

2024

Task Force on Climate-Related Financial Disclosures



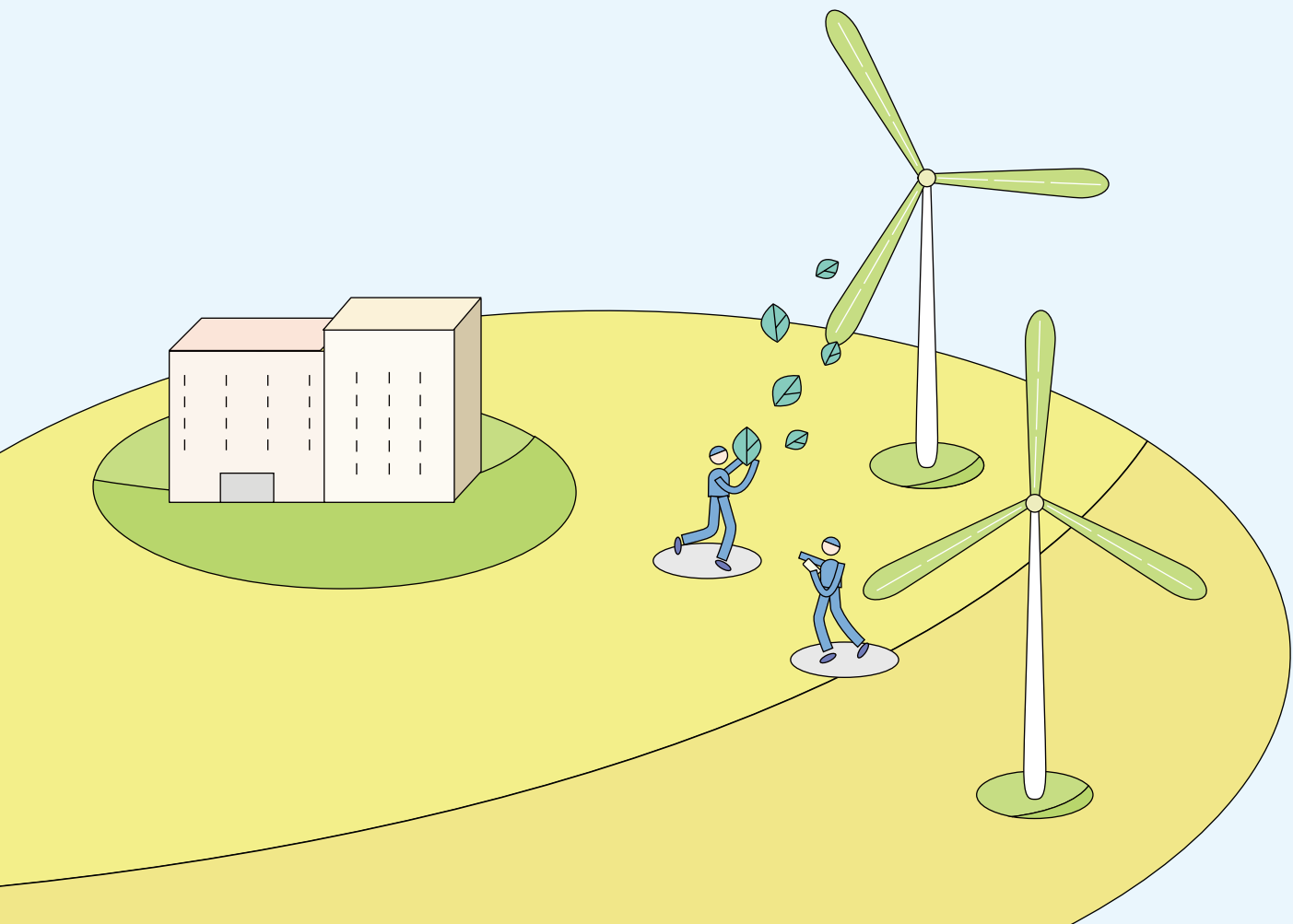
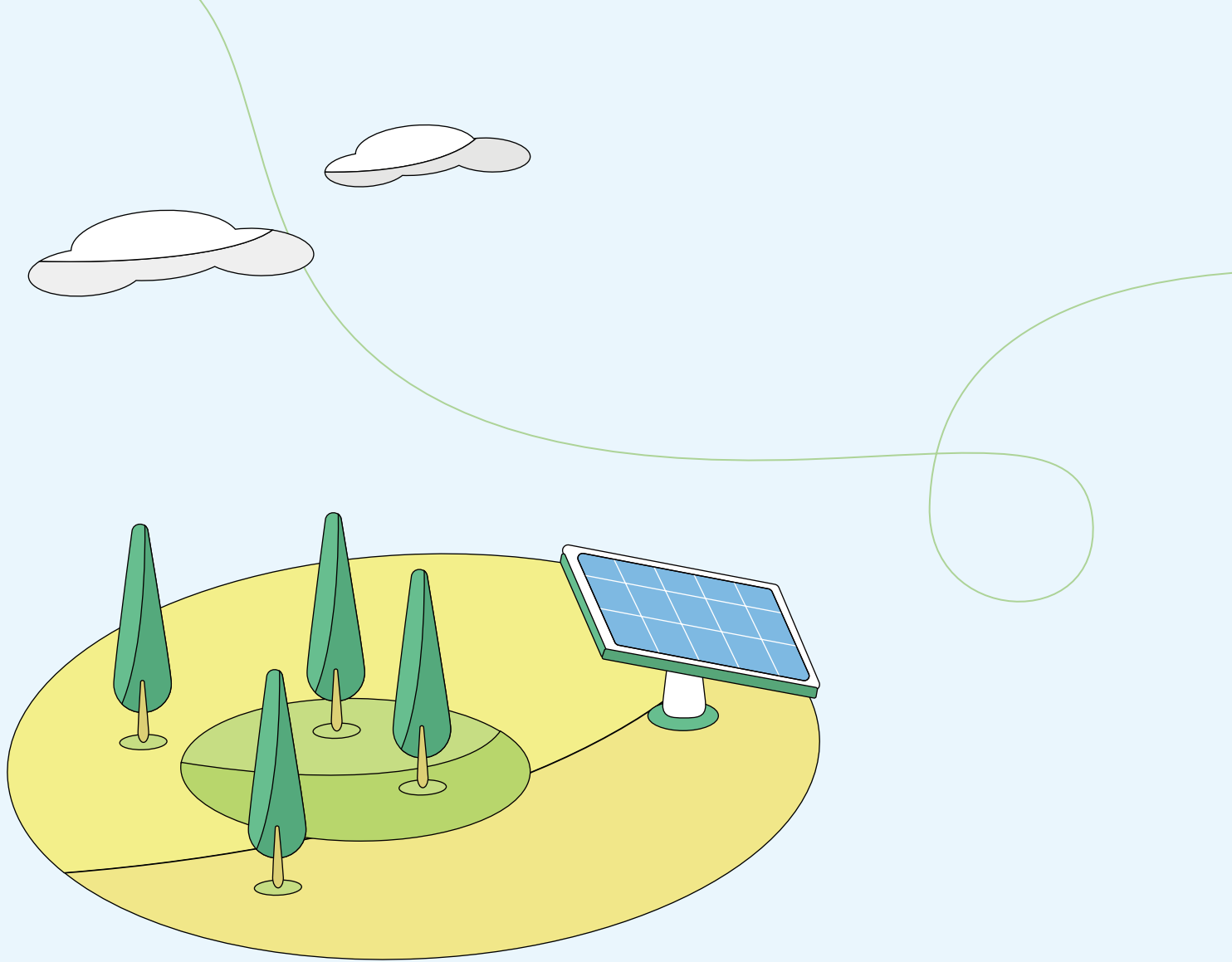


Table of Contents

Chapter 01

ABOUT THE REPORT	004
------------------	-----

Chapter 02

NET ZERO MILESTONE	006
--------------------	-----

2.1 Key Milestones in Climate Action	006
--------------------------------------	-----

2.2 Net-Zero Roadmap and Carbon Reduction Plan	008
--	-----

Chapter 03

CLIMATE GOVERNANCE	010
--------------------	-----

3.1 Governance Structure	010
--------------------------	-----

3.2 Climate Management Mechanism	012
----------------------------------	-----

3.3 Communication and Leadership on Climate Issues	017
--	-----

Chapter 04

CLIMATE RISK IDENTIFICATION AND STRATEGY DEVELOPMENT	018
--	-----

4.1 Process for Identifying Climate-related Risks and Opportunities	018
---	-----

4.2 Climate Risk and Opportunity Financial Impact Calculation	024
---	-----

4.3 Significant Climate Risks and Opportunities	026
---	-----

4.4 Climate-related Scenario Analysis	029
---------------------------------------	-----

4.5 Climate Mitigation and Adaptation Strategies	033
--	-----

Chapter 05

CLIMATE RISK MANAGEMENT	038
-------------------------	-----

5.1 Risk Management Organization and Framework	038
--	-----

5.2 Climate Risk Integrated into the Risk Management System	041
---	-----

Chapter 06

METRICS AND TARGETS	044
---------------------	-----

6.1 GHG Emissions and Progress Toward Carbon Reduction Targets	044
--	-----

6.2 Climate Strategy Metrics and Targets	047
--	-----

Appendix

APPENDIX 01 TCFD CONFORMITY STATEMENT	050
---------------------------------------	-----

APPENDIX 02 TCFD INDEX	051
------------------------	-----

APPENDIX 03 INDEX OF CROSS-INDUSTRY CLIMATE-RELATED METRICS	052
---	-----

Chart Index

FIGURE 3-1 CORPORATE STRUCTURE AND CLIMATE GOVERNANCE STRUCTURE	010
FIGURE 3-2 ORGANIZATIONAL STRUCTURE OF CHT SUSTAINABLE DEVELOPMENT AND STRATEGY COMMITTEE	011
FIGURE 3-3 SUPERVISORY MECHANISM FOR CLIMATE GOVERNANCE UNITS	012
FIGURE 4-1 CLIMATE RISK AND OPPORTUNITY IDENTIFICATION AND ASSESSMENT PROCESSES	019
FIGURE 4-2 CLIMATE RISK AND OPPORTUNITY MATRIX	026
FIGURE 4-3 PROJECTED LONG-TERM TEMPERATURE DEVIATIONS IN TAIWAN ACROSS CLIMATE-RELATED FIGURE SCENARIOS (°C)	031
FIGURE 5-1 RISK MANAGEMENT ORGANIZATION AND FRAMEWORK	038
FIGURE 5-2 THREE LINES OF DEFENSE	039
FIGURE 5-3 ERM MANAGEMENT SYSTEM	041



Table Index

TABLE 2-1	KEY MILESTONES IN CLIMATE ACTION	007
TABLE 2-2	SBTI GOALS BY EMISSIONS SCOPE	008
TABLE 2-3	CHT'S RENEWABLE ENERGY PROCUREMENT AND SELF-GENERATION (2022-2024)	009
TABLE 2-4	CHT'S INSTALLED CAPACITY OF SELF-BUILT SOLAR PV SYSTEMS (2022-2024)	009
TABLE 4-1	TIMEFRAME DEFINITIONS FOR SHORT-, MEDIUM-, AND LONG-TERM RISKS AND OPPORTUNITIES	019
TABLE 4-2	ADJUSTMENT TO CLIMATE RISK ISSUES IN 2023 AND 2024	020
TABLE 4-3	ADJUSTMENT TO CLIMATE OPPORTUNITY ISSUES IN 2023 AND 2024	021
TABLE 4-4	SCORING DEFINITIONS FOR RISK IMPACT ASSESSMENT	021
TABLE 4-5	SCORING DEFINITIONS FOR OPPORTUNITY IMPACT ASSESSMENT	022
TABLE 4-6	SCORING DEFINITIONS FOR TIMING OF OCCURRENCE	022
TABLE 4-7	RANKING OF CLIMATE RISK ISSUES	023
TABLE 4-8	RANKING OF CLIMATE OPPORTUNITY ISSUES	023
TABLE 4-9	OVERVIEW OF CLIMATE RISK ISSUES	027
TABLE 4-10	OVERVIEW OF CLIMATE OPPORTUNITY ISSUES	028
TABLE 4-11	DESCRIPTION OF ADOPTED SCENARIOS	029
TABLE 4-12	INUNDATION AREA PERCENTAGE AND MAXIMUM DEPTH LEVEL BY COUNTY/CITY UNDER THE 2°C WARMING SCENARIO	030
TABLE 4-13	WATER STRESS RISK ANALYSIS OF CHT AND KEY SUPPLIERS UNDER THE RCP 8.5 PESSIMISTIC SCENARIO	032
TABLE 4-14	CLIMATE RISK MITIGATION AND ADAPTATION STRATEGIES AND IMPLEMENTATION	033
TABLE 4-15	CLIMATE OPPORTUNITY STRATEGY AND IMPLEMENTATION	037
TABLE 5-1	RISK MANAGEMENT SYSTEM	040
TABLE 5-2	CLIMATE RISK INTEGRATION IN ERM MANAGEMENT PROCESS	042
TABLE 6-1	SCOPE 1 AND SCOPE 2 EMISSIONS AND PROGRESS TOWARD REDUCTION TARGETS	045
TABLE 6-2	SCOPE 3 GHG EMISSIONS AND PROGRESS TOWARD CARBON REDUCTION TARGETS	046
TABLE 6-3	CLIMATE RISK STRATEGY: TARGETS AND CURRENT STATUS OF ACHIEVEMENT	047
TABLE 6-4	CLIMATE OPPORTUNITY STRATEGY: TARGETS AND CURRENT STATUS OF ACHIEVEMENT	049



Chapter

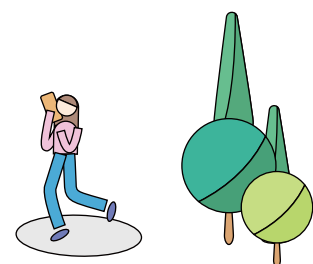
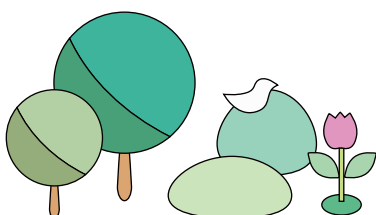
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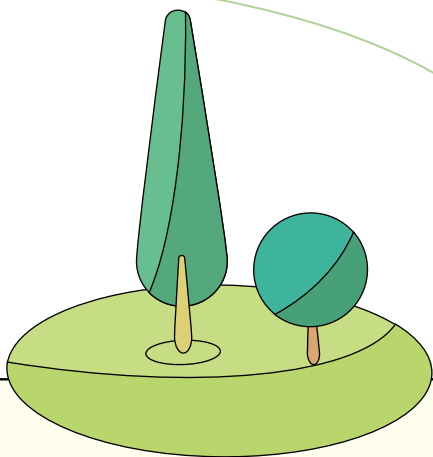
**About
the Report**

Climate change has emerged as one of the most critical global issues in recent years, profoundly impacting worldwide on industrial operating models and sustainable development. Chunghwa Telecom Co., Ltd. (hereinafter referred to as “CHT”), as a leading telecommunications service provider in Taiwan, acknowledges and shoulders its heightened responsibility and mission in addressing the challenges posed by climate change. The increasing frequency of extreme climate phenomena, including typhoons, torrential rainfall, and high temperatures, not only threatens the stability and continuous operation of telecommunications infrastructure, but also poses significant risks to the daily lives and emergency response capabilities of the public. Recognizing the fundamental value and critical societal importance of communication and telecommunications services, CHT commits to demonstrating strong accountability in its actions to address climate change, ensuring network stability, and contributing to global net-zero emissions and sustainable development.

As an industry leader, CHT is committed not only to delivering high-quality communications services but also to making climate action a core pillar of our sustainable business strategy. Demonstrating our dedication to achieving net-zero emissions by 2045, CHT has obtained verification of our near-term reduction targets from the Science Based Targets initiative (SBTi), a globally recognized authority on climate change, and set up an internal carbon pricing. CHT will continue to invest in enhancing energy efficiency, introducing intelligent energy-saving technologies and promoting the application of renewable energy to achieve the net-zero emissions target. Given the significant energy consumption characteristic of the telecommunications sector, particularly in data centers and base station operations, CHT has introduced a new 5G architecture to improve base station energy efficiency, utilized idle office buildings and land to build solar photovoltaic systems, and built green base stations, accumulating a total of 130 self-constructed renewable energy sites with a total self-generated renewable energy output of approximately 11,568,000 kWh in 2024. CHT has committed to fully electrifying its engineering and public transport vehicles by 2030, and it has joined the global renewable energy initiative RE100, demonstrating the company’s strong sense of responsibility in mitigating climate change.

Through a number of proactive climate change mitigation and adaptation strategies, CHT is fostering innovative business models and enhancing industry competitiveness to meet the growing demands for environmental sustainability from supply chains and society. Starting from 2022, CHT has annually published a report aligned with the Task Force on Climate-related Financial Disclosures (TCFD) framework, aiming to provide investors and stakeholders with insights of our implementation and management measures concerning the four core elements of TCFD: Governance, Strategy, Risk Management, and Metrics and Targets — in order to assess the maturity of our response and governance regarding climate-related risks and opportunities.





Reporting Scope

CHT’s sites in Taiwan (including all subsidiaries and operating sites).

Reporting Period

January 1, 2024 through December 31, 2024.

Reporting Frequency

Annually.

Principles of the Report

Prepared in accordance with the Task Force on Climate-related Financial Disclosures (hereinafter referred to as TCFD), issued by the Financial Stability Board (FSB).

Report Information

Chapter

2

Net Zero
Milestone

2.1

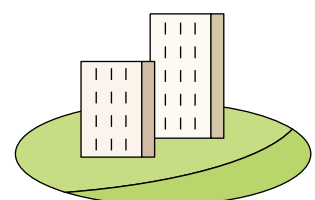
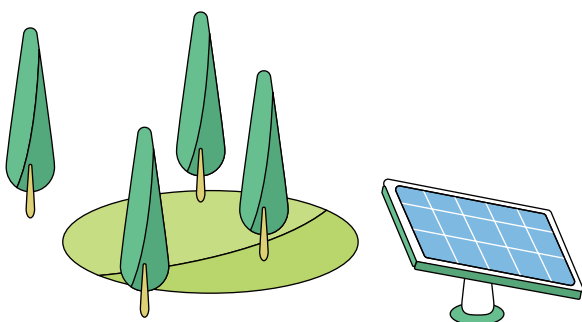
Key Milestones in Climate Action

Adhering to the principles of sustainable management, CHT actively promotes climate action and employs concrete strategies to address the challenges of climate change. Recognizing the profound impacts of climate change on the global economy, society, and the environment, CHT is committed to achieving net-zero emissions by 2045. To ensure an effective response to external risks during the low-carbon transition, CHT continuously refines our sustainable transition strategies and steadily promotes carbon reduction initiatives.

“Sustainable development” is one of our core values. In promoting the transition to a low-carbon economy and addressing climate risks, CHT has set a series of climate action milestones (as shown in Table 2-1) in accordance with international norms and policy requirements, and are systematically implementing relevant measures. These efforts not only establish a solid foundation for CHT’s sustainable development, but also lead to multiple innovative breakthroughs, including the validation by the Science Based Targets initiative (SBTi).

Since 2008, CHT has adopted international standards for greenhouse gas (GHG) inventories, and progressively established a comprehensive carbon emissions baseline data. Through the implementation of energy management systems, promotion of green technology innovation, utilization of renewable energy, enhancement of energy efficiency, and reduction of reliance on traditional energy sources, CHT has laid a scientific foundation for achieving net-zero emissions. Furthermore, CHT deeply understands that addressing climate change requires the collective effort of the entire supply chain. Therefore, CHT actively collaborates with stakeholders, not only intensifying its own carbon reduction actions but also enhancing the sustainable development capabilities of its supply chain partners to jointly promote a green transition.

In terms of climate action planning, CHT emphasize long-term strategy and risk management, paying particular attention to the potential impacts of extreme climate events. CHT strives to enhance corporate resilience to ensure operational stability amidst future environmental changes, thereby continuously creating value for society and stakeholders. CHT will continue to strengthen its climate governance mechanisms, broaden and advance carbon reduction initiatives, and pursue ongoing self-improvement to drive sustainable corporate development, aspiring to become a leading enterprise in low-carbon, green development.



2024

- CHT's Net Zero Targets were validated by the SBTi, becoming the first Taiwanese telecommunications service provider to make an advanced commitment to achieve the net-zero goal by 2045 ahead of schedule.
- The first telecommunications company in Taiwan to join the EV100 initiative, committing to achieve 100% electrification of its engineering and public transport vehicles by 2030.
- Selected as a constituent of the Dow Jones Sustainability World Index (DJSI), and has been included in the Emerging Markets Index for the 13th consecutive year.
- Obtained ISO 14067 certificates for: MOD Set-top Box 504A/B, Hami Video Service, Storefront Counter Service, 5G Mobile Internet, HiNet broadband (including FTTx circuits), Fixed Line Telephone Service, and ESG Sustainability Pavilion.
- Attained the highest maturity level (Level 4) in BS 8001 Circular Economy for "Customer Premise Equipment Services"
- Achieved the highest honorary leadership level (A-list) in CDP's "Climate Change Questionnaire" and the highest grade of "A" in the Supplier Engagement Assessment as the "Supply Chain Engagement Leader".
- Established a sustainable value chain mechanism:
 - Organized supplier environmental education visits and built a Net-Zero Sustainability Academy digital learning platform to provide in-depth support for suppliers to enhance their sustainability capabilities.
 - Invited major suppliers (over NT\$50 million in procurement) to complete CDP disclosures.
- The first telecommunications company in Taiwan to complete a carbon footprint inventory for all 443 directly operated stores.
- Advanced net-zero sustainability capacity building, with 81 senior managers obtaining the ISO 14064-1 international GHG inventory certification.

