CDP
DISCLOSURE INSIGHT ACTION

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

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Contents

EXECUTIVE SUMMARY

Climate change has become perhaps the most urgent and significant challenge the world faces. In response, different countries have set their own net-zero targets that can help in the quest to limit the global temperature rise to 1.5˚C. As the world's largest developing country and a major centre of manufacturing, China accounts for about 30%[1] of the world's total carbon emissions. In September 2020, President Xi Jinping announced that the country would strive to reach its carbon peak by 2030 and achieve carbon neutrality by 2060. In November 2020, the Hong Kong Special Administrative Region (HKSAR) announced its own commitment to achieving carbon neutrality by 2050. Since then, a number of Chinese companies, especially those listed in Hong Kong, have been actively exploring ways to achieve "carbon neutrality" or "net-zero emissions"[2] in their own operations. Solutions and practices presented by companies listed on Hong Kong Exchanges and Clearing Limited (HKEX) will bring valuable experience and inspiration to Chinese and even global corporates, playing a crucial role in the quest to reduce global emissions and address the issues presented by climate change.

The research in this report focuses on listed companies in Hong Kong and the Chinese Mainland. To render appropriate assistance to companies embarking on the pathway towards net-zero by integrating climate-related resources, this project aims to understand listed companies' current status in setting targets and implementing practices to promote emissions reduction and identify their challenges and needs in terms of setting net-zero targets and establishing emissions reduction plans.

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[1] This report adopted the “about 30%” figure after integrating various data sources. Major sources include page 12 of the BP Statistical Yearbook of World Energy 2022 and “In-depth Understanding of the Basic Logic and Technical Requirements of Carbon Neutrality” written by Academician Ding Zhongli, Chinese Academy of Sciences.

[2] According to the Science Based Target initiative, setting corporate net-zero targets aligned with meeting societal climate goals means (1) achieving a scale of value chain emissions reductions consistent with the depth of abatement at the point of reaching global net-zero in 1.5˚C pathways, and (2) neutralising the impact of any residual emissions by permanently removing an equivalent volume of CO_2. Net-zero targets set using the Net-Zero Standard must cover all UNFCCC/Kyoto greenhouse gas (GHG) emissions. Although often used interchangeably with “net-zero”, “carbon neutral” is not the same. In general, when companies claim carbon neutrality they are counterbalancing CO_2 emissions with carbon offsets without necessarily having reduced emissions by an amount consistent with reaching net-zero at the global or sector level. This may conceal the need for deeper emissions reductions that are in line with what the science requires for the world to keep global warming to 1.5°C. Carbon neutrality claims also do not necessarily cover non-CO_2 GHGs.

Although the number of Chinese Mainland companies listed in Hong Kong accounts for a relatively small proportion of these companies overall, many of them are leaders in their specific business sectors. The actions these companies take towards net-zero emissions will be sure to drive the transformation of entire industries and the overall economy.

Through questionnaires and in-depth interviews, eight key findings and industry-specific insights have been drawn. For example, the survey results show that around two-thirds of enterprises have set quantifiable emissions reduction targets, but the proportion of companies using sustainable financial products is relatively low. The interviews indicate that most respondents have formulated reduction plans for Scope 1 and Scope 2 emissions, while Scope 3 emissions accounting is still in the early stages.

The challenges companies face in setting and implementing net-zero targets arise from many aspects, including technology, economic cost, governance, awareness and clarity of policies. Some 70% of the companies surveyed for this research project find it difficult to collect Scope 3 data, making it the most challenging issue. Other challenges include limited access to low-carbon energy; insufficient understanding of the actual impact of a net-zero commitment on the company's operation, management approach and financial status; the high cost of low-carbon transition technologies; unclear local emissions reduction policies; and insufficient incentives and guiding measures. Companies look forward to having concrete policies and rules, clear guidance and technologies or platforms that facilitate emissions reduction to help them in their progress towards net-zero emissions.

Reaching net-zero is a long and complex process that requires a long-term joint effort in terms of policies, capital, technology, talents and other elements. This research hopes to shed some light on the path towards net-zero through cooperation among various stakeholders, such as corporates, investors, upstream and downstream in the value chain, and policymakers.

CHAPTER 1:
RESEARCH PURPOSE AND METHODOLOGY

1.1 Project Background and Research Purpose

Climate change has become perhaps the most urgent and significant global challenge faced by society in the 21st century. In 1997, the third meeting of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (the "Convention") was held in Kyoto, Japan. The COP adopted the Kyoto Protocol, aiming to stabilise the greenhouse gas (GHG)[3] content in the atmosphere at an appropriate level, thereby preventing drastic climate change from harming humans. In 2015, the Paris Agreement was reached by a consensus of nearly 200 parties of the Convention, framing the global response to climate change after 2020. The long-term goal of the Paris Agreement is to limit global warming to well below 2°C, and preferably to 1.5°C, compared to pre-industrial levels.

In 2021, the Intergovernmental Panel on Climate Change (IPCC) pointed out that human activities had caused the global temperature to rise by 1.1°C compared with pre-industrialisation, estimating that at the same rate, global warming would reach 1.5°C as early as 2030. In 2022, an IPCC report titled "Climate Change 2022: Mitigation of Climate Change"[4] indicated that there is still a 50:50 chance of limiting the global temperature rise to 1.5°C if we can ensure that global GHG[5] emissions peak before 2025 and reduce by 43% before 2030 compared to 2019 levels. Otherwise, it said, the world will be severely affected by extreme weather. The IPCC report has served as a wake-up call for humankind and prompted countries around the world to speed up their actions.

In September 2020, Chinese President Xi Jinping announced at the United Nations General Assembly that China would strive to reach carbon peak by 2030 and carbon neutrality by 2060. In October 2021, the Chinese government published the "Working Guidance for Carbon Dioxide Peaking

[3] The Kyoto Protocol covers six categories of GHG emissions, namely carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).

[4] Refer to p. 21 of the Summary for Policymakers for more details.

[5] "GHG" refers to the seven GHGs included in the Greenhouse Gas Protocol (GHG Protocol) – carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PCFs), sulphur hexafluoride (SF_6) and nitrogen trifluoride (NF_3).

and Carbon Neutrality in Full and Faithful Implementation of the New Development Philosophy" and "Action Plan for Carbon Dioxide Peaking before 2030" to formulate the overarching design of its "1+N" policy framework for achieving the goals of carbon dioxide peaking and carbon neutrality. Since then, realising these "dual carbon goals" has become a significant issue for implementation by both the Chinese government and the country's businesses, which have since started to set emissions reduction[6] targets and explore pathways to reach net-zero emissions.

To achieve net-zero requires a substantial and systematic change that could pose unprecedented challenges to global corporates, especially those in developing countries. Companies from the Chinese Mainland and Hong Kong account for fewer than 6% among the 4,000-plus companies worldwide that have joined the Science-based Targets initiative (SBTi)[7], and among the 1,500+ companies that have committed to achieving net-zero through SBTi, fewer than 6% are from the Chinese Mainland or Hong Kong. This research aims to understand the current status of target setting and action plans for emissions reduction for Chinese Mainland- and Hong Kong-listed companies and identify the opportunities and challenges in setting net-zero targets and developing emissions reduction plans so that practical assistance can be provided to help corporates achieve net-zero.

1.2 The Extensive Linkages between this Research Project and Other CDP Projects or Initiatives

As one of the initiators of the SBTi, CDP strives to promote and assist companies in setting GHG emissions reduction targets that are in line with the latest climate science findings. Through this research, CDP has gained a better understanding of how Hong Kong-listed companies have responded to the world's first Corporate Net-Zero Standard that was published by the SBTi in October 2021. Difficulties in setting and implementing emissions reduction goals have also been identified, which will serve as the basis for the promotion of the SBTi and popularisation of the Corporate Net-Zero Standard going forward.

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[6] "Emissions reduction" in this report refers to reduction of the seven GHGs covered by the GHG Protocol.

[7] The SBTi is an international initiative co-established by CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact (UNGC) to enable companies to set emissions reduction targets in line with leading climate science. Corporates joining SBTi have to set or commit to setting (within 24 months) near-term or long-term targets.

CDP operates the world's largest environmental information disclosure system and database, and its climate change questionnaire is globally recognised and has a wide range of applications. The questionnaire requires a company to report its emissions reduction targets and disclose its annual emissions data. As such, CDP's main purpose shares synergies with this research, encouraging companies to set emissions reduction and net-zero targets and disclose publicly the implementation of the targets through CDP. In 2022, more than 2,700 companies in the Chinese Mainland, Hong Kong, Macau and Taiwan have disclosed environmental management information to their stakeholders through the CDP questionnaire, of which more than 350 were listed companies. In addition, CDP's supply chain project helps the major procurement companies in the supply chain to understand the emissions performance of their suppliers, while CDP's capital market project assists financial institutions in understanding the carbon emissions of their investment portfolios. Mastering and managing such Scope 3 emissions is crucial for companies embarking on the process of achieving net-zero.

As a leading international financial centre supported by the world's second-largest economy, Hong Kong's capital market plays an important role in promoting the low-carbon transition of Chinese Mainland companies. As of October 2022, there are 1,389 companies from the Chinese Mainland listed in Hong Kong. This represents 54% of the total number of listed companies in Hong Kong and accounts for 76% of the total market capitalisation of the Hong Kong stock market[8]. Many of these companies are market leaders in their respective industries and can play an exemplary role in driving the transformation of entire industries as well as the economy as a whole.

