

Study of Swire Properties' Climate Disclosure under the TCFD Framework

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Abstract

Against the backdrop of intensifying global climate change, climate risk poses a significant challenge to corporate sustainable development, and climate information disclosure has become a key means for corporations to address climate risk. This paper takes Swire Properties as an example to study its climate disclosure practices under the TCFD framework. By analyzing Swire Properties' implementation of the four aspects of governance, strategy, risk management, indicators and targets, the paper explores its innovative practices in addressing climate change and its successful experience in standardizing disclosure. The study finds that its disclosure practices have not only improved corporate transparency, but also enhanced investor confidence. This paper hopes that the study of Swire Properties will provide a valuable reference for other companies in terms of climate information disclosure.

Keywords

The TCFD Framework; Swire Properties; Disclosure of Climate Information; Sustainable Development; Climate Risk Management.

1. Introduction

At present, the situation of global climate change remains serious, and climate change has become a key factor affecting economic development and a major challenge faced by mankind since the twentieth century, which has received extensive attention from the international community. Climate risks include the impacts of extreme weather, natural disasters, global warming and uncertainty in the transition to sustainable development. Different industries and businesses are affected to varying degrees when faced with climate change risks. In response to the opportunities and risks posed by climate change, the G20 Financial Stability Board (FSB) established the Task Force on Climate-Related Financial Disclosure (TCFD) and released its final recommendations in June 2017, with the aim of providing companies with a clear and consistent framework for voluntary disclosure of climate-related information to optimize resource allocation decisions.

With the widespread adoption of the TCFD framework, many good practitioners have emerged, and Swire Properties is one of them. This paper takes Swire Properties as an example to study how it discloses climate information under the TCFD framework, and discusses its specific implementation from the perspectives of governance, strategy, risk management as well as indicators and targets, and analyzes its innovative practices in response to climate change and its successful experience in standardized disclosure.

2. Overview of the TCFD Framework

The TCFD framework covers the four core elements of governance, strategy, risk management, indicators and targets, and focuses on the impact of climate change on a company's finances, so as to integrate climate issues into daily business and financial decision-making, and to ensure consistency, comparability, reliability and clarity of disclosure.

2.1. Governance

In terms of governance, the TCFD framework requires companies to disclose the board's oversight of climate-related risks and management's responsibilities with respect to climate-related risks and opportunities. The first is to detail how the board of directors oversees and responds to climate-related risks and opportunities, and the second is to specify the roles and responsibilities of management in assessing and managing these climate-related risks and opportunities.

2.2. Strategy

In terms of strategy, the TCFD framework requires companies to disclose short- and medium- to long-term climate-related risks and opportunities, as well as their impacts on the organization's operations, corporate strategy and financial planning; it also requires companies to disclose the implementation of their strategy under different climate scenarios, including scenarios with a global average temperature increase of 2°C or less. The disclosure of this information is intended to communicate to investors and other stakeholders the organization's expectations regarding its future performance.

2.3. Risk Management

Risk management refers to a set of processes implemented by an organization's board of directors and management that are designed to support the achievement of the organization's objectives by addressing the various risks faced by the organization and managing the combined effects that these risks may have. In terms of risk management, the TCFD framework requires companies to disclose their processes for identifying, assessing and managing climate-related risks and similar risks, and encourages companies to integrate climate-related risks into their overall risk management.

2.4. Indicators and Targets

In terms of indicators and targets, the TCFD framework requires companies to disclose the indicators used to assess climate-related risks, their GHG emissions targets, and their targets for managing climate-related risks and how well they are being met. Indicators and targets in this context refer to the quantitative criteria and expected outcomes that are used to assess and manage climate-related risks and opportunities. With indicators and targets, investors and other stakeholder groups can more accurately assess an organization's potential risks and thus adjust expected returns, measure its ability to meet its debt obligations, identify overall exposure to climate-related issues, and track progress in implementing management or adaptation measures.

