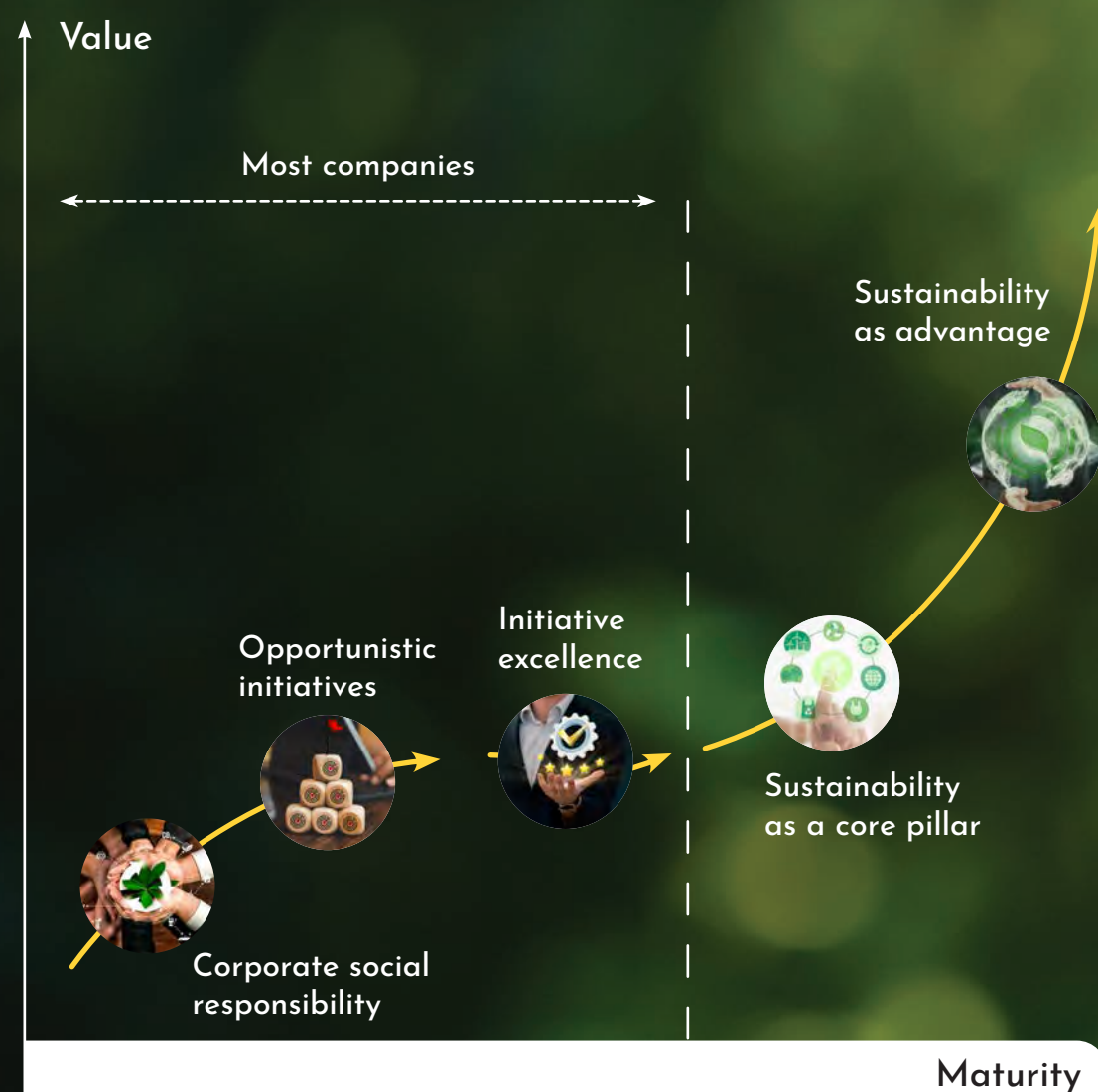


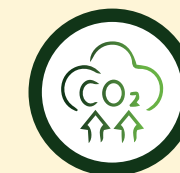
Environmental Sustainability in Logistics

Early adopters of environmental sustainability in the logistics sector stand to gain significant competitive advantages, as highlighted in BCG's Green Growth Accelerators report. These include early access to emerging green markets, stronger brand loyalty and improved regulatory readiness—critical in a sector facing increasing scrutiny over emissions. For logistics companies, embracing sustainability not only enhances operational efficiency and resilience through optimized energy and resource use, but also attracts eco-conscious clients and top talent. As the industry shifts toward zero-emission transport and circular supply chains, early movers can shape standards, influence policy and secure long-term growth in a rapidly evolving market landscape.

