



TALK

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MONTHLY NEWSLETTER

WAI SPOTLIGHT

WAI & DPIIT unveil handbook on warehousing standards

The Warehousing Association of India (WAI), jointly with Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry launched the second edition of e-Handbook on 'Warehousing Standards', a milestone for India's warehousing and logistics ecosystem. Pankaj Kumar, Joint Secretary, Logistics, DPIIT, officially launched the handbook. Dr. Jivisha Joshi Gangopadhyay, Deputy Secretary, Logistics, DPIIT and Sagar Kadu, Director, Logistics, DPIIT, graced the

occasion too. From WAI, Manu Raj Bhalla, President and Mohit Kapoor, Chair, Events and Projects addressed the audience, reaffirming WAI's commitment to enable world-class, smart and sustainable warehousing practices across India.

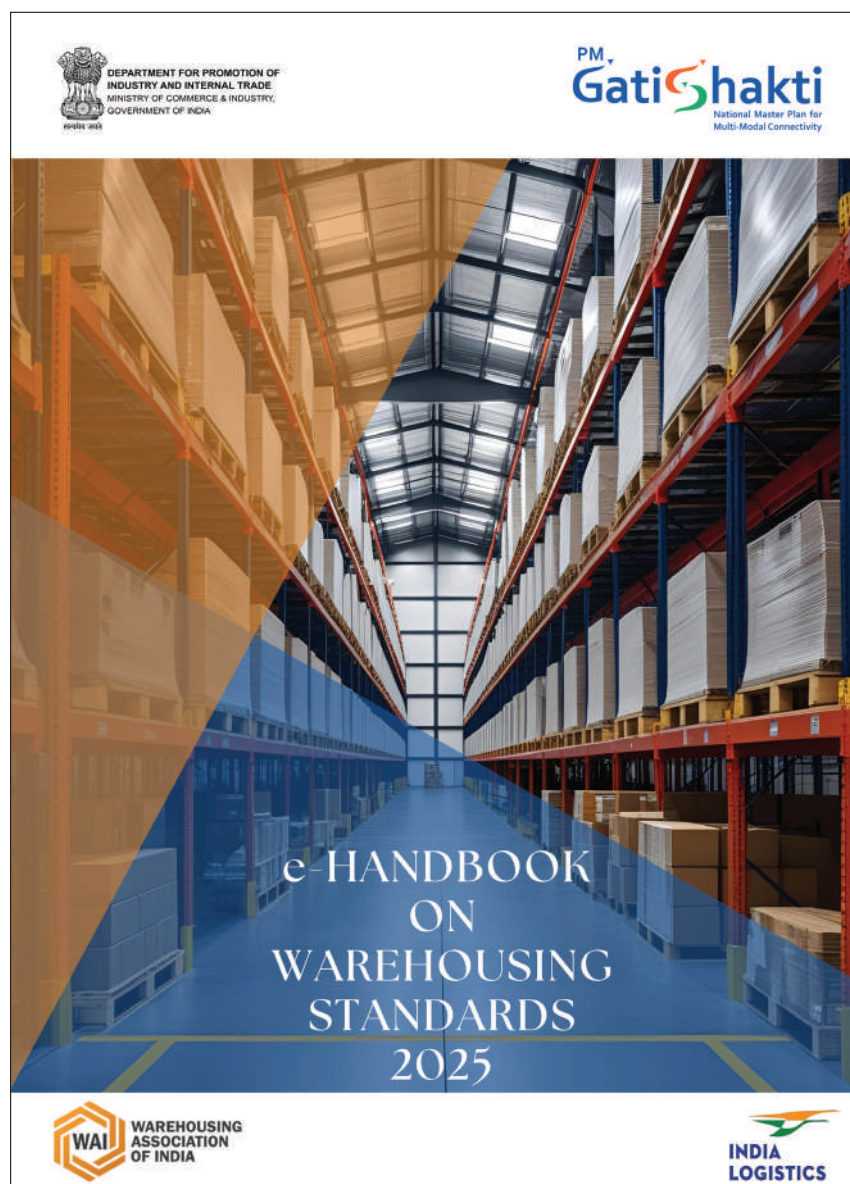
Why the handbook matters:

- It brings standardisation to fragmented warehousing practices
- Aligns with the National Logistics Policy
- Promotes digitisation, automation & interoperability
- Guides public and private stakeholders
- Enhances sustainability, safety and ROI across warehousing value chain. The document is a step towards intelligent and globally competitive warehousing infrastructure in India.