1.3 Feasibility Analysis

There are currently more than 2,700 companies disclosing climate change-related information through CDP in the Chinese Mainland, Hong Kong, Macau and Taiwan. CDP has established long-term cooperative relationships with numerous Chinese Mainland companies, providing support in disclosing climate-related information, collecting and managing emissions data along value chains, and communicating climate change-related performance with investors. More importantly, being

[8] See HKEX Monthly Market Highlights.

recognised and trusted by Chinese companies, and as one of the initiators of the SBTi, CDP plays a crucial role in developing and promoting the standards proposed by the initiative, facilitating and helping various companies to commit to or set science-based targets, and actively popularising the newly promulgated Corporate Net-Zero Standard. With its rich access to companies in the field of emissions reduction, together with its extensive accumulation of information and data, relevant background knowledge and technical capabilities, CDP is well positioned to fulfil the essential requirements for the purposes of this research.

1.4 Questionnaire and Interview Methodology

This research was conducted through a questionnaire and interviews. Chinese companies that disclose through CDP were identified and invited to complete the questionnaire. For a thorough understanding of the background and themes of this research, CDP held a net-zero emissions webinar on 2 June 2022 to introduce the concept and share some of the best practices of companies. From early June to the end of July, the research team sent out questionnaire invitations in three batches with the support of HKEX and received 70 completed questionnaires.

The research team then communicated with some of the companies that completed the questionnaire and arranged one-on-one interviews according to their interests they identified. The team sent out 35 interview invitations and 17 companies agreed to conduct telephone interviews, including 14 listed companies in Hong Kong. The interviews assisted the research team in understanding more about the mutual and specific issues encountered by different industries in setting net-zero targets.

1.5 Limitation Analysis

Most of the companies that participated in the survey are relatively active in sustainability. They take the lead in their respective industries in terms of climate governance, environmental risk management, target-setting, and emissions reduction actions. As such, certain deviations may exist between the information obtained in this research and the overall performance of the market.

During the interviews, most interviewees were from the sustainability department of the company and were not directly involved in corporate financing. Therefore, the information provided was relatively limited in response to the topic of green financial instruments. The information obtained may not fully reflect the needs of listed companies in terms of such instruments.

No response was received from listed companies in the oil and gas sector. Two companies from this sector rejected CDP's invitation for an interview. Therefore, although this sector serves a significant role in addressing climate change issues, it is not covered by this research.

CHAPTER 2:
RESEARCH RESULTS AND KEY FINDINGS

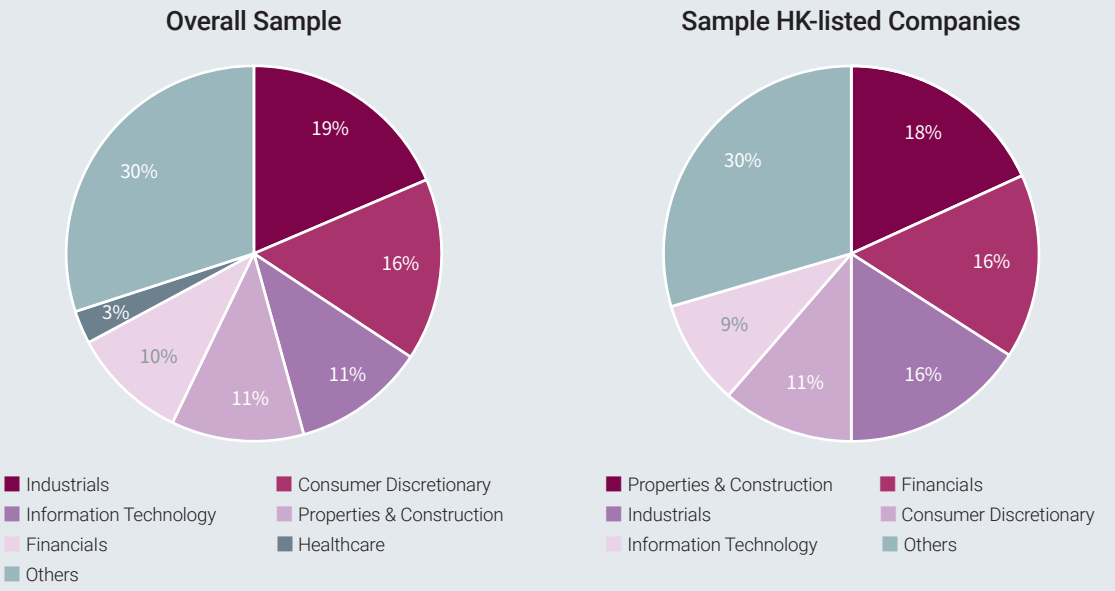
2.1 Questionnaire Design and Interview Arrangement

This research combined an in-depth questionnaire along with one-on-one interviews. The questionnaire (see Appendix 1) has a total of 17 questions covering five different aspects, namely the management and process of emissions reduction; emissions reduction target setting; the challenges of committing to and achieving net-zero; the resources needed to realise net-zero; and the application of green financial instruments. Companies that expressed a willingness to communicate further were invited to leave their contact details. The interviews were conducted on a one-on-one basis based on the companies' responses to the questionnaire. The interview outline (see Appendix 2) comprises 12 questions in five aspects, including management, emissions reduction targets, net-zero targets and financial instruments.

2.2 Results Analysis and Key Findings

A total of 70 valid responses (the "Overall Sample" or "Respondents") to the questionnaire were received. Among the Overall Sample, 44 replies came from Hong Kong-listed companies (the "Sample HK-listed Companies"), accounting for 63% of the total; 21 replies came from companies listed on the A-shares market, accounting for 30%; and five replies came from other companies, accounting for 7%. In terms of sectoral distribution, 70% of Respondents were from the consumer discretionary, information technology (IT), properties and construction, financials, industrials and healthcare industries (see Figure 1). These industries account for 80% of Hong Kong-listed companies in terms of two dimensions: number and market capitalisation.

Figure 1: The sectoral distribution of surveyed companies

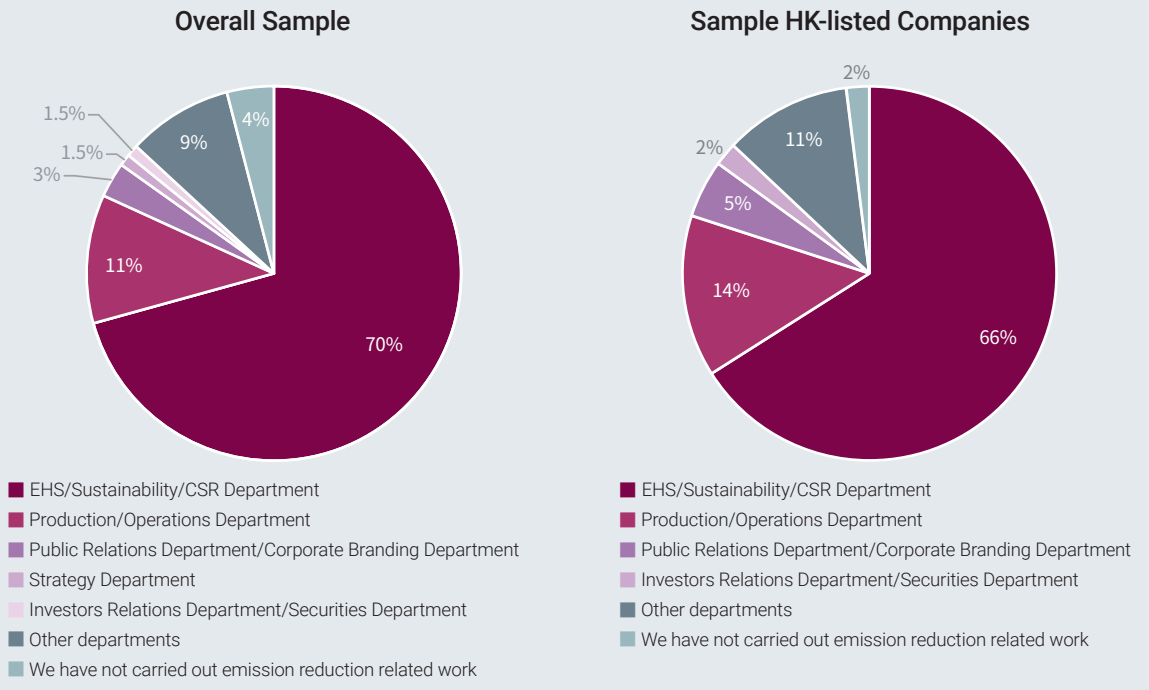


A total of 17 companies (the "Interviewees") participated in the interviews, including 14 companies listed in Hong Kong, two companies listed on the A-shares market, and one other company. During the interviews, the research team further solicited views on the 12 questions according to the company's questionnaire responses.

Key Finding 1: Most Interviewees have established a governance structure, management system and processes to facilitate emissions reduction.

As shown in the questionnaire results, 66% of Sample HK-listed Companies and 70% of all Respondents have their emissions reduction work led by their Environmental, Health and Safety (EHS), Sustainability or Corporate Social Responsibility (CSR) department. Furthermore, companies with work led by the Production or Operations Department accounted for 14% and 11% of the Sample HK-listed Companies and the Overall Sample respectively. These companies are mainly industrial companies. Since their production processes are the primary source of energy consumption and carbon emissions, it is most effective for the Production Department to take the lead. Others are led by the Public Relations or Corporate Branding Department, Investor Relations or Securities Department, as well as the Strategic Development Department (see Figure 2).

