TCFD Report 2024
(Task Force on Climate-related Financial Disclosures)

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1. Introduction

The world is facing the impacts of climate change including storms, floods, heat waves and droughts that are occurring with higher frequency and which are likely to become worse in the future. The main cause is the emissions of greenhouse gases from human activities, resulting in rising global temperatures. The United Nations has published statistics for the past 82 years (1941 - 2023), showing that 2023 had the highest global temperature on record, and the Secretary-General of the United Nations announced that the world has already entered the global boiling era. Meanwhile, on June 5, 2024, the World Meteorological Organization (WMO) released a report predicting that the average temperature near the sea surface between 2024 and 2028 is expected to be 1.1 - 1.9 degrees Celsius higher than during the industrial revolution, and there is an 86 percent chance that the temperature in any year during that period will set a new record, which means that the average temperature will not be kept below 1.5 degrees Celsius according to the Paris Agreement.

Given the situation, many countries including the public and private sectors, civil society and other sectors began to pay serious attention to reducing greenhouse gases and transitioning to a low-carbon society to alleviate impacts and build the ability to adapt to climate change for both businesses and households. This can be seen from the announcement of carbon neutrality goals and the net zero goals at the national and organizational levels. In addition, at the 28th Conference of the Parties (COP) held in the United Arab Emirates between 30 November and 12 December 2023, there was an emphasis on maintaining the temperature to increase by less than 1.5 degrees Celsius by the end of the century in accordance with the Paris Agreement. Moreover, other important agreements have also been made, including increasing the production of clean energy 3-fold (Triple Renewable Energy) and increasing energy efficiency 2-fold (Double Energy Efficiency) by 2030, including the transition away from fossil energy. Additionally, the 29th COP Meeting held in Azerbaijan from 11 to 22 November 2024 adjusted the new financial target (New Collective Quantified Goal on Climate Finance: NCQG) which requires developed countries to increase financial assistance to developing countries to 300 billion US dollars per year by 2035 to be used for activities to reduce greenhouse gas emissions and build resilience from the impacts of climate change, which is up from the original target of 100 billion US dollars per year. Such changes are considered as risks and opportunities for businesses as businesses that can adapt well are immune to risks and able to seize opportunities ahead of competitors.

The Bank recognizes the importance of risks and opportunities arising from climate change for its customers and the Bank. Therefore, we consistently monitor the situation as well as focusing on strengthening our capacity to assess climate risks and opportunities, both physical and transitional so that the Bank can appropriately manage risks and implement various measures to tackle the impacts of climate change on its business as well as providing financial support to activities or projects that help all sectors reduce or mitigate the impacts of climate change. The Bank prepared this report based on the recommendations of the

Task Force on Climate-related Financial Disclosures (TCFD), covering four key elements: governance, strategy, risk management and metrics and targets to demonstrate our commitment to disclosing information on our organization's climate management that complies with international standards.

- **Governance**

Organizational oversight of climate-related risks and opportunities.

- **Strategy**

Impact of climate-related risks and opportunities on business strategy and financial planning.

