



BE POSITIVE ALL POSSIBLE

2022 TCFD Report

Task Force on Climate-Related
Financial Disclosures

CONTENTS

Message from the Chairman	02
About This Report	03
1 Introduction	04
2 Governance	
2.1 Climate Governance Framework	06
2.2 Division of Responsibilities and Reporting Mechanisms	07
2.3 Training Programs	08
2.4 Rewards Mechanism	08

3 Strategy

3.1 Climate-/Nature-related Risks and Opportunities	09
3.2 Climate Strategy and Action	11
3.3 Climate Strategy Resilience and Certification	12
3.4 Performance from Climate-related Opportunities	13

4 Risk Management

4.1 Risk Governance	15
4.2 Risk Identification	17
4.3 Climate Change Scenario Analysis	20
4.4 Risk Management and Monitoring Procedures	29

5 Metrics and Targets

5.1 Key Metrics	31
5.2 Key Targets	33

6 Looking Ahead

.....	38
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7 Appendix

Appendix 1. TCFD Recommended Disclosures Mapping	39
Appendix 2. Related Reports and Publications	40





Message from the Chairman

As climate change issues are receiving increasing attention, governments and businesses around the world have been joining the net-zero carbon efforts. However, the Russo-Ukrainian conflict that started in February 2022 has not only affected the people of both countries but also caused turbulence in the international energy market, prompting a global reassessment of energy policies and structural transformation plans. In an effort to mitigate energy demand, the International Energy Agency (IEA) released oil stocks twice in 2022. Despite this pressure, European countries affected by the conflict have remained steadfast in their commitment to the "low-carbon transition" by accelerating the development of renewable energy and reducing reliance on fossil fuels.

According to the World Economic Forum's Global Risks Report 2023, the top four risks in the next decade are all related to climate change and environmental issues. As Fubon Financial Holdings is the only financial institution in Taiwan invited to join the World Economic Forum, it has been consistently focused on climate risk issues and global trends, aiming to become a leader in sustainable and responsible finance.

In 2021, Fubon Financial Holdings formulated a sustainability vision blueprint with "Run For Green™" as its centerpiece. It implemented a "low-carbon" strategy from top to bottom and paid close attention to international trends. It actively joined climate organizations, such as signing the Equator Principles in 2017, becoming a supporter of the Task Force on Climate-related Financial Disclosures (TCFD) in 2019, receiving a dual A rating from CDP in 2020, and releasing the first TCFD report in Taiwan's financial industry in 2021. In 2022, Fubon Financial Holdings continued to take proactive actions, including GHG emissions reduction targets approved by Science-based Targets initiative (SBTi), joining the RE100 initiative, joining the Partnership for Carbon Accounting Financials (PCAF), and becoming a member of the Asia Investor Group on Climate Change (AIGCC). These actions propelled them forward towards the goal of achieving net-zero carbon emissions by 2050, leading the development of green finance and creating sustainable mutual benefits.

With the announcement and revision of "Taiwan's Pathway to Net-Zero Emissions in 2050" and the Climate Change Response Act, industries are facing pressure for proactive transformation and climate risk management. 2022 can be seen as the year where companies faced a direct confrontation with the challenge of achieving net-zero transformation. Following the completion of the first "merger of two financial holding companies" in Taiwan's financial history, Fubon Financial Holdings now has a customer base that covers 58% of Taiwan's total population. Given the responsibility to manage climate risks and contribute to achieving net-zero emissions, Fubon Financial Holdings is dedicated to these efforts. Through four strategic approaches: 1) calculating the financial impacts from climate risk drivers translating into traditional financial risk categories, 2) assessing own operational and financial carbon emissions, 3) revising the "Sustainable Finance Policy" by modifying standards for allowing investment in or pulling investment out of high-carbon industries and actively assisting customers in transitioning, and 4) implementing low-carbon strategies in the own operations and installing solar panels, Fubon Financial Holdings is making significant strides towards achieving Net Zero.

The Ancient Roman philosopher Seneca wrote, "Almost any situation—good or bad—is affected by the attitude we bring to." Faced with the escalating climate crisis, Fubon Financial Holdings will continue to embody its brand spirit of "Be Positive All Possible™" and, with rigorous risk management, actively support subsidiaries in low-carbon transformation, enhance the culture of responsible investment, promote clean energy development, and develop insurance products that enhance asset resilience. Together with Taiwan's industries and society, Fubon Financial Holdings looks forward to stepping into a sustainable and brighter future.



About This Report

As a leader in the financial system and a mover in the low-carbon capital market, Fubon Financial Holdings (also referred to below as “the Company” or “Fubon”) has an obligation to fully understand climate-related risks and take appropriate management and mitigation measures. We hope that by setting strategic low-carbon goals and leveraging our financial influence, we can accelerate the sustainability transition of value chains, address the shared goal of mitigating global warming, and support the development of a sustainable economy. Beyond complying with international and regulatory authority norms, we have adopted the Task Force on Climate-related Financial Disclosures framework established by the Financial Stability Board.

“The Financial Sector Plays a Critical Role in Achieving Net-zero Emissions.”

This report, which covers Fubon Financial Holdings and its subsidiaries, describes how the Fubon organization identifies and assesses climate-related risks in its operations and the measures it takes to make the value chain more resilient to climate change. The content of this report is divided into six main sections. The introduction touches on Fubon’s support for international initiatives and the results achieved as well as the highlights of this report. Section 2 on “Governance” outlines the responsibilities of Fubon Financial Holdings’ board of directors and management and its governance structure. Section 3 on “Strategy” describes Fubon’s assessment of climate- and nature-related risks and opportunities, and how the results of the assessment are incorporated into such processes as operations analysis, the setting of strategies, and financial planning. It also details Fubon’s actions on climate-related opportunities. Section 4 on “Risk Management” describes the Company’s risk management framework, identification of climate-related risks, scenario analysis results, and risk response and control measures. Section 5 on “Metrics and Targets” summarizes metrics and targets related to Fubon’s decarbonization strategy that have been set for its own operations and its investment and loan positions, and Fubon’s success in achieving them. Section 6 on “Looking Ahead” highlights actions and practices adopted to achieve the targets and Fubon’s “Run For Green™” initiative that the Company hopes will lead it toward its ultimate goal of carbon neutrality.

We hope this report will convey to all stakeholders Fubon’s commitment to taking climate-change mitigation actions befitting a responsible investor and engaging in sustainable finance practices to counter climate-related risk. The maturity model for Fubon’s Climate-related Financial Disclosures achieved the highest grade “Level 5+: Excellence”, declared by BSI, a third-party organization. The environmental data disclosed in this report have all been verified under the ISO 14064-1, ISO 14001 and ISO 50001 standards.



Introduction



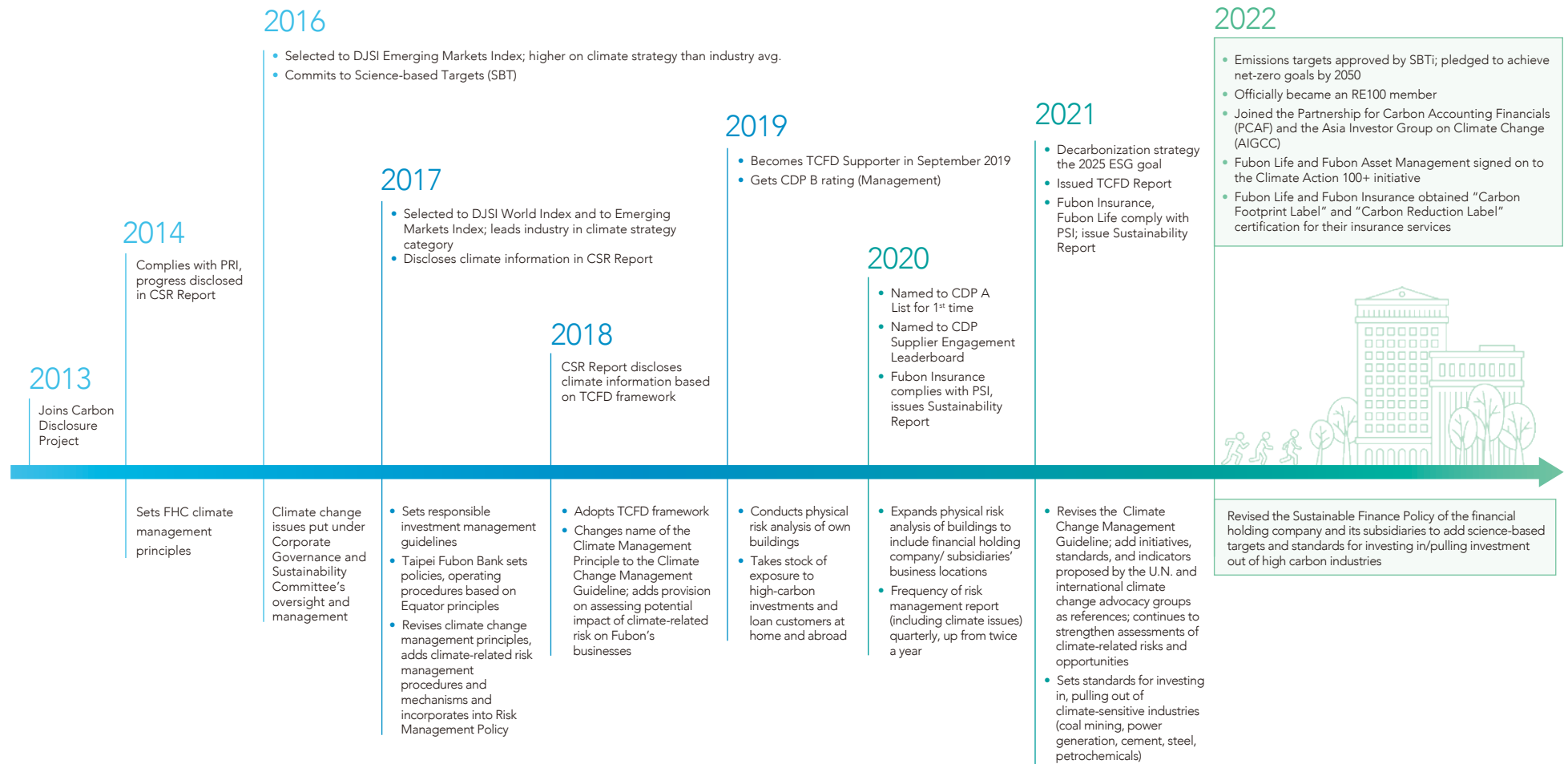
Fubon Financial Holdings has established four main strategies under its “ESG Visioning Project.” Of those, the “Decarbonization” strategy is aimed at helping customers transition to sustainable practices, improve their ESG performance through sustainable finance-related investment, loans, products, and specialized services, and develop low-carbon operating models. Fubon uses its financial influence to accelerate value chains’ sustainability transitions, hoping ultimately to align all operating activities with the Paris Agreement’s climate targets. It has also sought out investment opportunities in the clean energy era as a new driver of business growth.

Fubon continues to put a premium on strengthening its climate governance mechanism, developing cohesive strategies and management capabilities that can successfully guide the business into the future, and assessing risk and broadening its vision to guide adjustments of existing portfolios. Given the vital importance of the risks and opportunities brought by climate change in the future, Fubon has steadily reduced the climate exposure of its portfolios and adjusted their risk profiles. If a client is in a high-carbon industry, we identify the client's short-, medium-, and long-term risks to inform decisions on how to protect or reallocate capital. Understanding climate-related risks and opportunities also strengthens Fubon’s interaction with clients and enables us to provide products that support sustainability and help clients transition to a low-carbon future.

Fubon Financial Holdings adopted the TCFD risk management framework in 2018, became a TCFD supporter in September 2019, and issued the first TCFD report ever by a domestic financial institution in 2021. It has attained the CDP leadership level three years in a row, and continues to align itself with global sustainability trends by supporting and voluntarily complying with international sustainability initiatives. In 2022, Fubon joined the Partnership for Carbon Accounting Financials (PCAF) and the Asia Investor Group on Climate Change (AIGCC), and became a member of the RE100 Initiative, pledging to use only renewable energy at all of its operating locations around the world by 2040. The Company’s emissions reduction targets have been validated by the Science Based Target Initiative (also referred to below as “SBTi”), indicating its commitment to achieving net-zero emissions goals by 2050. To further strengthen the organization’s low-carbon transition and risk management, Fubon Financial Holdings and its subsidiaries continued to reinforce their qualitative and quantitative controls in 2022, as follows:

- Expanded the scope of the organization’s carbon footprint assessment, honed its risk quantification processes:
 - Initiated a TCFD optimization project designed to better identify transition and physical risks in investment and loan positions, use scenario analysis to assess the potential impact of those risks, and strengthen our command of climate-related risks to effectively control risks and create new opportunities.
 - Calculated emissions for commercial insurance and personal motor insurance based on the new standard for measuring insurance-associated emissions released by the PCAF in November 2022, and assessed the climate-related risk of underwriting portfolios.
- Established an investment decarbonization strategy, with the goal of not making any new investment in companies in the thermal coal mining/transportation, coal-fired power plants, and companies in unconventional oil and gas sectors that have not presented a carbon-reduction transition plan that is consistent with Paris Agreement targets.
- Subsidiary Fubon Insurance became Taiwan’s first non-life insurer to adopt standards for decarbonising underwriting portfolios. The goal is to no longer underwrite coal mining and related infrastructure companies, coal-fired power plants, and companies in unconventional oil and gas sectors that have not presented a carbon-reduction transition plan that is consistent with Paris Agreement targets.
- Subsidiaries Fubon Life and Fubon Asset Management signed on to the CA100+ initiative, hoping to exert the group’s leverage to interact and engage with companies invested in to achieve collective synergies in combating carbon.
- Got involved with the Taskforce on Nature-related Financial Disclosures (TNFD): Assessed the dependencies and impacts of clients on the natural environment and biodiversity, and analyzed, based on materiality principles, the related risks and their potential impact on the Company and its subsidiaries.

Climate Action Milestones



Note: In 2023, the "Fubon Financial Holding Co., Ltd. and Subsidiaries Climate Change Management Guideline" added a three-lines-of-defense framework to internal climate-related risk management controls; the "Fubon Financial Holding Co., Ltd. and Subsidiaries Sustainable Finance Policy" added the investment decarbonization strategy and underwriting standards.

2 Governance

2.1 Climate Governance Framework

Climate change is accelerating and increasingly affecting the natural environment and society in many ways. Major countries have announced net-zero emissions targets by 2050 and are drafting border carbon tax laws to prevent carbon from spreading across borders through traded goods. Taiwan's government officially incorporated its 2050 net-zero goals into the "Climate Change Response Act" and has established a unit responsible for climate change action, to be called the "the Preparatory Office of the Climate Change Agency (POCCA)," that could begin collecting carbon fees from big carbon-emitting companies in the second half of 2024. Given the global push toward net-zero, companies need to be able to identify and respond to climate-related risks and opportunities if they want to operate sustainably. They must also forge a robust corporate governance framework because corporate governance is at the heart of sustainable operations. In 2021, the Financial Supervisory Commission launched the "Corporate Governance 3.0 – Sustainable Development Roadmap" and in 2022 it issued a "Sustainable Development Roadmap" for TWSE and Taipei Exchange Listed Companies and a "Green Finance Action Plan 3.0" in support of its vision to "carry out corporate governance and forge a sound ESG ecosystem." The FSC directed companies to strengthen the organizational operations and responsibilities of their boards of directors and embed the concepts of low-carbon transitions and climate resilience in their sustainability practices. Companies were also asked to systematically review potential climate-related risks and opportunities and develop strategies to respond to climate change. These many directives reflect the important roles climate governance frameworks play in dealing with climate change issues.

Role of the Board of Directors

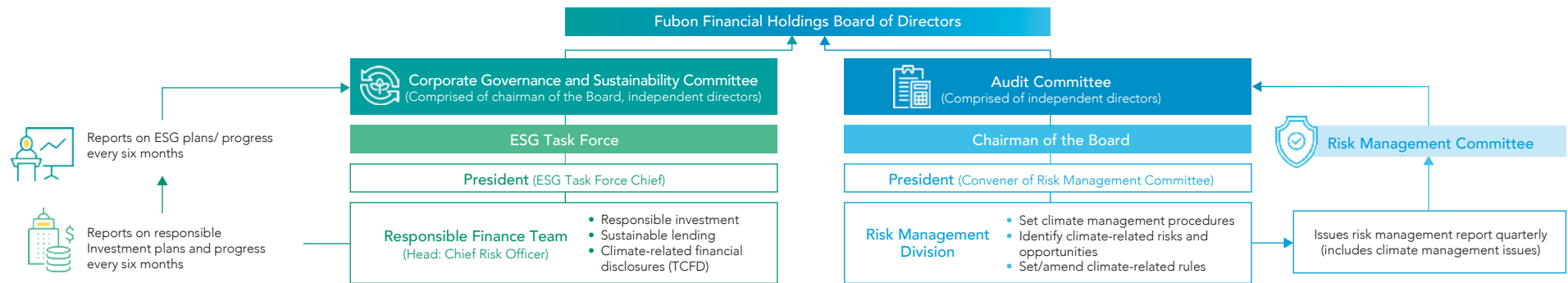
The board of directors is the top oversight unit responsible for promoting sustainability, fostering Fubon's sustainability culture, and overseeing the rollout and implementation of sustainability-related initiatives. Fubon Financial Holdings has established a "Performance Evaluation Policy for the Board of Directors and Its Functional Committees" to strengthen corporate governance through the board and its committees. The performance evaluations have both internal and external elements. External evaluations are conducted by an independent professional institution or a panel of external experts and scholars once every three years. The internal evaluations are arranged annually by the board and its functional committees and cover 48 indicators in six main areas: participation in the Company's operations, improvement in the quality of the board's decisions, the board's composition and structure, director elections and continuing education, internal controls, and participation in sustainability (ESG) initiatives. The results are reported to the Corporate Governance and Sustainability Committee and the board of directors, and are discussed and used to make improvements. The results of the 2022 evaluation showed that the board of directors and its functional committees did better in most categories than in 2021, especially in the areas of improvement in the quality of the board's decisions, director elections and continuing education, and internal controls. The Company also uses the personal evaluation mechanism to better understand what board directors need and take corrective measures.



2.2 Division of Responsibilities and Reporting Mechanisms

Aiming at the risks faced during operational processes, Fubon establishes an integrated enterprise risk management framework to build a comprehensive risk management organization and system. Risk management policies, which is approved by the board of directors, are in place to manage a variety of risks including credit risk, country risk, market risk, operational risk, asset/ liability and fluidity risk, reputation risk, emerging risk, and climate change risk. The Company also closely monitors global and industrial changes to effectively manage and reduce the impact of risks in a timely manner.

Fubon's corporate governance framework and reporting mechanisms are described below.



Board of Directors

Headed by the chairman of the board, the board of directors is the top oversight unit responsible for promoting sustainability, fostering Fubon's sustainability culture, and overseeing the promotion and implementation of sustainability-related strategies and initiatives. Among the board's duties are to review ESG strategies and execution plans, revise risk management policies, and approve funding for renewable energy transition plans, and it takes climate issues into consideration when dealing with these issues.

Corporate Governance and Sustainability Committee

The committee supports the board of directors' development and makes recommendations on the board's operations and management to strengthen its capabilities. It also works to ensure that corporate social responsibility and sustainability principles are put into practice so that the board can fulfill its responsibilities to protect the interests of the company and its employees, shareholders, and other stakeholders. Other responsibilities include overseeing sustainability management issues and evaluating their implementation, such as supervising and guiding participation in corporate governance evaluations or assessing progress in achieving climate-related goals.

ESG Task Force

An ESG Task Force has been set up under the Corporate Governance and Sustainability Committee that is led by the president of the Company. It is divided into six working groups – the Corporate Governance and Ethical Management Team, Responsible Finance Team, Innovative Services Team, Environmental Sustainability Team, Employee Care Team, and Social Commitment Team – that meet when necessary to discuss the latest sustainability-related issues. The teams are expected to come up with annual ESG plans at the beginning of each year. In preparing those plans, the teams consider climate-related trends and issues and rely on them to devise strategies and action plans, set low-carbon operating goals, and propose renewable energy budgets and capital expenditures. The plans' results are reviewed and followed up on every six months and are reported to the Corporate Governance and Sustainability Committee and then to the board of directors. To effectively track and control the plans' indicators, the teams conduct quarterly checks of the progress made in achieving goals and report the results to the head of the ESG Task Force to inform real-time adjustments as warranted.

