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Valuation & Advisory

Green Warehouses, Share the Future

The Impact of ESG on Logistics Real Estate in China

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Executive Summary

ESG stands for Environment, Social, and Governance. Environment refers to the environmental impact of an organization's activities. The social pillar refers to an organization's social responsibilities and relationships with its stakeholders. Governance refers to how a company is led, managed, and supervised.

Since 2016 when the Paris Agreement came into force, the market has been increasingly recognizing and adopting ESG principles. Investors, in particular those based overseas were among the first to embrace ESG principles. Gradually though, participants in the Chinese domestic market have also begun to accept and embrace ESG principles.

Under the ESG framework, investors and lenders will push the logistics real estate sector to better align with the ESG principles. All the participants in the logistics sector, including investors, lenders, developers, owners, occupiers and operators will need to engage to integrate the ESG principles into the real estate life cycle from development, design and construction to operation, investment, and exit. As such, we can see how these changes driven by a wider acceptance of ESG principles, will effectively re-shape the entire logistics supply chain.

For investors, ESG principles are a set of evaluation and selection criteria when making investment decisions. As the trend has shifted towards responsible investing, ESG principles have become a more important consideration when forming investment strategies.

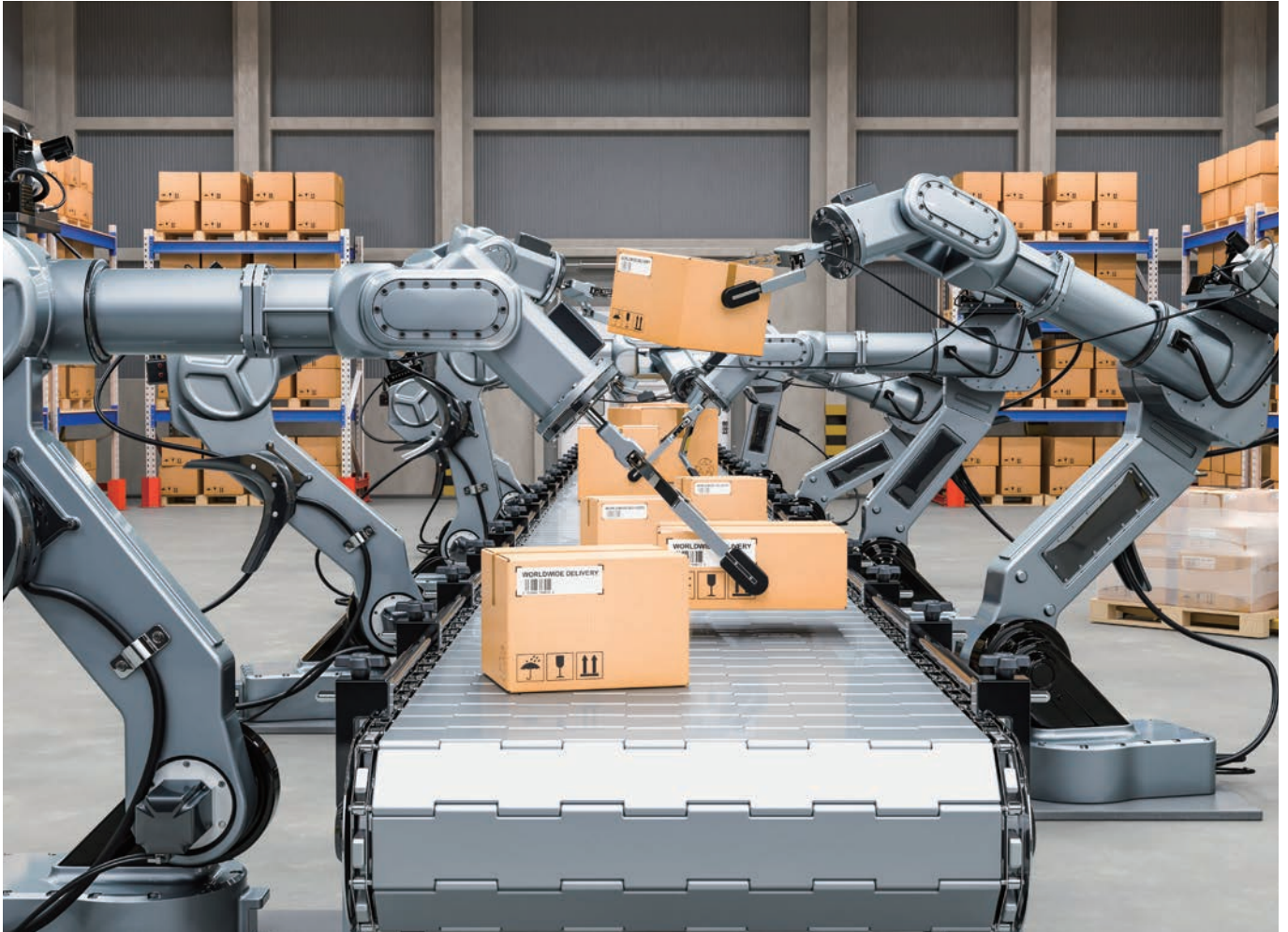
For corporations, ESG can help them understand how to better manage risks and opportunities related to environment, social, and governance issues. ESG principles can also guide corporations to achieve cost reductions, find new opportunities to improve their business and help with risk management.

In this white paper, we analyze the status quo of the logistics real estate market in China, summarize the ESG-related measures that are currently being taken, look at occupiers' attitudes towards ESG, reflect on the importance of ESG in investment decision-making, and invite logistics real estate owners to share their ESG strategies and best practice stories. We find that investors, especially those from overseas, have already integrated ESG principles into their investment decision-making processes. With operators keen to promote their own green credentials, many logistics companies already proactively engage in ESG practice, especially decarbonization within their supply chain. Rooftop photovoltaics, energy storage, and water re-cycling are popular and effective strategies for improving ESG performance in logistics properties. In the meantime, occupiers are increasingly aware of ESG principles and are helping to push landlords to make positive ESG changes to their buildings.

We are delighted to present to you our white paper, Green Warehouses --- the Impact of ESG on Logistics Real Estate in China and to share with you more details on our key findings.

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01

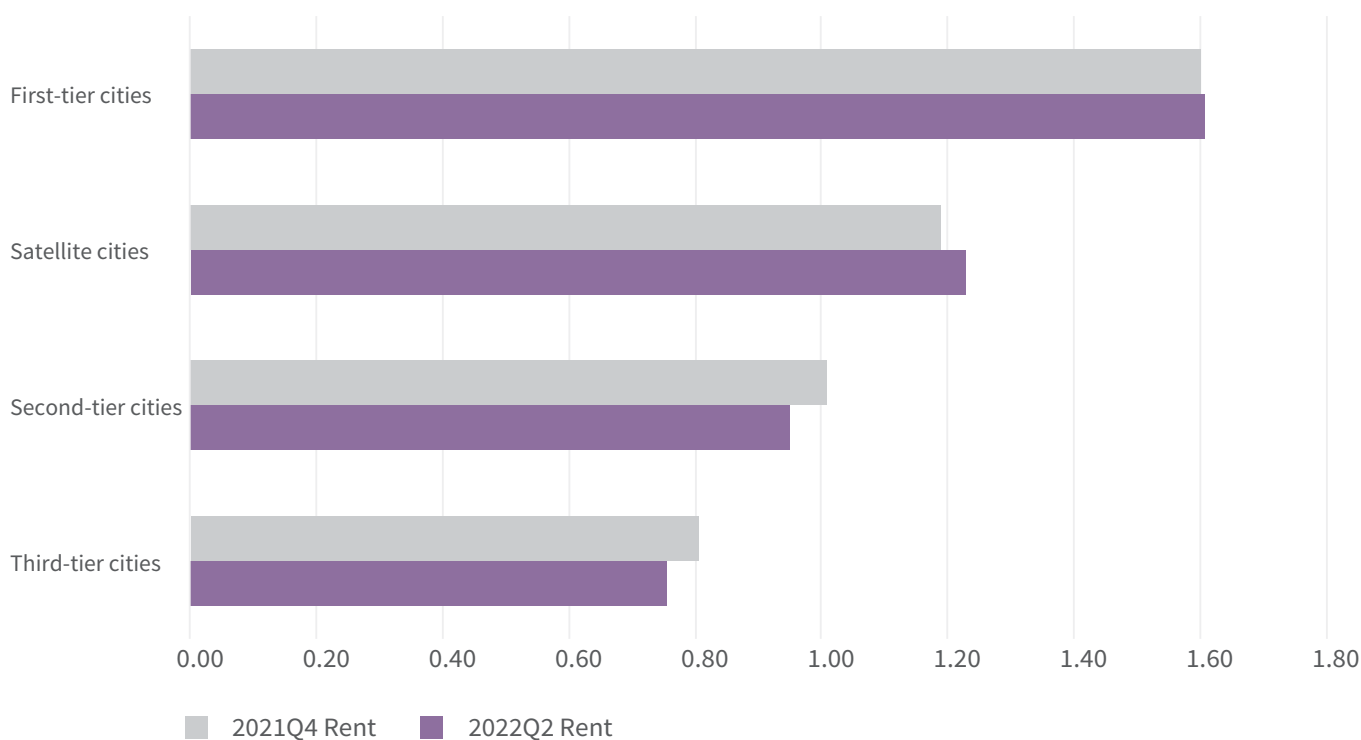
Fierce Competition in the Chinese Logistics Real Estate Market

Emergence of a Two-Tier Market of Logistics Real Estate in China

As the bridge of the modern commerce, the logistics industry plays a pivotal role in our global economy. In China, as our economy has boomed, so too has the logistics real estate market, which we now consider a mature market. However, the success of the logistics industry in China has led to a fiercely competitive market, but performance is not uniform across the whole market. At the end of 2021, among the 45 cities monitored by JLL's Zhenliang Asset Management Platform, the median rent for a Grade A warehouse in tier-1, tier-2, and tier-3 cities was 1.6, 1.01, and 0.01 yuan/sqm/day, respectively. The median rent in satellite cities which can take advantage of their locations close to tier 1 cities to attract spillover demand, was 1.19 yuan/sqm/day. Over the course of H1 2022, the rents in tier-1 and satellite cities have continued to rise, especially in satellite cities, whilst the rental growth in tier-2 and tier-3 cities is coming under slightly more pressure, with rents generally tracking flat or decreasing. As such we can consider that there is a two-tier market in China for Grade A logistics stock.

