



# Indian Logistics Investability Index- 2023

## Exploring Indian Logistics Investability

ASCELA, being involved in the development of key logistics infrastructure developments in India and across the globe, has been monitoring recent investment opportunities. The Index is an attempt to assess investability in various Logistics sub-sectors in India.

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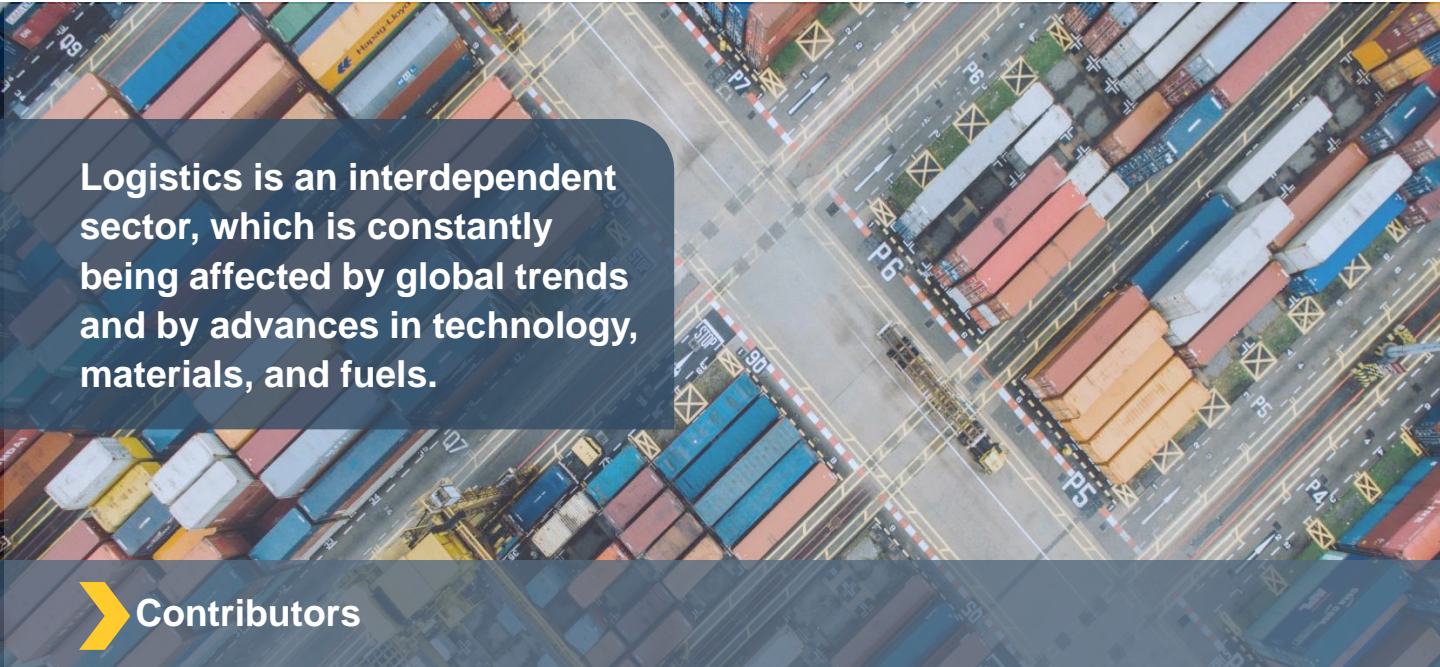
# ASCELA



*Industrial and logistics sector in India has proven its resilience in the tough times and would continue to amplify, supported by growing policy thrust and upbeat investor sentiments. Moreover, India's positioning to become a global manufacturing destination is in fruition. We have seen increased interest from several companies in the US and Europe wanting to invest in India and involve in key industrial micro-markets.*

*The government's focus is to develop its own supply chain and build up the domestic manufacturing industry. Thus, the logistics sector is set to witness large-scale investments this year and, in the years, to come.*

**Nivesh Chaudhary**  
Managing Director, Infrastructure  
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**Logistics is an interdependent sector, which is constantly being affected by global trends and by advances in technology, materials, and fuels.**

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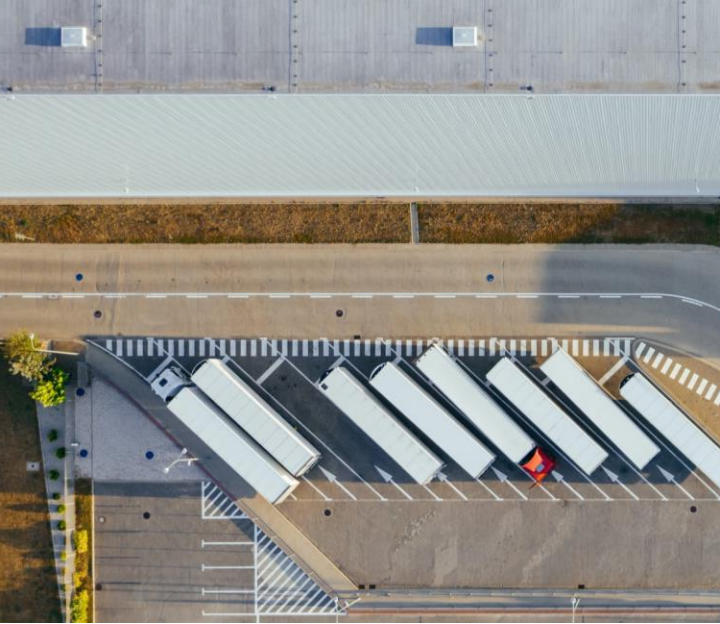
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## The BIG Picture- Indian Logistics Industry

3

### Opportunities for Year 2023

Shipping Industry	4
Port Sector	6
Railways Freight Sector	8
Air Cargo Sector	10
Inland Waterways	12
Warehousing Infrastructure	14
Urban Logistics	16
<b>INVESTABILITY INDEX 2023</b>	<b>17</b>

## Indian Logistics Industry

### The BIG Picture

India's logistics services cost arguably accounts for ~14.4% of GDP, compared to ~7% in some of the developed economies. As per the Niti Aayog, currently, India transports ~4.6 billion tonnes of freight annually, generating 2.2 trillion tonne-km transport demand.

#### Economic Development



In 2024

**6.8%**

GDP growth, as forecasted by IMF, against 2.7% global GDP forecast



In 2022

**6.8%**

Real GDP growth Rate in India

#### Foreign Investment



In FY-2022

**USD 81.97 billion**

Highest ever FDI Inflow in India, rising from USD 74.39 billion in FY-2020



In FY-2022

**76%**

Y-o-Y Increase in FDI Inflow in Manufacturing Sectors

#### Merchandise Exports



In FY-2022

**USD 418 billion**

Highest ever Merchandise export value in India



In FY-2019

**USD 330 billion**

Merchandise export value of India (highest before FY-2022)

#### ASCELA's View

As per the Paris Agreement (2015) on climate change, India has pledged to reduce the intensity of GHG emissions by 33-35% by 2030, compared to 2005 levels. Furthermore, India has set a target to transition into non-fossil fuel-based energy for 40% of its cumulative electricity generation capacity by 2030.

In India, a predominant mode of freight transportation is via road, with nearly 66% cargo share, and is the most polluting mode. Multimodal is a key that can provide great impetus in achieving India's 2030 targets for 'Net-Zero' emissions and pave a way for USD 5 Trillion economy by 2024.

