02 Moving Towards Net Zero

Moving from commitment to action, E.SUN continues to increase its green assets through supporting renewable energy, phasing out of coal companies, providing green building loans, and implementing internal carbon pricing. We are steadfast in our responsibility towards net-zero emissions by 2050.

 2.1 Climate & Environment Governance Structure
 2.2 Climate & Environment related Risk and Opportunity

 2.3 Opportunity Identification
 2.4 Risk Identification
 2.5 Carbon Emissions Structure

Level Carbon Disclosur Project (CDP) 21.7% Percentage of investments in companies with validated SBT

18.5

Annual reduction of Scope 1 & 2 emissions

Accelerating climate transition through data and technology

Aligning with international standards, employing science-based approaches to assist in decision-making and operations, driving climate transformation through sustainable innovation.

Systems and automation - Establishing a financed carbon emissions management system

E.SUN established a standardized carbon inventory mechanism to manage carbon emission data in accordance with the PCAF Standard through its Financed Carbon Emissions Inventory Management System. With this system, we have increased the automation rate, improved efficiency, and reduced operational risks. Technology assists in the generation of financed carbon emission information and target management, enabling us to respond to potential risks and opportunities in real-time.

Enhancing climate risk management -Improving our physical risk database

The physical risks of climate change pose a significant challenge to the operational resilience of banks. In addition to the potential disruption of business operations, which may impact customer service and revenue, the depreciation of credit collateral value is also a major concern. To effectively manage climate-related physical risks, E.SUN has established an internal physical risk database that integrates with its business systems to provide decision-making information. We will continue to expand our collection of climate-related risk data in order to enhance the ability of frontline staff to identify physical risks.

At the forefront of international trends -Joining TNFD Early Adopters

Since 2022, E.SUN has been implementing the LEAP methodology and has been at the forefront of integrating the Task Force on Climate-related Financial Disclosures (TCFD) and the Task Force on Nature-related Financial Disclosures (TNFD) frameworks by publishing its "Climate and Environmental Report." This report focuses on both climate change and biodiversity, with "Nature Positive" as a key goal. The report has received recognition from the TNFD secretariat and has been shared on social media, making it a featured case study in the TNFD's Guidance for Financial Institutions. E.SUN further strengthens its commitment by being among the first globally to join TNFD Early Adopters, taking concrete action to care for this beautiful land.





Climate and Environment Report



Moving Towards Net Zero



2.1 Climate & Environment Governance Structure

Board of Directors and Functional Committees

Board of Directors

- Approve climate-related and environmental risk management policy, major decision making, and supervision of climate risk Approve action plans and ensuring effective
 - operation of climate-related and environmental risk management mechanisms

Sustainable **Development Committee**

Guiding and supervising climate management policies, formulating annual plans and strategic direction, tracking and reviewing the effectiveness of project and activity plans. Meetings are held at least twice a year.

Board Risk Management Committee

In charge of risk management, risk measurement, risk supervision, deliberating on risk management and execution, tracking compliance with risk management policies, and promoting risk management culture.

Chief Executive Officer

Compensation link (20%): E.SUN's leadership strategy in climate and sustainability, including climate actions targets such as annual SBT and RE100 targets and Scope 1, 2 reduction commitments

Chief Sustainability Officer High-level Outlining sustainable development strategies, overseeing the progress of various projects and Integrate planning for risk management, Management goals by dedicated sustainability units. Ensuring overall sustainable development compliance with laws and regulations and further managing long-term risks. Compensation link (40%): risk-bearing capacity and risk status. 1. Achieve sustainable goals for external announcement.

- 2. Complete the setting of Scope 3 targets.
- 3. Achieve phased goals for internal carbon pricing / carbon cost management mechanisms for Scope 1, 2, and 3.
- 4. Complete the establishment of the first-phase finance carbon emission database.

Chief Risk Officer

- supervising the promotion and execution of risk management related work, and handling overall
- Compensation link (10%): CDP performance, Carbon reduction target achievement, Risk education and training penetration

Dedicated Sustainability Teams

- Measuring the impacts of physical risks and transition risks on the business and further developing management mechanisms for mitigation and adaptation.
- Seizing opportunities for the transition to a net-zero economy and developing financial products to meet customer demands.

Risk Management Division

- Planning and implementing climate risk management mechanisms, evaluating and consolidating climate risk management information, and reporting to the board of directors.
- Assisting in the development of data, methodologies, and management tools to effectively identify and assess climate risks for relevant units.

First Line of Defense

Executive Units

- Identify business risks
- Assess and measure business risks
- · Manage risks generated by business

Second Line of Defense

- Plan and implement risk management mechanisms
- Consolidate risk management information and report to the board of directors and risk management committee
- Assist in developing data, methodologies, and management tools

Third Line of Defense

· Perform independent audits on climate related risks

2.1.1 Policy and Culture Building

In order to better integrate climate change and sustainable development into operational decision-making, management systems, and business processes, E.SUN has established a board-level Sustainable Development Committee and dedicated organizations in each major unit. Starting from the governance level, E.SUN is committed to implementing its climate and environmental culture, outlining a long-term sustainable development blueprint, and implementing it in daily operations. Internally, we systematically cultivate green finance talents, and integrate ESG and climate environment into our development strategy to support internal decision-making, management processes, and business scope.



Establish a climate & environment management culture

- Established the Sustainable Development Committee with the chairman as convener
- Establish climate and environment related policies and procedures, and regularly report on progress¹
- Arrangement of annual Climate and Sustainability education training for the Board members and Senior Management to facilitate management in understanding latest climate trends²



- Collaborated with TAISE to hold the "Sustainable Finance Manager Development Program" to enhance ESG and climate-related skills, with 155 employees in total participating
- Internal education and training integrate ESG-related topics, introducing climate environmental risk management courses in a hierarchical training program that covers senior managers, mid-level managers, specialists in all divisions, and new employees. Additionally, environmental consensus is achieved through online courses and monthly education materials
- Members of relevant project teams have accumulated international certifications such as SCR, CFA ESG, CCI, ISO 14064-1,2,3, ISO 14067, PAS 2060, etc.