Figure 1
Diverging of rents in Grade A warehouse market

As with the logistics real estate market in China continues to mature, the competition is becoming fiercer, resulting in a more diverse and specialized market.



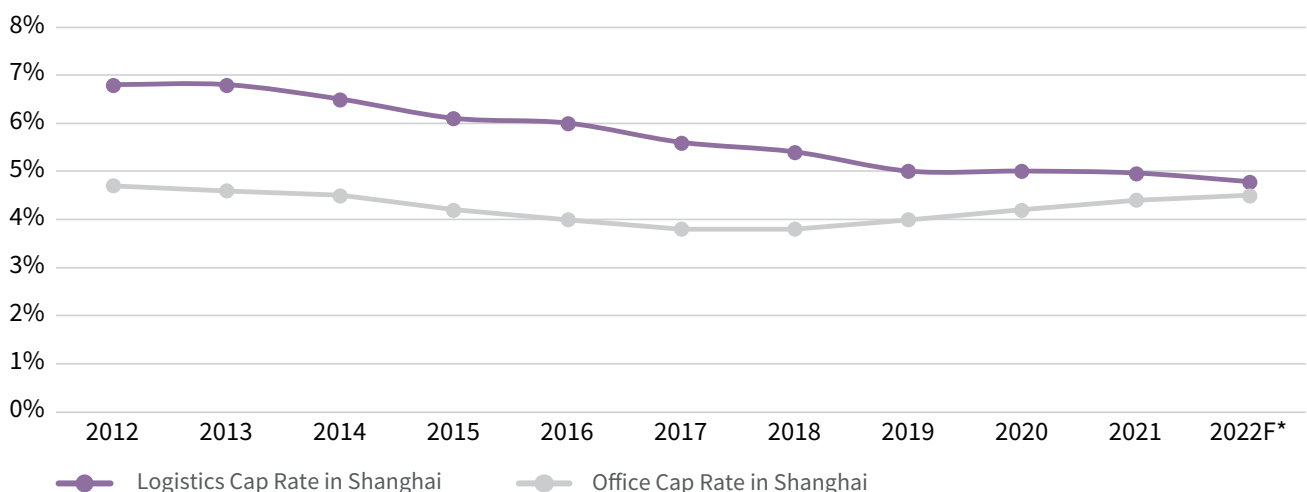
Rents are median rents, rent-free period not considered, management fees included, taxes not included.
Source: Zhenliang Asset Management Platform, JLL

Strong Competition in the Investment Market

The logistics sector in China has been in a period of rapid growth since 2020, with the rapid development of the E-commerce sector, the continued growth of manufacturing, and the advance of the medical equipment and cold storage markets due to the COVID-19 pandemic. With offices in China facing higher vacancy levels due to oversupply, logistics assets have attracted increased attention from investors. This strong competition for logistics assets has created upward price pressure and as a result, cap rates have compressed as capital values rise.

According to the data from our Zhenliang Asset Management Platform, the spread between the office and logistics cap rate in Shanghai has narrowed in recent years. In 2012, Shanghai's logistics cap rate was more than 200 bps higher than the office cap rate. In comparison, we project that by the end of 2022, the spread will have narrowed to around 50bps. If we compare this to other markets around the world, the typical spread between office and logistics cap rates is around 50- 100 bps. As such, we consider that the space for any further compression of the logistics cap rate is limited.

Figure 2
Office and Logistics Cap Rate in Shanghai, 2012-2022




Source: Zhenliang Asset Management Platform

*Note: projected numbers for 2022 Q4

This trend of cap rate compression means reduced annual return on investment and a longer payback period. Therefore, for investors planning to enter the market, improving their asset management to improve efficiency and reduce cost will be essential for rental growth and for protecting a more desirable level of investment return. We expect to see this emerges as a major challenge for investors during the next investment cycle.

With the operation and management of assets taking an essential role in improving investment performance, the topic is becoming more prominent in discussions being held with logistics and warehouse investors. One of the ways they have identified reducing costs and increasing efficiency is through decarbonization which we expect will become a new growth engine for logistics real estate.



The whole sector is also working hard to decarbonize and reduce energy and operational costs. The efforts to lower the cost and increase the efficiency of buildings starts with changes in Grade A warehouse construction.



02

ESG Facilitates Cost Reductions and Efficiency Improvements in Logistics Properties

As the logistics market has grown rapidly, logistics real estate has become an essential component of the modern supply chain. Real estate assets are not only helpful for storage, but they are also essential for improving the efficiency of the storage and supply chain process. Occupiers tend to consider the technical elements of the warehouse, including its suitability for automation and incorporation of features such as a digital loading platform, teleprocessing system and smart ramp.

The ongoing development of the logistics industry not only sets higher standards for the operational capacity of logistics real estate, but also increases energy consumption by warehouse and logistics assets. Occupiers will increasingly prioritize energy efficiency, operational costs, carbon emissions, and the stability of the energy supply as key metrics when selecting logistics assets

for rent. Because ESG measures can facilitate the reduction of operational costs and the improve the energy efficiency through decarbonization, occupiers are increasingly willing to pay a premium for warehouses that better incorporate ESG elements. High energy bills have been a challenge for occupiers and owners alike. Periodic episodes of electricity shortages in China are a concern for occupiers and so a stable source of power is an increasingly valued commodity. In response to this, Grade A warehouse occupiers are striving to decarbonize in order to lower their energy bills and reduce their overall consumption. The efforts to lower the cost and increase the efficiency of buildings starts with changes in Grade A warehouse construction. Some of the measures include:



Rooftop photovoltaics

To increase energy efficiency and reduce energy bills, many Grade A warehouses have started using solar power through rooftop photovoltaics. Conveniently, most warehouses are already well suited to the installation of rooftop photovoltaic panels due to their large size and exposure to incoming solar radiation.



Through the SolarSmart solution, Prologis can build, operate, and maintain rooftop photovoltaic systems. By the end of 2021, Prologis had generated **285 trillion** watts of electricity, which sees them ranked **third** in the U.S. in terms of the amount of solar electricity generated.



There are three mainstream models of operation for rooftop photovoltaic systems: 'Self-owned', 'Rental', and 'Power Purchase Agreements'. For the owners and operators of Grade A warehouses, installing a rooftop photovoltaic system can not only generate additional revenue through charging occupiers for utility costs, but it can also reduce overall running costs. The operators of rooftop photovoltaics rent the rooftop at a lower rate, the building owner then also gets the electricity at a lower rate. Since the cancellation of the 'Solar Electricity Subsidy Scheme', the State Grid purchases solar and coal generated electricity at the same price. The operators of rooftop photovoltaics who are able to cut their leasing cost can gain more profits. In the meantime, the electricity generated on-site will allow warehouse owners and operators to lower the electricity cost, as well as gain profits through selling the electricity. To sum up, installing rooftop photovoltaic systems can help warehouse owners achieve both cost reduction and sustainable development.



Self-owned:

Under the 'Self-owned Model', the owners of warehouse properties install rooftop photovoltaic systems on their own rooftops. The electricity generated will first be used to support the warehouse operation and then any residual electricity will be sold to the state grid. Under this model, warehouse owners are able to achieve additional revenue through charging tenants for electricity consumption and they can also reduce their own bills for any electricity consumption in common or un-occupied areas. Additionally, whilst there is no longer a national-wide subsidy for solar-electricity 2021; some jurisdictions still provide local subsidies for solar-electricity. This could then be classed as another source of revenue from rooftop photovoltaics.



Rental:

The 'Rental Model' differs from the 'Self-owned Model' as this involves warehouse owners licensing the rights to use their rooftop space to photovoltaic operators. Warehouse owners do not participate in the investment and operation of the rooftop photovoltaic system themselves and so the rental income becomes the main source of revenue. All the electricity generated will then be sold to the state grid with the income generated being kept by the photovoltaic operator. Typically, the licensing period ranges from 20 to 25 years, which is generally commensurate with the expected life cycle of the rooftop photovoltaic equipment. Under the rental mode, warehouse owners gain additional revenue through rooftop licensing, whilst incurring no capital or operational costs.