3. Swire Properties' Practice of Utilizing the TCFD Framework

3.1. Swire Properties Overview

Established in 1972 and headquartered in Hong Kong, China, Swire Properties is a leading company specializing in the development and management of commercial, retail, hospitality and residential properties. Swire Properties understands the impact of climate change on the company's business and is committed to managing these risks, as well as capitalizing on the opportunities that climate change presents, and has demonstrated a proactive approach and leadership in climate disclosure.

3.2. Application of TCFD Framework at Swire Properties

Swire Properties has followed the TCFD's recommendation to disclose climate-related financial information covering the four dimensions of "Governance", "Strategy", "Risk Management" and "Indicators and Targets" since 2018, and has enhanced the quality of its disclosure against the

climate disclosure guidelines issued by ISSB. Since 2018, Swire Properties has followed the TCFD's recommendations to disclose climate-related financial information covering the four dimensions of "Governance", "Strategy", "Risk Management" and "Indicators and Targets", and to enhance the quality of its climate disclosure by aligning itself with the Climate Disclosure Guidelines issued by ISSB. This paper will analyze Swire Properties' climate disclosure from 2018 to 2023, identify its highlights and shortcomings, summarize experiences that can be used as reference by other companies, and make recommendations for improvement.

(1) Disclosure of information at the governance level

Since 2018, Swire Properties has commenced climate information disclosure with reference to the TCFD recommendations, establishing a three-tier structure comprising the Board of Directors, the Environmental Social and Governance Steering Committee and the Sustainability Working Group, which is dedicated to climate change and information disclosure. The Sustainability Steering Committee is chaired by the Chief Executive Officer and comprises the Finance Director and other senior executives, with the addition of an independent non-managing director in 2022. The Committee reports annually to the Board on sustainable development and climate-related issues, reviewing the key risks, opportunities and investments in climate change, energy and the low-carbon transition. In 2022, Swire Properties began to disclose climate information with reference to the draft proposal for IFRS Sustainability Disclosure Standard 2 - Climate-related Disclosures issued by the ISSB, with an additional content index in 2023. Through the oversight of the Board of Directors and management, Swire Properties has continued to refine its climate risk management framework and has continued to focus on and improve climate issues.

(2) Disclosure of strategic level information

Swire Properties has progressively strengthened its strategy to address climate change since 2018, including developing an approach to climate change mitigation, adaptation and resilience, promoting green finance and green building development, and collaborating with Tsinghua University to enhance the energy efficiency of its projects. In 2019, the Company launched the Green Finance Facility to support green buildings and became the first real estate developer in Hong Kong and China's mainland to be approved by the Science-Based Targets Initiative (SBTi) to set long-term carbon reduction targets in line with the Paris Agreement. Since then, Swire Properties has continued to strengthen its sustainability strategy, enhance energy efficiency through innovative research and development and technology application, refine its strategic objectives, and promote green finance and renewable energy investments. From 2023, the company is piloting carbon pricing internally, setting up carbon reduction funds and supporting carbon reduction projects through green bonds and sustainability-linked loans. Swire Properties has demonstrated its leadership in combating climate change through continued strategic upgrades, committing to a long-term goal of low-carbon economic transformation and sustainable development.

(3) Risk management level disclosure

Swire Properties identifies and manages climate risk through a range of measures. Since 2018, the Company has used quantitative and qualitative scenario analyses combined with IPCC GHG concentration pathways to conduct asset-level modeling analyses to assess climate risk in the short term, 2030 and 2100. In 2019, the company developed short- and medium-term mitigation measures for building characteristics, such as strengthening flood protection and installing intelligent monitoring systems. In 2020, the climate risk assessment of the company's global property portfolio indicates a low to moderate risk. In 2023, the assessment is extended to new projects and analyzes the risks and opportunities of the transition, estimating its impact in terms of lowering operating costs, attracting green investments and diversifying financing sources. Throughout the climate risk assessment process, the company demonstrated its

proactive stance and effective management of climate change through cross-departmental collaboration and a risk management system that ensured a comprehensive and quantitative assessment.