Now is the time to act: Early adopters will get a head start and first-mover advantage, post initial investments



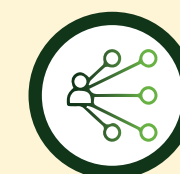
Sources: BCG analysis Green Growth Accelerators Exatiers for Green Growth and Call to Action



Lock up **low carbon supply** or create supply with material advantage



Gain **reputational value** for being the first mover in net-zero and nature positive



Lower cost of capital and **improved financing access** as investment in green businesses increases



Lower operational cost as most carbon reduction efforts consistent with cost reductions



Mitigate transition and physical **risk from climate change and ecosystem collapse** and strengthen **license to operate**



Drive **higher market valuations** with higher premium for companies with best sustainability metrics

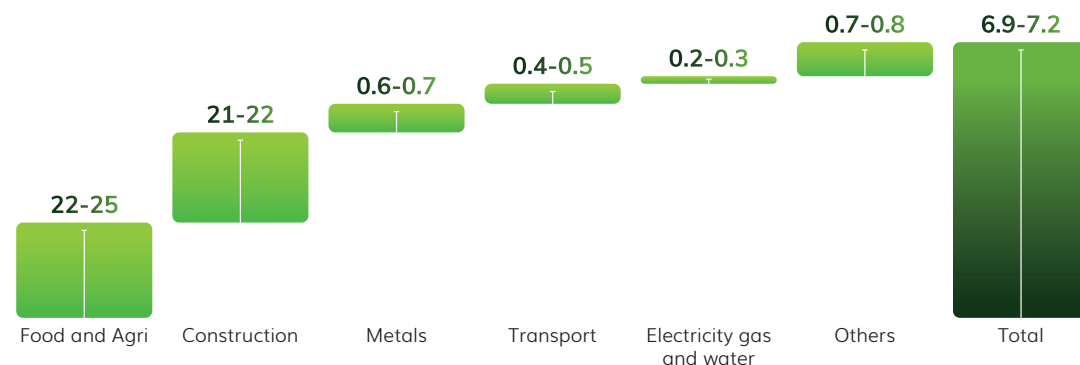
Management of Reverse logistics with more focus on EPR commitments

Reverse Logistics is a newly emerging concept out of the trade practices of e-commerce and quick commerce sector where the products for returns and exchanges have to be sourced back from the customer i.e. point of consumption through the supply chain to the point of origin i.e. the vendor. Management of reverse logistics requires efficient and timely collections in order to reduce wastages.

Adoption of circularity crucial to manage India's material consumption and 780-840 Mn Tonnes of annual waste generation

India consumes : 7 Bn tonnes of material every year →

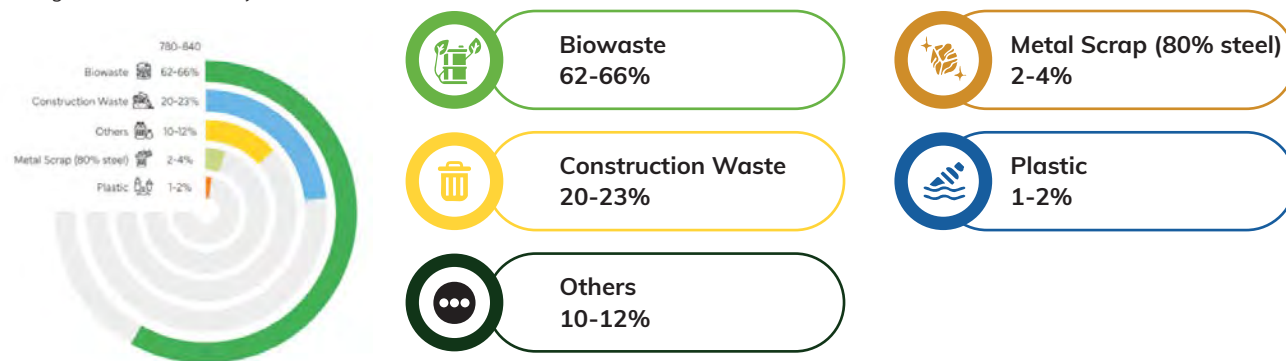
Material consumption annually (Bn)



 **Sources:** BOG-ET's *Flattening the curve*. Press search

→ generating 780-840 Mn Tonnes of waste each year

Waste generation annually (Mn)