Figure 2: Departments leading the emissions reduction work of companies



The interviews revealed that a vast majority of companies have established a governance structure to oversee issues related to emissions reduction and climate change, with the active participation of the Board and management. Some Interviewees have built a three-level management structure by setting up a dedicated emissions reduction working group at the execution level. At the Board level, most Interviewees have set up a dedicated committee, conducting regular meetings (every six months or quarterly) to formulate emissions reduction strategies and supervise their implementation. In terms of management, more than 80% of the Interviewees have emissions reduction work led by senior management above the vice president level. Among them, managers of the Production Department tend to lead and coordinate the work for most of the industrial companies interviewed. However, in terms of incentive and restraint mechanisms, most Interviewees have yet to incorporate emissions reduction into the performance assessment of relevant departments and management, while only a small number of the industrial companies interviewed have it included in the performance assessment of their Production Department and management.

Key Finding 2: Though absolute emissions have been increasing as a result of business growth, emissions intensity has declined among most Interviewees. Also, most Interviewees have established an accounting system for GHG emissions but this is yet to be improved.

Nearly 80% of Interviewees indicated that they started calculating Scope 1 and Scope 2 GHG emissions at some point in the past three years. The data reveals a trend for increasing emissions as a consequence of growing business of these companies. Only one company, in the financial services sector, reported that its Scope 1 and Scope 2 emissions had peaked and actually declined slightly over the past three years. An industrial company and an IT company that were interviewed indicated they have set targets for reaching carbon peak by 2030, while other Interviewees expressed uncertainty about the time it would take to achieve this goal. Companies that are experiencing rapid growth cannot expect to see their emissions substantially reduced without a feasible solution to quickly transform their energy consumption to low- or zero-carbon.

Nearly 40% of Interviewees mentioned that although their absolute emissions may increase, they have promoted measures internally to ensure that emissions intensity (carbon emissions per unit of production or production value) is on a downward trend. A number of Interviewees from the industrial, properties and construction and healthcare industries claimed that their emissions intensity has been dropping significantly for at least a year. However, the decline is not sufficient to compensate for the rise in total emissions resulting from growing production. One of the properties and construction companies interviewed stated that it is targeting a 19% reduction in emissions intensity by 2025.

In terms of emissions data, nearly 60% of Interviewees clearly stated that they have completed carbon emission assessments through third-party providers, but most have only conducted a complete analysis for Scope 1 and Scope 2 emissions. Regarding Scope 3 emissions, only some of the industrial companies interviewed indicated that they have conducted data consolidation through primary emissions data collection of purchased goods and services and capital goods[9] from their suppliers, while most Interviewees revealed they have yet to collect detailed data related to Scope 3 emissions.

[9] Purchased goods and services and capital goods are categories 1 and 2 of Scope 3, defined by the GHG Protocol, respectively.

Figure 3: List of Scope 3 categories

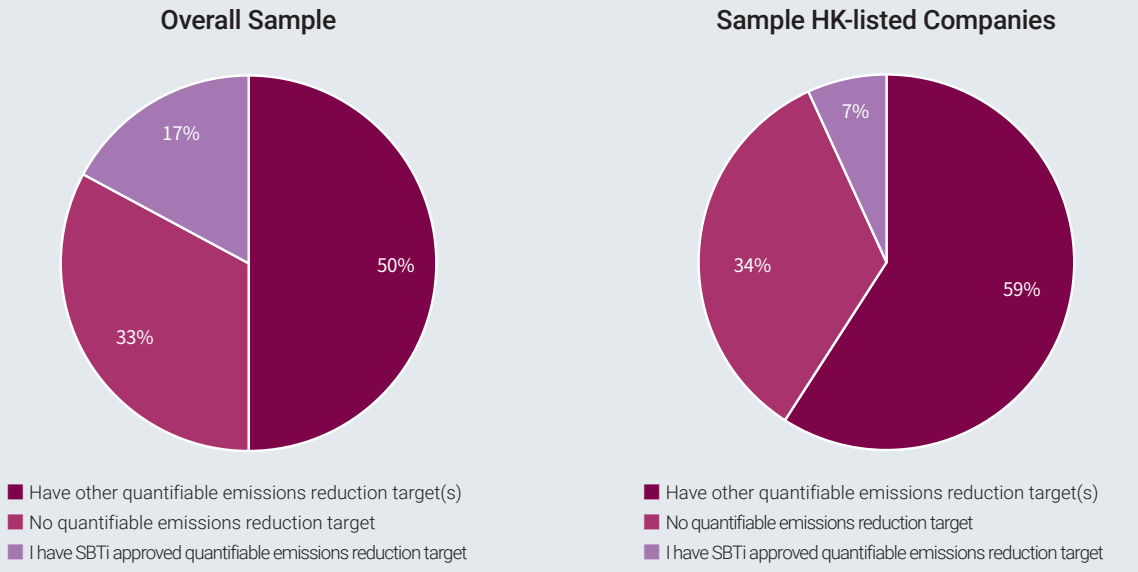
Upstream or downstream	Scope 3 category
Upstream Scope 3 emissions	1. Purchased goods and services 2. Capital goods 3. Fuel- and energy-related activities (not included in Scope 1 or Scope 2) 4. Upstream transportation and distribution 5. Waste generated in operations 6. Business travel 7. Employee commuting 8. Upstream leased assets
Downstream Scope 3 emissions	9. Downstream transportation and distribution 10. Processing of sold products 11. Use of sold products 12. End-of-life treatment of sold products 13. Downstream leased assets 14. Franchises 1 5. Investments

Source: Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard

Key Finding 3: Two-thirds of Respondents have set quantifiable emissions reduction targets.

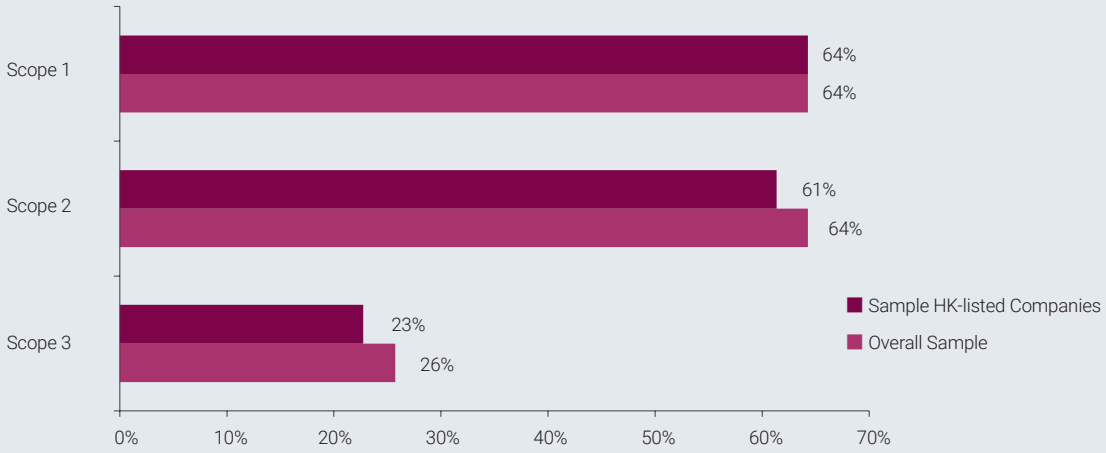
Results from the questionnaire suggested that two-thirds of Respondents have formulated quantifiable emissions reduction targets, some of which have acquired SBTi approval (see Figure 4). In the Overall Sample, the financial industry has the highest proportion of companies with quantitative targets, accounting for 86%, while the IT industry has the lowest proportion at 57%. Among the Sample HK-listed Companies, the consumer discretionary industry has the highest proportion of companies with quantitative targets at 100%, while both industrial and financial industries have the lowest proportion at 57%. Among Respondents that have not yet set any quantifiable emissions reduction target, more than 90% suggested they would set such a target within five years, while more than two-thirds aimed to set a target within two years.

Figure 4: Setting of quantifiable emissions reduction targets



Among Respondents that have set quantifiable emissions reduction targets, more than 60% have targets covering Scope 1 and Scope 2 emissions, and nearly 25% have targets that also include Scope 3 (see Figure 5).

Figure 5: Emissions scopes covered under quantifiable emissions reduction targets

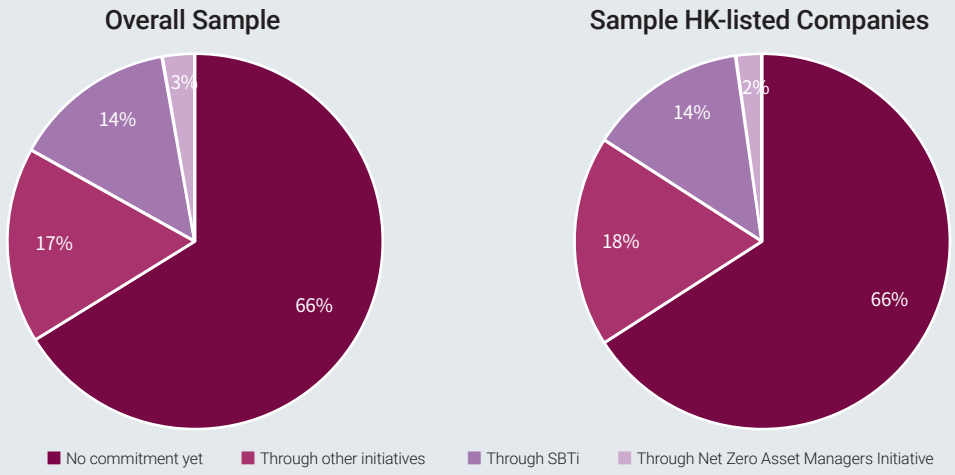


Key Finding 4: One-third of Respondents have committed to net-zero, with demonstrating climate leadership being a key driver.