Responsible Finance Team

Headed by the chief risk officer, the team helps manage the sustainable finance and low-carbon transition action plans of the financial holding company and its subsidiaries. It is responsible for establishing and managing sustainable finance and climate change rules and standards, coordinating assessments of climate-related risks and opportunities, and identifying and reporting material climate-related risks and opportunities. It was also the unit responsible for Fubon's admission to the AIGCC. Major subsidiaries have also

set up responsible finance teams that handle carbon inventories, impact assessments, and the setting of strategies related to the Company's investments and credit and insurance underwriting businesses. These teams closely monitor international sustainability-oriented organizations, such as the Intergovernmental Panel on Climate Change (IPCC), DJSI, CDP, and SBTi, and domestic and overseas ratings standards and initiatives to stay informed on climate issues. They also hold occasional ESG meetings to provide updates on the latest developments in the sustainability field and devise strategies, action plans and goals based on domestic and overseas trends that are adjusted as necessary. These strategies and plans are submitted for approval to senior managers or the board of directors, depending on each company's required level of authority for approval.

Audit Committee

Its main responsibilities are monitoring the effectiveness of the Company's internal controls, overseeing the appropriateness of internal compliance procedures, and supervising the management of existing or potential risks. The financial holding company's quarterly risk report is submitted to the Audit Committee for review before being forwarded to the board of directors.

Risk Management Committee

The committee is led by the Company's president, who serves as its convener, and consists of a chief secretary (the chief risk officer), and several members (subsidiaries' most senior risk management officers). It is responsible for overseeing the climate risk management of the financial holding company and its subsidiaries and reviewing, guiding, and coordinating the management of climate-related risks.

Risk Management Division

Coordinates and handles climate change-related financial disclosure projects and guides subsidiaries in implementing climate change management issues; these activities are included in the risk management report submitted quarterly to the Risk Management Committee, Audit Committee, and board of directors.

2.3 Training Programs

Fubon puts a high priority on talent development and provides professional growth opportunities and resources. It has established "Directions for the Implementation of Continuing Education for Directors" and organizes courses catering to board directors and subsidiaries' board directors and supervisors every year. The courses cover themes related to corporate governance, such as finance, risk management, information security, sales, and corporate social responsibility and are considered part of the continuing education roadmap for directors. To reinforce directors' specialized knowledge and keep them up to date on the latest management trends, Fubon occasionally feeds them information on a diverse range of courses or seminars held by outside institutions on such topics as ESG issues, compliance, financial reporting, and risk management. In 2022, the courses arranged for directors were on sustainable finance, climate change, net-zero emissions, and carbon pricing (including "Net-zero emissions and corporate governance: The outlook for Taiwan's sustainability taxonomy framework" on April 21; "Carbon Pricing Mechanisms" on April 29; "Net-zero challenges for Taiwan's petrochemical industry: Analysis of low-carbon technologies and market transitions" on May 6; and "Global Sustainable Finance Trends and Responses" on Oct. 7). These courses have helped Fubon forge a corporate climate governance culture from the top down.

In addition to the aforementioned executive management courses, the organization also provides multiple technical courses for responsible managers and staff members. These courses are "Net Zero Emissions and Corporate Governance/Industry Low-carbon Technology and Market Transformation Analysis" on Sep. 8; "Carbon Pricing Mechanisms/TCFD Assessment under Climate Change" on Sep. 14; "Sustainable Finance: Classification Methodology Development and Promotion/Net Zero Challenges in Taiwan's Petrochemical Industry" on Sep 20. Additionally, an online ESG course has been launched among the financial holding company and its subsidiaries. This course covers topics related to climate risk and sustainable finance, aiming to enhance the skills of employees at all levels to identify and evaluate climate-related risks and opportunities.

In the second half of 2022, Fubon launched a TCFD optimization project. The heads of the Company's and subsidiaries' responsible finance teams met every week in the first stage of the project. At these meetings, external consultants provided valuable information and techniques related to PCAF carbon accounting, physical risk assessments and scenario analysis. This created an internal flow of information on these topics and helped cultivate the ability to conduct climate risk assessments and analyses in-house. The consultants also held a three-hour class and workshop for managers of Fubon Insurance departments and people who deal directly with commercial and personal motor insurance to teach them how to calculate emissions for those types of insurance. The course gave them an understanding of carbon accounting goals for those types of insurance and calculation methods (including getting a feel for attribution factor concepts and guiding principles), so that they could calculate insurance-associated emissions themselves. In the future, as computational methods become more comprehensive, it will be possible to improve data quality and further utilize it in formulating relevant decarbonization strategies.

Meanwhile, the Company arranged for an external instructor to discuss the concepts behind the Taskforce on Nature-related Financial Disclosures, its reporting framework, and how it defines and addresses risks and opportunities to help align Fubon with the TNFD initiative. The instructor also explained how to analyze the dependencies and impacts of Fubon's loan clients and the companies it has invested in on the natural environment to lay the foundation for identifying related risks and opportunities. The courses were targeted at the Company's sustainability departments, members of the Responsible Finance team, and dedicated personnel of subsidiaries' Responsible Finance teams and their supervisors.

2.4 Rewards Mechanism



All Fubon employees set individual goals and workplace behavior standards every year based on the Company's "Performance Evaluation Policy." A key indicator for people in most types of jobs is "ESG promotion and implementation." Fubon requires that at least 5% of the performance evaluations of the chairman and president of Fubon Financial Holdings and managers a rung lower than the president, and subsidiary chairmen, presidents, and managers whose duties and responsibilities are related to ESG promotion or execution be based on their ESG performance. Subsidiary chairmen and presidents set ESG-related goals based on the businesses they manage. In 2022, 5%-20% of the performance evaluations of subsidiary chairmen and presidents were tied to ESG-related goals. For top executives and people directly under them at the financial holding company and subsidiaries, at least 5% of their evaluations for important business indicators must be for ESG goals based on their specific business and ESG responsibilities, and in 2022 that weighting was 10%-60% for ESG-related goals. For all employees, 10% of their evaluations were based on workplace behavior goals, including embracing an ESG spirit and adopting ESG strategies in their daily jobs, to give employees an incentive to promote ESG at work.



3 Strategy

3.1 Climate-/Nature-related Risks and Opportunities

Climate-related risks are generally divided into “physical risk” and “transition risk.” “Physical risk” represents the physical impacts of long-term changes to the climate and extreme weather events, while “transition risk” results from efforts by governments around the world to curb carbon emissions through taxes, subsidies, and strict regulations, or from changes in technologies or market preferences that affect a company’s costs or revenues. Both types of risk can adversely impact the Company by directly affecting its operations or indirectly affecting its value chain, including suppliers and financing/insuring clients. Based on the “Fubon Financial Holding Co., Ltd. and Subsidiaries Climate Change Management Guideline,” Fubon assesses and identifies climate-related risks and opportunities on an annual basis, and a list of climate-related risks is drawn up based on climate-related information collected from around the world. That list includes two major categories of risk: transition risks (current regulation, emerging regulation, legal, technology, market, and reputation risk) and physical risks (acute and chronic), totalling 17 climate-related risk items in 2022. Each subsidiary assessed their potential vulnerability¹ to and potential impact from those 17 risks based on the specific characteristics of their businesses as well as the likelihood of the risks occurring, and then plotted the results on a risk matrix to determine each risk’s materiality. The financial holding company compiled the climate-related risks identified by each subsidiary and selected the three³ biggest transition risks and physical risks at the financial holding company level based on a weighted formula², and ranked them by their materiality as follows:

Climate-related Risk Type	Climate-related Risks	Impact	Corresponding Traditional Risks ⁴	Impact Cycle	
 Transition Risks	Reputation	Increased stakeholder concern or negative stakeholder feedback	Failure to carry out and deliver on the actions pledged to address climate change could affect the sentiment and willingness to invest of stakeholders.	Reputation	Short/medium/long term
	Legal and Policy	Enhanced emissions-reporting obligations	Existing laws and regulations are requiring companies to expand the scope of their greenhouse gas emissions inventories and broadening their disclosure requirements, increasing the operating costs of companies Fubon invests in, loans money to, or insures.	Credit/Operational	Short/medium term
		Increased pricing of GHG emissions	If the price of greenhouse gas emissions rises, the costs of Fubon’s own operations and those of companies Fubon invests in, loans money to, or insures will also go up. Companies that do not engage in energy transitions will face high carbon taxes/fees or carbon fines, which could result in more unpaid loans or defaults by credit customers, fluctuations in prices for investment assets, or a crowding out of companies’ ability to pay insurance premiums. Those scenarios would all hurt the net profit, net worth, and premium income of the Company and its subsidiaries.	Credit/Market/Operational/Insurance	Medium/long term
 Physical Risks	Chronic	Rising mean temperatures	Extreme weather events could result in energy shortages or changes in commodity prices, labor shortages, and higher operating costs; changes in temperatures could increase mortality and morbidity rates, resulting in increased payouts on insurance claims.	Insurance/Operational	Medium/long term
		Changes in precipitation patterns and extreme variability in weather patterns	Changing climate patterns could result in water shortages and food crises, which could lead to additional costs in Fubon’s own operations, and higher operating costs and financial losses for Fubon loan clients and companies it has invested in.	Credit/Market/Operational	Medium/long term
	Acute	Increased severity of extreme weather events	Increased severity of extreme weather events, changes in rainfall patterns, and extreme changes in weather patterns may directly lead to financial losses for Fubon loan clients and companies it has invested in while also affecting Fubon’s own operations and its payouts of insurance claims.	Credit/Liquidity/Operational/Insurance	Short/medium term

Note 1: Short term- within 2 years (until 2024); medium term- 2-5 years (2025-2027); long term- more than 5 years (2028 and beyond).

Note 2: Most of Fubon’s corporate clients are Taiwanese companies; there is not much climate-related litigation in Taiwan at present, and litigation risk is low.

1 Potential vulnerability: Degree to which a company is prepared for a risk and its ability to adapt to that risk; Potential impact: Estimate of the impact on a company if the risk occurs; Likelihood: Probability of the climate-related risk occurring within 10 years.

2 The weighted formula was based on the averages of figures from each subsidiary’s individual financial reports audited and certified by certified public accountants over the past three years, and was calculated using a weighting of 70% shareholder equity and 30% net income.

3 Depending on the risk identification of subsidiary companies, the financial holding company conducts internal discussions and adds climate-related risks that require attention, if deemed necessary.

4 Fubon incorporates climate-related risks into its integrated corporate risk management framework. Risk management policies are in place to manage credit risk, country risk, market risk, operational risk, insurance risk, asset/ liability and liquidity risk, reputation risk, and emerging risk.

Nature-related Risk Assessments

In December 2022, the United Nations Biodiversity Conference (COP 15) adopted the Kunming-Montreal Global Biodiversity Framework, providing the impetus for governments, companies, and investors to face up to the wanton destruction of natural ecosystems by human activity and the world's accelerating loss of biodiversity. It also spurred companies to pay more attention to the TNFD and consider their impact on the natural environment and biodiversity when making decisions to avoid adversely affecting ecosystems or help restore and protect them. Fubon has actively participated in TNFD forums to strengthen its understanding of the TNFD framework and identify TNFD-related risks and responses from a broader perspective. With risks come opportunities, and a report published by the World Economic Forum in 2020 offered insights into the importance of nature-positive solutions and estimated they could create US\$10.1 trillion in annual business value and 395 million jobs by 2030. The Company will continue to participate in and develop nature transition plans and opportunities.

Nature-related Risk Type		Nature-related Risks	Impact	Corresponding Traditional Risks	Impact Cycle
Transition Risks	Legal and Policy	Company operates in an ecological conservation zone as defined by law	A business location is close to or in an ecological conservation zone after a change in the law, and the company has to carry out contingency measures or relocate, in either case increasing costs.	Credit/Operational	Medium/long term
		Heightened risk of nature-related fines or litigation	Could face new laws or regulations, fines, or litigation.	Credit/Reputation	Medium/long term
	Technology	A new technology developed that adds to costs but does not deliver as expected	New technology or equipment developed to reduce damage to nature, increasing costs and affecting profitability.	Credit	Long term
	Market	Commodity prices rise, pushing customer costs higher	Shortages of natural resources could push prices higher, leading to increased costs and lower profits.	Credit	Short/medium/long term
	Reputation	The cost of reputational risks goes up or revenues fall	The company's image takes a hit because of its operations' harmful effect on nature and the environment, affecting revenue.	Reputation	Short/medium/long term
Physical Risks	Acute	Uneven rainfall increases operating risks	Companies that are relatively dependent on water could face a bigger impact from uneven rainfall.	Operational/Liquidity/ Credit/ Insurance	Short/medium/long term
	Chronic	Soil degradation, pollution	The productivity of the soil declines or product quality suffers.	Credit/Insurance	Medium/long term

Note: Short term- within 2 years (until 2024); medium term- 2-5 years (2025-2027); long term- more than 5 years (2028 and beyond).

The financial holding company compiled the climate-related opportunities identified by subsidiaries and ranked them by their materiality. The impact and cycles are as follows:

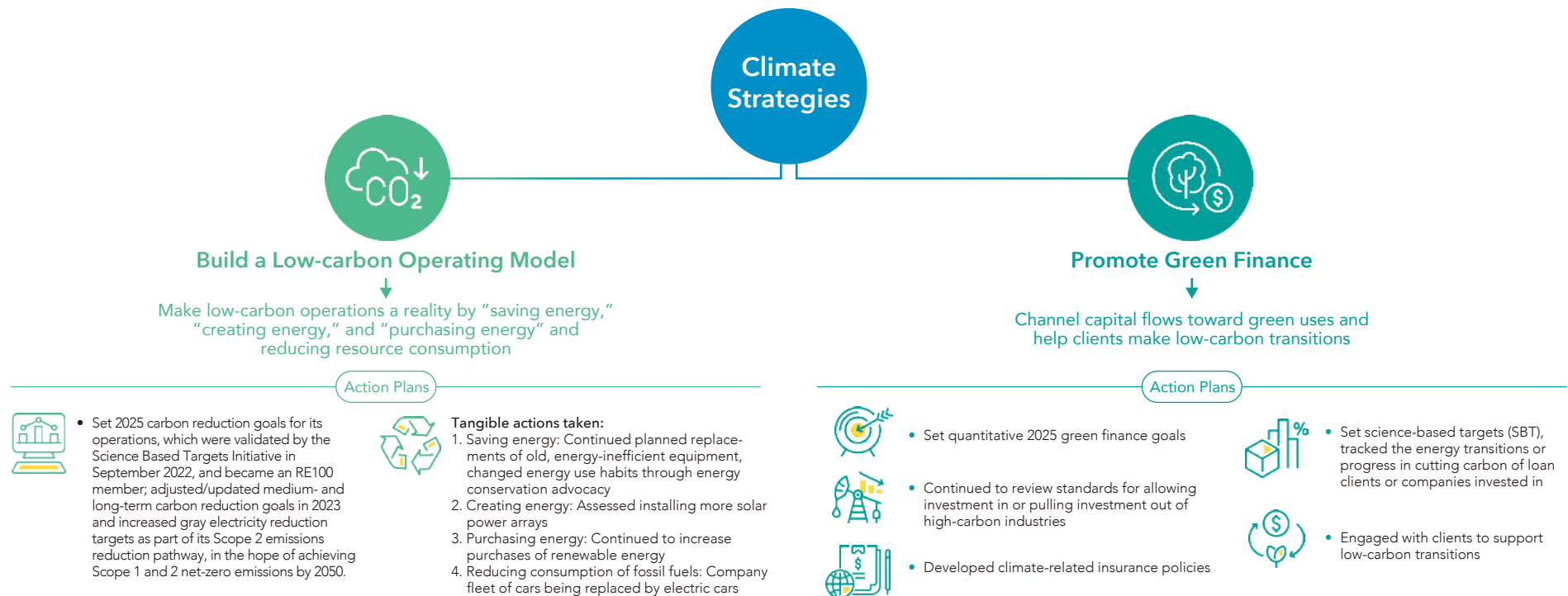
Climate-related Opportunity Type	Climate-related Opportunities	Impact	Impact Cycle
Products and Services	Development of new products or services through R&D and innovation	<ul style="list-style-type: none"> Promoted sustainability-linked loans to reward companies that strive to reduce greenhouse gas emissions and water consumption. Customers who achieve tangible results get preferential interest rates on the loans. Sustainability-oriented credit plans offer lower interest rates on credit for the purchase of energy-saving/eco-friendly equipment for a company or green building. Has developed green energy insurance products (including eco-friendly car insurance, green energy insurance, and insurance for electric motorbike sharing services); has also planned and rolled out agriculture insurance products that offer farmers and aquaculture operators insurance options that help them divert risks from natural disasters. 	Short/medium/long term
Markets	Access to new markets	<ul style="list-style-type: none"> Continued to promote green finance investment and loans that promote energy transitions, carbon reduction in the value chain, economic sustainability, low-carbon technology investment, and green bonds; actively provided credit to green energy companies/green power businesses. 	Short/medium/long term
Resource Efficiency	Use of recycling	<ul style="list-style-type: none"> Reduced paper consumption and promoted resource recycling and reuse to use resources more efficiently. 	Short/medium/long term
Energy Source	Use of lower-emission sources of energy	<ul style="list-style-type: none"> Solar power arrays installed on Fubon-owned office buildings; used low-carbon equipment (such as LED lights) to achieve green energy goals. 	Short/medium term
Resilience	Resource substitutes/diversification	<ul style="list-style-type: none"> Participated in renewable energy initiatives and adopted energy-saving measures. 	Short/medium/long term

Note: Short term- within 2 years (until 2024); medium term- 2-5 years (2025-2027); long term- more than 5 years (2028 and beyond).

3.2 Climate Strategy and Action

Fubon's main strategy to respond to climate-related risks and opportunities revolves around "decarbonization." The strategy focuses on two areas in particular – "low-carbon operations" and "green finance" – and on developing initiatives related to those issues, strengthening communications with stakeholders, and living up to their expectations. In terms of low-carbon operations, Fubon is determined to deploy a low-carbon operating model. It has previously set a 2025 operational carbon reduction targets. In response to Fubon's SBT targets validated by the SBTi in September 2022, as well as becoming a member of RE100 in the same year, Fubon adjusted its medium- and long-term operational carbon reduction targets accordingly, added a target for reducing gray electricity consumption, and continued, along with its subsidiaries, to gradually meet its carbon reduction and green energy commitment by "saving energy," "creating energy," and "purchasing energy." To be environmentally responsible in other environmental areas, Fubon has set water conservation targets and waste and copy paper reduction targets, and taken other resource-saving measures such as updating related equipment and systems, strengthening internal management and publicity, and holding conservation competitions. These steps have all supported Fubon's low-carbon operations vision. In terms of green finance, the Company has set quantitative 2025 green finance goals and monitors the latest international trends and regulatory and policy requirements and practices, channels capital flows to green uses, and fully supports the development of renewable energy and low-carbon technologies. At the same time, Fubon helps clients in high-carbon industries undertake low-carbon transitions, engaging more with them in the hope of getting them to adjust their attitudes and practices and joining with Fubon in pursuing the 2050 net-zero emissions goal.

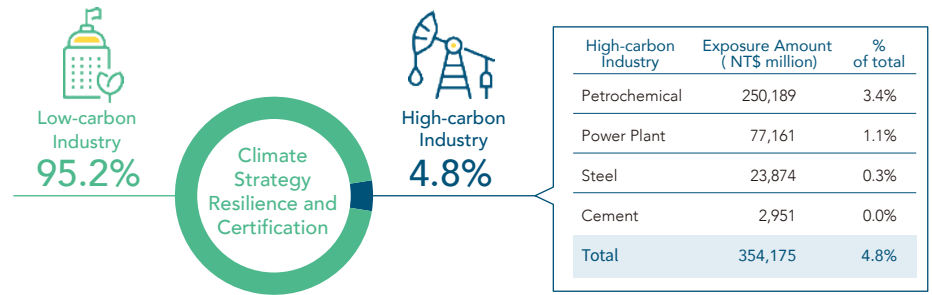
Climate Strategies and Action Plans



Note: For specific targets, see Section 5 of this report.

3.3 Climate Strategy Resilience and Certification




As of the end of 2022, the total credit and investment exposure of Fubon’s main subsidiaries (Fubon Life, Fubon Insurance, Taipei Fubon Bank, Fubon Bank (Hong Kong), and Fubon Securities) to high-carbon industries was NT\$354.2 billion, led by exposure to the petrochemical industry, followed by power plants. There was no exposure to the coal mining industry. For exposure by high-carbon industry and share, please see the table on the right. Total exposure to high-carbon industries accounted for under 5% of Fubon Financial Holdings’ total exposure, and the Company has adopted a carbon reduction strategy for its credit business and investments, hoping to use its financial leverage to help clients with low-carbon transitions.



