

The Global Convergence of Standards for Climate-related Disclosure

Enterprises need to take immediate action to prepare for the future

Chinese companies' 2022 CDP disclosure report
April 2023



Overview of environmental information disclosure on
CDP platform (April 2023)



18,700+

Companies representing half of global
market capitalization disclose to CDP

300+

CDP supply chain members
wielding over US\$5.5 trillion in
purchasing power

740+

Investors with over US\$130 trillion in
assets requested companies make
environmental disclosure through CDP

1,100+

Cities, states, and regions shared best practice

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Executive summary

The year 2022 witnessed broader consensus on global climate governance reached by the international community and more opportunities for cooperation. The 27th session of the Conference of the Parties of the UNFCCC (COP 27) was successfully convened in November and at the meeting, governments agreed to establish a Loss and Damage fund to provide financial support to developing countries. The EU continued to lead the world in climate change-related legislation, passing the most stringent regulations. The Group of Twenty (G20) Sustainable Finance Working Group, co-chaired by China and the US, released the G20 Framework for Transition Finance, to promote the financial sector's support for the transition of high-carbon emitting sectors to low and net-zero paths. China has been implementing the National Strategy for Climate Change Adaptation, establishing a policy system for reaching peak carbon emissions and carbon neutrality.

International sustainability disclosure standards gradually converged, attaching great significance to climate change. In March 2022, the International Sustainability Standards Board (ISSB) published two exposure drafts of IFRS® Sustainability Disclosure Standards (ISDS), namely IFRS General Requirements for Disclosure of Sustainability-related Financial Information (S1) and IFRS Climate-related Disclosures (S2). ISSB has taken its final decisions on the technical content of the drafts of ISDS, with their expected issuance at the end of Q2 2023;¹ The EFRAG Project Task Force on European Sustainability Reporting Standards (EFRAG PTF-ESRS) released the first set of draft European Sustainability Reporting Standards (ESRS); The United States Securities and Exchange Commission (SEC) has released a regulation on climate-related disclosures for listed companies in the country. Besides enhancing requirements for the disclosure of environmental information, China has been striving to align with international standards, with its Hong Kong SAR taking the lead. For example, the Hong Kong Exchanges and Clearing Limited (HKEX) issued the Guidance on Climate Disclosures in November 2021, requiring companies to strengthen climate disclosures; It is expected that listed companies in relevant industries in Hong Kong will have to make climate-related disclosures in line with the the Task Force on Climate-Related Financial Disclosures (TCFD) framework by 2025.

¹ Available at <https://www.casc.org.cn/2023/0224/238659.shtml>

In 2022, CDP has been working with multiple parties to actively promote corporate responses to climate change by planning to include S2 in its environmental disclosure platform from 2024 onwards, creating an open framework that makes environmental disclosure easier for small and medium enterprises (SMEs) and other businesses, and including questions on issues such as biodiversity in its questionnaire. In 2022, the number of global and Chinese CDP disclosures continued to increase at a high rate, with an annual growth rate of over 40%. Among them, more than 2,700 companies in China (including Hong Kong, Macao, and Taiwan) participated in CDP disclosure, an increase of 43% over last year.

Drawing on the TCFD framework, companies have taken actions to respond to climate change focusing on the four pillars of governance, strategy, risk management, and metrics and targets. According to the 2022 disclosure data collected by CDP, more than 20% of Chinese companies have conducted scenario analysis to identify climate related risks and opportunities; more than 30% of Chinese companies have incorporated climate change into their corporate strategies; more than 40% of Chinese companies have provided incentive measures for managing climate issues; nearly 60% of Chinese companies have set carbon reduction targets; and more than 70% of Chinese companies have board level participation in climate governance. It is expected that in the future, the official release of ISDS will guide Chinese companies to further improve their climate governance and assess climate impacts in a scientific and systematic manner. Fewer than 20% of Chinese companies currently disclose their Scope 3 emissions from purchased goods and services, below the global disclosure average. However, in 2022, the percentage of Chinese companies disclosing Scope 3 emissions has already increased in relation to 2021, and it is expected that as China's carbon emissions database is established across industries, more companies will follow the ISDS guidelines to disclose their Scope 1, 2 and 3 GHG emissions, further closing the gap with global percentages.

Amid rising global uncertainty and strategic opportunities and risks, in addition to actively addressing climate risks, Chinese companies should seize opportunities related to climate change, seek green cooperation, identify their direction in terms of climate strategy in the changing environment, further enhance environmental and sustainability disclosure, and lay a solid foundation for their development in the global market.

1. The development and future trend of global climate policy and sustainability disclosure standards

1.1 Broader consensus on and cooperation in global climate governance

In 2022, amid the slow recovery of global economy from the impact of the Covid-19 pandemic and the ongoing Russia-Ukraine conflict, global energy-related CO₂ emissions grew by 0.9%². Considering the current carbon emissions and the remaining carbon budget, there is now a 50% chance that global warming of 1.5°C will be exceeded in nine years³. Against this backdrop, COP27, convened in November 2022, achieved a historic outcome with governments agreeing to provide “loss and damage” funding for vulnerable countries hit hard by climate disasters. In the same year, at the 15th Conference of the Parties (COP15) to the Convention on Biological Diversity convened by the UN in Montreal, governments agreed on a new Global Biodiversity Framework committing to protect 30% of Earth's lands and oceans by 2030. Among targets of the framework, it is required to ensure that large and transnational companies and financial institutions disclose their risks, dependencies, and impacts on biodiversity.

1.1.1 China will work actively and prudently toward the goals of reaching peak carbon emissions and carbon neutrality, and implement the National Strategy for Climate Change Adaptation

In October 2022, the 20th National Congress of the Communist Party of China was held, and the report to the Congress proposed that "China will work actively and prudently toward the goals of reaching peak carbon emissions and carbon neutrality". Based on China's energy and resource endowment, we will advance initiatives to reach peak carbon emissions in a well-planned and phased way in line with the principle of building the new before discarding the old. We will exercise better control over the amount and intensity of energy consumption, and transition gradually toward controlling both the amount and intensity of carbon emissions. We will promote clean and high-efficiency energy use. We will speed up the planning and development of a system for new energy

² CO₂ Emission in 2022 published by International Energy Agency in March 2022

³ Carbon Budget 2022, from Global Carbon Project

sources, and strengthen our systems for energy production, supply, storage, and marketing to ensure energy security. We will improve the statistics and accounting system and the cap-and-trade system for carbon emissions. The carbon absorption capacity of ecosystems will be boosted. We will get actively involved in global governance in response to climate change.”⁴

The National Strategy for Climate Change Adaptation 2035, jointly released by 17 departments in May 2022, states that "Based on the exposure and vulnerability of various areas and regions to the adverse impacts and risks of climate change, it further clarifies the key areas, regional patterns, and assurance measures for China's climate change adaptation work."⁵ The strategy follows the ecosystem approach, covering both the natural ecosystems and the social and economic systems. In order to achieve China's 2035 vision, it proposes major measures, such as analyzing and assessing the impacts and risks of climate change, improving the climate change governance system, forming a working system of climate system observation – impact risk assessment – taking adaptation actions – evaluation of action effectiveness, and enhancing society's climate change adaptation awareness and ability.

1.1.2 EU promotes sustainable development through further legislation, requiring companies to disclose sustainability information

In November 2022, the European Parliament and the EU Council adopted the Corporate Sustainability Reporting Directive (CSRD). The CSRD will cover all undertakings listed on a regulated market in the EU, and all large companies incorporated in a EU member state that meet two of the following three criteria for two consecutive years (balance sheet total assets greater than €20 million, a net turnover of more than €40 million, or an average number of employees during the financial year of more than 250); with respect to non-EU incorporated companies that have one subsidiary listed on a EU regulated market, have significant EU revenues, or have one subsidiary in the EU that meets some of the large company requirements, disclosure obligations need to be fulfilled at the group or subsidiary level as appropriate. Also, under the current CSRD proposal, reporting information must be subject to third-party attestations. Under the CSRD proposal, the scope of companies covered by the mandatory disclosure of sustainability information and the requirements of disclosure will be significantly increased.

⁴ Report to the 20th National Congress of the Communist Party of China, October 16, 2022

⁵ For details, see The National Climate Change Adaptation Strategy 2035

1.1.3 China and the US resume climate cooperation and launch the Framework for Transition Finance to support green development

In November 2022, G20 Summit was held in Bali, Indonesia. The day before the official opening of the G20, Chinese President Xi Jinping met with the US president Joe Biden and agreed to jointly work for the success of the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC). Since China and the US, the world's two largest emitters of greenhouse gases, account for 40% of global carbon emissions, their agreement on climate issues could help drive the steady development of the global climate governance system. The G20 Bali Summit adopted the G20 Framework for Transition Finance, the outcome of the G20 Sustainable Finance Working Group, which is co-chaired by China and the US. The main purpose of the framework is to promote the financial sector's support for the transition of high-carbon emitting sectors to low and net-zero carbon. The Framework for Transition Finance includes five pillars: identification of transition activities and investments, reporting of information on these activities and investments, developing transition-related finance instruments, designing policy measures, and assessing and mitigating the negative social economic impacts of transition activities and investments. The landmark framework provides a reference of basic principles for countries to prepare transition finance policies.

1.2 National and international sustainability disclosure standards gradually converge

In response to the International Organization of Securities Commissions (IOSCO) statement calling for globally consistent, comparable and reliable sustainability disclosure standards, the IFRS formally announced the establishment of ISSB during COP26. Created to meet existing international disclosure requirements, ISSB consolidated several international organizations such as the International Integrated Reporting Council (IIRC), the Climate Disclosure Standards Board (CDSB), the Sustainability Accounting Standards Board (SASB), and signed a Memorandum of Understanding with the Global Reporting Initiative (GRI). The disclosure framework developed by ISSB is based on the four pillars of the TCFD and the work of ISSB is supported by the G20. During COP27, CDP also announced that it would incorporate the IFRS S2 Climate-related Disclosures into the CDP disclosure

platform from the 2024 disclosure cycle onwards. Major countries or regions have recently issued their own sustainability disclosure standards, which are to a large extent compatible with the TCFD framework and attach great significance to climate risk.

1.2.1 The Global Sustainability Disclosure Standards will be launched soon, which may accelerate the convergence of international standards

In March 2022, the ISSB published two exposure drafts of IFRS® Sustainability Disclosure Standards (hereinafter referred to as ISDS), namely IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information (hereinafter referred to as S1) and IFRS S2 Climate-related Disclosures (hereinafter referred to as S2), with the final standards currently proposed to be released by the end of the second quarter of 2023. Drawing on the TCFD framework, both S1 and S2 focus on the four pillars of governance, strategy, risk management, and metrics and targets, with S1 focusing on the overall disclosure requirements related to corporate sustainability and S2 focusing on the disclosure requirements for corporate climate-related topics.

In February 2023, the ISSB decided to introduce a requirement to permit preparers to consider open-ended sources of guidance to identify and disclose sustainability-related risks and opportunities. This means that in the short term, companies can follow other established sustainability disclosure standards or frameworks when identifying sustainability-related risks and opportunities other than climate change (such as SASB or GRI). But in the long term, companies should consider understanding, sorting out or establishing a comprehensive sustainability disclosure framework to systematically improve or optimize their ability to identify, manage and disclose sustainability-related risks and opportunities.