- **Risk Management**

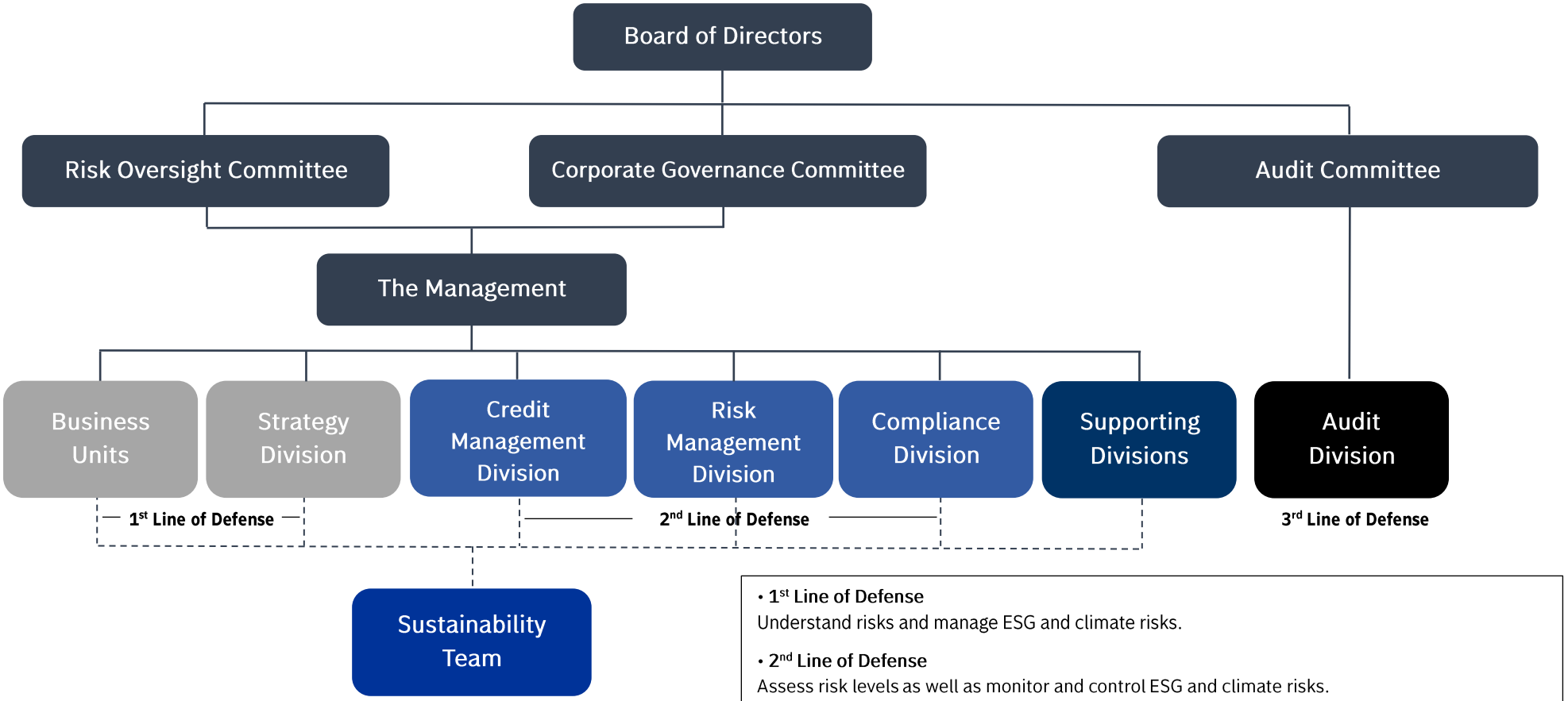
Process of identifying, assessing, and managing climate-related risks.

- **Metrics and Targets**

Indicators and targets used to assess and manage climate-related risks and opportunities.

2. Governance

The Bank incorporated environmental, social and governance (ESG) considerations including those related to climate into our normal business practices of all committees and departments as well as defining roles and responsibilities from the Board level to the operational level to ensure that its management of risks and opportunities related to ESG and climate change is efficient and effective in accordance with the Bank's policies and strategies including sustainability and climate change polices and guidelines of regulatory agencies.



- **1st Line of Defense**
  Understand risks and manage ESG and climate risks.
- **2nd Line of Defense**
  Assess risk levels as well as monitor and control ESG and climate risks.
- **3rd Line of Defense**
  Review and audit the operations of various units to ensure rigorous and effective internal controls.

Board of Directors is responsible for formulating and reviewing vision, policies, business directions, business goals and strategies by considering opportunities and challenges in both the short-term and long-term including economic, social and environmental aspects as well as climate change. The Board is to oversee all material risks in the organization including environmental and climate change risks as well as monitoring the Bank's risks to be within acceptable levels. The Board of Directors holds meetings at least once a month.