2023

- The only telecommunications company to participate in carbon trading in Taiwan's inaugural year of carbon fee implementation.
- Joined RE100 and committed to using 100% renewable energy by 2040.
- Committed to the goal of long-term Science-Based Targets (SBTs) to achieve net zero emissions.
- Passed the review of SBT's near term targets:
 - Reducing absolute Scope 1 and 2 GHG emissions by 50% by 2030 from a 2020 base year.
 - Reducing absolute Scope 3 GHG emissions by 25% by 2030 from a 2021 base year.

2022

- Proposed targets for mitigating climate change, including:
 - Reducing absolute Scope 1 and 2 GHG emissions by 50% by 2030 from a 2020 base year.
 - Reducing absolute Scope 3 GHG emissions by 25% by 2030 from a 2021 base year.
 - Achieving the target of RE100 by 2040.

2021

- Proposed the 2050 net-zero emissions target.
- Announced a Science Based Targets (SBT) commitment.
- Joined the Taiwan Alliance for Net-Zero Emissions.
- Launched the BS 8001 Circular Economy Project.
- Established the Sustainable Development Promotion Committee.

2020

- Launched the TCFD project.
- Obtained the TCFD assurance statement.

2019

- The Taipei Syntrend store was certified under ISO 14067 and PAS 2060 for carbon neutrality, reflecting its initial commitment to carbon reduction efforts.

2018

- Became the first telecommunications company in Taiwan to sign on in support of the TCFD initiative.
- Joined the CDP Supply Chain Program.

2011

- Implemented ISO 50001 energy management system.

2008

- Launched a GHG inventory project
- Developed and launched the "Environment ARTificer THEurgy Management System" (EARTH).

Table 2-1. Key Milestones in Climate Action

2.2

Net-Zero Roadmap and Carbon Reduction Plan

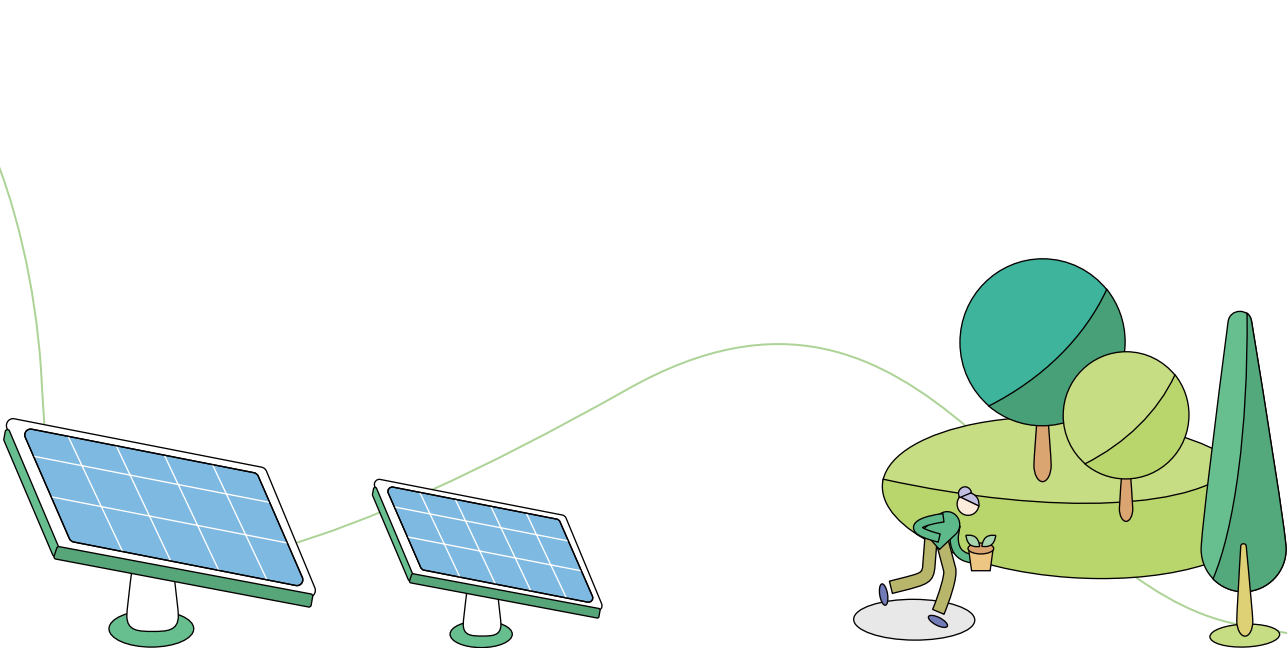
1 Net-Zero Roadmap

In 2023, CHT formally received validation for its GHG reduction targets from the Science Based Targets initiative (SBTi), an internationally recognized authority on climate action. The 2030 GHG reduction targets include a 50% reduction in Scope 1 and 2 emissions compared to the 2020 base year, and a 50% reduction in Scope 3 emissions relative to the 2021 base year. CHT is committed to achieving net-zero emissions by 2045, accelerating ahead of the common 2050 goal, which aligns with the emissions reduction pathways outlined by the United Nations Intergovernmental Panel on Climate Change (IPCC) to limit the global temperature increase to 1.5°C. CHT currently uses the SBTi-validated reduction targets as the primary benchmark for its mitigation efforts, as detailed in Table 2-2.

In addition, there are inherent limitations to reducing carbon emissions within the value chain. According to current guidance published by SBTi, once companies achieve significant internal emission reductions to a certain extent, they may utilize beyond value chain mitigation measures to reach net-zero, such as forest carbon sinks, high-quality carbon credits, carbon capture technologies, and efforts to reduce deforestation and forest degradation. Consequently, CHT participated in the inaugural carbon credit procurement offered by the Taiwan Carbon Solution Exchange in 2023. Going forward, CHT plans to continue sourcing high-quality carbon credits as part of its strategy to fulfill its net-zero commitment.

Base year	2020		2021
	Scope 1	Scope 2	Scope 3
Carbon reduction targets	50% carbon reduction by 2030. 95% carbon reduction by 2040. Achieving net zero emissions by 2045.	50% carbon reduction by 2030. 95% carbon reduction by 2040. Achieving net zero emissions by 2045.	25% carbon reduction by 2030. 90% carbon reduction by 2045.

Table 2-2. SBTi Goals by Emissions Scope



2 Carbon Reduction Plan

Our Net-Zero carbon reduction action plan includes carbon reduction through green power and data center technologies targeting carbon reduction, detailed as follows:

Carbon Reduction through Green Electricity



Renewable Energy Procurement and Self-Generation

Through self-built solar photovoltaic (PV) systems and procurement of renewable energy, CHT's renewable energy usage and renewable energy certificate (REC) data from 2022 to 2024 are summarized in Table 2-3.

Year	Renewable energy (10 MWh)	Renewable energy certificates (number)
2022	2,404.9	24,029
2023	7,357.5	73,541
2024	7,260.4	72,600

Table 2-3. CHT's Renewable Energy Procurement and Self-Generation (2022-2024)



Expanding Self-Built Capacity and Scale of Solar Photovoltaics

CHT also utilizes its own remote land parcels and building rooftops to construct solar photovoltaic systems, thereby increasing its self-generated renewable energy output. This includes: (1) developing a 1.16 MWp photovoltaic power station covering 3.8 hectares at the self-constructed Central Branch Material Depot, and (2) initiating preliminary preparations for signing long-term Corporate Power Purchase Agreements (CPPAs) with large-scale renewable energy generation companies. According to internal statistics, CHT's self-built installed capacity from 2022 to 2024 is summarized in Table 2-4.

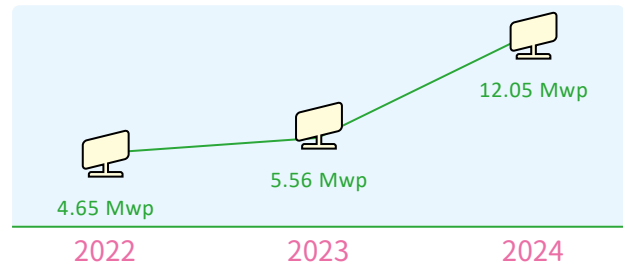


Table 2-4. CHT's Installed Capacity of Self-Built Solar PV Systems (2022-2024, cumulative amount per year)

Carbon Reduction through Technology in Data Centers

In terms of "technological carbon reduction," key initiatives include: (1) introducing the new 5G C-RAN Centralized Radio Access Network (C-RAN) architecture. This approach significantly improves the energy efficiency of base stations. Currently, 85% of CHT's base stations have been transitioned to the C-RAN architecture; (2) Phasing out the 3G network, which is estimated to achieve electricity savings of over 74 million kWh by 2030; (3) Utilizing a self-developed smart Energy Operation Center (EOC), which enables the comprehensive, automated collection and analysis of power consumption data, to provide real-time monitoring and insights into energy-saving effectiveness; (4) Incorporating Artificial Intelligence (AI) and Big Data analytics to analyze actual traffic conditions and manage the power consumption of various types of network equipment (including mobile base stations), thereby achieving electricity savings; (5) Promoting smart operation and maintenance solutions by analyzing equipment failure data to predict degradation trends in base stations, improving online troubleshooting success rates and reducing the need for field repair dispatches; (6) Other initiatives, such as actively accelerating the phase-out of old, energy-consuming equipment and improving Power Usage Effectiveness (PUE) in IDC data centers. In addition, CHT is actively investing in forward-looking technologies and has co-founded the Innovative Optical and Wireless Network Global Forum (IOWN GF) together with global technology leaders. It is actively promoting all-optical network technology and is committed to achieving its sustainability goals: increasing energy efficiency by 100 times, enhancing transmission capacity by 125 times, and reducing transmission delay by 200 times.

Chapter 3 Climate Governance

3.1 Governance Structure

The Board of Directors serves as the company's highest governing body in response to climate change, responsible for the oversight, supervision, and approval of policies related to climate risk. To further strengthen the Board's supervisory role over sustainability matters and to ensure the effective execution of strategies, action plans, and performance management related to climate issues, CHT has established a Sustainable Development Committee and a Risk Management Committee (as shown in Figure 3-1). In addition, through the Compensation Committee, the company explicitly links senior management's compensation to ESG performance, with the proportion of ESG-related incentives increasing year by year—demonstrating the company's commitment to realizing its vision and goals for sustainable development.

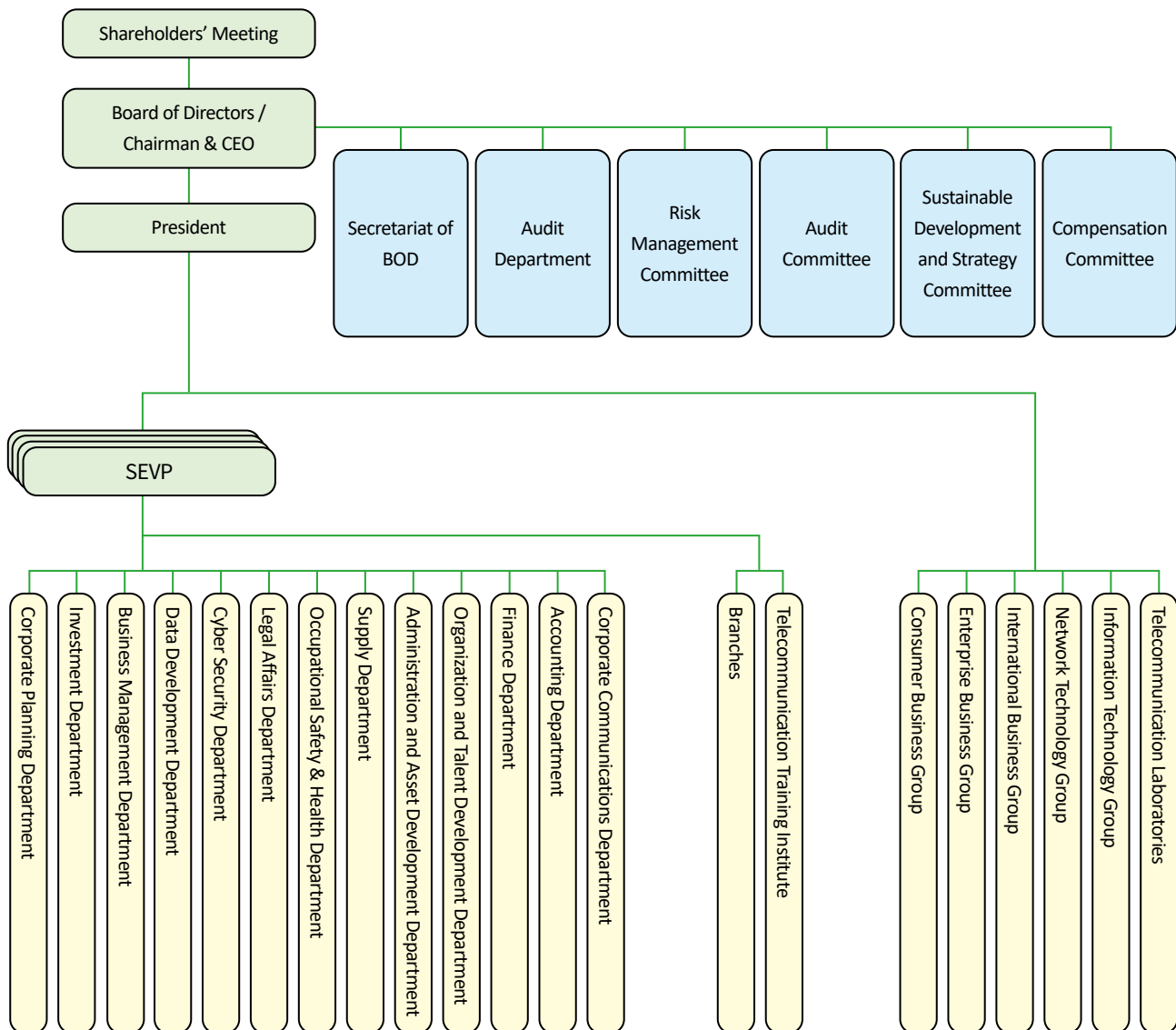


Figure 3-1. Corporate Structure and Climate Governance Structure

1 Sustainable Development and Strategy Committee

Since 2006, CHT has been actively promoting Corporate Social Responsibility (CSR) and established a dedicated “CSR Committee.” In response to the growing emphasis on sustainability and ESG (Environmental, Social, and Governance) trends, the CSR Committee was reorganized in 2021 into the “Sustainable Development Committee” to better align with evolving expectations. In 2023, to further promote sustainability and ESG strategic actions, the “Sustainable Development Committee” was integrated with the “Corporate Strategy Committee” to form the “Sustainable Development and Strategy Committee,” which was elevated to the level of a functional committee under the Board of Directors. The committee is composed of 9 directors, including 5 independent directors. The Chairman of the Board serves as the Chief Sustainability Officer, guiding the policies and direction of sustainability initiatives. The committee aims to strengthen the Board’s effectiveness by deliberating on matters assigned by the Board and convening to discuss key issues such as CHT’s sustainability guidelines and business strategies. Based on necessity, the committee’s conclusions and review outcomes are submitted to the Board of Directors for resolution.

Under the “Sustainable Development and Strategy Committee,” the “Sustainable Development Promotion Committee” has been established (as shown in Figure 3-2). The Chairman and the President serve as the Chair and Vice Chair of the committee, respectively, representing the Board of Directors in the formulation and review of various sustainability strategies, policies, and targets, as well as overseeing performance outcomes, including those related to climate change response.

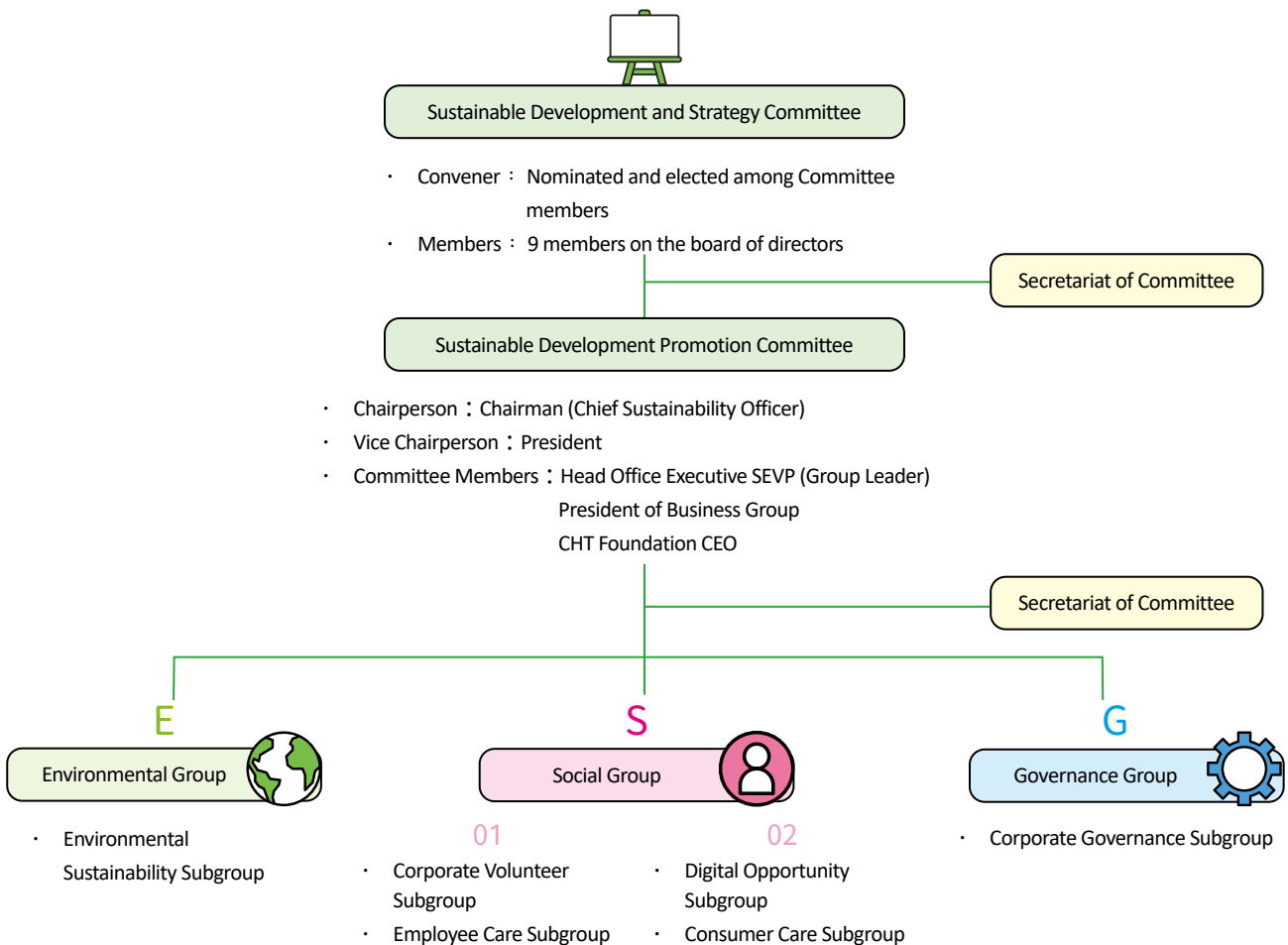


Figure 3-2. Organizational Structure of CHT Sustainable Development and Strategy Committee

Under the “Sustainable Development Promotion Committee,” four ESG subgroups (E, S1, S2, G) have been established to coordinate and advance CHT’s efforts in the areas of Environment (E), Social (S), and Governance (G). Among them, the Environmental Group (E), hereinafter referred to as the “E subgroup”, is primarily responsible for company-wide environmental sustainability initiatives. It oversees several dedicated project teams focused on key topics such as sustainability reporting, GHG inventory, TCFD, and RE100. The organizational structure and control mechanisms of these operations are detailed in Section 3.2.