1.2.2 EU and the US introduce climate-related disclosure requirements compatible with the TCFD framework

In November 2022, the European Financial Reporting Advisory Group (EFRAG) submitted the first set of 12 draft European Sustainability Reporting Standards (ESRS) to the European Commission for adoption. Building on the TCFD, the ESRS require companies to disclose their strategy and business model, climate scenario analysis, Scope 3 greenhouse gas emissions, as well as value chain-related sustainability risk assessment, greenhouse gas emissions, labor, community impact, and product and service information. Based on the double materiality principle, companies

are required to disclose both their impact on sustainability issues (environment, society, employees, human rights, anti-corruption and governance) and the impact of sustainability issues on the development, performance, and financial condition of companies.

In March 2022, SEC published proposed rules for climate-related disclosure by US public companies⁶. The proposal imposes strict requirements on US public companies to report information on greenhouse gas emissions and climate-related risks. US public companies are required to report their Scope 1 and 2 greenhouse gas emissions and get independent third-party attestations to enhance climate-related disclosures. SEC officials said most companies listed on the S&P 500 index may be required to report greenhouse gas emissions from their supply chains and consumers.

1.2.3 China accelerates sustainable development, with HKEX taking the lead in aligning with international standards

China is at the stage of voluntary disclosure plus mandatory disclosure by some companies. In December 2021, the Ministry of Ecology and Environment issued the "Measures on the Management of Environmental Information Disclosure for Companies". Focusing on companies with high environmental impact and public concern, the Measures require the disclosure of environmental information in accordance with the law by key emission units, corporates implementing mandatory cleaner production audits, listed companies that meet the prescribed circumstances, debt issuing corporates and other entities. For example, key emission units are required to disclose eight types of information, including information on corporate environmental management, pollutant generation, treatment and emissions, and carbon emissions. In June 2022, SASAC issued the "Measures for the Supervision and Administration of Energy Conservation and Ecological Environmental Protection of Central Enterprises". It is required that central enterprises should actively implement the concept of green, low-carbon, and circular development, incorporate energy conservation, ecological environmental protection, and the strategic orientation and target requirements of carbon peaking and carbon neutrality into enterprise development strategies and plans, develop orderly around the main business, and develop the energy conservation, environmental protection and other green and low-carbon industries. China actively participates in the global promotion and adoption of sustainable disclosure standards and strives to align with international sustainable development

⁶ SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors (US Securities and Exchange Commission)

rules. The Ministry of Finance and China Securities Regulatory Commission (CSRC) both submitted feedback on the ISDS exposure drafts. On December 31, 2022, ISSB and the Ministry of Finance jointly announced the establishment of an office in Beijing, which is expected to start operations in mid-2023.

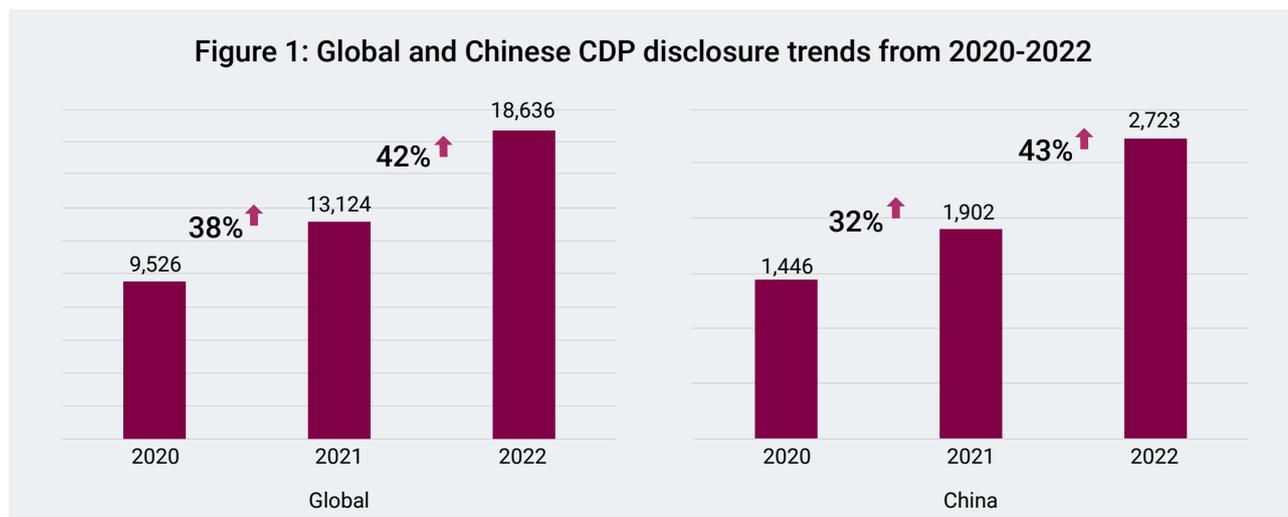
In June 2022, the Hong Kong Green and Sustainable Finance Cross-Agency Steering Group noted that as a priority, the Securities and Futures Commission (SFC) and the Hong Kong Exchanges and Clearing Limited (HKEX) were evaluating a climate-first approach to implement the ISSB standards for Hong Kong listed companies. HKEX has incorporated several key recommendations from TCFD into the ESG reporting requirements and conducted its fifth review of ESG disclosures in November 2022, coming up with key recommendations on board governance of ESG issues, social issues, and climate change. In terms of climate change, it is recommended that issuers should commence the planning and building of the necessary infrastructure and systems for climate reporting requirements in the future.⁷ Meanwhile, the Hong Kong Green and Sustainable Finance Cross-Agency Steering Group has announced its intention to make climate-related disclosures in line with the TCFD framework mandatory by 2025.

⁷ This refers primarily to the findings of the latest review of issuers' environmental, social and governance (ESG) disclosures published by Stock Exchange of Hong Kong Limited (the Exchange), a wholly-owned subsidiary of Hong Kong Exchanges and Clearing Limited (HKEX), on 25 November 2022.

2. A panorama of CDP disclosures and CDP development trends in 2022

2.1 The number of global and Chinese CDP disclosures continues to grow at a high rate, with an annual growth rate of over 40%

More than 18,700 companies worldwide disclosed climate change-related environmental information through CDP in 2022, an increase of 42% in relation to last year; among them, more than 2,700 companies in China (including Hong Kong, Macao and Taiwan) participated in CDP climate change-related environmental information disclosure, an increase of 43% year over year.



Among the 2,723 Chinese companies that responded to the climate change questionnaire, 2,580 companies submitted responses to their customers and 368 companies submitted responses to their investors or submitted responses independently. Overall, Chinese companies participating in climate change disclosures are more driven by the purchasing power of their customers. On the one hand, as a major manufacturing country with high-quality and stable output, China is favored by global buyers and has an important role in the global supply chain; on the other hand, increasing impacts of adverse climate, tightening environmental regulations, and volatile energy prices have led to an urgent need for international brands to find more climate-resilient suppliers as partners to implement a low-carbon transition in business.

More than 95% of the companies invited by investors to participate in the CDP disclosures are listed companies. In 2022, 376 companies in Mainland China, Hong Kong, Macau and Taiwan were

invited by investors to participate in CDP disclosures on environmental issues, a significant increase of 68% over last year. This is mainly due to two reasons: firstly, investors are increasingly pushing for disclosure and expanding the scope of invitations; secondly, companies' own disclosure and management awareness has increased and the response rate has improved.

However, overall, the number of Chinese listed companies participating in CDP disclosures is lower than the global average. While major markets around the world have introduced or are explicit about the forthcoming introduction of "mandatory environmental information disclosure" requirements, Chinese mainland is still at the stage of "mandatory + voluntary disclosure". Due to the difference in market environments in terms of policy, in 2021, the disclosures by listed companies in China accounted for less than 10% of the overall CDP disclosures, compared to the global average of about 25%. In 2022, the percentage of disclosures by listed companies in the overall CDP disclosure in China increased to 14%, narrowing the gap with the global average (27%).

2.2 CDP together with other parties continues to drive response to climate change in China and globally

Globally, besides Europe, the U.S., Singapore, Brazil, etc., the number of economies requiring mandatory disclosure has further increased, and relevant requirements have been further enhanced. The European Sustainability Reporting Standards (ESRS), submitted for adoption in June 2023, require companies to disclose not only financial information, but also their impacts on the environment. These apply to the entire value chain of companies, thus having global impacts. In this context, CDP stands ready to support companies in making the disclosures required by the law through the CDP disclosure platform, to encourage companies to be better prepared for the future. In China, in the second half of 2022, CDP China participated in the development and delivery of the TCFD course of the United Nations Sustainable Stock Exchange (UNSSE) initiative, and delivered an online course to companies listed on the Hong Kong Stock Exchange and Shenzhen Stock Exchange, to improve companies' understanding of disclosure requirements and enhance their disclosure capabilities.

In 2022, at COP27 CDP announced that S2 will be included in the CDP disclosure platform from 2024 onwards. Since 18,700+ companies representing half of global market capitalization disclose data through CDP, the move means that the standards may be rapidly extended to about 20,000 companies worldwide. Therefore, this paper analyzes the research results in light of the requirements of the draft ISDS. Another positive action by CDP in the process of standardizing and digitizing basic climate data is the announcement of the creation of a Net Zero Data Public Utility (NZDPU). In

November 2022, CDP announced that it would work with the Climate Data Steering Committee (CDSC) in an effort to provide the underlying data for the NZDPU. In China, CDP China will work with the ISSB Beijing office, which will begin operations in mid-2023, to provide support to companies in China and developing economies to make information disclosures.

To make disclosure easier for SMEs and other businesses, in 2021, CDP partnered with the International Chamber of Commerce (ICC) and the Exponential Roadmap Initiative to create a modular, open framework that resulted in the production of a bespoke questionnaire set shorter than the full CDP questionnaire. The brief questionnaire has just over 40 questions on climate, deforestation risk, and water security, making it easier for disclosers to understand than the full CDP questionnaire. After a successful pilot involving hundreds of companies, in 2022, CDP completed the adaptation of the questionnaire for SMEs, which CDP is now rolling out for banks. When it comes to supply chains, SMEs are a critical part of the picture. While the full CDP questionnaires have worked well for the world's largest companies, SMEs typically need something shorter, simpler and with no prior assumed sustainability knowledge, albeit still aligned to TCFD. This development will facilitate disclosure by SME clients of banks or SME suppliers of large clients. In 2022, CDP delegated some of the questions in its questionnaire to the Hong Kong Green and Sustainable Finance Cross-Agency Steering Group for custom development of a questionnaire for local SMEs in Hong Kong. CDP also facilitated two capacity building activities to guide SMEs on their disclosure journey and help financial institutions tackle the challenge of accessing climate and environmental data from their SME clients. Globally, this is one of the deepest collaborations between CDP and regulators.

