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DIRECTORATE OF VOCATIONAL EDUCATION AND TRAINING

Logistic trends and opportunities in Vietnam

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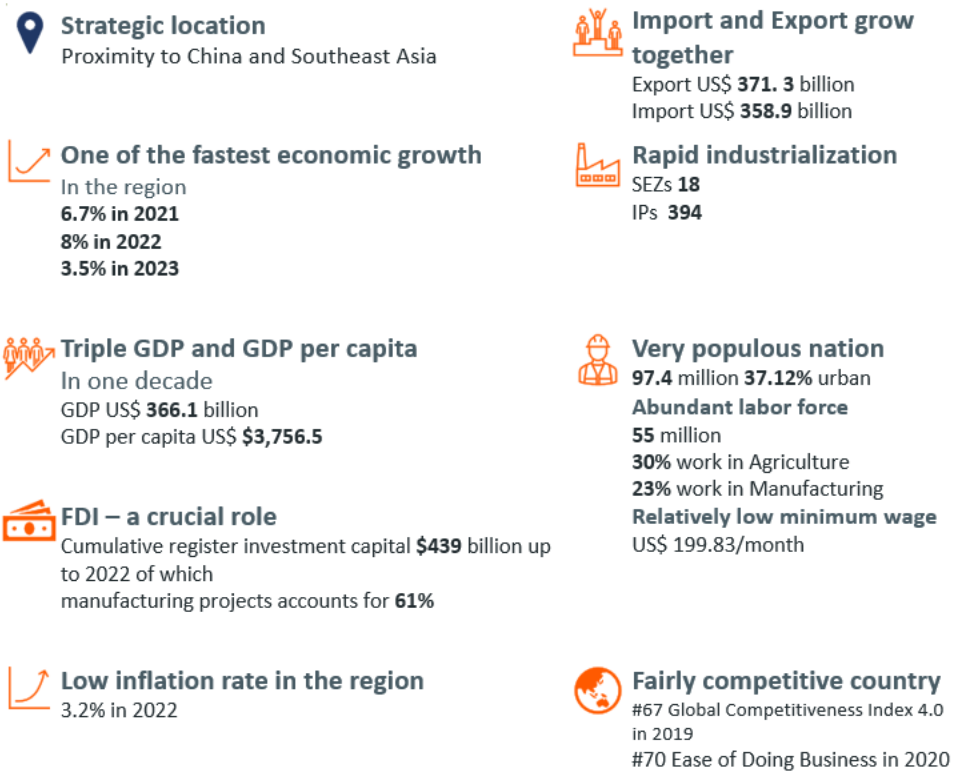
Table of Contents (if necessary)

Abbreviations

ASEAN	Association of Southeast Asian Nations
CBTA	Competency-based Training and Assessment
DFAT	Department of Foreign Affairs and Trade (Australia)
DVET	Directorate of Vocational Education and Training (Vietnam)
GEDSI	Gender Equality, Disability and Social Inclusion
GoV	Government of Vietnam
HCMC	Ho Chi Minh City
HRD	Human Resource Development
LIRC	Logistics Industry Reference Council
MOLISA	Ministry of Labour, Invalids and Social Affairs (Vietnam)
OPD	Organisation of People with Disability
PWD	People with Disability
RD	Disadvantaged rural
VCCI	Vietnam Chamber of Commerce and Industry
VET	Vocational Education and Training

Overview

Vietnam has recorded strong economic growth in recent years despite the pandemic and is well placed to continue growing based on its own export volumes, but also as a key hub location supporting growing trade between ASEAN and China. Vietnam expects a 5.3% growth in 2023 amidst weak global demand increasing to 6.2% in 2024. The Vietnam Logistics market is ranked 10th in the group of 50 emerging logistics markets globally. These are all good signs for the logistics market in Vietnam.



Currently, with the development of global science and technology, businesses providing forwarding and transportation services are also active in digital transformation and applying high technologies to their daily work. This is a very good signal for the Vietnamese logistics market. With the impact of covid people have also move over to eCommece and has resulted in a highly competitive market.