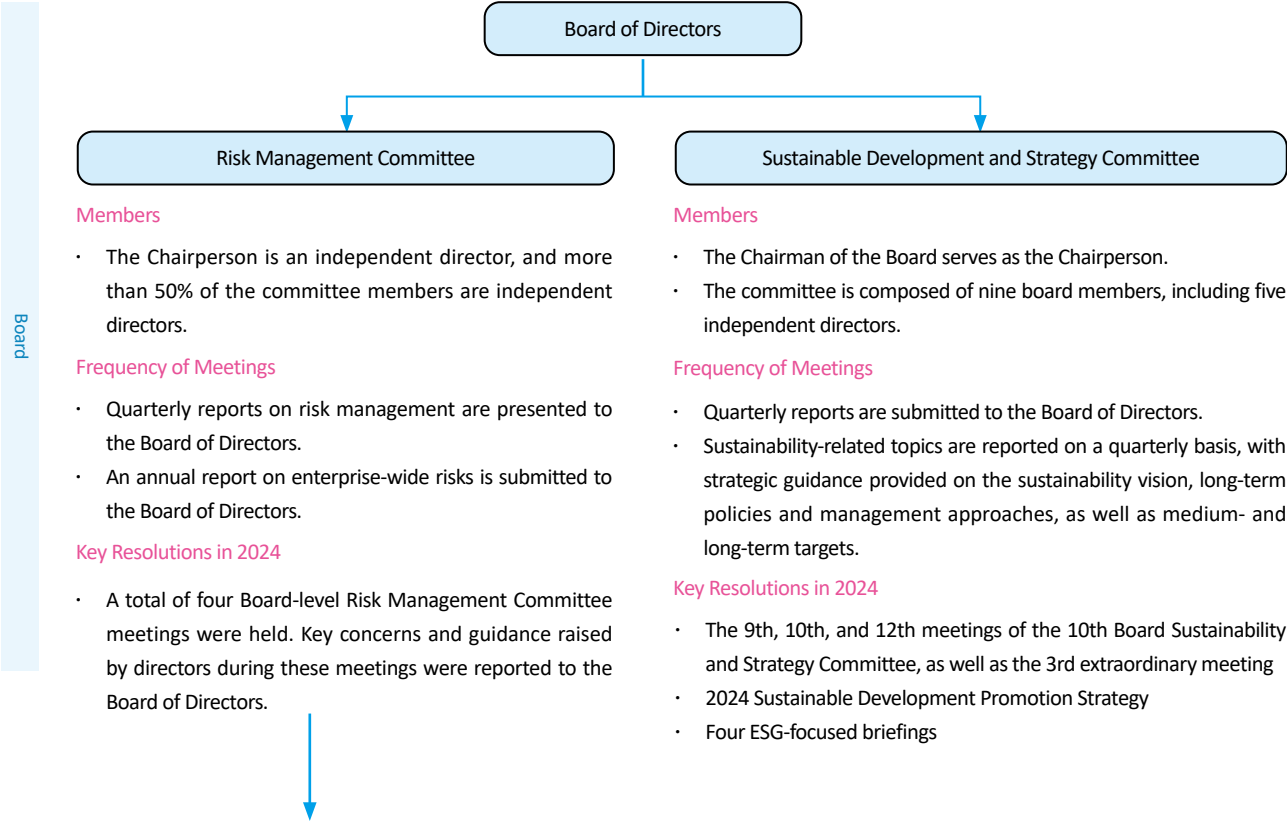
2 Risk Management Committee

The “Risk Management Committee” was formally established in 2016. In 2023, it was elevated to become a functional committee under the Board of Directors, enhancing the functions of the Board and the overall risk management framework (with the previous management-level committee subsequently renamed as “Risk Management Steering Committee”). This committee comprises 7 directors, 5 of whom are independent directors. The committee Chair is also an independent director.

In terms of management, CHT integrates climate risk into the internal risk management framework of the Enterprise Risk Management (ERM) system. Climate change risks and related issues are discussed regularly within this structure. Furthermore, the E subgroup of the “Sustainable Development Promotion Committee” periodically reports its assessment and analyses to the Risk Management Committee. Following a comprehensive assessment, the Risk Management Committee evaluates climate change risks in conjunction with CHT’s other risks and implements necessary mitigation measures based on the assessed level of risk. Relevant implementation details are further elaborated in Section 5.2.

3.2 Climate Management Mechanism

CHT operates under a dual climate governance mechanism through the “Sustainable Development and Strategy Committee” and the “Sustainable Development Promotion Committee,” both under the Board of Directors. This structure is integrated with the existing internal control system and the operations of the “Risk Management Committee.” Regular reports are submitted to the Board of Directors, covering TCFD risk assessment results, progress on climate strategy projects, and related outcomes—enhancing the Board’s oversight of climate change issues. The supervisory framework for units responsible for climate governance is illustrated in Figure 3-3.



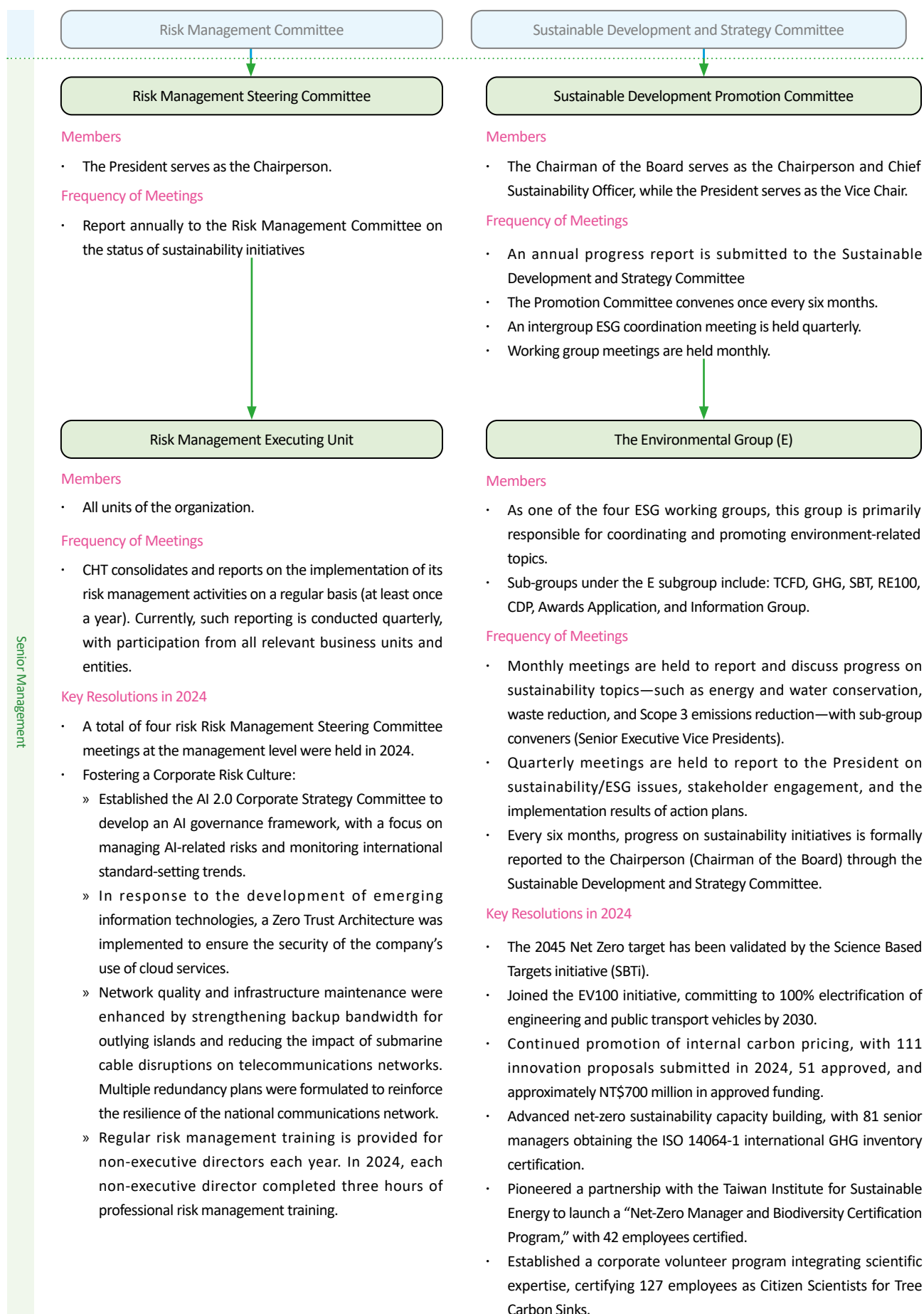


Figure 3-3. Supervisory Mechanism for Climate Governance Units

3.2.1

Board Functions and Climate Risk Oversight

In accordance with CHT's Corporate Governance Principles, the composition of the Board of Directors takes into consideration diversity, as well as professional knowledge and skills, to guide and support employees in addressing various climate risk issues. As such, experience and expertise in sustainability and climate risk management are key considerations in the selection of board members.

Among CHT's current 13 directors, 7 possess professional expertise in risk management—including climate change—and 11 have experience in ESG and sustainable development. To further strengthen their climate risk management capabilities, the directors participate annually in professional training on climate change and ESG-related topics. Recent courses attended include: "New Challenge to Corporate Governance as ESG Knocking," "Enterprise Digital Transformation and Risk Management," "Risks and Opportunities of Climate Change and Net Zero Policies for Business Operations," "Environmental Sustainability and Biodiversity," and "Carbon and Energy Management from a Sustainability Perspective in Listed Companies." These training programs aim to enhance the Board's capacity for effective climate risk oversight.

To actively advance ESG initiatives, the Board of Directors, as the highest decision-making body for climate risk management, oversees CHT's climate-related efforts through regular meetings with the responsible units—namely, the Sustainable Development and Strategy Committee and the Risk Management Committee. Through the approval of climate risk management policies and the annual business plan, the Board ensures the effective supervision of company-wide climate action, aiming to mitigate and adapt to the impacts of climate change. In addition, by conducting regular reviews and performance evaluations, the Board ensures that all sustainability and ESG strategies and action plans are aligned with the CHT's overall sustainability objectives.

3.2.2

Senior Management Control

To ensure the integration of climate strategies into daily operations, the Sustainable Development Promotion Committee—established under the Sustainable Development and Strategy Committee—is chaired by the Chairman (who also serves as Chief Sustainability Officer), with the President as Vice Chair and members comprising heads of key management departments. The primary objective of this committee is to follow CHT's sustainable development vision and strategies, and with a focus on "Sustainable Transformation to Low-carbon and Net Zero," the committee actively drives the telecommunications industry and the environment toward environmental sustainability. Each quarter, the committee reports to the Board of Directors on significant climate, sustainability, and ESG issues, stakeholder engagement, action plan implementation, and progress toward established targets. In addition, an annual report on the status of sustainability initiatives is submitted to the Sustainable Development and Strategy Committee under the Board.

The E subgroup, under the Promotion Committee, is led by the SEVP of Technology and is dedicated to managing CHT's climate change mitigation and adaptation strategies and actions. Currently, the group is organized into 8 subgroups—TCFD, GHG-1, GHG-2, SBTi, RE100, CDP, Awards Application, and Information Group—each responsible for executing specialized environmental projects aligned with CHT's focus areas.

In managing climate risk, the E subgroup acts in accordance with resolutions from the Sustainable Development Committee and instructions from cross-functional meetings led by the President. The group conducts ongoing analysis and tracking of risks and opportunities in relation to climate change, reporting its results to the Risk Management Committee for a comprehensive risk assessment and the adoption of necessary mitigation measures. For climate risk response, the group establishes short-, medium-, and long-term environmental sustainability goals, integrating net-zero emissions, energy conservation, carbon reduction, and environmental sustainability issues into its business plans. Internal environmental guidelines are developed, and targets are set for green energy development and GHG reduction—including CHT's TCFD climate-related financial disclosures, GHG inventory and management strategies, the net-zero emission target by 2045, SBTi long-term (net zero) and near-term goals, and other climate adaptation goals. The E subgroup regularly compiles the status, outcomes, and future plans regarding climate change targets, providing updates to the Sustainable Development and Strategy Committee. The committee, in turn, reports quarterly on CHT's ESG targets to the Board of Directors for their reference.

3.2.3

Linkage between Board of Directors' and Senior Management's Compensation and their Performance in Relation to Sustainable Development

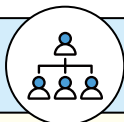
CHT's Compensation Committee regularly reviews the performance evaluation, remuneration policies, systems, standards, and structures for directors and managers to ensure effective corporate governance and compensation management. To incentivize senior management in achieving CHT's vision of sustainable operations, an enhanced performance-based incentive mechanism was established in 2023, aligned with medium- and long-term performance goals.

For senior managers, the "CHT Performance and Remuneration Regulations for Senior Management" incorporate ESG indicators into performance management, in line with the CHT's vision and strategy for sustainable development, directly linking their compensation to their ESG performance, with the weighting of this linkage increasing annually. Senior managers' annual ESG performance has a direct impact on their bonuses and total compensation, thereby reinforcing their commitment to ESG strategies and action plans, and supporting CHT's vision of sustainable development and achieving the set sustainability goals. Furthermore, with the aim of strengthening awareness and adaptive capacity toward climate change, CHT links the compensation of both directors and employees to corporate sustainability and climate-related issues. This approach encourages all personnel to proactively address climate risks and enhances their willingness to implement action plans—ultimately improving CHT's overall climate resilience and accelerating its transition toward a low-carbon, sustainable future.



Directors

Directors are nominated by the Board and shareholders holding the statutory percentage of shares, and are elected at the shareholders' meeting for a three-year term, with eligibility for re-election. At least one-fifth of the Board must be composed of expert representatives. To strengthen the alignment between the performance of directors, CHT's sustainability vision, and its short-, medium-, and long-term strategic goals, CHT's "Regulations Governing the Performance Evaluation of the Board of Directors of Chunghwa Telecom" were established, which includes participation of directors in sustainable management as one of six key evaluation dimensions. In addition to annual internal self-assessments, since 2019, external evaluations have been conducted every three years by independent professional institutions or teams of external experts, to ensure that directors are aware of the issues, performance, and implementation of CHT's industry-specific sustainability and ESG development. In addition, CHT regularly assesses directors' core competencies, strengthens their accountability, and ensures the effective linkage between their performance and compensation, as well as the retention and attraction of key talent. Through the Compensation Committee and relevant regulations, sustainability strategy objectives are incorporated into director compensation indicators, ensuring that variable compensation is substantively linked to their sustainability performance.



Senior Management

CHT has established an ESG-centered management mechanism, integrating it into its overarching corporate sustainability strategy. Leveraging its resources and expertise, the company is committed to advancing key sustainability issues, including social inclusion, digital inclusion, green ICT products and services, green brand management, and energy conservation and carbon reduction.

The Sustainable Development Committee links sustainability performance outcomes to the variable compensation of senior managers. The ESG-linked portion of their compensation has increased from 10% in 2022 and is expected to reach 30% by 2025, encouraging senior management to incorporate ESG principles into day-to-day operations. According to the "CHT Performance and Remuneration Regulations for Senior Management" relevant sustainability indicators include electricity consumption, use of renewable energy, digital empowerment of SMEs, adherence to codes of conduct, and ethical business practices.



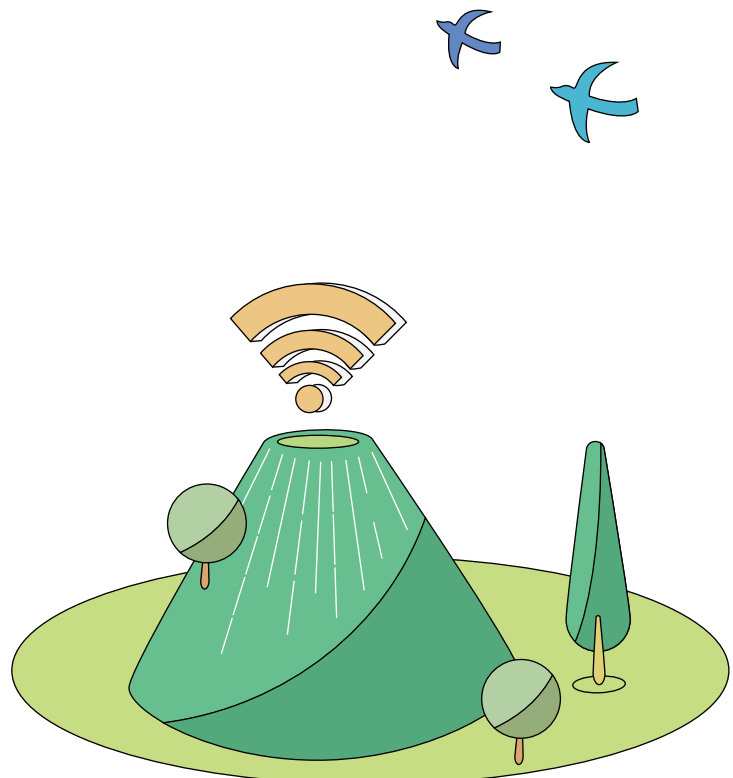
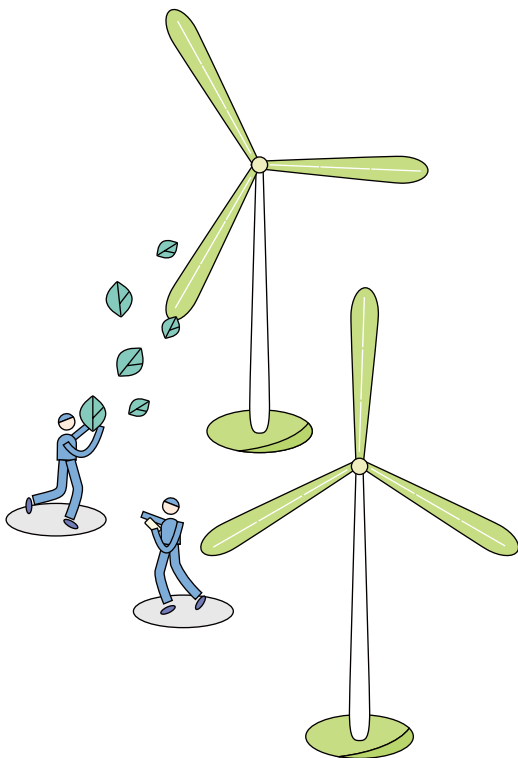
Employees

To support all employees in promoting environmental sustainability and to increase their participation and willingness to participate, CHT has established the “Guidelines for Environmental Sustainability Incentives,” which are linked to the annual performance evaluations of individual employees to foster a net-zero, sustainability-oriented corporate culture. According to these guidelines, the top five departments receive major administrative rewards, including significant increases in departmental annual bonuses and complimentary high-quality accommodation vouchers. Award-winning departments and employees are publicly recognized to further motivate participation in energy conservation and carbon reduction initiatives.



Procurement Personnel

Recognizing the critical role of supply chain collaboration in sustainable development, CHT has implemented the “Operational Guidelines Supplier Management of Chunghwa Telecom Co., Ltd.” to ensure that suppliers meet ESG-oriented standards across all three dimensions and to serve as a method for managing and evaluating suppliers. The “Guidelines for Promoting Sustainable Development Practices Among Suppliers” provide procurement personnel with a framework for conducting effective sustainability-related engagement throughout the supply chain. To further ensure that supplier performance aligns with expectations, CHT has also implemented the “Guidelines for Instant Reward of Special Performance of Chunghwa Telecom Co., Ltd.”, which include a financial reward mechanism tied to procurement personnel’s supplier management performance. Incentives are provided upon the achievement of defined performance targets.



3.3

Communication and Leadership on Climate Issues

01 Climate Governance from Diverse Perspectives

CHT's Board of Directors, including independent directors, is composed of experts from a wide range of professional backgrounds, such as accounting, law, risk management, and economics. These members bring forward-looking insight and leadership to corporate sustainability and risk governance. The senior management team also embodies diversity and equality, with members possessing interdisciplinary expertise across information and communications technology, engineering, financial management, and economics. This team combines the rich experience of seasoned leaders with the innovative thinking of younger members, fostering cross-generational collaboration and building a diverse organizational structure that enhances CHT's agility in responding to climate risks and market changes.

In the senior management questionnaire interviews conducted for this report, the professional judgment of leaders from various backgrounds and age groups, combined with supporting data provided by implementation teams, contributed to a more comprehensive approach to identifying climate-related risks and opportunities. This ensures more accurate assessments of climate risk exposure and financial impacts, helping to determine which risks and opportunities are most material to CHT's operations.

By cultivating a diverse team with varying expertise and generational perspectives, CHT not only enhances internal collaboration and responsiveness but is also better equipped to promptly and effectively address external concerns regarding climate risk. This includes playing a leading role in responding to domestic and international climate-related regulatory developments and strengthening post-disaster recovery capabilities for communications equipment and services affected by extreme weather events—ultimately building long-term trust with society and the industry.

02 Strengthening Climate Communication through Digital Platforms

Upholding the principles of integrity, accountability, and trustworthy corporate governance, CHT actively utilizes digital platforms to enhance external sustainability communications. In 2024, the number of visits to the sustainability section of the official website increased by 25% compared to 2023. A total of 92 ESG-related press releases were published on the official website. CHT maintains transparent communication with stakeholders through multiple information channels, including the corporate website, the Market Observation Post System (MOPS), the annual report, and the sustainability report. Additionally, press conferences and earning calls are leveraged to improve the timeliness, quality, and credibility of information disclosure. CHT also hosts annual forums and survey activities, attracting over 500 participants in 2024 to engage in climate-related discussions, with 97% of participants expressing satisfaction—demonstrating the effectiveness of CHT's multi-faceted engagement mechanisms.

03 Leadership in Climate Action

CHT continues to deepen its climate action initiatives by formulating energy transition strategies and implementing carbon reduction plans across the supply chain. In terms of climate risk management and disclosure, CHT is the first telecommunications company globally to pass the TCFD compliance assurance, achieving the highest rating for four consecutive years. It is also the first telecommunications provider in Taiwan to participate in the international CDP questionnaire, and in 2024, it received dual "A" ratings—the highest distinction—for both climate change and supply chain engagement. Key achievements are detailed in Table 2-1.

Chapter

4

Climate Risk Identification and Strategy Development

To address the risks and opportunities posed by climate change, and in alignment with the TCFD framework, CHT discloses the following: (1) the processes for identifying and assessing climate-related risks (as illustrated in Figure 4-1); (2) climate-related risks and opportunities across short-, medium-, and long-term horizons; (3) the impacts of these risks and opportunities on business operations, strategy, and financial planning; and (4) the resilience of CHT's strategy under various climate scenarios. Based on the results of annual identification and assessment of key climate risks and opportunities, CHT formulates corresponding measures to ensure the effective implementation of action plans to cope with the challenges posed by climate change.

4.1

Process for Identifying Climate-related Risks and Opportunities



Figure 4-1. Climate Risk and Opportunity Identification and Assessment Processes

1 Collection and Identification of Climate Issues

Collection and Inventory of Climate Risks and Opportunities

CHT systematically reviews its business activities, business models, product and services, and industry characteristics, while also reflecting on climate-related issues identified in the previous year to summarize the climate risks and opportunities that may impact CHT's operations.