(4) Indicator and target disclosure

Swire Properties has set clear carbon reduction targets and key performance indicators covering greenhouse gas emissions, energy consumption and water usage to measure its sustainability performance. In response to the vision of keeping global warming to 1.5°C, the Company has set and received SBTi approval for science-based carbon reduction targets, which include reducing Scope I and II GHG emissions by 25% by 2025 compared to the 2019 baseline, reducing Scope III downstream leased assets' per square meter GHG emissions by 28% by 2030 compared to the 2018 baseline, and reducing the Scope III GHG emissions per square meter of capital goods by 25% from the 2016-2018 baseline. During the period 2020-2023, Swire Properties has continued to monitor progress towards its carbon reduction targets, promoting initiatives such as green building certification, renewable energy procurement and green finance. In 2022, the company's global property portfolio reduces its absolute carbon emissions by 28% from its 2019 baseline, with approximately 60% of its bond and borrowing financing coming from green finance through 2023. Swire Properties is steadily advancing its sustainability strategy by consistently setting and achieving carbon reduction targets, effectively assessing and managing climate change risks, and ensuring the Company's transition to a greener future.

4. Effectiveness and Challenges of Swire Properties' Climate Disclosure

4.1. Effectiveness of Swire Properties' Climate Disclosure

From 2018 to 2023, Swire Properties has achieved significant results in climate disclosure in the following areas:

(1) Increased climate adaptation and resilience of businesses

By comprehensively identifying and assessing climate-related risks, Swire Properties has established a scientific risk management system that systematically analyzes the potential impact on the asset portfolio of factors such as extreme weather events, sea level rise and temperature changes. Based on the results of the assessment, the Company developed a differentiated response strategy, including measures such as upgrading the building envelope, optimizing the drainage system and strengthening the emergency response mechanism, which significantly enhanced the resilience of the assets. In terms of green building certifications, Swire Properties has implemented stringent sustainability standards, and by 2023, not only will all of its new developments be certified at the highest level of the Eco-Build rating, but also 92% of its wholly-owned existing properties will meet the top environmental standards through continuous renovation and upgrading. These initiatives not only enhance the building's climate resilience, but also bring significant economic benefits: through energy-saving retrofits and green operations, it is expected to increase tenant retention by 15-20% and create up to HK\$421 million in asset appreciation. At the same time, the company has established a perfect energy monitoring system to track energy consumption data in real time and ensure the effective implementation of various environmental protection measures, providing a solid guarantee to meet the challenges of climate change.

(2) Enhanced investor confidence

Swire Properties has established a comprehensive disclosure framework for climate information disclosure, which strictly follows the TCFD recommendations and comprehensively discloses the company's climate actions in terms of governance, strategy, risk management and indicator targets. The company regularly publishes sustainability reports and

climate-related financial disclosure reports detailing its strategic planning, risk assessment model and specific implementation path to address climate change, providing investors with a clear basis for risk assessment. Swire Properties' transparency in climate disclosure helps investors to better understand its climate-related risks and opportunities, which in turn enhances investor confidence in the company and contributes to the stability and growth of its share price.

In the area of green finance, Swire Properties is actively promoting the transformation of its financing structure. By December 2023, approximately 60% of its existing bond and borrowing financing will be sourced from green finance sources, with total green and sustainability performance-linked loans amounting to HK\$21 billion. On 8 August 2024, following the announcement of Swire Properties' interim results and climate-related disclosures, the market reacted positively, with the share price rising by 11.71% in a single day, the largest one-day increase in its history, reflecting investor recognition of the Company's climate risk management capabilities. In addition, the quality of Swire Properties' climate disclosure has been highly rated by a number of international financial institutions, with UBS reaffirming its "Buy" rating and setting a target price of HK\$17.2 in a research report, emphasizing the company's leadership position in the green transformation and its positive impact on long-term value.

