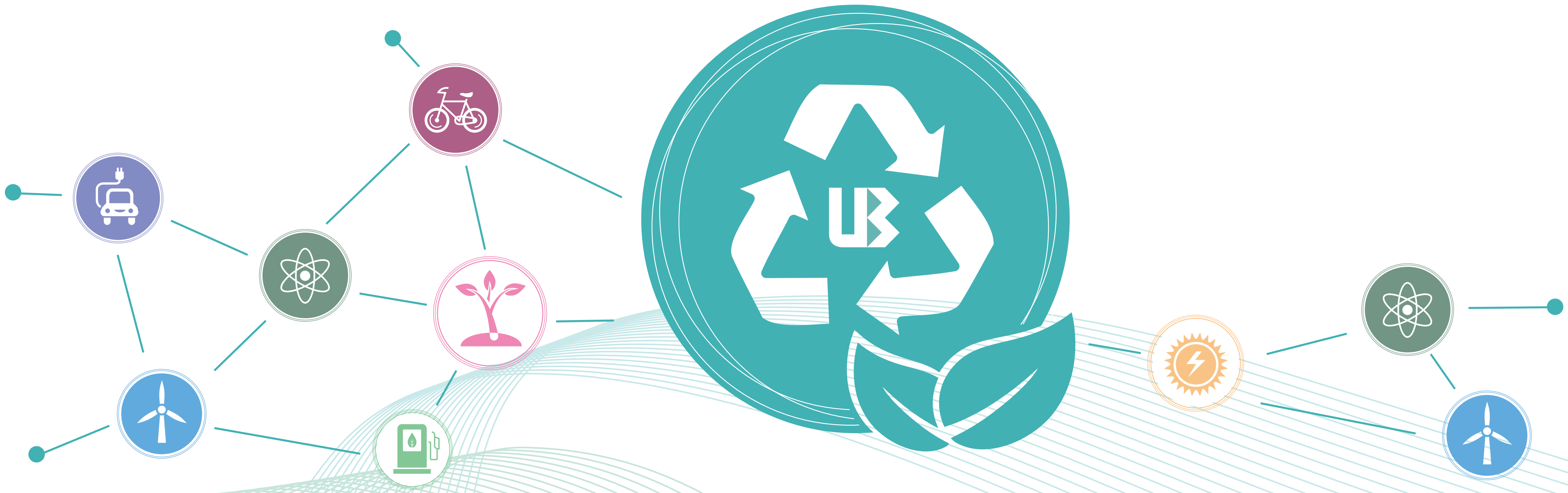
聯邦銀行
UNION BANK OF TAIWAN

2022
Task Force on Climate-Related Financial Disclosure (TCFD)



Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

In response to climate change becoming one of the major global risk issues, the Task Force on Climate-related Financial Disclosure (TCFD) established by the Financial Stability Board (FSB) issued the Report on Climate-related Financial Disclosure Suggestions in 2017, and the Financial Supervisory Commission of ROC issued "Guidelines for Financial Disclosure of Climatic Risks of Domestic Banks" at the end of 2021. In accordance with the framework of the Guidelines, the Bank continues to deepen its disclosure of the implementation of four aspects including governance, strategy, risk management, indicators and targets under climate change.

I.Governance

1.Climate governance architecture in the Board of Directors and the management

(1) In order to ensure the implementation of corporate social responsibility, sustainable development policy and climate change risk management, the Bank established the "Sustainable Development Committee" (ESG Committee) under the Board of Directors and the "Asset and Liability and Risk Management" under the Chairman of the Board. The two committees are responsible for relevant issues respectively.

(2) The ESG Committee is responsible for coordinating the Bank's sustainable development policies, management guidelines and specific promotion plans, and reports its implement annually to the Board of Directors. The ESG Committee has an Environmental Sustainability Group, whose functions include environmental sustainability policy, corporate de-carbonation management, green procurement, environmental sustainability propaganda and supply chain management. The convener of the Group could invite relevant units to participate in its work based on its functions.

(3) The Asset and Liability and Risk Management Committee is responsible for reviewing and inspecting management reports or information proposed by various business management units and the Risk Management Department. In addition to the Chairman, its members also include the General manager, Deputy General Manager, supervisors of Head Office's business management and risk management units.

(4) The Risk Management Department is responsible for planning and coordinating the financial disclosures related to climate change, and reporting relevant information on climate change risk issues to the Board of Directors annually.

2.Rights and Responsibilities of the Risk Management Organization

(1) Board of Directors: This is the supreme decision-making unit of the Bank's risk management policy, being responsible for reviewing and verifying the Bank's overall risk policies, limits, organization structure and attribution of rights and responsibilities.

(2) Asset and Liability and Risk Management Committee: It is responsible for reviewing and inspecting management reports or information proposed by various business management units and the Risk Management Department, so as to maintain the risk management effectiveness of the whole Bank.

(3) Risk Management Department: It is an independent dedicated risk management unit, which is responsible for inspecting the risk management mechanism formulated by various business management units and their control conditions, preparing risk control reports to be submitted to the Board of Directors and the Asset and Liability and Risk Management Committee, and planning and establishing various measurement tools of risk control.

(4) Various business management units: Formulate management regulations, processes and control mechanisms according to business their mainly responsible for, appropriately manage and supervise various business units to carry out necessary management.

(5) Various business units: They are responsible for making daily business management in accordance with the management regulations and measures formulated by the Bank's various management units, and confirming the correctness and integrity of all operational data.

3.Management Policy

(1) The Bank formulated "Criteria for Management of Climatic Change and Environmental Sustainability Risks" to its "Risk Management Policy", specifying that the Bank shall abide by relevant laws and regulations related to climate, energy and environmental protection, implement and disclose greenhouse gas inventory, water consumption and waste management and statistics, formulate related policies and improve education and promotion to strengthen employees' awareness of energy saving, disclose governance condition of climate risks and opportunities regularly, identify and evaluate relevant risks and the goals used for evaluating relevant topics.

(2) The Bank's Code of Practice for Sustainable Development requires it to comply with environment-related laws and regulations, as well as relevant international norms, and protect the natural environment as appropriate. Moreover, in the implementation of operational activities and internal management, it shall be committed to the goal of environmental sustainability; It shall assess the potential risks and opportunities of climate change and take relevant countermeasures; It shall adopt common standards or guidelines at home and abroad, implement enterprise greenhouse gas inventory and make disclosure and statistics of greenhouse gas emissions, water consumption and total waste weight, formulate various policies on energy conservation and carbon reduction, greenhouse gas reduction, water consumption reduction or other waste management, incorporate the acquisition of carbon emission rights into the its carbon reduction strategy planning, and promote relevant work based on this, so as to reduce the impact of its business activities on climate change.