The COP15 of the UN Convention on Biological Diversity took place in December 2022. For the first time, CDP included questions on biodiversity in its questionnaire, revealing that companies have recognized the importance of it but have not yet taken significant practical actions. In September 2022, CDP announced that it would expand the scope of the disclosure system and that from 2023 companies would disclose against new questions and metrics on plastic, initially through the water security questionnaire. CDP is uniquely positioned to scale disclosure, standards, and existing best practices across the global economy. CDP is keen to discuss further with various partners on how to leverage the CDP disclosure system to accelerate implementation of the new Global Biodiversity Framework and track progress against its targets.

3. Analysis of the CDP questionnaire responses by Chinese companies and key findings

Based on the analysis of the results of the 2022 CDP questionnaire for Chinese companies and drawing on the TCFD framework, this report identifies the following four key findings:

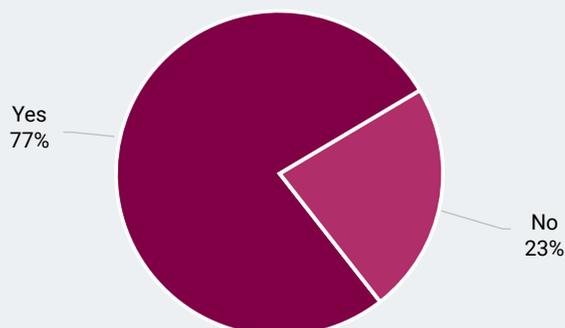
- 1. Governance:** Chinese companies attach a high degree of importance to climate governance, with over 70% of them having board-level climate governance. Yet, less than 50% provide salary incentive measures for managing climate issues and targets, which may result in unclear authority and responsibility for climate governance and inadequate incentives in some companies.
- 2. Strategy:** Over 60% of Chinese companies are aware of the implications of climate-related risks and opportunities on their strategies and finance, while only about 1/3 of them incorporate the issue of climate change into their strategic consideration. Chinese companies were significant underperformers in pushing their suppliers into involvement with climate governance when we compared the involvement rate of their suppliers to the global average. Those findings indicate that most Chinese companies are currently improving their awareness of climate change and practical actions need to be further strengthened.
- 3. Risk management:** More than 70% of Chinese companies have built procedures for assessing and managing climate-related risks and opportunities. However, less than 20% of them identified chronic and systematic climate risks respectively. Chinese companies are at the beginning stage of managing climate risks, and efforts are needed to develop a comprehensive and systematic approach to identifying, assessing, and managing such risks, and also integrate climate risk factors into their overall risk management system.
- 4. Metrics & targets:** Over 70% of Chinese companies have disclosed their Scope 1 emissions. For Scope 3 emissions, that figure was significantly lower, with less than 20% of companies having disclosed them (from purchased goods and services), indicating that the accounting and disclosure of carbon emissions upstream and downstream the value chain needs to be further strengthened. There is great enthusiasm among Chinese companies to set up carbon reduction targets with nearly 60% of them having established absolute or intensity objectives. In contrast, less than 10% has depicted long-term net zero targets, reflecting the lack of ambition of Chinese companies to set long-term carbon reduction targets.

3.1 Governance: improving top-level design

Companies gradually formulate their climate governance structures

The 2022 CDP questionnaire asks Chinese companies whether there is board-level oversight of climate-related issues within their organization, and finds out that 77% of Chinese companies have board-level climate governance, reflecting the importance Chinese companies attach to it. At the same time, the ISDS exposure draft has also proposed disclosure requirements on the governance structure, the clarity of which will determine the overall awareness of climate governance and its performance by a company. According to PwC's 26th Annual Global CEO Survey - Asia Pacific⁸, 46% of Asia Pacific CEOs prioritize climate change in business activities. This trend is most obvious in Australia, China, Japan, New Zealand, and Singapore. With 27% of Asia Pacific CEOs saying that their companies will be exposed to the threats of climate change in the next five years and 17% saying that such exposure will take place in the next 12 months, the importance and urgency of climate governance is growing among senior management in the China region.

Figure 2: Board-level participation in climate governance by Chinese companies in 2022



Companies urgently need to integrate climate considerations into their performance and remuneration management system

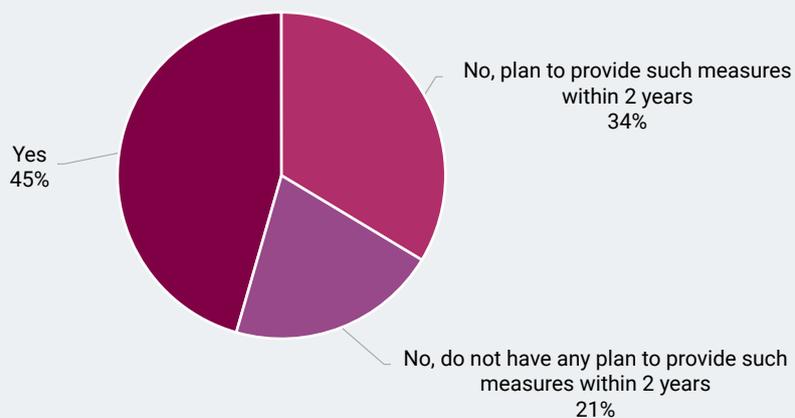
The 2022 CDP questionnaire asks companies if they offer incentives for the management of climate-related issues, with 45% of Chinese companies providing salary incentive measures for managing climate targets, and 34% of them indicating that they plan to introduce such measures in the next two years. The ISDS exposure draft contains detailed disclosure requirements on how companies monitor progress in setting and implementing targets related to significant climate-related risks and opportunities, including the linking of relevant performance indicators to remuneration. "Measures for the Supervision and Administration of Energy Conservation and

⁸ PwC, Leading in the new reality: 26th Annual Global CEO Survey - Asia Pacific, released in January 18, 2022

Ecological Environmental Protection of Central Enterprises”⁹ released by SASAC of the State Council in 2022 requires that the results of the assessment and evaluation of energy conservation and ecological environmental protection of central enterprises should be included in the business performance assessment system for the heads of central enterprises. With increasingly clear policies and standards guiding Chinese companies, it is expected that they will further improve the effectiveness of performance and remuneration management in climate governance.

Linking climate-related performance to salary incentives is key to implementing climate governance in companies, so as to drive action by managers, responsible departments, and employees. Climate performance incentives can be provided through long-term incentive schemes and should be integrated into existing human resource management systems. Companies should systematically plan their governance system, sort out their climate governance structure, define the responsibilities at each level, and agree on the specific objectives of each responsibility, so that they have the basic conditions to design their salary incentives.

Figure 3: Percentage of Chinese companies providing salary incentive measures for managing climate targets in 2022



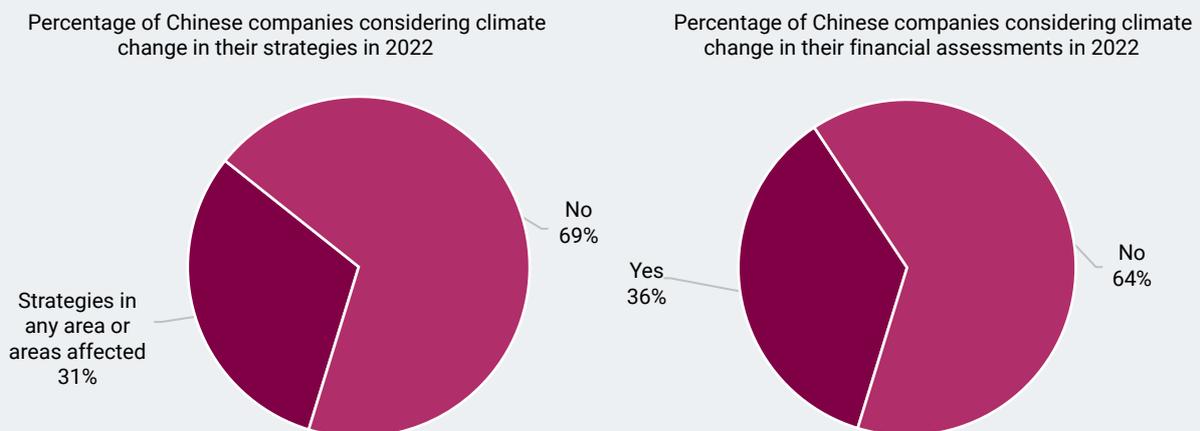
⁹ Measures for Supervision and Administration of Energy Conservation and Ecological Environmental Protection of Central Enterprises released by the State-owned Assets Supervision and Administration Commission of the State Council has been effective since August 2022

3.2 Strategy: enhancing climate assessment

Thirty percent of companies integrate climate change into their business strategy and financial planning

The 2022 CDP questionnaire has investigated the impact of climate-related risks and opportunities on the business strategy and financial planning of Chinese companies. It finds out that 31% of Chinese companies have incorporated climate change into their business strategy and 36% incorporated climate change into their financial assessment. As international and domestic organizations and markets further promote sustainable development, and the ISDS exposure draft proposes that an entity should be required to disclose strategies for climate-related risks and opportunities, it is increasingly important for Chinese companies to consider climate issues at the strategic level. However, Chinese companies currently lack clear guidelines and analytical tools for disclosure, and some have not even established relevant professional teams, which can collaborate with professional third-party partners to develop their climate strategies. The net zero transformation services provided by PwC help companies analyze the current state of climate change, assess the capabilities needed to transform their business, identify strategic options, develop a business case, and adjust their operating model¹⁰ to develop a sound and efficient climate strategy roadmap. In the path of climate strategy transition, companies also need to understand and develop green financial products, properly identify climate-related strategic opportunities, and drive the greening of value chains. Chinese companies can work with professional institutions to get support in policy and market analysis, management experience sharing, and low carbon technology introduction.

Figure 4: Percentage of Chinese companies considering climate change in their strategies and financial assessments in 2022

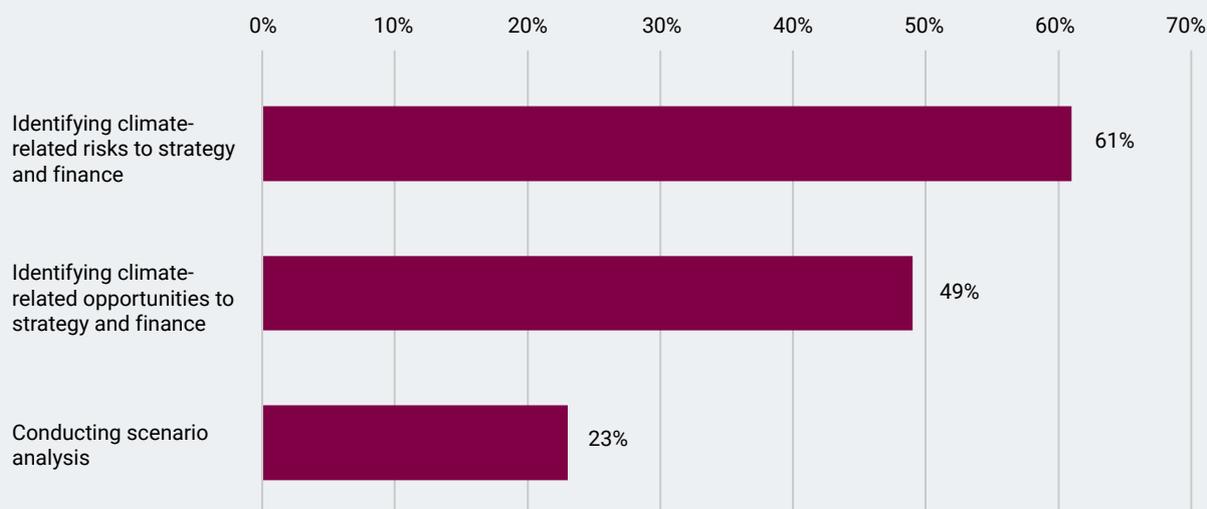


¹⁰ PwC, Building Blocks of Net Zero Transformation

Twenty percent of companies apply scenario analysis to identify climate risks and opportunities