(3) Promoting sustainable business development

By setting clear carbon reduction targets and sustainability indicators, Swire Properties is able to continually track and evaluate the progress of its sustainability efforts and drive the company to achieve better environmental, social and governance performance and sustainable development. Swire Properties has established a systematic carbon reduction target management system, with clear short-term and long-term emission reduction pathways based on the Science-Based Carbon Target Initiative (SBTi), covering Scope 1, Scope 2 and Scope 3 carbon emissions. By deploying an intelligent energy management system, the company monitors the energy consumption data of each property in real time and conducts regular carbon footprinting to ensure that the carbon reduction process is measurable, reportable and verifiable. For the financial impact assessment, the company quantitatively analyzed the carbon tax expenditure under different emission reduction scenarios, and estimated that if the science-based carbon reduction target is achieved by 2030, it will save HK\$105 million in carbon tax expenditure. As a result of its outstanding sustainability performance, Swire Properties has entered into sustainability performance-linked loan agreements with a number of financial institutions, which have resulted in significant reductions in interest rates due to the continued achievement of pre-determined ESG KPIs, and is expected to result in an annual saving of up to HK\$12 million in financing costs.

In terms of ESG governance, the Company has established a sustainability committee at the board level, incorporated ESG indicators into the performance appraisal system of its executives, and conducted regular stakeholder communications to ensure the effective implementation of its sustainable development strategy. These efforts have been recognised by international rating agencies, with Swire Properties receiving the industry's highest scores in each of the environmental, social and governance dimensions in the Dow Jones Sustainability World Index 2024 assessment, ultimately leapfrogging to the top spot in the global real estate industry. In addition, the Company is actively involved in the development of international sustainability standards, promoting the overall progress of the industry through the sharing of best practices.

4.2. Swire Properties' Climate Disclosure Challenges

Although Swire Properties has achieved significant success in climate disclosure, it still faces a number of challenges.

(1) Complexity of data collection and processing

The collection and processing of climate-related data is a systematic project involving a number of functional departments, such as investment, operation and finance, as well as property projects distributed in different geographic areas, requiring cross-departmental collaboration and a large investment of human and material resources. At the data collection level, the company needs to integrate diverse data sources from Hong Kong, China's mainland and overseas projects, including but not limited to energy consumption, carbon intensity, water use efficiency, waste generation and other dimensions. These data are not only distributed in different geographical areas, but also exist in multiple independent information systems with different data formats and collection frequencies, increasing the difficulty of data cleaning and standardization. In terms of data quality control, due to incomplete records of some historical data and differences in climate data collection standards in different regions, the company needs to invest a large amount of resources to carry out data cleansing and supplementation work. At the same time, the complexity and uncertainty of climate data pose challenges for analysis, such as the need to consider multiple factors such as historical meteorological data, climate model predictions, and specific building characteristics when assessing the impact of extreme weather events on assets.

To ensure the accuracy and reliability of data, Swire Properties is also faced with the challenge of establishing a unified data governance framework, including measures such as setting data quality standards, improving data verification mechanisms and enhancing data security protection. In addition, cross-sectoral data-sharing and collaboration mechanisms still need to be optimized to address data silos and improve the efficiency of data utilization. At the level of data interpretation and application, companies need to cultivate composite talents who are both business savvy and proficient in data analysis to accurately identify the climate risks and opportunities behind the data and provide reliable support for decision-making.

(2) Permanence and uncertainty of climate-related risks

Climate change is a long-term and uncertain process, and the risks it poses are diverse, complex and unpredictable. Swire Properties' identification and assessment of climate-related risks requires a combination of factors, including the rate of climate change, the frequency and intensity of extreme weather events, and shifts in long-term climate patterns. These factors not only make risk assessment more difficult, but also place greater demands on the risk management capabilities of companies to ensure sustainable development in the fight against climate change.