3.4 Performance from Climate-related Opportunities

Sustainability-oriented Investment/Financing

In 2022, Fubon continued to expand its ESG-related investment and loan portfolios, with low-carbon and renewable energy investment and loan amounts on the rise, reflecting the Company's strong commitment to responsible finance.

SDGs	Action Plans	Type of Investment	2018	2019	2020	2021	2022	
			Unit: NT\$100 million					
 7 AFFORDABLE AND CLEAN ENERGY	Invest in green energy or alternative energy enterprises	Wind power and solar power	Stocks	68	52	53	78	80
		Wind power and solar power	Loans	42	89	139	197	276
		Green bonds	Bonds	139	126	143	284	371
		Green bonds ^{Note1}	Issued	10	-	-	-	10
		Sustainability bonds	Issued				10	-
		Social responsibility bonds	Issued				10	-
		Low-carbon investment ^{Note2}	Stocks / Bonds	-	16,017	16,780	18,705	19,478
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	Invest in planned property development projects with energy-saving designs and invest in basic infrastructure	Planned property developments with energy-saving designs	Total project budgets	520	514	642	678	877
		Green Building	Loans	122	131	180	308	409
		Seeking out basic infrastructure investment opportunities	Funds	80	139	230	328	477
 8 DECENT WORK AND ECONOMIC GROWTH	Invest in Taiwanese enterprises with strong ESG records and ESG-themed funds, invest in six core strategic industries, public infrastructure and long-term care enterprises	Companies rated as good ESG performers	Stocks / Bonds / Funds	2,887	4,198	4,713	5,735	5,715
		Investment in the six core strategic industries, public infrastructure and long-term care enterprises ^{Note3}	Stocks / Bonds	3,490	3,937	5,227	6,019	5,216
		Green finance ^{Note3}	Loans	899	870	936	879	1,168

Note 1: The NT\$1 billion in green bonds (G107C7) issued in 2022 received green bond certification from the Taipei Exchange.

Note 2: Low-carbon investment refers to stocks of constituent companies in the MSCI ACWI Low Carbon Target Index.

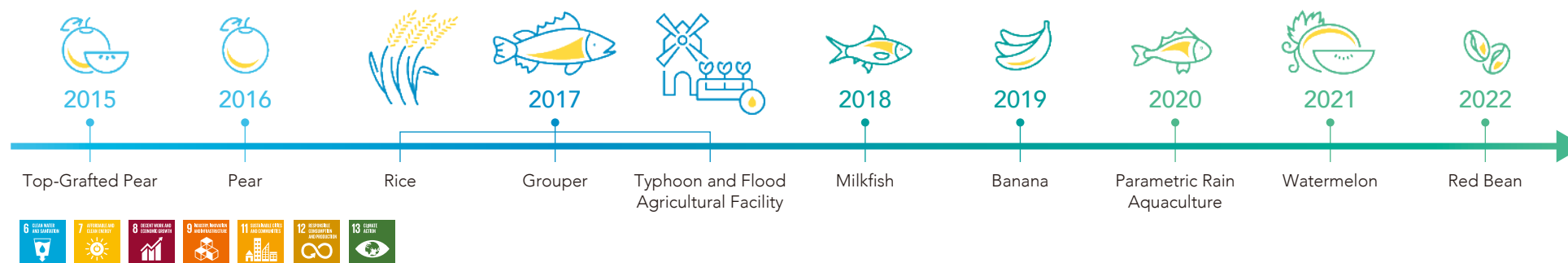
Note 3: The six core strategic industries plan was founded on the government's original 5+2 innovative industries plan, AI and 5G. The original category for investment in "enterprises covered under the 5+2 industries, basic infrastructure and social welfare" has been replaced by investment in "six core strategic industries, public infrastructure, and long-term care enterprises", and green energy technologies and other sectors recognized as green energy-related" has been replaced by "green finance" (including green industry loans, sustainability-linked loans and green spending loans not covered in the wind power and solar power or green building categories in the table above).

Climate-related Insurance Products

Subsidiary Fubon Insurance complies with the Principles for Sustainable Insurance and offers a range of climate-related insurance products, including eco-friendly vehicle insurance, green energy insurance, and insurance for electric motorbike sharing services. Its line of agriculture insurance includes crop and aquaculture insurance and coverage of agriculture facilities against typhoon and flood damage. Fubon Insurance has begun to put controls on engineering insurance for coal-related businesses, and beyond supporting green energy development, it has followed international trends by getting less involved in insuring coal-related projects and property. To give companies time to go green and reduce their carbon footprints, however, it has taken the approach of gradually reducing the coverage it underwrites for each policy while helping clients with insurance planning for their transition to green energy.

Fubon Insurance provides business continuity planning and post-disaster loss control services that help customers quickly rebuild their operations and reduce capital expenditures when a disaster occurs, helping mitigate the impact of major disruptions. Complete protection against natural disasters is also provided to companies and the public through earthquake, typhoon and flood insurance and business interruption insurance with the backing of the global reinsurance market. At the same time, Fubon Insurance has been an active participant in the Council of Agriculture's pilot program for crop insurance, developing insurance products best suited to Taiwan. Since its launch of Taiwan's first agriculture insurance policy (for top grafted pear crops) in 2015, the company has introduced policies covering pears, rice, bananas, grouper, milkfish, striped bass, tilapia, watermelons, and red beans, as well as typhoon and flood insurance for agricultural facilities. These products give Taiwan's farmers and aquaculture operators insurance options that help them divert risks from natural disasters. Fubon Insurance has also worked closely with experts in other fields to develop innovative products tailored to the special characteristics of different crops.

Fubon Insurance has made harnessing its core competencies to create eco-friendly products and services a top priority. Beyond using its influence to push green concepts, it also hopes to achieve its vision of a low-carbon lifestyle and environmental sustainability by giving customers incentives to get involved.



Climate-related Insurance Policies	2019	2020	2021	2022	2019	2020	2021	2022
	No. of Policies				Premium Income (NT\$ million)			
Natural Disaster and Agriculture Insurance	495,683	520,726	525,179	532,448	3,194	3,796	3,918	4,039
Insurance for Green Energy Products	9,968	13,745	35,172	43,895	1,067	990	1,030	1,349
Total	505,651	534,471	560,351	576,343	4,261	4,786	4,948	5,388
Share of total underwriting portfolio (%)	3.9%	4.1%	3.6%	4.0%	10.2%	10.6%	9.7%	10.0%

Note: For more details on Natural Disaster and Agriculture Insurance and Insurance for Green Energy Products, please see the 2022 Sustainability Report pg.46-47.

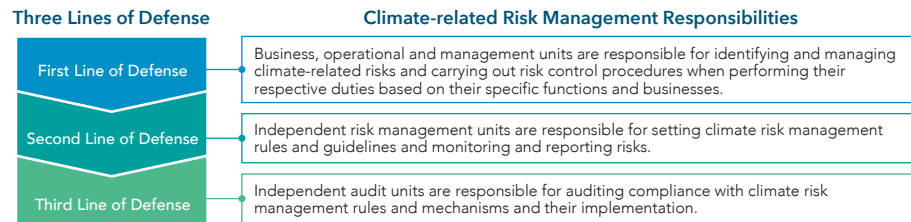
4 Risk Management

4.1 Risk Governance

Fubon Financial Holdings has put in place a comprehensive risk management system founded on an enterprise risk management framework and three lines of defense that encompasses risk identification, measurement, response, monitoring and reporting. To support this system, Fubon has developed risk indicators, risk monitoring points, an early-warning mechanism, and risk controls based on risk attributes and adopted a dual qualitative and quantitative approach to assess risks on a regular basis, helping the Company actively monitor and manage a whole range of significant risks⁵. They include credit risk, country risk, market risk, operational risk, insurance risk, asset/ liability and liquidity risk, reputation risk, emerging risk, and climate change risk. Definitions of critical risk events and related reporting mechanisms have been established based on these different types of risks and their respective characteristics. With the help of these many features, Fubon has incorporated the management of climate-related risk issues into existing risk management mechanisms under the integrated enterprise risk management framework, and the responsible units of the Company and subsidiaries report such risks in line with guidelines on critical events so that they can be responded to in a timely manner, and risk control measures can be taken.

4.1.1 Three Lines of Defense: Roles and Responsibilities

A risk management system featuring three lines of defense has been adopted to effectively manage and monitor the climate-related risks identified and assessed by the Company, and added in the "Climate Change Management Guideline" to help implement internal controls.



4.1.2 Setting Climate Risk Norms and Guidelines

Fubon has established the "Sustainable Finance Policy" and the "Climate Change Management Guideline" and continues to solidify its climate-related risk management and assessment mechanisms based on international trends, laws, and practices to strengthen its management of climate-related risks and capitalize on climate opportunities.

Climate Risk Norms and Guidelines	Description	Level of Approval
Fubon Financial Holding Co., Ltd. and Subsidiaries Sustainable Finance Policy	The policy's provisions represent Fubon's most important guiding principles in promoting sustainable finance. It stipulates that the Company should incorporate environmental, social, and corporate governance factors into business development decisions, and devise and implement related investment, credit business, and insurance business strategies. The policy's general principles include taking into consideration whether companies support and promote the achievement of United Nations Sustainable Development Goals, carefully assessing relationships with companies involved in controversial situations, and setting standards for investing in/pulling investment out of high carbon industries.	Board of Directors
Fubon Financial Holding Co., Ltd. and Subsidiaries Climate Change Management Guideline	The guideline were established to better respond to the potential impact of climate change on the environment and economic activity and the adverse effect it could have on the Company's operations and development. It stipulates that potential risks, opportunities and impacts of climate change on business should be checked and assessed regularly with the help of international climate-related data and trends, and that three lines of defense against climate-related risk and internal control systems should be established.	Chairman of the Board

Risk Management Process

- Responsible Investment Management**

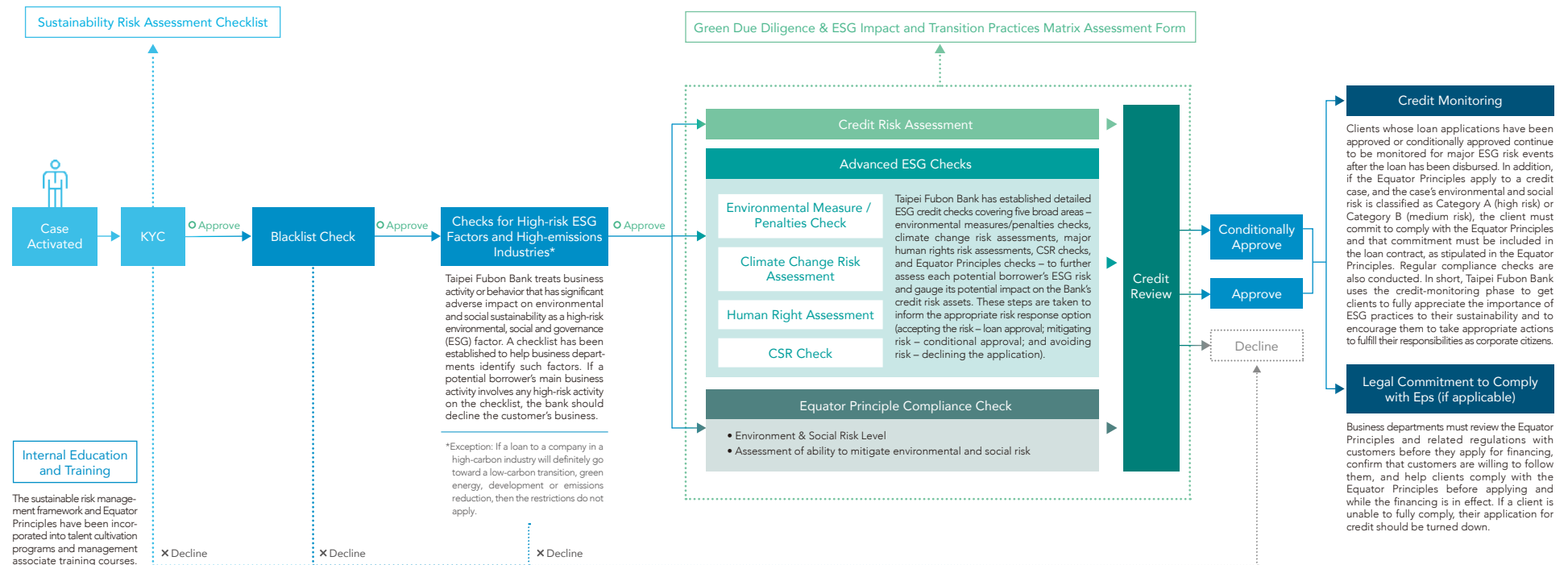
Fubon adheres to the United Nations Principles for Responsible Investment (PRI), and each subsidiaries comply

with the “Fubon Financial Holding Co., Ltd. and Subsidiaries Sustainable Finance Policy” in setting or revising their own related internal management policies and rules. Before and after an investment is made, an ESG checklist and ESG assessment indicators are used to identify, assess, and measure the investment’s sustainability risk, and monitoring indicators for ESG-sensitive industries have been devised to strengthen the responsible investment system and maintain steady investment returns. Also, all major Fubon subsidiaries have signed on to the Stewardship Principles for Institutional Investors, and they have incorporated ESG issues into their ownership policies and practices and actively engage in shareholder activism. For high ESG-risk countries that have significant adverse effects on environmental or social sustainability, human rights, or the rights and interests of workers, the Company and its subsidiaries avoid investing in bonds issued by those countries.

• **Responsible Lending Management Mechanism**

Fubon Financial Holdings subsidiary Taipei Fubon Bank has based its credit business on the five fundamental principles of security, liquidity, the common good, profitability and growth and adopted the following mechanisms to assess credit risk. Under the bank’s management framework for sustainability risk, sustainability risk assessments involving credit have been incorporated into KYC (know your customer) and credit check processes based on the “Fubon Financial Holding Co., Ltd. and Subsidiaries Sustainable Finance Policy.” That means that sustainability risk is identified, assessed, and weighed in all credit cases (including those that must meet Equator Principles guidelines and other project financing cases) based on sustainability risk assessment procedures and Equator Principles compliance within the existing credit risk management framework.

According to the “Taipei Fubon Commercial Bank Co., Ltd. Sustainable Loan and Investment Guideline”, priority should be given to checks of potential high-risk ESG factors (including a company’s significant adverse impact on environmental and social sustainability or high-carbon operations that should lead to rejections of credit requests, but if the purpose of the financing is for a low-carbon transition, green energy development or carbon reduction, this restriction does not apply). A credit risk assessment is then conducted that includes a green due diligence survey to accurately understand the impact of the client’s operations on the environment and the client’s transition plan, and an ESG rating is given (based on ESG impact and transition plans). The ESG rating then determines future business dealings with the client. The process helps the bank internally screen and identify companies with outstanding climate change resilience. In 2022, the bank planned the “Three-Specialist Process,” consisting of a customized review process and dedicated review officers and business teams to reduce the time needed to review credit applications of green finance.



• Sustainable Insurance Management

Fubon Financial Holding subsidiary Fubon Life and Fubon Insurance has adopted the Principles for Sustainable Insurance (PSI) Initiative launched by the United Nations Environment Programme (UNEP). They identify, assess, and monitor underwriting risks and opportunities associated with ESG issues, and develop innovative solutions that embed sustainability principles in the business and products, helping them play leading roles in the sector's sustainability.



Embedding ESG issues into corporate decision-making	Integrating ESG issues into underwriting, claims and investment management	Providing sustainable products and services and raising clients' ESG awareness
<ul style="list-style-type: none"> Fubon Insurance has set up a "Sustainability Strategy Task Force" led by senior executives to take stock of and devise development plans for Fubon Insurance's key sustainability businesses. Fubon Insurance identifies emerging risks, climate risks, and catastrophe risks concerning ESG issues, and conducts stress tests on a regular basis. Fubon Insurance uses domestic and international disaster assessment models to assess probable maximum loss (PML) twice a year based on the concept of disaster risk accumulation and correlation. It assesses outcomes of underwritten catastrophe risks and the risks the company can bear, and relies on reinsurance contracts to meet the needs of catastrophe risk capital. Key risk indicators are used to check net retained value at risk on a quarterly basis. 	<ul style="list-style-type: none"> Underwriting management: Fubon Insurance has put in place a reporting process for cases with high ESG-related risks and the Underwriting Committee to monitor the risks. The committee includes the top commercial insurance manager, the chief risk officer, and other managers of related commercial insurance product departments. In 2022, the Underwriting Committee discussed one fire insurance case and decided on risk retention based on information on those businesses, an underwriting evaluation report and the opinions of internal business departments. Insurance product coverage amounts are adjusted according to such factors as a business' ESG-related risk level, the items covered, and the scope of the coverage. The level of authorization is determined by the coverage amount for different types of insurance. 	<ul style="list-style-type: none"> Fubon Insurance reviews ESG risks and opportunities with 100% of its clients and offers sustainability-related insurance that includes natural disaster, agriculture, green energy, and liability insurance. To engage with brokers on ESG related risks and opportunities, Fubon Insurance organizes courses on occasion for insurance brokers and reinsurance companies as needed. The courses cover topics such as sustainable insurance products and claims settlements and convey our ESG philosophy to our partners to ensure that when they sell policies they will have a basic understanding of ESG risks and opportunities. Thanks to loss control technologies, Fubon Insurance can help clients quickly rebuild their businesses and reduce capital expenditures, limiting potential risks and damage when accidents occur. Assists companies in managing renewable energy risks, providing risk consulting services to clients that invest in wind power and energy storage projects. Offers loss control consulting services to the solar power, offshore wind power and energy storage sectors to make the green energy more resilient in the face of major disasters. In 2022, Fubon Insurance conducted 125 renewable energy risk assessments, while providing loss prevention training to clients. It also organized ESG-themed risk seminars and auto insurance loss prevention and agriculture insurance publicity campaigns.

4.1.3 Risk Appetite and Risk Limits/Indicators

The Company and its subsidiaries regularly identify and measure major climate-related risks (including physical and transition risks), and analyze the potential impacts they can generate. Main subsidiaries Fubon Life and Taipei Fubon Bank have issued statements on their climate-related risk appetites.

	Climate-related Risk Appetite Statement/Indicators
Fubon Life	<ul style="list-style-type: none"> The Company is dedicated to managing its existing and potential future transition and physical risks and achieving strategic net-zero carbon emissions goals. For investment or financing targets in high-carbon industries, the company will no longer provide additional financing for mining companies that only mine coal or additional investment or financing to power plants that generate more than 50% of their power from coal (unless the funds are to be clearly used to transition to green energy), and it will continue to review standards for pulling investment out of or investing in companies in carbon-sensitive industries.
Taipei Fubon Bank	The bank no longer increases its financing of clients in high-carbon industries for which certain kinds of additional financing have been prohibited ^{Note} .

Note: If the purpose of the financing is for a low-carbon transition, green energy development or carbon reduction, the restriction does not apply.

4.2 Risk Identification

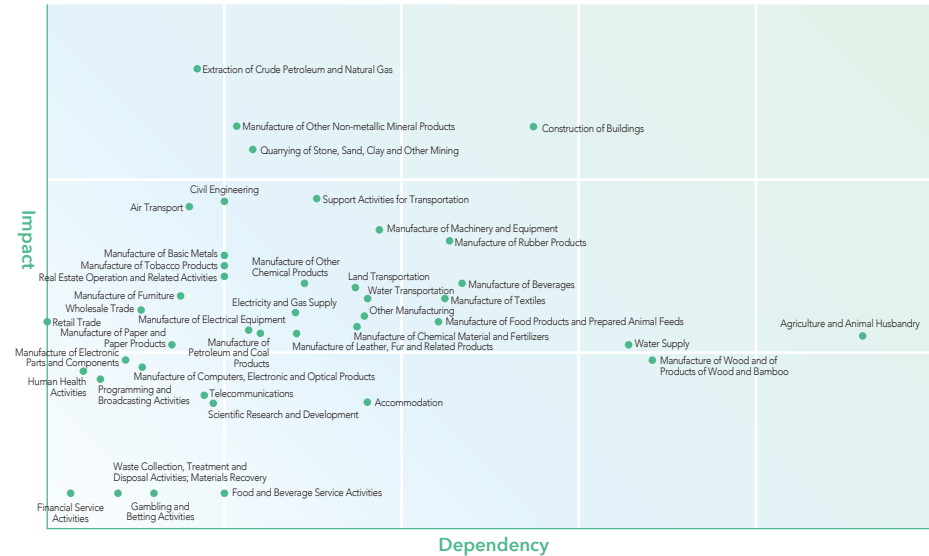
Climate change has different levels of impact on business operations, investments, and financing activities in the short, medium, and long term. Physical and transition risk drivers can be linked to existing risk types (including credit, market, operational, and reputation risk) and integrated into the existing risk management framework to help monitor and manage risks associated with climate change. Based on materiality principles, Fubon in 2022 identified the main climate change risk factors that could affect financial assets as flooding and carbon pricing. It then conducted scenario analyses on the Company's own operations, mortgages, investments, and corporate lending using different climate parameters to test their resilience to these risk drivers, with the results disclosed in Section 4.3.