Establishment of an Inventory of Climate Risk and Opportunity

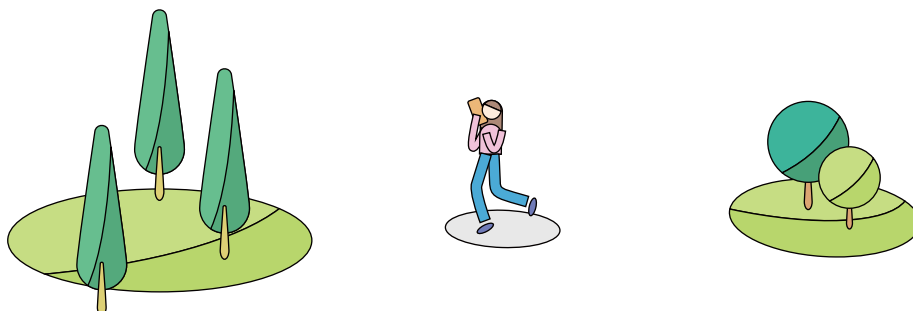
In reference to the TCFD recommended framework, CHT has compiled climate-related risks and opportunities by reviewing global risk reports, international standards, Taiwan's regulations and policies, as well as peer benchmarking. As CHT is also a U.S.-listed company, it must comply with both the International Financial Reporting Standards (IFRS) and the U.S. Securities and Exchange Commission (SEC) climate disclosure requirements.

In reconciling these standards, CHT categorizes the potential timing of climate risk and opportunity impacts into short-term (reporting year to 1 year), medium-term (2 to 6 years), and long-term (7 to 26 years) (as shown in Table 4-1). Climate impacts were assessed through internal discussions and reviewed by senior management, resulting in the identification of 16 climate risks and 4 climate opportunities for 2024, as presented in Tables 4-2 and 4-3.

(SEC)	(IFRS)	Reconciliation Schedule	
–	Reporting period (current year)	2024	Short-term
–	Subsequent year	2025	
Short-term (within the next 12 months)	Short-term (same as the following year)		
–	Mid-term	2026 – 2030	Mid-term
Long-term (after the next 12 months)	Long-term	2031 – 2050	Long-term

Table 4-1. Timeframe Definitions for Short-, Medium-, and Long-Term Risks and Opportunities

Compared to the total of 11 climate risk issues in 2023—including 3 categorized as high-risk and no climate-related opportunities identified—in the 2024 report, CHT has expanded the scope to include 16 climate risks and 4 opportunities. To provide users of this report with a clear understanding of the differences between the topics covered in 2023 and 2024, an explanation of the adjustments to climate risks and opportunities for both years is summarized in Tables 4-2 and 4-3, respectively.



Category	Subcategory	Issues in 2023	Issues in 2024	Changes
Transition Risks	Regulatory and Policy Risks	2050 Net Zero Emission Policy *	Domestic 2050 Net Zero Emission Policy	NA
		Increase in costs associated with greenhouse gas emissions (e.g. additional carbon fees due to regulations)	Enhanced GHG emission reporting obligations	NA
		Rise in electricity prices due to the shift in Taiwan's energy structure	-	Delete
		-	RE100 application and achievement	New
		-	IFRS climate disclosure requirements	New
	Market Risks	Changes in customer behavior (e.g. increased consumer awareness of climate change, or shifting demands for products and services)	Shifting demands for low carbon products and services	NA
		-	Impact on the global supply chain	New
	Technology Risks	Failure to invest in low-carbon transformation technologies, or foregoing the opportunity to invest in low-carbon R&D	Integration of renewable energy and infrastructure	NA
	Reputation Risks	Supplier's subpar carbon reduction performance affecting CHT's reputation	Service interruption leads to negative feedback from users	NA
		Litigation risks that may affect CHT's reputation	-	Delete
		-	Failure to meet publicly committed sustainability targets	New
Physical Risks	Acute Risks	Increased frequency and severity of typhoons/rainstorms resulting in damage to facilities/equipment *	•Damage to telecommunications equipment and base stations – strong winds (typhoons) •Damage to telecommunications equipment and base stations - heavy rainfall (flooding)	NA
		-	Damage to telecommunications equipment and base stations - mudslide	New
		Disruption/delay in product supply due to extreme weather events impacting suppliers' operations and production	Supply chain disruption due to extreme weather conditions	NA
	Chronic Risks	Asset losses due to the flooding of low-lying coastal areas in Taiwan, as a result of rising sea levels	Inundation of operational sites due to rising sea level	NA
		Increased energy consumption due to rising average temperatures	Increased electricity consumption due to high temperatures	NA
		-	Impacts of water resource availability on operations and the supply chain	New

Note 1: indication of * is for identification of those with high risk in 2023.

Table 4-2. Adjustments to Climate Risk Issues in 2023 and 2024

Category	Subcategory	Issues in 2023	Issues in 2024	Changes
Climate Opportunities	Market	-	Leveraging 5G and IoT to advance smart city development	New
	Energy Efficiency	-	Development of energy-efficient network infrastructure and data centers	New
	Resilience	-	Issuing green bonds to support sustainable development projects	New
	Energy Source	-	Electrification of transportation vehicles	New

Note 2: no climate opportunity issue in 2023.

Table 4-3. Adjustment to Climate Opportunity Issues in 2023 and 2024

2 Identifying Significant Climate Risks and Opportunities

1 Data Collection through Surveys and Interviews

Through interviews with 28 senior managers (internal departments) and 2 independent directors (external), CHT collected their perspectives on the CHT's list of climate-related risks and opportunities, and assessed the level of impact and expected timeframe for each item on the list. The "impact level" was scored on a scale of 1 to 5, based on evaluation dimensions including corporate image, business strategy, and value chain concerns (as shown in Tables 4-4 and 4-5). A total of 16 climate risks and 4 opportunities were scored and comprehensively evaluated to determine their significance of impact on CHT. The "urgency of occurrence" was also rated on a scale of 1 to 5, corresponding to timeframes such as the current year, next year, short-term, medium-term, and long-term (as shown in Table 4-6), in order to assess the likely timing of each risk or opportunity.

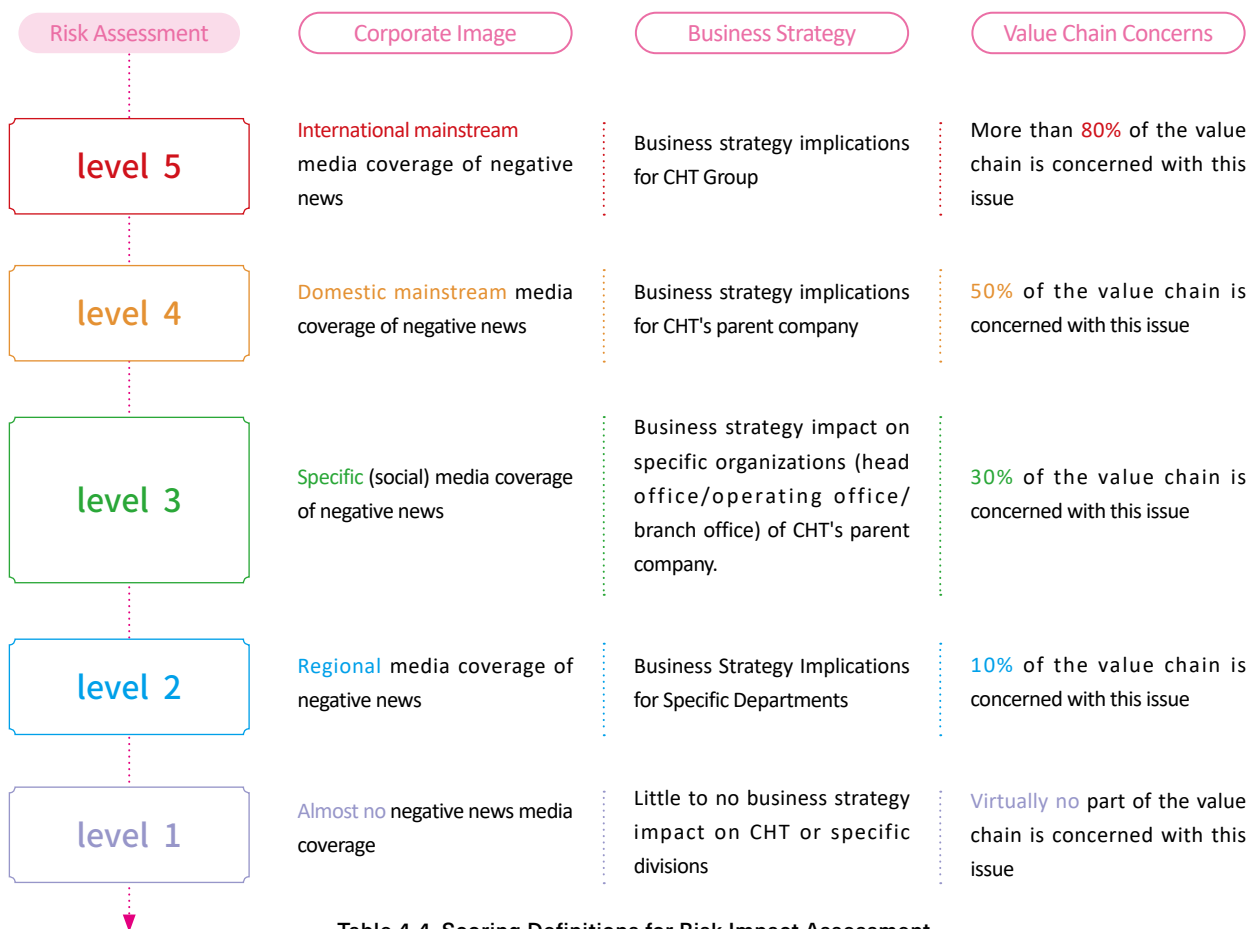


Table 4-4. Scoring Definitions for Risk Impact Assessment

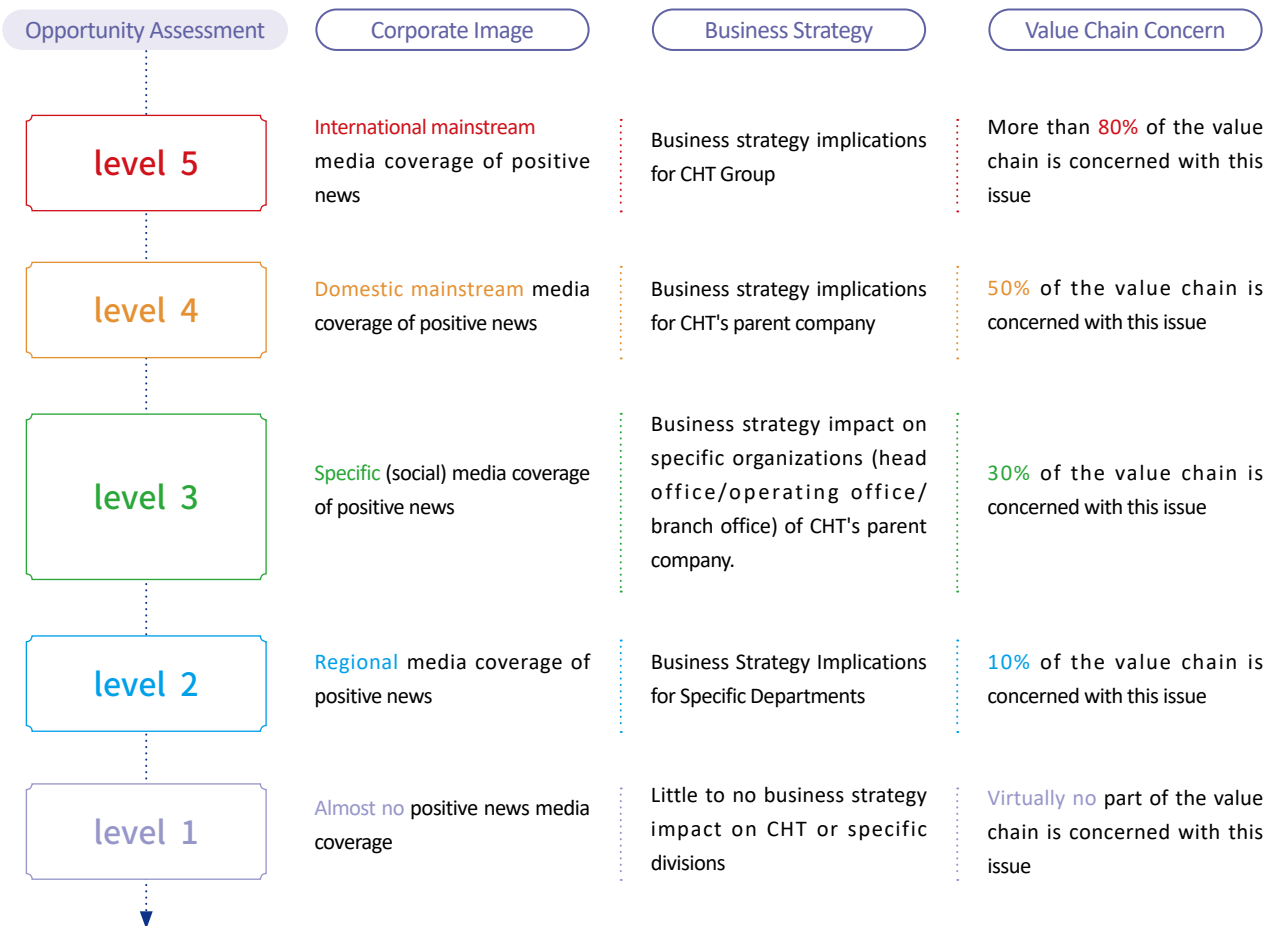
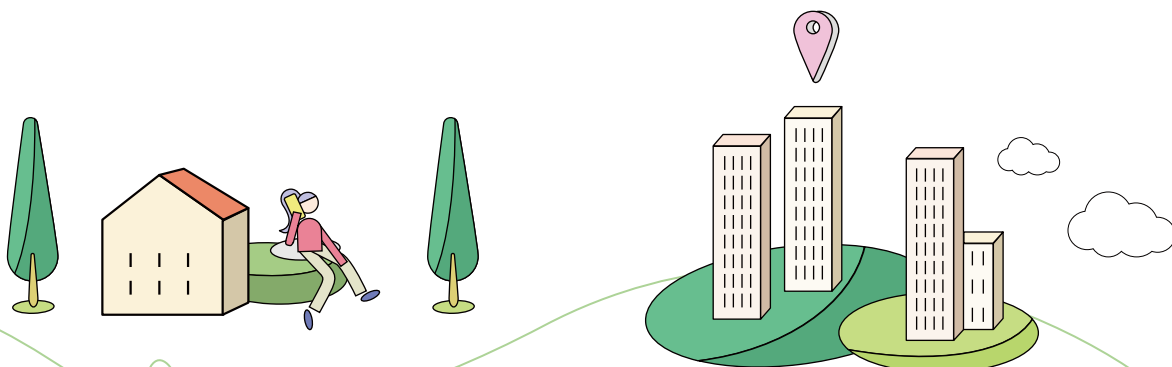


Table 4-5. Scoring Definitions for Opportunity Impact Assessment

Timeframe Assessment	Likelihood of Occurrence (Timing)
5	2024 (current reporting year)
4	2025 (next year)
3	2025 (short-term)
2	2026-2030 (mid-term)
1	2031-2050 (long-term)

Table 4-6. Scoring Definitions for Timing of Occurrence



Impact Assessment and Ranking

CHT collected and analyzed the results of the aforementioned interviews with senior managers and independent directors, calculating the arithmetic average of the scores assigned to each risk and opportunity based on impact level and urgency of occurrence (as shown in Table 4-7). Based on the ranking results, CHT adopted a selection principle whereby the top 50% of climate risk topics and the top 50% of climate opportunity topics—based on both impact and urgency—were identified for further evaluation. Following an additional review of their relevance and appropriateness, the top seven climate risks and top two climate opportunities were finalized for strategic planning and active management.

Ranking	Risk Issues	Impact Rating	Urgency of Occurrence
1	Damage to telecommunications equipment and base stations - strong winds (typhoons)	4.15	3.72
2	Supply chain disruption due to extreme weather conditions	3.88	3.64
3	Domestic 2050 Net Zero Emission Policy	4.15	3.20
4	Impact on the global supply chain	4.00	3.28
5	IFRS climate disclosure requirements	3.58	3.45
6	Service interruption leads to negative feedback from users	3.75	3.15
7	Inundation of operational sites due to rising sea level	3.60	3.10
8	Damage to telecommunications equipment and base stations – heavy rainfall (flooding)	3.85	2.41
9	RE100 application and achievement	3.60	2.50
10	Shifting demands for low carbon products and services	3.49	2.60
11	Increased electricity consumption due to high temperatures	3.00	3.07
12	Damage to telecommunications equipment and base stations - mudslide	3.00	2.96
13	Enhanced GHG emission reporting obligations	2.85	3.10
14	Impacts of water resource availability on operations and the supply chain	3.20	2.70
15	Integration of renewable energy and infrastructure	2.87	2.69
16	Failure to meet publicly committed sustainability targets	2.70	2.66

Table 4-7. Ranking of Climate Risk Issues

Ranking	Opportunity Issues	Impact Rating	Urgency of Occurrence
1	Leveraging 5G and IoT to advance smart city development	4.44	3.79
2	Development of energy-efficient network infrastructure and data centers	3.66	3.34
3	Issuing green bonds to support sustainable development projects	3.50	2.80
4	Electrification of transportation vehicles	2.87	2.59

Table 4-8. Ranking of Climate Opportunity Issues

3 Establishment of a Matrix of Climate Risks and Opportunities

Further details are provided in Section 4.3.

4 Objectives Setting and Strategy Management

Based on the climate risk and opportunity matrix, and following review by the Sustainable Development Committee, the E subgroup is responsible for coordinating and driving the process of formulating response strategies, execution directions, and management targets, as well as planning resource allocation.

CHT conducts quarterly reviews of the implementation status of risk response strategies and the achievement of corresponding targets. To ensure the effectiveness of these measures, a regular monitoring and evaluation mechanism has been established to track progress continuously. Relevant updates and outcomes are reported periodically to the Sustainable Development Committee and the Board of Directors. Adjustments are made in a timely manner to address gaps, ensuring that targets are met while enhancing resilience and governance transparency in responding to climate-related risks and opportunities. Details of the response strategies and target setting for climate risks and opportunities are provided in Sections 4.5 and 6.2.

4.2

Climate Risk and Opportunity Financial Impact Calculation

CHT assesses the financial impacts of physical climate risks primarily by estimating expenditures related to the repair of telecommunications equipment and infrastructure damaged by climate hazards, increased electricity consumption due to rising temperatures, and associated costs that affect telecommunications services. For transition risks, financial impacts include expenditures on green power procurement, renewable energy certificates (RECs), carbon credits, capital expenditures for energy-efficient equipment, and compliance costs related to GHG regulations. In terms of climate-related opportunities, financial impact assessments consider cost savings from enhanced energy efficiency in data centers and network infrastructure, as well as revenue generated through smart city infrastructure development. This section focuses on the calculation methodologies for the top 7 prioritized climate risks and the top 2 climate opportunities, providing a reference framework to support CHT's sustainable transition.

1 Physical Risks (Acute)

(1) Damage to Telecommunications Equipment and Base Stations – Strong Winds (Typhoons)

The assessment is based on historical repair costs for base stations, optical splice box, and fixed network equipment room facilities. Potential operational disruptions caused by extreme climate events are translated into estimated business interruption days, which form the basis for financial impact calculation.

(2) Supply Chain Disruption Due to Extreme Weather Conditions

CHT evaluates the risk by analyzing supplier categories and countries of origin to model potential operational downtime resulting from climate-related disruptions caused by extreme weather events. The estimated duration of such disruptions serves as the primary basis for financial impact assessment.

2 Physical Risks (Chronic): Inundation of Operational Sites Due to Rising Sea Level

Financial assessments focus on potential asset losses at operational facilities and critical data centers vulnerable to inundation due to rising sea level. CHT has made substantial investments in network infrastructure and remains firmly committed to enhancing mobile communication quality in remote areas. CHT continues to strengthen both backup routes for repeater transmission and wireless routing in rural regions, while also expanding

the capacity of backup power systems. The redundancy capabilities of disaster-resilient platforms have been further enhanced to ensure over 72 hours of service continuity for remote communities during natural disasters and power outages. To conservatively estimate potential financial impacts, CHT also considers scenarios in which backup systems may fail to activate in certain areas. In such cases, a 3-day operational disruption is factored into the overall assessment of business impact.

3 Transition Risks (Regulatory/Policy)

(1) Domestic 2050 Net Zero Emission Policy

In alignment with both domestic and international regulatory requirements and in response to stakeholder expectations, the company has proactively established its net-zero emissions roadmap, setting an accelerated target to achieve net-zero by 2045—five years ahead of the global 2050 benchmark. Relevant implementation measures, including engagement of carbon management consultancy services, application for SBTi-aligned net-zero targets, procurement of carbon credits and renewable electricity, as well as third-party verification of ESG-related projects, constitute the foundational basis for associated financial impact assessments.

(2) IFRS Climate Disclosure Requirements

Given the differences between IFRS S2 and the current TCFD framework, CHT is actively formulating compliance strategies and internal roles to address the requirements of IFRS S2. However, the transition involves substantial changes. Therefore, CHT has engaged professional consultants to conduct gap analyses between TCFD and IFRS S2, and to support the gradual internal dissemination and promotion of relevant information. These efforts aim to ensure future compliance with regulatory requirements. The associated consulting expenses form a key basis for related financial assessments.