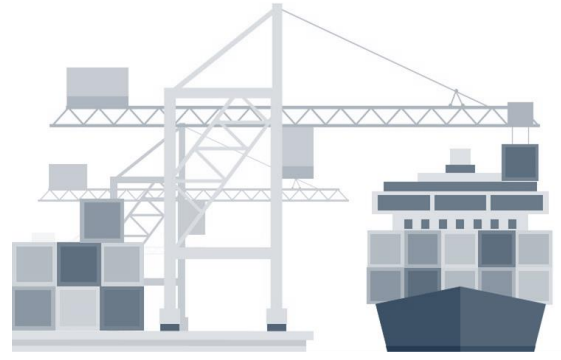
## Burgeoning requirement of Alternate Fuels

**70%** Reduction in carbon emissions by 2050

**40%** Reduction target by 2030

**30-40%** Carriers non-compliant

targeted by International Maritime Organization (IMO)



<b>Policy/Regulatory Framework</b>	<b>IMO 2023 Regulation</b>	Vessel operators eyeing to invest in alternate fuel technologies
	<b>CII Regulation (IMO)</b>	Globally, 30-40% of container ships and bulk carriers were considered non-compliant in 2021
<b>Positive Outlook</b>		
<b>Privatisation/Private Investment</b>	<b>Privatisation of SCI</b>	With >50 vessels and a capacity of 5.8 million DWT, SCI is India's largest carrier. Currently operates 6 year long contract by ONGC for Samudra Nidhi, to end by 2023.
	<b>Integration with inland operations</b>	Last decade, 10 largest carriers increased market shares from ~60% to ~85% of global capacity through vertical integrations
<b>Neutral Outlook</b>		

### Alternate Fuel Opportunities

- LNG and Hydrogen Bunkering ▲
- Shipbuilding (for LNG and Hydrogen compliant vessels) ▲
- Short-sea segments and ferries also aiming electrification ▲

### Operational Risks

- SCI's 40% revenue is driven by oil majors, and their prices are volatile. ▼

### Vertical Integration Opportunity

- Integration of MMLP operators with logistics and value-adding service providers ▲

### Key Global Examples

Maersk has started to manage all logistics operations for the FMCG multinational Unilever.

Moller-Maersk has acquired B2C Europe and Visible Supply Chain Management, for parcel delivery

In 2021, MSC expanded its logistics arm MedLog by buying the Brazilian company Log-In Logistica Intermodal and Bolloré Group Africa.

### Key Indian Examples

CMA CGM integrated its inland logistics operations. It has connectivity to over 50 ICDs

CMA CGM runs block trains from Mundra to ICD Garhi, Dadri, Sonipat, Ludhiana, Tughlakabad

Hapag Lloyd is operating India-Nepal Inland services, connecting ICD Birgunge to Ports at Kolkata and Vishakhapatnam

<b>Merger &amp; Acquisition</b>	<b>Alliances to increase market share</b>	10 largest container line, with mere 52% market share in 2000, reached 81% by 2020 Key alliances: 2M, OCEAN, and THE
	<b>Emergence of regional operators</b>	High freight rates on East-West trade lanes attracted smaller regional container operators like CU Lines, BAL Line, and SJJ
<b>Positive Outlook</b>	<b>Demise of Hanjin Shipping</b>	Hanjin Shipping, 4th largest container line in 2000, was bankrupt and shut down in 2016.

### Mergers with large carriers

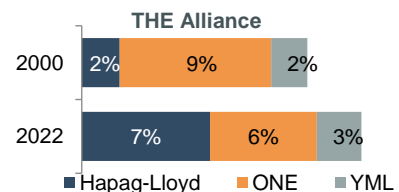
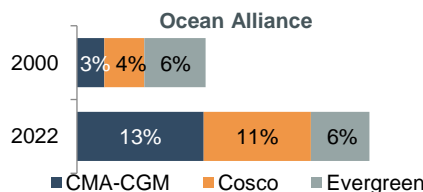
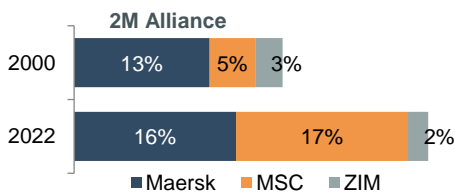
- Ports/ Terminal operators can merge with shipping lines to increase ship calls and attract more traffic. ▲

### Opportunities for new carriers

- Smaller vessel operations along regional routes, as larger vessels are not viable due to limited cargo. ▲

### Pre and post alliance snapshots (market share in terms of global container traffic)

Source: Alphaliner



<b>Entry Barriers</b>	<b>Soaring Charter rates</b>	By mid-2021, container freight and charter rates peaked by 4X	<b>Shipbuilding</b> • Container Freight Rates can be subdued by rise in Shipbuilding in India ▲
	<b>Diversifying economies to save lead time</b>	Nike transferred some production from Asia to Latin America. GoPro and Universal Electronics shifted some production from China to Mexico	
<b>Neutral Outlook</b>	<b>High cost of alternate fuels</b>	Alternative fuels currently cost 2-5X more than conventional fuel	<b>Volatile Fuel Prices</b> • VLSFO prices in February 2022 were USD 730/ ton, reached USD1,000/ ton in June 2022 ▼

## Investability in Shipping Sector

<b>Container Manufacturing Opportunities</b>	<b>Increasing Container Demand</b>	Indian coastal shipping adds ~10,000 TEUs annual demand, while CONCOR may require ~2,000 TEUs annually (MoPSW)	<b>Container Manufacturing</b> Regions around Chennai, Jamshedpur, and Pune may also be targeted due to presence of large-scale steel industries. ▲
<b>Positive Outlook</b>	<b>Opportunities in Gujarat</b>	Bhavnagar in Gujarat is to be developed as a container manufacturing hub.	
<b>Ship Building</b>	<b>Container and Bulk Fleet Recycling</b>	India is one of the world's top 5 ship recycling countries and holds 30% share in the global ship recycling market	<b>Ship building and recycling</b> Growing demand for cleaner fuel compliant vessels would add to capacity augmentation of shipbuilding infrastructure. ▲
<b>Positive Outlook</b>	<b>Shipbuilding</b>	As per UNCTAD 2022, the current average age of maritime fleets is 21.9 years, and by carrying capacity 11.5 years	
<b>Growing Industrial Output</b>	<b>Manufacturing sector</b>	Asian regions witnessed an increase in exports by 13.3%	<b>International and coastal shipping demand</b> Industries rely on extensive last-mile logistics, creating demand for coastal shipping and multimodal transport. ▲
<b>Positive Outlook</b>	<b>E-Commerce sector</b>	Indian eCommerce market increased by 32% Y-o-Y in 2021, compared to worldwide growth rate of 18%.	

### CONTAINER HUB IN BHAVNAGAR

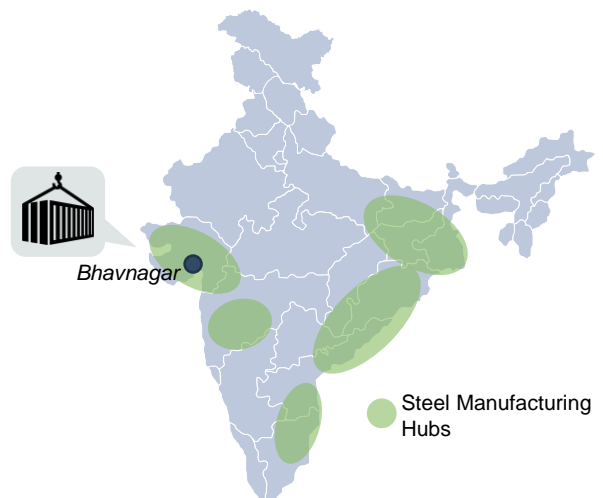
APPL (Aawadkrupa Plastomech Pvt. Ltd.) Containers, a Vartej-based company, has been given an order to supply 10,000 containers annually to CONCOR.