Power Purchase Agreement:

The 'Power Purchase Agreement Model' can be regarded as a hybrid of 'Self-owned' and 'Rental' models. Warehouse owners license their rooftops to photovoltaics operators to install the panels and the two parties sign a power purchase agreement that prioritizes meeting the utility demand of the warehouse occupiers, with any residual power then being sold to the State Grid. Under the 'Power Purchase Agreement Model', rooftop photovoltaic operators will be able to obtain a license for the use of the rooftop at either a discount rate or on a negligible basis. In return, the warehouse occupier can then use the electricity at a lower rate. Because the electricity generated on-site is cheaper than electricity from the State Grid, warehouse owners can lower service charges and boost their overall net profit. Therefore, the 'Power Purchase Agreement Model' can be considered mutually beneficial and has been more widely adopted across China when compared to either the 'Self-owned' or 'Rental' models.



Green design and construction: carbon neutrality during construction starting from 2025.



By the end of 2021, Prologis had generated 285 trillion watts of electricity around the globe, ranked third in the U.S. in terms of the amount of solar electricity generate.



Using LED lighting can cut the energy use by 60% - 80%. Since 2015, Prologis has been using LED lighting in all new projects.



Installing charging stations: Prologis plans to install charging stations that can provide as much as 10 trillion watts of electricity.



Installing white reflective rooftop surfaces can improve solar efficiency by reflecting sunlight and helping to reduce cooling costs. At the end of 2021, the coverage of white reflective rooftop surfaces in Prologis' industry parks had reached 47%.



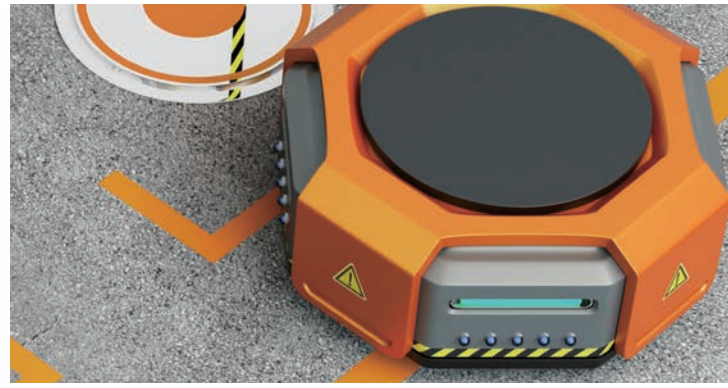
Energy Storage System

A steady power supply is important for warehouse occupiers. Having on-site power storage can guarantee an uninterrupted power supply when there are electricity shortages or when the clean energy system, including the rooftop photovoltaic system, cannot meet the current level of demand.

Cold storage and distribution centers in particular need to operate non-stop to meet the increasing demand of consumers. As such, energy storage systems for Grade A warehouses, especially those occupied by cold storage users, has become increasingly important. Many large logistics parks in China are exploring power storage and micro-grid technologies to help ensure uninterrupted operation of the facilities.

Setting up an energy storage system can ensure continued operation even when there is a power shortage. This helps to provide resilience against risks such as power outages, low voltage or other issues related to the quality of power.

Moreover, setting up an energy storage system can reduce energy bills by reducing spending during peak hours. The power storage system can allow users to use the backup power during the peak hours that charge the highest rate, whilst consuming grid-power at times when electricity charges are at their lowest.



GLP and Brookfield have formed a 50:50 joint venture to develop and operate rooftop solar photovoltaic cells on logistics and commercial rooftops in China.

The China Southern Power Grid Company has signed an agreement with Zhuangning Cold Storage company to collaborate on a pilot scheme exploring a 'distributed energy storage project'. The first stage of this project plans to conduct research on core energy storage technologies and build a 250kw lithium iron phosphate battery.





Water Recycling

Rainfall collection and harvesting systems can effectively reduce water consumption. The rain collection and harvesting system collects rainfall, then processes it for recycled usage. The processed rainfall can be used for green space irrigation, road surface cleaning, and greywater systems. Using under-utilized rooftops and empty lot space to install water recycling facilities can reduce the municipal water usage by 40-50%. In addition, the water recycling system can help reduce stresses

on the drainage system by re-directing grey water into the recycling tank, helping to protect the logistics parks from flooding during heavy rain events.

Currently, multiple logistics parks run by GLP and Yupei Group have installed rainfall recycling systems. We believe this will be an important measure which will be adopted more widely across logistics parks in China to incorporate ESG elements in the future.

GLP Baoshan Logistics Park installed a rainfall recycling system to irrigate its green spaces. Thanks to this system, the park can reduce its use of municipal water by **3,500 tons** on an annual basis.



GLP Baoshan Logistics Park



Smart Electricity Meters

Smart electricity meters and water meters can be used by occupiers to reduce consumption. Smart electricity meters and water meters can collect, calculate, and transmit real time utility data to provide more detailed and timely information for occupiers. With these data, occupiers can better manage their power usage, reduce utility costs and

reduce carbon emissions by controlling consumption.

Many logistics parks in China and abroad have been using smart electricity and water meters. In addition to improving energy efficiency, they also save on time spent copying and summarizing the readings from traditional meters.

Prologis Moissy II DC1 project applies innovative sustainable solutions. These include providing heating solutions through rooftop photovoltaics and geothermal energy as a substitute for fossil fuels.



Prologis Moissy II DC1

JLL analyzed multiple Grade A warehouse projects in China and found that projects with 'green building' or 'zero carbon' facilities are more likely to attract occupiers and these projects may also benefit from a rental premium.

03

ESG Facilitates Logistics Companies to Pursue Social Responsibilities

Improving working conditions and workers' wellbeing whilst facilitating sustainable development is an important part in implementing ESG strategies for logistics corporations.



In recent years, a shortage of talent, in particular truck drivers, becomes increasingly challenging for the logistics industry. The improvement of staff wellbeing is seen as essential for staff retention and is a channel for companies to pursue corporate social responsibilities and improve internal governance. For years, Prologis have been carrying out the Community Worker Initiative (CWI) to connect the workforce to the logistics sector.

In China, corporations in the logistics sector are placing greater emphasis on the protection of workers' rights. Companies have been working to protect workers' rights, improve working conditions, encourage life-long learning,

and provide on-the-job training. In terms of advancing the professional skills for staff in the logistics sector, Prologis has launched the road safety training programs for many years. As for improving the working environment, GLP Xi'an I-Park consistently upgrades the facilities in the park to create a young, vibrant, and innovative vibe.

In addition, as important participants in the local community, companies in the logistics sector actively engage in community development by taking part in charity and volunteer events. All these contribute to the formation of strong bonds between the corporations and local communities.

Since 2013, Prologis holds IMPACT Day volunteer events every year in May around the world to provide services to disadvantaged groups in local communities. To date, it has been the 10th IMPACT Day. In 2022, Prologis launched Sound Moves, Heart Joins charity campaign to 'donate sound'. This is an innovative contact-free form of volunteering uniquely designed during the period of regular COVID-19 prevention and control. In this way, Prologis calls for the participation of its workers, business partners, and the public, and encourage more people to be involved in charity activities.

Many companies in the logistics sector are active at the frontline of pandemic prevention. The logistics sector makes important contributions to pandemic prevention by ensuring

that logistics facilities function normally. During the lockdown events, many logistics and warehouse companies are exempt from the lockdown as they provide essential services.

During the 2020 Shanghai lockdown, the VX Logistics Group responded to the call of the local government to ensure the provision of essential supplies. The VX cold storage warehouses in Haigang, Nanqiao, Xinqiao, and Xinpang in Shanghai sent out a total of 79,000 tons of essential supplies.



VX participated in supply assurance work during the COVID-19 pandemic

04 Occupier Survey

In the first half of 2022, Zhenliang Asset Management Platform and 4 leading corporations in the logistics sector, including Prologis, DragonCor, VX Group, and LOGOS jointly conducted a questionnaire-based survey to 210 occupiers to understand their ESG awareness and practices. The survey provided insights about the impact of ESG principles on occupiers, the increasing awareness of ESG and sustainable development, and facilitated communication on the topic between owners and occupiers.

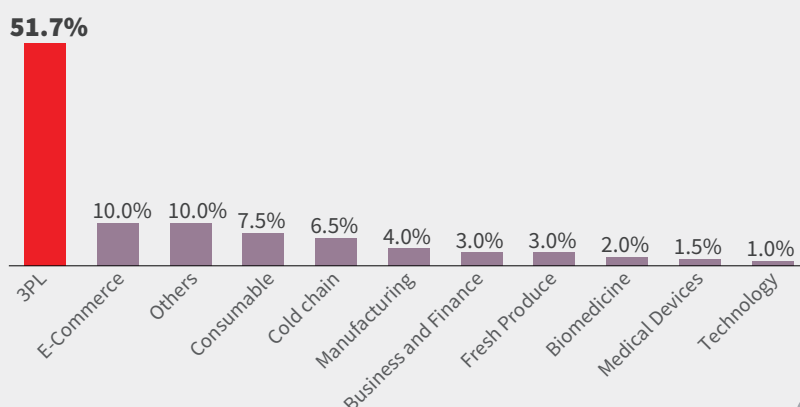


A large share of respondents in the survey are 3PLs and E-commerce occupiers, accounting for over 60% of the respondents. Most of the respondents are operating managers or middle-rank managers in privately owned companies. 88% of respondents' companies rent Grade A warehouses.