The questionnaire results showed that one-third of Respondents have committed to achieving net-zero emissions in various forms (see Figure 6). Among the Sample HK-listed Companies, 14% have committed to net-zero emissions through SBTi, and 18% have committed through other initiatives or

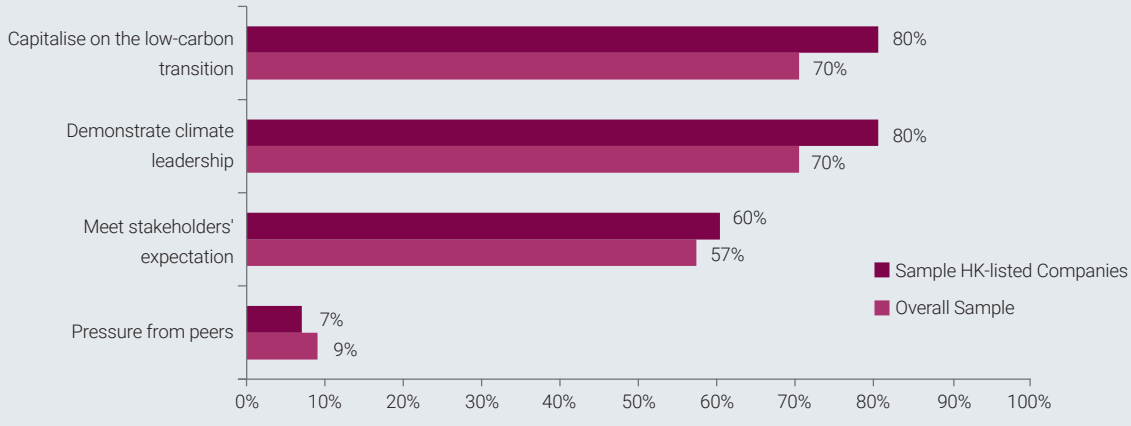
voluntary commitments, while 2% of financial institutions have joined the "Net Zero Asset Managers Initiative". It is worth noting that one IT company interviewed has set a more ambitious target, committing to achieve full carbon neutrality for its own operations and supply chain by 2030.

Figure 6: Corporate net-zero emissions commitment



The pursuit of a low-carbon transition, an intention to be seen as an industry leader, and pressure from stakeholders are the key drivers for Respondents to commit to net-zero emissions (see Figure 7). Among the Sample HK-listed Companies that have committed to net-zero, 80% considered the pursuit of a low-carbon transition and becoming an industry leader as being the main driving forces, while 60% considered it was the pressure from stakeholders. Fewer than 10% of Respondents concluded that their key motivation for net-zero came from peer pressure. It can be concluded that the commitment to net-zero emissions is a manifestation of demonstrating climate leadership rather than being a common phenomenon and/or requirement in the industry, while peer pressure has not yet become the main driving force.

Figure 7: Key drivers for corporates to commit to net-zero



Regarding the opportunities arising from their commitment to net-zero, Respondents said these were mainly viewed from the perspective of economic benefits. Among the Sample HK-listed Companies that have committed to net-zero, 67% thought the efficiency of resources and energy consumption can be improved, while 47% believed that new opportunities can be captured through an improved market reputation, or that the cost of operations can be reduced. Meanwhile, 33% of Respondents pointed out that emissions from the value chain can be reduced.

Key Finding 5: External shocks such as the pandemic and high international energy prices have a limited impact on Interviewees' long-term emissions reduction targets but may affect the pace of reductions in the short term.

Interviews revealed that the COVID-19 pandemic has slowed down the pace of corporate development over the past two years, decelerating the growth of carbon emissions for some of those concerned. One of the properties and construction companies interviewed said that slowing down or ceasing parts of its businesses during the pandemic would contribute to achieving its staged emission reduction targets earlier than originally planned. However, from the perspective of emissions intensity, the pandemic has affected the production capacity utilisation of companies, and some stationary emissions cannot be diluted by the growth in product volume or economies of scale. As a result, the trend of decreasing emissions intensity for some of the interviewed industrial companies fluctuated over the past three years. In terms of supply chain emissions reduction, the pandemic has had a greater impact on the supply of raw materials and spare parts. Some Interviewees explained that their main requirements for suppliers are the timely and quality supply of products, which overrides their requirements in terms of emissions reduction. Overall, the pandemic has had both positive and negative impacts on corporate emissions reduction targets.

The interviews also showed that the rapid increase in international energy prices resulting from the Russo-Ukrainian War has not had a significant impact on the companies questioned. For industries with a high degree of electrification, such as the service industry and industrial manufacturing, the applicable electricity prices are uniformly priced through the local power grid and as such are less affected by the fluctuation of primary energy prices. However, industrial companies with a high dependence on fossil fuels have been significantly affected by energy price shocks. Not

only has this adversely affected their cost base in the short term, but it has also strengthened their determination to reduce their reliance on fossil fuels in the longer run.

Key Finding 6: Most Interviewees have formulated emissions reduction plans for Scope 1 and Scope 2, while Scope 3 accounting is just getting off the ground.

The interviews revealed that Scope 1 emissions contribute to a significant part of the total emissions in the industrial and construction industries. One of the major solutions through which construction companies can cut their Scope 1 emissions is to increase the degree of electrification in construction. Scope 1 emissions reduction actions for industrial companies can be divided into two aspects: (1) enhancing the efficiency of fossil fuel consumption by improving production techniques, especially when economically viable alternatives such as photovoltaic glass production are unavailable to substitute for the direct use of fossil fuels in the current production processes of certain sub-sectors; and (2) optimising the energy structure, such as replacing the consumption of oil with natural gas (with a relatively lower emissions intensity), or replacing direct fossil fuel consumption with electricity, with the opportunity to further reduce overall emissions by increasing the proportion of electricity generated by renewable energy[10].

The Scope 2 emissions reduction strategies of Interviewees mainly include adapting alternatives and reducing consumption. Scope 2 emissions include purchased electricity, heat, steam and cooling, of which electricity is the most common type of energy purchased and also the main source of emissions. In terms of adapting alternatives, Interviewees with self-owned factories usually meet their electricity demand through self-built distributed photovoltaics. Some of the industrial companies interviewed stated that self-generated renewable energy can meet more than 30% of their overall electricity demand, while other Interviewees said they reduce emissions by purchasing renewable electricity or renewable energy certificates (RECs)[11]. In terms of consumption, interviewees mainly reduce their electricity consumption through energy-saving technologies. For example, manufacturers of photovoltaic equipment can reduce energy consumption on their

[10] According to the definition of RE100, renewable energy refers to energy generated from geothermal, solar, sustainable biomass (including biogas), water and wind energy sources.

[11] As defined by The International REC Standard (I-REC), a renewable energy certificate is an energy attribute certificate that represents the environmental attributes of each megawatt hour of electricity generated from renewable sources.

production lines by upgrading production facilities and optimising automation, which will help to bring down electricity consumption per unit.

The vast majority of Interviewees are only just beginning their Scope 3 emissions accounting, with very limited data available to form a solid foundation. Most stated that Scope 3 emissions involve a wide range of emissions sources and a large number of stakeholders. Having a weak information base makes it difficult to systemically and comprehensively quantify and reduce Scope 3 emissions. The major emissions categories in Scope 3 reported by most companies are emissions related to purchased goods and services and capital goods. Some Interviewees have started to manage their supply chain emissions and understand the energy consumption of suppliers through the green supply chain system, or are cooperating with third parties to empower suppliers. Generally speaking, however, the emissions data foundation for Scope 3 is relatively weak.

Some of the categories in Scope 3 emissions are relatively easier to manage, and some companies have already taken proactive measures. For example, business travel is comparatively easy to quantify and manage, and some of the financial institutions interviewed have adopted economic means, such as purchasing voluntary carbon credits, to offset emissions from air travel. Emissions from upstream and downstream transportation and distribution are relatively manageable for the industrial companies interviewed. By optimising their logistics systems, companies can adopt initiatives such as replacing road transportation with water transportation in order to reduce emissions. With regard to emissions generated by the consumption of sold products, some industrial companies have included relevant considerations during the product design stage, but it remains difficult to quantify the actual emissions reduction.

Key Finding 7: About one-third of Interviewees have cooperated with suppliers on emissions reduction in various forms, but further improvements are needed.

According to the CDP's 2020 Supply Chain Report, "Transparency to Transformation: A Chain Reaction", the average emissions in a company's supply chain are 11.4 times higher than its operations. Working with supply chains to reduce GHG emissions from suppliers is an essential task for industries looking to achieve net-zero emissions across the value chain. The interviews revealed that about one-third of companies have already started working with their suppliers in relation

to reducing emissions. Some of the industrial companies interviewed stated that they are also participating in the emissions reduction management of international suppliers, disclosing the unit emissions of products they supply. In addition, they noted that an increasing number of large joint ventures are expressing a similar need for supply chain cooperation.