Enhanceclimate & environment risk assessment skills

- Collaborate with external consultants to introduce climate and environmentalrelated technologies and establish databases for transition risks and physical risks.
- The first financial institution in Taiwan and the second financial institution in Asia to complete the SBT review
- · Joined PCAF and adopted its methodology to evaluate financed emissions
- Note 1: For information on climate related government results for the Board and senior management, please see E.SUN FHC 2022 Annual Report pg37-43
- Note 2: For information on climate related education training for the Board and high-level management, please see E.SUN FHC 2022 Annual Report pg47-49
- Note 3: SCR*, Sustainability and Climate Risk. CFA ESG*, Certificate in ESG Investing. CCI*, Certificate in Climate and Investing

2.2 Climate & Environment related Risk and Opportunity

Financial institutions play a vital role in guiding companies through transition. E.SUN holds the concept of "Double Materiality" and tackles the risks and opportunities brought by climate change and strives to lower the negative impacts on the environment and society. We leverage the influence of finance to aid our customers in sustainable transition, joining together industry partners, government, and academia to build a better future for the environment.



2.3 Opportunity Identification

In addition to facing climate and environmental risks, E.SUN actively seeks business opportunities for climate and environmental transition. One of the key elements to achieve Net Zero is through finance. Taiwan's financial industry controls significant capital, which can be utilized through investments or financing to expedite the progress towards net zero. The EU plans to implement the Carbon Border Adjustment Mechanism (CBAM) starting in 2026, which will exert significant pressure on international supply chains for low-carbon transition. Taiwan, as a critical producer in many major industries, will also be driven to transition. The financial industry must exert a positive influence by directing funds towards climate and environmentally friendly companies. E.SUN actively develops and supports the policies of regulatory authorities, assisting customers in low-carbon transition, and supporting the development of lowcarbon technologies through related businesses such as green finance, creating new opportunities for sustainable finance.



Note: e are considered more material

		Opportunity	Potential Financial Impact(s)	Impact Period
	Resource	Green and Low Carbon Operation	Green buildings and environmentally friendly measures to save water, energy, waste and costs	Medium
l F	Utilization Rate	2 Process Digitalization	Invest in process digitalization to improve operational efficiency and reduce the consumption of natural resources and negative environmental impact	Short
	Energy Sources	Renewable Energy Use	Use renewable energy to reduce dependence on fossil fuels and the impact of carbon- related costs, and to reduce GHG emissions	Long
	Products	Promoting Green Finance	Develop green products and services, direct capital to sustainable areas, help customers transition, and create business opportunities	Medium
	and Services	5 Digitalized Customer Service	Digitalized and convenient financial services to increase customer satisfaction and reduce service costs	Medium
	Markat	6 Corporate Sustainability Transition	Offer innovative green financial products to expand customer engagement and business opportunities.	Medium
	Market –	7 Capital Market Participation	Increase financial asset diversification and explore sustainable investment/fundraising opportunities	Medium
		8 Increase Power of Finance	 Enhance ESG performance, meet stakeholder expectations, and collaborate with sustainability partners to leverage 	
Re	Resilience	Talent Development	financial influence.2. Nurture sustainable finance talents, enhance capacity to respond to climate change, and promote innovation through	Long
		10 Operational Resilience Management	sustainability 3. Supply chain management and green procurement to raise operational resilience	

- Note 1: Time frame definition, short-term is within 1 year, medium-term is between 1 to 10 years, and long-term is over 10 years
- Note 2: Assessment on degree of impact includes potential losses or cost increase, revenue growth margin, and percentage of affected employees.
- Note 3: Credit products are categorized as follows: Short-term, maturity of less than 1 year; mediumterm, more than 1 year but less than 7 years; long-term, more than 7 years. Mortgage loans are mainly products with a 30-year maturity period, while corporate finance provides suitable products according to customers' needs. The product strategy is based on a 5 to 10-year cycle, during which management is done annually, and is further adjusted depending on management needs

2.3.1 Financial Plan and Response Strategy

Based on the identification of significant internal and external climate and environmental opportunities, E.SUN has formulated climate strategies and actions related to operations, business, products, and financial planning. Additionally, annual and long-term financial performance goals have been set for climate-related products (see page 31 for details) to enhance the income and asset proportion of these products. E.SUN also aims to improve internal operational efficiency and reduce manpower costs through digitalized service processes.