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

(3) The Bank's "Energy and Environmental Management Policy" requires that it shall "abide by laws and regulations related to energy and environmental protection", "support energy conservation and carbon reduction, and continue to implement green procurement", "pay attention to education and promotion to strengthen employees' awareness of energy saving", "improve management performance and build a sustainable business environment ", "implement GHG reduction and disclose related data", "use products with the water-saving mark to reduce waste of water resources." and "comply with waste classification and resource recycling and reusing".

(4) The Bank's "Supplier Management Policy" requires that it shall work together with its suppliers to implement corporate social responsibility and promote environmental sustainability. When signing the contract, they shall sign and abide by the "Commitment Letter on Compliance with CSR, Ethical Management and Legal Provisions", and jointly abide by the environmental sustainability policy or relevant environmental protection measures promoted by the Bank.

4.Enhance Climate-related Expertise and Capabilities

(1) In order to actively acquire new knowledge about climate trends, enhance staff awareness of climate change issues, and improve corporate culture, the Bank's members of the Board of Directors, senior managers, relevant personnel of Head Office's business units and risk management units continued to actively participate in various projects, seminars, presentations and training courses.

(2) The Bank has appointed a dedicated environmental management staff in the General Affairs Department, who is responsible for promoting measures related to environmental sustainability, making disclosure of greenhouse gas inventory information in accordance with the "Sustainable Development Roadmap of Listed and OTC Companies" made by the Financial Supervisory Commission, and conducting education and training for greenhouse gas emission inventory personnel in all units of the whole Bank.

(3) In 2022, a total of 20 training were held, with a total of 552 participants and a total of 79 hours of training.

Participant	Times	Cumulative Number of Employees	Total Training Hours (hours)	Main Content
Members of the Board of Directors	2	18	6	**Internal Courses:** 1.Global transition into sustainability driven by net zero carbon emission, new market rules under climate change, implications for promoting green finance in Taiwan, etc. 2.Taiwan government's policy to promote green finance, assessment and management of climate change issues in the financial industry, introduction of TCFD, development of stress tests under climate change in Taiwan, etc.
Senior managers		31		
Relevant personnel of Head Office's business units and risk management units	15	48	69.6	**External Courses:** Seminars on extreme weather and financial institution's response. 1.Opportunities and challenges of net zero emissions for the financial industry, Net Zero Carbon Reduction Conference, rules of carbon footprint product category, presentations on greenhouse gas emission reduction trade-off. 2.Sustainable credit and investment, green energy industry analysis, operation mode and risk assessment of project financing, ESG green fintech, seminars on issues related to climate change, etc. **Internal Courses:** Information sharing on climate change and educational training on TCFD architecture.
Personnel of the Head office (including senior management personnel) and business units	3	455	3.33	**Internal Courses:** 1.ISO50001 Energy Management System management review meeting, educational training courses. 2.Educational training on greenhouse gas inventory

II.Strategy

1.As the impact of extreme weather intensifies globally, relevant transnational initiatives and national governments have proposed various climate adaptation and mitigation measures. Sustainable development has become the primary goal of the current global economic transition. In line with the Sustainable Development Goals of United Nations, the Bank aims to use its influence to provide climatic finance products and services and enhance the climate adaptation capability of its customers. In addition, it would take practical actions to support Taiwan green energy, implement carbon reduction, and continuously commit to the sustainable development of enterprises. The Bank's strategy is as follows:

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

(1) Move to Net Zero

Manage the daily operations of the Bank, respond to energy conservation and carbon reduction, and gradually achieve the goal of net zero carbon emission.

(2) Support low-carbon economic activities

Developing and utilizing the potential business opportunities and relevant financial benefits of climate change, assisting customers to make the low-carbon transition, supporting the development of low-carbon technologies, and promoting climatic financial products and services.

2.Climate Risks and Opportunities

(1) Types

A.Entity risks

It refers to the direct or indirect impact of extreme weather events on banks that may result in the destruction of fixed assets, disruption of operations, impairment of production, and potential changes in asset values.

B.Transition risks

In order to achieve the Paris Agreement's goal of limiting global warming, leading nations in the world may set targets for net zero carbon emissions. They may curb carbon emissions through strict taxation, laws, regulations and other management measures, which may lead to reduced revenue or increased costs for enterprises.

C.Climate opportunities

In order to mitigate or adapt to the impacts of climate change and considering the market development potential, the Bank, as a financial service provider, may develop diversified business opportunities, such as providing support to key policy industries (such as the renewable energy industry) so as to achieve national carbon reduction targets; Encouraging the research and development of electric vehicles or promoting low-carbon means of transport, implementing green procurement, and providing green investment, financing, products and services.

(2) Short-term, medium-term and long-term climate risks and opportunities

In order to understand the impact of climate change risks and opportunities on the Bank and the Bank's response measures, description are made as follows:

Entity Risks

Number	Risk Description	Period of Impact	Correspond-ing Risk	Impact Description	Response Measure/ Climate Action
1	The impact of extreme weather on the Bank's business base.	Short-Term, Long-Term	Operational risk	Extreme weather events (such as sudden typhoons, floods, or long-term sea level rise) may cause regional power, water, and telephone outages, leading to operation interruption risk and related recovery cost at the business base.	1.Establish backup mechanisms for core information equipment, power and networks, and formulate key points for disaster emergency response operations. Business units shall regularly conduct safety protection education, training and exercises, and shall conduct review and improvement. In addition, the risk of property loss caused by extreme climate disasters could be covered by insurance. 2.Assess the implementation of control schemes through the self-assessment of operational risk control. Based on the results of the assessment, it shall develop a special programme of action where necessary.
2	The impact of extreme weather on the Bank's real estate collateral.	Short-Term, Medium-Term, Long-Term	Credit risk Market risk	Extreme weather events (such as sudden typhoons, floods or long-term sea level rise, etc.) may cause the value of the Bank's real estate collateral to decline, resulting in an increase in the Bank's credit risk.	The Bank's Standards for Real Estate Collateral Appraisal has stipulated that those susceptible to wind disaster, flood and drought or adverse geological conditions shall be included in the matters needing attention, and special attention shall be paid to their risk control.
3	Extreme weather may cause negative impact on the operation and income of customers.	Short-Term, Medium-Term, Long-Term	Credit risk Market risk	Extreme weather events (e.g. sudden typhoons, floods or long-term sea level rise) may lead to negative impacts on the operations or revenues of the Bank's investment and financing customers.	1.Pay attention to customers' operational or financial situation, and continuously strengthen customer due diligence and control measures. 2.Assist customers affected by natural disasters to recover and rebuild, provide them with funds required for recovery and reduce their impacts on the Bank's earnings.