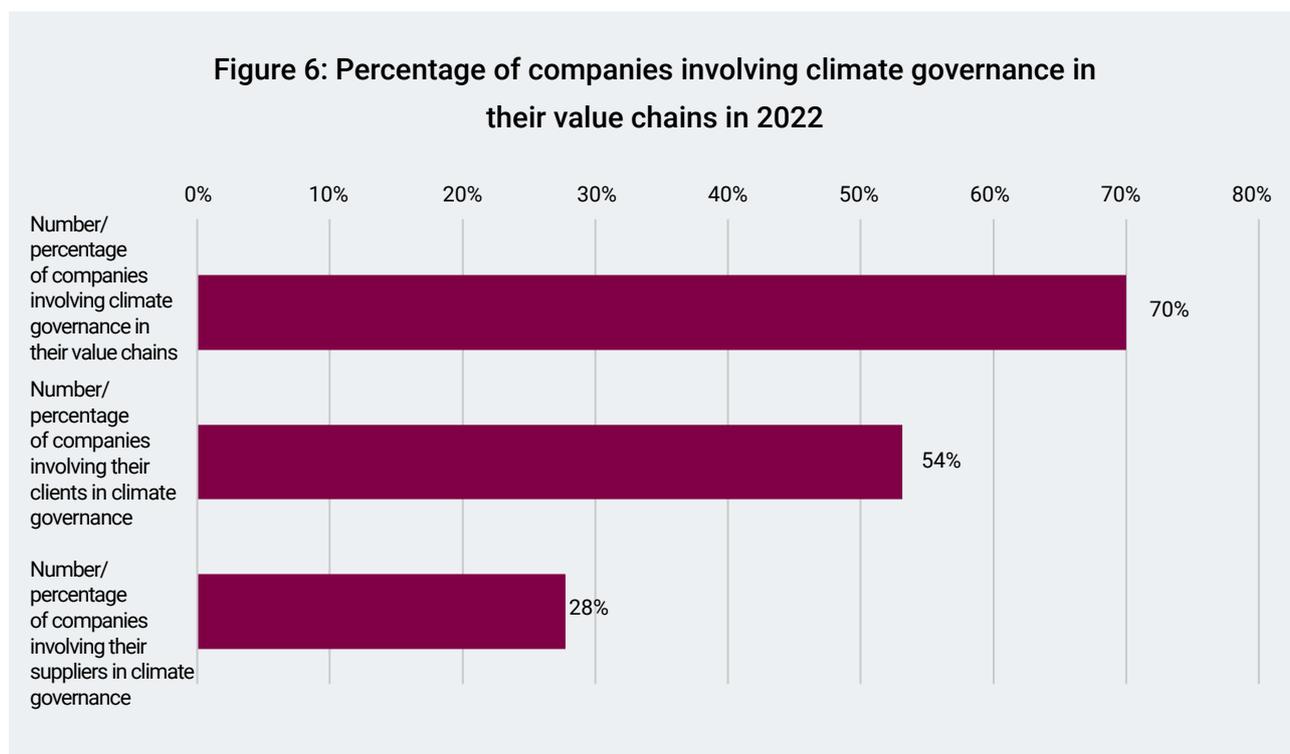
In the 2022 CDP questionnaire responses, 61% and 49% of Chinese companies identified the strategic and financial implications of climate-related risks and opportunities respectively, indicating that some Chinese companies have considered climate risks and opportunities prior to the official release of the ISDS. In their climate risk and opportunity identification process, 23% of Chinese companies have conducted qualitative or quantitative climate scenario analysis. Climate scenario analysis is one of the most important tools to help companies effectively identify and analyze the risks and opportunities presented by climate change. At its core is the construction of climate and environmental risk transfer models to assess how climate-related risks are transferred to a company. The ISDS exposure draft requires companies to use scenario analysis to conduct climate resilience assessments, disclosing the results of the climate resilience analysis and the process used. In case unable to use such scenario analysis, it requires companies to explain in detail the techniques and methods used to assess climate resilience. Scenario analysis is based on certain climate knowledge, models, data, and analysis, and poses a great challenge to the data integrity, data granularity, and professional competence of companies. Therefore, Chinese companies are in urgent need of improving their own capabilities in this regard or seeking external consultancies.

Figure 5: Percentage of Chinese companies identifying climate-related risks and opportunities and using scenario analysis in 2022



A few companies promote emissions reduction in the upstream supply chain

According to the findings of the 2022 CDP questionnaire on Chinese companies promoting emissions reduction in the value chain, 70% are already addressing climate governance with parts of their value chains, with half of them engaging their clients in climate governance, but only 28% doing so with their suppliers, which is lower than the global figure of 39%. According to PwC's 26th Annual Global CEO Survey - Asia Pacific¹¹, when asked about threats, Asia Pacific CEOs stated that over the next 12 months they will be particularly exposed to inflation, macroeconomic volatility, and geopolitical conflict; however, when considering threats in the next five years, climate seems to be progressively impacting operations of companies in the Asia Pacific region through a cycle of disruption of supply chains and inventory.



The current drivers of supply chain emissions reduction by Chinese companies are limited due to the lack of economic benefits that this might bring. The Implementation Plan for Promoting Green Consumption¹² issued by the National Development and Reform Commission and other departments has systematically designed an institutional policy system to promote green consumption, comprehensively promote the green transformation of consumption in key fields, and continuously improve standards related to green products. The maturing market of green consumption is expected to create new market opportunities for green products, driving companies to integrate emissions reduction initiatives across

¹¹ PwC, Leading in the new reality: 26th Annual Global CEO Survey - Asia Pacific, released on January 18, 2022

¹² The National Development and Reform Commission and other departments, Implementation Plan for Promoting Green Consumption, released on Jan 18, 2022.

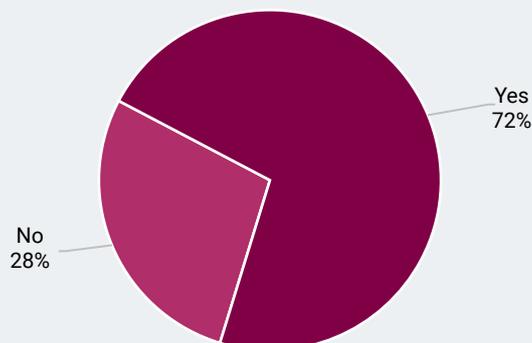
the value chain. According to the CDP questionnaire, 13% of Chinese companies already offer low carbon products or services. Currently, the supplier emissions management of most companies focuses only on supplier screening and capacity building, with only a few companies covering data collection¹³. In this regard, if Chinese companies want to seize the opportunities of green consumption, they need to step up their efforts to strengthen specific work in various aspects of emissions management of their suppliers, for example, by linking carbon data in the upstream and downstream supply chain and incorporating environment-related performance into supply chain management.

3.3 Risk management: improving management framework

Most companies have integrated climate-related risks into their risk management processes

The 2022 CDP questionnaire surveys Chinese companies on their climate risk management processes. It finds out that 72% of Chinese companies have built procedures for identifying, assessing, and managing climate-related risks and opportunities. In the management framework proposed by the ISDS exposure draft, stakeholders of a company need to understand how the company's climate-related risks are identified, assessed, and managed, and whether they are integrated into existing risk management processes. Building on the integration of climate-related risks into their processes, Chinese companies can further improve their climate risk management, establish a risk control mechanism covering ex-ante, ex-interim, and ex-post factors, integrate climate risk management with enterprise risk management, build a comprehensive risk management system, and develop specific climate risk management tools.

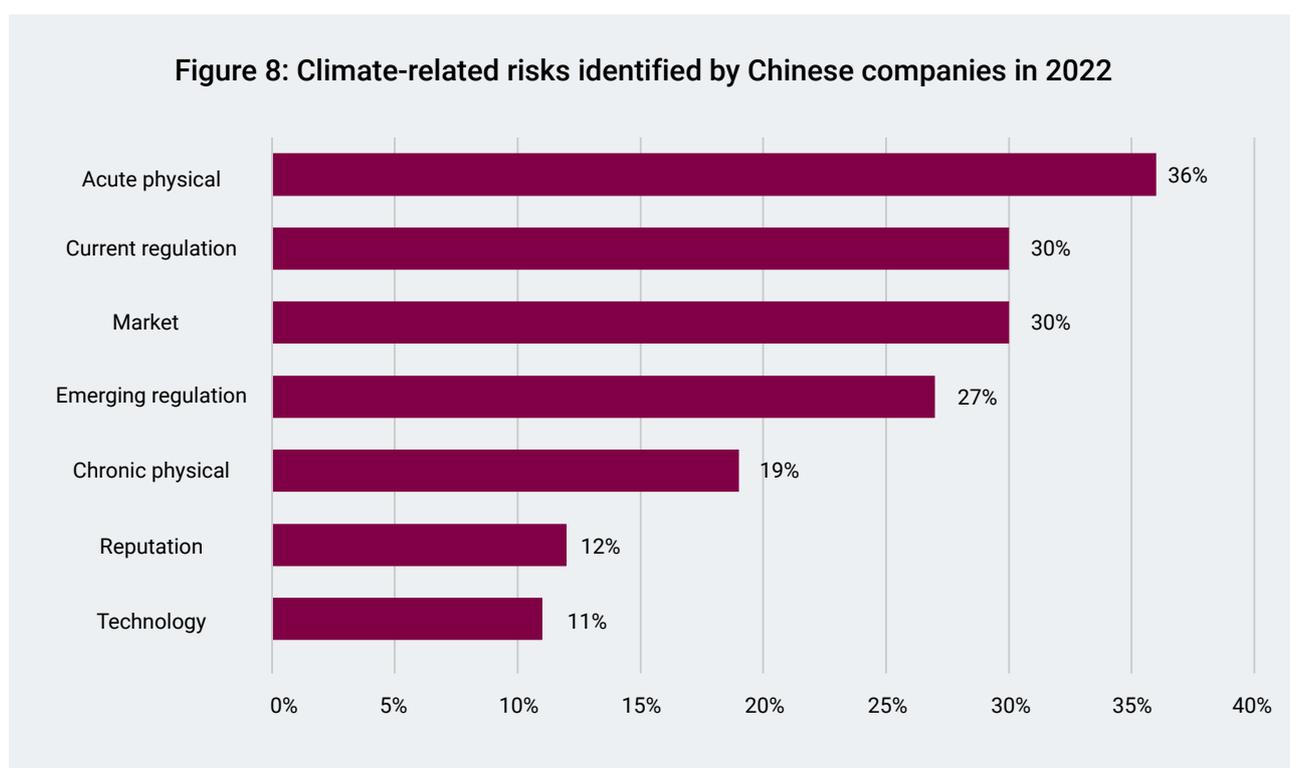
Figure 7: Percentage of Chinese companies with procedures for identifying, assessing, and managing climate-related risks and opportunities in 2022



¹³ CDP, Charting a Path Forward to Net-zero: A Research Report on the Opportunities and Challenges Faced by Listed Companies in the Chinese Mainland and Hong Kong in Relation to Decarbonisation, released in December 2022.