Benchmarking	Material Opportunities	Internal Strategies and Targets	Current Actions and Results
	 Green and Low Carbon Operation Process Digitalization 	 Reduce absolute carbon emissions of Scopes1 and 2 by 42% by 2030 compared to the 2020 baseline Reduce water consumption by 20% and waste by 56% by 2025 Reduce carbon emission by revenue by 25% by 2025 100% representation of a club of E SUNIa aparetian. 	 Establish rainwater recycling and water-saving devices, promote proper water-saving concepts and conserve water resources. Implement waste sorting, recycling, and reuse management, and promote going paperless. Replace operative figurate ar conditioners and lighting.
 Paris Agreement Taiwan 2050 Net-zero Emissions Pathway 	3. Renewable Energy Use	locations by 2040	 Replace energy menicient air-conditioners and lighting equipment. Implement ISO 50001 to strengthen energy management standards. Purchase green electricity and install solar panels on E.SUN-owned buildings to increase the proportion of renewable energy use.
 Taiwan Green Finance Action Plan Corporate Governance 3.0 – Sustainable Development 	 4. Promoting Green Finance 5. Digitalized Customer Service 	 E.SUN aims to be the choice sustainability partner for small- medium enterprises and other customers by 2030 Continue to deepen scope and scale of green products in line with Taiwan's 2050 net-zero emissions pathway and strategies 	 Support customers with positive impact on the environment and society, including green projects such as renewable energy and companies with clear ESG development objectives, etc. Leverage the positive impact of finance and deepen
Blueprint · SBTi Science-based Carbon Reduction Targets · Principles for Responsible Investment (PRI)	 Corporate Sustainability Transition Capital Market Participation 	 Target 100 billion NTD in green loans by 2030 Target Sustainability Linked Loans account for 13% of all corporate loans by 2030. E.SUN will employ 10 additional personnel to develop green products, which will cost \$15M NTD assuming annual salary is \$1.5M per person. 	 relationships with customers and sustainability partners through partnerships, ESG sustainability initiatives and consulting services. Establish dedicated green product development team to seize opportunities.
 Principles for Responsible Banking (PRB) TCFD TNFD 	 8. Increase Power of Finance 9. Talent Development 10. Operational Resilience Management 	 Benchmark international standards (such as CDP, DJSI, etc.) and continuously improve, reaching net-zero emissions by 2050 Actively participate in government and international organizations' sustainability and climate change-related initiatives to strengthen response capabilities Collaborate with TAISE to establish a Sustainable Finance Manager certification to enhance ESG and climate-related skills Internal education and training incorporates ESG-related issues, and climate risk management training is introduced into the orientation program. 	 Establish management structures, revise internal climate change-related regulations, integrate into daily operations and business development, and enhance risk and opportunity management capabilities. Participate in regulatory and industry association climate-related projects to help formulate related regulations, such as the Taiwan Sustainable Taxonomy, Bankers Association climate stress test projects etc. Cultivate in-house sustainability and climate talent, and plan to subsidize relevant certifications. Improve mitigation capabilities by obtaining green
			building certifications on new constructions, building enhancements, and through operations management

2.3.2 Climate & Environment related Product and Service Overview

In response to climate change, it is essential to address customer needs by innovating products and services. E.SUN is determined to become the top choice for sustainable transition. We aim to go beyond being a provider of funds and become an enabler of the low-carbon economy. The climate-related products of E.SUN Bank for 2023 is presented in the table below. For more information about each product, please refer to the "Banking for Better" chapter.

Personal Finance

Zero Carbon Credit Card

- E.SUN Bank's entire range of credit cards are now carbon neutral.
- Over 6.46 million cards have been issued

Digital e-Card

- In 2022, E.SUN Bank led the market in launching the virtual "Digital e-Card" which reached 99.5% online application rate. Physical cards are no longer provided after approval.
- This reduces the carbon emissions by 1,100 grams per card. In 2023, it is estimated to reduce carbon emissions by approximately 17.5 metric tons.

Zero-carbon ATMs

 In 2023, E.SUN Bank ATMs obtained ISO14067 certification. We use carbon credits verified and publicly disclosed by SGS, and obtained PAS 2060 certification for achieving carbon neutrality.

Digital Account Services

 Acquired market leading ISO14067 Carbon Footprint Verification and PAS 2060:2014 Carbon Neutrality specification, creating a net-zero finance circle for our customers

Innovative Inclusive Financial Services

 E.SUN promotes going paperless and reducing GHG emissions by switching to online platforms and electronic bills/statements.

Smiling Polar Bear Series Loan

- For mortgage collaterals that have the Green Building Mark issued by the Taiwan Architecture and Building Center, interest rates or fees are discounted. A total of 1,118 loans with a balance of approximately NT\$17.03 billion have received these incentives. The target for average annual growth rate of disbursed funds is 8% for 3 years
- Note: Green building mortgage include "purchase loans" and "working capital loans."

Corporate Finance

Green Loans

- Assisting in the development of green projects, such as renewable energy, energy storage, green building, and energy-saving equipment.
- Balance reached NT\$80.9 billion as of Dec. 2023
- Target balance NT\$130 billion by 2030

Sustainability Linked Loans

- Encouraging companies to establish and achieve ESG development goals, with financial service incentives provided to companies that meet their targets.
- · Balance reached NT\$60.06 billion as of Dec. 2023
- Target 13% of total corporate loans by 2030

Sustainable Advocacy

- Inviting like-minded corporate partners to focus on sustainability and jointly reduce carbon emissions, thereby building a sustainable ecosystem through practical action.
- From 2021 to September 2023, the "E.SUN ESG Sustainability Initiative" was held with 242 companies joining the initiative.

Sustainability Consulting Services

- Combining internal expert teams with external professional consultants to provide advisory services that assist corporate clients in ESG development
- As of December 2023, engaged with a total of 167 companies on sustainability and climate-related issues, including recommending steps for carbon reduction and encouraging and assisting companies in implementing GHG inventories

Sustainability Savings

- Balance reached NT\$923 million as of Dec. 2023
- Note: Climate-related products and services are estimated to create annual financial positive implications of \$2.67 billion NTD

Medium and Large Enterprises / Financial Institutions

Sustainable investments

- The balance of investments in certified green bonds, social bonds, and sustainability bonds is NT\$29.4 billion.
- The target balance for 2030 is NT\$42 billion.

Sustainable Bond Issuance

- Channeling funds to environmentally and socially friendly industries through issuance of sustainability bonds
- Total issuance reached NT\$23.4 billion

Sustainable Bond Underwriting

- Supporting companies in raising funds for sustainability causes and assisting them in issuing sustainability bonds
- Underwriting balance reached NT\$25.4
 billion
- 2023 In 2023, E.SUN Securities acted as a co-underwriter for six companies in sustainable industries, with a total underwriting amount of NT\$207 million

Hedging and Consultation Services for Sustainability-related Projects

- Supporting environmentally friendly projects with our services by providing hedging and consultation services for sustainability-related projects, e.g., financing for offshore wind power projects and solar power projects.
- The hedging services provided amounted to NT\$23.59 billion.