 **Sources:** [green-growth-accelerators-unlocking-new-opportunities-to-drive-sustainable-growth.pdf](#)

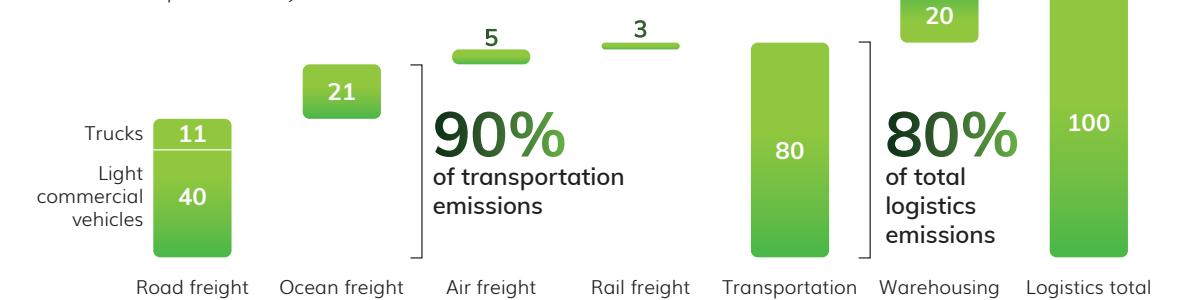
Extended Producer Responsibility (EPR) is an environment-oriented policy where the producer is held accountable for the entire life cycle of the products, including post-consumption waste management. Here, the logistics companies become integral partners in the process of developing reverse logistics mechanisms to collect the waste back from the consumer and recycle it in association with the producer.

Decarbonization of Logistics

India's logistics sector contributes about 13.5% of the country's total greenhouse gas (GHG) emissions. Road transport dominates, managing nearly 90% of passenger and 65% of freight movement and accounts for over 88% of sectoral emissions, trucks alone contribute around 38% of CO₂ emissions (IEA, 2023). Domestic aviation contributes about 4% to emissions, while coastal and inland shipping emit less than road freight. Warehousing also adds significantly due to high energy use. The government plans to triple inland waterway traffic and increase coastal shipping by 1.2 times by 2030, risking higher emissions if not managed sustainably.

Share of global annual logistics CO₂ equivalent emissions, %

Material consumption annually (Bn 7)



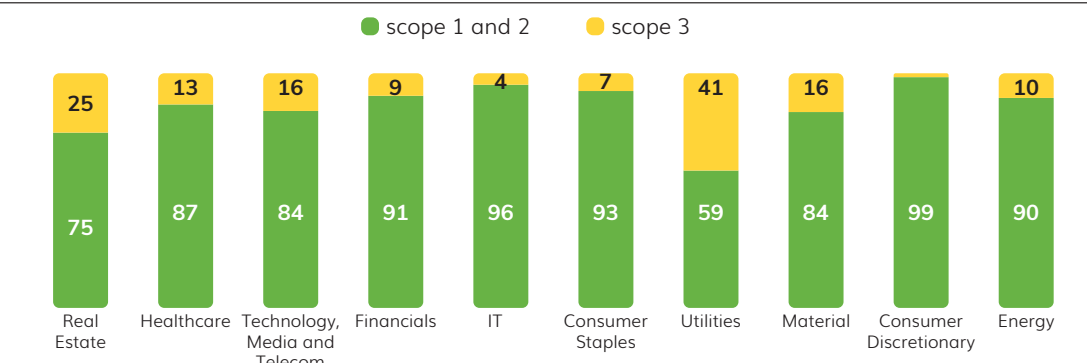
Carbon Emission Tracking

Recent developments in carbon emission tracking in India's logistics sector are increasingly influenced by global frameworks and strategic insights from leading think tanks and consulting firms. McKinsey & Company, in collaboration with the World Economic Forum (WEF), has emphasized the importance of a standardized book-and-claim framework and green supply-chain coalitions to accelerate decarbonization in freight transport. These mechanisms allow shippers to invest in low-carbon logistics even when physical alignment with green assets is not feasible, thereby creating a market for sustainable transport offerings.



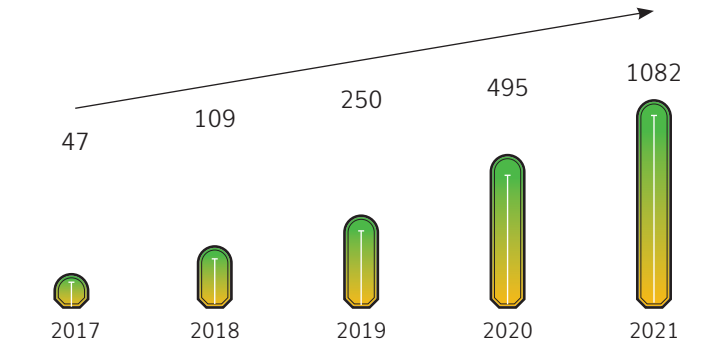
A rapidly increasing number of companies are taking action to reduce supply chain emissions.