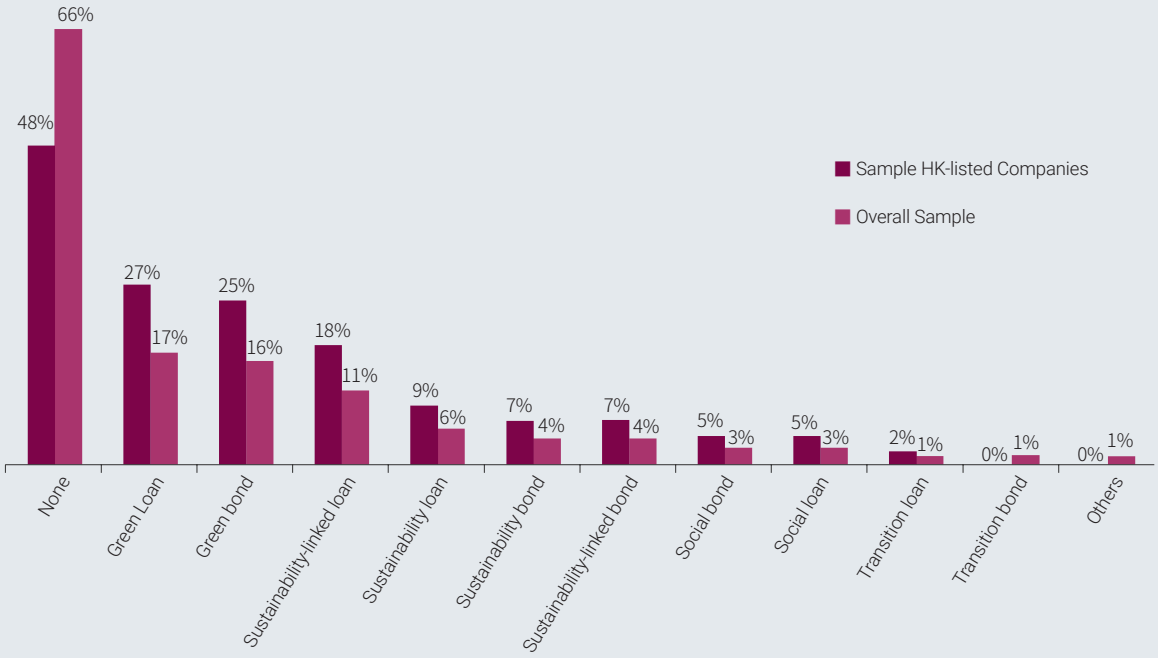
The supplier emissions management of most Interviewees currently focuses only on supplier screening and capacity building, with only a few companies covering data collection. Some Interviewees have incorporated environmental management performance into their supplier selection criteria while some of the properties and construction companies interviewed have included climate change issues in their supplier meetings for a number of years to guide suppliers on climate change and industry best practices. And some industrial companies revealed they cooperate with research institutions to help suppliers build capacity related to low-carbon management. Among all the Interviewees, only a few have developed information collection platforms to facilitate data collection on purchased goods and services for Scope 3 emissions.

The interviews also revealed a number of proactive and pragmatic supply chain cooperation practices. For example, several Interviewees have been working with suppliers to develop low-carbon raw materials to reduce emissions at source. Some of the properties and construction companies interviewed are also leading their suppliers to make steel bars and concrete from recyclable materials, helping to reduce upstream emissions. And some Interviewees in the automobile manufacturing industry have been working with suppliers to develop low-carbon steel and aluminium, helping suppliers become self-sufficient in renewable electricity at a lower cost through joint bidding for distributed photovoltaic projects.

Key Finding 8: Half of the Respondents have used sustainable financial products, but in general the understanding of financial instruments needs to be improved.

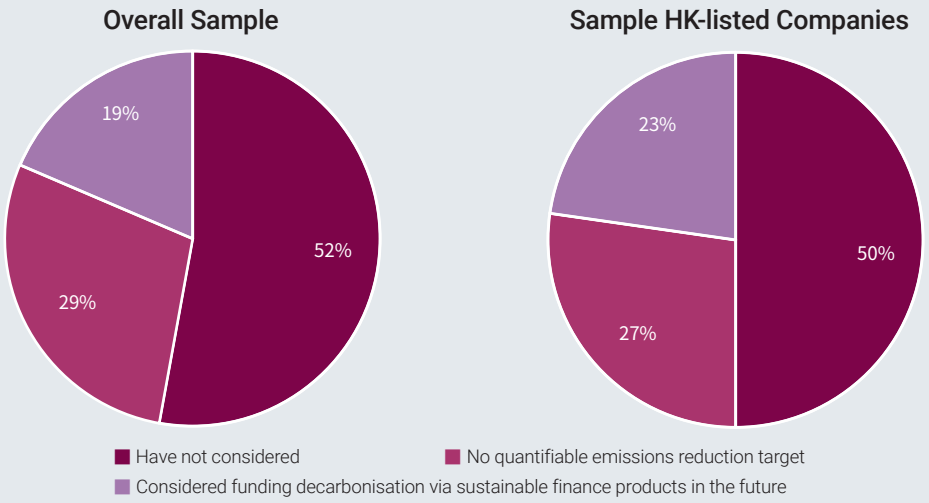
Questionnaire responses revealed that 52% of the Sample HK-listed Companies have adopted at least one sustainable financial product, compared to 34% of the Overall Sample. Green loans and green bonds are the most commonly used instruments, with 27% and 25% of Sample HK-listed Companies having used these two financial products respectively, while 18% of Respondents have used sustainability-linked loans.

Figure 8: Sustainable financial products used by companies[12]



Fifty percent of the listed companies interviewed indicated that they currently are not considering using relevant financial products to support their emissions reduction plan. This is largely consistent with the percentage of companies that have not adopted any sustainable financial products to date.

Figure 9: Sustainable financial instruments companies intending to use in the future



[12] According to the International Capital Market Association (ICMA), sustainable financial products are defined as follows:
Green loans (bonds) are loan (bond) instruments with proceeds or an equivalent amount exclusively applied to finance or refinance, in part or in full, new and/or existing projects with environmental benefits.

Sustainability-linked loans (bonds) are loan (bond) instruments and/or contingent facilities (such as bonding lines, guarantee lines or letters of credit) which incentivise the borrower's achievement of ambitious, predetermined sustainability performance objectives.

Sustainability loans (bonds) are loan (bond) instrument where the proceeds or an equivalent amount will be exclusively applied to finance or re-finance a combination of both green and social projects.

Social loans (bonds) are any type of loan (bond) instrument where the proceeds will be exclusively applied to finance or re-finance in part or in full new and/or existing projects that achieve greater social benefits.

A 'transition' label applied to a debt financing instrument should serve to communicate the implementation of an issuer's corporate strategy to transform the business model in a way which effectively addresses climate-related risks and contributes to alignment with the goals of the Paris Agreement.

Some companies indicated in the interviews that they have sufficient cash flow and hence do not need external support to fund their emissions reduction projects. Some have capital needs but lack sufficient understanding of related products, while others think it is difficult to get financing and hope that approval can be made easier for related financial products. Green bonds and green loans are recognised by most companies to be useful for achieving net-zero emissions.

2.3 Major Challenges for Companies to Achieve Net-Zero Emissions

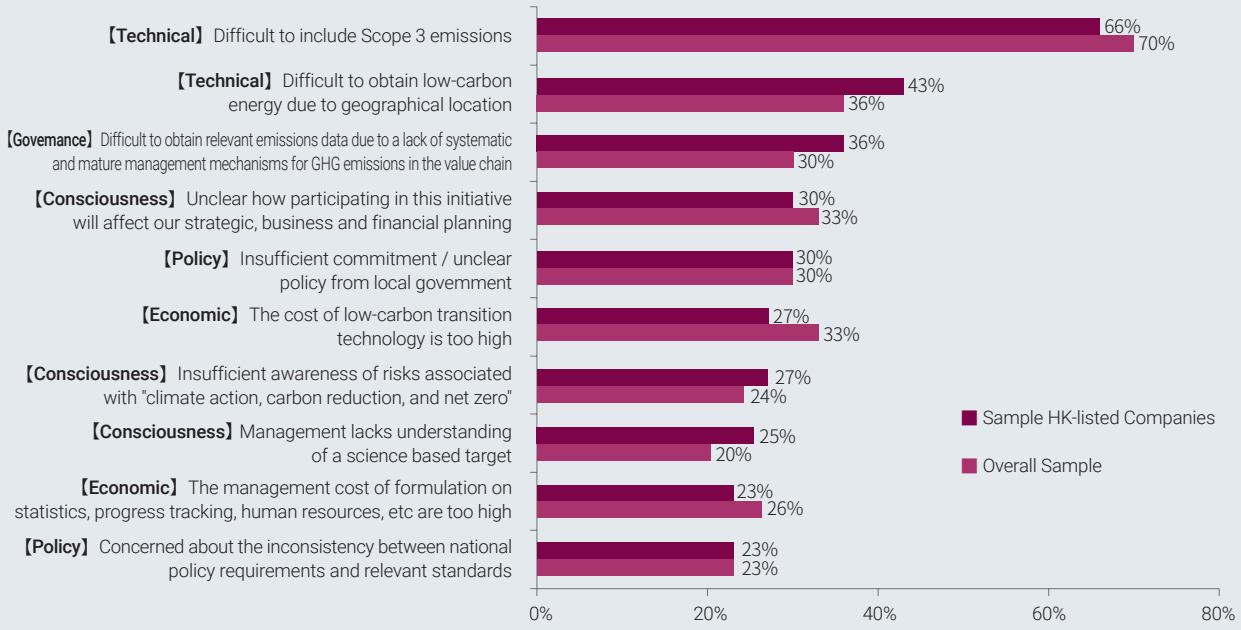
Achieving net-zero is a systemwide project that presents significant long-term challenges to companies. Statistics from the Overall Sample show that the factors hindering companies from making a net-zero commitment are, in descending order: technical, consciousness, governance, economic, policy and reputation. The specific factors covered by these six categories are illustrated in Figure 10.

