal to reduce GHG emissions by 50 per cent by 2050 is accelerating move toward lower- and zero-carbon fuels.
- Economic feasibility: CAPEX and OPEX of dual-fuel engines, retrofit costs, and fuel prices over time.
- Vessel type and operational profile: Bulk carriers, containerships, cruise ships, and offshore vessels each have distinct fuel demands based on range, engine load, and port call frequency.

Methanol: The medium-term front runner

Methanol has emerged as a highly promising fuel option for the medium term. With over 180 methanol dual-fuel engine orders placed in just the last 18 months and more than 500,000 operating hours logged, the fuel is transitioning rapidly from concept to commercial reality.

Why methanol?

- Proven Technology: MAN's methanol engine technology has matured quickly, with successful deployments on methanol carriers and, notably, the launch of the Laura Maersk, the world's first large containership running on green methanol.
- Simpler Retrofit Pathway: Compared to ammonia or LNG, methanol is easier to retrofit into existing vessel designs.
- Lower Emissions Profile: Methanol significantly cuts SOx, NOx, and particulate matter. When derived from biomass or renewable electricity, it also offers a path to carbon neutrality.
- Safer Handling: While flammable, methanol is less toxic and easier to store than ammonia.

Methanol's primary limitation today lies in the supply side. The demand for green methanol is outpacing current production capabilities, creating a gap that the industry must bridge through investments in fuel production capacity.

LNG: Mature but transitional

Despite a slowdown in new LNG dual-fuel orders, LNG still maintains a strategic role in decarbonisation. As Dr. Lauber notes, "we have the infrastructure available for LNG," which offers an immediate 20% reduction in CO_2 emissions when switching from heavy fuel oil.

LNG engines have been widely adopted in the past decade, especially for large containerships and LNG carriers. However, concerns about methane slip—the unburned methane released during combustion—have somewhat tarnished its image as a "clean fuel." MAN addresses this issue through high-pressure injection systems that can significantly reduce methane slip, albeit with increased capital expenditure.

The long-term viability of LNG will likely depend on the availability of bio-LNG or synthetic LNG to reduce lifecycle emissions. Until then, it serves as a crucial "bridge fuel" in the transition to zero-carbon options.

Ammonia: The long-term contender

Ammonia, long hailed as a zero-carbon fuel with great promise, is now making significant strides in engine development. However, its widespread use remains a few years away due to critical safety, regulatory, and technical challenges.

Progress in ammonia engine development

MAN Energy Solutions' ammonia project reached a landmark milestone in early 2025 when its prototype ME-LGIA (liquid gas injection ammonia) engine successfully ran at 100% load. The company expects to deliver its first operational ammonia dual-fuel engine by Q1 2026, to be installed on a 93,000 cu m Very Large Ammonia Carrier (VLAC) being built by HD Hyundai for Eastern Pacific Shipping.

These achievements follow a year of successful single-cylinder ammonia testing that demonstrated favorable emissions and performance characteristics. With Mitsui OSK Lines onboard as a launch customer and WinGD racing to deliver its own ammonia dual-fuel engines by late 2025, the competition is heating up to establish ammonia as a mainstream marine fuel.

Why ammonia matters

- Zero carbon emissions when produced using green hydrogen and renewable energy.
- High energy density (by volume) compared to hydrogen.
- Existing industrial handling infrastructure due to its use in fertilizer and chemical sectors.

But challenges remain:

- Safety concerns due to its high toxicity and corrosiveness.
- Limited regulatory framework for onboard ammonia use.
- Complex retrofit demands: Retrofitting a ship to run on ammonia is "almost like building a new ship," says Dr. Lauber.

He predicts large-scale adoption post-2028, when fuel supply, engine technology, and safety protocols are expected to mature in parallel.

Newbuild vs Retrofit vs Fuel-ready

The decision to install a dual-fuel engine now, opt for a "fuel-ready" design, or wait for a future retrofit depends on strategic vision, ship type, and budget.

- Newbuild Dual-Fuel: Best for shipowners ready to operate on alternative fuels from day one. Allows optimal system integration but requires certainty on fuel availability.
- Fuel-Ready Design: Offers flexibility by completing 40%–50% of the system work during construction. Particularly effective for methanol-readiness, where future retrofitting can be streamlined.
- Retrofit: While interest is high, only 3,000 to 5,000 ships globally are viable candidates based on age, engine control systems, and vessel size. MAN expects to complete 50 retrofits annually, scaling up to 70–80 as workforce capacity improves.