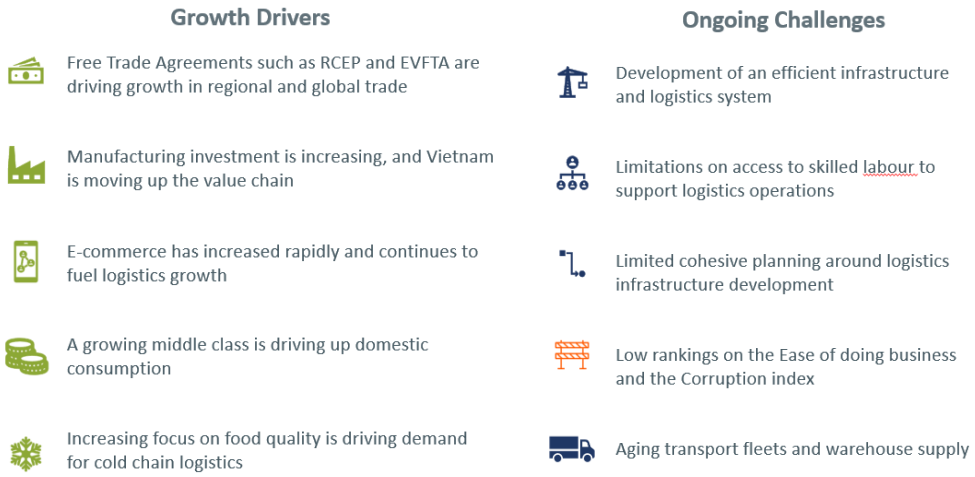
Vietnam logistics market

The Vietnam logistics market is forecast for ongoing, strong growth, but the market remains highly fragmented with limited consolidation contributing to Vietnam having one of the highest logistics costs to GDP ratios in the region representing 20% of total GDP.

Vietnam's stable and supportive Government policies, extensive trade agreements and favorable trends in manufacturing, exports and domestic consumption are driving logistics services in the country. Revenue from warehousing and transportation services has increased steadily over the years, except for the two-year decline during the epidemic. It is expected that this level of revenue will soon recover to the level of 2019.

Growth is forecast across all segments of the inland logistics sector with Contract logistics forecast to grow by the highest amount at 90% between now and 2026. Road transport and warehousing, the largest services in the market are both forecast to achieve 25% growth by 2026.

The country's logistics industry is benefiting from FTAs and the paid growth of e-commerce. Despite its great potential for growth, poor transport infrastructure and high costs are holding back the logistics industry, resulting in the logistics costs representing 20% of GDP in Vietnam while it is 7-9% in mature markets. With a highly fragmented 3PL market and comparatively high logistics costs, focus is expected to shift to consolidation connectivity and optimization within the logistics sector to ensure that Vietnam can maintain it's position as a cost-effective manufacturing base.



Cost is still a big issue for transportation operations in Vietnam. Transportation costs account for 60% of logistics costs. The reason for this is that transportation is highly dependent on road transport, a type of transport with high freight charges. Meanwhile, cheaper modes such as waterways and railways have not been prioritized for development. But this is still the most popular mode of transport because Vietnam's infrastructure is not enough to use other modes of transportation.

Road Transportation

The convenience and accessibility of road transport makes it by far, the dominant mode. Currently, goods are mainly transported via road (nearly 72% of cargo volume in 2022 was transported by road). In addition, due to the geographical advantage of many rivers and canals, especially in the South, water transport also accounts for a large proportion of all modes of transport (22.7%). Next is sea, rail, and air.

The efficiency of road transport is low, with high levels of traffic congestion, low travel speeds and long waiting times due to a lack of planning and connectivity between transport modes.

The potential for exploiting the capacity of road transport has not yet reached the highest level because road works are still not consistent in quality and key traffic projects are at risk of being behind schedule.

Most trucks in Vietnam are small vehicles for local distribution where limited modal choice exists. Alternate modes are gaining focus for heavy freight and longer routes.

Rail Transportation

Vietnam's rail infrastructure is considered outdated with limited capacity for cargo and long lead times. Rail upgrades are a key part of the government's logistics master plan however, it is expected to be some time before the benefits are realized.

Waterway Transportation

Waterway transport is focused in the south and gaining more traction as an alternative mode to road for container transport to ports and ICDs. Although travel times are longer, the carrying capacity of up to 45 TEUs per trip makes the cost per unit very attractive. River port upgrades are required to support significantly higher volumes. Waterway transport has not yet fully developed its capacity as expected. Although water freight rates are low and can transport many goods with large volumes, Vietnam's waterway transport has not yet been invested and developed. Besides, Vietnam should also continue to develop further by air and by sea – essential modes of transport for national development.

Strong economic growth and foreign policies are contributing to a growing logistics market, but there are still some challenges to overcome. Vietnam's logistics industry still has many weaknesses such as: logistics costs have not been optimized; logistics enterprises lack linkage with each other and with production, business, import-export enterprises.

Sustainability

Sustainability is set to become a mandatory trend among industrial developers and logistics operators.

FIVE KEY TAKEAWAYS

100%
of our investor sample stated they employ green leases with 36% linking remuneration to ESG targets.