4 Transition Risks (Market): Impact on the Global Supply Chain

Purchasing costs are expected to rise due to the impacts of climate change, with financial factors such as global inflation and the annual increase in the Consumer Price Index (CPI) considered as the primary basis for financial evaluation.

5 Transition Risks (Reputation): Service Interruption Leads to Negative Feedback From Users

Potential financial losses from negative customer feedback are assessed through contract penalties and customer churn. Given CHT's extensive customer base, prolonged service disruptions caused by extreme weather events may lead to contract terminations and compensation obligations, resulting in revenue losses. These are factored into the financial impact assessment.

6 Climate Opportunities

(1) Energy Efficiency: Development of Energy-efficient Network Infrastructure and Data Centers

As global technology companies shift toward green buildings and energy-efficient data centers in response to net-zero goals, early investment in energy-efficient infrastructure positions CHT to capitalize on emerging business opportunities. Financial impact is estimated based on internal data on energy savings from CHT-operated data centers.

(2) Market: Leveraging 5G and IoT to Advance Smart City Development

Financial benefits are projected from new revenue streams generated through smart city solutions, including infrastructure systems and sensor technologies developed using 5G and IoT innovations.

4.3

Significant Climate Risks and Opportunities

CHT developed a climate risk and opportunity matrix (as shown in Figure 4-2), with “impact level” on the vertical axis and “urgency of occurrence” on the horizontal axis. Based on the ranking of the evaluation scores, the two most significant transition risks are identified as: “Domestic 2050 Net Zero Emission Policy” and “Impact on the Global Supply Chain.” The top two physical risks are: “Damage to Telecommunications Equipment and Base Stations - Strong Winds (Typhoons)” and “Supply Chain Disruption Due to Extreme Weather Conditions.” The two leading opportunities are: “Leveraging 5G and IoT to Advance Smart City Development” and “Development of Energy-Efficient Network Infrastructure and Data Centers.” CHT has designated these issues as core priorities within its climate management strategy to ensure that resource allocation and strategic planning remain focused. This enables CHT to maintain effective control and management of climate-related impacts across its operations.

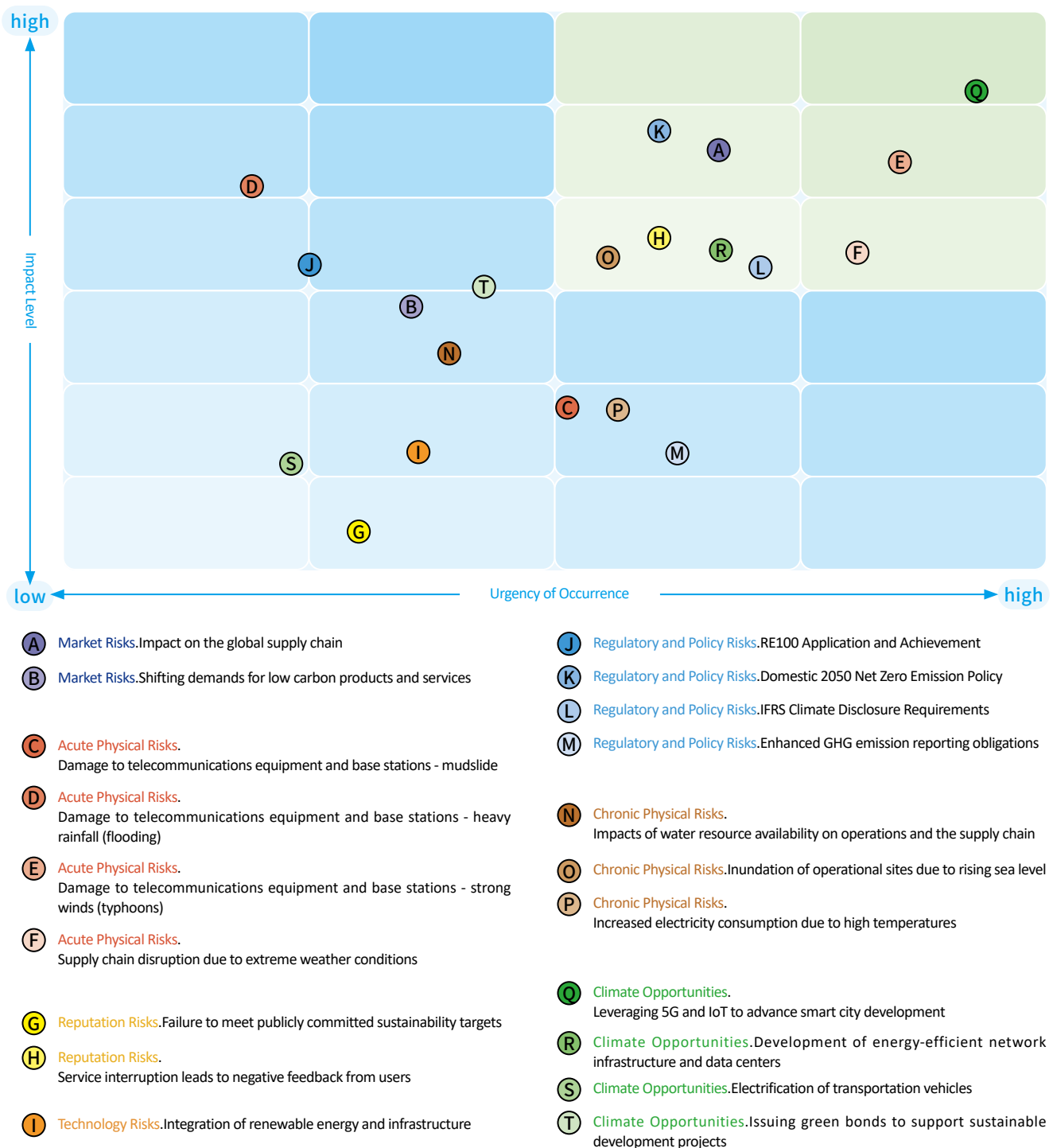


Figure 4-2. Climate Risk and Opportunity Matrix

CHT has consolidated seven climate risks and two climate opportunities that are rated as medium to high in both impact level and urgency of occurrence. The analysis outlines their expected timeframes, potential financial impacts, degree of financial exposure, and corresponding response strategies. A summary of these items is provided in Tables 4-9 and 4-10, serving as the basis for subsequent response actions and management measures.

Items	Risk Issues	Risk Type	Impact Period	Potential Financial Impact	Degree of Financial Impact
K	Domestic 2050 Net Zero Emission Policy	Regulatory and Policy Risks	Mid-term	In response to increasingly stringent climate, environmental, and financial regulations, there is a growing need for long-term adaptation and optimized energy-related expenditures. These include “carbon reduction measures and system introduction”, “increased green power procurement”, “carbon credits” and “staff training”.	1%-5%
L	IFRS climate disclosure requirements	Regulatory and Policy Risks	Mid-term	In response to the Financial Supervisory Commission’s policies, CHT anticipates increased financial compliance costs and related training expenditures, including “expenses for training programs”, “external expert consultations”, and “assurance services”.	<0.5%
A	Impact on the global supply chain	Market Risks	Mid-term	Extreme weather events can potentially affect delivery, market competitiveness, and supply chain stability, resulting in increased procurement and logistics costs.	0.5%-1%
H	Service interruption leads to negative feedback from users	Reputation Risks	Mid-term	Service interruptions caused by climate-related events may affect customer satisfaction, potentially leading to increased costs from complaint-related compensation or customer churn, resulting in a decline in revenue.	<0.5%
E	Damage to telecommunications equipment and base stations - strong winds (typhoons)	Acute Risks	Short-term	Severe typhoons may damage telecommunications infrastructure, leading to increased costs for repair work and temporary reinforcement of the network’s disaster resilience. These costs include “equipment procurement”, “engineering and construction”, and “personnel deployment”. In addition, service interruptions may result in a decline in operating revenue.	1%-5%
F	Supply chain disruption due to extreme weather conditions	Acute Risks	Short-term	Temporary disruptions in the supply chain may lead to shortages of certain components, affecting product delivery capacity and resulting in revenue loss for CHT, while also increasing procurement costs.	0.5%-1%
O	Inundation of operational sites due to rising sea level	Chronic Risks	Long-term	Coastal infrastructure may be affected by rising sea level, leading to flooding at certain operational sites and damage to telecommunications facilities. This could disrupt business operations and result in reduced operating revenue.	<0.5%

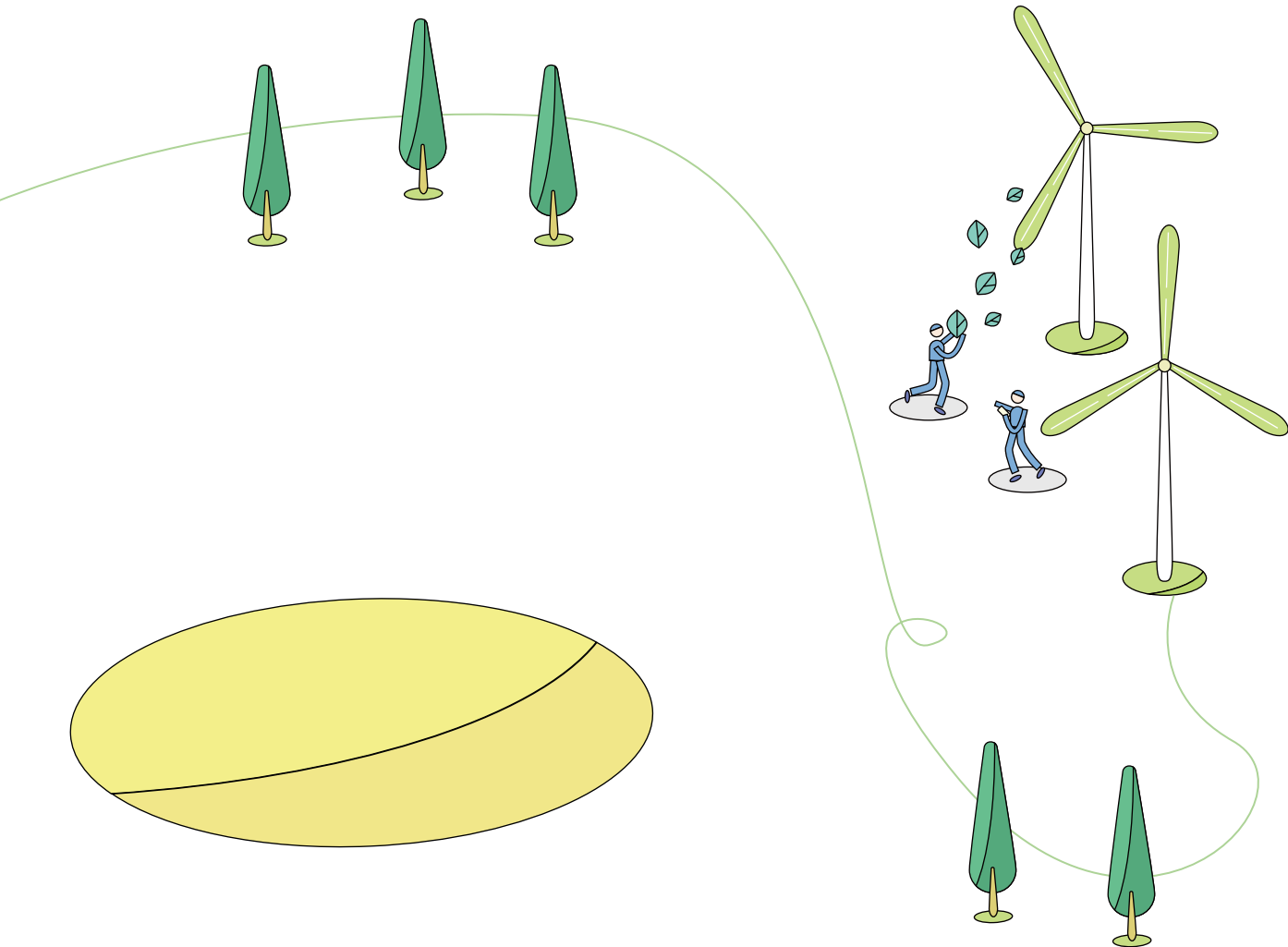
Note 3: The degree of financial impact is calculated based on CHT’s annual revenue (NTD \$) as the impact percentage; the revenue for 2024 is NT\$230.03 billion.

Table 4-9. Overview of Climate Risk Issues

Items	Opportunities Issues	Opportunities Type	Impact Period	Potential Financial Impact	Degree of Financial Impact
R	Development of energy-efficient network infrastructure and data centers	Energy Efficiency	Mid-term	By implementing energy-efficient equipment and improving energy usage efficiency in data centers, CHT reduces electricity consumption and lowers long-term operational energy costs. At the same time, through energy-saving solutions, CHT helps customers reduce their long-term electricity expenses, enhance their operational efficiency, and ultimately contribute to the stability of CHT’s business revenue.	<0.5%
Q	Leveraging 5G and IoT to advance smart city development	Products and Services	Short-term	By creating new types of market demand—such as “integrated sensor application systems” and “remote monitoring systems”—CHT not only enhances public recognition of its brand, but also significantly increases operating revenue and strengthens its market competitiveness.	1%-5%

Note 4: The degree of financial impact is calculated based on CHT’s annual revenue (NTD \$) as the impact percentage; the revenue for 2024 is NT\$230.03 billion.

Table 4-10. Overview of Climate Opportunity Issues



4.4

Climate-related Scenario Analysis

4.4.1

Scenario Selection

Before analyzing the climate-related scenarios, it is necessary to select scenarios for transition risk and physical risk respectively, as detailed in Table 4-11.

 Transition Risks	Adopted Scenario IEA STEPs Under the Stated Policies Scenario (STEPS), the Taiwanese government aligns with the Paris Agreement and its commitment to achieve net-zero emissions by 2050. Using 2005 as the base year, Taiwan has set the following emission reduction targets: a 10% reduction by 2025, a 24% ±1% reduction by 2030, and net-zero emissions by 2050, while all other policies remain unchanged.
	Adopted Scenario IEA Net Zero Emissions (NZE) In assessing transition risks under the IEA Net Zero Emissions (NZE) Scenario, the government, in alignment with the Paris Agreement, COP29 requirements, and its commitment to achieve net-zero emissions by 2050, is assumed to amend existing legislation by resetting the base year to 2020 and raising its emissions reduction targets to a 21% reduction by 2025, 42% by 2030, and net-zero by 2050. Under this context, CHT may face mandatory net-zero requirements, resulting in financial impacts that are included in the transition risk assessment.
	Adopted Scenario RCP 2.6 The Intergovernmental Panel on Climate Change (IPCC) adopts Representative Concentration Pathways (RCPs) to model climate-related scenarios with varying levels of global warming. RCP2.6 represents a mitigation scenario, in which radiative forcing peaks and then declines by 2100, reflecting efforts to significantly reduce greenhouse gas emissions.
	Adopted Scenario RCP 8.5 1. RCP8.5 represents a high GHG emissions scenario, in which radiative forcing continues to increase through 2100. In assessing physical risks, CHT selected three types of physical risks most commonly affecting the telecommunications sector and supported by domestic research. The evaluated parameters include: inundation caused by rising sea level, global temperature rise, and flood risk. 2. Assumption: It is assumed that future climate change patterns will follow the projections presented in the National Climate Change Scientific Report 2024: Phenomena, Impacts, and Adaptation, and that the resulting temperature increase will exhibit a consistent trend across all regions of Taiwan. 3. Analytical Factors: Severity of inundation caused by rising sea level, magnitude of global temperature increase, and the impact of climate-induced natural disasters on flooding.



Physical Risks

Table 4-11. Description of Adopted Scenarios

4.4.2

Climate-related Scenario Analysis Results

The results of the climate-related scenario analysis include both transition risks and physical risks. Physical risks are further categorized into three types: inundation caused by rising sea level, global warming, and flood risk. The analysis is summarized as follows:

1 Transition Risks

Assuming a government-imposed carbon price of NT\$300 per metric ton of CO₂e, and a combined Scope 1 and Scope 2 emissions total of 654,492.93 metric tons of CO₂e in 2024, the carbon fee—assuming no proactive emissions reductions—is calculated as: Carbon Fee = (Emissions – 25,000 metric tons) × NT\$300, resulting in an estimated carbon fee-related transition risk of approximately NT\$186 million. In addition, expenditures related to climate mitigation (policy, regulatory, and market responses) amount to NT\$2.7 billion, while adaptation-related costs (market and reputational risks) total NT\$2.5 billion. Therefore, the total financial impact of transition risks is approximately NT\$5.2 billion, representing about 2.3% of annual revenue.

2 Physical Risks

01 Inundation Caused by Rising Sea Level

CHT used NASA's Sea Level Projection Tool to estimate the extent of future rising sea level in Taiwan under a 2°C global warming scenario, which closely aligns with the temperature trajectory of RCP8.5. This year, CHT also referenced the National Climate Change Scientific Report 2024: Phenomena, Impacts, and Adaptation, and classified risk levels based on the projected percentage of urban area inundation, defining five risk tiers as follows: Low 0.00~1.00%, Slight 1.00~2.00%, Moderate 2.00~3.00%, Severe 3.00~4.00%, Extreme 4.00~5.00%. Among all regions, Yunlin County was identified as having the highest risk, with a maximum projected inundation percentage of 4.30%, while Tainan City also showed high risk, reaching 3.29% (see Table 4-12). Based on this information, CHT developed GIS-based mapping of operational sites and data centers in these two coastal regions and assessed the number of facilities at risk in Yunlin and Tainan. It is estimated that approximately 1.5% of CHT's data centers across Taiwan may be affected by inundation due to rising sea level, potentially leading to flooding and service disruptions. The associated financial impact is estimated to account for approximately 0.5% of annual revenue.

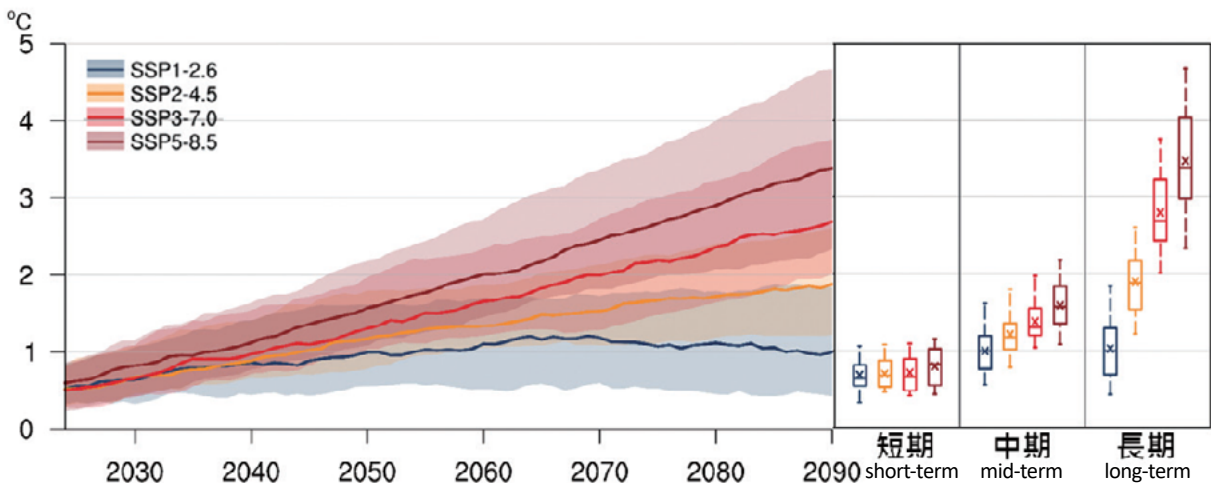
Note 1: <https://sealevel.nasa.gov/ipcc-ar6-sea-level-projection-tool>

County and City	Percentage of Inundated Area	Maximum depth (m)
Taipei City and New Taipei City	1.50%	1.5-2.0
Keelung City	2.26%	0.5-1.0
Taoyuan City	1.00%	>2.0
Hsinchu City and County	1.09%	>2.0
Miaoli County	1.61%	1.0-1.5
Taichung City	0.91%	0.5-1.0
Changhua County	2.89%	1.5-2.0
Yunlin County	4.30%	>2.0
Chiayi County and City	1.40%	>2.0
Tainan City	3.29%	1.5-2.0
Kaohsiung City	0.48%	1.5-2.0
Pingtung County	1.04%	1.0-1.5
Yilan County	0.56%	0.5-1.0
Hualien County	0.30%	1.5-2.0
Taitung County	1.24%	>2.0

Table 4-12. Inundation Area Percentage and Maximum Depth Level by County/City under the 2°C Warming Scenario

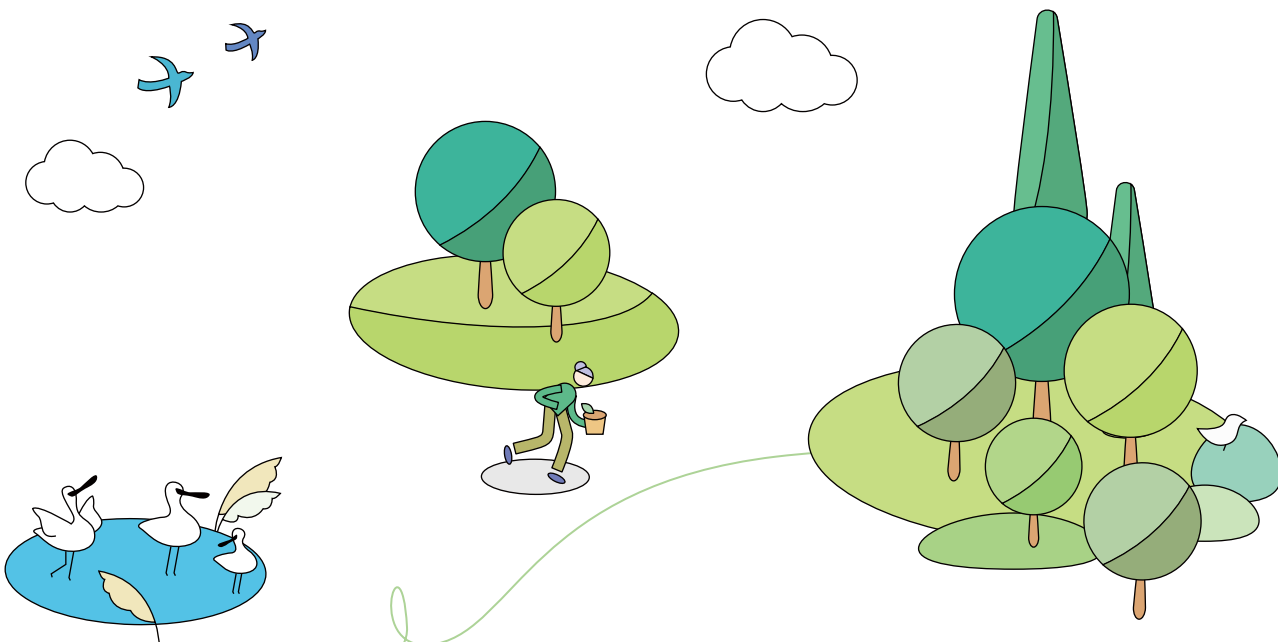
02 Global Warming

According to the National Climate Change Scientific Report 2024: Phenomena, Impacts, and Adaptation, under the RCP8.5 scenario, Taiwan is projected to experience a temperature increase of 1.6°C by mid-century (2041–2060), and up to 3.4°C by the end of the century (2081–2100) (as shown in Figure 4-3). Under this scenario, it is assumed that key data centers would need to offset the projected 1.6°C temperature rise in order to mitigate the effects of high temperatures on facility operations. Based on operational experience with HVAC systems, and assuming an average data center volume of 50 cubic meters, additional electricity would be required daily to restore internal temperatures to the 2020 baseline during an 8-hour operating period. With an estimated 1,000 data center sites across Taiwan, the annual increase in electricity costs required to offset the temperature rise is projected to be approximately NT\$15.33 million.