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E-Handbook on Warehousing Standards



The e-Handbook on Warehousing Standards is a collaborative effort developed with input from industry experts, stakeholders and regulatory bodies. It provides a comprehensive overview of national and international standards, best practices and emerging technologies impacting the warehousing sector. Recognising the critical role of warehousing in India's logistics ecosystem, the Ministry of Commerce and Industry, through its Logistics Division, initiated this handbook to address the need for standardised warehousing practices.

By consolidating existing standards and incorporating industry recommendations, the handbook aims to enhance efficiency, reduce costs and facilitate global integration within the warehousing industry.

This e-Handbook draws on standards issued by the Bureau of Indian Standards (BIS) and the Warehousing Development and Regulatory Authority (WDRA) and incorporates recommended practices where standards are lacking. It serves as a valuable resource for industry professionals to align their operations with national and global benchmarks, ultimately contributing to the growth and competitiveness of the Indian warehousing sector.

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This e-Handbook serves as a valuable resource for industry professionals to align their operations with national and global benchmarks

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MESSAGE

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GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY
DEPTT. FOR PROMOTION OF INDUSTRY
AND INTERNAL TRADE



FOREWORD


The modernisation of warehousing infrastructure is central to India's vision of developing a globally competitive logistics ecosystem. As supply chains evolve to become more integrated, data-driven, and customer-focused, the demand for robust, standardised, and future-ready warehousing solutions is being felt across every sector of the economy.

It is in this context DPIIT is introducing the 2025 edition of the *e-Handbook on Warehousing Standards*. This updated edition is the result of close collaboration among government institutions, industry stakeholders, technical bodies, and subject matter experts. It embodies our shared commitment to building logistics infrastructure that meets global benchmarks, while being rooted in the Indian context.

Since the release of the previous edition, we have witnessed substantial momentum in the implementation of the National Logistics Policy and the operationalisation of the PM GatiShakti framework. DPIIT along with Warehousing Association of India (WAI) has worked in close coordination with Central Ministries, State Governments, and private players to ensure coherent and efficient execution. The warehousing sector - both as a standalone industry and as a key enabler for manufacturing, retail, and e-commerce - has been at the heart of these efforts.

This handbook offers updated technical guidance on critical aspects such as warehouse design, palletization, racking systems, safety protocols, and automation. It also introduces new policy focus areas, showcases practical case studies, and outlines sustainability standards to support effective implementation on the ground. The document is intended to be accessible and actionable for a wide array of stakeholders - from state-level planning bodies and regulators to infrastructure developers and logistics service providers.

I am confident that this revised edition will serve as a practical reference and planning tool, contributing meaningfully to our collective goal of reducing logistics costs, enhancing service quality, and building world-class logistics infrastructure across the country.


(Amardeep S. Bhatia)
23.06.2025

WAI SPOTLIGHT

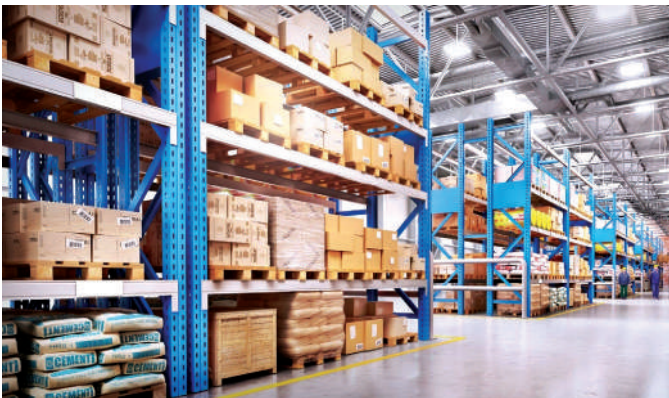
WAI showcases industry leadership at IWS 2025



Where is intelligent capital being allocated?