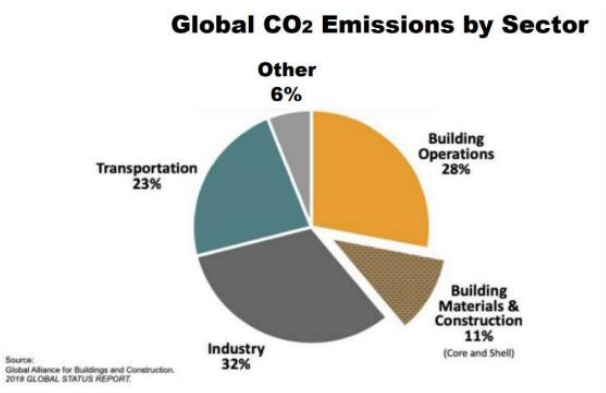
77%
of our investor sample have minimum environmental certification criteria for new acquisitions. Of those respondents targeting EPCs, over 50% require a minimum B rating.

74%
of our investor sample currently use CRREM analysis to analyse their existing portfolio and more than half require CRREM analysis as part of acquisition due diligence.

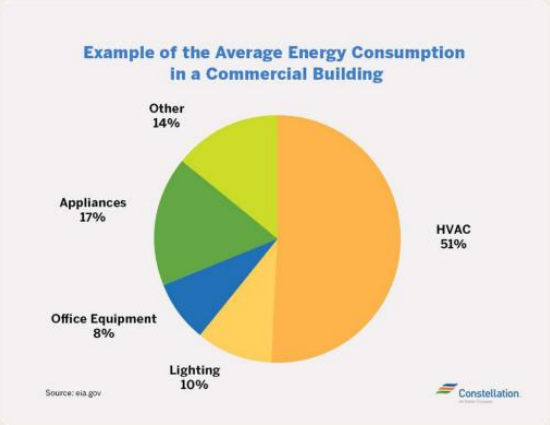
58%
of our investor sample are actively looking to acquire poor ESG-performing assets to improve/upgrade and reposition.

44%
of our investor sample own or are developing a NABERS-rated building.

Global Carbon Emissions



Emissions from buildings



Net Zero & Net Positive

Net Zero:

- Balance between the amount of GHG produced and the amount removed from the atmosphere.
- Requires commitments by governments and corporations based on science-based targets (SBTi)

Net Zero vs. Zero Carbon

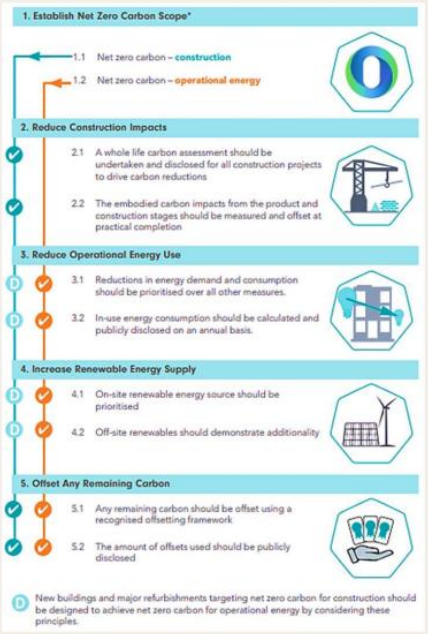
- Net Zero focus has resulted in emissions to continue to grow with the belief that Carbon Capture Utilisation Systems (CCUS) will be developed to capture this.
- Zero carbon is the genuine reduction of carbon emissions at the source rather than pro-longing business-as-usual through off-setting, tree planting and carbon-capture.

Net Positive

- Where a building removes more carbon from the air than was generated in its whole-life cycle (embodied and operational carbon).

Real Estate Sector

- Energy efficiency to target building operations, resource efficiency to reduce impacts from materials and greater decarbonisation of the energy system



Source: UKGBC

Is VN ready for green leasing?

Examples of clauses in green leases	Is building infrastructure in Vietnam ready?
Energy Efficiency	
Net zero goals	✓
Carbon pricing	X
Energy efficiency fixtures and systems	✓
HVAC temperature setting	✓
Water Conservation	
Low-flow fixture	X
Water-efficient landscaping	✓
Leak detection systems	X
Data Management	
Disclosure and reporting of energy and water usage	✓
Submetering	✓

Examples of clauses in green leases	Is building infrastructure in Vietnam ready?
Waste Management	
Recycling programmes	X
Composting facilities	X
Waste reduction strategies	X
Cost Provisions for Green Initiatives	
Pass-through cost provisions for sustainability-related investments and ongoing operational expenses	X
Sustainable Procurement	
Procurement of sustainable materials, suppliers, and contractors during fit-out	✓
Sustainable Transportation	
Transit pass provisions	X
EV charging facilities	X

Regional adoption of green leases has been slower than US & EU. H1 2023 survey in Malaysia, only 20% of respondents indicated an interest in adopting green leases.