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

Transition Risks

Number	Risk Description	Period of Impact	Corresponding Risk	Impact Description	Response Measure/ Climate Action
1	Response costs of carbon reduction and compliance arising from policies and regulations.	Short-Term, Medium-Term	Operational risk	In response to the cap on carbon emissions set by Greenhouse Gas Reduction and Management Act, it would increase the Bank's costs on carbon reduction (such as carbon tax, carbon price, etc.), as well as related penalties due to non-compliance.	1.Set relevant energy conservation goals, give priority to the purchase of various energy saving equipment with energy-saving labels, water-saving labels, green building labels, energy-saving labels, etc. 2.Participate in the "Service Industry Energy Management System Demonstration and Promotion Program" of the Ministry of Economic Affairs, five buildings of the Bank have obtained ISO energy management system certification, and all units of the Bank would implement greenhouse gas inventory certification. 3.Assess the implementation of control schemes through the self-assessment of operational risk control. Based on the results of the assessment, it shall develop a special programme of action where necessary.
2	Risks of carbon reduction and sustainable transition faced by customers.	Short-Term, Medium-Term, Long-Term	Credit risk Market risk	The Bank's earnings would be affected by the additional cost of its customer's transition in response to policies and regulations, or the decline in revenue caused by the delay in the transition.	Pay attention to customers' operational or financial situation, and continuously strengthen customer due diligence and control measures. In addition, continue to pay attention to the publication of relevant regulations, timely provide customers with operational capital, so as to assist customers in low-carbon transition.

Note：Short-term refers to within 3 years, medium-term refers to 3 to 10 years (inclusive), and long-term refers to more than 10 years

Transition Risks

Number	Opportunity Description	Period of Impact	Impact Description	Response Measure/ Climate Action
1	Improve the energy efficiency of business bases.	Short-Term, Medium-Term, Long-Term	Reduce operating costs by replacing old energy-consuming products, adopting energy-saving products and promoting energy-saving measures.	1.Use LED instead, replace old air conditioners, participate in the "Service Industry Energy Management System Demonstration and Promotion Program" of BOE, MOEA, control the temperature of indoor air conditioners in summer, and promote energy-saving measures. 2.When the Bank's building is decorated, the use ratio of green building materials shall reach more than 45%.
2	Promote all kinds of network services and paperless initiatives.	Short-Term, Medium-Term	Promote electronic transactions and web-based services to enhance operational efficiency, thereby generating paperless benefits and reducing operating costs.	Provide digital deposit accounts, online services of loan application, promote e-billing and insurance policies, and optimize internal working procedures to achieve energy saving and carbon reduction.
3	Issue low-carbon financial products or services.	Short-Term, Medium-Term	Through the development and promotion of low-carbon products and services, enhance consumers' overall opinions towards the Bank, thus contributing to the overall profit.	1.Issue green credit cards made with environmentally friendly materials and virtual cards, and encourage customers to answer the call of green consumption through its official website. 2.Launch ESG or low-carbon related funds to meet investor demands.
4	Promote green loans and invest in relevant products.	Short-Term, Medium-Term, Long-Term	Provide relevant green loans and invest in green bonds to encourage enterprises to develop relevant sustainable measures, so as to increase the Bank's operating income.	Provide green credit (including renewable energy loans, green building loans, electric (hybrid) car loans, etc.) and invest in green bonds, sustainable bonds and solar power plants, etc.
5	Responding to energy-saving advocacy campaigns and programs.	Short-Term, Medium-Term, Long-Term	Corporate image is an intangible asset of the company. If we can jointly respond to energy conservation initiatives with our customers and neighboring businesses to save energy expenditure, it will have a positive impact on corporate finance.	Enhance corporate image by responding to the global "Earth Hour", "World Earth Day", "World Environment Day" and other energy-saving initiatives, as well as participating in the "Green Procurement for Private Enterprises and Organizations" program organized and promoted by the Executive Yuan.

Climate Risk and Opportunity Matrix

Impact Degree	Low Probability	Medium Probability	High Probability
High			Entity 2 Entity 3 Transition 2
Medium		Opportunity 2	Entity 1 Transition 1 Opportunity 1
Low		Opportunity 3	Opportunity 4 Opportunity 5

Possibility of Occurrence

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

III.Climatic Risk Management

1.The Bank conducts climatic risk management through the three-defense-line framework of internal control, which includes the internal audit system, self-audit system, legal compliance system, and risk management mechanism. Among them, self-audit constitutes the first defense line, compliance with law and risk management constitute the second defense line, and internal audit constitutes the third defense line In order to enable effective and proper operation of the internal control system, the first and the second defense lines perform risk monitoring, and the third defense line performs independent monitoring so the three defense lines perform their own functions.

2.The "Risk Management Policy" formulated by the Bank is its highest management principle of risk management, which includes the "Criteria for Management of Climatic Change and Environmental Sustainability Risks" and its risk management process includes risk identification, risk measurement, risk monitoring, risk reporting and other procedures.

3.For its credit-awarding policy orientation, the Bank shall support alternative energy, water resource, environmental protection and pollution control, and other green industries, help credit grantees to conduct de-carbonation transition, and its credit-awarding audit shall lay special emphasis on circumstances such as significant negative impact of enterprise operation on environmental protection, or violation of environmental protection laws and regulations, etc.