Risk Oversight Committee has a duty to ensure that risk management is properly and continuously undertaken with efficiency and effectiveness in accordance with the overall risk management policy and strategy covering the management of key risks of the Bank including ESG risks, and climate-related risks. The Risk Oversight Committee holds meetings at least once every quarter.

Corporate Governance Committee is responsible for upholding good corporate governance and sustainability in the Bank by ensuring that the principles of good corporate governance and sustainability are practiced. The committee is also responsible for considering a sustainability strategy that suits the Bank's business operations, driving and monitoring progress as well as giving opinions to the Board of Directors on the risks and opportunities relating to ESG issues and climate change. The committee's meetings are held to deliberate matters on a quarterly basis.

The Audit Committee is responsible for reviewing and evaluating the effectiveness of internal control and internal audit systems.

The Management is responsible for driving and managing operations in accordance with policies, strategies and goals approved by the Board of Directors, including considering and determining operational guidelines, action plans, work systems, work processes, and appropriate human resources and other resource management, taking into account ESG and climate change opportunities and risks.

In 2024, the Risk Oversight Committee and Corporate Governance Committee meetings presented and discussed climate management and reported to the Bank's Board of Directors as follows:

Committee	Number of meetings	Topics
Risk Oversight Committee	2	• Improvement of the risk management policy of the financial business group • Pilot of the climate stress test in 2024
Corporate Governance Committee	3	• Industry Handbook with environmental and climate change dimensions • Launching of Bualuang Green Financing for Transition to Environmental Sustainability loan as a transition product • Climate risk management

In addition, there were two knowledge-sharing activities on ESG issues and climate change for the Bank's directors, under the topics of "Climate Change Risk Management" and "Adaptation and Business Necessity:

Turning Environmental Crisis into Opportunity", covering a variety of important issues, such as the draft Climate Change Act, international trade measures related to carbon reduction and their impact on business and the need for businesses to adapt to future greenhouse gas reduction measures.

Business Units are responsible for searching for business opportunities and managing risks to their own units as well as developing products to meet the needs of customers related to the environment.

Strategy Division has a duty to formulate and review strategic plans by considering opportunities and risks related to the environment and climate change, to drive business according to strategies, business plans and goals as well as monitoring business performance and reporting results to the Management on a regular basis.

Credit Management Division is responsible for setting policies, operational frameworks and processes for credit, taking into account ESG and climate change risk factors, overseeing and monitoring credit allocation to ensure compliance with the Bank's policies, collecting data and calculating the amount of greenhouse gas emissions from customer activities in the Bank's lending and investment (Scope 3 - Financed Emissions) to be used in preparing greenhouse gas reduction plans for key industrial sectors in collaboration with business units and other relevant units. In addition, the division is responsible for analyzing credit risks of customers in the loan portfolio under climate scenarios in collaboration with other relevant units.

Risk Management Division is responsible for systematic risk assessment, effective risk monitoring and control, and analyzing the transmission channels of environmental and climate change risks to the Bank's key risks, such as credit risk, market risk and operational risk.

Compliance Division is responsible for monitoring the operations of the Bank's various units to ensure compliance with laws, regulations, rules and regulations of the authorities, as well as the Bank's internal policies and procedures.

Supporting Divisions include the Human Resources Division, Property Management Division, and Public Relations Division, which are responsible for providing resources and supporting the implementation of strategic plans.

Audit Division is responsible for review and audit of units of the Bank to ensure prudent and effective internal control.

Sustainability Team has the duty of sustainability planning and driving related activities including climate-related issues to be consistent with the Bank's sustainability policies and to attain specified goals through communication, support, and collaboration with related internal and external parties. Moreover, the team has a duty to prepare reports and disclose information related to ESG and climate in accordance with international reporting requirements.