Our People Seeking Common Good

2.4 Risk Identification

According to the WEF Global Risks Report 2024, extreme weather events, environmental changes, and natural ecosystem disruptions are the most significant risks in the next decade. Climate-related risks not only affect E.SUN's own operations but also have a greater impact on our investment and financing activities. For example, if our customers are impacted by climate-related risks, it can lead to credit deterioration or price fluctuations of E.SUN's assets. As climate change and the transition to low-carbon progress, these risks may have varying degrees of impact at different times, thereby affecting existing risks, such as credit risk, market risk, and operational risk. E.SUN considers the practical business management mechanism and life cycle of the products, and conducts climate change-related risk assessments for short, medium, and longterm periods. We integrate these assessments into the current risk management framework and review and formulate response plans regularly.



	Risk Factors	Potential Financial Impacts	Term
Policy and	1 Carbon tax / fees	Financial impacts on the company, customer and clients from Carbon tax / fee.	Short
Regulation	2 Stricter regulations	Climate and Environmental policies, laws, and financial supervision become more stringent.	Short
	Climate-sensitive Assets	Replacement of existing products and services with low carbon and environmentally friendly products may increase the uncertainty of operations and investment and financing assets	Medium
Technology	4 Business Transition	Refining existing management mechanisms and systems or adjusting business operations and customer preferences in response to climate and natural environment issues, resulting in an increase in fees and costs (including opportunity costs).	Short
Markat	5 Raw Material Prices	Price rising in water, electricity, and raw materials increases cost or negative impact on financial assets.	Medium
Market	6 Changing Consumer Preferences	Customers' preferences change; decision- making for operations, investment and financing requires considering ESG factors.	Medium
Reputation	Negative News / Litigation Risk	Negative behavior of company operations or customers, resulting in negative press and even litigation risk.	Medium
·	8 Green-washing risk	Information bias or operating procedures creating risk of green-washing	Short
Acute	9 Natural Disasters	Natural disasters such as typhoons, floods, and water stress impairs assets or collaterals and interrupts operations.	Medium
Chronic	10 Natural Resource Depletion / Environment Deterioration	 Lack or deterioration of natural resources (e.g., water shortages) on which the operation depends, impacting company or customer operations. Changes in climate patterns, rising sea level, loss of biodiversity affecting the economy, impacting our business model and that of our customers, increasing costs due to asset impairment or early replacement. 	Long

2.4.1 Impact Assessment

Correlation between Physical Risks and Traditional risks

Business Category	Pick Import	Major Risk	Risk Impact Level		
		Category	Short-term	Medium-term	Long-term
Lending and	 Being affected by climate change or natural environmental factors (such as strong typhoons, heavy rain, landslides, and debris flows) can lead to decreased collateral value or supply chain disruptions that affect customer operations. Climate change and the degradation of natural environmental resources have an impact on macroeconomic factors (e.g., GDP, unemployment rate, insufficient natural resources) and real-world risk events, causing adverse effects on investment 	Credit Risk	Low	Moderate	Moderate
	targets (revenue decline, additional operating costs, supply disruptions), and resulting in fluctuations in investment position prices.	Market Risk	Low	Moderate	Moderate
Company Operations, Policy and Reputation	Operational locations are impacted by extreme weather and natural environmental resource factors (such as strong typhoons, heavy rain, water resource pressure), which result in damage to buildings, equipment, and negative effects on operations.		Low	Low	Moderate
Suppliers	Natural disasters and environmental factors that impact infrastructure operations (such as electricity, networks, etc.) can have an impact on businesses.		Low	Low	Moderate

Correlation between Transition Risks and Traditional risks

Business	Risk Impact		Risk Impact Level		
Category			Short-term	Medium-term	Long-term
Lending and	 The imposition of carbon taxes/fees and carbon tariffs in response to the low-carbon economic transition negatively affect high-carbon-emitting industries and enterprises that are unable to reduce carbon emissions or transition to green technology, as well as their related supply chains. Environmental assessment factors also influence factory development or operations, and products may face boycotts 	Credit Risk	Low	Moderate	Moderate
Investment	 High-carbon industries experience higher operating costs due to carbon cost burdens and face the risk of failure during the business transformation process. Environmental issues also impact specific sectors, resulting in fluctuations in investment position prices. 	Market Risk	Low	Moderate	Moderate
Company Operations, Policy and Reputation	 The imposition of carbon-related costs and increased investment in energy conservation and emission reduction (such as the use of renewable energy and energy-saving equipment) result in increased resource input. Climate change-related regulations and policies are common sources of transition risk, such as government legislation imposing carbon taxes or fees, implementing stricter energy efficiency standards for residential and commercial buildings, and imposing legal disclosure obligations for carbon emissions. When assessing policy and regulatory risks, it is necessary to consider the potential direct impact on operations and the potential indirect impact on the supply chain. Reputational risk is closely connected to how customers or the public perceive a company's commitment to low-carbon transition and upholding its environmental sustainability commitments. If a company fails to fulfill and implement its climate change commitments, it can impact the perception of stakeholders (including its upstream and downstream) and result in a negative reputation for the company, leading to the loss of customers, consumers, or suppliers, which affects the company's ability to secure funds or even recruit and retain employees. 	Operational Risk	Low	Low	Moderate
Suppliers	Manufacturers transfer investment and carbon-related costs as a result of transition, adjustments in service models, or legal restrictions, leading to increased payment costs.	Operational Risk	Low	Low	Low

Low risk: Small increase in costs with little financial impact. Medium risk: Increased risk of overdrafts and fluctuations in asset prices may affect revenue growth. High risk: Increased risk of defaults on credit assets, fluctuations in investment asset prices, and extreme weather events affecting base operations, which may result in revenue decline.

Measure

· Conduct GHG inventories

for investment and

2.4.2 Climate & Environment Risk Management Procedures

Identify

- Regularly monitor relevant laws, guidelines, and publications to enhance the integrity of identifying climate-related risks that may impact business and operations.
- Establish the significance of climate-related risks and opportunities through the indicators recommended by TCFD, as well as relevant laws, guidelines, literature, and internal experts
- Strengthen the identification of companies with high climate-related risks in the lending process

Identify

and Dist.