	Climate Change Risk Drivers	Economic Transmission Channels	Impacts	Financial Risks
Physical Risks	<ul style="list-style-type: none"> Acute: typhoon, heavy rain, floods, drought Chronic: Sea levels, rising average temperatures 	Macro <ul style="list-style-type: none"> GDP Unemployment rate Interest rates 	<ul style="list-style-type: none"> Revenue declines Collateral price fluctuations Interest rate spread changes 	Credit Risk Market Risk Operational Risk Liquidity Risk Reputation Risk Insurance Risk
Transition Risks	<ul style="list-style-type: none"> Carbon price Legal and Policy (including current regulation, emerging regulation and legal) Innovative technologies Shifts in consumer preferences Supply and demand mismatch 	Micro <ul style="list-style-type: none"> Tangible objects (related to space) Operations and business (related to industry) 	<ul style="list-style-type: none"> Revenue variation Cost increase Expense increase Impairment of stranded assets 	

Identification of Natural-related Risks

As Fubon officially became a member of the TNFD Forum in January 2023, the Company conducted its first assessment of nature-related risks using the TNFD beta framework to understand the state of natural risks associated with its industry. The Natural Capital Protocol, published in January 2021, states that every business impacts and depends on natural capital to some degree and will experience risks and/or opportunities associated with these relationships. Dependency refers to the reliance of businesses on natural capital, such as regular access to clean water resources. Impact, on the other hand, refers to the effects of human activities on environmental resources and ecosystems, which can be either positive or negative. To understand the level of dependency and impact faced by the investment and credit portfolio, the company referenced the Encore tool developed by the Natural Capital Finance Alliance (NCFA) and the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC). This tool utilizes the Global Industry Classification Standard (GICS) to categorize industries into three levels: sector, sub-industry, and production process. It provides corresponding dependency and impact factors and their respective levels of influence. Based on the information provided by the Encore tool, the company converted the levels of dependency and impact into quantitative values, calculated the total scores for dependency and impact factors, and mapped the GICS industries to the Standard Industrial Classification System of the Republic of China(SICs) to make a scatter chart of impact versus dependency for industries.

Dependency and Impact Assessment of Industries



Note: This chart provides a simplified representation of industry dependencies and impacts. In cases where there is overlapping of multiple industries at a single point, only one industry is listed.

From the scatter chart, it can be observed that the industry "Agriculture and Animal Husbandry" has high dependency on natural capital and moderate impact. Based on the Encore tool and the classification of natural issues (resource use, climate change, ecosystems, pollution, and species interference,) the industry "Agriculture and Animal Husbandry" relies on ecosystems (such as pollination and pest control), resource use (such as water resources and soil), and climate change drivers (such as flood prevention, typhoons, or climate regulation); the impacts include ecosystems, resource use (such as excessive water abstraction), and resulting soil or water pollution. The industry "Extraction of Crude Petroleum and Natural Gas" has low dependency on natural capital but high impact, particularly on ecosystems and water resources. It also has high impacts in terms of climate change (greenhouse gas emissions), pollution (air, soil, waste, and water), and species interference. Some industries, including the industries "Retail Trade," "Publishing Activities," "Information Service Activities," "Activities of Head Offices; Management Consultancy Activities," "Employment Activities," and "Education," have low dependencies but still have impacts on the natural environment.

Biodiversity Hotspots Analysis

Fubon Financial Holdings conducts an analysis by overlaying the registered locations of domestic investment and financing clients with the biodiversity hotspots, which are defined based on conservation areas (Coastal Conservation Zones, National Parks, Wildlife Refuges, Major Wildlife Habitat, Nature Reserves, and Important Wetlands) designated by the Construction and Planning Agency and the Forestry Bureau. The analysis focuses on the overlap between the registered locations of domestic investment and financing clients and the biodiversity hotspots.

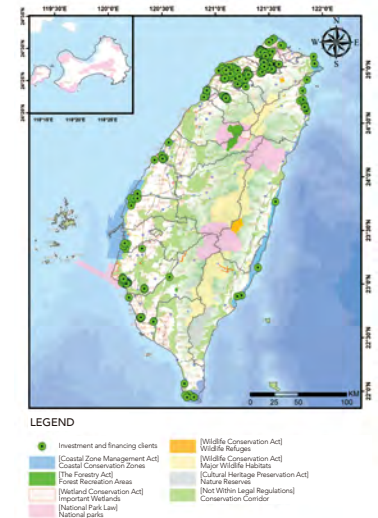
The results of the analysis show that there are 699 companies registered within a 2-kilometer radius of the biodiversity hotspots (as shown in the diagram on the right). In the future, as methodologies evolve and data collection becomes more comprehensive, continuous attention will be given to the impact of investment and financing clients on natural ecosystems.

Analysis of Potential Risks for Major Investment and Financing Clients

Based on materiality principles, a focus is placed on observing the top ten domestic companies in terms of exposures (accounting for approximately 8.31% of domestic exposures). Referring to the levels of dependency and impact identified by the Encore tool, the top ten companies in terms of exposures by Fubon Financial Holdings are all in low dependency industries. However, there are differences in impact levels. The industry "Extraction of Crude Petroleum and Natural Gas" has a high impact, while the industries "Manufacture of Basic Metals," "Electricity and Gas Supply," and "Manufacture of Chemical Material and Fertilizers" have moderate impacts and the electronics industry is considered a low impact industry.

Based on the natural issues listed in the Natural Capital Protocol (resource use, climate change, ecosystems, pollution, and species interference,) the electricity industry has different levels of dependency and impact on the natural environment depending on the type of power generation. For example, solar power generation has a high dependency on climate change and a very high impact on resource use and ecosystems, while nuclear and thermal power generation have high impact levels in five impact categories. Therefore, different perspectives need to be established for different types of power generation, and other industries should follow suit.

Finally, the factory locations of the top ten domestic companies are overlaid with biodiversity hotspots to determine the proportion of overlap, providing insights into potential impacts and areas of focus. In the future, continuous attention will be given to domestic and international information, and monitoring the impact of Fubon Financial Holdings' investment and financing clients on biodiversity or ecosystems.



Scatter Chart of Impact Versus Dependency for Industries of Top Ten Investment and Financing



Sector	Sub-Industry	Production Process	Dependency			Impact					The Percentage of Investment and Financing	Factories	
			Resource Use	Climate Change	Ecosystem	Resource Use	Climate Change	Ecosystem	Pollution	Species Interference		No. of Factories	% of Biodiversity Hotspots
Utilities	Renewable Energy	Solar Energy Provision		H	M	VH		VH			1.35%	98	52%
		Wind Energy Provision		M	M			H		M			
	Non-Renewable energy	Nuclear Power Stations	H	M		VH	H	H	H	H			
		Thermal Power Stations	H	M		VH	H	H	H	H			
Materials	Diversified Chemicals	H	M		H	H	H	H		0.98%	11	45%	
	Steel and Metal	M			H	H		H					
Information Technology	Semiconductor Equipment				H	H		H		5.94%	53	13%	
	Electronic Manufacturing	M						H	M				
Extraction of Crude Petroleum and Natural Gas			M		VH	H		H		0.43%	13	31%	
Nature-Sensitive Industry										8.71%			

Note 1: The percentage of investment and financing balance refers to the proportion of the top ten domestic investment and financing positions held by Fubon Financial Holdings, relative to the total investment and financing balance.
 Note 2: The percentage of factories located in biodiversity hotspots refers to the proportion of overlap within a 2-kilometer radius of the factories of the top ten domestic companies in terms of investment and financing by Fubon Financial Holdings with biodiversity hotspot areas. Due to limitations in splitting the investment and financing balance by each factory location, only the number of factories and the percentage of overlap with biodiversity hotspots are provided as reference.
 Note 3: VH (Very High), H (High), and M (Medium) represent the levels of dependency/ impact.

In conclusion, nature-related physical risks represent drivers such as soil or marine pollution or degradation that can directly impact companies invested in or loan clients that depend on nature. These issues can have both short-term and long-term impacts. Nature-related transition risks and climate-related transition risks are similar and can involve legal and policy, market, technology, and reputation risks (such as new or revised land conservation policies, the emergence of a technology or product with a relatively low-impact on natural capital, or damage to nature caused by a company's operations that hurt its image). In contrast to the climate-related risks, the nature-related risks has added systemic risks, which refer to one issue triggering a chain reaction that can cause imbalances in systems and make it impossible for the system to return to normal. Risk identification under the TNFD framework is more complicated than under the TCFD framework, and can vary by industry type and the organization's location. The impact and dependency on nature of the operations of a company or organization must be examined individually for each entity, but risk transmission channels are similar to those used by TCFD and can be linked to existing risk types (including credit, market, operational, and reputation risk). The results of this process are integrated into the existing risk management framework to help monitor and manage risks associated with changes in nature. Subsidiary Taipei Fubon Bank currently conducts ESG rating assessment before undertaking corporate lending, which collects information of TNFD concern, such as greenhouse gas emissions, water usage, and waste management, providing a reference for further understanding and assessing nature-related risks in the future.

Nature-related Risks	Impacts	Financial Risks
Physical Risks <ul style="list-style-type: none"> Acute Chronic 	<ul style="list-style-type: none"> Revenue declines Collateral price fluctuations Shifts in demand Price of raw material increases Value of assets change Interruption or cessation of operation Increase in fines and lawsuits 	Credit Risk Market Risk Operational Risk Liquidity Risk Reputation Risk
Transition Risks <ul style="list-style-type: none"> Legal & Policy risks Market risks Reputation risk Technology risk 		
Systemic Risks <ul style="list-style-type: none"> Ecosystem collapse Aggregated risks Contagion risks 		



4.3 Climate Change Scenario Analysis

4.3.1 Climate Scenarios and Parameters

The Fifth Assessment Report (AR5) issued by the United Nations Intergovernmental Panel on Climate Change (IPCC) in 2014 used Representative Concentration Pathways (RCPs) as future emissions scenarios, and these RCPs have since become oft-used standards for physical scenario factors. The Sixth Assessment Report (AR6) issued in 2021 introduced shared socioeconomic pathways (SSPs) to help assess socioeconomic development. For transition risks, Fubon used three scenarios – Net Zero 2050, Delayed Transition, and Current Policy – from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), which was formed by major central banks and supervisory agencies. Based on transition and physical risk scenarios, converting to "Orderly Transition (AR6: SSP1-2.6, NGFS: Net Zero 2050)", "Disorderly Transition (AR6: SSP1-2.6, NGFS: Delayed Transition)" and "No Policy (AR6: SSP5-8.5, NGFS: Baseline)" scenarios used in Section 4.3.

The scenarios and parameters used in climate scenario analyses for different types of businesses and asset classes are described below.

Climate Scenarios and Parameters

	Physical Risk							Transition Risk		
	1	2	3	4	5	6	7	8	9	10
Climate Scenarios	RCP 2.6	RCP 4.5	RCP 6.0	RCP 8.5	SSP 1-2.6	SSP 5-8.5	SSP 3-8.5	Net Zero 2050	Delayed Transition	Baseline
Timeframe	2006~2100				2015~2100			2020~2050		
Magnitude of Warming by the End of the Century	0.3°C~1.7°C	1.1°C~2.6°C	1.4°C~3.1°C	2.6°C~4.8°C	1.4°C	4.4°C	--	1.4°C	1.6°C	--
Class of Business	<ul style="list-style-type: none"> Suppliers 		<ul style="list-style-type: none"> Office Buildings/ Business Locations (Taiwan) Suppliers Investment Properties Property Insurance 		<ul style="list-style-type: none"> Mortgages Domestic Corporate Credit 		<ul style="list-style-type: none"> Office Buildings/ Business Locations (Overseas) Investment Properties (Overseas) 	<ul style="list-style-type: none"> Suppliers Mortgages Domestic Corporate Credit Overseas Corporate Credit Investments 		
Geographical	 Taiwan							 Global		

➔ Climate Change Scenario Analysis

Business/ Asset Type		Climate-related Risks/ Scenarios	Analysis Scope	Analysis Period	Traditional Risks	Analysis Results
Own Operations	Office Buildings/ Business Locations (Taiwan)	Physical (flood) ④	• Financial holding company and its subsidiaries ^{Note2}	• Base period: 1976~2005 • Mid-21 st century: 2036~2065	Operational Risk	The assessment indicates that physical risks are manageable, as Fubon has established contingency measures to cope with various disasters, and they were found to be adequate in coping with and controlling the potential adverse impact of flood risks.
	Office Buildings/ Business Locations (Overseas) ^{Note1}	Physical (flood) ⑦		• 2050	Operational Risk	Only one office building reached a risk rating of 4 and it was on a high floor, and the overall potential risk impact was considered to be limited.
	Suppliers	Physical ①②③④		• 2021~2100	Operational Risk	Observed the proportion of suppliers located in high-risk areas during various periods and scenarios. Fubon will continue to monitor the stability of their supply of goods and services or assess if a change in suppliers is necessary.
		Transition ⑧⑨		• 2030 • 2050	Operational Risk	Under the Delayed Transition scenario, assuming that suppliers passed on all of their carbon fees to Fubon, the estimated increase in annual procurement costs would be approximately 26.50% of Fubon's procurement amount ³ in 2022.
Investment, Loans and Insurance	Mortgages	Physical (flood)/ Transition ⑤⑥⑧⑨⑩	• Fubon Life • Taipei Fubon Bank	• 2030 • 2050	Credit Risk	The expected credit loss (EL) in 2050 is projected to increase by less than 2 basis points compared to the base case scenario.
		Physical (slope) ④	• Fubon Life • Taipei Fubon Bank	• Base period: 1979~2003 • End-21 st century: 2075~2099	Credit Risk	The risk levels for slope disasters ⁴ predominantly fall into levels 1 and 2, indicating a relatively low potential risk for slope disasters.
	Domestic Corporate Credit	Physical/ Transition ⑤⑥⑧⑨⑩	• Taipei Fubon Bank	• 2030 • 2050	Credit Risk	The expected credit loss (EL) in 2050 is estimated to increase by approximately 66~152 basis points compared to the base case scenario.
	Overseas ^{Note 1} Corporate Credit	Transition ⑧⑨	• Taipei Fubon Bank • Fubon Bank (Hong Kong)	• 2030 • 2050	Credit Risk	The expected credit loss (EL) in 2050 is projected to increase by approximately 93~186 basis points compared to the base case scenario.
	Holdings of Held-to-Maturity Positions	Transition ⑧⑨	• Financial holding company and its subsidiaries ^{Note2}	• 2030 • 2050	Credit Risk	The average probability of default (PD) in 2050 is expected to increase by 17~34 basis points compared to the base case scenario.
	Securities Positions	Transition ⑧⑨	• Financial holding company and its subsidiaries ^{Note2}	• 2030 • 2050	Market Risk	The impact of the disorderly transition scenario in 2050 is the most significant, accounting for more than 10% of the financial holding company's consolidated net worth.
	Investment Properties (Taiwan)	Physical (flood) ④	• Fubon Life • Fubon Insurance • Fubon AMC	• Base period: 1976~2005 • Mid-21 st century: 2036~2065	Market Risk	For investment properties, the projected flood risk level ⁴ generally falls into levels 2 and 3 in the middle of the 21 st century.
	Investment Properties (Overseas) ^{Note1}	Physical (flood) ⑦	• Fubon Life	• 2050	Market Risk	For overseas investment properties, the flood risk level ⁴ is generally in the low-risk range (level 1-2), indicating limited overall impact.
Property Insurance	Physical (flood) ④	• Fubon Insurance	• Base period: 1976~2005 • Mid-21 st century: 2036~2065	Insurance Risk	For insured properties, the projected flood risk level ⁴ generally falls into levels 1 and 2 in the middle of the 21 st century.	

Note 1: Overseas refers to regions outside of Taiwan.

Note 2: The analysis scope includes subsidiaries holding the respective asset type, but excludes Jih Sun Commercial Bank and Jih Sun Securities.

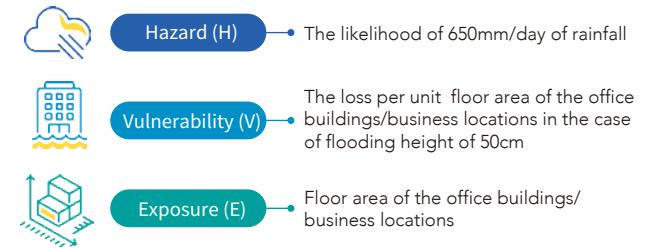
Note 3: Fubon's procurement amount in 2022 totaled NT\$3.641 billion.

Note 4: Slope disaster and flood risk levels based on a 1-5 scale with 5 the highest risk.

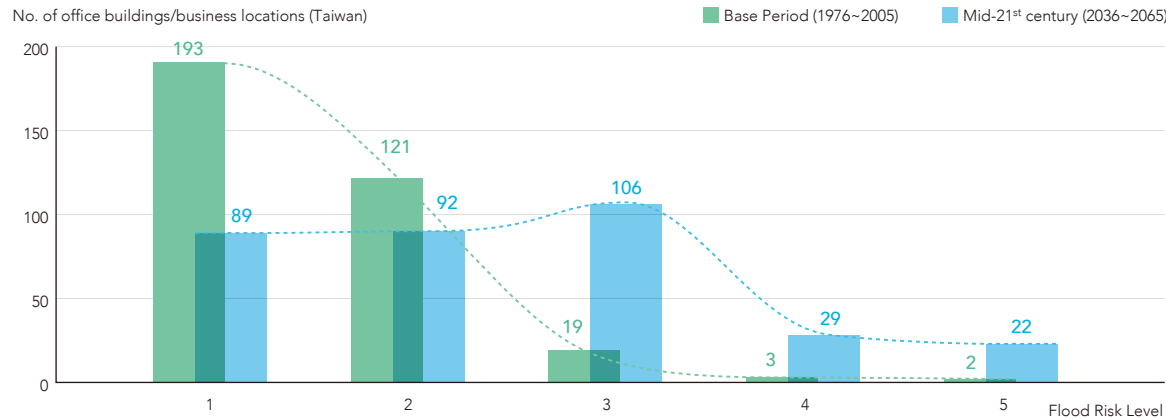
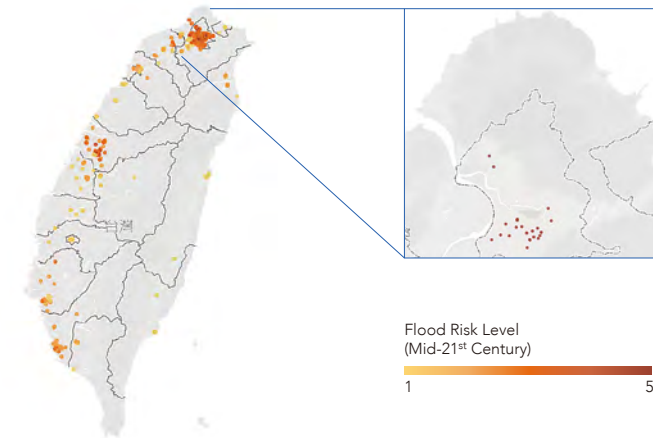
4.3.2 Scenario Analysis – Own Operations

• Office Buildings/Business Locations

Fubon conducted flood risk assessments of its 338 office buildings and business locations around Taiwan to better understand the potential impact of physical climate-related risks on its own business locations and estimate the costs of repairing the damage caused by potential flooding to the Company's property. Flood risk levels were measured on a scale of 1-5, with 5 representing the highest risk, and flood risk assessments focused on three major factors – exposure, hazard, and vulnerability. The degree of hazard was based on the National Science and Technology Center for Disaster Reduction's (NCDR) flood risk map and represented the probability of extreme rainfall in the base period (1976-2005) and under an RCP 8.5 scenario in the middle of the 21st century (2036-2065). The degree of vulnerability represented the total amount of expected losses per unit of building or office floor area, and the degree of exposure was obtained based on total floor area. There were only two office buildings or business locations with the highest flood risk rating of 5 in the baseline period, compared to 22 under an RCP 8.5 scenario in the mid-21st century. Most of the 22 were located in Taipei, but only eleven were located on the second floor or below and dealt with customers. Based on these findings, the assessment concluded that the overall impact of flooding on business disruptions and asset losses was limited. Fubon has established contingency measures to cope with various disasters, and they were found to be adequate in coping with and controlling the potential adverse impact of flood risks, even for office buildings and business locations with the highest flood risk rating of 5.