#### Key Opportunities

- 01 Container manufacturing setup at Bhavnagar.
- 02 Coastal shipping of steel from east coast to Bhavnagar.
- 03 Shipping of manufactured containers to various Ports.

#### Status

More companies are being reviewed for container manufacturing in Bhavnagar.



### ASCELA's View

The Government of India has been increasingly focusing on sectors related to ship-building, recycling, and repair, along with India's growing stature as a maritime power. There is a vast demand for Indian flagged fleets with increasing multi-modality through coastal shipping and inland waterways.

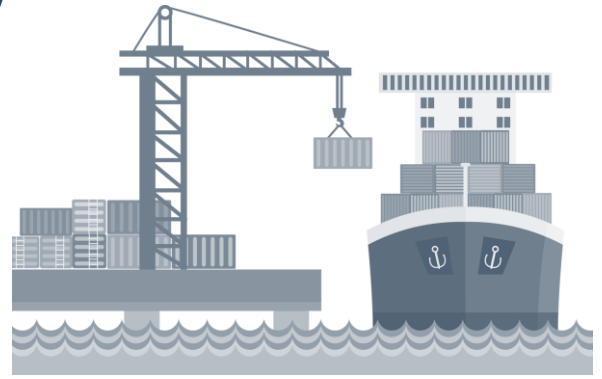
# Steering Port Privatization to Encourage Investments

423 MTPA

Port Capacity Addition targeted by 2030

31 berths to be privatized by 2024-25

108 berths Mechanization aimed by 2030



by Ministry of Ports, Shipping, and Waterways (MoPSW)

<b>Policy/ Regulatory Framework</b>	<b>National Logistics Policy 2022</b>	Increasing efforts for reducing average turn-around time of vessels and reduce logistics cost.	<b>Increasing Port Privatisation</b> <ul style="list-style-type: none"> <li>Better Port Performance through privatization of activities</li> <li>New resolution likely to unblock the country's cargo handling capacity, which can be further privatized.</li> </ul>
	<b>Resolution of PPP port projects</b>	Ports can take over a project by paying a partial amount equivalent to the work already done by the concessionaire or bid for an abandoned project that is undergoing insolvency under the NCLT.	
	<b>National Green Hydrogen Mission, 2023</b>	Promotes production and Export of Green Hydrogen from India	
<b>Positive Outlook</b>			<b>Green Hydrogen Export</b> <ul style="list-style-type: none"> <li>Opportunity for development of green hydrogen handling infrastructure at Ports.</li> </ul>
<b>Privatisation/ Private Investment</b>	<b>Privatization of existing berths</b>	Privatization of 31 cargo berths by MoPSW worth INR 12,828 Cr by 2024-25.	<b>Privatisation of berths</b> <ul style="list-style-type: none"> <li>Existing berths are being privatized for mechanization and operation</li> </ul>
	<b>Capacity Augmentation under PPP</b>	As part of MIV 2030, Major Ports need to undertake 423 MTPA capacity addition. A total investment cost of over INR 33,400 Cr. has been earmarked.  Out of this, ~95% capacity expansion is to be planned under PPP/ Captive mode	
<b>Positive Outlook</b>			<b>Landlord Model for Major Ports</b> <ul style="list-style-type: none"> <li>Major Ports would likely follow Landlord Model for privatization, similar to JN Port.</li> </ul>
<b>Merger and Acquisition</b>	<b>Integration with marine operations</b>	Adani Group, under its subsidiary TAHSL has entered into a definitive agreement for acquiring India's largest marine service provider OSL	<b>Integration with Shipping Lines</b> <ul style="list-style-type: none"> <li>Port operators can integrate with Shipping Lines to increase ship calls at Ports, and thus increase traffic volumes.</li> </ul>
	<b>Integration with Industrial Development</b>	Mundra SEZ, operated by the Adani Group, is providing integrated Rail, Air, and Port connectivity and is inviting large-scale manufacturers	
<b>Positive Outlook</b>			<b>Integration with Logistics Parks</b> <ul style="list-style-type: none"> <li>Port operators can integrate with Logistics Pars/ SEZs to inflate cargo volumes.</li> </ul>

## TRANSHIPMENT HUB AT GRATER NICOBAR

Government of India is targeting a Mega Port at Galathea Bay in Greater Nicobar Islands, aiming for a container transshipment hub in India. With a deep draft of ~20m, the port would likely enable anchoring of Mega Ships, and raise India's share in Maritime Trade.

### Key Opportunities

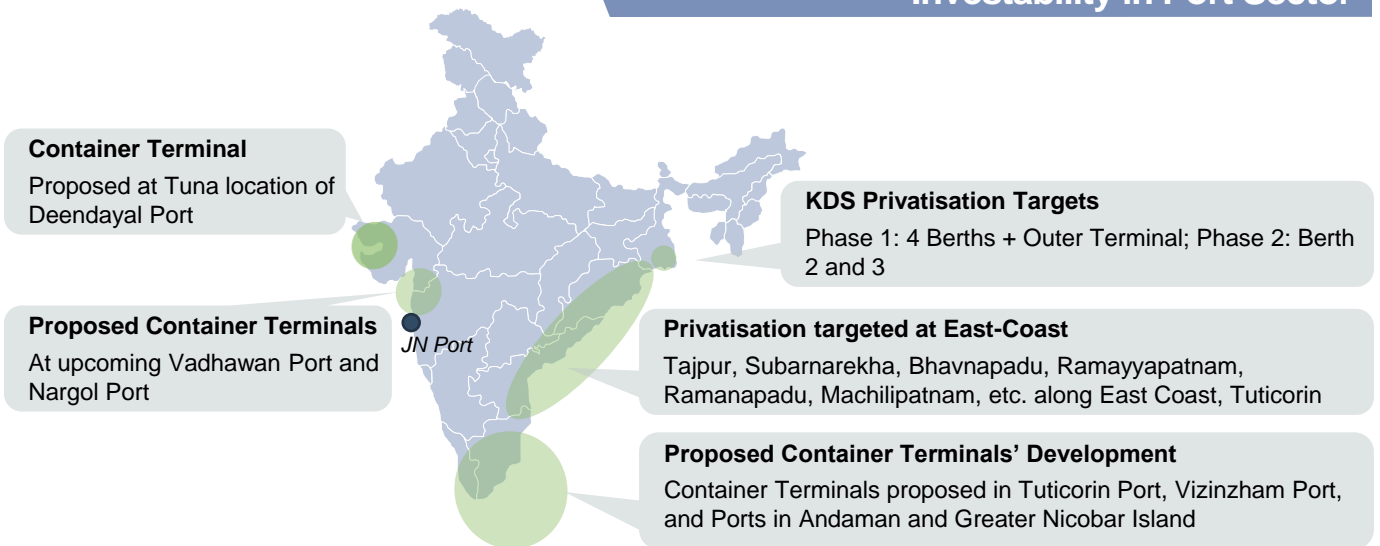
- 01 Opportunities for Port/ Terminal Operators for container handling.
- 02 Opportunities for Shipping Lines and Logistics Service Providers.
- 03 Opportunities for Coastal Shipping to other Ports in India.

Status: EoI to be floated by GoI in early 2023.