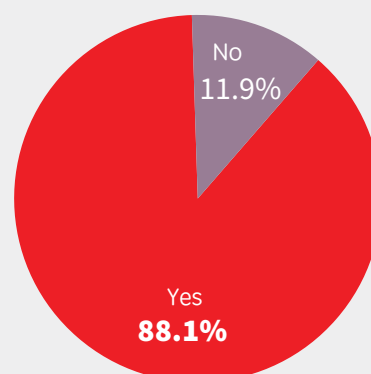
52%
3PL occupiers

88%
Grade A warehouse occupiers

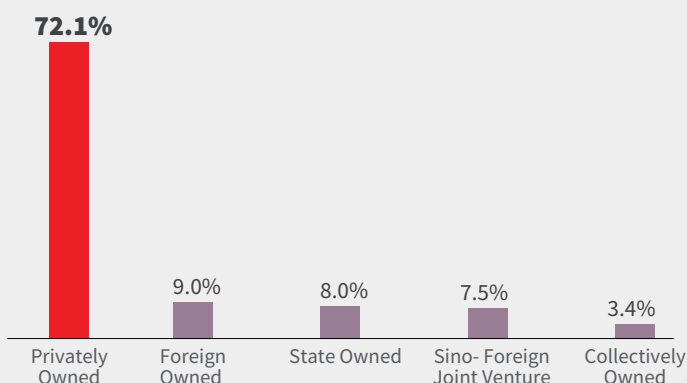
Q What industry does the company you work in belong to?



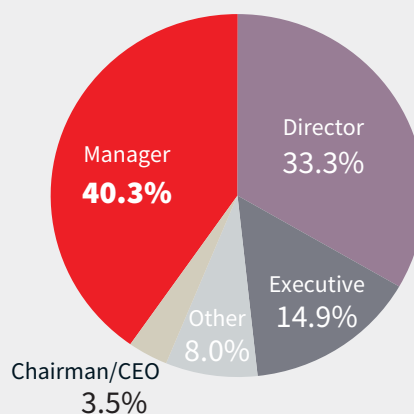
Q Does the company currently rent any Grade A warehouse space?



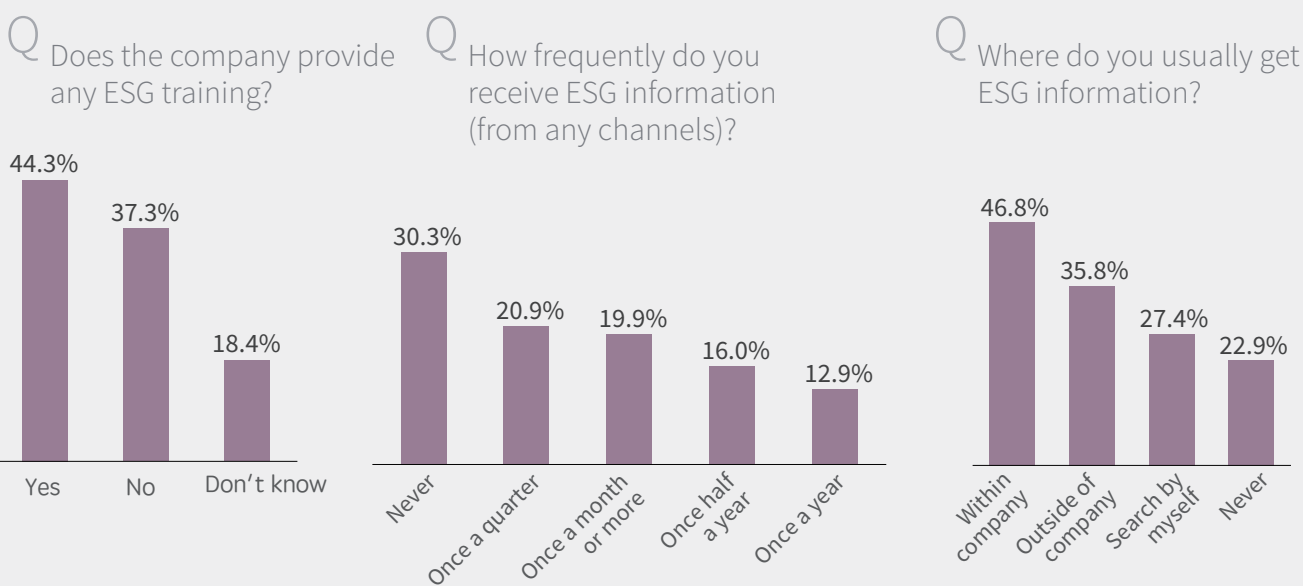
Q What is the ownership type of the company?



Q What is your position in the company?



In terms of providing and receiving training on ESG, nearly half of the respondents indicated that they have had internal ESG training. About 70% of the respondents received ESG information from multiple channels, mainly those within the company. However, there are still about 30% of respondents indicated they have never received information or training on ESG.



As with an increasing acceptance and understanding of ESG principles, most of occupiers think ESG will become one of the main criteria they use to evaluate warehouse leasing options.

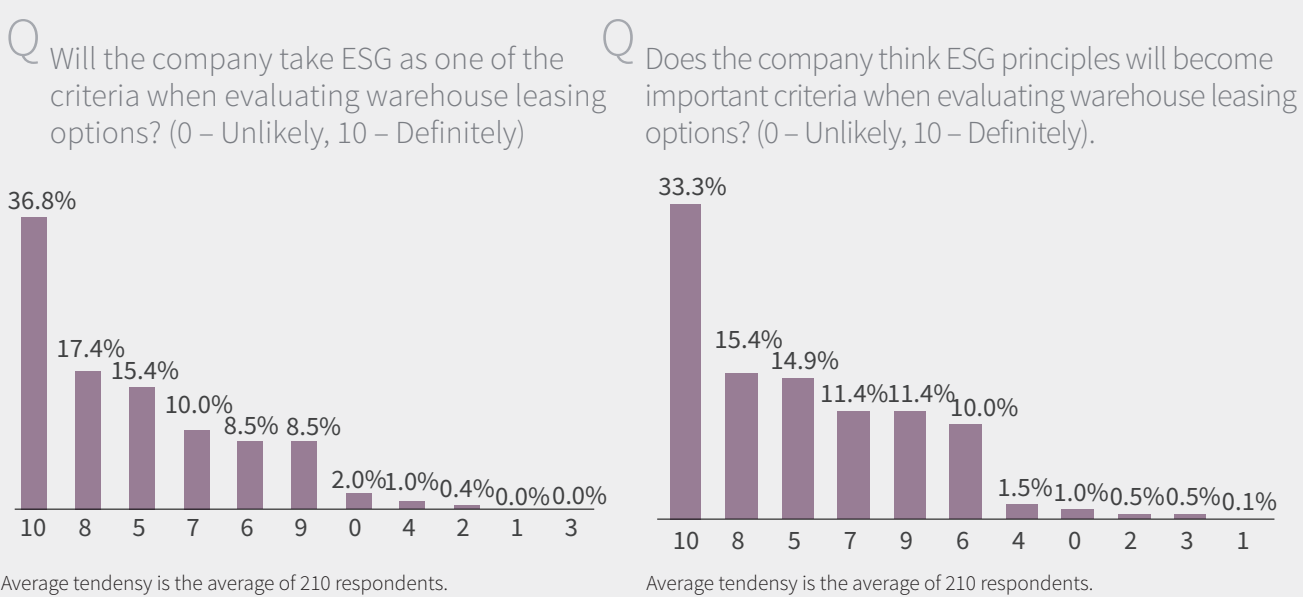
More than 1/3 of respondents are certain that ESG principles will become an important criterion they use to evaluate warehouse leasing options. On average, occupiers score a 7.5 (10 as the highest) as their inclination to take ESG as important criteria when they consider leasing options.

7.5

Average tendency of considering ESG when choosing warehouses (10 as the highest)

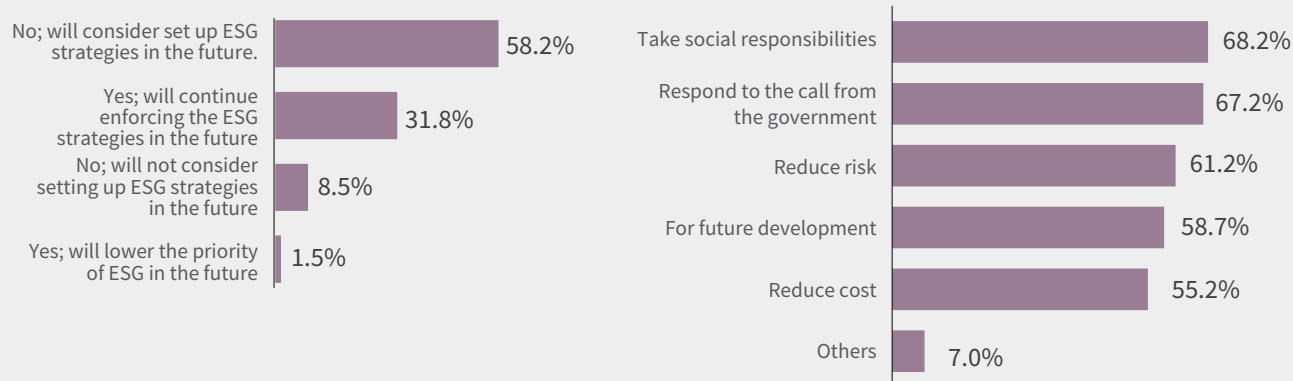
1/3

of respondents tend to consider ESG as main factors when choosing warehouses



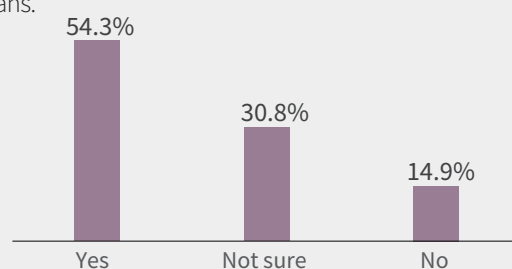
In the future, ESG principles will become more important when choosing a warehouse. Many companies will incorporate ESG into their overall strategy in order to respond to demands in terms of corporate social responsibility, government pressures and to reduce overall risk.