WAI is developing WGRS along with ADB to enhance global performance of India's logistics landscape. Developing an ecosystem of quality warehouses is vital to achieve this aim. Rating system will play a significant role in streamlining logistics operations and ensuring higher standards of service.

The warehousing sector is propelled by rapid industrial expansion, growth of e-commerce and government-led infrastructure projects. As investors seek high-yield opportunities, this sector has garnered attention from private equity firms, institutional investors, and logistics companies. This prompts an inquiry into the direction of intelligent capital within India's warehousing landscape.



Surge in PE investments

The warehousing sector has experienced a significant increase in private equity investments, with logistics space absorption rising by 25 per cent year-on-year in 2024. In the first half of 2024, warehousing accounted for 66 per cent of total PE investments across various asset classes, underscored by major transactions such as US\$ 1.54 billion investment by Abu Dhabi Investment Authority and KKR in Reliance Logistics & Warehouse Holdings.

Expansion of MMLPs

Government initiatives such as PM Gati Shakti (PMGS) and National Logistics Policy (NLP) are encouraging the development of Multimodal logistics parks (MMLPs). These parks integrate road, rail, air and inland water transport, which have resulted in lower logistics costs and enhanced supply chain efficiency. Growth of e-commerce and the decentralisation of manufacturing is leading the investors to target tier II and III cities.

The rise of AI-driven automation is gaining traction, with tech-savvy investors increasingly favouring smart warehouses to streamline logistics operations

Digital twins & AI-driven optimisation

The warehousing investment landscape is undergoing a transformation due to tech advancements, particularly with introduction of digital twin technology creating virtual models of warehouses, enabling real-time simulations that improve inventory management, anticipate maintenance issues, and enhance operational efficiency. The rise of AI-driven automation is gaining traction, with tech-savvy investors increasingly favoring smart warehouses to utilise robotics, IoT and blockchain to streamline logistics operations.

Rise of last-mile & q-commerce warehousing catches investors' attention

The swift expansion of quick commerce is reshaping urban warehousing strategies. Investors are focusing on hyperlocal distribution centres facilitating same-day or 10-minute deliveries. This trend is particularly prominent in urban settings, where there is demand for micro-fulfillment centers. The firms are adopting automated warehouses to enhance last-mile logistics, making this area a target for investment.

Investors focus on green warehousing

With India's ambition to achieve net-zero by 2070, sustainability has become an element driving investments. Warehousing developers are incorporating solar energy, rainwater harvesting and energy-efficient designs to promote green logistics initiatives.



Mohit Kapoor
Chair, Projects and Events
Committee, WAI

(The views expressed are solely of the author. The publication may or may not subscribe to the same)

E-commerce & logistics: India's next growth frontier

Domestic and cross-border e-commerce propel businesses towards innovative thinking for investment in warehousing, logistics and supply chain infrastructure. This surge is transforming warehousing from a traditional storage facility into a high-tech ecosystem.



The rate of growth in Indian e-commerce industry is incredible with the market likely to reach US\$ 200 billion by 2026. Adoption of digital technologies, increased expectations from consumers and 'Make in India' sentiment has fuelled domestic and cross-border e-commerce, propelling businesses towards innovative thinking for investment in warehousing, logistics and supply chain infrastructure. This surge is transforming warehousing from a traditional storage facility into a high-tech ecosystem powered by automation, real-time data, and agile last-mile execution.

1. Domestic e-commerce: From central fulfilment to hyperlocal execution

With 80 per cent of e-commerce orders coming from tier I and II cities demanding same or next-day delivery, modern fulfillment centres must do as follows:

- Handle a wide SKU base with high inventory turnover
- Integrate WMS with real-time tracking
- Support returns processing and reverse logistics

To meet these needs, companies are investing in micro-fulfillment centres and dark stores, especially in urban clusters, ensuring faster delivery and localised inventory placement.