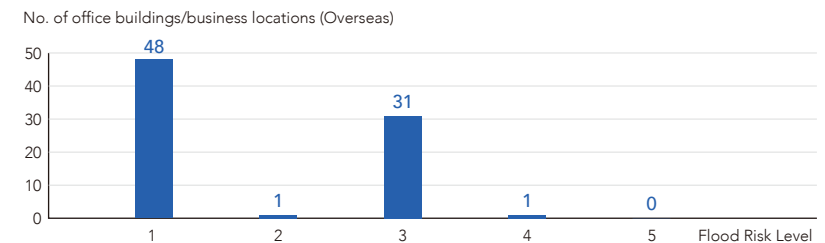


• Flood Risk Map for the Mid-21st Century



Note: There are three more business locations on outlying islands, but because the NCDR did not have hazard data for those islands, we were not able to assess their flood risk levels.

For the 81 buildings and business locations of overseas subsidiaries and sub-subsidiaries, the hazard, vulnerability, and exposure factors were also used to assess flood risks. World Resources Institute statistics for annual economic losses from flood events by country under SSP 3-8.5 scenarios were used to determine the degree of hazard and vulnerability. Those factors, combined with the degree of exposure based on a weighting of the floor area of those subsidiaries' business locations, were used to assess the risk of asset or equipment damage and losses caused by flooding at overseas business locations. Only one office building reached a risk rating of 4 and it was on a high floor, and the overall potential risk impact was considered to be limited.



• Suppliers

• Physical Risk

Fubon Financial Holdings used the Taiwan Climate Change Projection Information Platform’s (TCCIP) climate change risk hazard forecasting model to gauge the potential impact of climate change disasters on the ability of its suppliers to meet their contractual obligations to deliver products and services and Fubon’s ability to mitigate potential supply chain disruption risks. The model was used to assess the potential risk of extreme rainfall (more than 650 millimeters of rain in a 24-hour period, based on 1-5 levels of likelihood) and resulting floods (flood levels measured on a 1-5 scale), debris flows (vulnerability Level 2), and landslides (Level 1) to the operating locations of 1,562 Fubon suppliers under four Representative Concentration Pathways (RCP 2.6, RCP 4.5, RCP 6.0, and RCP 8.5) scenarios in the short-term (2022-2040), medium-term (2041-2060), medium- and long-term (2061-2080) and long-term (2081-2100). The results were plotted on a risk matrix, helping assess the amount and concentration of Fubon’s purchases of products and services from suppliers located in medium- and high-risk areas, helping inform risk mitigation measures.

	Risk Type	Indicator	RCP 2.6	RCP 4.5	RCP 6.0	RCP 8.5	Description
Short Term (2021-2040)	High risk	No. of suppliers (share of purchases)	2 (0.00%)	3 (0.00%)	3 (0.00%)	3 (0.00%)	2-3 suppliers located in high-risk areas (0.00% of total purchases); 53-80 suppliers located in medium-risk areas (about 1.08%-3.03% of all purchases). Purchases from suppliers in medium and high-risk areas were relatively low, and their risk can be managed by monitoring the stability of their supply of goods and services.
	Medium risk	No. of suppliers (share of purchases)	57 (1.12%)	53 (1.08%)	80 (3.03%)	58 (1.34%)	
Medium Term (2041-2060)	High risk	No. of suppliers (share of purchases)	9 (0.10%)	4 (0.01%)	0 (0.00%)	0 (0.00%)	0-9 suppliers located in high-risk areas (0.00%-0.10% of total purchases); 13-236 suppliers located in medium-risk areas (about 0.10%-12.29% of total purchases). Fubon Financial Holdings will continue to monitor the stability of their supply of goods and services or assess if a change in suppliers is necessary.
	Medium risk	No. of suppliers (share of purchases)	236 (12.29%)	68 (2.52%)	13 (0.10%)	31 (0.15%)	
Medium- to Long-term (2061-2080)	High risk	No. of suppliers (share of purchases)	6 (0.00%)	20 (0.79%)	6 (0.01%)	10 (0.06%)	6-20 suppliers located in high-risk areas (about 0.00%-0.79% of total purchases); 87-253 suppliers located in medium-risk areas (about 3.35%-13.22% of all purchases). Fubon Financial Holdings will continue to monitor the stability of their supply of goods and services or assess if a change in suppliers is necessary.
	Medium risk	No. of suppliers (share of purchases)	87 (3.35%)	253 (13.22%)	92 (3.41%)	124 (4.94%)	
Long Term (2081-2100)	High risk	No. of suppliers (share of purchases)	2 (0.00%)	6 (0.06%)	8 (0.06%)	9 (0.06%)	2-9 suppliers located in high-risk areas (0.00%-0.06% of all purchases); 31-93 suppliers located in medium risk areas (0.73%-3.36% of all purchases). Overall, purchases from suppliers located in medium and high-risk areas still accounted for only a small share of total purchases. Fubon Financial Holdings will continue to monitor the stability of their supply of goods and services.
	Medium risk	No. of suppliers (share of purchases)	31 (0.73%)	93 (3.30%)	92 (3.30%)	92 (3.36%)	

• Transition Risk

Fubon Financial Holdings has run simulations to understand the potential impact of government-imposed carbon fees on enterprises' operating costs and on Fubon's procurement costs if suppliers were to pass on their carbon fee costs to Fubon. Using the NGFS disorderly transition (delayed transition) scenario and orderly transition (Net Zero 2050) scenario, the Company simulated and evaluated the possible impact on Fubon's procurement costs if Fubon's suppliers were to pass on to Fubon all carbon fees imposed by Taiwan's government in 2030 and 2050.

Scenario 1 Delayed Transition (Disorderly Transition)		Scenario 2 Net Zero 2050 (Orderly Transition)	
2030 Taiwan carbon fee ^{Note} US\$ 375.26/ton CO ₂ e (NT\$ 11,257.82/ton CO ₂ e)	2050 Taiwan carbon fee US\$ 829.51/ton CO ₂ e (NT\$ 24,885.19/ton CO ₂ e)	2030 Taiwan carbon fee US\$ 156.07/ton CO ₂ e (NT\$ 4,682.19/ton CO ₂ e)	2050 Taiwan carbon fee US\$ 437.28/ton CO ₂ e (NT\$ 13,118.36/ton CO ₂ e)
If suppliers passed on all of their carbon fees to Fubon, Fubon's annual procurement costs would rise by an estimated NT\$437 million, equal to about 12.00% of Fubon's total purchases in 2022.		If suppliers passed on all of their carbon fees to Fubon, Fubon's annual procurement costs would rise by an estimated NT\$182 million, equal to about 5.00% of Fubon's total purchases in 2022.	
If suppliers passed on all of their carbon fees to Fubon, Fubon's annual procurement costs would rise by an estimated NT\$965 million, equal to about 26.50% of Fubon's total purchases in 2022.		If suppliers passed on all of their carbon fees to Fubon, Fubon's annual procurement costs would rise by an estimated NT\$509 million, equal to about 13.98% of Fubon's total purchases in 2022.	

Note: The carbon prices used in the analysis is generated by the NGFS phase 2 MESSAGEix-GLOBIOM 1.1 model. Under the Delayed Transition scenario, due to the late initiation of transformation actions, the carbon price in 2030 remains relatively low. However, in order to anticipate the rapidly rising carbon costs in the future, the analysis replaces the 2030 carbon price with the carbon price in 2035.

2020 Sector Emissions (million t/CO ₂ e)			2022 Sector GDP (NT\$ million)	2022 Total Fubon Purchases (NT\$ million)		Carbon Fee Costs (NT\$ million)			
						Scenario 1 Disorderly Transition (Delayed Transition)		Scenario 2 Orderly Transition (Net Zero 2050)	
Sector	Emissions	Share of Total	Purchased Amount	Fubon Purchases' Share of Sector's GDP	2030	2050	2030	2050	
					Carbon Fee NT\$11,257.82/ton CO ₂ e	Carbon Fee NT\$24,885.1/ton CO ₂ e	Carbon Fee NT\$4,682.19/ton CO ₂ e	Carbon Fee NT\$13,118.36/ton CO ₂ e	
Industrial	235.79	82.7%	\$8,529,231	1,331	0.016%	414	915	172	483
Services	9.47	3.3%	\$10,935,802	2,300	0.021%	23	50	9	26
Transportation	36.53	12.8%	\$893,706	0	0.000%	0	0	0	0
Other	3.34	1.2%	\$1,560,912	10	0.001%	0	0	0	0
Total	285.13	100.0%	\$21,919,651	3,641	0.017%	437	965	182	509

Note 1: The latest year for which the Environmental Protection Administration's 2022 "National Greenhouse Gas Inventory Report" disclosed total emissions was 2020.

Note 2: Carbon fee costs = Sector's carbon emissions*(Share of Fubon purchases from that sector/sector's GDP)*Scenario carbon fee

Note 3: Fubon's purchases in 2022 totaled NT\$3,641 million (or 0.017% of the combined GDP of all sectors), including 1) NT\$1,331 million in purchases from the industrial sector (including apparel, paper goods, printing and data storage media duplicating, audiovisual electronics, and building construction suppliers), or 0.016% of the sector's GDP; and 2) NT\$2,310 million in purchases from the service sector (including from suppliers of retail services, computer-related and information services, real estate development, rent, and other services), or 0.021% of the sector's GDP.

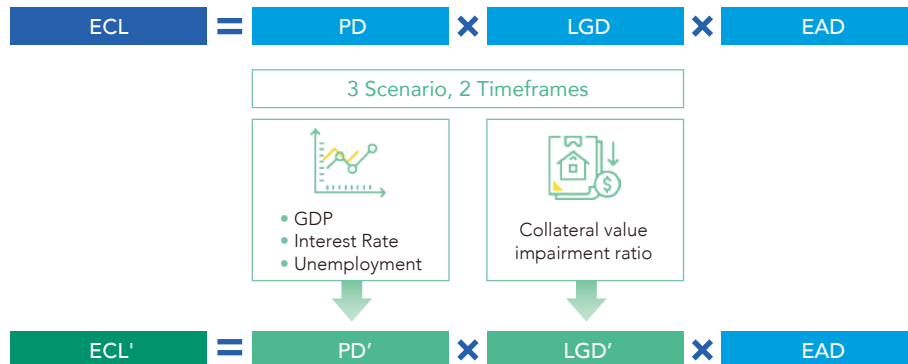
4.3.3 Scenario Analysis – Investment, Loans and Insurance

• Mortgages

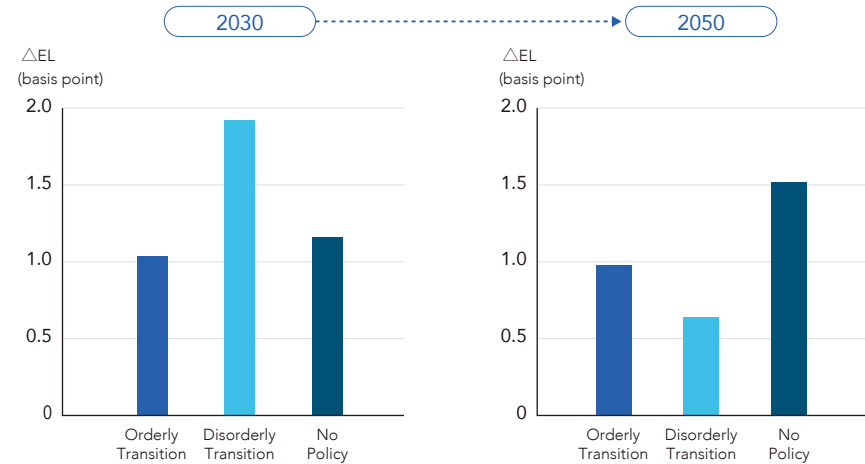
One of the major physical risks brought by climate change identified by Fubon was that “extreme weather events grow more serious.” Extreme rainfall is one of the climate disasters Taiwan is most likely to face, and often leads to floods. Landslides can also result because of Taiwan’s high proportion of mountains and hills and a population densely packed onto a small amount of land. The Fubon business that could face the biggest financial impact from floods and landslides is its mortgage business, and the Company assessed and analyzed the risk of floods and landslides in areas where mortgage collateral was located.

• Flood Risk

Transition risk factors were further taken into consideration this year by assessing the impact of macroeconomic variables such as GDP, the unemployment rate, and interest rates on credit customers’ probability of default (PD) under three NGFS climate stress scenarios. At the same time, to check the losses in value due to changes in loss given default (LGD) in areas where mortgage collateral is located, we calculated expected credit losses (ECL) under the climate stress scenarios. Compared to the baseline scenario, the average expected loss (EL) increased by 1.04-1.92 basis points under the 2030 climate stress scenarios and by 0.64-1.52 basis points under the 2050 climate stress scenarios. The highest increases in ECL came under the disorderly transition scenario and current policy scenario for 2030 and 2050, largely because the macroeconomic situation varied greatly under different scenarios. Under the disorderly transition scenario, unemployment peaked between 2030 and 2035 before falling, while under the current policy scenario it remained at a high level after 2035, and customer PD clearly fluctuated with those trends. The impact on LGD, however, was relatively limited. Overall, the PD and EL on Fubon mortgages have always been low, and even with climate stress, the EL rose only slightly and remained relatively low, indicating a limited impact.



Compared to the baseline scenario, the average expected loss (EL) of the mortgage business increased in all three climate stress scenarios.



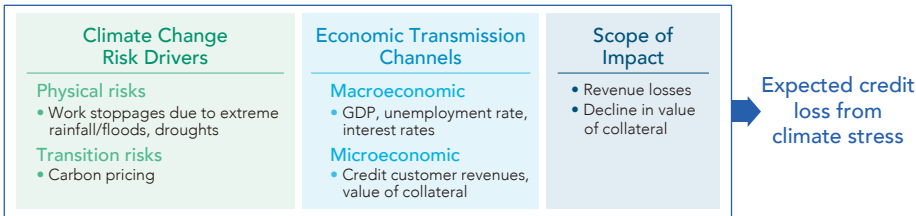
• Slope Risk

Three factors – exposure, hazard, and vulnerability – given risk ratings on a 1-5 scale, are used to assess slope risk and the potential for disaster. This risk assessment is conducted on 157,832 properties held as collateral by Taipei Fubon Bank and Fubon Life for mortgages. Under the RCP 8.5 scenario, the future slope risk rating was Level 1-2, indicating that the potential slope risk is relatively low, primarily because climate factors have long been part of Fubon’s standard procedures for credit risk assessments. For example: Before main subsidiary Taipei Fubon Bank undertakes a mortgage, it assesses whether the collateral is located on a dangerous hillside prone to landslides, debris flows, or flooding. It has also established a “Climate Risk Area Rejection List” and a “Climate Risk Special Area List” to help screen and manage mortgage requests.

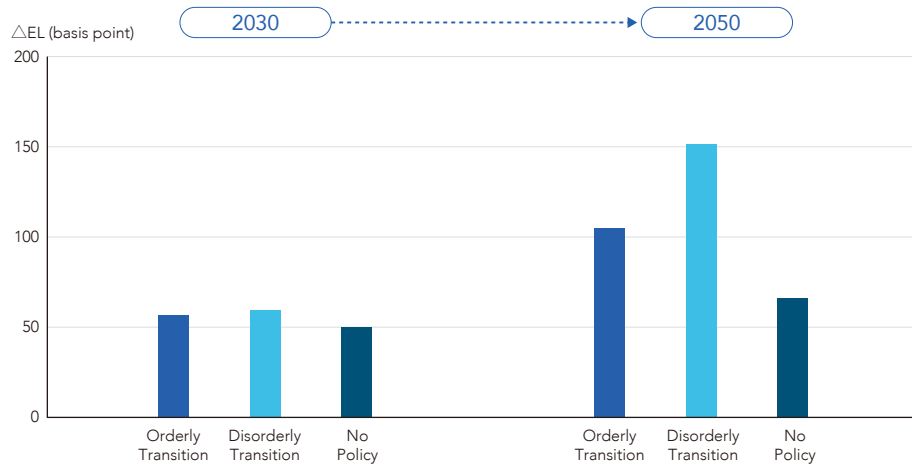
Assessment Factors	Definition
Hazard	<ul style="list-style-type: none"> NCDR slope hazard level: Under the RCP 8.5 scenario, probability of maximum rainfall in a year exceeding 350 mm over a 24-hour period (Base period: 1979-2003; End-21st century: 2075-2099) NCDR slope environment hazard factors: Considers the historical landslide rate, the actual slope, and geohazard indicators
Vulnerability	Rate at which hillside home loses value
Exposure	Distribution of current mortgage collateral value

Domestic Corporate Credit

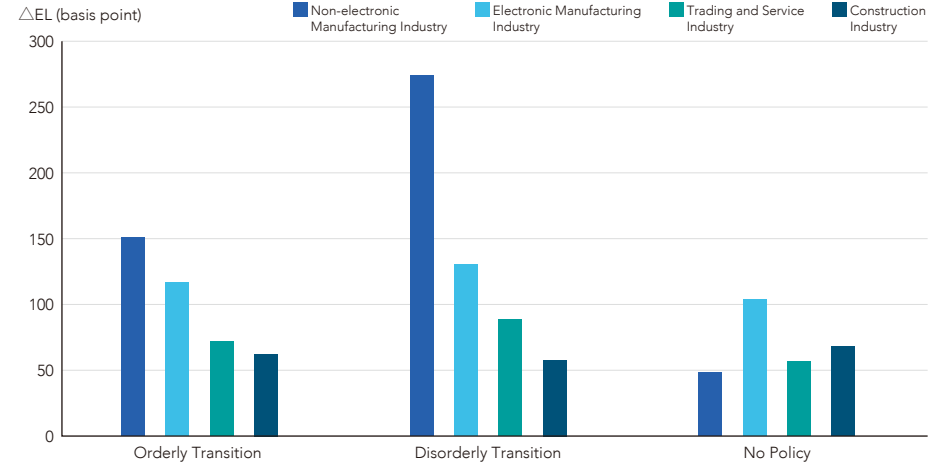
The climate stress tests on Fubon’s corporate credit business in Taiwan took into account transition and physical risks and included macroeconomic and microeconomic transmission pathways. Microeconomic transmission pathways are used to help assess the impact of future carbon fees/taxes on company revenues by industry type, as well as calculate the impact of physical risks (extreme rain, drought) on client revenues and collateral value based on the location of the client and the collateral held. These are all used to assess changes in corporate probability of default under three climate stress scenarios. The assessments found that the EL in 2050 under the three scenarios ranged from 66 to 152 basis points higher than the base case scenario. The biggest impact came under the disorderly transition scenario. By industry type, the increase in the EL for the non-electronics manufacturing sector in 2050 under the three scenarios was most noticeable, largely because the probability of default for petroleum and coal products manufacturers and electricity and gas suppliers rose considerably.



Change in EL Under 3 Climate Scenarios

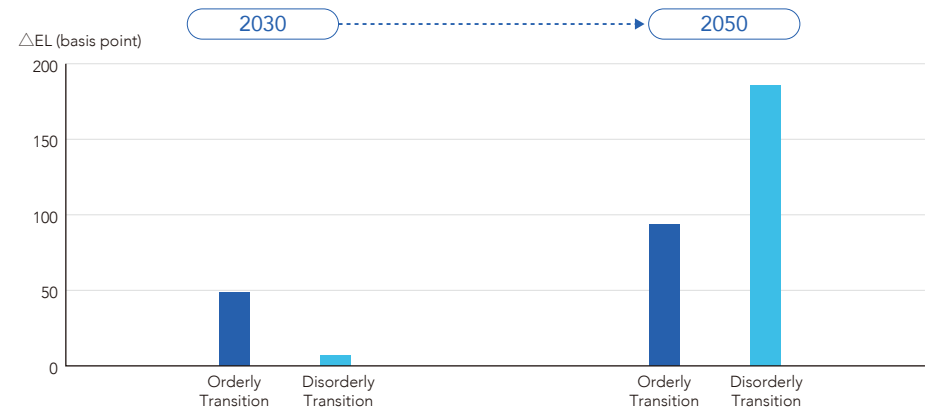


Change in EL Under 3 Climate Scenarios in 2050



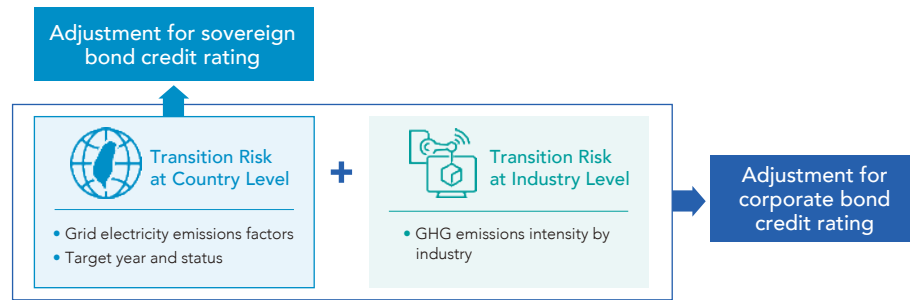
Overseas Corporate Credit

Fubon Financial Holdings banking subsidiaries and sub-subsidiaries conduct climate scenario stress tests based on laws and regulations in their jurisdiction and their own internal models. The tests assess the potential increase in greenhouse gas emissions costs their overseas credit customers face because of transition risks. Under orderly and disorderly transition scenarios, the EL of their overseas corporate credit positions in 2050 is projected to increase by approximately 93-186 basis points compared to the base case scenario.