Source: 2024 National Climate Change Science Report

Figure 4-3. Projected Long-Term Temperature Deviations in Taiwan Across Climate-related Scenarios (°C)



03 Flood Risk

According to research published by the National Science and Technology Council, while the number of typhoons affecting Taiwan is projected to decrease, both wind intensity and rainfall are expected to increase, with the frequency of strong typhoons also on the rise. In terms of geographic exposure, domestic studies most closely related to typhoon impacts focus on storm surge and wave height projections. Under the RCP8.5 scenario, regions projected to experience extremely high wave heights (>12 meters) include Taitung County, as well as parts of Hualien County and Yilan County. Areas projected to experience extreme storm surge levels (>1.2 meters) include New Taipei City, Yilan County, and parts of Taichung City, Yunlin County, Chiayi County, Hualien County, and Taitung County. The occurrence of such extreme events implies significant wind and rainfall, increasing the risk of damage to outdoor telecommunications equipment and base stations in the affected counties. Based on GIS comparison, the areas potentially impacted are estimated to account for approximately 1.5% of CHT's total sites.

According to research by the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), under long-term climate-related scenarios—including mid-century (2040–2065) and end-of-century (2075–2099) periods—the probability of flooding across counties and cities in Taiwan is projected to increase. The most affected regions are expected to include Changhua, Yunlin, Chiayi, Nantou, and Tainan City. In the event of flooding in these areas, key transportation links within the supply chain may be significantly disrupted, with financial impacts estimated at approximately 0.5% of total revenue. As mentioned above, based on the latest available domestic research, the financial impacts of physical risks are estimated to be approximately \$70,365,616 in total with inundation caused by rising sea level (NT\$27,517,808), high temperature (NT\$15,330,000), and flood risk (NT\$27,517,808). Additional physical risks were estimated based on scenario assumptions, which include “damage to telecommunications equipment and base stations - strong winds (typhoons)”, “supply chain disruptions due to extreme weather conditions”, “impacts of water resource availability on operations and the supply chain”. The combined financial impact of these additional risks is estimated at NT\$3.7 billion, representing approximately 1.6% of annual revenue.

CHT adopted the World Resources Institute (WRI) methodology to conduct a comprehensive water stress analysis for its operational sites. The years 2030 and 2050 were selected as target assessment years, using the pessimistic RCP 8.5 scenario as the basis for future water stress risk analysis. In addition, CHT used the WRI tool to assess physical risks for key suppliers whose annual transaction volume exceeds NT\$50 million. The analysis results indicate that over 98% of these key suppliers are classified under low to moderate or lower risk levels, as shown in Table 4-13.

Risk Levels	Percentage of CHT's Operating Locations		Percentage of Key Suppliers	
	2030	2050	2030	2050
Extreme Risk	0.00%	0.00%	0.00%	0.00%
Very High Risk	0.00%	0.00%	0.54%	0.54%
High risk	0.00%	0.00%	1.08%	1.08%
Medium risk	96.44%	100%	96.77%	97.85%
Low risk	3.45%	0.00%	1.61%	0.54%
Very low risk	0.00%	0.00%	0.00%	0.00%
Total	0.00%	0.00%	100.00%	100.00%

Table 4-13. Water Stress Risk Analysis of CHT and Key Suppliers Under the RCP 8.5 Pessimistic Scenario

4.5

Climate Mitigation and Adaptation Strategies

Extreme weather events such as typhoons and floods may result in damage to critical infrastructure, including data centers and base stations, causing service disruptions and leading to significant repair and restoration costs. These impacts pose potential risks to CHT’s revenue and financial performance, as well as customer retention. On the other hand, long-term climate changes — including rising average temperatures, shifting precipitation patterns, and rising sea level — may further increase energy demand for cooling systems, elevate asset damage risks, and cause operational disruptions, collectively presenting material threats to the telecommunications industry. Nevertheless, these challenges also present opportunities for business transformation. They enable CHT to accelerate the deployment of energy-efficient technologies and develop low-carbon operational models, thereby enhancing climate resilience and unlocking new opportunities for sustainable growth.

To mitigate the operational impacts of climate change, CHT has been actively implementing both climate mitigation and adaptation strategies, as shown in Table 4-14. The Science Based Targets initiative (SBTi) serves as the primary benchmark for setting emission reduction targets. Key transition measures include “low-carbon technologies for telecom data centers” and the “adoption of renewable energy,” aimed at achieving 100% renewable energy usage by 2040 and net-zero emissions by 2045. Relevant strategies and implementation plans for capturing climate-related opportunities are presented in in Table 4-15.

In addition, CHT utilizes revenues generated from its internal carbon pricing mechanism as a dedicated funding source for advancing climate strategies. A carbon price of NT\$1,600 per metric ton is applied as the internal benchmark for calculating the cost of GHG emissions, and an internal carbon fee fund has been established accordingly. In 2024, a total of 51 innovation proposals were approved and funded through the internal carbon fee mechanism. The use of this fund is not limited to emission reduction initiatives—it also supports business transformation. Through innovative low-carbon strategies and technologies, CHT aims to develop new products and services aligned with climate-related opportunities.

Strategy Category	Risk Issue	Strategy Description	Implementation Details
Climate Mitigation	Domestic 2050 Net Zero Emission Policy	Establishing a decarbonization pathway aligned with the SBTi roadmap, targeting net-zero emissions by 2045—five years ahead of the International 2050 goal	SBTi Net-Zero Target Surpassing the national 2050 net-zero emissions target, CHT has set its Science Based Targets initiative (SBTi) net-zero target for 2045. To achieve this, it has committed to a range of emission reduction measures, including improving energy efficiency, adopting renewable energy, implementing telecom data center energy-saving programs, and promoting internal environmental responsibility.
		Leveraging technology to reduce carbon emissions by progressively lowering the Power Usage Effectiveness (PUE) of IDC data centers	Low-Carbon Technology for IDC Data Centers • CHT has accelerated the decommissioning of outdated and energy-intensive equipment, actively introducing Next Generation Network (NGN) devices and replacing legacy PSTN switches to reduce overall energy consumption. • Energy efficiency measures implemented in IDC data centers include dedicated hot and cold aisle containment systems and high sensible heat servers, resulting in annual electricity savings of 2.16 million kWh and a significant reduction in Power Usage Effectiveness (PUE). • Energy data collection has been fully automated, with the establishment of an energy efficiency performance monitoring center. Electricity consumption patterns are analyzed to enhance visibility and optimize energy-saving outcomes. • CHT has completed the full shutdown of its 3G network, achieving annual electricity savings of over 74 million kWh. Services have been transitioned to more energy-efficient VoLTE (Voice Over LTE) systems.

Table 4-14. Climate Risk Mitigation and Adaptation Strategies and Implementation

Strategy Category	Risk Issue	Strategy Description	Implementation Details
Climate Mitigation	Domestic 2050 Net Zero Emission Policy	Procuring and installing renewable energy systems, and promoting the use of electric vehicles through CHT's EV100 commitment	RE100 CHT joined the RE100 initiative in 2023 and committed to achieving 100% renewable energy use across all operations by 2040. As part of its renewable energy strategy, CHT has developed rooftop and ground-mounted solar photovoltaic systems on idle buildings and land, and established green base stations. As of 2024, a total of 130 sites have been developed, with a combined installed capacity of 12 MWp. In 2024, the total volume of renewable electricity generated and procured reached 72.604 million kWh. EV100 In 2024, CHT officially joined the EV100 initiative and pledged to fully electrify all engineering and public transport vehicles by 2030.
	Impact on the global supply chain	Adopting a diversified supplier strategy across the value chain, with a focus on engaging suppliers that have robust carbon management practices	Three Key Objectives of Supply Chain Carbon Management Enhancing Green Procurement and Supplier Awareness of Climate Change To fulfill its Scope 3 emission reduction targets under the Science Based Targets initiative (SBTi), CHT carefully selects suppliers, actively promotes green procurement, and communicates its environmental performance to raise suppliers' awareness of climate change issues. In procurement practices, CHT prioritizes environmentally friendly products and services with lower carbon footprints. Its green procurement strategy encourages all operational sites to give preference to: Category I: Products with official environmental certifications Category II: Products made from recycled materials, recyclable items, low-pollution goods, or those with energy-saving attributes Category III: Products certified with energy-saving, water-saving, or green building labels, as well as paper and wooden furniture certified by FSC or PEFC The strategy also includes self-declared criteria such as mobile devices, computers, monitors, servers, and network equipment certified under EPEAT Gold, RoHS, WEEE, EMAS, ECOCERT, COSMOS, or OMRI, or other products with lower environmental impacts throughout their life cycle (from raw material extraction to disposal). GHG Emissions Data Collection For customer-end network communication devices such as home gateways (HGWs), mesh access points (APs), and MOD set-top boxes (STBs), CHT requires suppliers to provide ISO 14067 product carbon footprint certification. Communication and Incentives (Shaping Supplier Behavior) Since 2017, CHT has been a member of the CDP Supply Chain Program, helping suppliers move from basic climate awareness toward effective carbon management. CHT also launched a "Sustainable Partner Certification" system, which evaluates and classifies suppliers based on type and significance, as well as audit results. Suppliers are ranked into four levels: Gold, Silver, Bronze, and Participant. Those not meeting minimum requirements are provided with guidance and a deadline for corrective action. Certified suppliers receive recognition marks according to their tier, and the certification level serves as a bonus criterion in procurement tenders. CHT also plans to expand incentive mechanisms to encourage suppliers to develop climate-friendly products and services that contribute to climate change mitigation.

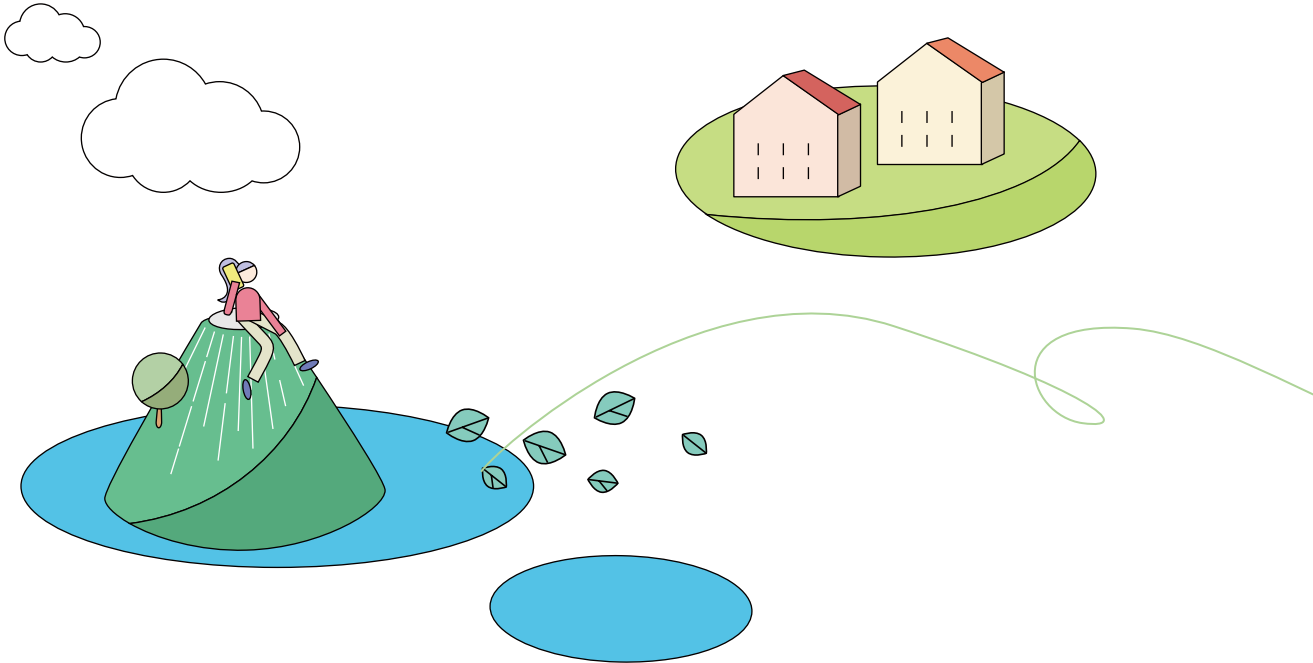
Table 4-14. Climate Risk Mitigation and Adaptation Strategies and Implementation

Strategy Category	Risk Issue	Strategy Description	Implementation Details
Climate Adaptation	Damage to telecommunications equipment and base stations – strong winds (typhoons)	Reducing losses caused by strong winds (e.g., typhoons) through regular inspections, emergency response drills, and the establishment of standardized operating procedures (SOPs) for equipment maintenance	Pre-Event Inspections - Each telecommunications equipment management unit has developed business continuity and emergency response plans for natural disaster preparedness. These plans include evacuation procedures, backup systems for equipment, and operational recovery drills during flood scenarios. Pre-Event Drills - All telecom facilities are equipped with 24/7 monitoring systems to promptly assess network conditions in the event of a sudden disaster. Response resources are prepared based on the severity of the event, and real-time updates are continuously tracked. Annual flood prevention drills are conducted at the Mobile Communication Building in the Taipei Aiguo campus, covering four key access points: the car entrance, motorcycle entrance, basement stairwell, and basement emergency exit. Flood barriers are installed at the entrances connecting the ground floor and basement levels. Establishing Standard Operating Procedures (SOPs) for Repairs - CHT has deployed mobile transmission backup equipment and conducts integrated disaster response drills involving both fixed-line and mobile networks to enhance emergency response and repair efficiency. - The construction of Optical Transport Network (OTN) routes in Hualien Guangfu, Yuli, Fengbin, and Taitung Chenggong and Guanshan has been completed to resolve the issue of single routing in the region's mountainous and coastal areas by establishing dual-routing pathways. - OTN infrastructure has also been completed in Taichung Fushou and Nantou Puli. These upgrades strengthen circuit availability and resiliency in vulnerable mountainous regions through dual-route access via OTN networks.
	Supply chain disruption due to extreme weather conditions	Improving supplier climate resilience and minimizing supply chain disruption risks by implementing a supplier evaluation mechanism and encouraging participation in the CDP Supply Chain Program	Promoting Participation in the CDP Supply Chain Program CHT conducts training sessions titled “CDP Supply Chain Program” for international suppliers” to enhance supplier awareness of climate-related issues. The training covers the following key areas: - Introduction to the international CDP initiative and its relevance to supply chain management. - Improving suppliers' understanding of climate risk management and opportunity identification. - Strengthening competencies in carbon footprint calculation and emissions reduction strategy planning, while encouraging suppliers to take more proactive climate actions

Table 4-14. Climate Risk Mitigation and Adaptation Strategies and Implementation

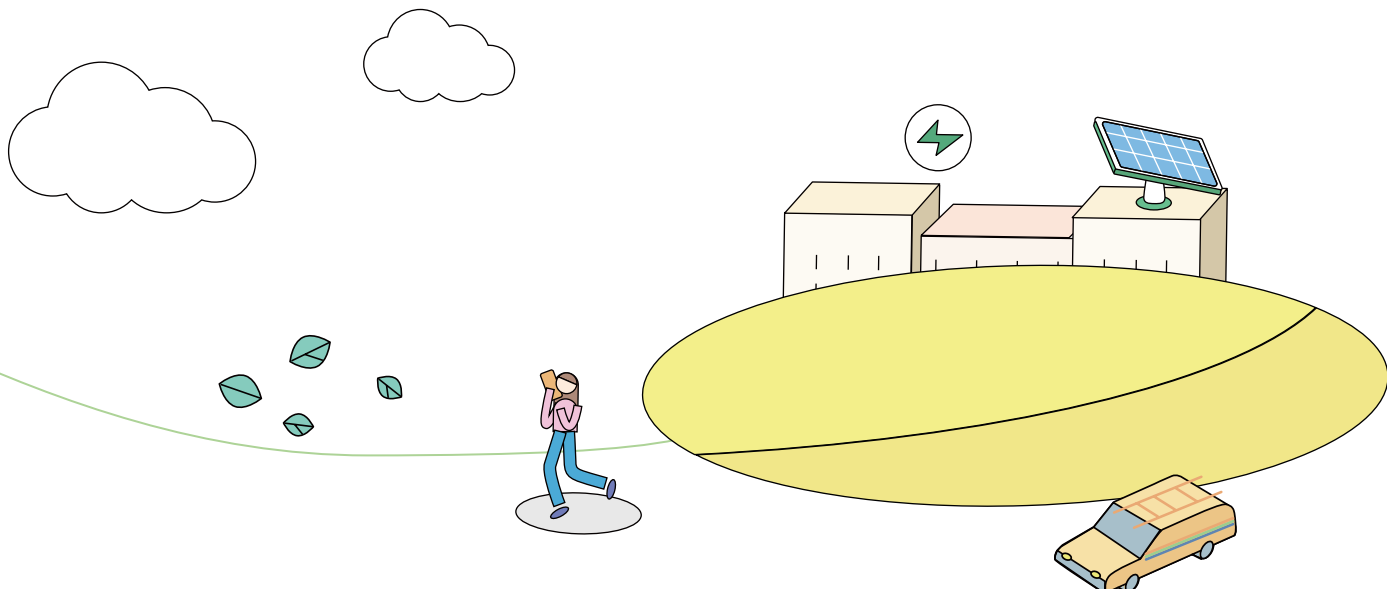
Strategy Category	Risk Issue	Strategy Description	Implementation Details
Climate Adaptation	Inundation of operational sites due to rising sea level	Installing climate-resilient infrastructure and implementing site selection criteria to address risks associated with sea-level rise, storm surges, and coastal high winds	Deployment of Climate-Resilient Infrastructure • CHT continues to strengthen its business continuity and emergency response plans, including conducting backup and service rerouting drills for remote and offshore locations. • A triple-layered network redundancy system has been established between Taiwan and Matsu—including submarine cables, microwave transmission, and satellite communications—to enhance network resilience and reduce the impact of undersea cable failures on national security, public services, and industry. • To improve disaster resilience in vulnerable mountainous facilities and remote areas in eastern Taiwan, CHT has constructed new microwave base stations and upgraded existing base stations. • Through disaster recovery systems, CHT ensures redundancy for critical network access paths and communications equipment. In the event of equipment failure, adjacent base stations can be adjusted to maintain service continuity. Site Selection Principles IDC (Internet Data Center) site selection follows strict criteria to minimize climate and operational risks. These include avoiding proximity to critical infrastructure (e.g., air routes, military facilities, or defense structures), residential areas, hazardous zones, and environmentally sensitive locations. Priority is also given to sites with access to at least two roads or a frontage of more than 20 meters, enhancing operational flexibility and customer confidence. To further ensure network resilience, each IDC site is designed with 2 to 4 vertical cable conduit spaces on both sides of the building, enabling future scalability while avoiding single-route dependency.