 Incorporate climate change-related risks and opportunities into the management and analysis of securities investments and underwriting processes

2.4.3 Climate-sensitive Assets

E.SUN employs domestic and international risk management guidelines, including those from UNEP FI and SASB, to identify industries that are particularly vulnerable to climate change impacts. These guidelines serve as both external disclosure references and internal risk decision-making tools.

As of 2023, E.SUN's investments and loans in climate-sensitive industries account for 6.29% of our total portfolio. E.SUN is committed to ambitious sustainability goals, including a complete phase-out of coal by 2035 and achieving net-zero emissions by 2050. To guide these efforts, E.SUN relies on science-based methods and robust risk management practices.

Climate-sensitive Assets

Climate-sensitive Asset Cl	Total Investment and Financing	
Enorgy and Utilitios	Fossil Fuels	0.65%
	Power Facilities and Utilities	1.50%
Transportation Industry	Transportation	0.90%
	Petrochemical/Chemical	2.02%
Materials and Construction	Metal Manufacturing/Smelting	0.56%
	Cement and Glass	0.18%
Agriculture, Food, and	Agriculture, Forestry, Fishing, and Animal Husbandry	0.16%
Forestry Products	Papermaking	0.31%
Climate-sensitive assets	6.29%	
Non-climate-sensitive as	93.71%	
Total	100.00%	

Note: Climate-sensitive asset positions include E.SUN Bank, Securities, and Venture Capital

Report

- Report on climate and environmental risks to the Board at least every six months, and regularly report risks to senior management to assess the exposure and management of climate change-related risks
 If climate & environment risks impact overall
- operations or business conditions, immediate appropriate management measures are taken and reported to the Board Disclose information according to climate

& environment-related

quidelines

Report	Management Procedure	Measure	 financing activities. Assess the proportion of climate change-sensitive assets Regularly conduct scenario analysis and stress tests on physical
	Monitor		risks and transition risks to inform strategy development and risk management.

Monitor

- Establish indicators linking climate factors and reduce exposure when triggered
- Implement Science-based Targets (SBTs)
- Implement risk-based and differentiated management measures based on the results of climate & environment risk assessments

2.4.4 Climate Change Scenario Analysis SASB: FN-MF-450a.1, FN-MF-450a.2

Portfolio Scenario Analysis

Scenario analysis is a process of identifying and evaluating potential impacts of future events under uncertain conditions. Climate change scenario analysis, including stress testing and sensitivity analysis, conducts both quantitative and qualitative assessments of climate-related risks to understand the probable financial influences on business activities. Furthermore, the governance strategies and risk management processes will incorporate the assessment results. Using methods and scenarios set out by the "Domestic Bank's Application of Climate Change Scenario Analysis," E.SUN analyzed its investment and financial portfolio and disclosed relevant information as required by the FSC. This year we implemented advanced analysis methods, enabling a more precise identification of physical risk on financial impacts and further strengthening risk management as well as information transparency.

Scenario Setting

The scenarios are primarily based on the climate scenarios released by international organizations, such as The Network for Greening the Financial System (NGFS) and the UN Intergovernmental Panel on Climate Change (IPCC), and three scenarios are used: Orderly Transition, Disorderly Transition, and No Policy scenarios. The scenarios use the years 2030 and 2050 as checkpoints to analyze the impacts of climate change in the longer term. Details of scenario setting are listed as below.

Category	Orderly Transition	Disorderly Transition	No Policy	
Scenario Description	 Gradual and measured transition to Net-Zero globally by 2050 	· Delayed start but still reaches Net-Zero by 2050	 Climate change brought on by lack of transition policies 	
Transition Bisk	Taking into account carbon emission intensity by country	and industry, and carbon price impacts on finances		
	• NGFS Net Zero 2050 Scenario	NGFS Delayed Transition Scenario	NGFS Baseline Scenario	
Physical Risk · IPCC AR5 RCP 2.6 · IPCC AR5 RCP 2.6		· IPCC AR5 RCP 2.6	· IPCC AR5 RCP 8.5	
Overall Economy	 Taking in account GDP growth rate, Unemployment rate, a 	and long term interest rate change in NGFS scenarios		

Note: The RCP2.6 scenario represents an increase in radiation intensity to 2.6 Watts/m2 in 2100, while the RCP8.5 scenario represents an increase to 8.5 Watts/m2.

Analysis Methodology

Climate change-related risks can be categorized into transition risks and physical risks. Transition risks refer to the negative impact on operations or revenue that companies may face in order to comply with low-carbon transition regulations, including the expenses for carbon reduction and carbon taxes/fees which are primarily influenced by industry and nation factors. Physical risks refer to direct damages or losses caused by extreme weather events, which may result in the depreciation of assets, operational disruptions, or business losses. Based on statistics on natural disaster losses from the National Fire Agency and the estimated future rainfall trends by the Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP), the main physical risks in Taiwan are hydrological-related disasters. Hence, we considered both long- and short-duration intense rainfall as well as droughts as key risk sources in the following assessment.



Results

1. Overview of Transition and Physical Risk Exposure in Investment and Financial Portfolio

Based on the climate scenario analysis of E.SUN FHC's net worth and pre-tax profit evaluation, the analysis includes the consolidation of banking operations, general insurance for individuals and businesses, bond and equity investments. E.SUN Bank accounts for over 99% of E.SUN FHC's assets. According to the analysis, the largest projected loss occurs in the scenario of disorderly transition in 2050, amounting to approximately 7.96% of E.SUN FHC's benchmark year (2023) net worth. Transition and physical risks are estimated to cause \$7.2B NTD and \$274M NTD in largest loss scenario respectively.