3. Strategy

Realizing potential opportunities, risks and impacts from climate change through funding support provided to businesses and households, the Bank is committed to offering credits and investing in activities or businesses that create positive impacts on the environment and society. Moreover, we support the transition to a low-carbon society under Thailand's roadmap as well as promoting renewable energy, BCG and electronic vehicle industry according to the roadmap to attain carbon neutrality by 2050 and net zero greenhouse gas emissions by 2065. In addition, the Bank places importance on the reduction of direct greenhouse gas emissions from the Bank's operations that consume energy and resources as well as indirect emissions from electricity consumption and business travel. To formulate strategies and manage climate risks in a clear and comprehensive manner, the Bank has identified and analyzed opportunities and risks from climate change that affect the Bank's banking business, customers, and the Bank's value chain.

3.1 Assessment of opportunities and impacts related to environment and climate change

The Bank identifies opportunities from the adaptation of various sectors in line with environmental policies and regulations aimed at transitioning to a low-carbon and green economy to reduce greenhouse gas emissions and mitigate the impact of climate change. The Bank, as a financial service provider, is positioned to help provide financial support to businesses and households to assist them to adapt to the transition trends. The Bank identifies and analyzes climate opportunities that may affect the banking business and customers as follows:

Environment/ Climate Opportunity	Incident	Opportunity and Impact
1. **Resource Efficiency**	• Economical and efficient use of resources such as replacement with energy/water-saving equipment, campaigns to save energy and water, wastewater treatment, conversion of food waste into soil conditioners and garbage sorting and recycling.	• Reduction of operating costs of the Bank in the long run. • Support both business and household customers to transition to a low carbon economy and to gain benefits from lower operating cost and daily expenses. • Engagement and motivation for employees to conserve the environment and reduce greenhouse gas emissions at work and at home to make employees feel included and proud of the Bank's environmental and climate efforts. • Building a positive image of the Bank related to environmental conservation and reduction of greenhouse gas emissions.
2. **Energy Sources**	• Use of equipment that reduces greenhouse gas emissions to enhance efficiency in energy utilization in buildings. • Installation of solar rooftops as sources of clean energy to save electricity charges and reduce electricity consumption from transmission lines.	

Environment/ Climate Opportunity	Incident	Opportunity and Impact
3. Products and Services	• Development of products and services that support transition and green businesses and activities. • Support transition and green loans to reduce greenhouse gases to mitigate impacts and support adaptation from climate change. • Adoption of technology to promote easier access to financial services and broader customer coverage.	• Revenue generation and customer base expansion of the Bank for green businesses and businesses that are transitioning to low-carbon business. • Knowledge sharing and support for customers to utilize the market for trading carbon credits and renewable energy. • Building of business partner networks to create business opportunities and enhance the competitiveness of the Bank and our partners. • Risk diversification of the Bank's financial assets. • Accumulation of knowledge and understanding on sustainability and climate change to serve customers as "Puan Koo Kit" (a trusted partner). • Engagement with customers, employees and other sectors to drive toward greenhouse gas emission reduction goals at an organization level and national level. • Building a good image of the Bank.
4. Market	• Extension of customer base to transitioning and green businesses as well as businesses with technology that helps adaptation to climate change. • Support carbon credit market and renewable energy to generate business opportunities for customers.	
5. Resilience	• Adaptation to embrace impacts from climate change either related to rules and regulations or technology and market demand.	• Maintenance of a leadership position on sustainability and building trust among stakeholders. • Enhancement of the market value of the Bank.

3.2 Assessment of risks and impacts related to environment and climate change

The Bank has identified and assessed climate risks and impacts, both physical risk (acute and chronic), transition risks (policy and legal, technology, market and customer) and liability risk, on the Bank's business and customers in greater detail. The transmission of physical, transition and liability risks to the Bank's risks, including credit risk, market risk, liquidity risk, operational risk, strategic risk, compliance risk

and reputational risk, are assessed, along with the timeframes in which they may occur. Details of the assessment results are provided in the Risk Management Section.