<b>Entry Barrier</b>	<b>Reduced Opportunities</b>	Major Private Port players are collaborating with Shipping Lines, likely reducing ship calls at other smaller ports.	<b>Integration with Coastal Liners</b> <ul style="list-style-type: none"> <li>Port operators can integrate with small domestic Shipping Lines to increase coastal traffic volumes. ▲</li> </ul> <b>Slower Divestiture</b> <ul style="list-style-type: none"> <li>Private divestiture in India has been a slower process, impacting trade volumes ▼</li> </ul>
	<b>Delayed Privatization</b>	Delayed Security Clearance for privatization has been a concern. Only 14% of the target invested in 2021-22.	
<b>Neutral Outlook</b>			

## Investability in Port Sector



<b>Bunkering Infrastructure</b>	<b>LNG FSRU</b>	Owing to the IMO Regulations, demand for LNG Bunkering would likely increase	<b>Bunkering Infrastructure at Port</b> Port/ Terminal Operators may likely target increase in FSRUs for LNG and Hydrogen Bunkering Infrastructure ▲
<b>Positive Outlook</b>	<b>Green Hydrogen</b>	With the National Green Hydrogen Mission 2023, India may be targeted as hub for Green Hydrogen Bunkering	
<b>Port Mechanization and Automation</b>	<b>MIV 2030</b>	As per MIV 2030, 21 berths across Major Ports identified as high potential for mechanization in Phase-1 Remaining 87 berths are to be targeted in next 2-3 years	<b>Smart Ports</b> Opportunity for mechanization and inclusion of Smart Ports Technologies to compete globally. ▲ Data Integration with ULIP
<b>Positive Outlook</b>			
<b>Transshipment Opportunities</b>	<b>Transshipment Hub</b>	Vizinzham, Kanyakumari region and Campbell Bay in Greater Nicobar Islands have deep draft potential of ~20m and are at approximately 6-10NM deviation (0.5-1 hours) from the Suez route	<b>Container Transshipment</b> Large opportunities for transshipment along Ports in southern region ▲
<b>Positive Outlook</b>			

### ASCELA's View

The Government of India has big plans for port capacity augmentations, improving operational efficiencies, and port modernization. This creates large opportunities for privatization of ports and allied logistics services, leading to increased consolidation of supply chain activities and higher trade volumes across Indian Ports.

## Need for High-Speed Dedicated Freight Movement

**45%** freight via railways  
(current 27%)

**3,600 MT**  
Rail Freight  
Traffic by 2031

**30%**  
Reduction in  
freight cost



by Indian Railways

<b>Policy/ Regulatory Framework</b>	<b>National Railways Plan 2020</b>	Increase rail mode share to 40-45%; Target 3,600 MTPA by 2031	<b>Rail Privatisation</b> <ul style="list-style-type: none"> <li>Better performance through privatization of activities</li> <li>Subsidies on transportation of non-traditional industrial commodities.</li> <li>Subsidies on transportation of F&amp;V</li> </ul>
	<b>Premium Indent Policy 2020</b>	Prioritized allotment of rakes in 2 days with payment of 5% premium over normal freight charges	
	<b>LSFTO Scheme, 2020</b>	12% freight rebate to promote privatized procurement and operations of specialized wagons for non-traditional commodities No freight charge for empty run	
<b>Positive Outlook</b>	<b>Kisan Rail Project 2021</b>	50% subsidy in freight, borne by MoFPI, under "Operation Greens" Scheme, for F&V	<b>Development of PFTs</b> <ul style="list-style-type: none"> <li>In Tier-II and Tier-III cities.</li> <li>Integration with rake operations</li> </ul>
<b>Privatisation/ Private Investment</b>	<b>Privatization in rolling stock operations</b>	CMA CGM runs block trains between Mundra Port – ICDs at Tughlakabad, Dadri, Sonipat, Ludhiana, and Garhi	<b>Privatisation in Operations</b> <ul style="list-style-type: none"> <li>Privatization of rail services from proposed MMLPs to Ports</li> <li>Private ownership of cargo depots along RRTS corridor</li> <li>Development of PFTs along DFC route</li> </ul>
	<b>Private Participation in RRTS</b>	NCRTC is planning private operations of Rapid Rail cargo handling in Delhi/NCR	
	<b>CONCOR Privatisation</b>	CONCOR owns 61 container terminals, targeted to be privatized	
<b>Positive Outlook</b>	<b>Privatisation of DFC operations</b>	Indian Railways is considering operation of private freight trains along DFC	
<b>Merger and Acquisition</b>	<b>Adani Tracks Management Services</b>	All owned rail units under a single entity; Target 2,000 Km track length from 690 Km	<b>Python Train Service</b> <ul style="list-style-type: none"> <li>Integration with other operators for common rail movement</li> <li>Integration with Port and Terminal operators</li> </ul>
<b>Positive Outlook</b>	<b>Transport Bundling- Python Train</b>	In Feb 2021, CMA CGM launched Python Train Service on Western DFC from New Kishangarh Junction to Mundra	

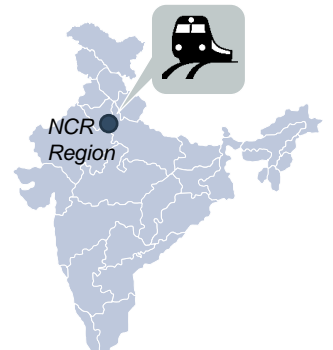
### RAPID RAIL TRANSIT SYSTEM, NCR REGION

RRTS is envisioned to accommodate freight traffic during the off-peak passenger hours along Delhi-Meerut, Delhi-Alwar/SNB, and Delhi-Panipat routes in Phase-I. It would likely reduce logistics travel time and associated logistics costs.

#### Key Opportunities

- 01 Opportunities for Warehousing and Depot operations along corridor.
- 02 Integration of RRTS operations along with Depot operation.
- 03 Opportunities for new markets and businesses along corridor for better connectivity

**Status:** Feasibility Study in progress by us.

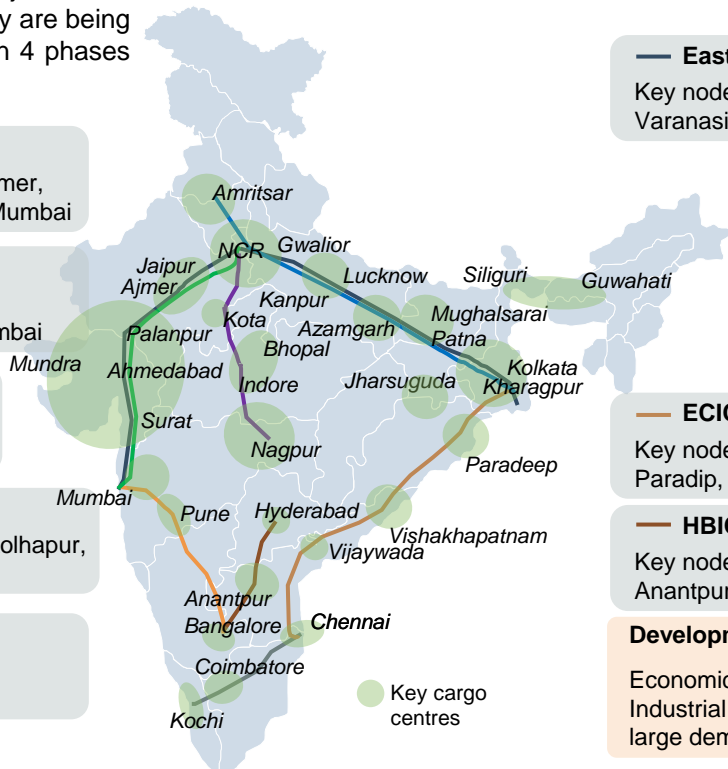




<b>Entry Barrier</b>	<b>Procedural Delays</b>	Procedural delays and regulatory uncertainties have been restricting private sector participation in Indian Railways	<b>Better Policy Incentives</b>
	<b>Cross Subsidization</b>	Revenue earned through freight traffic is diverted to meet shortage in passenger revenue, due to which expansion of freight infrastructure suffers	<b>Ownership to Private Player</b>
<b>Neutral Outlook</b>			<ul style="list-style-type: none"> <li>Better policies and regulations required for PPP engagement</li> <li>Increase in PPP operations would foster competition and better logistics services</li> </ul>

11 Industrial Corridors Projects with High-Speed Rail connectivity are being taken up for development in 4 phases up to 2024-25.