Figure 10: Factors hindering companies' commitment to net-zero emissions

Consciousness level • Insufficient awareness of risks associated with "climate action, carbon reduction, and net zero". • Management lacks understanding of a science-based target. • It is unclear how participating in this initiative will affect our strategic, business and financial planning.	**Policy level** • Concerned about the inconsistency between national policy requirements and relevant standards. • Insufficient commitment/ unclear policy from local government.	**Economic level** • The cost of low-carbon transition technology is too high. • The management cost of formulation on statistics, progress tracking, human resources, etc. are too high. • Lack of green finance, carbon market and product availability.
Governance level • Lack of board support. • There is no leading department within our company to uniformly lead related work. • Difficult to obtain relevant emissions data due to a lack of systematic and mature management mechanisms for GHG emissions in the value chain.	**Technical level** • Do not understand how to make a commitment and how to set a net-zero target. • Difficult to include Scope 3 emissions. • Do not have a mitigation plan after the target is set. • Difficult to obtain low-carbon energy due to geographical location. (Low-carbon energy refers to energy that does not produce direct greenhouse gas emissions, including wind energy, solar energy, hydro energy, hydrogen energy, nuclear energy, geothermal energy, and biomass energy.)	**Reputation level** • Worry about the negative impact on the company of failing to meet relevant commitments. • Concerns about the uncertain impact of joining an international initiative.

From the questionnaire results, the top five factors preventing companies from committing to net-zero emissions are: difficulty in Scope 3 data collection; limited access to low-carbon energy due to geographical location; high cost of low-carbon transition technologies; insufficient understanding of the impact of a net-zero commitment on the company's operation, management strategies and financial planning; and a lack of commitment or unclear policies from local government (see Figure 11). Combining the specifics revealed by the interviews, six major challenges have been identified:

Figure 11: Major barriers to companies' commitment to net-zero emissions



Challenge 1: Miscellaneous categories and complicated data of Scope 3 emissions.

According to Respondents, the major barriers to setting emissions reduction and net-zero targets are the extensivity of information involved, weak data foundation and difficulty in defining emissions boundaries. As shown in the GHG Protocol, "Corporate Value Chain (Scope 3) Accounting and Reporting Standard", Scope 3 emissions can be divided into 15 categories (refer to Figure 3). With the exception of a few categories, such as business travel, where data is relatively easy to obtain, most categories present challenges to companies in terms of collecting data. As most Respondents are still at the initial stage of Scope 3 reporting, it is expected to take at least three to five years to develop a strong data foundation and information management system. In general, Respondents reported that setting Scope 3 emissions reduction targets requires external professional support. Some of the

industrial companies interviewed have already started to assess Scope 3 emissions through external consulting.

Challenge 2: Difficulty in collecting and segmenting emissions data from suppliers.

Incomplete information disclosure from suppliers is a major challenge in obtaining emissions data for purchased goods and services. Although carbon emissions disclosure has become common among Sample HK-listed Companies, it is still in its infancy in the Chinese Mainland. The disclosure rate of listed companies in the Chinese Mainland is not high, and data is also lacking for most private companies and small and medium-sized enterprises (SMEs), making it a challenge for companies whose supply chains are primarily in the Chinese Mainland. Interviewees from properties and construction companies mentioned that most upstream suppliers providing construction raw materials do not have systemic management in place for emissions-related issues due to their small scale, and hence are relatively weak in disclosing carbon emissions data. Some Interviewees have incorporated suppliers' environmental, social and governance (ESG) performance into their supplier evaluation system but have not yet considered including emissions data when evaluating suppliers. Some Interviewees have established supply chain management platforms to collect energy consumption data from suppliers.

Identifying suppliers' emissions for which companies are responsible for is a critical challenge in calculating the upstream carbon emissions of those companies. More than 30% of Interviewees indicated that they find it hard to accurately segment the emissions of the purchased goods and services they have responsibility for when incorporating suppliers' emissions into their own Scope 3 emissions. Some industrial organisations do provide data on the carbon emissions of raw materials in their industries but obtaining this data increases costs for companies. Industrial companies in the material manufacturing sector pointed out that it is difficult to collect supplier data because of the numerous types of raw materials provided by upstream suppliers, each with different emission factors.

Challenge 3: Limited influence in driving value chain emissions reductions.

A limited choice of suppliers or the complicated composition of raw materials will pose challenges when looking to collect supply chain data. Some of the IT companies and properties and construction

companies interviewed said they don't have a wide choice of suppliers, especially in the case of monopolies in upstream industries, and they have limited influence over their suppliers. Therefore, even if companies set emissions reduction targets for their supply chains, it can be a challenge to get suppliers to account for their own emissions and impose influential constraints on their operations and emissions reduction activities.

Challenge 4: Obstacles to accessing low-carbon energy and RECs.

Respondents said they are lacking channels and platforms through which they can purchase renewable electricity and RECs. In terms of renewable electricity, most of the companies interviewed that are in a position to do so have made full use of their plants and other facilities to lay distributed photovoltaics to lower their own Scope 2 emissions. However, due to geographical constraints, many Interviewees are unable to use low-carbon energy sources such as wind and solar power. Hence, they need to sign power purchase agreements with external renewable electricity suppliers or purchase RECs to help fill the gap in renewable electricity demand. Properties companies indicated that some of their projects lack a renewable electricity supply due to their location in first- and second-tier cities with limited rooftop areas on high-rise buildings, and with less room for self-built distributed photovoltaics. Considering that nearly 27% of Hong Kong's electricity supply comes from the Chinese Mainland[13], Respondents see the need for more extensive renewable electricity and REC trading platforms.

Challenge 5: Considerably high overall cost of low-carbon transition.

Making a low-carbon transition puts upward cost pressure on companies and industry value chains. For industrial companies that are highly dependent on fossil fuels, the first step of this transition is to increase their degree of electrification. This requires the introduction of new production technologies and techniques, as well as the transformation and upgrading of existing production lines, which will lead to an increase in overall costs. For industries with a high degree of electrification, increasing the proportion of renewable energy can cause higher overall energy costs in some regions and threaten energy stability. For automobile manufacturing and other industries with long industry value chains, although their core businesses have sufficient profit margins to absorb a certain magnitude of

[13] Calculated based on the statistics on local electricity consumption and electricity imports from the Chinese Mainland from the Hong Kong Energy Statistics (2021 Annual Report).

increased energy costs, Interviewees are worried that promoting the low-carbon transition of upstream and downstream companies would bring challenges to the profitability and viability of the industry value chain in the short term.