Q Do the corporate development strategies of your company involve ESG? If your company considers ESG strategies, why?



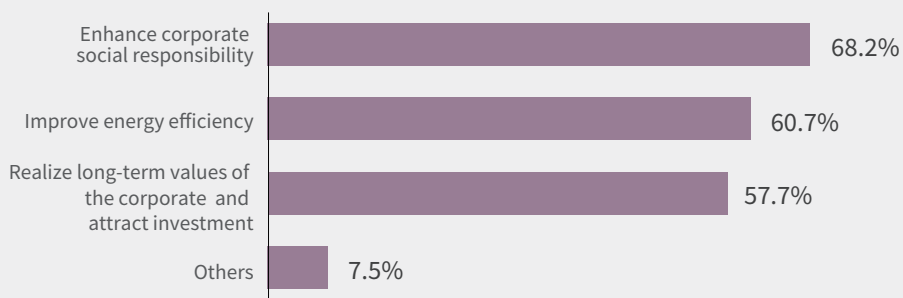
This is also being driven by investors in the business and with a preference for strong ESG credentials, many companies have already experienced investors inquiries about their ESG plans.

Q Has the company experienced any inquiries about ESG plans from the investors?

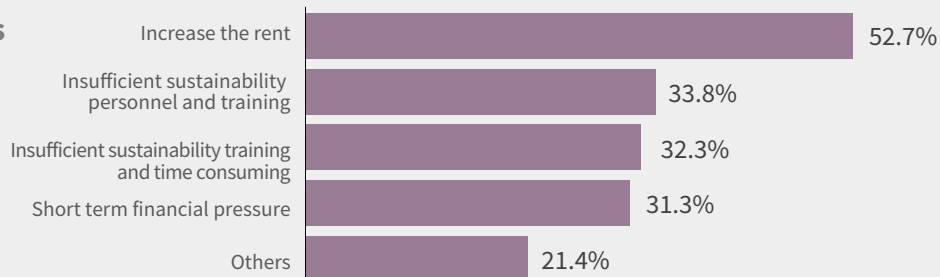


Enforcing sustainability measures can bring long-term benefits to a company. However, these measures may also increase costs when they are first introduced. 53% of the respondents indicate their main concern regarding improved sustainability measures with regards to their real estate is an increase in rent.

Q What are the **benefits** of the sustainability measures in the warehouse you currently rent?



Q What are the **downsides** of the sustainability measures in the warehouse you currently rent?



When deciding on which warehouse to choose, what aspects of ESG are most important to occupiers? Our survey shows more than half of the respondents value automatized warehouses, digital platforms, teleprocessing systems, and smart ramp technologies.



Automization



Digital platform

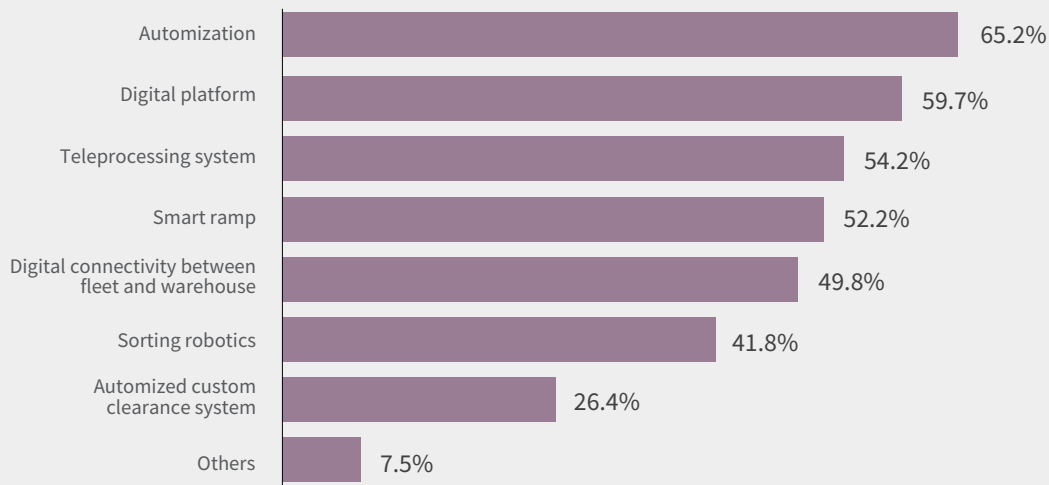


Teleprocessing system



Smart ramp

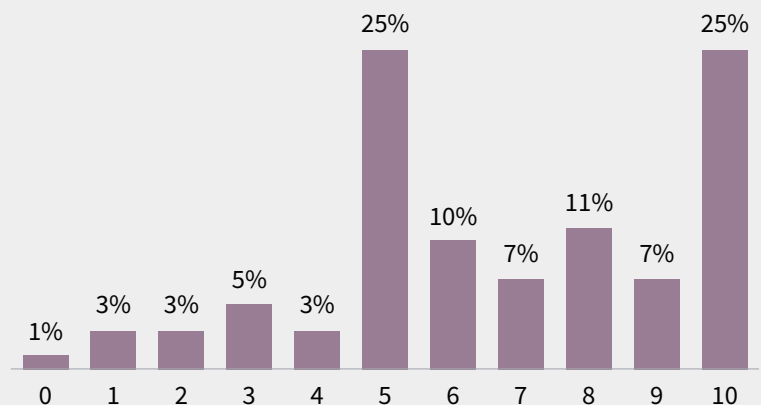
Q What aspects of the ESG related measures would you consider when evaluating warehouse options?



Do occupiers prefer warehouses with strong ESG credentials that charge a higher rent, or warehouses with fewer ESG features that charge a lower rent? Are they willing to pay an ESG premium? We asked them to indicate their willingness level between 0 (unlikely) and 10 (definitely).

On average, the willingness to pay an ESG premium is 6.5 on a 0-10 scale.

Q Compared to warehouse without or with little ESG elements, would you pay higher rent for a warehouse with ESG element? (0 – Unlikely, 10 – Definitely)



“

Different ESG measures have different impact depending on types of business. Our survey shows privacy and data security, garbage processing, and carbon emissions are the most important factors for occupiers.



Privacy and data security

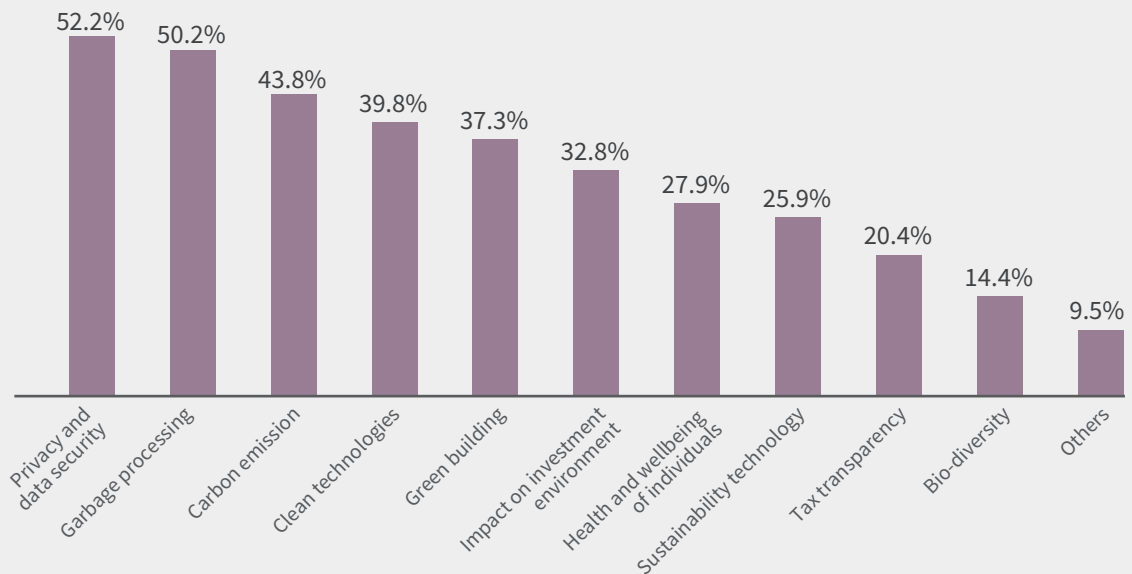


Garbage processing



Carbon emission

Q What aspects of ESG will affect your business?