- Western- DFC**  
Key nodes: Dadri, Rewari, Ajmer, Palanpur, Vadodara, Surat, Mumbai
- DMIC Corridor**  
Key nodes: Dadri, Manesar, Neemrana, Ahmedabad, Mumbai
- DNIC Corridor**  
Key nodes: Delhi, Kota, Indore, Nagpur
- BMIC Corridor**  
Key nodes: Mumbai, Pune, Kolhapur, Belagavi, Hubballi, Bangalore
- CBIC Corridor**  
Key nodes: Kochi, Thrissur, Coimbatore, Salem, Chennai



## Investability in Railways

- Eastern- DFC**  
Key nodes: Delhi, Agra, Lucknow, Varanasi, Patna, Kolkata
  - AKIC Corridor**  
Key nodes: Amritsar, Delhi, Agra, Lucknow, Azamgarh, Jamshedpur, Kharagpur
  - ECIC and VCIC Corridor**  
Key nodes: Kolkata, Dhamra, Paradip, Vishakhapatnam, Chennai
  - HBIC Corridor**  
Key nodes: Hyderabad, Jadcherla, Anantpur, Bangalore
- Development of PFTs**  
Economic development around Industrial Corridors would create large demand for PFTs

<b>Vertical Integration</b>	<b>New PFTs</b>	Likely increase in demand for PFTs upon commencement of Industrial Corridors	<b>New Developments</b>
<b>Positive Outlook</b>	<b>Integration with MMLPs</b>	Integration with MMLPs would likely offer increase in throughput	High speed rail corridors along major routes Modern and smart PFTs at Tier-II and Tier-III cities.
<b>Modernization of Infrastructure</b>	<b>High-speed freight trains</b>	PPP infusion may lead to capacity building and modern technology like smart yards, green corridors, and AI integration.	<b>Smart Technologies</b>
<b>Positive Outlook</b>			Opportunities for smart tools integration like blockchain. Likely increase in use of electric reefer cars like in RRTS

## ASCELA's View

Being world's second-largest railway network, India holds vast demand for use of green fuel for low-carbon economic growth. Alternative fuels like LNG and Green Hydrogen may be targeted along major economic corridors for cargo operations on the railway network.

# Hub-and-Spoke Air Connectivity to Tier-II and III

**10 MTPA**

Air freight traffic by FY-2030

**30-35**  
Airports privatize by 2025

**INR 3,660 Cr**  
likely private investments



For Airports with > 1.5 Million Passenger Traffic

<b>Policy/Regulatory Framework</b>	<b>MoCA 2022</b>	Air Cargo traffic targeted to reach 10 MTPA by FY-2030, from 3.1 MTPA in FY-2022	<b>Airport Privatisation</b>	<ul style="list-style-type: none"> <li>~60% investment is likely to be targeted by private investors; rest would be borne by AAI.</li> </ul>
	<b>Open Skies Policy</b>	Amendments to Open Air Policy 2020 limits foreign ad hoc and pure non-schedule flights by foreign carriers to six airports	<b>Domestic Freighters</b>	<ul style="list-style-type: none"> <li>Opportunities to operate at Tier-II and III cities</li> </ul>
<b>Neutral Outlook</b>	<b>Air Cargo Policy 2019</b>	Agreements between foreign and Indian Air Freight Carriers; Last Mile Connectivity Program: Tier-II & III	<b>Focus on passenger traffic</b>	<ul style="list-style-type: none"> <li>Passenger traffic preferred for operator selections at Airports</li> </ul>
<b>Privatisation/Private Investment</b>	<b>National Monetization Pipeline</b>	30-35 Airports to be privatized by 2025 with INR 3,660 Crore Likely Private Investment	<b>Privatization of Operations</b>	<ul style="list-style-type: none"> <li>Privatization of terminals at International Airports</li> <li>Tri-partite agreement with private operators and AAI</li> </ul>
<b>Positive Outlook</b>	<b>Privatization of Airports</b>	In 2019, Adani Group won 6 airports from AAI		

## Key Global Examples

In 2021, Maersk acquired freight forwarder Senator International and ordered 5 freight airplanes	CMA CGM ordered six air freighters for the launch of its airline	MSC has started developing a new MSC Air Cargo solution, to be available from 2023, that will be operated by Atlas Air
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## Indian Examples

BIAL is working with Amazon to establish Joint Innovation Center (JIC) at KIA Airport in Bengaluru	Air India ordered 500 new aircraft in January 2023 for passenger and cargo operations	Amazon Air partnered with Quikjet to become first e-commerce company in India to launch a dedicated air cargo network at Hyderabad.
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<b>Merger and Acquisition</b>	<b>Demerger of SpiceJet</b>	Demerged cargo operations to Spice Express in August 2022; Reported revenue of INR 20.6 Bn in just 3 months of Operation	<b>Capacity Augmentation</b>	<ul style="list-style-type: none"> <li>Increased freighters capacity with dedicated cargo handling</li> <li>Investment Opportunity for additional freighters and warehousing</li> </ul>
<b>Positive Outlook</b>	<b>Integrations in cargo operations</b>	FedEx Corporation acquired regional express players to increase its service range		

## INTEGRATED CARGO HUB AT JEWAR AIRPORT

Operator: Yamuna International Airport Private Limited (YIAPL). Located in Delhi/NCR, targeted to be developed as largest Airport in Asia.  
 Likely traffic by 2045 = 2.6 MTPA  
 ~80 acres land dedicated on the eastern side for a large warehousing and logistics facility.

### Key Opportunities

- 01 Opportunities for Warehousing, cold chain, and Value-added services at Airport.
- 02 Opportunities for new markets and businesses in the hinterland

**Status:** Under Construction; Likely commencement by 2025.



<b>Entry Barrier</b>	<b>AFS Privatization</b>	No AFS registered since 2014, likely due to lack of financial interest for Terminal Operators	<b>Better Policy Incentives</b>
	<b>Higher lay-time and demurrage costs</b>	Airports (cargo) in India are suffering from congestion as well as decreasing executive efficiency in loading and discharging	<ul style="list-style-type: none"> <li>Better policies and regulations required for PPP engagement at Indian Airports</li> </ul>
<b>Neutral Outlook</b>			<b>Inefficient cargo operations</b> <ul style="list-style-type: none"> <li>Shortage of landside truck docks, vehicle holding area, and airside operational space</li> </ul>