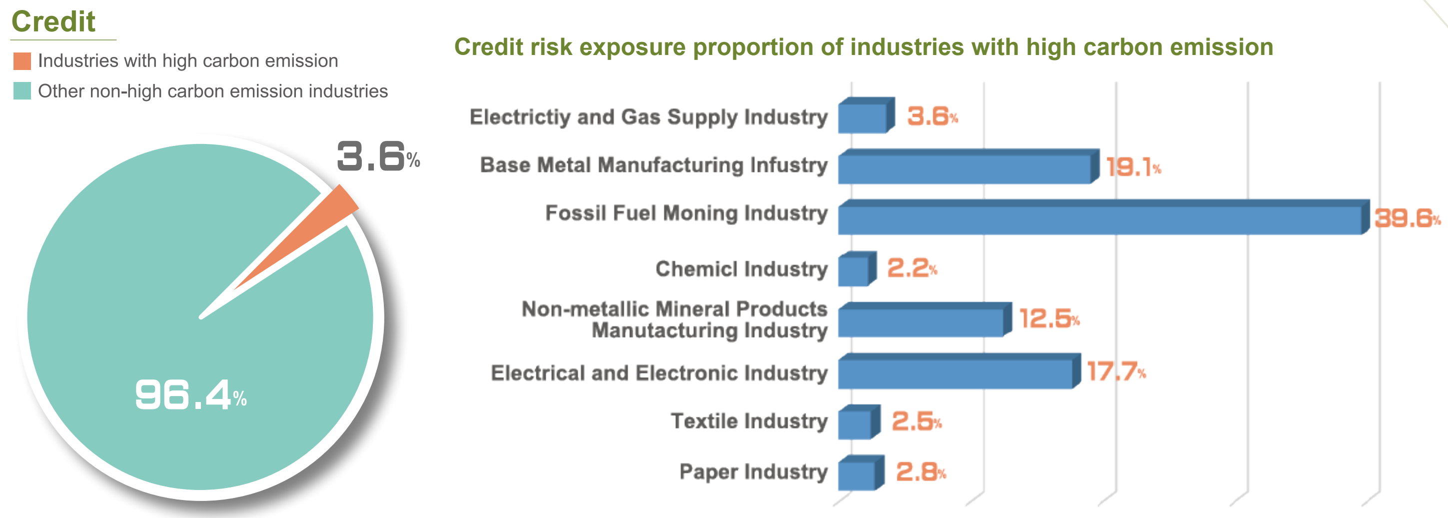
4.Progressively take ESGs or projects with high climate risk factors into account for investment businesses. At present, for corporate bonds in New Taiwan Dollar (including financial bonds), ESG shall be included in the inspection and evaluation process before investment, and the investment cap shall be set according to evaluation grade intervals. After the investment, regularly review the ESG situation, and manage it dutifully. In addition, in terms of foreign currency bonds, investment in industries with high carbon emissions shall be regulated.

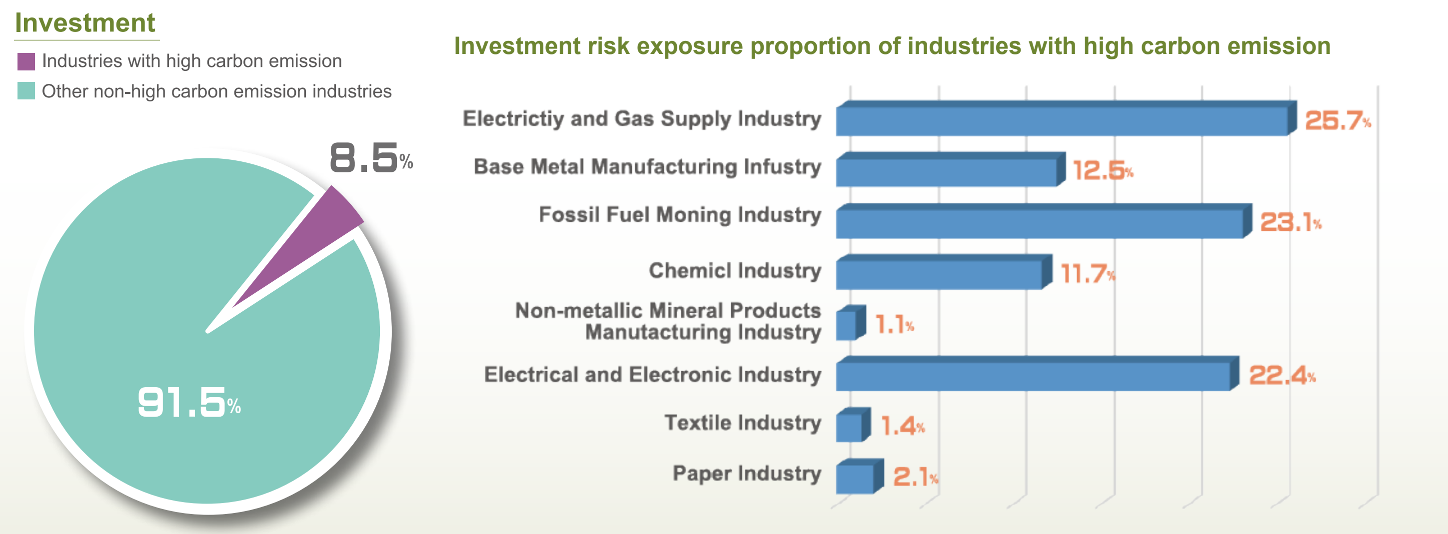
5.Special unit for energy and environmental management shall establish appropriate energy and environmental management system in accordance with attribute of the banking industry, including green management policy, enterprise de-carbonation management, green procurement, energy certificate subscription, supply chain management, resource recycling, and reusing, and creating green life and other execution measures, and review the operation effect regularly.

6,Risk measurement

(1) Risk exposure of industries with high carbon emission:

Under the trend of global low-carbon transition, industries with high carbon emission would face increasingly strict control by laws, regulations or policies. In the future, the imposition of carbon tax/fee at home and abroad would increase the operating cost of enterprises. If the enterprise's transition is not timely, it may affect the operation and profit. Through referring to the identification of industries with high energy consumption and high carbon emission by the Environmental Protection Administration and the Ministry of Economic Affairs, the Bank's "List of Industries with High Carbon Emission" is identified as follows: "Electricity and Gas Supply Industry", "Base Metal Manufacturing Industry", "Chemical Industry", "Fossil Fuel Mining Industry", "Non-metallic Mineral Products Manufacturing Industry", "Electrical and Electronic Industry", "Textile Industry" and "Paper Industry". By the end of 2022, credit and investment risk exposure proportion of industries with high carbon emission are shown in the following table:





Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

(2) Scenario analysis of transition risks - the carbon price influence scenario

A.Background description:

In the context that the trend of promoting economy towards the low-carbon transition and building net zero emission has become a global consensus, industries with high carbon emission would be the first to be affected by relevant laws, regulations and policies and become their main object of control. In the future, the imposition of carbon tax/fee at home and abroad would increase the operating cost and reduce the revenue of relevant enterprises. In the face of increasing customer risk, it is necessary to reassess the change of customer default risk. In addition, it shall analyze the possibility of increased expected losses from future credit risk, and evaluate the transition risk for customers with the Bank's credit and (for non-trading purposes) bond investments.