Table 4-14. Climate Risk Mitigation and Adaptation Strategies and Implementation



Strategy Category	Opportunity Issue	Strategy Description	Implementation Details
Climate Opportunities	Development of Energy-Efficient Network Infrastructure and Data Centers	- Construct world-class cloud data centers with hot and cold aisle containment systems to reduce Power Usage Effectiveness (PUE). - Attract large-scale and multinational enterprises to collocate in the cloud data centers and pursue strategic partnerships	Expanding Business Opportunities Through World-Class Data Centers CHT's Banqiao Internet Data Center (IDC) has been built to the highest international standard—TIA-942 Rated 4—and was officially launched in 2016. Its clientele includes global internet companies, over-the-top (OTT) service providers, as well as leading domestic firms in the finance and technology sectors.
	Leveraging 5G and IoT to advance smart city development	Promoting Smart City Development through 5G and IoT Invest in the development and deployment of smart city projects	Creating Business Opportunities Through Smart Cities CHT invests in Internet of Things (IoT)-enabled smart city projects, which include: (1) IGB (Intelligent Green Building), (2) IVS (Intelligent Video Surveillance), (3) ITS (Intelligent Transportation System), (4) IEN (Intelligent Environment Network *renamed in 2025).

Table 4-15. Climate Opportunity Strategy and Implementation



Chapter 5

Climate Risk Management

5.1

Risk Management Organization and Framework

In response to the multiple challenges posed by rapid changes in business operations and the industry—including market competition, technological evolution, regulatory adjustments, and climate change—CHT elevated its “Risk Management Committee” to a functional committee under the Board of Directors in 2023 and renamed the former management-level committee to “Risk Management Steering Committee,” establishing it as the highest decision-making and supervisory body for risk management under the Board of Directors, to ensure CHT’s stable development and sustainable operations. The risk management organization and structure is illustrated in Figure 5-1.

The “Risk Management Committee” is chaired by an independent director, with more than 50% of its members being independent directors, ensuring neutrality and objectivity in its operations. The “Risk Management Steering Committee” is responsible for reviewing, supervising and formulating enterprise risk management policies and mechanisms, and it reports regularly to both “Risk Management Committee” and the Board of Directors. In 2024, 4 management-level Risk Management Steering Committee meetings and 4 board-level Risk Management Committee meetings were held. Key concerns and guidance raised by the Risk Management Committee were concurrently reported to the Board of Directors.

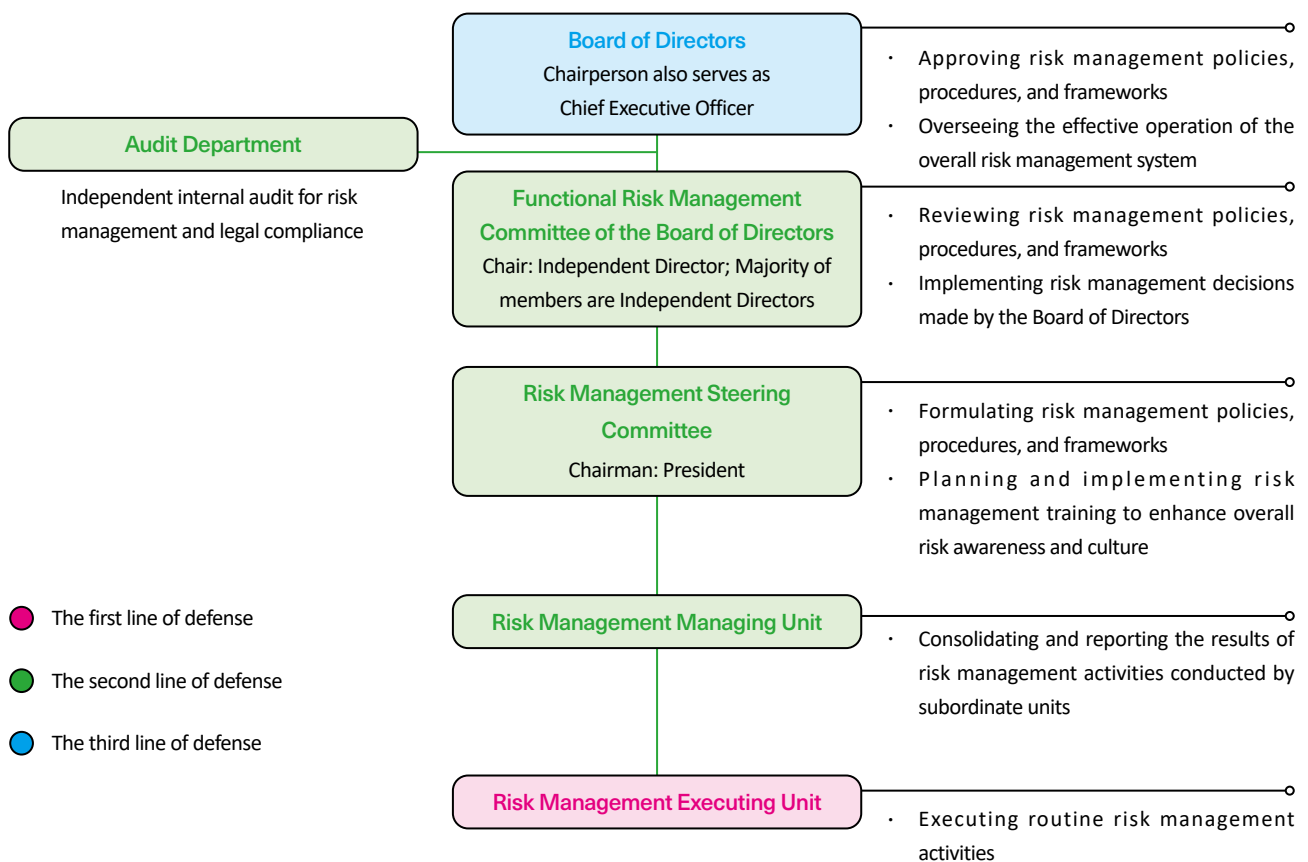


Figure 5-1. Risk Management Organization and Framework

CHT's risk management is operated in accordance with the "Three Lines of Defense" principle (as illustrated in Figure 5-2), ensuring that all risks are systematically identified, managed, and supervised throughout the organization. The first line of defense is undertaken by risk owners and operational units, who are responsible for the day-to-day management and mitigation of risks by embedding risk controls directly into daily operations. The second line of defense is led by the Risk Management Steering Committee and relevant units. This line is tasked with supervising, guiding, and adjusting CHT's risk management policies and mechanisms, and with establishing standardized procedures and guidelines. The third line of defense is carried out by the Audit Department, which conducts periodic internal audits to evaluate the effectiveness and implementation of the overall risk management system and provides recommendations for improvement on identified issues. Together, the three lines of defense create a multi-layered protective mechanism that reinforces CHT's operational resilience and long-term sustainability.

Within the risk management framework, the Board of Directors holds ultimate responsibility for defining the CHT's overall risk management policies, framework, and culture. The Risk Management Committee, a dedicated functional committee under the Board, supervises and reviews all related policies, processes, and structures. At the management level, the Risk Management Steering Committee is responsible for driving and implementing company-wide risk control activities. The Audit Department performs independent reviews of risk incidents and reports them to appropriate bodies based on the nature of the risk: realized risks are reported to the Audit Committee, while emerging or preventive risks are escalated to the Risk Management Committee. This mechanism ensures that all types of risk are addressed appropriately and managed effectively.

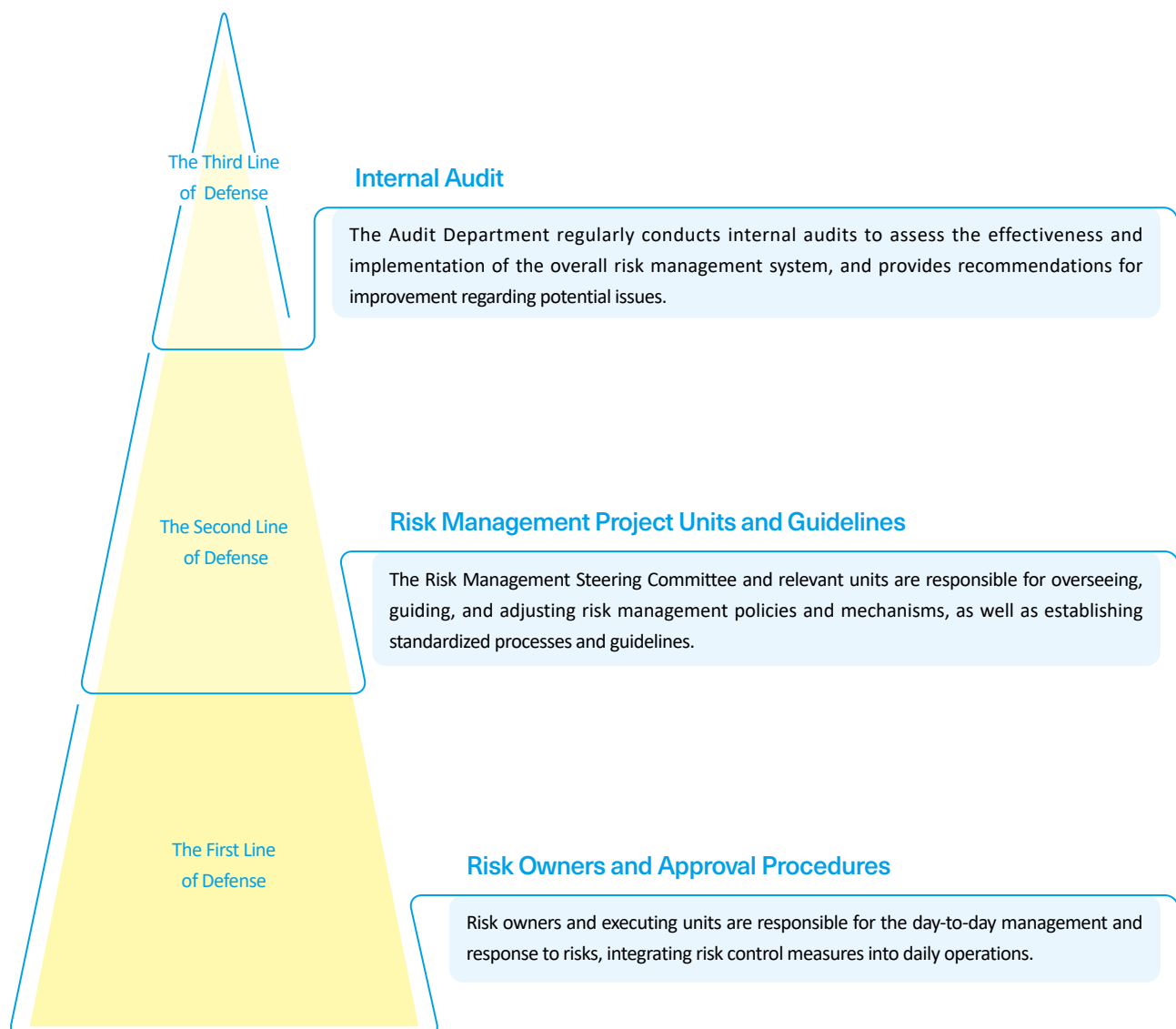


Figure 5-2. Three Lines of Defense

To effectively manage and mitigate risks, CHT has implemented an Enterprise Risk Management (ERM) system. This system enables comprehensive oversight of risks across all business operations and integrates risk management outcomes into senior management performance evaluations. In doing so, risk management is embedded into CHT’s day-to-day operations in a substantive manner. For details on CHT’s risk management system, please refer to Table 5-1.

Organization

- A Board-level functional committee—the Risk Management Committee—has been established to oversee CHT’s risk management mechanisms.
- The Risk Management Steering Committee is responsible for cross-functional communication and coordination, and for implementing risk management policies and practices across the organization.

Policies

- The Board of Directors has established the “Risk Management Policy” and the overarching risk management framework.
- “The Risk Management Rules” serve as the operational basis for all employees in executing business activities.

Management System

CHT has implemented an Enterprise Risk Management (ERM) system to monitor and control business risks on a regular basis, with rolling assessments and updates.

Assessment Tools

- The “Risk Analysis Matrix” is used to assess various categories of risk, including operational, strategic, compliance, and reporting risks.
- Standard operating procedures (SOPs) are developed as part of daily operations to help identify and evaluate potential risks.

Performance Evaluation

- The Risk Management Steering Committee promotes the implementation of risk control actions and evaluates the effectiveness of risk mitigation efforts.
- The Audit Department conducts independent internal audits and reports directly to the Board of Directors.
- Risk management outcomes are incorporated into performance evaluation indicators.

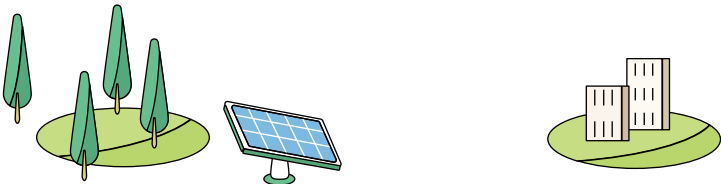
Feedback and Improvement

- Risk status is monitored monthly. The Risk Management Steering Committee meets regularly and reports its findings to both the Risk Management Committee and the Board of Directors.
- Based on resolutions from these meetings, CHT continuously enhances its risk management mechanisms to better meet the needs of enterprise-level risk management.

2024 Execution Results

- Held 4 management-level risk management meetings to identify enterprise-level risks aligned with strategic objectives and to evaluate emerging risk issues.
- Held 4 board-level Risk Management Committee meetings, and reported all key concerns and recommendations raised by committee directors to the Board.
- Actively monitored and executed various risk mitigation measures, ensuring that remaining risks remained within CHT’s risk tolerance.

Table 5-1. Risk Management System



5.2

Climate Risk Integrated into the Risk Management System

CHT integrates climate risks into its Enterprise Risk Management (ERM) system and processes (as illustrated in Figure 5-3), emphasizing real-time responses to extreme weather events and natural disasters. At the operational level, CHT embeds long-term goals such as decarbonization strategies and energy efficiency improvements, ensuring comprehensive control over environmental risks.

Through a systematic management approach, climate-related risk events can be quickly identified, classified based on scenario severity, and addressed through the development of targeted response plans. A structured communication mechanism is in place to ensure that climate risks and corresponding mitigation strategies are effectively communicated to stakeholders, reinforcing consistency and execution efficiency across the organization. Details on the integration of climate risks into the ERM framework are provided in Table 5-2.

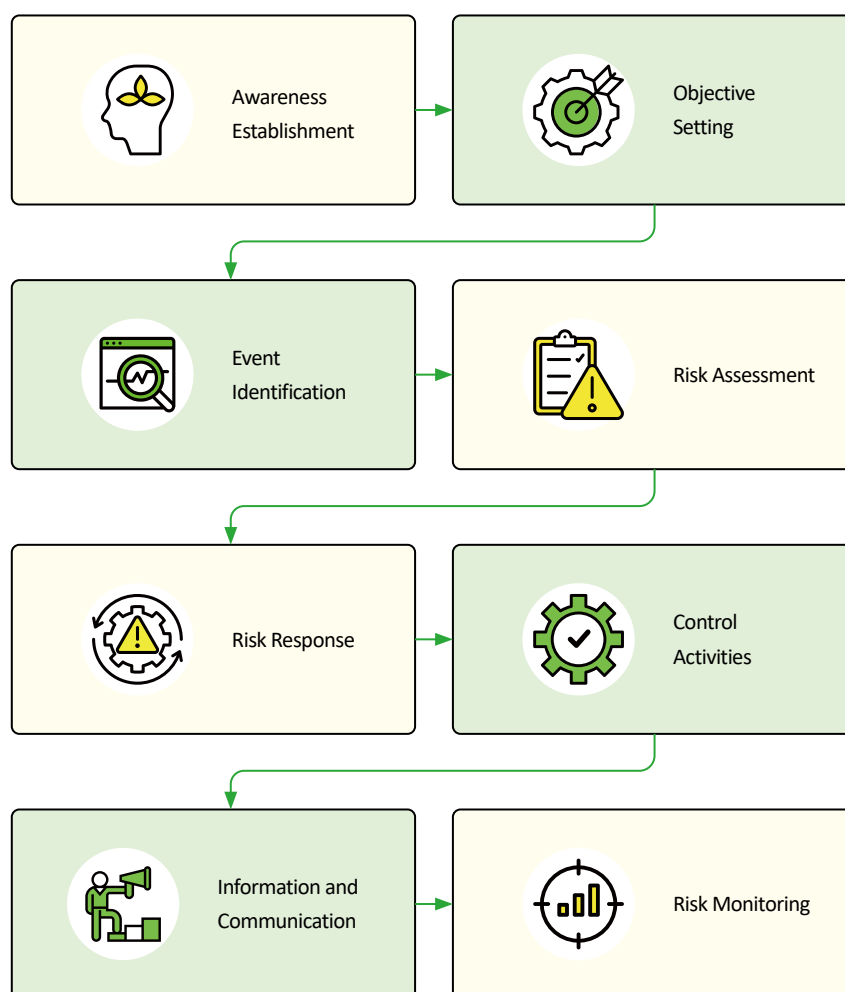


Figure 5-3. ERM Management System



**step
01**
Awareness Establishment

- Conduct regular risk management employee training, seminars, or briefings to strengthen organization-wide risk awareness.
- Build awareness of climate-related risks and extreme weather events to ensure employees understand the associated challenges and impacts.

**step
02**
Objective Setting

- Establish clear risk management objectives to ensure risks are controllable and aligned with CHT's mission and vision.
- Climate risk objectives should focus on reducing the impacts of climate change and proactively anticipating risks through effective planning.

**step
03**
Event Identification

- Analyze the operating environment to identify internal and external opportunities and risk events, and document the results in the "Risk Identification Form". In the case of unexpected or emerging risks, immediate reporting and response are required to ensure that risk events with potentially significant impacts are not overlooked.
- In identifying climate-related risks, consider the occurrence of extreme weather events and natural disasters, as well as their potential impacts on business operations. Complete the climate risk identification form accordingly and ensure timely updates to the climate risk database.

**step
04**
Risk Assessment

- When conducting risk assessments, both the possibility of risk occurrence and the impact level of each risk event must be analyzed. The adequacy of existing internal controls should also be evaluated to determine whether they are sufficient to mitigate the risk. Risk levels are determined using a "Risk Analysis Matrix", and the results are recorded in the "Risk Register" to support response planning. Identified risk events are also logged in the "Risk Register". If the risk level falls within CHT's risk appetite range, it will continue to be monitored; if it exceeds the threshold, immediate response measures must be initiated.
- Each year, CHT conducts systematic identification and assessment of climate-related risks and opportunities through senior management interviews and surveys. Based on the severity of impact and urgency of occurrence, a "Risk and Opportunity Matrix" is developed to identify risk issues that require prioritized action.

**step
05**
Risk Response

- Based on the results of the risk assessment, appropriate response strategies are formulated in accordance with the "Risk Response Flowchart". These may include risk avoidance, reduction of likelihood or impact, and risk transfer. Specific response plans are documented in the "Risk Response and Action Plan Form" to ensure effective implementation and to support the deployment of risk management actions at the operational level.
- Climate risk response planning should incorporate concrete decarbonization strategies, such as the use of renewable energy, improvements in energy efficiency, and enhanced carbon emission monitoring. These measures aim to effectively reduce both the likelihood and potential impact of climate-related risks. For climate risk issues with significant impact, solutions should be formulated immediately and integrated into the response plan as a priority.

**step
06**
Control Activities

- Ensure that risk response plans are executed in accordance with established policies and procedures, and that control measures are effectively implemented.
- In the context of climate risk control, climate actions are integrated into daily operations. Key metrics such as carbon emissions and energy consumption are continuously monitored, and performance is regularly evaluated to ensure the effectiveness of climate risk mitigation efforts.

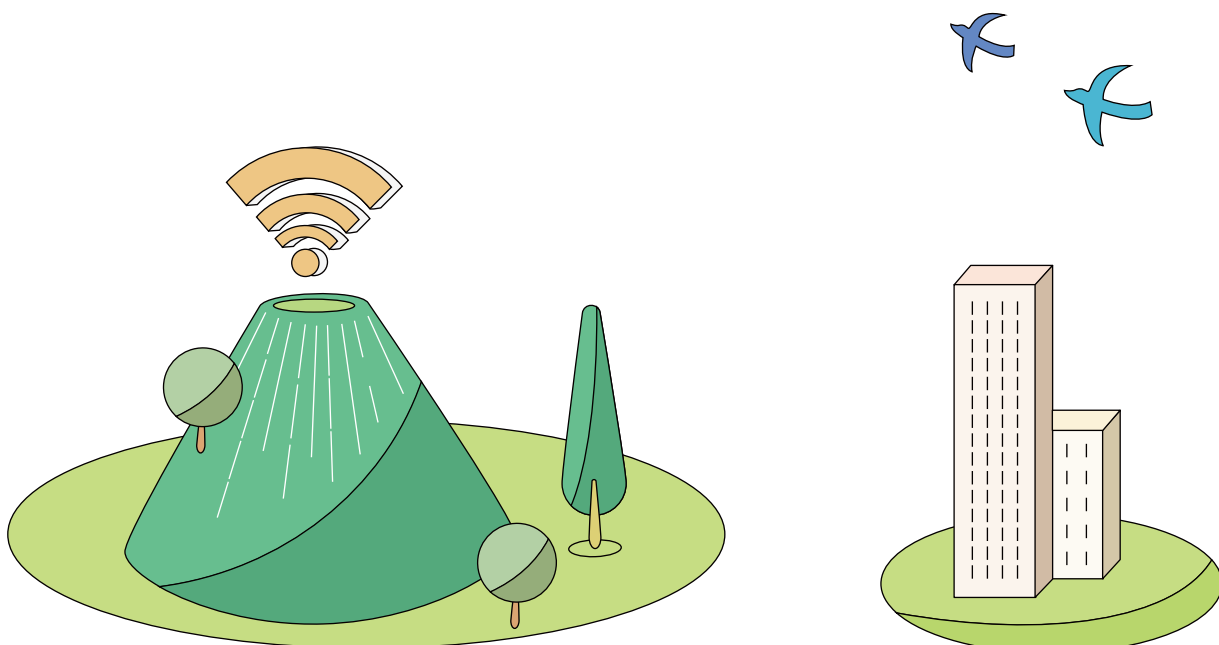
**step
07**
Information and Communication

- Timely communication of risk events and corresponding response plans is carried out with both internal and external stakeholders. Relevant information is compiled with reference to the “Risk Management Summary Table” and the “Stakeholder Mapping Table.” For risk events with significant potential impact, associated response plans must be reported promptly to the Audit Committee and, where necessary, escalated to the Board of Directors based on committee resolutions.
- As part of climate-related risk communication, CHT reports environmental impacts to stakeholders. In addition, it discloses climate risk data and the corresponding mitigation strategies through public channels.