In terms of physical risks, the Company needs to continuously monitor and analyze the trends of climatic phenomena such as sea level rise, extreme precipitation, and high temperature heat waves, which are risk factors that not only have significant regional variability, but also show a non-linear increase in their frequency and intensity. At the same time, climate model projections are subject to large uncertainties, making asset-level risk assessment difficult. In terms of transformation risk, firms need to deal with evolving regulatory policies, market preferences and technological innovations, which are intertwined and add to the complexity of risk identification. For example, changes in carbon pricing mechanisms may affect asset valuations, upgrades in green building standards require continued investment in retrofit capital, and the rapid development of low-carbon technologies may pose risks in the choice of technology routes. In addition, the multidimensional relevance of climate risk to a company's operations adds to the difficulty of the assessment, which requires both consideration of physical exposure at the asset level and analysis of vulnerability to socio-economic factors such as supply chains, tenant structures and financing costs.

(3) Harmonization of economic efficiency and sustainable development

Swire Properties has the challenging task of balancing sustainable development objectives with the pursuit of economic benefits. The uncertainty of climate change and rapid changes in policy, market and technology trends require Swire Properties to constantly adapt its strategy to address transformational risks. Increased global climate change may lead to a high incidence of extreme weather events, which not only increases the cost of operating and maintaining buildings, but may also affect the long-term return on investment of a project. Not only do companies need to maintain strong profitability in a highly competitive real estate market to ensure shareholder returns and long-term momentum, but they also need to respond to increasingly stringent carbon emission regulatory requirements and stakeholder expectations for sustainability. This dual pressure is reflected in the fact that, on the one hand, companies must continue to optimize their asset portfolios and improve operational efficiency to remain competitive in the marketplace; on the other hand, in order to achieve the net-zero carbon emissions target by 2050, large-scale investments are needed in areas such as building energy efficiency upgrades, renewable energy applications, and green supply chain management. These strategic investments, while contributing to asset value and operational resilience in the long term, may have some impact on financial performance in the short term. In addition, technological innovation presents both opportunities and risks, and the application of new low-carbon technologies has the potential to create new growth points, but is also accompanied by the challenges of technological maturity and uncertainty of return on investment. How to balance short-term financial performance with long-term sustainable development goals in a dynamically changing market environment and develop a forward-looking and executable transformation path is a key challenge for the Company.

5. Swire Properties' Climate Disclosure Insights and Recommendations

5.1. Swire Properties Climate Disclosure Proposal

In response to the challenges Swire Properties faces in climate disclosure, this paper makes the following recommendations:

(1) Enhancement of Data Collection and Processing Capabilities

Swire Properties should increase its investment in climate data collection and processing, and ensure the comprehensiveness and timeliness of the data by integrating data from multiple sources and introducing real-time monitoring technology. Consideration can be given to deploying an IoT sensor network to cover all of its commercial complexes, office buildings and residential projects to collect key indicators such as temperature, humidity, air quality and energy consumption in real time. At the same time, it establishes a perfect data management system and adopts distributed storage architecture and cloud computing platform to improve data storage, processing and sharing capabilities. In terms of data quality control, machine learning algorithms can be introduced for outlier detection and data cleaning, and a data traceability mechanism can be established to ensure the accuracy and reliability of data. In addition, it is recommended to build a unified data middle platform to break through the data barriers of various business systems and realize cross-departmental and cross-project data synergy. In the construction of the technical team, it is necessary to introduce professionals in the fields of data analysis and environmental science, and to carry out data governance training on a regular basis in order to improve the data literacy of all staff.