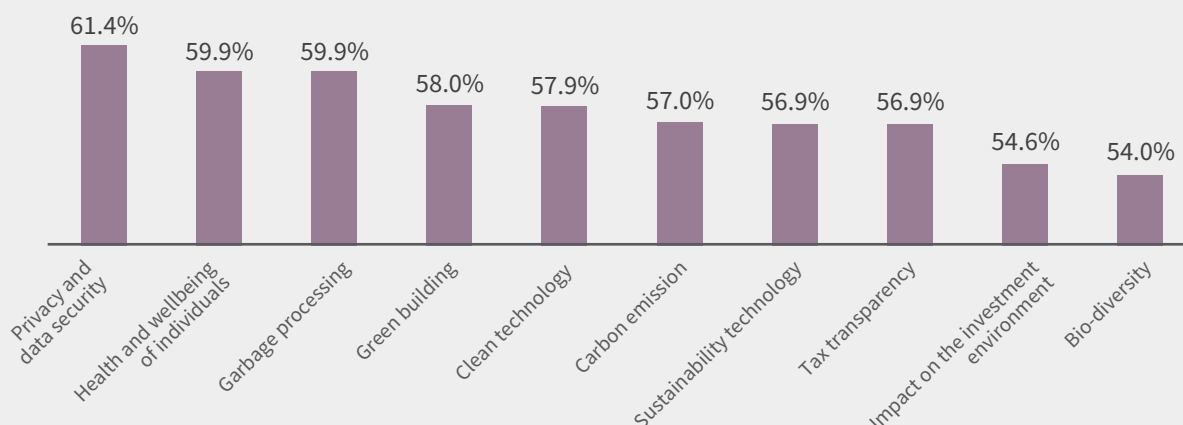
To date, respondents have formed their own estimates about how ESG measures will increase their business costs. Occupiers indicate all the above ESG measures will increase their costs by more than 50%.

“

Occupiers think ESG related measures would lead

to more than **50%** of cost increase

Q How much will the above aspects of ESG measures affect the cost?



Last but not least, we asked occupiers to rank ESG measures according to their importance. Among the occupiers, green building credentials, carbon emissions, and changes to the investment environment formed the top 3.

Q How to rank the importance of the above aspects of ESG measures?



Measures	Ranking
Green building	1
Carbon emission	2
Impact on investment environment	3
Clean technology	4
Garbage processing	5
Privacy and data security	6
Sustainability technology	7
Health and wellbeing of individuals	8
Tax transparency	9
Bio-diversity	10



To conclude, our survey shows that occupiers have realized the importance of ESG in the logistics and warehousing sector. The occupiers value measures relating to sustainability and emission reductions. However, occupiers are concerned about the increase in rent and related costs in the short term.

It is important for owners to reach a consensus with occupiers regarding ESG. Going green can be the first step to help occupiers reduce costs, improve efficiency, and attract investment. By implementing ESG measures, the warehouse owners ought to work with occupiers to achieve long-term benefits.

Voice of Owners



Prologis

‘Prologis believes, long term consideration and dedication will bring larger economic benefits and higher returns on investment. Our commitment today will make a better Prologis tomorrow. Everything we do today will become a beacon for people working in Prologis in the future.’

---- **Hamid R. Moghadam,**
Co-Founder, CEO and Chairman of Prologis

As an infrastructure investor and operator that is dedicated to the upgrade of the industry, Prologis promotes balanced considerations among the environment, their business partners, employees, social and economic development. Prologis strive to achieve harmony between the environment, the economy, and society. Following this guidance, Prologis incorporates ESG into our long-term strategies. Prologis pay attention to the top-down design and create a management framework. We ensure the healthy development of our organization and create values for communities, stakeholders, and individuals through promoting environmental and social responsibilities and good governance.

1. Strengthen the Top-Down Design of ESG Leadership Framework:

Prologis implements a top-down design of its ESG leadership to coordinate ESG strategies and enforce the ESG measures. The ESG leadership includes:

Borad of Directors: Governance and Nomination Committee oversees ESG.

Executive Team: Chief legal officer leads the team responsible for ESG. Investment Committee assesses ESG profile of every investment.

Global ESG Office: Responsible for the development and integration of our global ESG strategy.

2. Adhere to ‘Double Carbon’ Goals and Promote Net Zero Value Chain:

Real Estate and the logistics industry both have a significant impact on global greenhouse gas emissions. According to the US Energy Information Administration, 47% of global annual carbon emissions come from constructions, materials, and buildings, while 28% come from transportation. Prologis continues to promote the supply chain to be more environmentally friendly and efficient through investment behavior, and jointly develops parks and services that can bring commercial value and positive impact to customers and other stakeholders.

Prologis has projects with LEED green building certification in the United States, Brazil, China, Canada, France, and Mexico. Prologis optimizes energy efficiency and reduces greenhouse gas emissions by:

- Green design and construction, seeking sustainable building certification for all new development projects and reconstruction projects, building more efficient projects and using lower emission materials and methods;
- Long term investment in energy related fields including electric vehicle charging stations and on-site solar energy generation. Prologis’ solar energy installation ranks third in the United States in terms of the amount of solar power generated.
- LED lighting is installed in all properties to reduce energy consumption by 60% to 80%. The coverage of LED lighting at the end of 2021 was 57%, with the goal of reaching 100% by 2025.
- Facilitating renewable energy solutions, such as installing electric vehicle charging points.
- Installing white or luminous surface coverings on the roofs of buildings to reduce solar generated heat and cut air conditioning usage by 15%.
- Emphasizing innovation and developing intelligent buildings, such as pre-installed Internet and cabling infrastructure, power supply, data and network equipment, intelligent monitoring (smart meters, pump room equipment, dock doors), and employee health monitoring (air quality, light level).

In the latest ESG report released to the public, Prologis took the lead in promising that by 2040, it will achieve net zero carbon emissions across the whole value chain in three steps:

Achieve
1GW
Enabling our customers' decarbonization goals by deploying 1 GW of solar, supported by energy storage, by 2025

Achieve
Net zero emissions from our operations (scopes 1 and 2)
by
2030

Achieve
Net zero emissions
by
2040
across our value chain

Green buildings and operations to enable low-carbon transformation



Project name: Dutra RJ 100
Project location: Rio de Janeiro, Brazil
Building area: 2 million square feet

Architecture features: LEED Platinum certification

- Solar power generation capacity
- Cool roof and light paving
- LED lighting
- 95% of construction waste is recycled
- Low VOC materials improve indoor air
- Water saving landscape using rainfall for irrigation
- Electric vehicle charging station
- Skylight with natural lighting

3. Payback to Society, Empower a Better Life

In addition to environment conservation and internal governance, Prologis also practice the ESG principles at the social level and adheres to the good deeds to the society. Over the past decade, Prologis has launched the IMPACT Day (Global Volunteer Service Day), a public welfare activity that links social charities, employees, and their families to participate in voluntary services such as environmental protection and health promotion.

- By 2021, the workers in Prologis around the globe have served the community for more than 10,700 hours.
- By 2021, 13,000 people have been trained through the CWI (Community Workforce Initiative), which not only cultivates talents, but also provides the community with strong employment support.
- On the tenth anniversary of the Impact day in 2022, employees from 19 countries in Prologis contributed through 76 volunteer projects and over 7,900 hours to serve the local community.

Prologis hopes to attract more people to participate in public welfare undertakings and create a good social atmosphere through its corporate influence.



DragonCor 龙地

As the world's largest alternative asset manager, BX has a large and rapidly growing RE portfolio in mainland China. In 2017, Blackstone established DragonCor, a multi-asset management platform. Through its well-planned deployment, DragonCor leverages its local market expertise and multi-asset class capabilities to manage BX's RE portfolio in mainland China.

In line with BX's sustainability strategy and emission reductions targets, DragonCor integrates the concept of energy conservation and sustainable development into the development, operation and management of logistics infrastructure. DragonCor upholds the concept and commitment to sustainable development and are guided by the goals and values to create long-term value for our investors. For new projects, DragonCor has established systematic project development and construction standards, integrating low-carbon and sustainable construction concepts from site selection, design, material selection, construction, and operation at all stages of the life cycle, taking into account the supply and installation conditions of renewable energy, natural lighting, rainwater recycling system, etc.

For investment projects where Blackstone controls energy contracts, DragonCor conducts ESG due diligence in the early stage. This would allow all assets are adapted to climate variability to cope with different future climate scenarios and meet the potential ESG needs of future stakeholders. At the same time, DragonCor invites an independent third party to create a roadmap to decarbonize the assets, carry out

energy-saving reconstruction and optimization of facilities and equipment, and improve energy management efficiency to support the 15% carbon emissions reduction target is achieved within three years.