Transition Risk: Exposure Distribution by Industry and Country

The assessment of transition risks involves exposures to domestic and foreign corporate loans and investments. Analysis factors include industries and countries, with risks categorized into "Low," " Medium-Low," "Medium," "Medium-high," and "High" groups. The higher the risk level, the greater the impact on revenue due to carbon pricing. From the results of the transition risk exposure, it is observed that the impact of carbon pricing on domestic corporate loan customers' revenue is concentrated in the 1-5% range, accounting for approximately 60% of the total exposure. Additionally, around 10-20% of the exposure is affected by carbon pricing with revenue ratio ranging from 5% to 50%. In the 2050 orderly/disorderly transition scenarios, a small number of customers may experience impacts exceeding 100% of revenue ratio due to transition risks.



Transition risk distribution: Carbon price impact as percentage of revenue



Building Resilience

Physical Risk

Physical risks mainly consider the operating location of the customer and the potential business impact or value impairment of collateral caused by physical risks. The evaluation of domestic corporate loans includes stocks, bonds, and equity investments. Among them, the most severe case is the Disorderly Transition 2050 scenario, as shown in the graph below. Over 97% of the loan customers are affected by less than 1% due to physical risks, indicating overall manageable risks. For personal loans, the evaluation focuses on mortgages. The analysis is based on the impact of different levels of flooding on collateral value according to the Water Resources Agency flood potential data. The No Policy 2050 scenario has the highest impact level, with depreciation levels ranging from 0% to 41.5%. The impact is particularly severe in the southwest coastal region. Comparing the No Policy 2030 and No Policy 2050 scenarios, the impact on collateral value due to physical risks in the northern, central, and southern metropolitan areas will increase, with the maximum increase of approximately 4.83%.

Percentage of domestic corporate customers affected by physical risks in terms of revenue in the 2050 Disorderly Transition scenario



In the No Policy 2050 scenario, the percentage decrease in collateral value for personal loans affected by physical risks (left) and the percentage increase in collateral value impairment compared to 2030 (right)



2. Scenario Analysis for High-energy and High-carbon Industries

High-energy and high-carbon industries refer to the six major energy-consuming industries (petrochemical, electronics, steel, cement, textile, and paper making) announced by the Ministry of Economic Affairs in accordance with the Energy Management Act, classified by the Directorate General of Budget, Accounting and Statistics.

In response to climate change, countries have set the goal of achieving "Net-zero Emissions by 2050" and have proposed various measures and policies to reduce carbon emissions. These measures and policies may have significant impacts on the operations and revenues of high-energy and high-carbon industries, thus affecting their repayment capacity and increasing default risks. Therefore, it is necessary to analyze these industries to implement climate risk management. The analysis results of our domestic and international portfolios are shown in the table below, with approximately 10.33% of the portfolios belonging to high-energy and high-carbon industries, with the electronics industry accounting for the largest proportion at 7.78%. The expected losses under various scenarios, expressed as a percentage of E.SUN FHC's benchmark net worth ratio (2023), are highest in the Disorderly Transition 2050 scenario, totaling 0.73%.

Six High-Energy and High-carbon Industries

					Units: I	Percentage (%)	
		Expected losses as percentage of FHC net value					
	Exposure percentage	Pagalina	20)30	20)50	
		Daseime	Orderly	Disorderly	Orderly	Disorderly	
Petrochemicals	0.64	0.03	0.05	0.04	0.06	0.08	
Electronics	7.78	0.18	0.37	0.45	0.47	0.49	
Steel	0.77	0.03	0.04	0.04	0.05	0.07	
Cement	0.08	0.01	0.01	0.01	0.01	0.02	
Textiles	0.58	0.01	0.02	0.02	0.03	0.04	
Paper making	0.48	0.01	0.02	0.02	0.02	0.03	
Total	10.33	0.27	0.50	0.57	0.65	0.73	

3. E.SUN Operations Scenario Analysis

Climate risks for financial institutions mainly arise from finance and investment positions. Operational transition risks primarily impact water and electricity prices and the cost of compliance, which have relatively low effects on finances. Physical risks are more likely to affect business operations and income. Therefore, our operational risk analyses focus mainly on physical risks. In reference to the IPCC physical risk analysis framework and suggestions from internal experts, a flood risk level analysis using hazards, vulnerability, and operating location (exposure) is shown in the chart below. When considering the operational lifecycle, we mainly examine the period before 2030 and 2050. The analysis results show that there are no high-risk locations within this timeframe.





Unit: Percentage of locations

Scenario		SSP1-2.6			SSP2-4.5			SSP5-8.5	
Time	2030	2050	EoC*	2030	2050	EoC*	2030	2050	EoC*
High Risk	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.09%
Medium-high Risk	0.00%	1.85%	0.00%	0.00%	1.23%	0.00%	0.00%	2.47%	4.32%
Medium Risk	3.70%	4.94%	3.70%	3.70%	3.09%	3.70%	3.70%	2.47%	5.56%
Medium-low Risk	9.26%	6.17%	9.26%	9.26%	8.64%	9.26%	9.26%	8.02%	0.00%
Low Risk	87.04%	87.04%	87.04%	87.04%	87.04%	87.04%	87.04%	87.04%	87.04%

Our Story	Journey to Net Zero	Banking for Better	Building Resilience	Our People	Seeking Common Good
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2.4.5 Risk Management Measures

Based on the comprehensive climate change risk assessment results and climate change scenario (stress) testing analysis, E.SUN's management measures are summarized in the following table