(2) Enhancing capacity-building for climate risk management

Swire Properties should systematically strengthen the cultivation and introduction of climate risk management talents and build a multi-level and multi-dimensional talent development system. In terms of internal training, special training programs can be set up to design core courses covering climate change science, risk assessment models, sustainable development strategies, etc., and industry experts can be invited to conduct practical seminars. At the same

time, it has established an industry-university-research cooperation mechanism with well-known universities at home and abroad to jointly offer specialized courses on climate risk management and to cultivate composite talents in a targeted manner. In terms of talent introduction, it focuses on high-level talents with international perspectives, especially overseas experts with specialized backgrounds in climate change scenario analysis, climate finance product development, and ESG investment assessment.

In terms of professional capacity building, build a complete climate risk assessment system and develop a quantitative climate risk model adapted to the characteristics of the real estate industry, including a physical risk model and a transformation risk model. At the same time, it improves the early warning mechanism for extreme weather events, establishes a multi-level response plan, and incorporates climate risk management into the management process of the whole life cycle of the project. In addition, emphasis should be placed on technological innovation and tool development, and the application of artificial intelligence and big data technology in climate risk prediction should be explored to enhance the accuracy and foresight of risk assessment. Establish a regularly updated climate scenario database and develop asset valuation models adapted to different climate scenarios to provide a scientific basis for investment decisions. Through continuous optimization of the risk management process, incorporate climate risk factors into corporate strategic planning and daily operations, so as to comprehensively enhance the climate adaptation capacity of the enterprise.

(3) Promoting a balance between economic efficiency and sustainable development

Swire Properties should focus on achieving sustainable development goals while pursuing economic benefits. Through technological innovation, we are actively exploring the application of low-carbon building technologies, intelligent energy management systems and renewable energy solutions to reduce the cost of carbon reduction and increase the efficiency of resource utilization. In terms of management innovation, green supply chain management can be implemented, a supplier environmental performance assessment system can be established, and the low-carbon transformation of the whole industrial chain can be promoted.

In order to ensure the effective implementation of the sustainable development goals, a cross-sectoral coordination mechanism has been set up to clarify the division of responsibilities and assessment objectives of various departments. Regularly carry out sustainable development performance assessments and link the results to performance appraisals to form closed-loop management. At the same time, it has strengthened communication with stakeholders, issued regular sustainability reports, disclosed environmental performance and fulfillment of social responsibility, and enhanced corporate transparency. Climate scenario analysis and ESG risk assessment are introduced into project investment decisions to ensure that projects have both economic and environmental benefits. In addition, the application of green financial instruments, such as the issuance of green bonds or sustainable development-linked loans (SLLs), can be explored to provide financial support for low-carbon projects.

(4) Strengthening industry exchanges and cooperation

Swire Properties should take the initiative to deepen communication and cooperation within the industry, and actively participate in experience sharing and knowledge building in the field of climate information disclosure and climate risk management. By organizing or participating in industry forums, seminars and roundtables on a regular basis, we exchange best practices and discuss innovative solutions with peer companies. At the same time, it maintains close communication with government departments to keep abreast of policy guidance and regulatory requirements, which provides a basis for the development of corporate climate strategies. At the level of industry associations, a special working group can be led to promote the establishment of unified climate information disclosure standards and risk management frameworks to facilitate the standardized development of the industry.

With regard to cooperation with financial institutions, a green finance cooperation mechanism can be established to participate in the design of climate-related financial products, such as green bonds and sustainable development-linked loans (SLLs), in order to provide support for the financing of low-carbon projects. At the same time, it can cooperate with research institutions to carry out climate scenario analysis and transition path research, so as to provide a scientific basis for enterprises' long-term strategic planning.

In order to enhance the effectiveness of cooperation, a regularized cooperation mechanism can be established, such as setting up a joint working group or a special cooperation fund to promote the implementation of specific projects. Through the establishment of a digital collaboration platform, information sharing and resource integration can be realized to improve the efficiency of cooperation. Ultimately, through multi-party synergy, we can jointly address the challenges posed by climate change, accelerate green and low-carbon transformation, and inject momentum into the sustainable development of the industry.