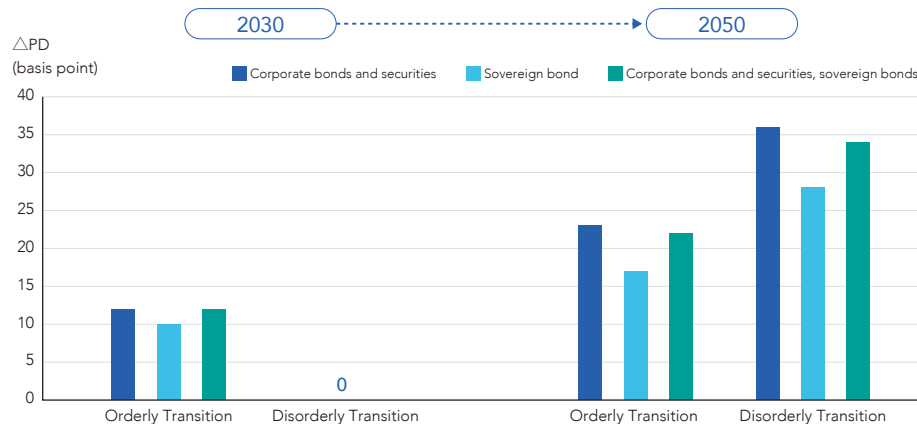


• Holdings of Held-to-Maturity Positions

The main climate-related risk for holdings of held-to-maturity investments – positions in corporate bonds and securities – is transition risk. The level of “country” and “industry” transition risk are weighed to adjust a position’s credit ratings. Of Fubon’s holdings of held-to-maturity investment positions as of the end of 2022, only 3.4% had a variable in a high-risk range. For sovereign debt positions, tested for their “country” transition risk. As a whole the biggest impact was seen under the disorderly transition scenario in 2050, with the weighted average of probability of default 34 basis points higher than the base case scenario. Among the positions, the weighted average of probability of default was 36 basis points higher than the base case scenario for corporate bonds and securities holdings and 28 basis points higher for sovereign bond holdings.



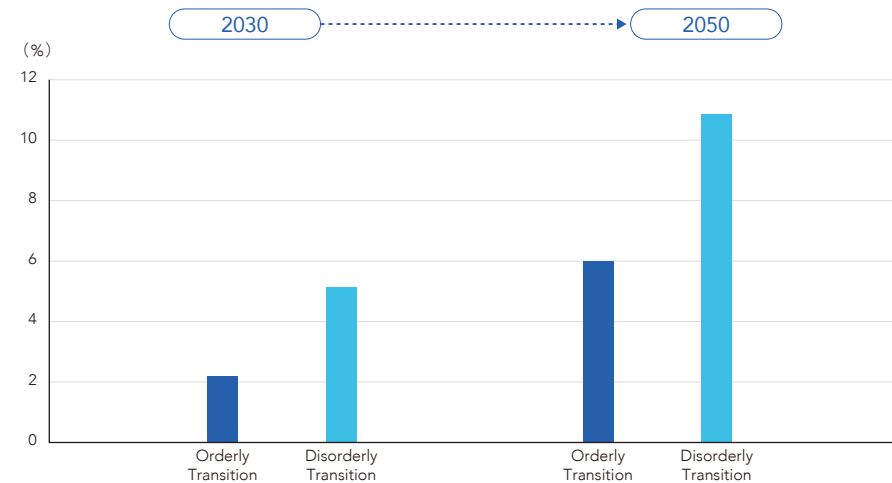
• Change in Probability of Default for Holdings of Held-to-Maturity Investment Positions



• Securities Positions

Assuming static balance sheets and using NGFS climate stress scenarios based on carbon fees, Fubon calculates the additional operating expenses (unit carbon price*carbon emissions) incurred by securities investments due to carbon emissions and their subsequent impact on net worth. Assuming the same number of shares in circulation and price-to-book ratio, the rate of decline in the stock price is identical to the rate of decline in net worth and can be used to estimate the investment’s expected loss. The expected loss in 2050 as a percentage of the financial holding company’s total equity under the disorderly transition scenario was higher than under the orderly transition scenario, indicating that if action is taken too late, a sharp rise in carbon fees will have a bigger impact on companies, and adversely affect the asset price of investments.

• Expected Loss/the Financial Holding Company’s Total Equity



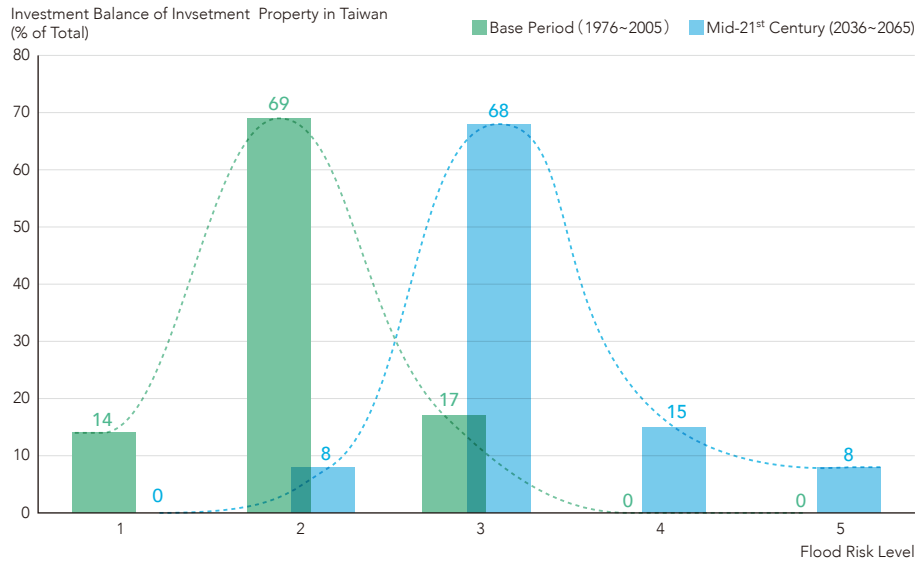
Note: The assessment of securities investments used the carbon price generated by the NGFS Phase 2 MESSAGEix-GLOBIOM 1.1 model. Under the Delayed Transition scenario, due to the late initiation of transformation actions, the carbon price in 2030 remains relatively low. However, in order to anticipate the rapidly rising carbon costs in the future, the analysis replaces the 2030 carbon price with the carbon price in 2035.

• Investment Properties

For domestic investment property, assessments looked at the risk of investment property losing its value because of flooding. This differed from risk assessments for Fubon’s own business locations by substituting the vulnerability factor with the decline in property value and the exposure factor with weighted tiers of the investment properties based on their current values. The flood risk levels of investment properties were generally Levels 1 and 2 in the base period (1976-2005). Under the RCP 8.5 scenario in the middle of the 21st century (2036-2065), estimated flood risk levels were generally Levels 2 to 3, indicating that the potential investment property physical risks Fubon facing were manageable. For overseas investment property assessments, Fubon relied on the World Resources Institute’s expected annual damage model and country data and applied SSP 3-8.5

scenarios to calculate the risk levels of different overseas properties. It found that the risk levels of losses in value of investment properties due to flooding were at a relatively low level of 1-2.

Assessment Factors	Definitions	
	Taiwan	Overseas
Hazard	Under RCP 8.5 scenario, likelihood of more than 650 mm of rainfall in a day (Base period: 1976-2005; Mid-21 st century: 2036-2065)	<ul style="list-style-type: none"> • Scenario: SSP 3-8.5 • Time frame: 2050 • Used World Resources Institute expected annual damage model
Vulnerability	Loss in property value (considered "property location" and "type of building"; loss in property value caused by flooding assessed based on actual property values recorded historically)	
Exposure	Current value of investment property	



Note: Flood risk levels measured on a scale of 1-5 (low risk to high risk).

Property Insurance

After assessing the characteristics of each form of underwriting, it was determined that the main type of insurance affected by flooding is engineering insurance. The properties used to assess Fubon Insurance's exposure to flood risk were those for which it underwrote engineering insurance policies with retained coverage of more than NT\$100 million as of the end of 2022. A total of 22 properties met those criteria after excluding overseas cases and offshore wind turbines. In the base period (1976-2005), those properties were found to have relatively low Level 1-2 flood risks. Under the RCP 8.5 scenario in the middle of the 21st century (2036-2065), there was only one case in which the flood risk level went from Level 2 to Level 3, and that was a large-scale electronics enterprise that already has a certain degree of climate resilience and can mitigate the potential losses it faces, limiting the potential insurance claims Fubon would have to pay.

Hazard (H)

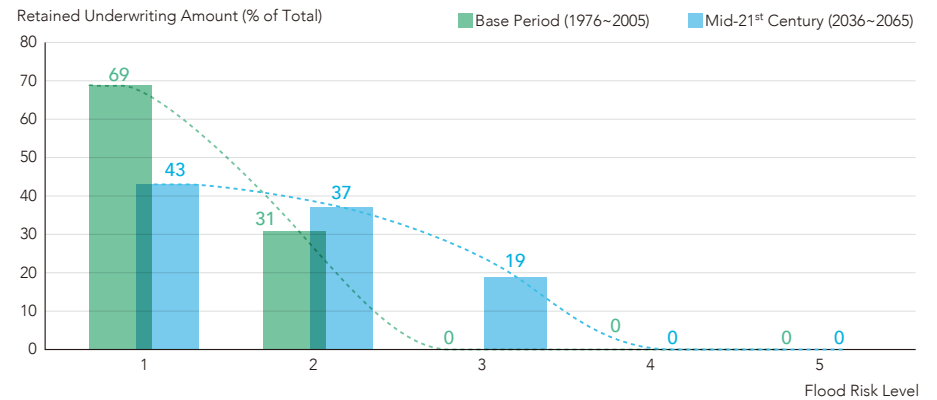
The likelihood of 650mm/day of rainfall

Vulnerability (V)

Potential flooding from 650mm/day rainfall based on Water Resources Agency projection

Exposure (E)

Retained Underwriting Amount



Note: Flood risk levels based on a 1-5 scale with 5 the highest risk.

4.4 Risk Management and Monitoring Procedures

4.4.1 Climate Risk Strategies and Management Measures

Fubon devises risk responses and control measures based on climate scenario analyses. Though the physical risks to its own business locations and supplies are relatively limited, the potential adverse impacts of those risks are still closely monitored. At the same time, Fubon helps train suppliers to undertake carbon inventories and set carbon reduction goals to mitigate transition risk. In terms of investments and insurance underwriting, the impact of these risks on corporate credit and investment positions become most evident in 2050 under a disorderly transition scenario, and if action is not taken ahead of time, the expected sharp rises in future carbon fees or taxes could have an even bigger impact on Fubon loan clients and investee companies than expected. To mitigate climate-related transition risks, Fubon continues to reinforce its climate-change responses, practices, and risk control mechanisms, including by reviewing its standards on investing in or pulling investment out of high-carbon companies based on domestic and overseas trends. This year, Fubon has developed a new investment and underwriting decarbonization strategy for the coal industry and unconventional oil and gas sectors to reduce climate-related risks. The strategy requires Fubon to try to help clients in making low-carbon transitions while gradually adjusting its asset allocation away from exposure to high-carbon companies that do not have energy transition plans or actions in place.

• Investment Strategies

By 2040, no longer make new investments in companies involved in thermal coal mining/transportation, coal power, and unconventional oil and gas sectors that have not presented a carbon-reduction transition plan that is aligned with Paris Agreement.

Coal Power	Thermal Coal Mining/Transportation	Unconventional Oil and Gas
<ul style="list-style-type: none"> Starting in 2021, no longer made new investment in power plants that generate more than 50% of their power from coal. By 2030, no longer make new investment in power plants that generate more than 30% of their power from coal. By 2040, no longer make new investment in power plants that generate more than 5% of their power from coal. 	<ul style="list-style-type: none"> By 2025, no longer make new investment in companies that derive more than 50% of their revenues from thermal coal mining or transportation. By 2030, no longer make new investment in companies that derive more than 30% of their revenues from thermal coal mining or transportation. By 2040, no longer make new investment in companies that derive more than 5% of their revenues from thermal coal mining or transportation. 	<ul style="list-style-type: none"> By 2025, no longer make new investment in companies whose share of revenue from unconventional oil and gas sectors is continuing to rise. By 2030, no longer make new investment in companies that derive more than 30% of their revenue from unconventional oil and gas sectors. By 2040, no longer make new investment in companies that derive more than 5% of their revenue from unconventional oil and gas sectors.

Note 1: The above restrictions do not apply if a potential investment target has developed a low-carbon transition plan that is aligned with Paris Agreement or a state-run enterprise controlled by governments that have signed the Paris Agreement or committed to achieving net-zero emissions.

Note 2: Unconventional oil and gas sectors refer to upstream extraction businesses involved in tar sands, shale oil and gas, arctic oil and gas, ultra-deep-water oil and gas and the production of liquefied natural gas derived from these unconventional oil and gas sources.



• Underwriting Standards

By 2050, subsidiary Fubon Insurance will no longer underwrite companies involved in coal mining/related infrastructure, coal power, and unconventional oil and gas that have not taken concrete carbon reduction actions or undertaken low-carbon transition plans.

Coal Power	Coal Mining/Related Infrastructure	Unconventional Oil and Gas
<ul style="list-style-type: none"> • By 2025, no new underwriting of power plants that generate more than 50% of their power from coal. • By 2030, no new underwriting of power plants that generate more than 30% of their power from coal. • By 2050, no longer underwrite power plants that generate more than 5% of their power from coal. 	<ul style="list-style-type: none"> • By 2025, no new underwriting of companies that derive more than 50% of their revenues from coal mining or related infrastructure. • By 2030, no new underwriting of companies that derive more than 30% of their revenues from coal mining or related infrastructure. • By 2050, no longer underwrite companies that derive more than 5% of their revenues from coal mining or related infrastructure. 	<ul style="list-style-type: none"> • By 2025, no new underwriting of companies that derive more than 50% of their revenue from unconventional oil and gas sectors. • By 2030, no new underwriting of companies that derive more than 30% of their revenue from unconventional oil and gas sectors. • By 2050, no longer underwrite companies that derive more than 5% of their revenue from unconventional oil and gas sectors.

Note 1: The share of existing policies in these sectors in 2023 will be the baseline; these shares will not be increased.
 Note 2: If a potential insurance client has publicly disclosed specific carbon reduction actions or a low-carbon transition plan, including adopting science-based emissions reduction targets, joining the RE100/EP100 initiatives, developing renewable energy, using carbon capture technology to mitigate emissions, or engaging in other carbon reduction actions verified by a third-party organization, or the purpose of the insurance is clearly related to a low-carbon transition, green energy development or carbon emissions reduction, the underwriting opportunity can be assessed and if approved at the company's required level of authority it will not be subject to the above restrictions.
 Note 3: Unconventional oil and gas sectors refer to upstream extraction businesses involved in tar sands, shale oil and gas, arctic oil and gas, ultra-deep-water oil and gas, and the production of liquefied natural gas derived from these unconventional oil and gas sources.

• Financing Standards

In 2021, Fubon established standards for investing in and pulling investment out of five high-carbon industries – power plant, coal mining, cement, petrochemicals, and steel – while encouraging the extension of credit to be used for low-carbon transitions, green energy development, or carbon reduction to support clients that have initiated green transitions. Subsidiary Taipei Fubon Bank has set “Sustainable Loan and Investment Guideline” and “Credit Risk Management Operating Guideline – Institutional Banking” and incorporated sustainability risk assessments involving credit into KYC (know your customer) and credit check processes. That means that sustainability risk is identified, assessed and weighed in all credit cases (including those that must meet Equator Principles guidelines and other project financing cases) based on sustainability risk assessment procedures and Equator Principles compliance within the existing credit risk management framework. Priority is given to checks for high-risk ESG factors followed by a green due diligence survey to understand the impact of the credit client's operations on the environment and its transition risk. Those factors and an assessment of “ESG impact” and “energy transition plans” are used to give the credit client an ESG rating and develop a strategy for dealing with the client that involves mitigating potential transition risks.

Taipei Fubon Bank also established “Taipei Fubon Commercial Bank Co., Ltd. Institutional Banking Sustainable Development Credit Product Operation Guideline” in 2022, covering products such as sustainability-linked loans, sustainable supply chain financing, and green spending loans. The loans offer preferential conditions for meeting green indicators and implementing monitoring measures to encourage clients to take carbon reduction actions. Through the above risk control measures and incentives, Fubon can gradually adjust and reduce its exposure to high-carbon companies that have not adopted transition plans or practices while also mitigating the potential climate-related risks it faces.

4.4.2 Regular Monitoring Measures

In 2021, Fubon set four major sustainability strategies – decarbonization, digitalization, empowerment, and connection – and set related goals for 2025. The decarbonization strategy focuses on quantitative goals for green finance, green bond underwriting, climate-related products and services, and reduction of carbon emissions from operations, as well as the review of standards on investing in or pulling investment out of companies in high-carbon industries. In terms of global initiatives and external goals, Fubon's SBT targets have been validated.

By regularly monitoring low-carbon indicators, checking exposure to high-carbon businesses and industries, calculating financed emissions, and monitoring progress on achieving SBT targets, Fubon keeps close tabs on whether its climate-related strategies and control measures are consistent with the Company's short-, medium-, and long-term management goals and are reinforcing its resilience to climate change. Fubon also constantly watches for changes in domestic or international climate policies and trends and adjusts and optimizes its management practices and action plans in response.





5 Metrics and Targets

5.1 Key Metrics

5.1.1 Operational Emissions

Fubon Financial Holdings launched the ISO 14064-1 greenhouse gas inventory and assurance certification process in 2012. Emissions from the past four years and related information are shown below.

Scope 1, Scope 2 Emissions from Fubon Operations (2019-2022)

GHG Emissions (t/CO ₂ e)		2019	2020	2021	2022	2022 Targets ^{Note 4}	
Operational Emissions ^{Note 1}	Scope 1	6,438	5,100	4,967	4,786	5,490	
	Scope 2	Location Based	60,379	57,356	53,690	53,344	58,898
		Market Based	60,379	57,356	53,690	53,053	58,898
	Total	Location Based	66,817	62,456	58,657	58,130	64,388
		Market Based	66,817	62,456	58,657	57,839	64,388
		Emissions per Person	1.47	1.42	1.42	1.43	1.47

Note 1: The operational emissions for each year includes the emissions of Jih Sun Financial Holdings, which was formally merged into Fubon Financial Holdings in 2022, and its main subsidiaries Jih Sun Commercial Bank and Jih Sun Securities.

Note 2: The GHG emissions inventory of Fubon Financial Holdings and its related subsidiaries in 2022 was conducted based on the standards of ISO 14064-1:2018, The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard, GHG Emissions Registry Guidelines, 2021 IPCC AR6 GWP values, and Version 6.0.4 of the Environmental Protection Administration's GHG Emissions Factor Management Table, and verified by assurance institutions such as the British Standards Institution (BSI).

Note 3: The inventory methods used by Fubon Financial Holdings and its four subsidiaries (Fubon Life, Taipei Fubon Bank, Fubon Insurance and Fubon Securities) from 2019 to 2021 were based on the same standards as those used in 2022, including IPCC AR4 and AR5 GWP values and Version 6.0.4 of the Environmental Protection Administration's GHG Emissions Factor Management Table and were verified by the British Standards Institution (BSI). The emissions inventories of other subsidiaries were calculated based on their actual consumption of fuel and energy or their emissions per person.