Chinese companies need to systematically identify, assess, and manage climate-related risks

The 2022 CDP questionnaire asks Chinese companies to identify risks with the potential to have a substantive impact on their business. Among the eight types of transition risks and physical risks collected, acute physical, current regulation, market, and emerging regulation are the types identified most often in the climate-related risk assessments by Chinese companies, reflecting that Chinese companies are more concerned about some short-term risks at this stage, such as the impact of extreme weather events on their finances and strategies. Less often identified are transition risks that have more direct impact on companies, such as current policy, shifts in market supply and demand, and upcoming policies; Chinese companies pay less attention to chronic physical risks that lag behind the current impact and more indirect transition risks, such as reputation and technology, with less than 20% of them identifying such risks.



Overall, Chinese companies are still at the early stage of climate risk awareness and management and need to further develop a comprehensive and systematic approach to climate risk identification, assessment, and management. Developed countries, particularly those in Europe, have been aware of climate risk for a long time, and some companies have been concerned about the impact of climate risk after the adoption of the Kyoto Protocol almost 20 years ago. At present, a series of management tools and scenario analysis guidelines for climate risk have been established across the world. Compared to the 50 to 70 years it will generally take for developed countries to

realize carbon neutrality after reaching peak carbon emissions, China has only 30 years between the planned transition from peak carbon to carbon neutrality, so the transition risks for Chinese companies are even more severe. Chinese companies can systematically manage climate risk by taking into account their own realities and drawing on existing international climate risk assessment methodologies. Firstly, companies need to establish a baseline and objectives to enable their management or board of directors to understand climate risks as early as possible, analyze the gaps between their practices and international disclosure standards and regulatory requirements, and be informed of the progress of the practices of peer companies, on the basis of which they can set up a roadmap for climate risk management that suits them. Secondly, companies need to identify and analyze climate-related risks and opportunities. At this stage, companies need to identify and analyze climate risks by industry, region, and business unit through proper quantitative or qualitative scenario analysis, and to build internal capacity for climate risk assessment. Lastly, companies need to integrate climate-related risks and opportunities into their risk management framework and climate risk factors into their current risk control system. For major climate risks, companies should further study and develop response strategies and set corresponding climate risk monitoring indicators.

3.4 Metrics and targets: proactively expanding the scope

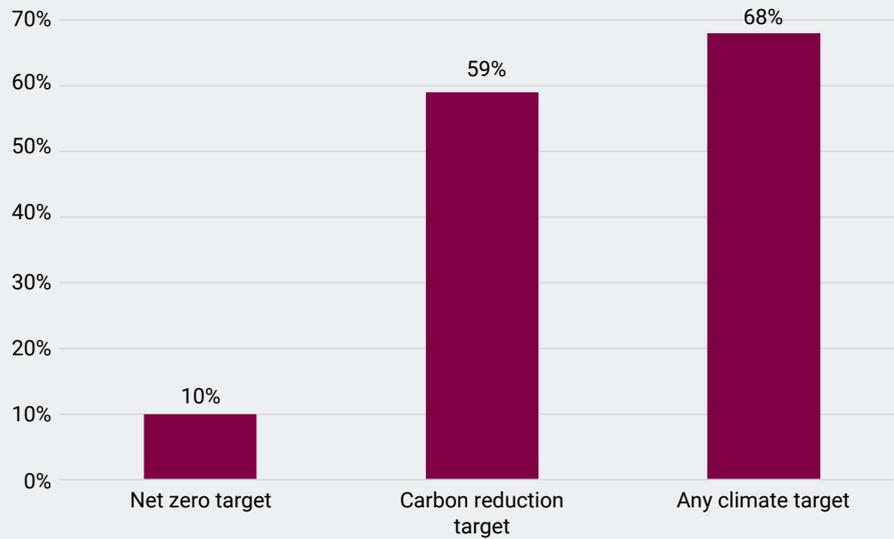
Nearly 70% of companies have set up climate-related targets, but only 10% have set net zero targets

The 2022 CDP questionnaire asks companies about the setting of net-zero targets, carbon emission targets and other climate-related targets. It finds out that 68% of Chinese companies have set climate-related targets, of which 59% have set absolute or intensity emissions reduction targets, and only 10% have set net-zero targets. More Chinese companies have set emissions reduction and climate-related targets, reflecting their proactive actions in the context of China's carbon peak and neutrality commitments and long-term action on climate change. However, for the long-term systemic project of "net zero emissions", companies face key challenges, such as difficulties in collecting data on Scope 3 emissions, limited influence on value chain emissions reduction, difficulties in accessing low-carbon energy, high comprehensive costs of low-carbon transition, lack of clarity of local emissions reduction policies, etc.¹⁴ impeding their efforts to set net zero targets. Demonstrating climate leadership in the industry is one of the key drivers for companies to commit to net-zero emissions.¹⁵

¹⁴ CDP, Scoping Out: Tracking Nature Across the Supply Chain – Global Supply Chain Report 2022, released in March 2023.

¹⁵ CDP, Charting a Path Forward to Net-zero: A Research Report on the Opportunities and Challenges Faced by Listed Companies in the Chinese Mainland and Hong Kong in Relation to Decarbonisation, released in December 2022.

Figure 9: Climate-related targets set by Chinese companies in 2022



Case studies: Lenovo Group Limited¹⁶

Lenovo has set its targets of greenhouse gas emissions reduction. The targets cover emissions from Scope 1, 2 and three categories of Scope 3 (use of sold goods, purchased goods and services, and upstream transportation and distribution).

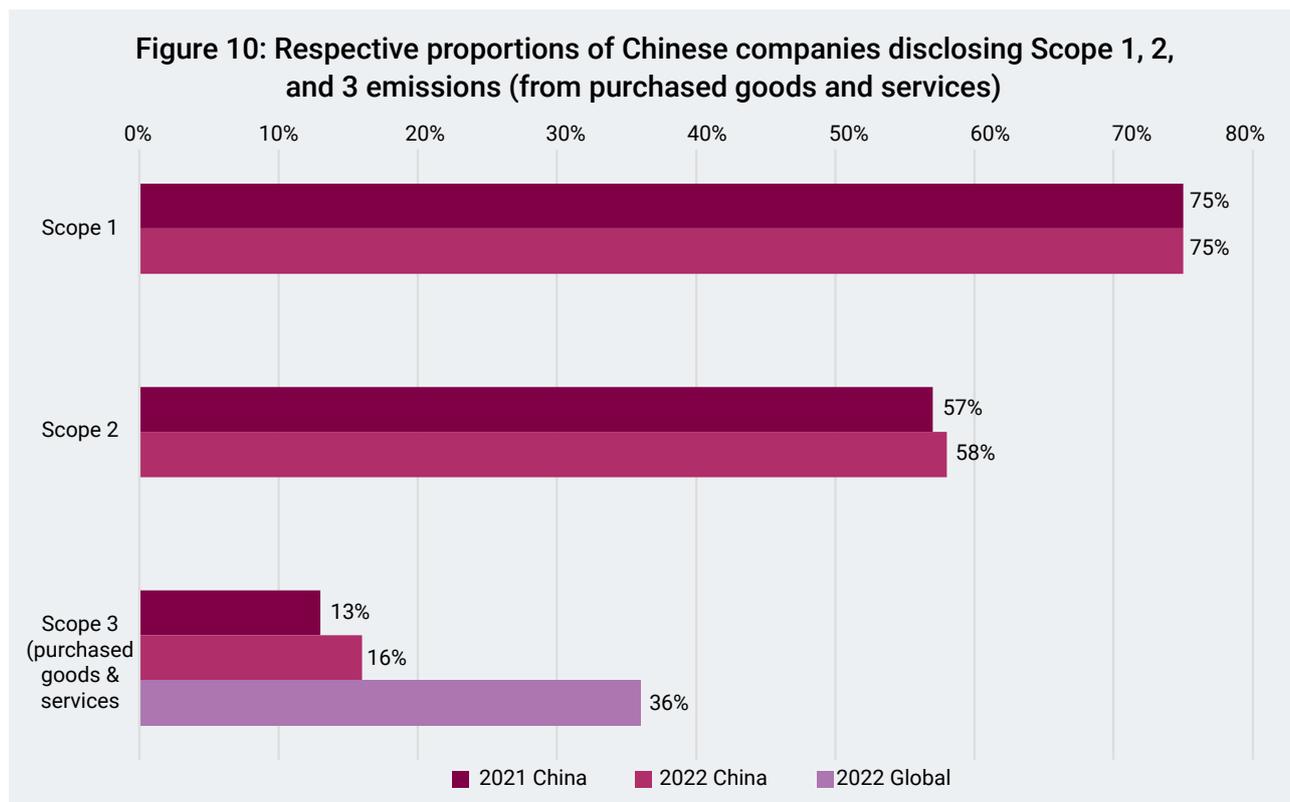
Lenovo has established Science-Based Targets and has made its immediate goals public through the website of Science Based Targets initiative (SBTi): Lenovo is committed to reducing Scope 1 and 2 GHG emissions by 50% in absolute terms by FY2029/2030, using FY2019/20 as the base year; within the same target timeframe, Lenovo is committed to reducing GHG emissions by 25% from each of the three categories of Scope 3, namely, the use of sold goods (laptops, desktops and servers), purchased goods and services, and upstream transportation and distribution.

Lenovo's roadmap to achieve these goals includes: progressive optimization of climate change KPIs and assessment processes; collection of climate-related information; development of climate change incentive policies, etc. Meanwhile, through its CDP supply chain membership, Lenovo collects environment-related information from suppliers and assesses their environmental performance, and continuously tracks the environmental performance of the supply chain and the progress of its goals.