Scope	Material Risks	Risk Factors	Management Measures / Adaptation Plans
Low Carbon Transition	 Carbon tax/Fees Climate-sensitive Assets Business Transition 	Reduce operational and investment- related carbon emissions	 Inventory Scope 1 and 2 carbon emissions, and plan mitigation measures (such as installing solar panels, using renewable energy, etc.). Follow the PCAF methodology for carbon inventory of investment and financing activities. Set targets and reduce carbon emissions according to the SBTi.
Investment	6. Changing Consumer Preferences	Stock and bond investments	 Fulfill the responsibility as asset owners or managers by considering the ESG performance of investees. Avoid investing in companies with direct or potential environmental and social impacts, such as coal companies, and implement responsible investment. Promote or assist companies in raising sustainability awareness and implementing ESG actions through engagement.
Loans	 Carbon tax/Fees Climate-sensitive Assets Business Transition 	Corporate loans	 Support companies in transitioning and responding to climate risks by providing green financing for renewable energy projects, green buildings, and other sustainable expenditures. Link loan terms to performance in ESG or sustainability indices to encourage companies to invest in sustainability. Refer to the guidance of the Banker Association's Equator Principles 4.0 for corporate loan review. Include ESG considerations in the loan process to prevent funds from flowing into high-carbon emitters such as coal-fired power projects.
	9. Natural Disasters 10. Natural Resource Depletion/ Environment Deterioration	Real estate collateral loans	 Regularly assess and monitor the potential risk of real estate value impairment caused by climate change and continuously improve the database of physical risks, analysis methods, and scenario testing. Incorporate flood risk factors - hazards (e.g., heavy rainfall, increased typhoon frequency) and vulnerability (e.g., whether the area is prone to flooding) into the real estate collateral zoning standards and set lending limits and LTV ratios according to the zoning to control risks. Regularly manage high flood risk cases, make special notes, and carefully assess collateral located in high climate risk areas with high LTV ratios. Refuse collateral labeled as pollution-related sites or those announced by government agencies as subject to the "Soil and Groundwater Pollution Remediation Act." Strengthen processes and conditions for collateral in high landslide-risk communities.
Self Operations	9. Natural Disasters 10. Natural Resource Depletion/ Environment Deterioration	Disaster response	 Develop the "Emergency Response and Crisis Management Measures" based on the "Financial Institution Disaster Emergency Response Measures Manual Template" and operational overview to ensure operational continuity and organizational resilience. The "Continuous Information Service Management Regulation" takes into consideration power supply interruption and regional flooding recovery.
	5. Raw Material Prices	Supplier management	 E.SUN collaborated with external consultants to introduce AR6 scenario data, domestic disaster potential data, and analytical techniques. We conducted a physical risk assessment of our properties from 2030 to the end of the century to plan adaptation measures for service locations. By 2025, our goal is to reduce high-risk locations to within 2%, and existing high-risk locations will be monitored or prepared early for extreme weather reports to reduce climate impacts.
	2. Stricter regulations 7. Negative News/Litigation Risk 8. Green-washing Risk	Compliance and reputation	 Implement sustainable procurement standards to manage suppliers. Establish measures to avoid greenwashing in the provision of green financial products and services and set up mechanisms for internal control.

Note: The cost of physical risk mitigation is estimated to be \$54M NTD based on salary costs for 3 extra personnel, training, and database maintenance costs over a 10-year period correlating to the IPCC Assessment Report cycle and the average mortgage life cycle.

2.4.6 Applying Differential Management of Industries

E.SUN incorporates climate change-related risks into its daily operations, differentiating its business as shown in the table below, actively managing carbon emissions from financial assets, increasing green assets, reducing grey assets in investment and financing positions, guiding low-carbon transition through financial resources, exerting its financial influence, and fulfilling global climate-related sustainable goals.

Management Measures	Management Description		
Avoid	 According to "E.SUN Financial Holding Co., Ltd. Sustainable Finance Policy," companies involved in illegal logging, harming endangered wildlife, developing coal mines, or setting up new coal-fired power projects should be avoided. According to "Guidelines for the Phase-Out of Coal and Unconventional Oil & Gas Industries of E.SUN Financial Holding Company," to accelerate the phase-out of high GHG emitting coal companies and unconventional oil & gas companies. Real estate collateral listed in the "Soil and Groundwater Pollution Remediation Act" should be avoided 		
Enhanced Management	 Companies involved in coal-fired power generation, tobacco, gambling, mining, and leather and fur-related activities should be carefully evaluated and regularly monitored. We have signed the Equator Principles and, in accordance with Equator Principles 4.0, have included climate change assessments as a necessary item in project financing. The Equator Principles should be applied to large-scale project financing in sectors such as electricity, oil and petrochemicals, and infrastructure to classify and manage risks. Projects should be thoroughly assessed for social responsibility, appropriate environmental and social impact monitoring, and improvement planning. Analyze the practical implementation of climate-related physical and transitional risks, environmental pollution, and biodiversity issues on a case-by-case basis. Develop specific measures to address industry-specific climate and environmental risks, including carbon emissions, climate risks, biodiversity, toxic substance management, and water resources. Incorporate the hazard and vulnerability of climate risk factors into real estate collateral zoning standards to manage credit business climate risks within jurisdiction divisions. Strengthen the review process for cases in communities with high landslide risk. Establish mechanisms to encourage customers with environmental pollution penalties to address their issues. 		
Actively Support	Support social innovation and local revitalization industries by offering tailored financial services, financial counseling, and marketing resources. This contributes to 'aiwan's efforts towards achieving the Sustainable Development Goals (SDGs). ncrease investment and financing in forward-looking economic activities aligned with the key strategies outlined in the National Development and Reform Commission's 2050 net-zero emission pathway. This includes sectors such as wind power, solar power, hydrogen energy, forward-looking energy, power systems and energy storage, energy conservation, carbon capture utilization and storage, vehicle electrification and decarbonization, resource recycling and zero waste, and natural carbon sinks.		

Note: The cost of transition risk mitigation is estimated to be \$9M NTD per year based on salary costs for 6 additional management personnel.

2.5 Carbon Emissions Structure

E.SUN began taking carbon inventory of its service locations according to the ISO14064 standard in 2014. In 2017, we expanded to 100% of locations. The inventory included Scope 1 direct GHG emissions (including emissions from electric generators, natural gas, company vehicles, and firefighting equipment) and Scope 2 indirect GHG emissions from electricity use.