5.2. Implications for Corporate Climate Information Disclosure

In the face of the growing challenge of global climate change, companies should fully recognize the importance of climate disclosure and take more proactive measures to strengthen climate-related risk management. Swire Properties' practice in climate disclosure also provides useful insights for other companies.

(1) Establishment of a sound climate governance structure

Enterprises should establish a climate governance structure under the direct leadership of the board of directors and incorporate climate-related issues into the core scope of corporate governance. A specialized climate change committee should be set up under the board of directors, responsible for formulating climate strategies, overseeing the implementation of targets, and reporting progress to the board on a regular basis. At the same time, the specific responsibilities of all levels of management in climate information disclosure should be clarified, and a vertical management system from the board of directors to the executive level should be established to ensure that climate-related issues are systematically managed and effectively supervised.

In order to enhance the effectiveness of climate governance, it is necessary to improve the internal oversight mechanism and establish a full-process management system covering climate risk identification, assessment, response and disclosure. By formulating detailed guidelines on climate information disclosure, the scope, frequency and quality requirements of disclosure should be clarified to ensure the accuracy and transparency of information. At the same time, regular training on climate change topics is carried out to enhance the climate awareness and management ability of all employees, and a differentiated course system is designed for employees at different levels.

Establishing a climate performance assessment mechanism, incorporating the completion of climate objectives into the management performance appraisal system and strengthening the accountability mechanism. Enhance the credibility of climate information disclosure by introducing a third-party organization to conduct independent assessment and authentication. Ultimately, through the systematic construction of governance structure and capacity enhancement, we will promote the realization of corporate sustainable development goals and strengthen the resilience and competitiveness in addressing climate change.

(2) Developing a science-based climate strategy

Enterprises should formulate a scientific climate strategy based on their business characteristics and risk profile, with clear carbon reduction targets and sustainable development indicators, and incorporate them into the company's long-term development plan. It also focuses on assessing the possible financial impacts of climate risks and opportunities, and develops differentiated response strategies by quantifying the possible financial losses (e.g.,

asset impairment, operational disruption costs, carbon tax expenses, etc.) of climate risks and the opportunities (e.g., growth in the market for green products, cost savings due to energy efficiency improvements, etc.) of low-carbon transition. For example, in response to physical risks, the climate resilience of infrastructure can be strengthened; in response to transition risks, clean technology research and development and low-carbon business layout can be accelerated.

In order to enhance the adaptability and resilience of enterprises, it is recommended that a dynamic monitoring mechanism for climate risk be established, integrating big data and artificial intelligence technologies to track changes in climate policies, market trends and technological innovations in real time. At the same time, internal risk management processes should be improved, climate risk should be integrated into the comprehensive enterprise risk management (ERM) system, and stress tests and emergency drills should be conducted regularly. In addition, by strengthening communication with stakeholders, including investors, customers, suppliers and the community, we will build an ecosystem to collaboratively address climate challenges, and ultimately realize sound operations and sustainable development of the enterprise under climate risks.

(3) Strengthening climate risk management

Enterprises should establish a comprehensive climate risk management system, integrate sustainable development with corporate governance, and clarify the responsibilities of all levels of management in climate risk governance. Comprehensively identify and assess climate-related risks through a combination of quantitative and qualitative analyses, quantify the financial and operational impacts of climate risks. Qualitative analysis can include transformational risks such as policy changes, shifts in market preferences and technological innovations, as well as physical risks such as extreme weather events and changes in long-term climate patterns; quantitative analysis requires the use of climate scenario analysis tools to simulate the specific impacts of different temperature rise scenarios on the finances and operations of an enterprise, including impairment of assets, disruption of the supply chain, the cost of carbon taxes, and fluctuations in energy prices. By building climate risk databases and quantitative models, companies can more accurately assess the potential financial impacts of climate risk and incorporate them into their financial planning and investment decisions.