¹⁶ Source: Lenovo 2022 CDP Climate Change Disclosure

Seventy percent of companies disclose carbon emissions data, but less than 20% of them disclose such data for Scope 3 purchased goods and services

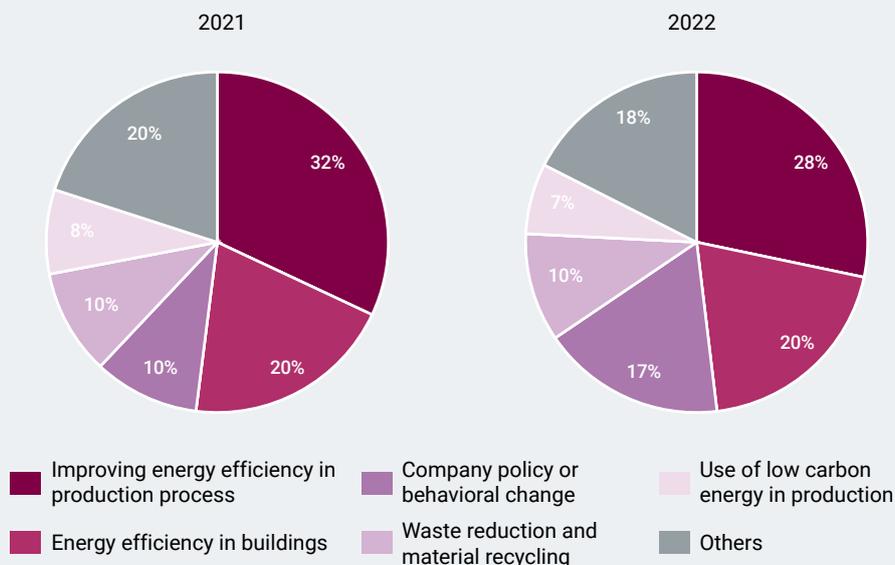
In the 2022 CDP questionnaire, findings state that 75% of Chinese companies disclose Scope 1 emissions and 58% disclose Scope 2 emissions. These proportions are essentially the same as those in 2021. Sixteen percent of Chinese companies have disclosed carbon emissions from purchased goods and services in Scope 3, a slight increase over the proportion in 2021. Compared to the global average of 36% included in the CDP Global Report, the percentage of Chinese companies disclosing emissions in the upstream supply chain is still lower. On the one hand, Chinese companies are still unaware of the measurement of the environmental impact of their supply chains; on the other hand, the difficulties in traceability of Scope 3 data and the lack of uniform disclosure requirements, emission accounting methods, and carbon emission factor databases have led to a lack of overall Scope 3 emissions disclosure and inadequate data quality. The SEC's proposed climate disclosure rules for US-listed companies, the ISDS exposure drafts, and the EU ESRS all require participating institutions to disclose their Scope 1, 2 and 3 GHG emissions and emissions intensity. As Chinese companies go global and align with international standards, they need to gradually build and improve their carbon accounting and disclosure capabilities, establish carbon emissions data collection mechanisms, and develop tools, templates and carbon management systems to track and manage carbon emissions data effectively.



Chinese companies implement various emissions reduction initiatives to save energy and reduce carbon emissions

In 2022, 66% of Chinese companies are taking active emissions reduction initiatives, a significant increase from 44% in 2021. The total number of emissions reduction initiatives has increased significantly in line with the increase in the number of companies participating in CDP disclosure (see Section 2. The number of Chinese companies participating in CDP climate change-related environmental information disclosure increased by 43% over 2021), with an increase of almost 50% in 2022 compared to 2021. Energy efficiency in production processes and energy efficiency in buildings account for nearly half of the emissions reduction initiatives undertaken by Chinese companies, indicating that Chinese companies are taking more practical actions to reduce carbon emissions while decreasing operating costs through energy savings and consumption reduction. Among the major emissions reduction initiatives, the adoption of company policy or behavioral change has increased significantly compared to 2021, accounting for 17% of all emissions reduction initiatives. More Chinese companies have established corporate management systems for implementing emissions reduction actions, which will help to further systematically promote the long-term and in-depth low-carbon transition. The implementation of emissions reduction initiatives is a long-term project for companies. They can usually start with systematic planning to identify specific emissions reduction initiatives, prioritizing the implementation of these through an analysis of financial benefits and carbon reductions, and finalizing the implementation of actions through specific carbon reduction projects.

Figure 11: Types of emissions reduction initiatives implemented by Chinese companies



Case studies: Cscec International Construction Co., Ltd ¹⁷

China State Construction Engineering (Hong Kong) Limited (CSHK) releases the "Carbon Neutral Commitment for the Construction Period of Organic Resource Recovery Centre Phase II" (O.PARK2), committing to achieve carbon neutrality during the construction period of O.PARK2. The project of Organic Resource Recovery Centre Phase II (O.PARK2) incorporates the concept of sustainable development and is designed to gain a Platinum rating under the BEAM Plus rating system. Measures include maintaining 40% of the original plants on site and replanting trees throughout the slope, increasing the green area by 50% by building gardens and urban farms on the roof of buildings to integrate the buildings into the surroundings and reduce the impact on landscape. The project also uses renewable building materials and energy efficient technologies to minimize carbon emissions during its entire lifecycle. To calculate the expected avoided emissions, the project used the operational control approach to determine the organizational boundary and covered the time period from 5 September 2019 to 31 August 2021. During the project period the company used low carbon building materials, such as up to 100% recycled steel and metal iron, as well as concrete with ground granulated blast-furnace slag (GGBS) as a replacement for 60% of cement, which is expected to avoid emissions of 18,337 metric tons of carbon dioxide equivalent per functional unit when compared to the reference product/service or baseline scenario. The revenue generated from this green low-carbon project accounted for 0.2% of total revenue for the reporting year and the company believes that this approach can be extended to all types of construction projects.

Companies need to pay more attention to internal carbon pricing mechanisms

Only 3% of Chinese companies responding to the 2022 CDP questionnaire use internal carbon pricing, and 23% of companies indicate that they would not establish an internal carbon pricing mechanism in the next two years. However, in its section about the cross-industry metric categories, the ISDS exposure draft has specific requirements for companies to disclose internal carbon prices: on the one hand, a company is required to disclose the price for each metric tonne of greenhouse gas emissions that it uses to assess the costs of its emissions; on the other hand, a company is required to disclose how it is applying the carbon price in decision-making (for example, investment

¹⁷ Source: CSCEC International, CDP Climate Change Disclosure in 2022

decisions, transfer pricing and scenario analysis). The ISDS exposure draft also gives a specific definition of internal carbon price, i.e., "Price used by entities to assess the financial implications of changes to investment, production and consumption patterns, as well as potential technological progress and future emissions-abatement costs." There are two types of internal carbon prices. The first type is a shadow price, which is a theoretical cost or notional amount that the entity does not charge but that can be used in assessing the economic implications or trade-offs for such things as risk impacts, new investments, net present value of projects, and the cost-benefit of various initiatives. The second type is an internal tax or fee, which is a carbon price charged to a business activity, product line, or other business unit based on its greenhouse gas emissions (these internal taxes or fees are similar to intracompany transfer pricing). Internal carbon price is an effective tool of a company for managing and promoting a low-carbon transition, and the process of setting it up needs to be continually validated and tested through corporate practice, to arrive at a carbon pricing model that fits the company's carbon targets and reduction path. Chinese companies should pay more attention to internal carbon pricing, mobilize their departments to reduce emissions by establishing internal carbon pricing mechanisms, achieve their own emissions reduction targets more effectively, avoid the risks of climate change and seize more business opportunities brought about by climate change.

3.5 Brief summary

Chinese companies can draw on the TCFD framework and plan holistically along four pillars: governance, strategy, risk management, and metrics and targets.

Companies take concrete actions through climate-related risk and opportunity governance. Governance requires, on the one hand, the involvement of the board of directors, elevating the work to the high level of decision-making; on the other hand, it is necessary to establish a governance structure and assign specific responsibilities to the corresponding departments and employees. The effective functioning of the governance structure requires appropriate salary incentives, and the alignment of responsibilities and rights in climate governance contribute to the systematic implementation of climate governance. In the future, Chinese companies will need to strengthen their governance structures and promote the establishment of supporting mechanisms, such as remuneration policies, to help implement climate governance actions.

By incorporating climate change into their strategies, companies can prevent and manage the risks of climate change, and at the same time seize the business opportunities that it presents. The basis of a climate strategy is the identification of climate-related opportunities and risks and the quantification of the resulting financial impact to support strategic decisions. Chinese companies need to consider adopting scenario analysis to systematically analyze the climate risks and opportunities they face under their current strategies. At the same time, companies should identify the business value of driving climate actions in the value chain and integrate the low-carbon transition of the value chain into the approaches of their climate strategy.

Climate risk management in a company is a systematic effort, and implementing it in the specific processes is an important step in driving a systematic response to climate change. Chinese companies should learn from international climate risk assessment methods, set a roadmap for future risk identification, assessment, and management, improve corporate capabilities for climate risk assessment, identify and analyze the climate risk factors they are facing, develop assessment and monitoring metrics, and integrate climate risk management into the overall corporate risk management.

Companies need to put climate governance into practice by setting specific climate-related metrics and targets. On the whole, Chinese companies are currently on a relatively weak footing in terms of Scope 3 carbon emissions disclosure, internal carbon pricing and net zero target setting. The quality of the disclosure of metrics and targets can be gradually improved by continuously consolidating the accumulated data base, strengthening internal and external capacity building, mobilizing suppliers to participate in emissions reduction actions, and establishing a data collection and monitoring system.

Given the gap between the current status of carbon information disclosure by Chinese companies and the requirements of TCFD and ISDS exposure drafts, it is recommended that companies should develop a climate information disclosure management team and establish an internal climate information disclosure system as soon as possible, and gradually improve their climate information disclosure system from such aspects as board-level oversight, climate risk and opportunity assessment, carbon emission management and climate target setting, in order to enhance their climate resilience and capabilities for sustainable development.

4. Case Study

4.1 Ping An Insurance (Group) Company of China ¹⁸

Background

Founded in 1988 in Shekou, Shenzhen, Ping An Insurance (Group) Company of China, Ltd., emerged as the pioneering publicly traded insurance company in China. Over time, it has transformed into one of the country's three leading integrated financial conglomerates. In light of China's dual carbon targets, the Group has proactively worked to drive carbon neutrality and sustainable development across the nation. It has established green finance development goals and a comprehensive 2030 plan for operational carbon neutrality, with the aim of achieving net zero emissions of greenhouse gases, including carbon dioxide, within its own operations. It also explores avenues for carbon neutrality in its asset portfolio. To better turn the principles of sustainable development into actions, it has launched a five-year agenda focusing on sustainable development initiatives.

Climate governance

Ping An has implemented a four-tier governance structure, with the Board of Directors at the helm, to supervise and manage climate change and carbon neutrality concerns. Each level of the organization has governance mechanisms designed specifically for climate-related affairs. Through ongoing improvements in the management and regular reporting mechanisms of ESG practices and risks, it ensures timely dissemination of climate risk management objectives, plans, implementation progress, and outcomes to the Board of Directors and management. This approach enables more effective climate risk management within the company.

¹⁸ Source: Ping An Group's 2022 Sustainability Report

Figure 12: Ping An's governance structure for sustainable development



Climate-related risks and opportunities

Ping An identifies climate-related physical and transition risks and uses publicly accessible scenarios to analyze climate scenarios, strengthen assessment and management of climate-related risks, and plan the roadmaps for emissions reduction.