B.Evaluation object:

From the enterprises that disclosed carbon emission data on Taiwan's National Greenhouse Gas Registry Platform and the Market Observation Post System, 45 customers of the Bank were selected as having risk exposure by the end of December 2022, and their balance accounted for 2.63% of the Bank's total credit and bond balance.

C.Evaluation method:

Based on relevant domestic and foreign information, three carbon fee scenarios (as shown in the table below) were assumed to calculate the additional operating costs that customers may face (unit carbon price * carbon emissions) and the resulting impact on revenue. The financial data adjusted by carbon fee pressure was used to analyze the change of default rate and expected credit loss under the scenario that customers pay extra costs of carbon fee.

D.Evaluation Results:

a.Under Scenario 1, it is estimated that Taiwan would collect the carbon fee from 2024. It shows that there is no change in customer default rates and no change in expected credit losses for the time being. However, under Scenario 2 and Scenario 3, eight customers are expected to experience an increase in default rates by 2030 under the scenario of increased carbon fees. What's more, under both Scenario 2 and Scenario 3, the expected credit losses may increase by about NT$45 million. It is assessed that the expected loss amount would have little impact on the Bank.

b.According to the industry category analysis by Directorate-General of Budget, Accounting and Statistics, under Scenario 3, which collects the highest carbon fee, industries with high carbon emissions defined by the Bank that have increased additional expected loss amount account for about 97%. The industry category with the largest additional expected loss is "chemical industry (41%)", followed by "electricity and gas supply industry (29%)". Among industries without high carbon emissions, only "food and feed manufacturing industry" accounts for about 3%. In addition, it has no impact on industries with concentrations of more than 8%, including "wholesale industry", "real estate development industry" and "financial service industry".

Item	Scenario with Carbon Fee Pressure		
	Scenario 1	Scenario 2	Scenario 3
	NT$307 (about $10)	NT$2,303 (about $75)	NT$3,194 (about $104)
Scenario Description	The Environmental Protection Administration has pushed for an amendment to the Climate Change Adaptation Act, and it would consider and negotiate the carbon fee after the third reading of the legislation. Taiwan is expected to impose the carbon fee from 2024, keep up the pressure with the current starting price of NT$10 per ton recommended by the outsourced study commissioned by the Environmental Protection Administration.	According to the World Bank, the carbon price per tonne in 2030 shall be $50-100 if the Paris Agreement's goal of keeping global warming below 2℃ is to be met. We made the estimate at the median price of US$75 per metric ton.	Among the six NGFS scenarios, we selected the Net Zero 2050 scenario of ordered transition and adopted the average estimated carbon price of approximately $104 per metric ton for Asian countries in 2030.
Number of Customers with Changes in Default Rate	0	8	8
[Calculation Result]: The amount of additional expected credit losses (NT$1 million)	0	45.48	45.48

Climate Risk and Opportunity Matrix

	Item	Proportion of additional expected losses	Item	Proportion of additional expected losses
Industries with high carbon emission	Electricity and gas supply industry	29%	Non-metallic mineral products manufacturing industry	17%
	Base metal manufacturing industry	10%	Electrical and electronic industry	0%
	Fossil fuel mining industry	0%	Textile industry	0%
	Chemical industry	41%	Paper industry	0%
			Subtotal	97%
Industries without high carbon emission			Food and feed manufacturing industry	3%
Total				100%

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

(3) Scenario analysis of physical risks - the flooding scenario

A.In terms of climate disaster, Taiwan is more prone to flooding. Therefore, the quantitative assessment of flooding risk was carried out for the Bank's business bases and the locations of the real estate collaterals with credit granted by the Bank.

B.Evaluation method:

Refer to the hazard rating of extreme rainfall occurrence probability of town regions all over Taiwan released by National Science and Technology Center for Disaster Reduction (NCDR) on the Climate Change Disaster Risk Adaptation Platform [mid-21st century (2036-2065) under the estimation scenario of RCP8.5], as well as the vulnerability grade chart of the third generation inundation probability released by the Water Resources Agency of Taiwan. In addition, under the estimation scenario, the exposure degree of the Bank's business bases and loans secured with real estate is considered according to the business base quantity and balance scale grade. From low to high, the risk is divided into five risk levels, namely Level 1 to Level 5, to assess the extent to which the Bank is likely to be affected by flooding.

C.Evaluation Results:

According to the flooding map of 316 towns and cities made by NCDR, under the scenario of RCP8.5, there are 42 towns and cities in the region with relatively high flooding risk-vulnerability degree (with the risk-vulnerability level of 5) in the mid-21st century. After comprehensive consideration of exposure degree, the risk exposure of the Bank's business bases and the locations of the real estate collaterals with credit granted by the Bank in flooding is as follows:

a.Business bases of the Bank:

At the end of December 2022, among the 90 business bases of the Bank in Taiwan, 5 were located in the region with high exposure risk (Level 5: more than three located in the same region), all of which were located in northern Taiwan.

b. Real estate collateral loans with credit:

(a) At the end of December 2022, among the real estate collateral loans with credit, the ratio of notional balance of that with high risk exposure (Level 5) to total credit balance was 2.94%. All of them are located in the northern region. However, its proportion is relatively low and the overall physical risk it faces is relatively limited. Among them, the real estate balance of enterprise customers accounted for 0.68% of the total real estate loan, and that of individual customers accounted for about 2.26% of the total real estate loan.

(b) According to the analysis by industry, the industries with high carbon emission defined by the Bank account for 0.02%, while the industries without high carbon emission account for about 0.66%. Among them, the industries with a credit concentration of more than 8% (according to the classification description of the Directorate-General of Budget, Accounting and Statistics) include real estate development industry, wholesale industry and financial service industry, accounting for 0.15%, 0.14% and 0.09%, respectively.