The turbocharger revolution: Enabling efficiency

To support these evolving fuel strategies, MAN's PBST turbochargers are helping engines achieve peak efficiency across a wide range of fuel types. From single-stage high-pressure systems like the TCP series to smart, sensor-enabled turbochargers equipped with PrimeServ Assist, the technology is evolving fast.

These turbochargers are not merely accessories—they are enablers of low-emission, high-performance marine propulsion. Optimised for methanol and ammonia, they help compensate for challenges like lower calorific values and corrosive combustion byproducts.

Looking ahead

The pathway to marine decarbonisation is not linear. Instead, it is shaped by a patchwork of fuels, technologies, and timelines. While methanol leads today, LNG provides a robust transitional base, and ammonia promises a zero-carbon future.

Marine engine development must therefore remain agile, modular, and ready for adaptation. As Dr. Lauber aptly puts it, "The future will be complex," but with strategic foresight and investment in fuel-flexible propulsion technologies, the shipping industry can navigate this complexity—and thrive within it.

Fuel choice is no longer just a technical decision—it is a strategic one. Whether shipowners invest in dual-fuel engines, opt for retrofits, or prepare for ammonia-readiness, success will depend on aligning today's actions with tomorrow's energy landscape.

According to Dr. Uwe Lauber, CEO of MAN Energy Solutions, the shipping industry is entering an era of complexity, where "a one-size-fits-all strategy" is no longer viable. Owners, operators, and shipbuilders must now weigh a matrix of factors to determine the best fuel fit for their fleet and operations.

Electrifying the Ports:

Liebherr unveils two material handlers

Liebherr is constantly developing its machines through continuous innovations, such as different drive concepts or intelligent assistance systems. At this year's Bauma, Liebherr is presenting the LH 40 M Port E and LH 60 M High Rise Port E, two machines with an electric drive concept.

At Bauma 2025 in Munich, Liebherr has raised the bar for sustainable port operations with the launch of two cutting-edge electric material handlers—the LH 40 M Port E and LH 60 M High Rise Port E. Specifically engineered for efficient bulk and general cargo handling in port environments, both machines represent a significant stride towards low-emission, energy-efficient maritime logistics.

The LH 60 M High Rise Port E is a powerhouse designed to tackle demanding port workloads. With an impressive reach of over 23 meters, a system output of 312 kW, and a robust 180 kW electric motor, this machine delivers exceptional lifting performance with zero emissions and low noise. Its operating weight of up to 80,300 kg ensures maximum stability even under extreme conditions. A key feature is the infinitely height-adjustable cab, which can be elevated by up to six meters, offering operators optimal visibility over vessels and cargo areas. The machine also includes a tower elevation of two metres between the upper and lower carriage, improving safety and ergonomic comfort during operations.

Both machines reflect Liebherr's commitment to intelligent, energy-efficient solutions for modern port operations.

Its modular design allows for a variety of attachments—including orange peel grabs (0.90–3.00 m^3), clamshell grabs (3.00–8.00 m^3), and timber grabs (1.30–3.60 m^2)—making it highly adaptable across cargo types. A self-winding cable system further enhances its flexibility and ease of use.

Complementing it is the LH 40 M Port E, a 43-tonne material handler powered by a 145 kW electric motor. Ideal for dynamic and powerful loading tasks, it incorporates an auxiliary electric motor for secondary systems, optimizing energy use. The machine features a port boom of 10.6 meters and a stick of 7.7 meters, offering extended reach and lifting versatility. Like its larger counterpart, it's available with either a trailing cable or automatic cable winding system.

Both machines reflect Liebherr's commitment to intelligent, energy-efficient solutions for modern port operations. With rising environmental regulations and an industry-wide push for decarbonization, these electric handlers mark a crucial evolution in cargo handling equipment—delivering performance, sustainability, and cost-efficiency.

Liebherr's showcase at Bauma, including a wide range of grab attachments, reaffirms its leadership in port handling innovation. For operators looking to future-proof their terminals, the LH 40 M and LH 60 M electric handlers are game-changing additions to the fleet.

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