3.3 The Bank's strategies for transitioning to a low-carbon economy

• Management of greenhouse gases generated from the Bank's internal operations

The Bank systematically practices environment and energy conservation in order to mitigate environmental impacts that may occur from the Bank's operations by setting environmental and energy conservation policies as a framework for operations as well as applying ISO 14001:2015 standards covering comprehensive planning, setting of targets and action plans, assessment of environmental risks and impacts, performance tracking and monitoring, as well as improvement to plans and solutions. This includes the development of data management tools for energy and resource consumption and greenhouse gas emissions that cover the entire organization. Moreover, the Bank also promotes knowledge and understanding as well as the participation of employees on issues related to environmental conservation, energy saving and reduction of the organization's carbon footprint.

At present, the Bank has implemented the Bualuang Save the Earth project with the objective of carrying out activities that help reduce energy utilization, resources, waste, and the carbon footprint, including building awareness and sharing useful knowledge. In 2024, the Bank undertook a number of important efforts ranging from office equipment modification to increase energy efficiency, such as LED bulbs, air conditioners, water-saving and electricity-saving equipment for toilets and replacements of branch cars that use internal combustion engines to electric ones, to digitalization of employee work processes to reduce paper usage and the development of digital banking services to reduce the carbon footprint from traveling to branches and using paper documents for making transactions. In addition, the Bank has also reduced the amount of general waste that goes to landfills to help reduce greenhouse gas emissions under the Bualuang Save the Earth: 3R+ (Reduce, Reuse, Recycle Plus) project by promoting comprehensive employee participation in waste management, starting from waste reduction, correct waste sorting to waste reuse and recycle. The Bank also has food waste disposal machines installed to convert into soil nutrients at the Silom Head Office Building, Rama III Office Building and Building 3. Note that the Bank has expressed its intention to support the implementation of Bangkok's goals on the bio-circular-green (BCG) economy through the announcement of zero waste to landfill target at the Rama III Office Building by 2025.

Additional details of the management of greenhouse gases from the Bank's operations can be found in the Sustainability Report 2024, under the subject Environmental and Carbon Footprint, pages 70-77.

• Financial support for environmentally friendly businesses

The Bank aims to provide credit support for projects and activities that are environmentally friendly and use resources efficiently to strengthen customers' capacity to transition to a low-carbon economy and contribute to achieving climate change goals under the Paris Agreement. The opportunities and risks of the environment and climate change are integrated into the business plans of relevant units and the offering of loan products that can meet the needs of both business and individual customers, consisting of loans for renewable energy businesses, sustainability-linked loans, loans for the electric vehicle business, loans for environmentally-friendly real estate, Bualuang Green Loan, Bualuang Green Solar Energy Loans, Bualuang Poonphol Green Loans and Bualuang Green Home Loans. During 2024, the Bank launched two loan products with special interest rates for projects or activities that support climate change transition and adaptation as per the following:

1) **Bualuang Transformation Loans** to support SMEs to restore their businesses and adapt to enhance their competitiveness by investing in machinery, equipment, tools and systems to enable them to conduct businesses leveraging digital technology and adopting innovation while remaining environmentally-friendly.
2) **Bualuang Green Financing for Transition to Environmental Sustainability** to support businesses that aim to adapt and transition to low-carbon businesses through investment in three areas:
    - Avoiding or reducing greenhouse gas emissions
    - Adapting to climate change
    - Avoiding or reducing pollution

In addition, the Bank also offers investment products that take into account environmental impacts and help preserve the environment comprising Green Bonds, Bualuang BCAP Clean Innovation Fund (BCAP-CLEAN), Bualuang Sustainability Investing Portfolio (B-SIP), Bualuang Sustainable Investing Portfolio RMF (B-SIPRMF), Bualuang Sustainability Investing Portfolio Super Savings Fund (B-SIPSSF) and Bualuang Top-Ten Thai ESG Fund (B-TOP-THAIESG). For 2024, the Bank will introduce three more investment products that take into account environmental performance, climate change and sustainability as additional options for customers, namely Bualuang Sovereign Instruments Thailand ESG Fund (B-SI-THAIESG), Bualuang Equity Thailand ESG Fund (B-EQ-THAIESG) and Bualuang Mixed Thailand ESG Fund (B-MIXED-THAIESG). The Bank continuously promotes these products through various communication channels of the Bank as well as conducting surveys and assessments of customer needs while raising awareness and promoting participation of customers on risks and opportunities from climate change along with developing and offering loans and investment products.