### Airports likely to be privatized in 2023

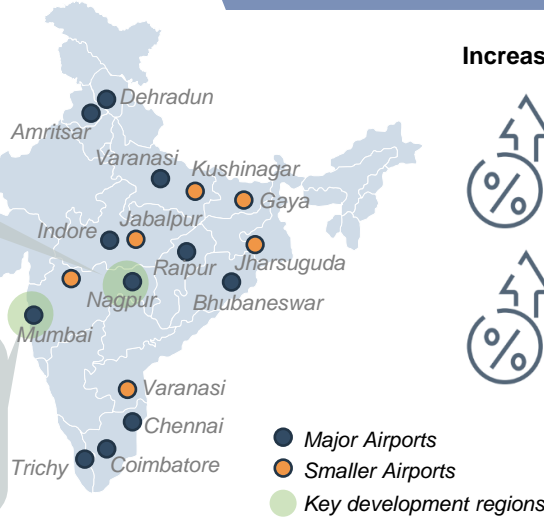
### Investability in Airport Sector

#### MIHAN, Nagpur

4,025 Ha SEZ and Airport;  
Likely to commence in 2023

#### NMIA, Mumbai

Operator: NMIAL  
23,700sqm international and  
33,000sqm domestic cargo  
building by 2023



#### Increasing Cargo traffic



#### Mumbai Airport (FY-2022)

**40%** increase in Domestic cargo  
**26%** increase in international cargo

#### Hyderabad Airport (FY-2022)

**38%** increase in Domestic cargo  
**18%** increase in international cargo

<b>Growing e-commerce</b>	<b>Smart AFS Development</b>	With rise of e-commerce, Indian Freighter Fleet would likely multiply Smart AFS demand for quick evacuation	<b>Infrastructure at Port</b>
<b>Positive Outlook</b>	<b>Transshipment</b>	India being targeted to be developed as Air Cargo Transshipment Hub	Airport/ Terminal Operators may likely target capacity addition at Airports
<b>Use of small freighters fleet</b>	<b>Cargo operation using A-320-P-2-F Carrier</b>	Pradhan Air introduced All-cargo airline after Blue Dart in Oct 2022 Indigo is planning to add 4 all cargo A-321 by 2023	<b>New AFS may be targeted around Major Airports</b>
<b>Positive Outlook</b>	<b>Digital Integration</b>	Improving logistics cost and time through AI integration Tier-II and Tier-III cities maybe targeted	<b>Small Fleet demand</b>
<b>Automation and Digitization</b>			Dedicated operations in future Likely target: Tier-II and III cities with small aircrafts
<b>Positive Outlook</b>			<b>AI Integration</b>
			Integration with ULIP and Kale's Air Cargo Community System

### ASCELA's View

India is likely to see a boom in air cargo infrastructure facilities with a focus on increasing domestic movement. Indian registered airlines are likely to be encouraged more, especially for the movement of perishable commodities like fruits, vegetables, pharmaceuticals, etc. to/from remote locations.

## Inclining trend towards IWT for Cost Saving

**140 MTPA**

IWT freight traffic by FY-2030

**17**  
Operational IWT routes

**5,000 km**  
IWT Route by 2075



as per Maritime India Vision Report and India @75 by NITI Aayog

<b>Policy/Regulatory Framework</b>	<b>IWT Transport Subsidy Scheme</b>	~90% subsidy on cargo movement along NW-2 in North-East India.	<b>Multimodal Integration</b> <ul style="list-style-type: none"> <li>With MMLPs, shipping lines, and freight forwarders</li> <li>Large demand for freight forwarders</li> </ul> <b>Capacity Building</b> <ul style="list-style-type: none"> <li>Opportunities in eastern and western coast of India</li> </ul> <b>MMLP Integration</b> <ul style="list-style-type: none"> <li>Opportunities to integrate with Jogighopa MMLP along NW-2</li> </ul>
	<b>IWAI capacity augmentation plan</b>	IWAI has targeted to handle 140 MTPA traffic along IWT routes by 2020. Under India@75, IWAI is targeting development of 5,000 km of IWT routes across States	
<b>Positive Outlook</b>	<b>Inland Vessels Act, 2021</b>	For regulating IWT operations across all states, routes are segregated into zones.	
<b>Privatisation/Private Investment</b>	<b>Jal Marg Vikas Project (JMVP)</b>	Gol is planning to privatize Multi-modal Terminals built by IWAI under JMVP or their operations	<b>Privatisation of Operations</b> <ul style="list-style-type: none"> <li>Terminal operation at MMLPs</li> <li>Tri-partite agreement with terminal operators for value-added logistics operations</li> </ul>
<b>Positive Outlook</b>			
<b>Merger and Acquisition</b>	<b>Jal Marg Vikas Project (JMVP)</b>	Gol is planning to privatize Multi-modal Terminals built by IWAI under JMVP	<b>Diagonal Integration</b> <ul style="list-style-type: none"> <li>Sharing of logistics services with other players; reduces cost</li> <li>Vertical integration with operators of other legs in supply chain</li> </ul>
<b>Positive Outlook</b>	<b>Vertical Integration</b>	IWAI signed MoUs with 15 organizations to increase the cargo traffic, cruise movement, and infrastructure development along NWS	

### BBIN SUBREGION AND MMLP QUADRILATERAL

Under the BBIN initiative, various agreements have been signed to enhance the use of water connectivity. A set of four MMLPs connected majorly via waterways would be a sustainable way to boost BBIN trade.



Jogighopa in Assam, expected to be completed by 2023, would be India's first MMLP. The MMLP would likely divert cargo from roadways to waterways in the region, which would significantly decongest the Siliguri corridor.

#### Key Opportunities

- 01 Opportunities for MMLP and Terminals privatisation along the region.
- 02 Opportunities for new markets and businesses in the hinterland

### BBIN Subregion



<b>Entry Barrier</b>	<b>Unsuccessful Privatization</b>	At MMLPs along NW-1 due to lack of financial viability at Varanasi and Sahibganj.	<b>Better Policy Incentives</b>
	<b>Night Navigation</b>	Lack of night navigation limits cargo operations along NWs	• Better tax incentives required for PPP engagement 
	<b>Lack of infra along IBP route</b>	Dredging in length across Bangladesh is pending for long due to inadequate finance.	<b>Need for Night Navigation</b>
<b>Neutral Outlook</b>			• to increase cargo movement 
			<b>Need for AI integration</b>
			• With other logistics facilities and consumption centers

## Investability in Warehousing Sector

<b>Mechanization</b>	<b>Vertical Integration</b>	Vertical integration with other services to reduce cost and for organized spatial planning	<b>Vertical Integration</b>
<b>Positive Outlook</b>			
<b>Automation</b>	<b>Digital Integration</b>	IWAI developed Cargo Data Portal (Car-D) and PANI for information on National Waterways in India	<b>Increased Efficiency</b>
<b>Positive Outlook</b>			

### Key Global Examples

EC approved Dutch Scheme 2022, allowing non-refundable grants to logistics operators for IWT use.



Recharging and refueling infra for "0-emission" vessels targeted at Europe's inland ports by 2030.

EU funded PLATINA3 program works on Coordination and support action to implement a future inland navigation Programme

Norway is testing unmanned vessel on Flemish IW route under AUTOSHIP Programme

"Green Danube" Programme for integrated transnational policies for environment-friendly IWT.

Modernization and Greening of Danube's IWT fleets under "GRENDL" Programme with identification of investment needs.

<b>Cold Chain Infrastructure</b>	<b>Increasing Demand</b>	High growth in FMCG, pharmaceutical, and organized retail sectors during the pandemic	<b>Capacity Augmentation</b>
<b>Positive Outlook</b>			Within MMLPs for storage of perishable goods Along NW routes 
<b>Capacity Building</b>	<b>IWT Vessels Shipbuilding and Dwarf Containers</b>	Dwarf containers may likely allow easy stacking and movement along NWs for movement of low-density products.	<b>Capacity Augmentation</b>
<b>Positive Outlook</b>			• Dwarf containers may reduce operation cost and likely increase revenue. 