Figure 13: Climate-related risks and opportunities for Ping An

Risk Type	Climate Risk Factors	Risk Categories	Risk Examples	Time Horizon	Business Segments Involved	Magnitude of Impact
Physical risks	Climate disasters	Operational risk	• Climate disasters may cause physical losses to the physical assets in the affected areas, resulting in asset impairment.	Long term	The whole Group	Significant
	Climate change	Credit risk	• Climate change leads to business loss of specific clients.	Medium to long term	Banking, asset management, etc.	Minor
Transition risks	New economic policies on low-carbon transition	Credit risk, market risks, etc.	• If the government issues new policies to support low-carbon transition, high-emission economic activities will be under pressure, and low-carbon industries may benefit from the move. The policies may have a positive or negative impact on the business of specific clients.	Medium to long term	Banking, asset management, etc.	Medium
	Emerging low-carbon technologies	Credit risk, market risks, etc.	• Emerging low-carbon technologies rapidly take over the market, while the development of clients in traditional sectors is hindered.	Medium to long term	Banking, asset management, etc.	Medium
	Fluctuating prices in the carbon market	Credit risk, market risks, etc.	• The cash flows of high-emission clients are affected by the fluctuation of carbon prices.	Medium to long term	Banking, asset management, etc.	Significant
	Higher environmental standards	Credit risk, operational risk, market risks, etc.	• Higher standards for energy use in buildings may require more investments in renovation for the purposes of energy conservation and environmental protection	Short term	The whole Group	Significant
	Concerns of investors	Reputation risk	• With the increasing public concerns for climate change and green and low-carbon development, inconsistency of the company's business models with the trend of low-carbon economy may impair the corporate reputation and affect rating results.	Long term	The whole Group	Medium

The company has incorporated climate-related risks into the Group's ESG risk management, building a full management process - advance, intermediate and afterward - risk management mechanism. This mechanism is specifically tailored to the different assets within the organization. To improve its risk prevention and governance performance, it has integrated ESG's core theories and standards with the Group's risk management practices and relied on such strategies as the implementation of a dual control model that involves both the Group and its member companies, the adoption of ESG integrated risk management approaches, and the provision of a unified ESG management system along with dedicated management tools.

Key measures

Developing low-carbon buildings: Ping An's Scope 2 emissions, primarily attributed to purchased electricity, constitute 87.5% of its total operational emissions, surpassing those of Scope 1 or 3 emissions. To realize its 2030 carbon neutrality goal set for its operations, it started with buildings. For instance, when constructing a commercial building in Shenzhen, it employed a 'free cooling' system, heat recycling system, high-performance elevation design and other cutting-edge technologies, resulting in a remarkable 46% reduction in energy consumption. In Beijing, guided by the design philosophy of "Green, Energy-saving, Low-carbon, and Environmentally Friendly", it promoted energy-conservation and emissions reduction while ensuring optimal comfort and practical functionality in its commercial buildings.

Cutting office-related emissions: In 2022, Ping An 's total paper consumption amounted to 1,559 tons. During the same period, it launched a series of campaigns to minimize office supply wastes and reduce operational emissions, which garnered significant participation from its major office buildings. These efforts involved promoting double-sided printing, adopting online paperless processing systems, relying more on online conferences, and encouraging improved office behaviors, resulting in a reduction in office-related carbon emissions.

Transitioning from brown assets to a green future: Ping An plans a cut or phase-out of its investments in brown assets to facilitate the achievement of its low-carbon targets and transition of its asset structure to a green future. The Group has made it clear that its future financial support will be correlated with transition roadmaps and targets, imposing stringent thresholds, and listing management systems on various aspects of the four industries with the highest carbon emissions.

Promoting investments in green assets: To promote the development of global green economy, Ping An prioritizes and focuses its investments on assets that remove carbon dioxide.

In September 2022, the company launched green bonds funds, aimed at supporting the growth of renewable energy-based electricity generation in countries along the Road and Belt. These funds will add an additional 181 MW of electricity-generating capacity from renewable sources, bringing their total capacity up 71,770 MWh while cutting 135,012 tons of CO₂ emissions.

4.2 Yanfeng ¹⁹

Background

The Shanghai-based Yanfeng Automotive Interiors (YFAI) operates 82 plants and technology centers across 17 countries with 27,000 global employees. The company designs, develops, and manufactures automotive interiors and exteriors for all carmakers. It considers sustainable development as a cornerstone of its global corporate strategy. It places particular emphasis on carbon neutrality, greenhouse gas emissions reduction, and development of lightweight product portfolios to enhance fuel efficiency and minimize landfill waste. Moreover, the company collaborates with Schneider Electric, Sphera, iPoint, and the Responsible Supply Chain Initiative (RSCI) and other organizations to effectively work towards achieving its carbon neutrality goals.

Climate governance

YFAI has established a Sustainable Development Committee, led by the CEO as the chairman, who is responsible for assessing and managing climate-related risks and opportunities, reviewing risk management policies, reporting significant risks, and making informed decisions. The global climate risk managers are appointed to coordinate and manage risks on a regional level, providing regular reports to the CEO. The regional risk managers are assigned to assess risks specific to their respective regions. Additionally, the Sustainability Council, consisting of multiple functional departments, such as procurement, R&D, operations, finance, human resources, legal, IT, and public relations, collaboratively defines sustainable development metrics and encourages its members to take actions within their respective sectors so as to facilitate the implementation of lighthouse projects.

¹⁹ Source: YFAI's 2022 CDP Climate Change Disclosure and 2021 YANFENG Corporate Social Responsibility Report

Figure 14: Climate-related risks and opportunities for YFAI

Risk Type	Climate Risk Factors	Risk Examples	Time Horizon	Magnitude of Impact	Solutions
Transition risk	Current regulation	The company faces various legal frameworks as it operates across over 12 countries.	Medium term	Medium	<ul style="list-style-type: none"> Develop energy management plans to save energy. Follow international standards to set specific targets for reducing energy consumption.
	Science and technology	Technology holds the key to the success of its business models.	Medium term	Medium to high	<ul style="list-style-type: none"> Product and service R&D. Regularly receive customer feedback. Develop lightweight solutions.
	Reputation	It places greater importance on corporate image and negative feedback from its stakeholders.	Short term	Medium to low	<ul style="list-style-type: none"> Identify customers' needs for sustainable development and climate strategies. Conduct climate-related risk governance.

The company has included climate metrics as part of its employee incentive mechanisms by integrating the Scope 1 and 2 carbon emissions reduction targets for the 2020-2023 period into its long-term incentive plan for its senior management team. It also provides financial incentives for EHS managers who successfully meet energy-saving goals and obtain ISO 50001 certification. To further rise energy efficiency, it has introduced the Energy Hunt Program, which encourages the active involvement of all factory employees in this effort.

Climate-related risks and opportunities

After assessing acute physical, chronic physical, current regulation, emerging regulation, science and technology, laws, market and reputation, and other physical and transition risks, YFAI has taken targeted measures.

The company also recognizes the identified risks as potential climate-related business opportunities. It actively engages in renewable energy projects, implements energy efficiency measures, innovates its products and services, and adapts to market shifts that proceed from the evolving consumer preferences. It promotes its climate-related risk and opportunity management system to global organizations and constantly enhances its effectiveness.

Setting climate goals

Guided by the dual-carbon strategy, YFAI aspires to Scope 1 and Scope 2 carbon neutrality by 2030 and a 50% reduction in Scope 3 emissions (upstream supply chain). At the same time, it has set its sights on comprehensive global carbon neutrality by 2040. In addition to these overarching goals, it has also established specific targets related to energy consumption and energy efficiency. By 2030, it aims to ensure that renewable energy sources account for 100% of its total energy consumption. In 2020, it also set a target to improve energy efficiency by 3% annually across all its global automotive interiors manufacturing areas.

Key measures

Internal operation: in 2022, thanks to improved resource efficiency and adoption of renewable energy, YFAI reduced its Scope 2 emissions by 217,152 tons, a 22% drop from that of last year.

Use of renewable energy: YFAI has collaborated with global partners on six solar panel projects. One notable project involved the installation of 1,373 solar panels on the roof of the Neustadt factory in Germany, estimated to generate approximately 532,000 kWh of electricity annually. In 2021, the automotive supplier utilized a total of 48,000 square meters of solar panels worldwide. By 2022, renewable energy had become the exclusive power source for all its European factories.

Enhancing resource efficiency: YFAI has taken a range of measures to improve resource efficiency in its daily production. One example is that it globally sourced 3,736,160 kilograms of recyclable materials. Since it applied the proprietary Compression Hybrid Molding (CHyM) process, the company was able to save 1,600,000 kilograms of plastic for 6,000,000 door panels produced worldwide, compared with conventional manufacturing methods.

Raising employees' awareness about carbon reduction: To achieve the sustainable development goals designed for its business units and the entire company, YFAI has implemented the Energy Hunt Program across its global interior factories, encouraging active participation from all employees. As part of the program, one energy-saving advocate will be appointed within each factory and provided with specialized training. These advocates play a vital role in driving the program's success by regularly communicating performance and progress updates.

Across the entire value chain: With the help of carbon footprint monitoring tools, YFAI effectively engages with customers and suppliers, offering more sustainable solutions and reducing emissions at all stages of the value chain.

Product carbon footprint accounting: Apart from company-level climate mitigation measures, YFAI introduced product carbon footprint software for its automotive interior products in 2021 to improve its environment reporting at the product level. This software allows the company to measure the carbon footprints of various interior applications and provide data support to downstream customers for carbon accounting purposes.

Developing sustainable products: As an automotive interior manufacturer, YFAI is committed to developing sustainable products. For example, the company has developed a sustainable steering wheel that reduces carbon monoxide equivalent emissions by over 95% per kilogram during production. Its environmentally friendly interior decorations incorporate recycled fabrics that are 100% recyclable, and its lightweight design of dashboard crossbeams reduces weight up to 50%.

Evaluating suppliers' climate-related performance: To deepen collaborations with suppliers, YFAI has identified sustainable development as a key part of its procurement process and an essential criterion in evaluating supplier performance. To date, the majority of its direct suppliers

have successfully undergone this process. It also organizes an annual Yanfeng Outlook Day event where suppliers are introduced to current and future sustainable development initiatives, along with collaborative opportunities.

4.3 Zhongxing Telecommunication Equipment Corporation (ZTE) ²⁰

Background

ZTE Corporation is a global provider of telecommunications and information technology. Founded in 1985 and listed on both the Hong Kong and Shenzhen Stock Exchanges, the company has been committed to providing innovative technologies and integrated solutions for global operators, enterprise customers, and individual consumers from over 160 countries, serving over a quarter of the global population. The company adheres to the concept of "Innovation, Convergence, and Green Development" throughout its product lifecycle, from R&D to production, logistics, and customer services. It has been releasing the sustainability report/CSR report to the public since 2009 as well as participating in CDP climate disclosure since 2008. To tackle the challenges posed by the low-carbon transition, it has paved a green path to the digital economy by promoting green operations, green supply chain, green digital infrastructure, and empowering the green development of industries to help operators and industrial consumers transition to a green, low-carbon, and sustainable future.

Climate governance

ZTE has established an organizational structure for sustainability within the company. At the top level, its Board of Directors reviews the company's annual sustainable development strategy, major projects, and related work plans, and regularly discusses reports from the Sustainable Development Management Committee to ensure that the company's sustainable development goals are achieved. The Sustainable Development Management Committee comprises the senior management members of the company, including the Executive Vice Presidents, Chief Operating Officer, and Chief Strategy Officer. The committee implements the decisions of the company's Board of Directors on sustainable development in terms of the environment, society, and governance, guards the company against relevant risks, and reports the work progress to the Board of Directors on a regular basis. Under the coordination of its Human Resources Department, the Sustainable Development Working Group consists of representatives from all units within the company (Compliance, Strategy, Finance and

²⁰ Source: ZTE's 2022 CDP Climate Change Disclosure and 2021 ZTE's Sustainability Report

Accounting, Supply Chain, Securities, Quality, Learning and Development, Marketing, R&D, Branding, Cybersecurity, Operations Management, and ZTE Foundation). The working group reports ESG information to the Sustainable Development Management Committee and provides necessary information for decision-making. It also guides and supports the units in executing sustainable development strategies and decisions.