D.Existing measures:

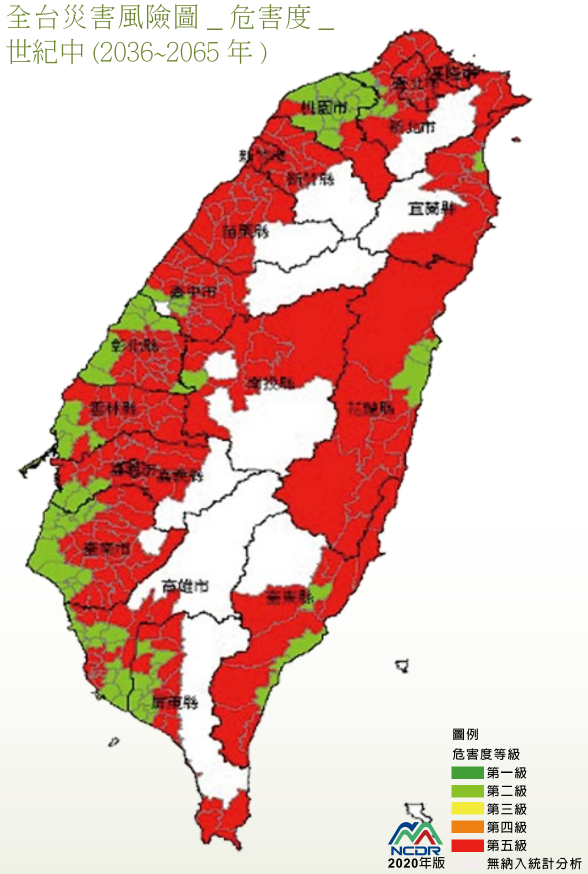
a.As for its business bases, the Bank has included natural disasters (e.g. floods, earthquakes, etc.) in the scope of major contingencies and reporting procedures, and has developed emergency response measures against disasters to cope with the possible negative effects of floods.

b.The Bank's current Standards for Real Estate Collateral Appraisal has stipulated that those susceptible to flooding shall be included in the matters needing attention in the appraisal report.

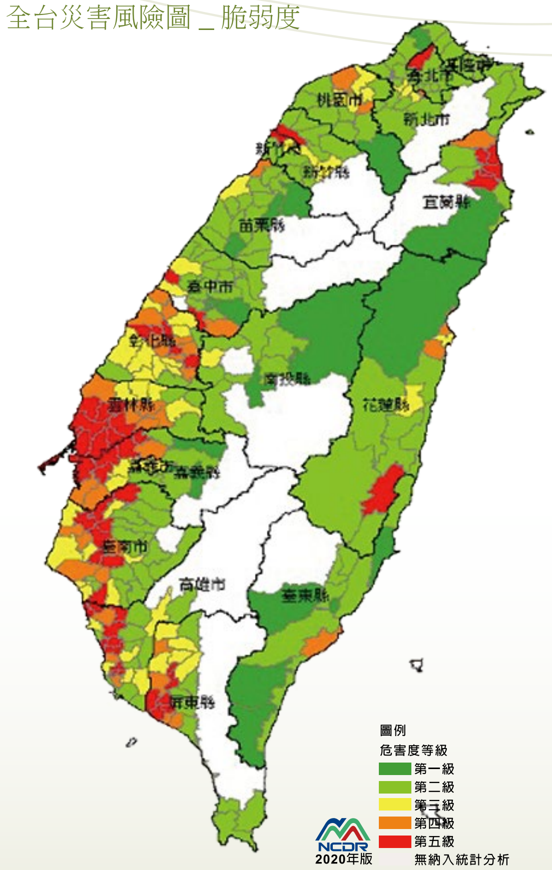
淹水風險程度屬高風險(Level 5)區域	世紀中 (2036-2065年)	
	營運據點數	不動產擔保貸款餘額占比
北部地區	**5**	**2.94%**
中部地區	**0**	**0%**
南部地區	**0**	**0%**
東部地區	**0**	**0%**

不動產擔保貸款			
對象別			餘額占比
企業戶	高碳排產業	電力及燃氣供應業	0.00%
		基本金屬製造業	0.00%
		化石燃料開採業	0.00%
		化工業	0.00%
		非金屬礦物製品製造業	0.00%
		電機電子業	0.01%
		紡織業	0.01%
		造紙業	0.00%
		小　計	**0.02%**
	非屬高碳排產業		0.66%
	小　計		**0.68%**
個　人　戶			2.26%
合　計			**2.94%**

全台災害風險圖＿危害度＿
世紀中 (2036~2065 年)



全台災害風險圖＿脆弱度



Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

Given Scenario Period		2030 & 2050		
Climate Scenario Category		Scenario 1	Scenario 2	Scenario 3
		Ordered Transition	Unordered Transition	No Policy
Situation Descriptionperiod		Take immediate and gradual transition steps to achieve carbon reduction targets	Delayed implementation of the transition, but still achieve carbon reduction targets	No Transition Policy
Corresponding Scenario	NGFS	Net Zero 2050	Delaly Transition	Baseline
	IPCC	RCP2.6	RCP2.6	RCP8.5
Climate Scenario Factor Setting		1.Overall economic factors: The scenarios of "Net Zero 2050", "Delay Transition" and "Baseline" in the NGFS scenario were taken as the basis of the overall economic factors in each analysis scenario. The indicators it used include GDP growth rate, unemployment rate and long-term interest rate, and the changes of default rates in each position were simulated. 2.Environmental factors: "RCP2.6" and "RCP8.5" in the Fifth IPCC report were used as the basis for environmental factors in each analysis scenario. The values of environment and temperature change were used to obtain the future change trend of entity risk's hazard items (rainstorm, flooding, drought), as well as the change of impact degree to individuals with different attributes. 3.Transition factors: They were mainly used to simulate the change of carbon emissions of enterprises and carbon price, as well as their impact on individuals.		
Methodological Framework		1.Domestic credit position: Consider the influence extent on the overall economic indicators under each scenario, evaluate their influence on the risk linkage indicators [including the Business Finance Ratio, Full Guarantee Ratio, Combined Loan-to-Value Ratio (CLTV), Debt Burden Ratio (DBR)]. And then, obtain the probability of default, loss given default and default risk exposure under each scenario, and evaluate the expected losses for each analysis scenario. 2.Foreign credit position: Mainly consider its international credit rating results, decide the default rate under the analysis scenario, and estimate the loss given default with reference to the domestic credit position. 3.Investment position of the bank book: In principle, it takes the same method as that of credit position.		

Note:
1.NGFS: It stands for the Network of Central Banks and Supervisors for Greening the Financial System.
2.IPCC: It stands for the Intergovernmental Panel on Climate Change of the United Nations.
3.RCPs: It stands for the Representative Concentration Pathways.

(4) Scenario analysis of entity and transition risks - according to the Operational Planning for the Scenario Analysis of Climate Change by Domestic Banks.

Notes:

A.The Bank assessed the influence on its financial impact based on three climate scenarios of "ordered transition", "unordered transition" and "no policy" (covering entity risks and transition risks) set out in the "Operational Planning for the Scenario Analysis of Climate Change by Domestic Banks" published by the Financial Regulatory Commission.

B.Evaluation method:

a.Base date of evaluation: The end of December, 2022.

b.Evaluation scope: The credit risk position of the Bank (including branches of international financial business) in and outside Taiwan, that is, the position of on-balance-sheet and off-balance-sheet credit (including credit card), bond and equity investment belonging to the Bank book.