### ASCELA's View

The current trend towards larger vessels leads to a decline of the inland fleet with smaller loading capacity and smaller waterways, which cannot accommodate those new vessels. This develops a huge demand for shipbuilding opportunities for inland waterways fleet, with an average loading capacity of 2,500-3,000 tonnes. Vertical integration would likely make IWT economically attractive for freight owners and ports.

## Spiking demand for Smart Warehousing

According to MORTH, logistics parks will drive an estimated 10% reduction in transportation cost for the top 15 nodes by enabling INTEGRATED freight movement.



Policy/ Regulatory Framework	<b>Gati Shakti MCT Policy, 2022</b>	Indian Railways announced development of 100 Gati Shakti Multi-modal Cargo Terminals till FY-2025.	<b>Multimodal Integration</b> <ul style="list-style-type: none"> <li>• With trucking, shipping lines, air carriers, IWT operators</li> <li>• Large demand for freight forwarders</li> </ul>
	<b>Guidelines for ICD/ CFS/ AFS Development, 2020</b>	Regulates regional disparities in the concentration of facilities	
Positive Outlook	<b>Bharatmala Programme</b>	35 MMLPs proposed Increased concession period from 30 years to 45 years	<b>Capacity Building</b> <ul style="list-style-type: none"> <li>• Opportunities in eastern and southern regions of India</li> </ul>
Privatisation/ Private Investment	Privatization of MMLPs	Feasibility studies in progress at Mumbai, Pune, Hyderabad, and Coimbatore, and being initiated at Anantapur, Jammu, Kanpur, Visakhapatnam, and Jalna	<b>Privatisation of Operations</b> <ul style="list-style-type: none"> <li>• Terminal operation at MMLPs</li> <li>• Tri-partite agreement with terminal operators for value-added logistics operations</li> </ul>
Positive Outlook			
Merger and Acquisition	<b>Vertical Integration</b>	Being capital-intensive infrastructure projects, adopting a “warehousing” model alone is not sustainable	<b>Diagonal Integration</b> <ul style="list-style-type: none"> <li>• Sharing of logistics services with other players; reduces cost</li> <li>• Vertical integration with operators of other legs in supply chain</li> </ul>
Positive Outlook	<b>Resource sharing</b>	PepsiCo and Nestle share warehousing, co-packing, and outbound distribution to retail stores of fresh and frozen products.	

### WAREHOUSING OCCUPIER DEMAND

Occupier demand spiked 62% YoY after COVID-19 pandemic to 4.8 mn sqm (51.3 mn sq ft) in FY-2022.

Pune and Hyderabad saw the most YoY increases in annual transacted volumes at 166% and 128% YoY, respectively.

3PL sector accounted for the highest market share among all occupier groups at 29% in FY 2022. 31% of the total space taken up by the 3PL sector in FY-2022 was in Pune.

NCR and Mumbai led the market in terms of overall transaction volumes during FY-2022



#### Key Opportunities

- 01 Opportunities for Warehousing development in Tier-II and Tier-III cities.
- 02 Integration of Cold-chain development with Warehousing operations.

<b>Entry Barrier</b>	<b>Lack of integrated infrastructure</b>	Lack of planned and integrated warehousing infrastructure development with inadequate cold chain capacity and truck parking	<b>Lack of Policy Incentives</b> <ul style="list-style-type: none"> <li>Better tax incentives required for PPP engagement in smart warehousing</li> </ul>
	<b>Globally uncompetitive warehousing infrastructure</b>	Compared to global warehouses, Indian warehouses lack significantly in terms of equipment and smart tools	
<b>Neutral Outlook</b>			

## Investability in Warehousing Sector

<b>Spatial Integration</b>	<b>Transformation to Logistics Parks</b>	Spatial integration with other services to reduce cost and for organized spatial planning	<b>Vertical Integration</b> Transformation of <ul style="list-style-type: none"> <li>Warehouses as MMLPs;</li> <li>CFSs as FTWZ</li> </ul>
<b>Positive Outlook</b>			
<b>Automation</b>	<b>Digital Integration</b>	To improving logistics cost and time through AI integration	<b>Smart Warehousing</b> Near large air-cargo hubs.  Within MMLPs for real-time supply chain management.
<b>Positive Outlook</b>			

### Key Global Examples

Amazon has semi-automated warehouses in US, where 400 robots do stacking & scanning.

Alibaba launched fully robotic warehouse in 2018 where 700 guided robots move parcels.

DHL uses smart glasses, robots, drones, and autonomous vehicles for a worker to identify products and sort through parcels

DHL has teamed up with Cisco to create a platform to monitor supply chain in real-time

IKEA converted its warehouses into showrooms, integrating physical and virtual shopping

Hitachi uses 2-armed Robot for scanning, picking, and packing cargo. Robot doubled the working speed.

<b>Cold Chain Infrastructure</b>	<b>Increasing Demand</b>	High growth in FMCG, pharmaceutical and organized retail sectors during the pandemic	<b>Capacity Augmentation</b> Within MMLPs for storage of perishable goods  Near Industrial Corridors
<b>Positive Outlook</b>			
<b>Dark Stores</b>	<b>Increasing Demand</b>	Instamart, Dunzo, Blinkit and Zepto, etc. are maintaining these premises at urban consumption centers	<b>Capacity Augmentation</b> <ul style="list-style-type: none"> <li>In Tier-II and Tier-III cities.</li> <li>Integration with rail sidings and MMLPs</li> </ul>
<b>Positive Outlook</b>			

### ASCELA's View

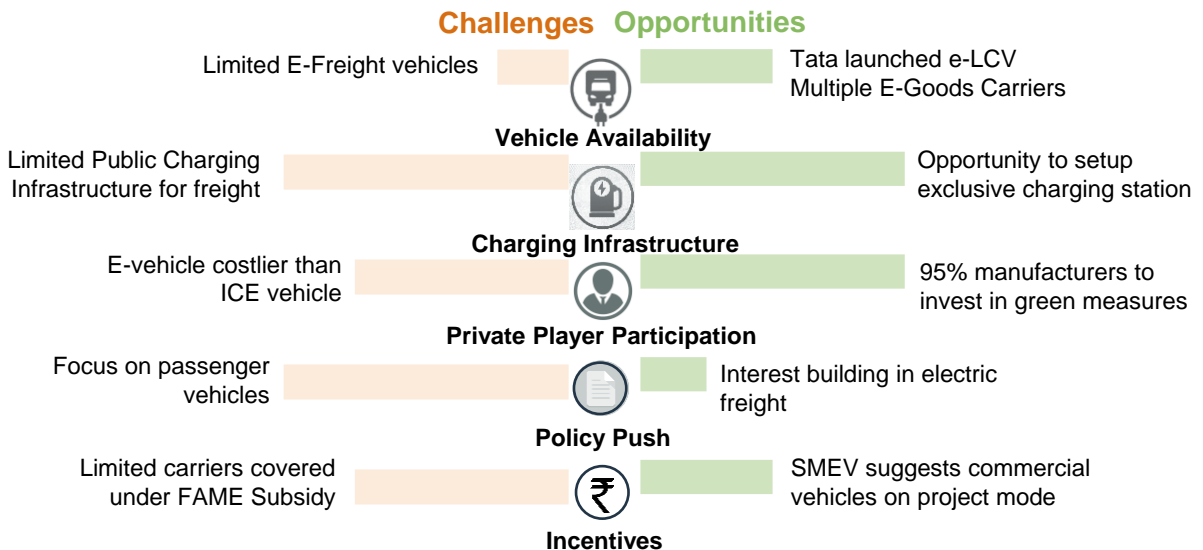
Warehousing industry is expected to expand further in the coming years with the rise of e-commerce transactions and demand for storage in Tier II and Tier III cities, strengthening the last-mile delivery to customers. This creates huge demand for temperature-controlled warehouses, high-density storage, and advanced distribution centers.