Figure 15: The sustainability governance framework of ZTE



Climate-related risks and opportunities

Identifying climate-related opportunities from product and service R&D: ZTE's customers, including major telecom operators both internationally and domestically, have stringent requirements for supply chain and product energy efficiency. They expect suppliers to set emissions reduction targets, demonstrate progress in emissions reduction, offer energy-efficient products, and disclose carbon footprints. ZTE understands that setting emissions reduction and energy efficiency goals not only helps the company save costs but also attracts and retains customers with needs for low-carbon development, thereby enhancing its overall market competitiveness. To capitalize on these opportunities, it has strategically restructured its former Digital Energy Product Operation Department. By integrating power electronics, energy storage technology, cloud technology, and artificial intelligence, it aims to rapidly digitize its energy and develop innovative energy-saving products and services. Furthermore, it has increased its R&D investments in energy efficiency, operations, and low-carbon innovation within its production to enable its production process to be low-carbon and highly energy-efficient.

Setting climate goals

ZTE Corporation has clearly set its ambitious goals to reach "carbon peak" by no later than 2030 and achieve "carbon neutrality" by no later than 2060. Acknowledging the immense challenges of the low-carbon transition, ZTE is strategically developing green solutions for enterprise operations, supply chain, digital infrastructure, and industry empowerment to drive the progress toward its dual carbon goals.

Key measures

Green operations: Since 2021, ZTE has been inviting external certification agencies to conduct annual on-site inspections within the company and to verify its global greenhouse gas emissions in accordance with the ISO 14064 standard. It has also provided relevant carbon emission data in its annual sustainability report.

Green supply chain: ZTE collaborates with partners across its global value chain to establish a "green supply chain", focusing on energy conservation and emissions reduction in raw material selection, material recycling, and logistics and transportation. The company requires its suppliers and partners to adhere to the environmental and social responsibilities.

Green digital infrastructure: ZTE is actively working towards minimizing its infrastructure carbon footprints by deploying green sites and data centers. Firstly, in the construction of communication network energy infrastructure, it has introduced the concept of a new "zero-carbon" energy network and promoted its application through the adoption of green energy sources. Secondly, in the design and implementation of site products and solutions, it has integrated low-carbon and environmentally friendly principles, such as reducing resource waste and promoting smart collaboration, to establish green sites. Thirdly, it has developed digital solutions like UniSite+, PowerPilot, and iEnergy, which have been widely deployed in operator networks worldwide, effectively supporting energy conservation and consumption reduction.

In addition, it is dedicated to the development and provision of eco-friendly products. This includes using recyclable phone packaging, designing smart devices with low energy consumption, as well as building high-performance data centers. Environmental protection requirements have become an integral part of its conceptual design, performance appraisal, design finalization, and product certification processes, establishing a full-lifecycle management system for green products that intends to reduce carbon emissions during product sales and use.

Empowering the green development of industries: ZTE continuously drives ICT innovation and collaborates with industry partners to explore green application scenarios. It launched its own

green energy strategy in 2021, demonstrating its commitment to promoting green energy. With over 500 green innovation patents, it consistently improves efficiency, reduces energy consumption, and contributes to building a green and low-carbon society through technological innovations. Moving forward, it will further strengthen its basic research efforts in new energy, new materials, and new components, striving for key technological breakthroughs. By promoting the extensive adoption of digital technologies across various sectors for sustainable development, it will ultimately achieve carbon neutrality.

5. Prospects

There is a growing global consensus on addressing climate change and protecting our environment. As part of its efforts in global governance and in building a shared future for mankind, China's commitment and actions in this regard are essential for the great rejuvenation of the Chinese nation. In its 20th National Congress report, the Chinese government highlighted the pursuit of a "modernization of harmony between humanity and nature" as one of the five defining characteristics of China's modernization. Consensus turns into actions only when information is disclosed. Comparable corporate environmental information applying increasingly consistent standards will provide key data foundation for shaping carbon policies and managing green investment portfolios and green supply chains.

Climate and environment legislation are becoming increasingly stricter in the European and US markets, with a wider coverage of mandatory disclosure and more rigorous requirements. One example is the EU's Corporate Sustainability Reporting Directive (CSRD), which applies to an enterprise's global supply chain and companies trading securities in the EU market, and mandates reporting on the environmental impact of corporate activities. Consequently, certain Chinese companies may be affected. The Chinese mainland currently has voluntary and mandatory disclosure mechanisms running in parallel. But research has commenced on developing Chinese-specific standards for sustainability information disclosure. Within this context, Chinese businesses shall stay informed about and understand the evolving information disclosure requirements set by policymakers and investors regarding the environment, climate, and nature conservation and gain deeper insights into environment disclosure practices to prepare for compliance.

The global sustainability disclosure standards are converging and becoming increasingly compatible. Recent sustainability disclosure standards introduced by major countries and regions demonstrate a strong alignment with the TCFD framework and regard climate risks as an important consideration. The ISDS (draft), which is built on existing international disclosure requirements, encompasses the four pillars of the TCFD disclosure framework. This initiative is supported by China and other G20 members. As a platform that has consistently adopted mainstream disclosure standards, CDP is committed to contributing to the standardization and digitization of essential

climate data. Following the comprehensive integration of the CDP questionnaire with the TCFD framework in 2018, during COP27, CDP announced that it is to incorporate ISSB's climate-related disclosure standards into its disclosure system starting from 2024. This move ensures that nearly 20,000 companies worldwide, which have already disclosed through CDP will be exempt from duplicative disclosure, effectively reducing their compliance costs. Chinese companies can use the CDP questionnaire to proactively familiarize themselves with international mainstream disclosure standards and make early preparations.

Regarding environmental disclosures and management of impact on environment, Chinese companies have made continuous improvements, offering the international community Chinese wisdom and solutions in combating climate change. Notably, some top-notch Chinese companies have moved beyond mere on-request disclosure and have proactively leveraged CDP to establish and manage their global green supply chains. By doing so, they aim to catch up with global leading counterparts by empowering their supply chains to play a more extensive role in decarbonization, thereby gaining a competitive advantage in this new international arena.

The year 2023 must be a year of accelerated action as we strive to achieve the arduous task of limiting global warming to 1.5°C. On the domestic front, the journey towards achieving "carbon peak" and "carbon neutrality" is faced with numerous challenges, necessitating collaborative efforts and collective actions. The Chinese president Xi Jinping once said, "Charge at the toughest and aim at the farthest", which means to take on the biggest challenges and go after the most ambitious goals. Looking ahead, CDP is looking forward to fostering broader and deeper cooperation with stakeholders in China, working together to drive transformations in combating climate change and protecting biodiversity to build a greener, more prosperous, and sustainable future.

6. Appendix (CDP methodological framework & technological standard updates)

CDP facilitates companies in promoting the transparency of their environmental actions, scaling up their environmental efforts, and embracing accountability through its standard questionnaire system, which embraces three different types of questionnaires: the climate change questionnaire, which focuses on companies' response to climate change risks and their efforts in emissions reduction; the forests questionnaire, which addresses companies' management of deforestation risks and improvement of traceability in commodity supply chains; and the water security questionnaire, which highlights companies' water security risks and enhancement of water efficiency in their operations. The dimensions contained in these questionnaires have been aligned with the reporting framework recommended by the TCFD, covering Governance, Strategy, Risk Management, and Metrics and Targets. As a result, CDP now has a TCFD-aligned environmental database.

Table 16: The relationship between the climate change questionnaire and TCFD's recommendations

Dimension	TCFD's Recommendations for Disclosure	CDP Climate Questionnaire
Governance	Provide board-level supervision information on climate-related risks and opportunities. Provide management-level responsibilities on assessing and managing climate-related risks and opportunities.	C1.1b; C1.2; C1.2a
Strategy	Provide the short-, medium-, and long-term climate-related risks and opportunities identified by organizations. Provide the implications of climate-related risks and opportunities on an organization's business, strategies, and financial planning. Provide resilience to an organization's strategies, considering different climate scenarios including those relevant to 2°C or below.	C2.1a; C2.3; C2.3a; C2.4; C2.4a; C3.1; C3.2; C3.2a; C3.2b; C3.3; C3.4; C-ES3.7; C-FS3.7a
Risk management	Provide the procedures to identify and assess climate-related risks. Provide the procedures to manage climate-related risks. Provide how the procedures for identifying, assessing, and managing climate-related risks could be integrated into an organization's overall risk management activities.	C2.1; C2.2; C2.2a; C-FS2.2b; C-FS2.2c; C-FS2.2d; C-FS2.2e
Metrics and targets	Disclose the metrics applied by an organization when it assesses climate-related risks and opportunities through its strategies and risk management procedures. Disclose information on Scope 1, 2, and 3 (if applicable) greenhouse emissions and relevant risks. Provide an organization's targets on climate-related risks and opportunities management and progress toward them.	C4.1; C4.1a; C4.1b; C-FS4.1d; C4.2; C4.2a; C4.2b; C6.1; C6.3; C6.5; C6.5a; C9.1; C-FS14.0; C-FS14.1; C-FS14.1a; C-FS14.1b; C-FS14.1

CDP provides a general questionnaire for each of the three themes (Climate Change, Forests, and Water Security), along with industry-specific questionnaires tailored to sectors with significant environmental impact, taking into account their unique characteristics. In addition, CDP has developed comprehensive scoring methodologies for each questionnaire, encompassing base scores and score weights for each grade.

Questionnaire scoring is conducted by accredited scoring partners trained by CDP. Its internal scoring team then collates all scores, running data quality checks to ensure that scoring standards are accurate and consistent.

CDP ranks participating companies within their global industry peers based on four ascending levels: (1) Disclosure (D-/D), (2) Awareness (C-/C), (3) Management (B-/B) and (4) Leadership (A-/A). These four levels present their progress in the journey of environment management.

CDP upholds the principles of voluntary, public, and transparent disclosure. The methodologies, which are subject to annual updates, are publicly accessible on its official website and can be obtained free of charge. Additionally, companies' annual ratings are shared with invited investors and procurement customers through the platform. Companies have the flexibility to decide whether to publicly disclose their ratings on the CDP official website, in accordance with their own discretion.

By participating in annual environmental data disclosure, companies can reap various benefits. They can enhance their reputation, move ahead of market regulatory requirements, strengthen their competitive advantage, identify environmental risks and opportunities, track and measure progress, and lower financing costs. Research indicates a positive correlation between higher environmental performance scores and improved financial results among companies. Notably, over the past eight years, the "STOXX Global Climate Change Leaders Index", which is based on the CDP's 'A-List', has delivered an average annual return 5.8% higher than other comparable indices²¹.

²¹ The date is based on the aggregate performance (total returns) of the STOXX Global Climate Change Leaders Index and the STOXX Global 1800 Index between December 19th, 2012 and November 17th, 2021.

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