C.Evaluation Results:

a.Under three hypothetical scenarios, the ratio of the expected loss amount at 2030 and 2050 to the Bank's net worth and pre-tax profit and loss is shown in the table below:

(a) According to the analysis of the ratio of expected loss to net profit and pre-tax profit and loss respectively, the "unordered transition" scenario would reach the highest point in 2030 and 2050. Among them, the expected loss amount in 2030 would be about NT$3.1 billion, accounting for 5.11% of net worth and 69.48% of pre-tax profit and loss, respectively. By 2050, the expected loss amount would be about NT$3.9 billion, accounting for 6.31% of net worth and 85.70% of pre-tax profit and loss, respectively.

Climate Scenario Category		Scenario Period	Overall Evaluation Results	
			Ratio of expected loss to net worth	Ratio of expected loss to pre-tax profit and loss
Scenario 1	Ordered Transition	2030	5.04%	68.44%
		2050	5.99%	81.43%
Scenario 2	Unordered Transition	2030	5.11%	69.48%
		2050	6.31%	85.70%
Scenario 3	No policy	2030	4.72%	64.17%
		2050	5.23%	71.07%

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

b.Analyze the ratio of expected losses of each asset type to net worth and risk exposure in 2030 and 2050 respectively under the “unordered transition” scenario:

(a) Based on the analysis of the ratio of expected loss to net worth, the ratio of “enterprise credit” would reach the highest point in 2030 and 2050, accounting for 2.29% and 3.11% respectively.

(b) Based on the analysis of the ratio of expected loss to risk exposure, the ratio of “bank book investment” would reach the highest point in 2030 and 2050, accounting for 1.06% and 2.25% respectively.

Asset Types			Ratio of expected loss to net worth		Ratio of expected loss to risk exposure	
			2030	2050	2030	2050
Credit (including credit card)	Corporate		2.29%	3.11%	1.04%	1.41%
	Individual	Housing Loan	0.29%	0.22%	0.08%	0.06%
		Others	1.73%	1.26%	0.69%	0.51%
	Subtotal		4.31%	4.59%	0.50%	0.54%
Banking Book Investment			0.80%	1.71%	1.06%	2.25%
Total			5.11%	6.31%	0.55%	0.68%

D.Response Measures:

a.The current Standards for Real Estate Collateral Appraisal of credit business has stipulated that those susceptible to wind disaster, flood and drought shall be included in the matters needing attention in the appraisal report.

b.For investment businesses, the Bank shall progressively take ESGs or projects with high climate risk factors into account of investment. At present, for corporate bonds in New Taiwan Dollar (including financial bonds), it has stipulated the ESG evaluation and inspection process. In addition, in terms of foreign currency bonds, it has stipulated early warning indicators for investment in industries with high carbon emissions.

c.In the first quarter of 2023, the Bank adjusted the method of credit risk concentration limit by industry (including credit and investment business), and lowered the limit of relevant industries according to factors of industries with high carbon emissions.

d.In the future, it is planned that the “Climate Risk Assessment Form” would be used in the enterprise finance credit business to evaluate the enterprise credit grantees’ tolerance to entity risks and transition risks, so as to provide reference for collecting and reviewing cases, and adjust credit conditions for customers with low risk tolerance.

IV.Implementation Effectiveness, Indicators and Goals of Climate-related Measures

1.Types of “Greenhouse Gas Emissions”

(1) Greenhouse Gas Emissions:

A.Inventory of its own operating emissions:

a.nventory result: Conduct a bank wide inventory of electricity consumption and corresponding greenhouse gas (carbon dioxide equivalent metric tons) emissions according to the standards announced by the Bureau of Energy (BOE), Ministry of Economic Affairs (MOEA). The results of each year are shown in the table below, showing a downward trend year by year.

Year	2019	2020	2021	2022
Emissions (metric tons / CO2e)	5,023	5,016	4,838	4,309

b.Set the goal:

(a) It shall complete verification of the whole Bank’s greenhouse gas inventory by 2024 and verification of the whole Group’s greenhouse gas inventory (including its subsidiaries) by 2027.

(b) “Net zero carbon emission (carbon neutrality)”: According to the above inventory results, goals of net zero carbon emission (carbon neutrality) before 2050 would be set by means of energy conservation and carbon reduction, investment in solar power plants (innovative energy), purchase of green electricity, carbon emission rights trading, etc.

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

B.Emission inventory of the investment finance portfolio:

During this year, the Bank conducted greenhouse gas inventories for its customers of loan, as well as stock and bond investment. It made the calculation through inquiring about enterprises that disclosed carbon emission data in Scope 1 and Scope 2 on Taiwan's National Greenhouse Gas Registry Platform of the Environmental Protection Administration and the Market Observation Post System, and with reference to the methodology suggested by the Partnership for Carbon Accounting Financials (PCAF). By the end of 2022, the total carbon emission that shall be born by the Bank was 227,719 metric tons of CO2e, and the carbon emission intensity was 14.42.

Asset Types	2022		
	Carbon Emission (metric ton ofCO2e)	Carbon Emission Intensity (metric ton of CO2e/NT$1 million)	Inventory Coverage
Enterprise Loan	62,850	9.18	1.28%
Investment in equity and corporate bonds of listed (OTC) companies	164,869	18.43	13.52%
Total	**227,719**	**14.42**	**2.69%**

Note 1：Carbon emission intensity: carbon emission of investment and financing position/inventory amount of the investment and financing portfolio.

Note 2：Inventory coverage: inventory amount of the investment and financing portfolio/overall amount of equity and bond investments and loans.

2.Types of "Energy Usage"

(1) "Reduction of electricity consumption"

A.Set the goal: With 2020 as the baseline, the whole Bank shall save 15% of electricity by 2035.

B.Take the following measures:

a.Replace old lighting fixtures and air conditioning units with high energy consumption (43 old lighting fixtures and 52 air conditioning units with high energy consumption have been replaced in 2022 at a total cost of NT$25.724 million).

b.Control the cool air temperature in summer shall not be lower than 26℃.

c.Post "Electricity-Saving Operation" signs at the conspicuous places in all business halls of the Bank to remind staff and customers to save energy.

d.For public spaces, except during peak hours, maintain minimum lighting or use sensor lighting.