Share of Scope 3 (indirect, mainly supply chain-related) emissions across sectors¹ % of total Scope 1-3 emissions, 2021



More companies set science-based targets for Scope 3*

of cumulative companies with approved targets



*IGICS sector. Emission data based on MSCI World

Sources: Driving decarbonization: Accelerating zero-emission freight transport | McKinsey

96%

of companies with approved science-based targets have targets covering scope 3 emissions

Bain & Company highlights digital tracing as a transformative tool for logistics, enabling companies to track emissions across the supply chain, optimize operations and certify sustainability claims. This approach not only supports carbon tracking but also enhances supply chain resilience and efficiency. These insights align with India's broader policy goals under the National Logistics Policy and PM Gati Shakti, which aim to integrate multimodal transport and digital infrastructure to reduce the sector's carbon footprint.

Zero Emission Trucking

Recognizing the need to shift towards net-zero carbon emissions as a part of their social and environmental responsibility, many logistics and supply chain businesses, FMCG players and E-commerce ventures are moving towards Zero Emissions Trucking (ZET). Major Original Equipment Manufacturers (OEMs) are ramping up their production of electric Medium-Duty Trucks (MDTs) and Heavy-Duty Trucks (HDTs) under their plans for the electrification of their fleet to meet the growing demand.

Production of a range of MDTs and HDTs capable of accommodating various duty cycles and operational requirements is underway to cater to the unique requirements of the Indian freight businesses. For the successful deployment of ZETs in India, an entire ecosystem of deployment of such vehicles in high-density road freight clusters, shared charging and refueling as well as vehicle servicing mechanisms should be created to benefit multiple corporate, transport and government stakeholders.



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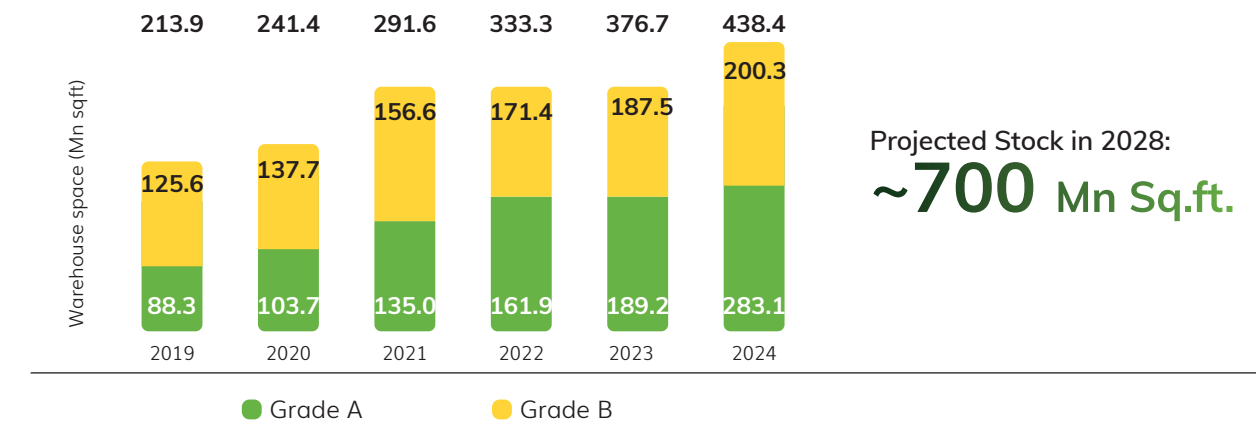


Green Warehousing

According to Grant Thornton's report "Evolving Landscape of Warehousing and Logistics in India", the Indian warehousing market is projected to reach \$ 34.99 Bn (₹ 2,872.10 Bn) by 2027, growing at a CAGR of 15.64% between 2022 and 2027. This growth is driven by the booming e-commerce sector, proactive government initiatives and accelerated tech adoption. Among metro markets, Mumbai, Bengaluru and Kolkata emerged as hotspots, registering

the highest demand for warehousing space, driven by increased consumption, last-mile delivery needs and strategic infrastructure development. There has been a 16% y-o-y growth for Grade A and B warehousing stock across the top eight cities in India.