Vietnam has the potential ready itself for green leases with certain existing infrastructure in place for energy efficiency, data management, and sustainable procurement.

Future trends

Logistics industry growth is expected to be ongoing in the foreseeable future with a number of key trends expected to influence the level and direction of development in the sector.

Infrastructure	▪ Ongoing road and port upgrades will support growth. ▪ Rail upgrades will play a pivotal role in the development of local and cross border transport but need to be supported by inland logistics development. ▪ Additional investment is expected in river ports and ICDs to develop intermodal capabilities.	Automation	▪ As logistics and labor costs increase, the value proposition for warehouse automation will become more attractive. ▪ Demand for higher class warehouses that can support automation is expected to increase. ▪ Robotics as a service (RAAS) is also being touted and likely to emerge as an option in the short term.
Sustainability	▪ Reliance on road transport is expected to drive focus on electric vehicles in future. ▪ More energy efficient warehousing design will also become key to reducing operating costs. ▪ Smarter fleet design to increase load utilization and more efficient transport planning will also become key to reducing emissions and costs.	Cold Chain	▪ Growing focus on food safety and increasing food exports are driving growth in cold chain logistics with many companies entering this segment of the market. ▪ Significant investment has been made in cold storage facilities in both the north and south and cold chain transport is gaining more attention. ▪ Ongoing growth is expected in the medium term.
Digitalization	▪ Vietnam is in the nascent stage of supply chain digitalization, but there is increasing focus and investment in this space. ▪ Opportunities exist at discrete supply chain levels, but also at a macro level in areas such as modal connectivity and transport interchange brokerage among others including port management and end to end solutions.	Capability Development	▪ Availability of skilled labor is a problem across the logistics sector especially as manufacturing is becoming more sophisticated. ▪ Numerous training organizations have developed, but there will need to be an ongoing focus on upskilling the workforce as the industry grows.

The "**right now" expectation** is putting high pressure on the logistics chain and warehouses automation technology must evolve to survive and compete. We can't deny it, warehouse automation brings huge benefits in **terms of productivity, safety and efficiency.**

Cloud	**1. Cloud-based Warehouse Management Systems (WMS)** • **much more scalable and flexible** than a site-based WMS • **software-as-a-service (SaaS)** subscription rather than paying for software licenses. • **advanced cybersecurity, fast processing power** and **24-hour maintenance** services.	AI	**4. Machine Learning (ML) in Warehouse Labor Planning Systems** ▪ (AI) technology in which machines are created with the **ability to improve their decision-making and performance** through experience. ▪ application would be an order-picking mobile robot which learns how to handle different items in ways that avoid breakage. ▪ ML can be used to make **warehouse labor planning systems** much more accurate and efficient
AGV	**2. Mobile Robots - Displacing Conveyors** ▪ automatic conveyance systems is that they **take up a large amount of your warehouse space** ▪ fixed structure also makes it difficult and expensive to alter your warehouse layout to meet changing needs. ▪ AGV's tart receiving a return on your investment (ROI) sooner. Once in use, **they adapt quickly** and easily to any redesign of the operation.	Automated XD	**5. Automated cross-docking** ▪ transfer **incoming goods to outbound vehicles** with little or no need for storage and with minimal handling. ▪ This time-saving and space-saving approach can be even more efficient if it is automated. ▪ time and labor can be reduced further by implementing an **automated scanning and sortation system**.
DATA	**3. Big Data and Analytics** • 'smart' warehouses automatically gather **huge amounts of data** • task has become fast and automatic. • Analytics systems can detect **patterns in your data** which would otherwise be invisible optimum decision-making and improvement. ensure the **fastest possible flow of goods**.	RaaS	**6. Mobile Robots as a Service (RaaS)** • This cloud-based subscription package approach to deploying AGVs and AMRs means you **no longer need to make large capital investments** to obtain their benefits. • RaaS allows you to **use mobile robots without buying them**.

Infrastructure investment and upgrades in road, rail and water ways/sea. Along the 2050 commitment of the Government in net zero and the sustainability targets, there will be further pressure on green technologies and facilities.

Digitalisation in Vietnam in supply chain is in its infancy, but there is increasing focus and investment in this space. Opportunities exist at discrete supply chain levels, but also at a macro level in areas such as modal connectivity and transport interchange brokerage among others including port management and end to end solutions. The is a massive opportunity from proof of origin, track and trace, cost efficiencies and payments.

The future of logistics is automation and the "right now" expectation is putting high pressure on the logistics chain and warehouses automation technology must evolve to survive and compete. We can't deny it, warehouse automation brings huge benefits in terms of productivity, safety, efficiency and it's happening now.