DragonCor adheres to the highest green building standards for operating and maintaining its assets. As of September 2022, 10 of assets have been certified as LEED Gold and above green building standards. Among them, Dongguan Dalingshan Logistics Park and Dongguan Changping Logistics Park received LEED Platinum green building certifications in September 2021. By 2025, DragonCor is realizing 100% of its assets to be green building certified. For all of its assets, DragonCor conducts independent external environmental audits every three years to identify opportunities in improving energy efficiency in water, energy, and waste management, and to implement management of energy and resources. DragonCor also places a high priority on ESG digital management – through partnership with energy management company Schneider Electric, DragonCor tracks and manages the environmental data of relevant assets.





DragonCor Shanghai Tianma Logistics Park, LEED Silver certified, Photovoltaic capacity at 3MW

DragonCor is committed to providing high-quality, sustainable logistics and warehousing services to its customers, while also giving full play to its leading role in the industry ecosystem and actively calling on tenants and partners to pursue the low-carbon cause. As of September 2022, about 60% of the tenants have joined DragonCor's green lease program and will engage in constructive cooperation to create a low-carbon logistics park in various aspects such as energy and carbon emissions management, water management and waste management. By 2025, DragonCor aims to have 100% of its tenants participating in the green leasing program.



万纬物流

Based on market analysis, industry positioning analysis, professional and technical research, and external research, combined with the analysis of pros and cons in sustainable development, VX set its vision of carbon neutrality action to “become China’s top reliable low-carbon warehouse service provider”.

VX puts forward the “3+4+N” path plan for ESG practice. The plan emphasizes 3 focus points of low-carbon warehousing and cold chain services, technology-enabled safety management, and improving the transparency of enterprise control. VX takes the transformation of management concept, intelligent cold chain management, green building, and zero carbon circle as 4 important starting points. Finally, VX plans to carry out N carbon reduction actions.

Management concept transformation: VX has set up an ESG team responsible for researching, formulating, carrying out and coordinating ESG and carbon neutrality work, and will continue to improve the relevant mechanisms for the implementation of overall planning in the near future. VX will also carry out a comprehensive carbon screening mission to conduct a more comprehensive mapping of carbon emissions in its parks. In addition, VX actively cooperates with industry authorities to participate in the preparation of relevant green standards and conducts ESG training for internal employees every quarter to advocate low-carbon concepts to customers.

Green building: Relying on its leading position in the cold storage industry, VX has taken the lead in formulating the standards and rules of green cold storage. VX edited and written the “VX Green Cold Storage Product Bottom Line Standard”, in both domestic and international versions. These industry standards can meet the high-quality construction and operation needs of green cold storage products at home and abroad. VX will also improve the standards in the near future, and issue detailed guidance and professional explanations about the design and construction of green cold storage, raw material procurement, technical application and so on.



New projects are **100%** reserved for rooftop photovoltaics installation.

100% coverage in the long run



0 carbon electricity in the long run

Smart cold chain management: VX will soon land several pilot projects for smart parks to define a new generation of low-carbon smart storage parks in terms of facilities and equipment, operation methods, etc. VX has built a carbon management platform through digital means to scientifically monitor energy consumption and production capacity data during operation to ensure that the park can continue to operate with low-carbon emission. In the medium and long term, VX will continue to improve the smart cold chain logistics supply chain and is expected to produce green electricity carbon sinks and enter the carbon trading market.

Promote the local specific “zero carbon circle”: VX will formulate detailed and step-by-step implementation plans according to the resource endowments and market conditions of different regions. At present, VX has determined that all new projects will reserve the installation conditions of distributed photovoltaic systems and carry out the “zero carbon circle” pilot from the Shanghai area to provide samples for the construction for other regions. In the future, VX will follow the principle of “regional first, overall planning”, expand the scope of the “zero carbon circle” in a planned and organized manner, and eventually form a unified national “zero carbon circle”.

Located in Fengxian District, Shanghai, CRRC Near-zero Carbon Smart Demonstration Park leads in four aspects: management concept, green building, smart operation, and near-zero carbon emission. It is the benchmark of low-carbon park of VX Logistics:

- The park is VX's first logistics park built in full compliance with the ESG concept, and is an important reference for the “zero-carbon park evaluation system”.
- All warehouse buildings in the park meet the LEED platinum certification requirements, and are the first batch of BRE's net zero carbon building certification pioneer projects, as well as VX Three Star Green Cold Storage Product Bottom Line Standard model park;
- 100% coverage of distributed photovoltaic facilities in the roof of the park, and the park achieves nearly zero carbon emissions in terms of electricity used;
- The park uses 13 smart product modules to independently develop a cold chain IoT platform to monitor carbon emissions and carry out hourly photovoltaics energy efficiency tracking.



LOGOS

乐歌

LOGOS has long been committed to sustainable development and operation and strives to lead the sustainable development of the region. Deeply aware of that the concept of sustainable development can empower logistics real estate at all stages of development, we work with our customers and partners to integrate sustainable development strategies into all aspects of logistics real estate management.

In order to actually integrate sustainability into our operations, we continuously optimize our processes both inside and outside the company. Continue to explore new opportunities to reduce emissions through various measures such as the establishment of emission inventories, set emission reduction targets, and create a carbon neutrality path for the company.

LOGOS' Vision and Practical Strategies:

- To be a market leader in providing sustainable and comprehensive logistics solutions;
- Prioritize the consideration of the actual environmental, social and corporate governance impacts of the company's operations;
- Make strategic decisions and lead on sustainable development directly from the leadership perspective;
- Adopt the world's leading sustainability evaluation and disclosure standards.

LOGOS' Strategic Framework for Sustainable Development:

LOGOS is committed to fully empowering our customers and partners in three aspects: environment, society, and corporate governance.

Environment:

We are committed to reducing negative environmental impacts and enhancing the company's resilience to environmental changes. We set scientific carbon reduction goals, improve energy efficiency, protect biodiversity and renewability, and we adopt the world's leading ESG principles and standards such as GRESB, Green Star, Green Mark, LEED.

Society:

Improve employee well-being and create positive interaction with the community and partners. We ensure that our employees work in a healthy and safe environment, continue to give back to the community, and promote employee diversity. We practice ISO20400, UN Guiding Principle and other international guidelines for corporate and social relations.

Corporate Governance:

We are committed to the highest level of integrity and transparency in our investment, operations and data disclosure processes. We integrate ESG principles into investment decision-making and asset management processes, strictly enforce work ethics such as anti-corruption, and improve data transparency.

Over the years, LOGOS has also gained international recognition in terms of its ESG practice. Several LOGOS' logistics parks in Hangzhou, Changshu, Wujiang, and Nantong are LEED Silver certified and Green Building Marked.



LOGOS Taicang Dongting Logistics Park



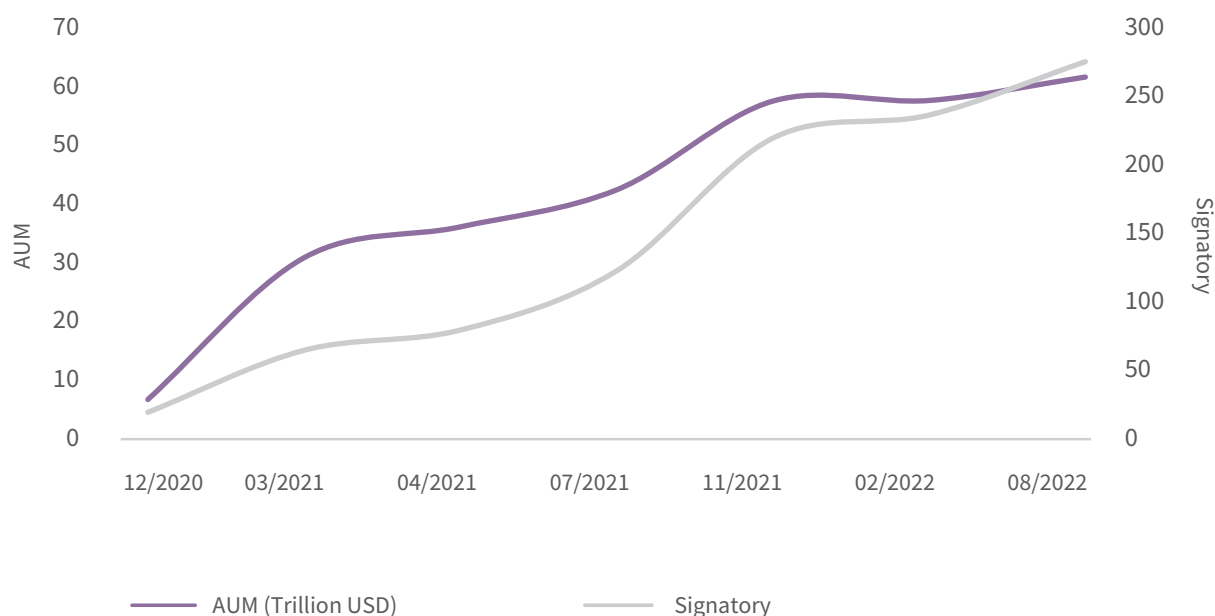
LOGOS Taicang Europe Industrial Park

06

ESG facilitates Financing and Builds a Sustainable Future

The establishment of sustainable development investment organizations such as the RPI (Responsible Investment Initiative) and NZAM (Net Zero Asset Manager Initiative) have formed a constraint on helped shape investors' investment strategies and target choices. In recent years, major investors have joined responsible investment-related organizations, demonstrating their determination to incorporate ESG in investment practices.