Note 4: Operational emissions reduction targets were based on Scope 1 and Scope 2 emissions in 2017 and called for a reduction of 6% by 2022 and 12% by 2025. The target for per capita emissions in 2022 was a 2% reduction from 2017 per capita emissions of 1.50 t/CO₂e/person.

Scope 3 Value Chain Emissions (2019-2022)

GHG Emissions (t/CO ₂ e)	2019	2020	2021	2022
Purchased Goods and Services	37,872	39,379	35,291	39,331
Capital Goods	54,973	75,736	79,005	48,068
Fuel-and Energy-related Activities (not included in Scope 1 or 2)	14,676	11,310	9,055	8,629
Upstream Transportation and Distribution	0.06	0.06	0.05	0.03
Waste Generated in Operations	457	453	346	308
Business Travel	440	115	83	109
Employee Commuting	33,335	34,374	28,710	24,270
Upstream Leased Assets	0	0	0	0
Other Upstream	3	3	3	3
Downstream Transportation and Distribution	-	21	76	78
Processing of Sold Products	-	139	191	224
Use of Sold Products	-	6,570	6,738	5,224
End of Life Treatment of Sold Products	-	268	973	1,086
Total ^{Note 3}	141,756	168,368	160,471	127,330

Note 1: For related information, please see the 2022 Sustainability Report, pgs. 52-53

Note 2: The inventory methods of fuel- and energy-related activities (not included in Scope 1 or 2), waste generated in operations, business travel and employee commuting used by Fubon Financial Holdings and its four subsidiaries (Fubon Life, Taipei Fubon Bank, Fubon Insurance and Fubon Securities) from 2019 to 2021 were the same as those used in 2022. The GHG emissions inventory of other subsidiaries was calculated based on their actual consumption of fuel and energy or their emissions per person. Other emissions are calculated and summed up by multiplying activity data and corresponding emission factors.

Note 3: Total Scope 3 emissions do not include financed emissions.

Note 4: Scope 3 emissions were lower in 2022 than in 2021 mainly due to a decrease in the amount spent on property purchases.

5.1.2 Financed Emissions

In 2019 and 2020, Fubon based the scope of its inventory of emissions by loan clients and companies invested in on the SBTi's guidance on methodology on target-setting for financial institutions published in 2020. The inventories covered investments in stocks, corporate bonds, ETFs, mutual funds, and REITs, as well as financing for power generation projects, electricity generation-related loans, commercial property loans, and long-term corporate loans (not including small and medium-sized enterprises). The inventory results for the two years were as follows:

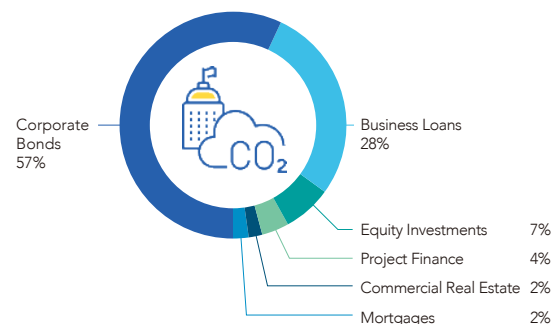
	2019	2020
Financed Emissions (tCO ₂ e)	8,161,918	7,466,794
Carbon Footprint (tCO ₂ e/NT\$ million)	2.15	1.95

In 2021, Fubon began using the PCAF financed emissions methodology and expanded its inventory's scope to the PCAF's six major asset classes and then added other asset categories such as unlisted securities, project financing, SME loans, and personal loans. In 2022, emissions from investments and loans totaled 17,556,691 metric tons CO₂e, down 8.2% compared to 2021. The carbon footprint fell from 3.2 metric tons CO₂e/NT\$ million in 2021 to 2.9 metric tons CO₂e/NT\$ million in 2022, and had a data quality score of 2.8. Of those, the top five financed emissions sectors accounted for only 12% of total investment and financing balance, while they accounted for more than 70% of total financed emissions. The main emissions generated through investments came mainly from the petrochemical and electricity generation sectors while loan-generated emissions came primarily from the state-run power company and power generation projects. The majority of those power projects rely on natural gas, which, along with nuclear power, was classified by the European Union in 2022 as a "sustainable activity." Natural gas has been widely seen as important bridge energy during the transition to cleaner fuels, and Fubon is actively helping credit clients involved in electricity generation to accelerate their energy transitions. The goal is to first substitute coal with natural gas and then upgrade further to using renewables to generate electricity.

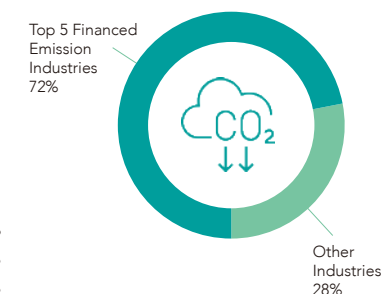
PCAF Asset Classes	2021		2022	
	Financed Emissions (tCO ₂ e)	Carbon Footprint (tCO ₂ e/NT\$ million)	Financed Emissions (tCO ₂ e)	Carbon Footprint (tCO ₂ e/NT\$ million)
Corporate Bonds	11,827,178	3.9	9,921,004	3.3
Equity Investments	1,677,061	2.4	1,308,203	2.2
Business Loans	4,389,320	5.0	4,883,603	5.4
Project Finance	694,820	12.3	714,951	10.6
Commercial Real Estate	199,958	0.6	367,380	1.1
Mortgages	334,715	0.3	361,550	0.4
Total	19,123,052	3.2	17,556,691	2.9

Note 1: Financed emissions did not cover Jih Sun Commercial Bank and Jih Sun Securities.
 Note 2: The PCAF has not yet provided a method for calculating emissions for green bonds; for these calculations, a conservative approach was taken and they were treated as regular bonds.
 Note 3: Given that most business loans can be renewed when they come due, business loans that came due within one year were included in the inventory.
 Note 4: The commercial real estate category in the table above includes investments in commercial real estate and commercial real estate loans.

2022 Financed Emissions for Each Asset Class



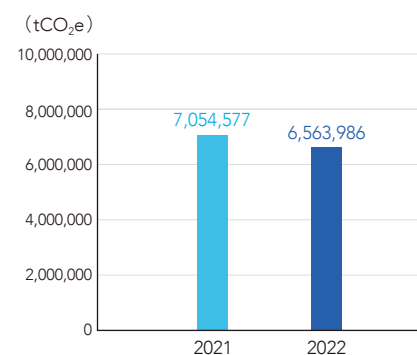
2022 Financed Emissions



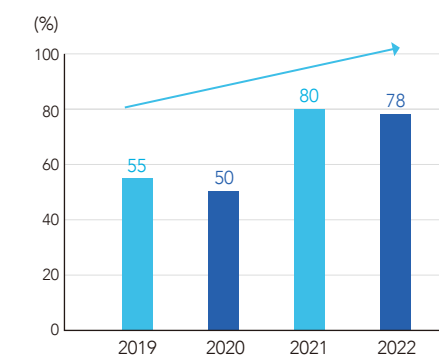
Note: The five biggest financed emissions sectors were electricity and gas supply, manufacture of oil and coal products, extraction of crude petroleum and natural gas, manufacture of chemical material and fertilizers, and agriculture and animal husbandry.

In December 2022, the PCAF launched the second version of the Global GHG Accounting and Reporting Standard for the Financial Industry and added a method for sovereign debt (including sovereign bonds and sovereign loans) emissions and guidance to account for emission removals. Fubon recalculated its sovereign debt emissions for 2021, and found that its 2022 sovereign debt emissions were down 7% to 6,563,986 metric tons CO₂e, mainly because of a reduction in Fubon's sovereign debt positions. The carbon footprint rose slightly, from 8.2 metric tons CO₂e/NT\$ million in 2021 to 8.4 metric tons CO₂e/NT\$ million in 2022, and the data quality score was 1.

➔ Sovereign Debt Financed Emissions



➔ Portfolio Coverage of Carbon Footprint Assessment



Note: The investment (including financial assets measured at fair value through profit or loss and other comprehensive income, debt investments measured at amortized cost, investments accounted for using equity method/equity method and investment property) and financing (net of discounts and overdrafts, import and export bill negotiation) balance is based on the consolidated balance sheet of the financial holding company for the year 2022.

5.1.3 Insurance-associated Emissions

In November 2022, the PCAF launched the Global GHG Accounting and Reporting Standard for Insurance-Associated Emissions, covering two lines of business: “commercial lines” and “personal motor lines.” Subsidiary Fubon Insurance followed the guidelines to calculate insurance-related emissions for the first time in 2022. Commercial insurance policies generated 150,635 metric tons CO₂e. Of those, the insurance-associated emissions of the engineering insurance are relatively higher due to the higher uncertainty in carbon emissions, which are estimated based mostly on economic activity data, as there are fewer disclosures of carbon data by insured parties and the higher proportion of carbon-intensive industry such as electricity and gas supply. The Novel insurance has the lowest insurance-associated emissions because the main insured clients belong to industries with lower carbon intensity, such as wholesale trade and specialized construction activities. As for personal motor insurance, Fubon Insurance had a roughly 20% share of the auto insurance market in 2022, and after excluding vehicles for commercial use, it estimated its auto-insurance-related emissions at 685,756 metric tons CO₂e. Insured electric vehicles accounted for only 0.05% of those carbon emissions, not surprising given that they generate far fewer emissions than non-electric vehicles. As part of Taiwan’s 2050 net-zero pathway, all new vehicles sold in Taiwan starting in 2040 will be electric vehicles, meaning their share of the total market will inevitably grow in the future. Fubon Insurance has aggressively promoted eco-friendly car insurance in recent years, and the rise in electric vehicles will help lower its insurance-related emissions.

Insurance Types		Insurance-associated Emissions (tCO ₂ e)	Relative Insurance-associated Emissions (tCO ₂ e)/NT\$ million	Data Quality Score
Commercial Insurance	Engineering Insurance	17,868	24.2	4.7
	Commercial Fire Insurance	95,406	17.5	3.4
	Marine Insurance	20,994	10.8	3.7
	Novel Insurance	16,367	4.7	4.4
Subtotal		150,635	12.98	3.8
Personal Motor Insurance	Cars	528,230	43.4	3.1
	Electric Cars	621	2.2	3.0
	Motorbikes	154,441	24.1	3.0
	Electric Motorbikes	2,464	7.2	3.8
Subtotal		685,756	35.7	3.1
Total		836,391	27.2	3.3

Note 1: Annual fuel consumption is based on Bureau of Energy statistics and related assumptions: it assumes that cars travel 15,000 kilometers a year and motorbikes about 4,500 kilometers a year. Calculations were based on gasoline costing NT\$29.03/liter and diesel costing NT\$25.04 a liter.
 Note 2: Personal motor insurance-associated emissions were estimated based on the number of policies.

5.2 Key Targets

5.2.1 Key Operating Targets

Fubon Financial Holdings is committed to reducing the impact of its operations on the climate and the natural environment, and has set goals for reducing the emissions generated and energy used by its own operations and implemented several measures to achieve those goals, as summarized below.

Operational Emissions Reduction

Fubon Financial Holdings initially set emissions reduction targets based on Scope 1 and Scope 2 emissions in 2017 that called for a reduction in emissions of 6% by 2022 and 12% by 2025. Because of ongoing efforts to replace high power-consumption equipment, manage and encourage energy conservation, and use renewable energy, emissions from operations totaled 57,839 t/CO₂e during the year, down 16% from the 2017 baseline.

Fubon has consistently aligned its emissions goals with international carbon reduction and renewable energy initiatives, and its SBT emissions targets based on a 1.5°C scenario were validated by the SBTi in September 2022. It commits Fubon to reducing Scope 1 and Scope 2 emissions by 42% by 2030 compared to emissions in 2020. In July 2022, Fubon signed the new version of the SBT commitment letter, pledging to achieve the target of net zero emissions by 2050 at the latest. It also became a member of RE100 and committed to sourcing 100% renewable electricity across its global operations by 2040.

To meet its SBT and RE100 commitments, Fubon in 2023 adjusted its carbon reduction targets for its own operations, including increasing its target for reducing gray electricity consumption related to its Scope 2 emissions reduction pathway while increasing its purchases of renewable energy and installations of solar panel arrays.

• New Goals for Reducing Emissions from Operations and Gray Electricity Usage

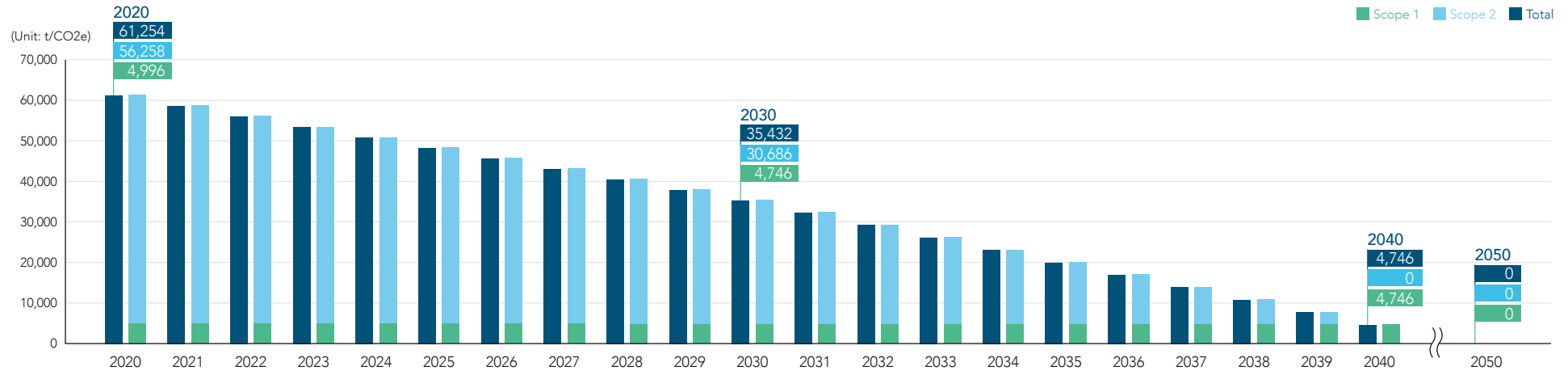
- Operational emissions reduction target:

Baseline is Scope 1 and Scope 2 carbon emissions in 2020; Fubon pledged to reduce emissions by 42% by 2030 (5% reduction in Scope 1 emissions and 45.5% reduction in Scope 2 emissions) to achieve the SBT target and then continue to reduce carbon emissions in a scientific way until cutting them by 92.3% by 2040 (5% reduction in Scope 1 emissions and a 100% reduction in Scope 2 emissions). The remaining emissions are expected to be eliminated before 2050 using carbon rights and other related tools.

- Gray electricity consumption reduction target:

Baseline is gray electricity consumption in 2020; pledged to cut gray electricity consumption by 45.4% by 2030 and by 100% by 2040 (to be achieved through energy saving initiatives, purchases of renewable energy and increases in solar panels for own-use power generation).

Adjusted Mid-to-long-term Carbon Reduction Path of Fubon Financial Holdings



Note: Fubon set baseline year (2020) Scope 1 and Scope 2 emissions for its mid-to-long-term carbon reduction path based on the boundary threshold rules in the "Financial Sector Science Based Targets Guidance" issued by the SBTi, which state that "Financial Institutions may exclude up to 5% of scope 1 and scope 2 emissions combined in the boundary of the inventory and target." It set baseline year (2020) Scope 1 and 2 emissions at 61,254 tons, which was 98% of total Scope 1 and 2 emissions of 62,456 tons in the same period, consistent with the SBT boundary threshold rules.

Increasing Procurement of Renewable Energy

Fubon Financial Holdings has gradually increased its procurement of renewable energy in recent years:

- In 2021, Taipei Fubon Bank purchased 670,000 kWh of solar power per year for the first time (with an estimated maximum annual carbon reduction benefit of 341.03 t/CO₂e). A total of 570,981 kWh of solar power was actually provided in 2022, equal to 570 T-RECs and a reduction of 290.62 t/CO₂e in carbon emissions.
- In 2022, Taipei Fubon Bank increased its procurement of solar power by 2 million kWh per year (with an estimated maximum annual carbon reduction benefit of 1,018 t/CO₂e). This additional solar power is expected to be supplied starting in March 2023.
- By 2023, Taipei Fubon Bank, Fubon Insurance and Fubon Securities will have increased their procurement of solar power by about 4.39 million kWh per year (with an estimated maximum annual carbon reduction benefit of 2,235.01 t/CO₂e).
- Therefore, cumulative renewable energy purchased by Fubon Financial Holdings in 2023 will reach approximately 7.06 million kWh per year. In the future, Fubon Financial Holdings plans to further increase its procurement of renewable energy year by year to meet its reduction targets for carbon in its operations and use of gray energy.

Ramping Up Installation of Solar Panels

Since 2016, Fubon Financial Holdings has successively installed solar panels in seven locations, with a total installed capacity of 179.9 kW. Four of the installations are for self-use (at the Fubon Life Taichung Wenxin Building, the Fubon Life Taipei Liaoning Building, the Fubon Life Taipei Jianbei Building and the Taipei Fubon Bank Taipei Zhongshan Building, with a total installed capacity of 139.3 kW).

In 2022, the seven solar panel arrays generated a combined 171,029 kWh (including 121,614 kWh for self-use) of electricity, resulting in a reduction of 87.05 t/CO₂e in carbon emissions (including reduction benefits of 61.9 t/CO₂e from power generated for self-use).

Unit: kWh; t/CO₂e

Locations	Completed Date	Installed Capacity (kW)	2022		Cumulative since Completion	
			Power Generation	Carbon Reduction	Power Generation	Carbon Reduction
Fubon Life Taichung Wenxin Building	2018/01	5.2	5,449	2.77	27,516	14.34
Fubon Life Taipei Liaoning Building	2021/05	34.8	39,342	20.03	46,993	23.87
Fubon Life Taipei Jianbei Building	2022/05	63.9	40,200	20.46	40,200	20.46
Taipei Fubon Bank Taipei Zhongshan Building	2018/07	35.4	36,623	18.64	172,363	89.19
Fubon Insurance Pingtung Building	2017/07	12.5	13,600	6.92	74,073	38.65
Fubon Insurance Kaohsiung Chunghua Building	2018/12	19.5	27,318	13.90	109,762	56.29
Fubon Life Taipei Tungnan Building	2016/04	8.6	8,498	4.33	62,634	33.24
Total		179.9	171,029	87.05	533,540	276.04

Note 1: From the completion of the installation of solar panels on the Taipei Fubon Bank Taipei Zhongshan building in 2018 to the end of 2022, a total of 144 T-RECs have been generated (including 36 in 2022)

Note 2: The emissions factor for power consumption in Taiwan in 2022 was 0.509 kg CO₂e/kWh

• Internal Carbon Pricing

Fubon Financial Holdings launched an internal carbon pricing mechanism based on an implicit pricing model in 2021. It was done in response to expectations among international assessment organizations that enterprises adopt carbon pricing and also to improve Fubon's energy efficiency and change its internal behavior. Under the new program, designed to evaluate the carbon reduction benefits of new equipment purchases, Fubon and its subsidiaries use these guidelines to do their assessments:

- Calculate the carbon reduction cost (carbon price) of the equipment under consideration, and compare the benefits with the average carbon reduction cost (average carbon price) for other models of the same type of equipment
- Carbon price = Net cost of equipment investment/estimated carbon reduction during the service life of the equipment
- Average carbon price = Sum of net costs of purchases of similar equipment in previous years/total estimated carbon reduction during the service life of that equipment in previous years.
- Average carbon price to be announced and updated every year; in 2022, the average carbon prices for different types of equipment ranged between -NT\$2,500/t CO₂e and NT\$50,200/t CO₂e.

To make Fubon's carbon reduction management more efficient, the Company began in 2022 to announce on its internal website the results of its ISO 14064-1 GHG emissions inventory and simulated calculations of carbon fees for Scope 1 and Scope 2 emissions as a reference for the managements of Fubon subsidiaries. The simulation used an initial price of US\$10 t/CO₂e suggested in a study titled "Carbon pricing options for Taiwan" by the London School of Economics and Political Science (LSE) that was commissioned by the Environmental Protection Administration. The basis for calculating carbon fees will be adjusted in the future after Taiwan's government announces its carbon fee standards.