# Efficient & Sustainable Urban Freight Systems

Urban freight arguably accounts for ~10% of freight-related CO<sup>2</sup> emissions and ~50% of E-commerce supply chain's TLC. The sector's improvement is bottle-necked with insufficient data, lack of focused policies on urban freight. Covid-19 has, however, changed the outlook of decision-makers towards urban freight issues.

<b>Policy/ Regulatory Framework</b>	<b>Gati Shakti</b>	Focus on last mile connectivity	<b>Multi-Modal Integration</b> MMLP Development
	<b>Freight Smart Cities 2021</b>	Logistics Plan for 75 GOI proposed cities Mandate under LEADS Survey for States	
<b>Medium Outlook</b>			
<b>Privatisation/ Private Investment</b>	<b>Fragmented Transporters &amp; Facilities</b>	Transporters as individual entities E-commerce players own distribution centers	<b>Private Sector</b> Limited investment scope Development of DCs as per demand
<b>Neutral Outlook</b>			
<b>Collaboration</b>	<b>Delivery Service Partners</b>	E-commerce players appoint 3-P Transporters Amazon partners with various transporters within the city for cost saving	<b>Full-time Opportunity</b> For small transporters
<b>Positive Outlook</b>			
<b>Entry Barrier</b>	<b>B2C Shipping</b>	Ekart expands services beyond Flipkart Amazon to deliver 3-P e-commerce orders soon	<b>Competition</b> For smaller Indian Players like Delhivery, etc.
<b>Neutral Outlook</b>			
<b>Instability</b>	<b>Last Mile Delivery Start- ups</b>	140% e-commerce growth in this decade 71% freight movement via road	<b>Competitive Environment</b> For faster deliveries
<b>Positive Outlook</b>	<b>Drone-based Delivery</b>	India to witness delivery by drones for small payloads of 1kg to 100kg, in pharma and e- commerce sector. ~INR 60 Cr dedicated for drone manufacturing under PLI Scheme	

## Private Investment for Charging Infrastructure?





# INDIAN LOGISTICS INVESTABILITY INDEX 2023

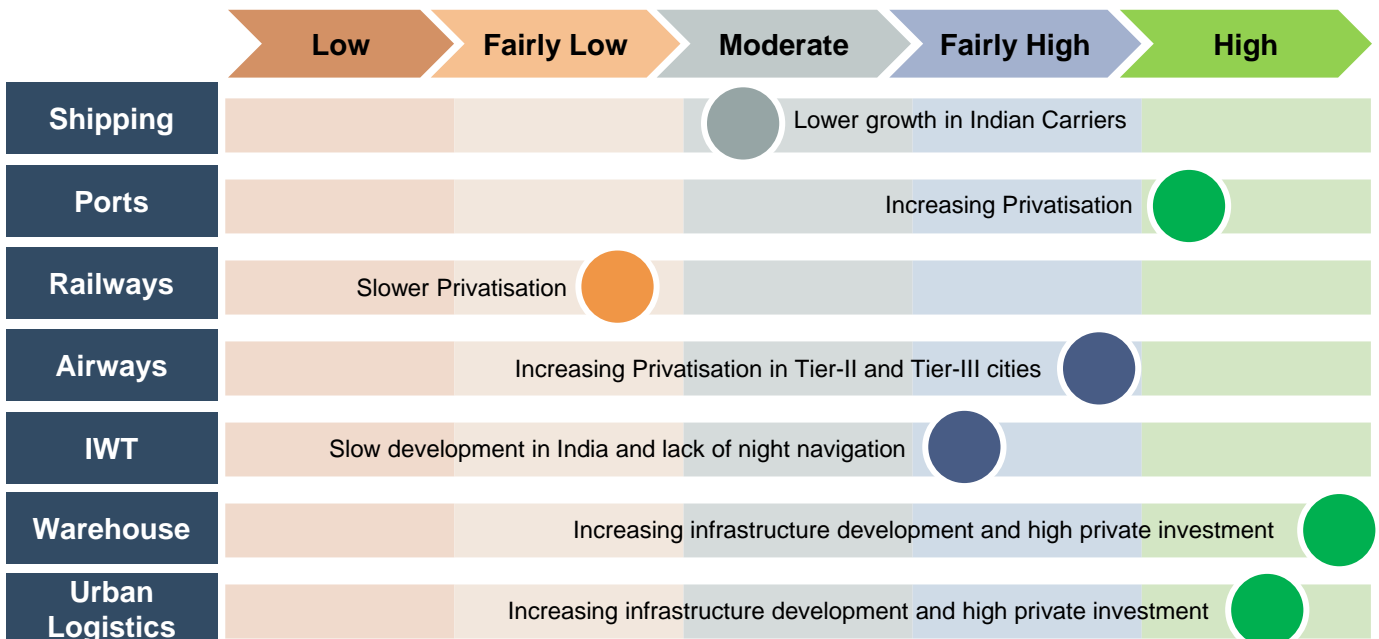
## Sector Scoring

	Policy/Regulations	Privatisation	Mergers/Acquisitions	Entry Barriers	Investability
Shipping	Blue	Grey	Grey	Orange	Grey
Ports	Green	Green	Blue	Grey	Green
Railways	Blue	Orange	Orange	Orange	Orange
Airways	Green	Blue	Blue	Grey	Green
IWT	Green	Blue	Grey	Orange	Green
Warehouse	Green	Green	Green	Blue	Green
Urban Logistics	Green	Green	Blue	Blue	Green

### ASCELA's View

Warehousing, Urban Logistics, and Port sectors have high potential for investments in India in 2023 owing to the greater policy push and consumer market demand. This would likely be followed by Air Cargo and IWT infrastructure due to large infrastructure investments planned by the Government of India.

## Investability Index in India – Year 2023





## United Arab Emirates

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## About ASCELA

ASCELA is a professional service company providing advisory services to organizations to help them enhance efficiency through analysis of market potential, competitive landscape, operational, financial, economic, technical, and strategic challenges. The firm was established in 2018 with a vision to provide independent strategic insights into Infrastructure and build environments.

ASCELA is headquartered in India and has offices at Gurgaon, India and Dubai, United Arab Emirates (UAE). In India, the firm is registered as ASCELA ADVISORS PRIVATE LIMITED (CIN- U74999HR2018PTC072828). ASCELA is recognised by the Department for Promotion of Industry and Internal Trade (erstwhile DIPP), Ministry of Commerce and Industry, Government of India, under the Startup India initiative (Recognition ID - DIPP17959).

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## About ASCELA Infrastructure Advisory

ASCELA's Infrastructure Advisory practice helps clients develop and leverage core competencies to deliver sustainable and tangible returns. We define strategies that help clients gain market share, enter new markets, regions, and products, improve the bottom line and reconfigure organizational/ operational structures. ASCELA is well placed to provide strategic inputs and analysis for assessing potential development opportunities in Infrastructure design and development space. Our in-depth knowledge of our focus transportation sectors, backed by intensive research and analysis of our clients' specific contexts, helps define superior strategies, frameworks, and implementable action plans.

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