Firms investing in micro-fulfillment centres and dark stores, especially in urban clusters, ensuring faster delivery

2. Cross-border e-commerce: India's export push

Indian MSMEs and D2C brands are active on platforms such as Amazon, eBay and Noon. Cross-border warehousing enables their global ambitions

- Export compliant warehousing with packaging and labelling as per international standards
- Free Trade and Warehousing Zones such as JNPT, Panvel and Khurja allow duty-free storage until dispatch
- Strategic staging hubs in Dubai, Singapore, and Europe cut down delivery times and costs

This aligns with India's vision to become a global export powerhouse, boosting value-added exports from sectors such as fashion, electronics and health supplements.

3. Tech-driven logistics & fulfillment warehouse operations rapidly evolving with automation and system integrations:

- Real-time integration with Order Management Systems and shipping aggregators
- Use of AI-powered sorting, picking and packing to handle



Since India is aiming to be a US\$ 5 trillion economy, warehousing is becoming a strategic enabler, not just a backend function

- volumes of over 150,000 parcels/day in some facilities
 - Collaborations with 3PL and 4PL providers to streamline operations
- E-commerce sellers want insight into data, cost minimisation and performance SLAs from their warehousing and logistics providers.

4. Policy and infrastructure: Government-led transformation

With the NLP, ONDC initiative and Digital Export Hubs, the government is reshaping the logistics landscape:

- GST-compliant, tech-enabled warehouse networks
- Expansion in cold chain, high-value goods and return logistics
- Emphasis on green warehousing: EV-based deliveries, solar rooftops and rainwater harvesting

Warehousing operators are aligning with WAI standards to ensure safety, efficiency and sustainability.

5. National alignment: Warehousing as a pillar of India's global trade ambitions

Warehousing now plays a central role in major national agenda:

- 'Atmanirbhar Bharat' & 'Make in India': Tech-enabled and export-compliant facilities like those of Freight Systems across globe, including India, Adani, and DHL are enabling scalable MSME growth

6. Indian locations with export-compliant & tech-enabled facilities

- JNPT FTWZ (Navi Mumbai)
- Adani Logistics Parks (Pan India)
- Arshiya FTWZ (Panvel, Khurja)
- FSL facilities in major air/seaports are providing WMS facilities coupled with in-house system 'e-freight Suite' to provide real-time visibility in inventory transactions along with the VAS features such as labelling and kitting, among others

to stay ahead in fulfilling the international market fulfillment requirements.

7. PM Gati Shakti: With a ₹100 lakh crore investment plan, this initiative integrates warehouses into multimodal logistics parks and boosts connectivity between manufacturing zones and markets. As more Indian brands now go global, modern warehouses act as operational hubs to optimise reach and credibility of Indian manufacturing across borders.

Conclusion: Warehousing at centre of e-commerce success

As India is aiming to be a US\$ 5 trillion economy, warehousing is becoming a strategic enabler, not just a backend function. Its role in enhancing customer experience, boosting exports and supporting nationwide logistics connectivity is undeniable.

To stay ahead, warehouses must:

- Integrate with national logistics infrastructure
- Adopt cutting-edge technologies
- Align with sustainability goals
- Partner across the value chain—from startups to global brands

The future of global e-commerce and trade is being built in India—and its foundation is in the warehouses.



Gaurav Shandilya
Head, E-Commerce
Freight Systems Ltd

(The views expressed are solely of the author. The publication may or may not subscribe to the same)

Mega logistics hub near Varanasi-Chandauli border soon



Varanasi will get a multimodal logistics park as the city is witnessing growing investor interest that is reshaping its urban landscape and positioning it as a tier II alternative to Delhi NCR and Lucknow. Spearheaded by development of a 150-acre MMLP near the Varanasi-Chandauli border, the city is evolving into a logistics powerhouse, sparking a surge in real estate development and investor interest across important peripheral zones.