Yearly Growth of Warehousing Stock



Sources: JLL Logistics and Industrial

Sources: The Growing Landscape of Warehousing Sector in India, JLL, February 2025

Sources: Evolving Landscape of Warehousing and Logistics in India, Grant Thornton

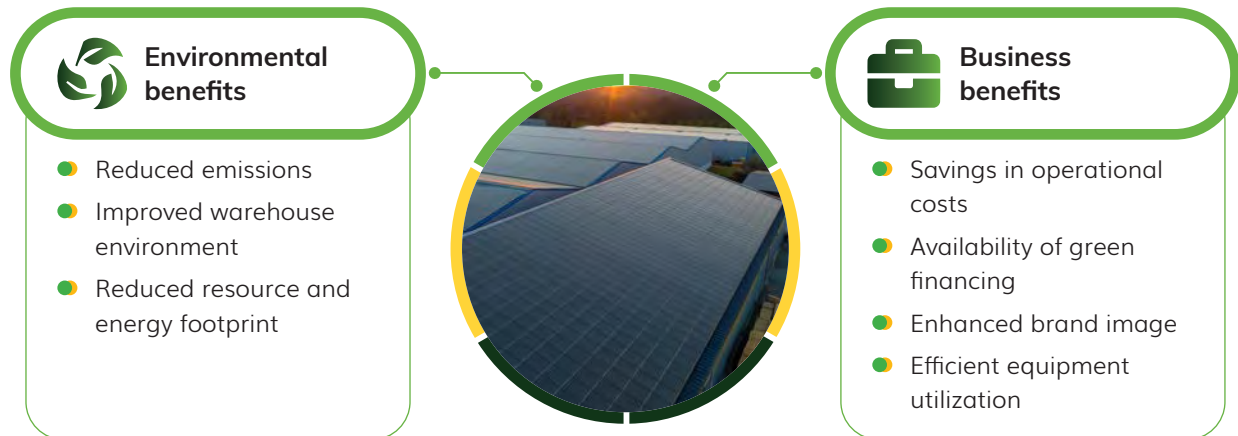
Traditional warehouses, while essential to supply chains, often pose sustainability challenges. As India progresses toward its renewable energy targets, the logistics industry is rapidly embracing green transitions. Warehouses are evolving into dual-purpose facilities—serving both as energy-efficient storage hubs and small-scale energy generation units. Technologies like rooftop solar panels, wind turbines in high-speed zones and hydro systems near water sources can generate clean energy to power operations, store for future use, or sell to the grid, creating additional revenue.

Real-time inventory systems can also enhance the management and distribution of this renewable energy. A similar industrial version of the government's PM-Surya Ghar Muft Bijli Yojana could further incentivise rooftop solar adoption in logistics. The push for sustainable warehousing is gaining global traction, supported by certifications from IGBC, LEED and IFC Edge. These frameworks encourage low-impact, energy-efficient infrastructure, making green warehouses a key driver of environmental performance and long-term value in the supply chain sector.

Key features of a green warehouse include:



Factors driving adoption of green warehouses in India



Sources: <https://www.pwc.in/assets/pdfs/transforming-warehouses.pdf>

Compared to conventional facilities, green warehouses offer significant reductions in energy and water consumption, lower embodied carbon and long-term cost savings, while contributing meaningfully to India's sustainability goals.

Carbon Markets and Logistics

India's carbon market is undergoing a significant transformation, with the government formalizing a compliance-based carbon trading system under the Carbon Credit Trading Scheme (CCTS). This marks a shift from the earlier voluntary mechanisms to a regulated market aimed at aligning with India's net-zero goals by 2070. According to the World Economic Forum, this development is crucial for sectors like logistics and manufacturing, which are among the highest emitters and stand to benefit from carbon pricing mechanisms that incentivize cleaner operations.

For manufacturers and logistics providers, the carbon market offers both a challenge and an opportunity. Companies that proactively decarbonize their operations can unlock new revenue streams through the sale of surplus carbon credits, while also gaining a competitive edge in global supply chains increasingly governed by ESG standards. Moreover, as per estimates, India's growing manufacturing base -- projected to rise from 16% to 25% of GDP by 2030—must integrate carbon tracking and trading into its operational strategy to remain globally competitive. These developments underscore the strategic importance of carbon markets in driving sustainable industrial growth.

Toy manufacturing

With the Govt's 'Make in India' policy, the toy manufacturing industry in India has received a new boost. This industry, dominated by Micro, Small and Medium Enterprises (MSMEs) and cottage industry players and concentrated in geographically dispersed clusters across the length and breadth of the country, is worth approximately US\$1.5 Bn. Due to this unique manufacturing landscape, there is a need for effective logistics support such small manufacturers to cater to the domestic and global market demand. The logistics services for this sector need to be flexible, affordable and dependable, catering to their niche requirements such as a Less-than-truckload (LTL) for small to medium loads and Full-truckload (FTL).



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