The financial industry' s largest source of emissions originates from its financing and investment activities. In 2023, E.SUN conducted an assessment of its financing and investment carbon emissions using the Partnership for Carbon Accounting Financials (PCAF) Second Edition standards with data from ESG reports and CDP data from its financed and invested entities. The results of the assessment have been independently verified (see <u>Appendix 18</u>). In addition to the total emissions, carbon intensity indicators such as Carbon Footprint and Weighted Average Carbon Intensity (WACI) are used to analyze the carbon emissions profile of financial assets. This information serves as reference for financing and investment decisions.

The Carbon Footprint represents the emissions per unit of financing and investment exposure, providing insights into whether the investment portfolio is moving towards carbon reduction. The Weighted Average Carbon Intensity is calculated based on the carbon emissions per unit of revenue from the financed and invested entities, taking into account the proportion of E.SUN's financing and investment. This indicator helps interpret changes in the carbon emissions of the financing and investment portfolio. By systematizing carbon emissions information, E.SUN closely monitors the changes in carbon-related indicators of its assets and continues to work towards its mission of achieving Net-Zero.



	Gł	HG	Em	issions	Time	line
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Total	4,788,679	3,745,755	5,023,703	5,421,598
Scope 3: Others	53,713	49,181	56,015	46,436
Scope 3:Financed Emissions	4,710,269	3,672,612	4,945,550	5,355,042
Scope 2	22,299	22,105	20,294	17,959
Scope 1	2,399	1,858	1,844	2,161
	2020	2021	2022	2023
				Unit: t-CO ₂ e

Note: Scope 2 emission is calculated base on market base.

Scope 3 Portfolio Emissions Inventory

				Unit: t-CO ₂ e
	2020	2021	2022	2023
Financed Emissions(t-CO ₂ e)	4,710,269	3,672,612	4,945,550	5,355,042
Carbon Footprint (t-CO ₂ e/\$M)	69.64	47.88	64.66	65.81
Weighted Average Carbon Intensity (t-CO ₂ e/\$M)	-	172.63	146.68	156.53
Inventory Coverage (%)	73.69%	75.27%	76.53%	77.62%

Note 1: Emissions from investment and financing activities for 2023 have been estimated based on the changes in our total assets reported in our financial statements

Note 2: Carbon Footprint = GHG emissions from investment and financing companies / inventoried balance of investment and financing companies

Note 3: Inventory Coverage = inventoried balance of investment and financing companies / sum of FVPL, FVOCI, AC, loans, and discounted items

Note 4: Inventory coverage for 2023 using PCAF methodology is 100%

Note 5: Currency shown in \$USD, calculated using USD/TWD exchange rate of 12/31/2023

2.5.1 Portfolio Emissions Analysis

E.SUN analyzes the GHG emissions of its investment and financing assets based on asset types, industry, and regions. We have set different decarbonization goals for different asset types according to SBT targets and plan control mechanisms for high-carbon industries. We also engage with customers and encourage staff to increase interaction with low-carbon companies or investment targets. We hope to leverage our financial influence to help achieve net-zero emissions.



Corporate Loans

Sovereign Bonds



Stocks and Corporate Bonds

12.6%

Mortgages



Power Generation Project Finance

<mark>3</mark>.5%

Commercial Real Estate Loans

3.0%



2.5.2 Our Path to Net-Zero by 2050

Category	Risk Factors	SBT Targets	Net-Zero Actions
Scope 1	 Use of Company vehicles, refrigerants, natural gas Base year: 2020 Operating locations and building 	Emission reduction percentage	 Install solar panels, 100% of E.SUN's owned buildings equipped with solar facilities by 2025, and 100% use of renewable energy in all domestic branches by 2030. Purchase renewable energy certificates in line with government energy policies. Poplace concrete accounting equipment update old energy.
	electricity consumption • Base year: 2020	60.0% 40.0% 2025 2030	 replace energy-consuming equipment, update old energy- consuming lighting and air-conditioning equipment with energy- saving products. 100% of E.SUN-owned buildings to obtain green building certification by 2027.
Scope 3	 Investment and Financing (based on PCAF methodology) Base year: 2019 	(1) Emission intensity of the power generation project financing 100.0% 80.0% 60.0% 60.0% 2019 2025 2030 (3) Emission intensity of commercial real estate loans 100.0% 60	 for Since July 2019, E.SUN has committed to not support coal-fired power generation project financing, and by the end of 2021, no related balance remains. ESUN committed to phase out from coal-related companies and unconventional oil & gas related companies. Regarding unconventional oil & gas related companies, we no longer finance or invest any unconventional oil & gas related companies. Furthermore, E.SUN has no investment or credit outstanding since 2023 in terms of unconventional oil & gas related companies. Furthermore, there will be no new lending business and investment. Existing positions will be halved by 2030 and fully exited by the end of 2035. In 2022, we introduced internal carbon pricing to our business portfolio, combining E.SUN's attributed emissions with trusted international carbon pricing to create an accessible carbon cost concept and use it as a reference for business development. E.SUN will continue to drive sustainable development through financial initiatives and products, increasing its engagement with clients that have adopted SBTs, as well as through investments in green energy and green building projects to help customers reduce their carbon footprint. In 2021, E.SUN joined the Science Based Targets initiative (SBTi), setting a goal to reduce carbon emissions in line with a 1.5°C target. In terms of scope 3 target, E.SUN use intensity targets. The finance carbon emission in baseline year is 4,710,269 tons, it accounts for 98.3% of total base year emissions. Since the scope 3 target has several sub targets, those reduction target percentage from base year is around 49%-58%.
	Other (procurement process, credit card manufacturing and disposal process, employee travel, waste disposal, etc)		 Reducing carbon emissions from credit cards by utilizing carbon neutralization and researching renewable card materials. Collaborating with suppliers to implement local and green procurement.

Note 1: SBTs use increase in reduction rate compared to baseline as the target. To make the information more instinctual, we chose to present our results as a reduction percentage. Note 2: (1)(2) carbon intensity (t-CO₂e/MWh) reduction Note 3: (3)(4) carbon intensity (t-CO₂e/m²) reduction