Established at the end of 2020, NZAM (Net Zero Asset Manager Initiative) has 273 signatories and covers \$61.3 trillion dollars in assets by August 2022.



Source: Net Zero Asset Management

Sustainable development strategies can help Grade A warehouses slow down depreciation, and stabilize capital expenditures.

ESG measures can reduce financing costs and help companies obtain more financing channels. In terms of operation costs, ESG practices can reduce the discount rate and the rate of return. From a risk perspective, the discount rate for warehouses with sustainability measures will be lower, thereby increasing the capital return when the investors exit. There are no green asset securitization products based on Grade A warehouse properties yet. We do know that the financing coupon rate of the recently issued 'carbon neutrality' securitization products is 60 basis points lower compared to most other products. Other financial products are also opening a "fast pass" for ESG compliant properties. Based on a comprehensive understanding and application of the policy, the development, construction, and operation of green warehouses can significantly help an enterprise to achieve a better financing rate or priority financing qualifications.

With further acceptance of the important of ESG, the ability to really practice implement ESG strategies is of increasing importance for investors. A survey for investors in 2020 shows about 73% of asset managers will consider taking responsible investment, requiring the investee to provide a project plan and an investment management agreement in order to examine the environmental, social, and corporate governance aspects of the potential investment. Blackstone, for example, has made it clear that it will focus on the enterprises' programs in carbon neutrality, diversity, and good corporate governance. For investment targets in the real estate sector, Blackstone will pay special attention to resource management, setting relevant benchmarks and targets, green leases, and obtaining relevant certifications and licenses.

NAZM's recent phased target disclosures show that BlackRock said that by 2030, 75% of the company's assets under management will be aligned with ESG objectives. For context, this level currently stands at 25%. In addition, after careful study, BlackRock also decided to stop investing in companies where more than 25% of its revenue comes from fossil fuel production. In 2018, BlackRock CEO Larry Fink stated in a letter to the market that "Your company's strategy must articulate a path to achieve financial performance. To sustain that performance, however, you must also understand the societal impact of your business as well as the ways that broad, structural trends - from slow wage growth to rising automation to climate change - affect your potential for growth."

Prologis is committed to sustainable financing innovation. In the last four years, through its advantages in the sustainable construction program, Prologis has issued 16 green bonds and 3 green private bonds to finance for ESG with its joint venture companies in Europe, Japan, Mexico, and the U.S. These products attract a wide range of environmentally conscious investors from all over the world. Prologis has established its own green bond framework to guide the evaluation and selection of projects, as well as the use and management of green bond yields. Prologis, meanwhile, owns and manages multiple revolving credit lines in its portfolio. These include the Global Line of Credit (GLOC) and support for FIBRA, PELF and USLF shipments. In 2021, 19.36% of the portfolio was certified for sustainability.

Blackstone launched an energy-saving and emission-reduction project in 2021, for all assets managed by Blackstone, a 15% reduction in Scope 1 and Scope 2 emissions has been set over a three-year period.

With large international investors integrating ESG principles into their investment strategies, Chinese companies are finding that ESG initiatives are especially important for attracting offshore financing.

Since joining the Paris Agreement in 2016, China's committed to reach "peak carbon" in 2030, and "carbon neutrality" by 2060 has attracted attention from all over the world. The ESG measures of Chinese companies are therefore likely to become a major focus when looking at economic development, cross-border cooperation, and geopolitics. Therefore, when considering investment options in China, foreign capital will pay special attention to the ESG aspects of the targets.

For warehousing and logistics enterprises, investors are currently paying more attention to carbon reduction. The

storage and transportation of goods consumes a lot of energy. Reducing the carbon footprint in warehousing and goods circulation is therefore an important driving force for the development of the entire industry.

From these situations, we can see that the properties that contain ESG elements can continue to effectively increase revenue and reduce operating and financing costs, while improving risk resistance and resilience. Our expectation is that this will help to improve the value of the assets, particularly in relation to buildings with weaker ESG credentials.



07

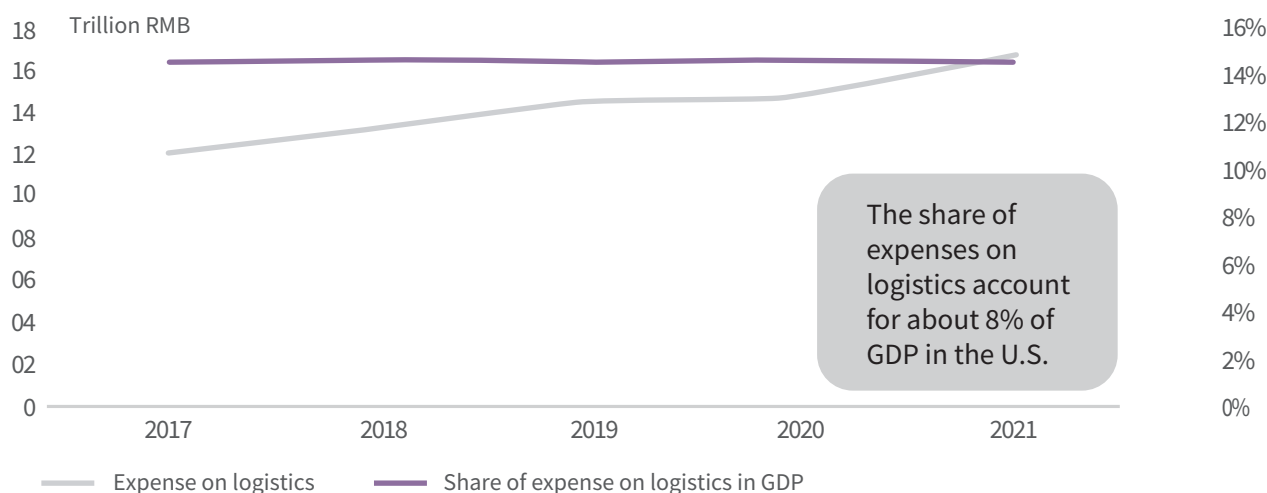
ESG Promotes Shared Prosperity

ESG-related measures can not only help enterprises develop resilience in the long run, but also promote logistics and warehousing enterprises to achieve the mutually positive development of environment and society. The data from Climate Watch showed that in 2019, China's carbon emissions exceeded 12 billion tons, accounting for 24.23% of the world's carbon emissions. Electricity, commodity manufacturing, deforestation, transportation and food production, which are all major features of economic development, consumes the earth's resources and emits a large number of greenhouse gases. These features have become the main drivers of climate change. Enterprises have a responsibility to maintain the ecological environment and build a better society.

The warehousing and logistics industry has an important role to play in terms of achieving shared prosperity between economic development and environment conservation.

In the recent years, with the expansion of the market, the demand for transportation and warehousing in China has continued to rise. Data from the National Bureau of Statistics shows that the energy consumption of China's transportation, warehousing and postal services increased from 128 million tons of standard coal in 2003 to 439 million tons of standard coal in 2019. During the same period, the share of energy consumption of the transportation and warehousing sector in China has increased from 6.50% to 9.01%. In 2021, the total cost of logistics reached 16.7 trillion yuan, accounting for 14.6% of GDP. Transportation costs, storage costs and management costs are 9, 5.6, and 2.2 trillion yuan, respectively. For comparison, the total cost of logistics in the United States accounts for about 8% of GDP. Therefore, the share of logistics cost in China as a share of total GDP is high, and there is room for cost reduction and increased efficiency. Green logistics has broad prospects.

Expenses on logistics and its share in GDP in China, 2017- 2021



Source: China Federation of Logistics & Purchasing

ESG-related measures in the warehousing and logistics industry are also an important part of ensuring quality of life. At present, there are more than 400,000 companies employing over 50 million people. Through good corporate governance and the improvement of employee well-being, the logistics industry will play an important role in promoting employment and improving living standards. Since the outbreak of the COVID-19 pandemic, the logistics industry has played a key role in ensuring the circulation and transfer of medical supplies and daily necessities. Under the regular pandemic prevention, the healthy functioning of the logistics industry with ESG elements will continue to serve as a pillar of national economic circulation and ensure the smooth operation of the national economy.

Overall, with the rapid development of e-commerce, closer regional collaboration, and the urgent carbon emission reduction requirements, the logistics and warehousing industry no longer only aims for fast and accurate performance, but also low carbon emissions.

Such development goals require that when evaluating logistics enterprises and projects, we should not only focus on the traditional requirements of the industry -- the ability to deliver and to meet ever-changing consumer demands, but also need to consider the enterprises' ability to practice and incorporate ESG principles. On-site renewable assets, efficiency of resource utilization, monitoring and disclosure of energy consumption and emissions, as well as the broader social environmental impact, will become essential to the development of corporations.

In recent years, intensified global warming and the frequent occurrence of extreme weather events increasingly brought climate risks to the attention of the market. Climate change, extreme weather events, and natural disasters causes great uncertainty in the real economy. During the process of adapting to climate risk and transitioning to a low-carbon economy, the re-pricing of high carbon assets due to the policy and technology changes may also bring risks to relevant industries.

As we have seen, the transformation of logistics real estate has started. Over the next decade, how we turn risk into opportunity will be the key to success.



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