MMLP near Jewar Airport

A mega infrastructure project will be developed in Greater Noida with the launch of a land allotment scheme to establish a Multimodal Logistics Park (MMLP) in Sector Kappa 2, Dadri. This project will be developed on 174 acres land, costing ₹11,000 per sq. mt. Located near the Jewar International Airport, said Ravi Kumar NG, CEO, Greater Noida Authority, "This project is a core component of the authority's Master Plan 2041. It will address the NCR's expanding logistics needs and enhance competitiveness of industries in the global market," he said.



Mahindra unveils warehousing facility in Phaltan

Mahindra Logistics announced launch of its state-of-the-art warehousing facility in Phaltan, Maharashtra. The mega facility, spanning 3 lakh sq. ft., is now operational as a dedicated site for Cummins India to optimise their nationwide operations through consolidation of products from multiple sources into one central location.

Through this warehouse, Mahindra Logistics will strengthen Cummins India's logistic capabilities and improve supply chain efficiency, availability and visibility with an expansive integrated warehousing & distribution network. Phaltan is emerging as a key logistics and manufacturing hub and this Integrated Logistics Centre for Cummins India is located near Pune with direct access to key highways and industrial zones. Through this facility, Mahindra Logistics reinforces its commitment to provide logistics solutions and manage end-to-end supply chain for its customers, including site identification, greenfield development, and unified manufacturing and distribution operations.

As the region's advanced warehousing project, this site will support Cummins India's inbound and outbound logistics operations, warehouse management, last-mile dispatch management as well as support in agile manufacturing operations.



Panattoni expands Grade A logistics park in Hosur

Panattoni announced expansion plan for 25-acre Panattoni Park, Hosur I, in Hosur, Tamil Nadu. The Phase I of the park spanning around 11 lakh sq. ft has a built-up area of 550,000 sq. ft. The park's construction will begin in Q3 of 2025 and will be completed in Q2 of 2026. Designed as per global

standards, Panattoni Park, Hosur I will cater to a diverse mix of occupiers—from e-commerce, 3PL players, FMCG and manufacturing companies—offering scalable, high-performance infrastructure built to Grade A specifications. The development will also integrate sustainable building practices, aligned with Panattoni's global ESG commitment.



Situated 50 km from Bengaluru's Central Business District (MG Road) and 11 km from Hosur Town, Panattoni Park, Hosur I offers easy access to major transit routes. It lies only 5 km from NH44 (Bengaluru-Chennai highway), 4 km from the Satellite Town Ring Road (STRR), and 7 km from SIPCOT Phase II, enabling direct link to established industrial ecosystems and logistics corridors.

Jeena expands Bhiwandi facility to boost efficiency

Jeena and Company has expanded its storage infra at Bhiwandi, Mumbai facility. The Bhiwandi warehouse, which spans 1.10 lakh sq. ft., has a clear centre height of 50 feet and 30 feet shoulder height, providing a high-volume, scalable logistics environment. The facility design includes G+7 & G+6 heavy-duty pallet racking system and G+7 multi-tier shelving system. The warehouse also offers two forklifts, two stackers, and 14 hand pallet trollies.

Its flexible design aims to allow optimised storage space thereby, empowering sellers to boost their business. This capacity expansion includes a 20 per cent increase in storage capacity, adding 1,000 additional pallet positions through heavy duty racking. Additional 16,000 new location bins were added to manage high volume freight and expand storage capabilities.

The Bhiwandi facility features a spiral chute to handle gravity-fed material for swift movement of smaller consignments from upper floor to the ground, cancelling operative disruptions between packaging and dispatch process.





We welcome new members to WAI

Avanti Hydro Power LLP

AWH All Warehouses and Industrial Parks Private Limited

Barabazaar Transport Company Private Limited

Cold Steel Corporation

Dewas Techno Products Private Limited

Durafloor Concrete Solutions LLP

Freight Systems India

Globe Moving & Storage Company

H.A.M. Enterprises

Indelox Services Private Limited

KMRA Associates

Lynkit Solutions Private Limited

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Nayyar Packers

Precision Pyramid Private Limited

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Shivani Services

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