**step
08**
Risk Monitoring

- Continuously monitor and review the implementation of risk management plans, making adjustments as needed in response to internal and external environmental changes.
- Climate risk monitoring focuses on real-time developments related to climate change. This includes closely tracking extreme weather events and shifts in environmental policies, and accordingly adjusting climate risk management strategies. Risk issues with potentially significant impacts should be prioritized for monitoring, with response strategies revised as necessary to ensure timely action and resolution.

Table 5-2. Climate Risk Integration in ERM Management System



Chapter

6

Metrics and Targets

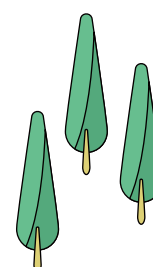
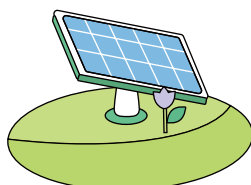
6.1

GHG Emissions and Progress Toward Carbon Reduction Targets

Since 2008, CHT has conducted greenhouse gas (GHG) inventories in accordance with the operational control approach. Over time, the scope of these inventories has been expanded to include the parent company and all subsidiaries, covering 100% of operational sites. In alignment with the Science Based Targets initiative (SBTi) guidelines and international standards, CHT conducts comprehensive inventories of Scope 1, Scope 2, and Scope 3 emissions. Carbon management initiatives are implemented through technological carbon reduction, the use of renewable energy, and collaboration across the supply chain. These efforts support the achievement of CHT's 2030 carbon reduction targets—a 50% reduction in Scope 1 and 2 emissions and a 25% reduction in Scope 3 emissions—as well as its long-term commitment to reaching net-zero emissions by 2045.

1 GHG Emissions

CHT discloses its GHG emissions data annually and commissions independent third-party verification in accordance with the GHG Protocol and ISO 14064 standards to ensure the accuracy of its emissions information. In 2024, CHT's total Scope 1, Scope 2, and Scope 3 (Categories 1–6) emissions amounted to 2,390,326.73 metric tons of CO₂e, covering seven types of greenhouse gases: CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, and NF₃. Among these, the emissions of PFCs, SF₆, and NF₃ were zero. The majority of emissions were from Scope 2 (purchased electricity), which accounted for 25.31% of the total. Scope 1 emissions, comprising only 0.85%, primarily originated from company vehicles (gasoline and diesel), generators (diesel), septic systems, and refrigerant emissions. Scope 3 emissions (Categories 3–6) totaled 1,765,032.12 metric tons of CO₂e, with the top two contributing categories being "Purchased goods and services" (613,291.41 tCO₂e) and "Capital goods" (530,294.28 tCO₂e).



2 Progress Toward Carbon Reduction Targets

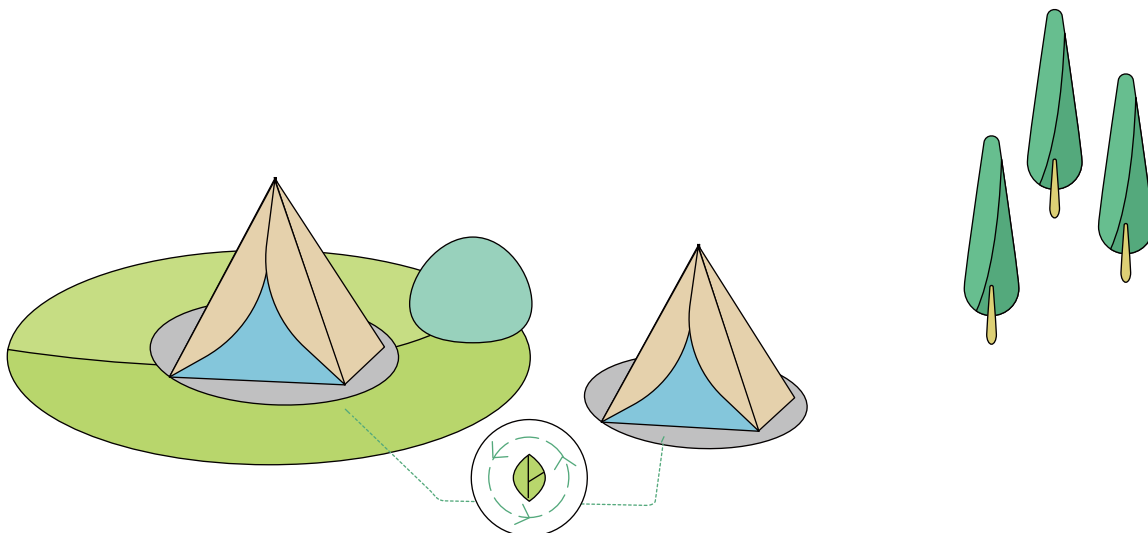
In 2024, CHT achieved a reduction of 165,026.39 metric tons of CO₂e in Scope 1 and Scope 2 emissions compared to the 2020 base year, representing a 20.88% decrease. This leaves a remaining 29.12% gap to reach the 2030 target. Details of Scope 1 and Scope 2 emissions and the level of target achievement are presented in Table 6-1. Scope 3 emissions and progress towards reduction targets are provided in Table 6-2.

Year	2020 (Base Year)	2021	2022	2023	2024
Scope 1 emissions (t-CO ₂ e)	22,192.93	17,887.47	19,185.32	18,874.89	20,315.12
Scope 2 emissions (t-CO ₂ e)	768,128.07	716,979.26	694,912.72	645,490.65	604,979.49
Total emissions (t-CO ₂ e)	790,321.00	734,866.73	714,098.04	664,365.54	625,294.61
Annual increase/ decrease rate (%)	-	-7.02%	-2.83%	-6.96%	-5.99%
Carbon reduction rate compared to the base year(%)	-	7.02%	9.64%	15.94%	20.88%
Progress toward 2030 target (%)	-	42.98%	40.36%	34.06%	29.12%

Note 5: All greenhouse gas emissions data and carbon reduction figures have been subject to internal audits and third-party verification in accordance with ISO 14064-1 standards annually since 2008, ensuring data accuracy and transparency.

Note 6: Scope 2 emissions are reported using the market-based method. Total emissions represent the sum of Scope 1 and Scope 2 (market-based) emissions.

Table 6-1. Scope 1 and Scope 2 Emissions and Progress Toward Reduction Targets



Category 3: Indirect GHG Emissions from Transportation Activities

Items	2021 emissions (t-CO ₂ e)	2022 emissions (t-CO ₂ e)	2023 emissions (t-CO ₂ e)	2024 emissions (t-CO ₂ e)
4. Upstream transportation and distribution	1,167.47	646.60	1,332.55	564.25
9. Downstream transportation and distribution	1,469.46	901.86	56.59	28.46
6. Business travel	4,771.10	1,174.65	2,948.24	4,890.50
7. Employee commuting	8,665.22	10,203.88	6,550.97	8,505.57
Subtotal	16,073.25	12,926.99	10,888.35	13,988.78

Category 4: Indirect GHG Emissions from the Products Used by the Organization

1. Purchased products and services	754,637.02	752,416.69	721,023.74	613,291.41
2. Capital goods	364,752.98	344,733.39	471,191.29	530,294.28
3. Fuel and energy-related activities	135,568.03	124,456.91	130,772.70	128,022.52
5. Waste generated in operations	1,359.40	943.59	936.19	1,234.34
8. Upstream leased assets	18,492.14	13,045.93	17,728.19	91,946.13
Subtotal	1,274,809.57	1,235,596.51	1,341,652.11	1,364,788.68

Category 5: Indirect GHG Emissions from the Use of Products from the Organization

11. Use of sold products	472,310.54	460,657.59	449,619.64	86,690.67
12. End-of-life treatment of sold products	3,167.79	1,403.50	594.91	688.02
13. Downstream leased Assets	145,217.43	115,519.72	10,346.95	242,402.51
14. Franchises	-	-	-	-
15. Investments	1,668.34	1,956.57	1,560.31	56,473.46
Subtotal	622,364.10	579,537.38	462,121.81	386,254.66

Category 6: Indirect GHG emissions from other sources

Others	-	-	-	-
Total	1,913,246.92	1,828,060.89	1,814,662.26	1,765,032.12
Carbon Reduction Ratio (%)	-	4.45%	5.15%	7.75%
Gap to 2030 carbon reduction target (%)	-	20.55%	19.85%	17.25%

Table 6-2. Scope 3 GHG Emissions and Progress Toward Carbon Reduction Targets

6.2

Climate Strategy Metrics and Targets

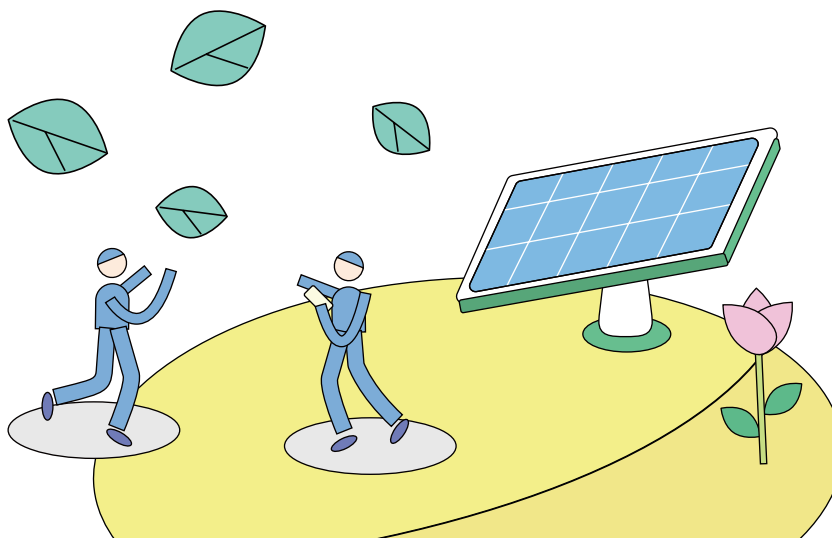
This section presents CHT's concrete goals and current progress related to climate strategies, with a focus on key performance indicators (KPIs). These include targets for net-zero emissions, renewable energy adoption, data center PUE (Power Usage Effectiveness), and climate change adaptation measures—demonstrating the Company's commitment and proactive efforts in addressing climate change. In terms of greenhouse gas (GHG) emissions reduction performance, since 2021 the Company has achieved an annual reduction rate of at least 5%. In 2024 alone, more than 500 carbon reduction initiatives were implemented, resulting in a total reduction of 135,828.07 metric tons of CO₂e, equivalent to a 17.19% decrease in emissions compared to the base year. A summary of climate strategy-related metrics and targets is provided in Tables 6-3 and 6-4.

Risk

Domestic 2050 Net Zero Emission Policy

Climate Strategy	Indicator	Target	Achievement Status of 2024 Goals
Establishing a decarbonization pathway aligned with the SBTi roadmap, targeting net-zero emissions by 2045—five years ahead of the national 2050 goal	GHG emissions (Scope 1, Scope 2, Scope 3)	SBTi Net Zero Target Achieving net zero emissions by 2045.	See Section 6.1
Leveraging technology to reduce carbon emissions by progressively lowering the Power Usage Effectiveness (PUE) of IDC data centers	PUE of IDC data centers	Low-Carbon Technology for IDC Data Centers Below 1.5 in 2030 (with 2020 as base year)	The PUE was 1.61, with an annual improvement rate of approximately 0.6% to 1%.
Procuring and installing renewable energy systems, and promoting the use of electric vehicles through CHT's EV100 commitment	Total renewable energy consumption (purchased and self-generated, in MWh)	RE100 100% renewable energy use by 2040	Renewable energy usage (procured and self-generated): 72.604 million kWh
	Electrification rate of engineering and public transport vehicles (%)	EV100 Achieving 100% electrification of engineering and public transport vehicles by 2030.	From 2024 to 2026, CHT has initiated the phased replacement of existing engineering and public transport vehicles with electric vehicles (EVs). Starting in 2027, all newly procured vehicles will be electric.

Table 6-3. Climate Risk Strategy: Targets and Current Status of Achievement



Risk

Impact on the global supply chain

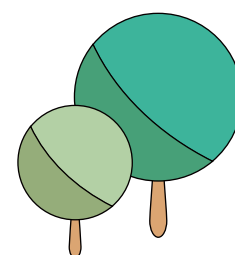
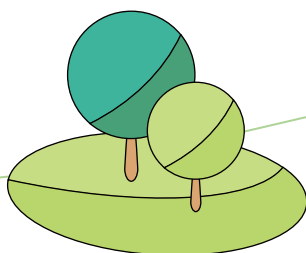
Climate Strategy	Indicator	Target	Achievement Status of 2024 Goals
Adopting a diversified supplier strategy across the value chain, with a focus on engaging suppliers that have robust carbon management practices	Percentage of green procurement in total procurement expenditure (%)	Enhancing Green Procurement and Supplier Awareness of Climate Change Green procurement will account for more than 50% of total procurement by 2035.	Achieved. In 2024, green procurement amounted to NT\$37.925 billion, accounting for 55.01% of the total procurement expenditure.
	Percentage of CPE suppliers certified under ISO 14067 product carbon footprint standard (%)	GHG Emissions Data Collection 100% CPE suppliers are required to obtain ISO 14067 carbon footprint certification.	Achieved. 100% of CPE suppliers have obtained ISO 14067 product carbon footprint certification.
	Percentage of bidders achieving the “Bronze Level” in procurement projects over NT\$50 million (%)	Communication and Incentives Starting from 2027, for procurement cases with a purchase amount of more than \$50 million, all bidders are required to obtain CHT’s “Bronze Level” certification or above.	Achieved.

Risk

Damage to telecommunications equipment and base stations – strong winds (typhoons)

Climate Strategy	Indicator	Target	Achievement Status of 2024 Goals
Reducing losses caused by strong winds (e.g., typhoons) through regular inspections, emergency response drills, and the establishment of standardized operating procedures (SOPs) for equipment maintenance	Number of inspections per quarter	- At least once a quarter, inspecting and strengthening the antenna guy wire, and fixing and tie down the dangerous objects in the base station. - Inspecting communication facilities at least once a quarter.	Achieved.
	Number of periodic emergency drills conducted	Organizing at least one natural disaster emergency response drill per year.	Achieved.

Table 6-3. Climate Risk Strategy: Targets and Current Status of Achievement



Risk

Supply chain disruption due to extreme weather conditions

Climate Strategy	Indicator	Target	Achievement Status of 2024 Goals
Improving supplier climate resilience and minimizing supply chain disruption risks by implementing a supplier evaluation mechanism and encouraging participation in the CDP Supply Chain Program	Percentage of key suppliers responding to the CDP Climate Change Questionnaire under the CDP Supply Chain Program (%)	Promoting Participation in the CDP Supply Chain Program More than 85% of key suppliers respond to CDP Climate Change Questionnaire by 2030	84% of key suppliers responded to the CDP Climate Change Questionnaire.

Risk

Inundation of operational sites due to rising sea level

Climate Strategy	Indicator	Target	Achievement Status of 2024 Goals
Installing climate-resilient infrastructure and implementing site selection criteria to address risks associated with sea-level rise, storm surges, and coastal high winds	Number of reviews per year	Site Selection Principles Review site selection criteria at least once a year	Achieved.

NOTE 7: CPE(Customer Premise Equipment) includes Home Gateway (HGW), Mesh AP, and MOD Set Top Box (STB).

Table 6-3. Climate Risk Strategy: Targets and Current Status of Achievement

Opportunities

Development of energy-efficient network infrastructure and data centers

Climate Strategy	Indicator	Target	Current Status of Achieving Targets in 2024
Building a world-class cloud data center and adopting hot and cold aisles to reduce the PUE of the data center	PUE of IDC data centers	Expanding Business Opportunities Through World-Class Data Centers Below 1.5 in 2030 (with 2020 as base year)	The PUE was 1.61, with an annual improvement rate of approximately 0.6% to 1%.

Opportunities

Leveraging 5G and IoT to advance smart city development

Climate Strategy	Indicator	Target	Current Status of Achieving Targets in 2024
Investment in smart city projects	Number of new smart infrastructure projects	Creating Business Opportunities Through Smart Cities At least 2 new cases per year	Achieved.

Table 6-4. Climate Opportunity Strategy: Targets and Current Status of Achievement

Appendix I. TCFD Conformity Statement



Conformity Statement

Task Force on Climate-related Financial Disclosure

TUV NORD declares that
Chunghwa Telecom Co., Ltd.
No.21-3, Sec. 1, Xinyi Rd., Zhongzheng Dist., Taipei City, Taiwan
中華電信股份有限公司
台灣臺北市中正區信義路1段21之3號

As a result of carrying out conformity check process based on recommendation disclosure information of Task Force on Climate-related Financial Disclosures (TCFD). Chunghwa Telecom Co., Ltd. demonstrates 4 core elements including governance, strategy, risk management, metrics and targets. There are 7 principles for effective disclosures.

The maturity model for the Climate-related Financial Disclosures is Level A+: Excellence

Independent Statements and Competence

TUV NORD Group is a leader in the supervision, testing and certification. It operates businesses and provides services in more than 150 countries around the world. The services include management systems and product certification; quality, environmental safety, social and moral audits; corporate sustainability report assurance.

TUV NORD and Chunghwa Telecom Co., Ltd. are mutually independent organizations, and there is no conflict of interest with Chunghwa Telecom Co., Ltd. or any of its affiliates or interested parties when performing the verification of the sustainability report. Regarding the TCFD Report of Chunghwa Telecom Co., Ltd., TUV NORD is based on the Chunghwa Telecom Co., Ltd. verification agreement and does not assume any legal or other responsibilities. Chunghwa Telecom Co., Ltd. is responsible for responding to any questions that intended users concerned.

Jack Yeh
General Manager

Date of Issuance: 02.May.2025
TUV NORD Taiwan Co., Ltd.
Room A1, 9F, No. 333, Sec. 2, Tun Hua S. Rd., Taipei 10669 Taiwan, R.O.C.

Page 1 of 1

Appendix II. TCFD Index

Four Pillars	Disclosure	Chapter	Page No.
Governance	Describe the board's oversight of climate-related risks and opportunities.	3.2.1 Board Functions and Climate Risk Oversight	14
	Describe management's role in assessing and managing climate-related risks and opportunities	3.2.2 Senior Management Control	14
Strategy	Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term	4.3 Significant Climate Risks and Opportunities	26
	Describe the impact of climate related risks and opportunities on the organization's businesses, strategy, and financial planning.	4.2 Climate Risk and Opportunity Financial Impact Calculation	24
	Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	4.4 Climate-related Scenario Analysis	29
Risk Management	Describe the organization's processes for identifying and assessing climate-related risks.	4.1 Process for Identifying Climate-related Risks and Opportunities	18
	Describe the organization's processes for managing climate-related risks.	3.1 Governance Structure Ch 5 Climate Risk Management	10 38
	Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	5.2 Climate Risk Integrated into the Risk Management System	41
Metrics and Targets	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	6.2 Climate Strategy Metrics and Targets	47
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	4.3 Significant Climate Risks and Opportunities 6.1 GHG Emissions and Progress Toward Carbon Reduction Targets	26 44
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	2.1 Key Milestones in Climate Action 2.2 Net-Zero Roadmap and Carbon Reduction Plan	6 8

Appendix III. Index of Cross-industry Climate-related Metrics

Indicator	Content	Chapter	Page No.
GHG Emissions	Total GHG emissions • Scope 1 • Scope 2 • Scope 3	6.1 GHG Emissions and and Progress Toward Carbon Reduction Targets	44-46
Transition Risks	PUE of IDC data centers	6.2 Climate Strategy Metrics and Targets	47-49
	Total renewable energy consumption (purchased and self-generated, in MWh)	6.2 Climate Strategy Metrics and Targets	
	Electrification rate of engineering and public transport vehicles (%)	6.2 Climate Strategy Metrics and Targets	
	Percentage of bidders achieving the “Bronze Level” in procurement projects over NT\$50 million (%)	6.2 Climate Strategy Metrics and Targets	
Physical risks	Number of emergency response drills for natural disasters conducted per year	6.2 Climate Strategy Metrics and Targets	
	Number of inspections and reinforcements of antenna support lines and hazardous objects around base stations per year	6.2 Climate Strategy Metrics and Targets	
	Number of reviews of site selection principles per year	6.2 Climate Strategy Metrics and Targets	
Climate-related Opportunities	Percentage of revenue from smart infrastructure projects in total revenue	6.2 Climate Strategy Metrics and Targets	
Capital Allocation	Percentage of green procurement in total procurement spending	6.2 Climate Strategy Metrics and Targets	
Internal Carbon Price	Implementation of internal carbon pricing/carbon fee fund	4.5 Climate Mitigation and Adaptation Strategies	33
Compensation	Linkage between senior management’s compensation and climate-related performance	3.2.3 Linkage between Board of Directors’ and Senior Management’s Compensation and their Performance in Relation to Sustainable Development	15.16