C.In 2022, the electricity consumption of the whole Bank was 12.1% lower than that of the same period in 2020. Based on this trend, as well as the progress of the actions described above, we conducted the trend analysis, and predicted that the reduction goals could be achieved on schedule by 2035. In addition, due to the obsolescence and renewal of equipment with high energy consumption, the energy saving benefit in the early stage would be very significant. However, the energy saving benefit in the later stage would gradually decrease. In the future, according to the obsolescence and renewal situation of equipment with high energy consumption, the energy saving goals would be adjusted appropriately and timely. We judge that current climate strategies and actions remain climate resilient for the time being.

(2) "Reduction of water consumption": With 2023 as the baseline, the Bank sets a target of reducing water consumption by 8% by 2035. In addition to checking sanitary equipment for leaks, products with water saving labels shall be used.

(3) "Reduction of fuel consumption for official cars": With 2023 as the baseline, the Bank sets a target of reducing fuel consumption for official cars by 40% by 2035.

(4) "Build its own charging system for electric vehicles": The Bank sets a target that from 2023, all parking lots of the Bank's buildings shall be equipped with the charging system for electric vehicles.

(5) "Solar power plants": The Bank has set a target of installing at least five rooftop solar power plants in its own buildings by 2035.

3.Types of "Climatic Risk Management"

(1) In terms of foreign currency bonds, the control indicators and targets of "industries with high carbon emission" are as follows: For foreign currency bond investment, the early warning indicators are stipulated that "the proportion of investment in industries with high carbon emission shall not exceed 35% of the total investment", and the range of industries with high carbon emission includes petroleum and chemical, steel, coal, electric power, cement and energy industry. At the end of December 2022, the investment commitment ratio was 15.35%.

(2) "Investment for corporate bonds and financial bonds in New Taiwan Dollar": Relevant ESG investment guidelines have been developed. Before making investment, ESG integrated information disclosed by Taiwan Depository & Clearing Corporation is required for investment review and evaluation. According to the evaluation results, the investment cap shall be set according to evaluation grade intervals. After the investment, it would be reviewed every quarter.

(3) Incorporate climatic risk factors into the credit process objectives: Developing the "Climate Risk Assessment Form" for enterprise finance credit business to collect information on the climate risks of the credit grantees (including entity risks and transition risks) and formulating the development direction of credit granting based on the analysis results (such as adjusting credit granting terms and interest rate pricing, etc.), so as to help the credit grantees to reduce carbon and accelerate the sustainable transition, which is expected to be completed in 2026.

Environmental Sustainability

Task Force on Climate-Related Financial Disclosure (TCFD)

4.Types of "Climate opportunities"

(1) Green credit: It refers to the credit cases that belong to green expenditure in accordance with the "Key Operation Points of Financial Institution Credit Data Submission" of the Joint Credit Information Center) [including renewable energy loans, green building loans, electric (hybrid) car loans, etc.]. As of the end of December 2022, the total loan balance was about NT$1.659 billion. Among them, the green credit balance of enterprise customers was about NT$325 million, accounting for 0.17% of enterprise customers' total loan balance of NT$189.84 billion. The green credit balance of individual customers was about NT$1.334 billion, accounting for 0.36% of individual customers' total loan balance of NT$367.39 billion.

(2) Green and sustainable bond investment in New Taiwan Dollars and foreign currencies: Invest in green bonds and sustainable bonds in New Taiwan Dollars and foreign currencies. As of the end of December 2022, the total amount is about NT$1.93 billion.

(3) Launch green funds: Union Investment Trust of the Union Group has launched the "Union 2023 High Quality Bond Fund", which invests mainly in bonds with an ESG concept, as well as the "Union Multi-Asset Low Carbon Target Fund", which invests in securities with a "low carbon target" concept. As of the end of December 2022, the size of the two funds was approximately NT$1.43 billion and NT$1.46 billion respectively.

(4) Sell green funds: As of the end of December 2022, there were 45 ESG-related funds available for customers to choose from and purchase.
Set a goal: From 2023, 10 climate-related and environment-related products in ESG and green energy would be put in the market within three years.

(5) Union Green Card: The Bank issued the "Union Green Card", which was the first credit card issued in the market with both physical cards made with environmentally friendly materials and virtual cards, expecting to reduce the burden on the environment in the process of card production using the channel feedback of green consumption, environmental protection material and virtual card technology. In addition, based on the consumption amount, the Bank allocated funds to donate to "Taiwan Environmental Information Association", and participated in more environmental protection work and environmental promotion education, so as to achieve the goal of environmental friendliness. By the end of December 2022, 55,000 cards had been issued. In 2022, the cumulative transaction amount was NT$1.18 billion, and about NT$650,000 was donated to green public welfare organizations.

(6) Reinvest in solar power plants: Reinvest in key 5+2 new innovative industries proposed by Taiwan government (Asia · Silicon Valley, intelligent machinery, green energy technology, biotech medicine, national defense, new agriculture and circular economy). Union Venture Capital of the Union Group reinvested in solar power plants through its subsidiaries. At present, there are a total of four projects: Tingjie, Nanhe No.1, Tianji and Tingxu. When completed, it is expected to generate up to 290 million kilowatts of electricity per year. By 2022, the actual power generating capacity was 52 million kilowatt-hours.

(7) Promote digital finance: Actively promote digital finance services to reduce paper usage. In 2022, the number of users of the Bank's digital accounts increased by 31.35% to 213,471, the cumulative number of individual users of electronic banking increased by 22.82% to 799,114, and the cumulative number of enterprise customers increased by 24.05% to 20,567. In addition, it has set the following indicators and goals.

Indicator	2022			2023
	Target Number	Actual Number	Achievement of Goals	Target Number
Number of newly opened accounts of New New Bank	50,000	50,950	101.90%	120,000
Number of new applicants for individual Internet/mobile banking	100,000	148,479	148,48%	132,000
Number of accounts with newly added functions in e-banking	3,240	3,568	110.12%	3,600

(8) Supplier Management: The Bank has formulated a "Commitment Letter on Compliance with CSR, Ethical Management and Legal Provisions" for suppliers, and requires its suppliers and manufacturers to sign the letter of commitment when signing contracts, to jointly abide by the environmental sustainability policy or relevant environmental protection measures promoted by the Bank, and comply with occupational safety and health management and other requirements; In 2022, there were 36 copies of the Commitment Letter were signed, with the signature rate of 100%.

(9) In 2022, the Bank participated in the "Green Procurement of Private Enterprises and Organizations" program promoted by the Executive Yuan, purchasing green products with a total amount of NT$38,689,000.

5.Implementation of other measures

In 2022, the Bank's total insurance premiums for electronic equipment and fire insurance was about NT$2,364,000.