Enterprises should formulate corresponding countermeasures based on the results of risk assessment. For example, for physical risks, potential losses can be reduced by strengthening the climate resilience of infrastructure, optimizing the layout of supply chains and purchasing climate-related insurance; for transformation risks, market opportunities arising from a low-carbon economy can be captured by accelerating research and development of low-carbon technologies, investing in renewable energy projects and developing green products and services.

(4) Increased transparency in the disclosure of climate information

Enterprises should, in accordance with the requirements of the TCFD framework, clarify the division of responsibilities between the board of directors and the management in climate governance, issue climate information disclosure reports on a regular basis, explain how climate risks are integrated into the strategic planning and decision-making process of the enterprise, and show the results of the enterprise's assessment of physical risks and transformational risks as well as the countermeasures, and disclose to investors and the public the climate-related risks and opportunities of the company, as well as the progress of the carbon-reduction targets and sustainable development indicators, so as to enhance investor confidence and promote sustainable development of the industry. progress of the company's climate-related risks and opportunities, as well as carbon reduction targets and sustainability

indicators, to ensure the transparency and comparability of the disclosed information, so as to enhance investor confidence and promote the sustainable development of the industry.

To enhance the credibility of the disclosure report, companies may introduce a third-party organization to provide independent authentication of climate information to ensure the accuracy and reliability of the data. At the same time, they can proactively communicate with investors and stakeholders through channels such as investor conferences and roadshow events to answer questions about climate risks and carbon reduction strategies and enhance market confidence. In addition, we actively participate in industry initiatives and standard-setting to promote the standardization and unification of climate information disclosure and contribute to the sustainable development of the industry.

(5) Setting appropriate indicators and targets

Enterprises should set realistic carbon emission targets for the current situation and for the future in the short, medium and long term. Short-term targets should focus on rapidly implementable emission reduction measures, such as energy efficiency improvement and renewable energy use; medium-term targets should cover systematic changes such as supply chain optimization and low-carbon technology application; and long-term targets should be deeply integrated with the overall corporate strategy, such as achieving net-zero emissions or carbon neutrality. In the process of target setting, it is necessary to follow the principle of comparability and adopt the internationally recognized carbon emission accounting standards (e.g. GHG Protocol) to ensure consistent data caliber and facilitate horizontal comparison and vertical tracking. Through detailed disclosure of the dynamic changes in carbon emissions, enterprises can promote self-examination, improvement and efficiency enhancement.

Accordingly, in terms of public disclosure of climate-related information, enterprises should focus on the material and potential impacts of climate change on their financial position, and use scenario analysis and other methods to quantify the financial risks and opportunities under different climate scenarios. For example, analyze the impact of carbon pricing policies on operating costs, the impact of extreme weather events on asset values, and the market opportunities arising from investments in low-carbon technologies. In addition, detailed disclosure of the magnitude of changes in each category (e.g., governance, strategy, risk management, metrics and targets) and their drivers is required to ensure the comprehensiveness and transparency of the disclosure, as well as an in-depth analysis of the specific magnitude of the changes in each of the disclosed categories and the reasons behind them, so that the enterprise can achieve the goal of sustainable development.

6. Conclusion

Swire Properties, through its practice of climate information disclosure under the TCFD framework, not only demonstrates its commitment to sustainable development, but also provides a valuable reference for peer enterprises. Against the backdrop of increased uncertainty about future climate change, enterprises should pay more attention to climate information disclosure, strengthen climate risk management capacity building, and promote a balance between economic benefits and sustainable development. This not only requires enterprises to make adjustments at the strategic level, but also to implement corresponding improvements in financial reporting, supply chain management, customer relations and other aspects, and at the same time, enterprises should also utilize this information to guide the implementation of their own risk management and sustainable development strategies, so as to jointly respond to the challenges posed by climate change.

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