• Energy Management

Energy Consumption		Unit	2019	2020	2021	2022	2022 Target (Note 2)
Non-Renewable Energy	Purchased Gray Electricity	kWh	109,812,929	108,941,723	103,044,335	103,414,963	105,188,122
	Gasoline	Liter	448,233	443,271	365,512	325,802	-
		kWh	4,063,360	4,018,377	3,313,466	2,953,483	-
	Diesel	Liter	29,720	30,778	35,713	39,965	-
		kWh	290,154	300,482	348,660	390,169	-
	Natural gas	M ³	20,837	21,483	20,242	20,140	-
		kWh	225,333	232,317	218,900	217,797	-
	Total	kWh	114,391,776	113,492,898	106,925,361	106,976,413	109,459,467
Renewable Energy	Purchased Renewable Energy		-	-	-	570,981	-
	Renewable Electricity for Self-Use	kWh	52,251	52,257	54,786	121,614	-
	Total		52,251	52,257	54,786	692,595	-

Note 1: The thermal value of gasoline for vehicles is 32.635 million joules/liter, and 35.146 million joules/liter for diesel fuel, 38.931 million joules/m³ for natural gas, and 3.6 million joules per kWh of electricity.

Note 2: The energy consumption reduction targets are based on consumption in 2017 and were set at a reduction of 8% by 2022 and a 12.8% reduction by 2025.

Note 3: The data boundary includes Fubon Financial Holdings and subsidiaries Fubon Life, Taipei Fubon Bank, Fubon Insurance, Fubon Securities, Fubon Bank (Hong Kong), Fubon Bank (China), Fubon Futures, Fubon Sports & Entertainment, Fubon Stadium, Fubon Asset Management, TFB Capital, Fubon Securities Investment Services, Jih Sun Securities, and Jih Sun Commercial Bank.

For additional information on Fubon Financial Holdings' environmental sustainability practices, please see the 2022 Fubon Financial Holdings Sustainability Report.

5.2.2 Key Investment and Financing Targets

Fubon has actively channeled capital flows toward green uses, including by supporting clients making green transitions. Aside from establishing 2025 green finance goals, Fubon has followed the SBTi's guidance in setting targets for a main source of the financial sector's emissions – the emissions generated by its investments and loans. In 2022, Fubon decided to increase its 2025 green finance goal by 14%, from the original NT\$2.45 trillion to NT\$2.8 trillion, a goal that it is now moving steadily toward.

Low-carbon Indicators	2021	2022	2025 Goal
Green finance (NT\$100 million)	23,346	24,694	27,963
Participation in green bond underwriting cases (%)	31%	56%	34%

Fubon's SBT Scope 3 emissions goals cover an asset portfolio consisting of investments (listed equities, corporate bonds, ETFs, mutual funds, REITs) and loans (power-generation project financing, commercial real estate loans, electricity generation-related loans, and long-term business loans). The SBTi's Portfolio Coverage

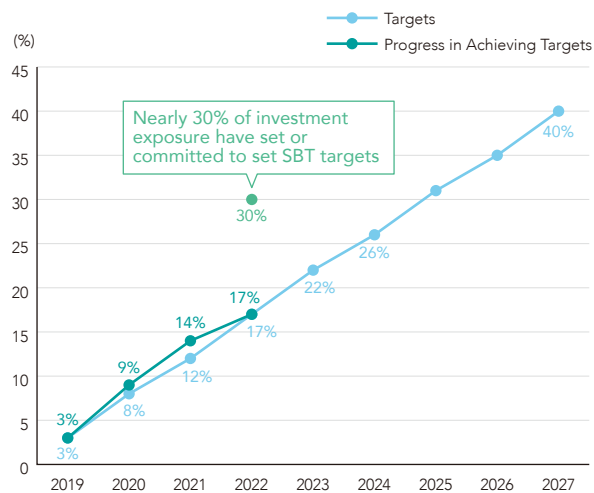
Approach is used to set emissions targets for investment positions, while targets are set for loans by asset class or economic activity through the Sectoral Decarbonization Approach (SDA) or the SBTi's Portfolio Coverage Approach, creating a future carbon reduction pathway. In 2022, SBT Scope 3 emissions for most asset classes remained on their projected pathways, indicating that the climate strategies and actions adopted by Fubon are contributing to climate resilience. In the future, Fubon will continue to adjust its investment and loan portfolios and work closely with suppliers, clients, and investors to ensure that its funds are used to achieve sustainability goals.

Asset Classes	Methods	SBT Targets	Progress in Achieving Targets	Planned Actions
Investments	Portfolio Coverage Approach	40% of investment exposure will have set SBTi validated targets by 2027.	As of 2022, 17% of the investment portfolio had set SBT targets, consistent with the target pathway; in 2023 to date, nearly 30% of the investment portfolio have set or committed to set SBT targets, and it is expected that the goals set for 2024 will be met.	<ul style="list-style-type: none"> Regularly track global companies that have set/pledged to set SBT targets and review percentage of companies invested in or loan clients that have achieved agreed upon goals, to inform adjustments of investment and loan portfolio allocations. Make setting SBT targets the goal requested of companies engaged with; help key clients with low-carbon transitions Encourage existing clients to set SBT targets and increase credit to clients that have already set or pledged to set SBT targets.
Loans	Portfolio Coverage Approach	Target year for goals: 2027 • 38% of long-term outstanding loans within the fossil fuel sector will have set SBTi validated targets by 2027. • 38% of long-term outstanding loans within the electronic manufacturing sector (in the semiconductor packing and testing sector, printed circuit board sector, LCD panel and component sector, and computer manufacturing sector) will have set SBTi validated targets by 2027.	<ul style="list-style-type: none"> Long-term loans to the fossil fuel sector account for a relatively low share of the loan portfolio, with loans to only 5 companies in these industries in 2022. Efforts are being made to engage with these clients to set SBT targets. By the end of 2022, clients accounting for 12% of long-term outstanding loans within the electronic manufacturing sector had set SBT targets, and in 2023 to date, clients accounting for 31% of long-term outstanding loans within the electronic manufacturing sector have set or committed to set SBT targets, and it is expected that the goals set for 2025 will be met. 	<ul style="list-style-type: none"> Continue to increase the share of loans devoted to renewable energy and gradually reduce funding for natural gas and cogeneration power plant projects; assist clients in accelerating their energy transitions. Encouraging loans that have green buildings as collateral to promote the development of effective building standards in Taiwan; give priority to loans for commercial real estate developments that feature Level 4 ratings (the minimum standard for green buildings) or above. Devise plans to directly collect clients' emissions and activity data (such as electricity generation and floor space) to improve data quality.
	Sectoral Decarbonization Approach (SDA)	2030 goals compared to baseline year 2019 • 52% reduction in emissions intensity (metric ton CO ₂ e/MWh) from Fubon's electricity generation project finance portfolio. • 59% reduction in emissions intensity (kgCO ₂ e/m ²) from the commercial real estate sector within Fubon's corporate loan portfolio. • 49% reduction in emissions intensity (metric ton CO ₂ e/MWh) from the electricity generation sector within Fubon's corporate loan portfolio. • 58% reduction in emissions intensity (kgCO ₂ e/m ²) from the finance, retail, service, food and lodging, real estate development sectors within its other long-term corporate loan portfolio.	The emissions intensity of financed electricity generation projects rose, mainly because of the increased use of a main transitional energy source in the transition to clean energy –natural gas– to generate electricity. The emissions intensities from the commercial real estate, the electricity generation and long-term services/commercial buildings sectors within Fubon's corporate loan portfolio were all trending below their target pathways.	

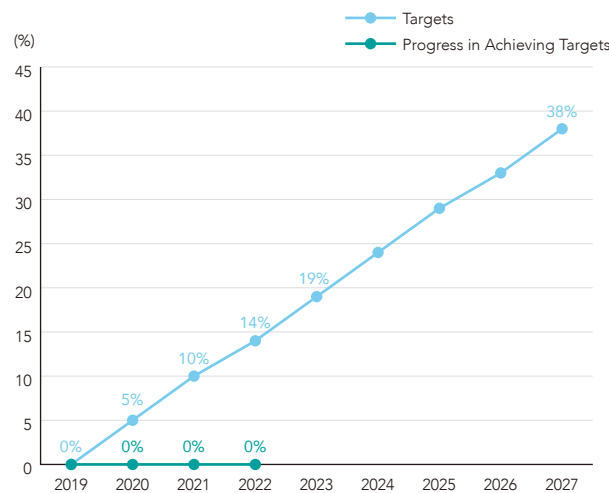
Note: Investment exposure referred to above are those covered by the Fubon's SBT targets, including common/ preferred stock, corporate bonds, ETFs, investments in REITs, and mutual funds.

Portfolio Coverage Approach

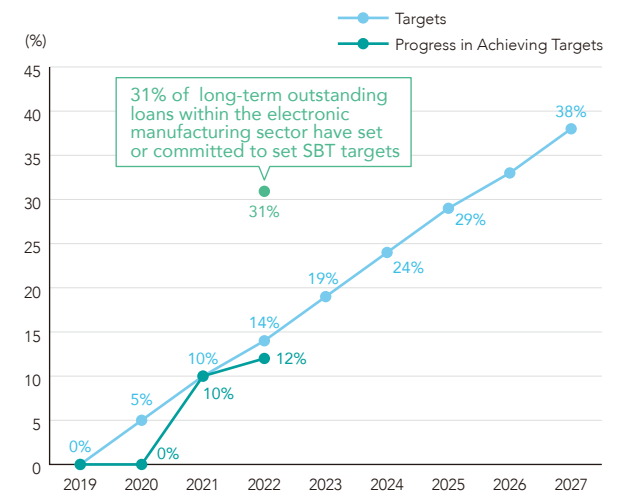
Investments



Corporate Loan: Other Long-Term Debt Fossil Fuel Sector

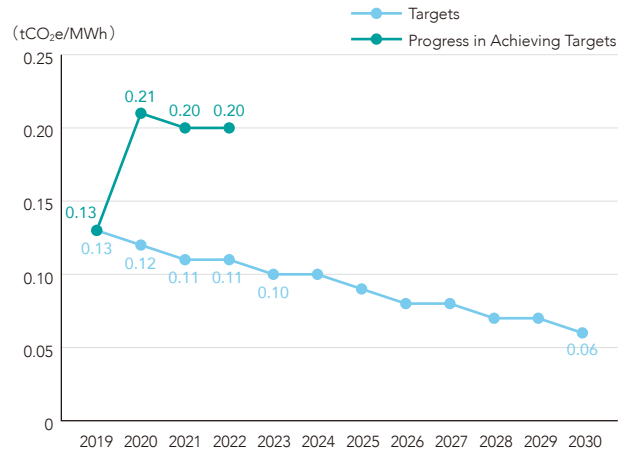


Corporate Loan: Other Long-Term Debt Electronic Manufacturing Sector

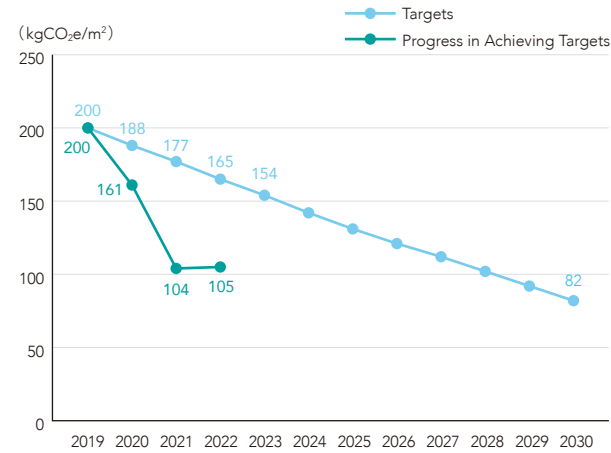


➤ Sectoral Decarbonization Approach

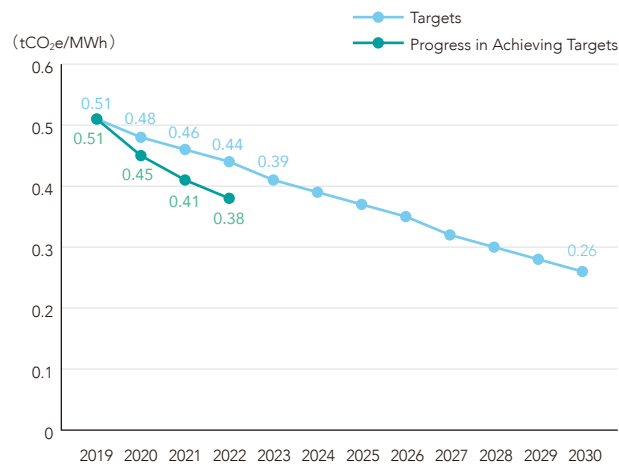
Electricity Generation Project Finance



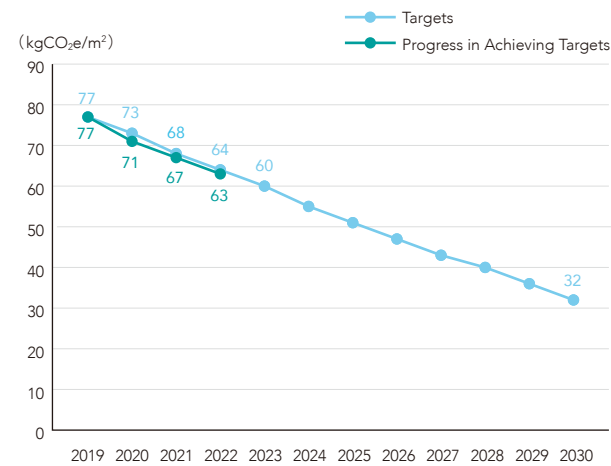
Corporate Loan: Commercial Real Estate Sector



Corporate Loan: Electricity Generation



Corporate Loan: Other Long-Term Debt Services/
Commercial Buildings Sectors



6 Looking Ahead

Climate change is taking a growing toll on the world. In the context of COVID-19, which has had a massive impact on humanity in a relatively short amount of time, the climate threat may seem like a chronic illness. In the future, however, it could prove more deadly than COVID-19, with severe economic consequences. Those consequences may be different from the costs exacted by the coronavirus, but there can be no doubt of their scale over the next 10 to 20 years, with economic losses resulting from climate events expected to approximate the economic disruption from pandemics occurring once every 10 years. Mitigating and adapting to climate change has become an imperative for all people, countries, and enterprises, and while it will not be easy, the situation is not hopeless. Beginning now, if the necessary changes are made and the right actions taken, we can prevent climate-related disasters.

Climate change risks have grabbed the attention of companies and their stakeholders, but support for the Taskforce on Nature-related Financial Disclosures (TNFD) is also on the rise. Its primary mission is to mitigate the loss of biodiversity. To achieve the goal, it forces companies and organizations to understand the impact and dependence of their operations on "ecosystem services" covering four realms – "land, ocean, freshwater, and atmosphere" – and the risks and opportunities they bring to companies.

As the world strives toward a net-zero carbon vision and prioritizes conserving the natural environment, every sector and every company will have to play critical roles in driving real change, and individuals, investors, and governments will increasingly demand that companies adopt more sustainable strategies and concepts. In fact, the world needs more enterprises to transition to sustainable, low-carbon operations to advance global climate and biodiversity goals. To do its part, Fubon Financial Holdings is taking a phased approach in implementing the TCFD and TNFD frameworks so that it can effectively incorporate them into its business strategies and investment decisions. Fubon fully appreciates the important role the financial services sector plays within the global economic structure in supporting business development, but it also sees its mission as maximizing its financial influence and using its core competencies to widen the impact of sustainable investment. Through this vision, Fubon hopes to emerge as a positive force in driving industrial value chains to engage in sustainable practices and creating added value for society and its stakeholders. We will continue to take action to engender a sustainable future, including promoting our "Run For Green™" initiative and embracing such global trends as green finance, responsible investment, and net zero emissions, ultimately creating a better future for all.





Appendix 1. TCFD Recommended Disclosures Mapping

Thematic Area	Guidance for All Sectors	Respective Section	Respective Page
Governance	a) Describe the board's oversight of climate-related risks and opportunities.	2.1, 2.2	6-7
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	2.1, 4.1	7
Strategy	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	3.1	9-10
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	3.1, 3.2, 3.4, 4.4	9-10, 11, 13-14, 29-30
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	3.3, 4.3	12, 20-28
Risk Management	a) Describe the organization's processes for identifying and assessing climate-related risks.	4.1, 4.2, 4.3	15-17, 17-19, 20-28
	b) Describe the organization's processes for managing climate-related risks.	4.1, 4.3, 4.4	15-17, 20-28, 29-30
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	4.1, 4.2, 4.4	15-17, 17-19, 29-30
Metrics and Targets	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	2.4, 3.4, 5.1, 5.2	8, 13-14, 31-33, 33-37
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	5.1, Appendix 2. FHC ESG Report	31-33, 40
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	3.4, 5.1, 5.2	13-24, 31-33, 33-37
Thematic Area	Supplemental Guidance for Banks	Respective Section	Respective Page
Strategy	a) Banks should describe significant concentrations of credit exposure to carbon-related assets. Additionally, banks should consider disclosing their climate-related risks (transition and physical) in their lending and other financial intermediary business activities.	3.1, 4.1, 4.3	9-10, 15-17, 20-28
Risk Management	a) Banks should consider characterizing their climate-related risks in the context of traditional banking industry risk categories such as credit risk, market risk, liquidity risk, and operational risk. Banks should also consider describing any risk classification frameworks used (e.g., the Enhanced Disclosure Task Force's framework for defining "Top and Emerging Risks").	3.1, 4.1	9-10, 15-17
Metrics and Targets	a) Banks should provide the metrics used to assess the impact of (transition and physical) climate-related risks on their lending and other financial intermediary business activities in the short, medium, and long term. Banks should also provide the amount and percentage of carbon-related assets relative to total assets as well as the amount of lending and other financing connected with climate-related opportunities. Banks should describe the extent to which their lending and other financial intermediary business activities, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities. Banks should also indicate which financial intermediary business activities (e.g., loans to specific sectors or industries) are included.	4.3 3.3, 3.4 5.2	20-28 12, 13-14 33-37
	b) Banks should disclose GHG emissions for their lending and other financial intermediary business activities where data and methodologies allow. These emissions should be calculated in line with the Global GHG Accounting and Reporting Standard for the Financial Industry developed by the Partnership for Carbon Accounting Financials (PCAF Standard) or a comparable methodology.	5.1	31-33

Thematic Area	Supplemental Guidance for Insurance Companies	Respective Section	Respective Page
Strategy	b) Insurance companies should describe the potential impacts of climate-related risks and opportunities as well as provide supporting quantitative information where available, on their core businesses, products, and services, including: (1) information at the business division, sector, or geography levels; (2) how the potential impacts influence client or broker selection; and (3) whether specific climate-related products or competencies are under development, such as insurance of green infrastructure, specialty climate-related risk advisory services, and climate-related client engagement.	3.1, 3.4, Appendix 2. Fubon Life and Insurance ESG Report 4.1, 4.4 3.4, 4.1	9-10, 13-14, 40 15-17, 29-30 13-14, 15-17
	c) Insurance companies that perform climate-related scenario analysis on their underwriting activities should provide the following information: (1) Description of the climate-related scenarios used, including the critical input parameters, assumptions and considerations, and analytical choices. In addition to a 2°C scenario, insurance companies with substantial exposure to weather-related perils should consider using a greater than 2°C scenario to account for physical effects of climate change and (2) Time frames used for the climate-related scenarios, including short-, medium-, and long-term milestones.	4.3 3.1, 4.3	20-28 9-10, 20-28
Risk Management	a) Insurance companies should describe the processes for identifying and assessing climate-related risks on re-/insurance portfolios by geography, business division, or product segments, including the following risks: (1) Physical risks from changing frequencies and intensities of weather-related perils; (2) Transition risks resulting from a reduction in insurable interest due to a decline in value, changing energy costs, or implementation of carbon regulation; and (3) Liability risks that could intensify due to a possible increase in litigation.	4.3 3.1 3.1	20-28 9-10 9-10
	b) Insurance companies should describe key tools or instruments, such as risk models, used to manage climate-related risks in relation to product development and pricing. Insurance companies should also describe the range of climate-related events considered and how the risks generated by the rising propensity and severity of such events are managed.	4.1	15-17
Metrics and Targets	a) Insurance companies should provide aggregated risk exposure to weather-related catastrophes of their property business (i.e., annual aggregated expected losses from weather-related catastrophes) by relevant jurisdiction. Insurance companies should describe the extent to which their insurance underwriting activities, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities. Insurance companies should also indicate which insurance underwriting activities (e.g., lines of business) are included.	4.3 4.1, 4.4, 5.1	20-28 15-17, 29-30, 31-33
	b) Insurance companies should disclose weighted average carbon intensity or GHG emissions associated with commercial property and specialty lines of business where data and methodologies allow.	5.1	31-33

Appendix 2. Related Reports and Publications

Annual Report



FHC ESG Report



Fubon Life ESG Report



Fubon Insurance ESG Report