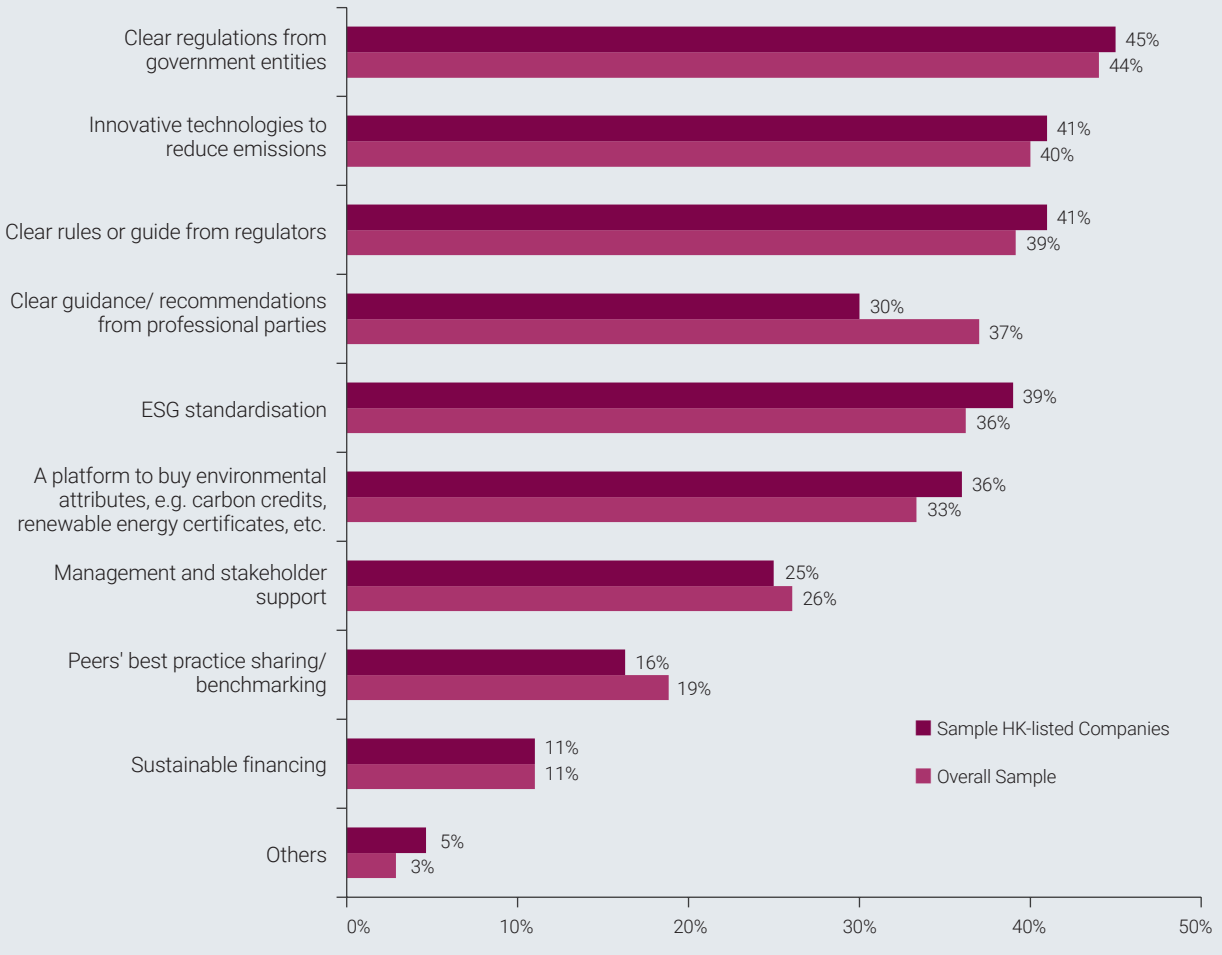
Challenge 6: Unclear local emissions reduction policies and insufficient incentives and guiding measures.

Some of the Industrial companies interviewed reflected that local renewable electricity purchasing policies remain unclear at present, and there are barriers to cross-provincial renewable electricity procurement by production bases, resulting in a structural shortage in the supply of renewable electricity. Construction companies highlighted how the determination of local governments to reduce emissions and the strength of the measures they take directly affect the level of interest in green buildings. Local governments can stimulate market development by promoting low- and zero-carbon building standards. At the same time, they can exert influence over emissions reductions in the construction industry by directly steering investment. The properties companies interviewed said they expect that more ambitious local emissions reduction policies will encourage the development of green buildings and properties. One company that provides environmental protection services pointed out that while the use of recycled waste materials can reduce emissions over the life cycle of a product, the cost of recycled materials is higher than traditional raw materials, hence national and local incentives are needed to ensure market competitiveness.

CHAPTER 3:
SUPPORT REQUIRED FOR CORPORATES AND RELATED SUGGESTIONS

In the course of this research, the team explored the assistance required by companies to commit to and achieve net-zero. More than 40% of Sample HK-listed Companies believed that clear regulations and management from regulators and governments would be helpful. Meanwhile, over 40% of them expressed that more innovative technologies are needed to support their emissions reduction efforts. In addition, more than 30% of companies said that guidance from professional bodies, standardised ESG guidelines and platforms for purchasing environmental attributes are also required (see Figure 12).

Figure 12: Assistance required for companies to commit to and achieve net-zero emissions



Companies have demonstrated a demand for multiple internal and external resources in all aspects of consciousness, policy, technical, and economic factors. Regarding the consciousness aspect, companies need to better understand the impacts of climate change and scientifically assess the implications for them making the transition to net-zero. In the policy aspect, companies require clearer regulations and guidance from governments and regulators, as well as preferential policies to support a low-carbon transition. In the technical aspect, companies need to strengthen their ability to collect data from their own operations and value chains, while seeking innovative technologies that can help to reduce emissions. As part of this process, companies can use artificial intelligence software or third-party consulting services in their quest for solutions. In the economic cost-effectiveness aspect, companies need to find low-cost ways to transition and employ sustainable financial instruments that can help lower the overall cost of making the transition.

To sum up, taking the pain points of companies into consideration, we have come up with the following suggestions to help companies accelerate their low-carbon transition and work towards net-zero.

Suggestion 1: Enhancing the granularity, transparency and publicity of policies and establishing incentive and constraint mechanisms in the process of continually improving climate policies.

As policies continue to improve, management approaches and regulatory guidelines for different sectors are being introduced. This has led to a strong demand from enterprises for clear regulations and guidelines from regulatory authorities, as well as management measures from government authorities that are to be gradually met. Given the urgent needs of companies and the considerable difficulties of policy development, the process of combining the demands of companies and international research and experience can speed up policy introduction and reduce the difficulty of implementation. For policies to be fully understood and implemented, it is imperative to drive companies to set targets for their low-carbon transition and make continuous information disclosures, and to clearly define reporting criteria and standards, in order to enhance the efficiency of resource input.

Based on the actual situation, local authorities can establish a corresponding incentive and constraint mechanism, guiding companies to carry out a low-carbon transition through taxation, talent,

technology, industry and other policies. They can also consider leveraging government-led investment to mobilise private capital and industrial resources for a transition to a low-carbon future, foster relevant markets and low-carbon technologies, and form a mature low-carbon transition network.

Suggestion 2: Companies should start to create a cooperation mechanism to obtain data along their value chains.

In view of the common difficulties companies face in calculating Scope 3 carbon emissions, especially the lack of emissions data from suppliers, they can utilise existing resources available in the market and establish a cooperation mechanism to obtain data from their value chains. Existing resources include the platforms of academic institutions, services provided by consulting agencies, and information-collection mechanisms offered by non-profit organisations. For example, industrial organisations can apply for the supply chain programme run by CDP to include their suppliers in the standardised information disclosure system, so as to collect climate change-related data from suppliers in a one-stop manner. Similarly, financial institutions can use mechanisms such as CDP's capital market programme to integrate their investee companies and clients into the information disclosure system, providing data for calculating the emissions of their investment portfolios.

Suggestion 3: Improving the renewable electricity and REC trading system to effectively match the supply and demand for renewable power.

Channels for purchasing RECs should be broadened to help those companies that face obstacles in accessing low-carbon energy due to their geographical location or other reasons. An extensive renewable electricity and REC trading system should be established to allow companies to diversify their purchasing options, with RECs that have a comprehensive credit traceability system, leveraging Hong Kong's advantages as an international financial centre. To achieve effective matching of renewable power supply and demand, it is recommended to remove the institutional barriers to cross-provincial renewable electricity trading systems in the Chinese Mainland in cooperation with the construction of auxiliary facilities, such as large-scale wind power, photovoltaic and other renewable energy bases, ultra-high-voltage (UHV) electricity transmission networks, pumped-storage hydroelectricity and electrochemical energy storage, thus meeting the rapidly growing demand for renewable electricity from companies.

Suggestion 4: Integrating professional services to build a community to provide technical support.

Many companies would like to see clear guidance and advice from professional institutions. Non-profit organisations, research institutions, exchanges and professional consulting services can leverage their respective strengths to help build a professional service community that can provide comprehensive technical support to companies in various aspects. This support could include carbon emission accounting, target setting, emissions reduction path development and implementation, and continuous disclosure. Through multi-level seminars, training and other capacity-building activities, professional service agencies can spread basic knowledge and provide more universal ideas, allowing companies to make judgements and actions according to their own circumstances or, if they prefer, seek out customised professional services.

The Sustainable and Green Exchange (STAGE) launched by HKEX provides the market with extensive case studies, webcast videos, guidance materials, research papers and other publications. With the publication of the "Practical Net-Zero Guide for Business", it introduces the essential steps for businesses to develop a pathway to net-zero, aiming to help companies to understand their GHG emissions in terms of where they are now, where they want to get to, and how they can get there. In addition, the ESG Academy, HKEX's centralised ESG educational platform, supports, guides and educates issuers and the broader business community, helping issuers incorporate ESG considerations into their business strategies and achieve their sustainable development targets.

The education platform developed by CDP provides companies with ongoing online training resources and materials to raise awareness in moving towards sustainable operations with a low-carbon transition. The education platform not only provides courses on theoretical and practical case studies for exploring environmental management pathways, setting emissions reduction targets including science-based targets, and promoting environmental actions, but also features videos of workshops on various environment-related topics, such as the Net-Zero Emissions online presentation of this Hewlett Foundation-supported study, providing professional support for companies in their net-zero pathway.

Suggestion 5: Promoting sustainable financial instruments and concessionary financing policies to help companies develop carbon assets.

Green finance-related non-profit organisations, industry organisations and consulting agencies, in addition to exchanges and other institutions, can all provide capacity-building for companies relating to the development and use of sustainable financial instruments, so as to advocate the use of financial tools to lower the overall cost of a low-carbon transition. Different parties can introduce and share examples of financial products such as bonds and loans that traditionally finance green projects, and explain the workings of new debt financing instruments, including sustainability-linked bonds and loans and transition bonds.

Further promotion of the HKSAR Government's Green and Sustainable Finance Grant Scheme (GSF Grant Scheme) is also suggested, which provides subsidies for eligible bond issuers and loan borrowers to cover their expenses related to bond issuance and external review services. Boosting publicity for STAGE would help to further connect issuers and investors and enhance the visibility and liquidity of sustainable financial products. In addition, with the assistance of relevant institutions to actively develop carbon assets, companies could seize the opportunities in the carbon market, thus seeking the optimal allocation of low-carbon resources and the best way to achieve net-zero.

ACKNOWLEDGEMENTS

The successful implementation of this project could not have happened without the tremendous support of participating companies, especially those that took part in the follow-up interviews. They shared their practical experiences, actual situations and the real-life challenges they faced, providing information that helped our research team refine the main findings and insights of this report. We would like to express our sincere gratitude to all the companies that took part.

Meanwhile, the sponsorship provided by the Hewlett Foundation has been indispensable to this project, along with the valuable opinions and suggestions they provided from the project initiation right through to implementation. We would like to express a very big thank you to the Hewlett Foundation for their great support.

APPENDIX 1: QUESTIONNAIRE

1. Which sector does your business operate in? (according to Hang Seng Industry Classification System) [Please select according to your primary line of business.]

   Primary classification_____

   Secondary classification_____

   Tertiary classification_____

2. Which of the following departments takes the lead in your emissions reduction related work?

   - ☐ Strategy Department
   - ☐ Production/Operations Department
   - ☐ EHS/Sustainability/CSR Department
   - ☐ Investors Relations Department/Securities Department
   - ☐ Public Relations Department/Corporate Branding Department
   - ☐ We have not carried out emission reduction related work
   - ☐ Others: _____

3. Do you have quantifiable greenhouse gas emissions reduction targets currently?

   - ☐ Yes, we have SBTi (Science-based Targets initiative)-approved quantifiable emissions reduction target(s)
   - ☐ Yes, we have other quantifiable emissions reduction target(s), please briefly explain, e.g. the framework and standards used to set the target(s), the coverage of the target(s):
   - ☐ No, we do not have a quantifiable emissions reduction target

4. Which of the following does your quantifiable greenhouse gas emissions reduction targets cover?

   - ☐ Scope 1 emissions (direct GHG emissions from sources used for organisation's direct production)
   - ☐ Scope 2 emissions (indirect GHG emissions from purchased energy including purchased electricity, heat, steam and cool energy)

- [ ] Scope 3 emissions (indirect GHG emissions from up and down of value chain, including transport, employees' commuting and travelling, use of sold products)

5. Do you have plans to formulate quantifiable emissions reduction targets in the future?
   - [ ] We plan to introduce a target in the next 2 years
   - [ ] We plan to introduce a target in the next 3-5 years
   - [ ] No plans in the next 5 years

6. Have you committed to net-zero? (If the 1st option is chosen, then Q9 and Q12 will be skipped directly.)
   - [ ] Not yet.
   - [ ] Yes, by Science-based Targets initiative
   - [ ] Yes, by Fashion Charter for Climate Action
   - [ ] Yes, by Net Zero Asset Managers Initiative
   - [ ] Yes, by others: _____

7. What is the key driver/incentive for your company to commit to net-zero emissions? (please choose maximum 3 options)
   - [ ] Demonstrate climate leadership
   - [ ] Meet stakeholders' expectation
   - [ ] Capitalise on the low-carbon transition
   - [ ] Pressure from peers
   - [ ] Others:_____

8. Which of the following factors are challenges you faced when you first committed to net-zero emissions or do you think has been or is preventing you from committing to net-zero emissions by 2050? (please choose maximum 5 options)

   (Consciousness level)
   - [ ] Insufficient awareness of risks associated with "climate action, carbon reduction, and net zero"

- [ ] Management lacks understanding of a science-based target
- [ ] It is unclear how participating in this initiative will affect our strategic, business and financial planning

(Policy level)

- [ ] Concerned about the inconsistency between national policy requirements and relevant standards
- [ ] Insufficient commitment/unclear policy from local government

(Governance level)

- [ ] Lack of board support
- [ ] There is no leading department within our company to uniformly lead related work
- [ ] Difficult to obtain relevant emissions data due to a lack of systematic and mature management mechanisms for GHG emissions in the value chain

(Economic level)

- [ ] The cost of low-carbon transition technology is too high
- [ ] The management cost of formulation on statistics, progress tracking, human resources, etc. are too high
- [ ] Lack of green finance, carbon market and product availability

(Technical level)

- [ ] Do not understand how to make a commitment and how to set a net-zero target
- [ ] Difficult to include Scope 3 emissions
- [ ] Do not have a mitigation plan after the target is set
- [ ] Difficult to obtain low-carbon energy due to geographical location (Low-carbon energy refers to energy that does not produce direct greenhouse gas emissions, including wind energy, solar energy, hydro energy, hydrogen energy, nuclear energy, geothermal energy, and biomass energy)

(Reputation level)

- ☐ Worry about the negative impact on the company of failing to meet relevant commitments
- ☐ Concerns about the uncertain impact of joining an international initiative

Others:

- ☐ _____

9. Which of the following will you consider useful to facilitate your net-zero goal or embrace your net-zero journey? (please choose maximum 3 options)
   - ☐ A platform to buy environmental attributes, e.g. carbon credits, renewable energy certificates, etc.
   - ☐ Sustainable financing
   - ☐ ESG standardisation
   - ☐ Peers' best practice sharing/benchmarking
   - ☐ Clear regulations from government entities
   - ☐ Clear rules or guide from regulators
   - ☐ Clear guidance/recommendations from professional parties
   - ☐ Innovative technologies to reduce emissions
   - ☐ Management and stakeholder support
   - ☐ Others: _____

10. Which of the following factors are opportunities you faced when you first committed to net-zero emissions? (please choose maximum 3 options)
    - ☐ Discover new markets and revenue opportunities from enhanced reputation
    - ☐ More efficient use of resources and electricity
    - ☐ Reduction in operational costs
    - ☐ Enable suppliers and customers to reduce their emissions
    - ☐ Others:_____

11.Which of the following financial instruments have you used or are currently using?

- ☐ None
- ☐ Green bond
- ☐ Green loan
- ☐ Sustainability bond
- ☐ Sustainability loan
- ☐ Sustainability-linked loan
- ☐ Sustainability-linked bond
- ☐ Social bond
- ☐ Social loan
- ☐ Transition bond
- ☐ Transition loan
- ☐ Others:_____

12.Have you considered financing your emissions reduction plan/action via sustainable finance products? (If 1st or 2nd option is chosen, then Q15 will be skipped directly.)

- ☐ No quantifiable emissions reduction target
- ☐ Have not considered using sustainable finance products to finance emissions reduction plan/action
- ☐ Yes,_____% of the emissions reduction plan/action

13.What financing instruments do you think will be needed?

[only appear if Yes is selected in Question 13.]

- ☐ Green bond
- ☐ Green loan
- ☐ Sustainability bond
- ☐ Sustainability loan
- ☐ Sustainability-linked loan
- ☐ Sustainability-linked bond
- ☐ Social bond

- ☐ Social loan
- ☐ Transition bond
- ☐ Transition loan
- ☐ Others:_____

14.Please supplement if you have other questions and suggestions. (Optional) _____

_____

_____

15.Are you from a company listed on the Hong Kong Stock Exchange?

- ☐ Yes I am. Please provide your company's stock code (non-mandatory): ___
- ☐ No, I'm not. But I am from a company listed in the mainland of China. Please provide your company's stock code (non-mandatory): ___
- ☐ No, I'm not. But I am from a company listed outside of Hong Kong and the mainland of China.
- ☐ No, I'm not. I am from a non-listed company.

16.If you are interested in further discussions on the above with CDP experts, please leave you contact information.

APPENDIX 2: OUTLINE OF THE TELEPHONE INTERVIEW

Management

1. What is the highest level of position that leads the carbon reduction work within your company? What organisational support does the leading department need to drive the emission reduction, e.g. incorporate the emissions reduction into KPI framework? (An extension of question 4)
2. Has your company measured the carbon emissions during the last 3 years? According to the measurement result and your knowledge, has the emission been increasing at the moment or has it peaked? Does your company use any carbon emissions calculation tools or hire external consultants to measure their carbon emissions?
3. Which areas is the company working on to reduce carbon emission? Do you have confidence in reducing emissions, and even reach net-zero by 2050?

Emission Reduction Target

4. Would the emission reduction target setting and implementation of the company be influenced by the domestic economic growth pressure, the impact of pandemic, or the international geopolitical conflicts and high-rising energy price? (An extension of question 5-7)
5. If the company has set an emission reduction target that does not cover Scope 3 emissions, does the company plan to set Scope 3 emission reduction target? Which element(s) of Scope 3 do you find the most difficult for setting the target? (An extension of question 6)
6. Does the company cooperate with the suppliers or portfolio companies over emission reduction? Does your company collect the emission data from the suppliers or portfolio companies? (An extension of question 6)

Net-Zero Target

7. For each obstacle you have chosen, could you please describe how each of them hinders the company to make a net-zero commitment? (An extension of question 10)
8. For each type of support you have chosen, could you please describe the preferable ways you would like to access them? (An extension of question 11)

Financial Instruments

9. What is the reason if you are not going to use sustainability financial instruments?
10. Could you please describe the advantages of the financial products that you find helpful? How do they help on this journey? (An extension of question 13-15)

Others

11. For any "others" chosen, could you please give further descriptions? (if necessary)
12. Do you have any other topics around net-zero/SBT that you would like to talk with us?

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