Additional details of sustainable financial products can be found in the Sustainability Report 2024, under the subject Sustainable Finance, pages 41-51.

• Promotion of knowledge and understanding on risks and opportunities from climate change

In the early stages of the transition to a low-carbon economy, awareness and understanding of the businesses involved is fundamental. Therefore, the Bank focuses on creating awareness and understanding about the opportunities, risks, and impacts of climate change to business customers especially SME customers, to prepare their businesses to be able to not only plan ahead and better cope with potential changes that may occur in the future but also to maintain or create a competitive advantage in the long term. In addition, the Bank places importance on the preparation of the Bank's employees to be able to provide useful advice and recommendations to customers by providing continuous training to educate employees in related departments and developing high potential employees through the BU Champion project, which aims to build and develop talent with specialized expertise to serve as advisors of each department and pass on knowledge to other employees within the department. In 2024, the Bank organized learning exchange activities both online and onsite on climate change issues for executives, employees, and customers of the Bank as follows:

Subject	Target Group
Discover Net Zero Opportunities	Executives and employees of Corporate Banking and Credit Management
Waste Sorting and Management of Each Type of Waste	Representatives of employees and housekeepers at Rama III Office Building
Reducing Business Costs with Clean Energy: Solar Rooftop Gas Stations 2024	Executives and employees of Commercial and Business Banking and customers
Global Warming and Loss of Biodiversity Impact on Customers and Banks	Executives and employees of Corporate Banking, Credit Management and Risk Management
Thailand EV Market Opportunity	Executives and employees of Corporate Banking.
Stepping into the New Era: SMEs Embracing Carbon Measures and How Modern SMEs Adapt?	Executives and employees of Commercial and Business Banking and customers
Carbon Pricing Measures: Who Will It Affect? And How Should It Be Coped With?	Executives and employees of Corporate Banking and Credit Management
Adaptation and Business Necessity: Turning Environmental Crisis into Opportunity	Executives
Energy Efficiency: The First Step towards Net Zero	Executives and employees of Commercial and Business Banking and customers
AI-Driven Green Finance: Transforming Sustainability in Banking	Executives and employees of Human Resources Department and IT Department
The Principle of Corporate Sustainability	Executives from supporting departments including Operations and Support, Audit, Risk Management, Compliance and Human Resources

Subject	Target Group
Opportunities and Challenges of the Transition to Low Carbon Automotive and Parts Industry in Thailand	Executives and employees of Corporate Banking, Commercial and Business Banking, Credit Management and Risk Management
Sustainable Living: - ESG in Everyday Life - Ready for a Zero-Waste Lifestyle? How to Live Without Waste - Sustainable Wellness: Save the World, Freedom from Diseases - Sustainable Fashion: The Fashion Industry Transforms to Sustainability	Executives and employees
Bualuang Save the Earth: Energy Challenge Energy Conservation Strategy for Success and Energy Use to Create Sustainability and Reduce Environmental Problems	Executives and employees of Human Resources, IT, Accounting and Operations Support.
Bualuang Collaborates with Partners to Manage Waste Sustainably	Executives, employees and suppliers

4. Risk Management

The Bank's risk management covers important risks to the banking business, including strategic risk, credit risk, market risk, liquidity risk, operational risk and information technology risk as well as other related risks such as reputational risk, regulatory risks, etc. Note that when we consider such risks, we incorporate aspects resulting from risk factors related to the environment and climate change, both physical and transition risks as appropriate and to be consistent with the business context. We incorporate such risk factors into the Bank's risk management process under the 3 Lines of Defense approach, whereby business units, strategy division, credit management division and risk management division cooperate in identifying, assessing and managing environmental and climate change risks in the Bank's credit portfolios, and presenting reports to the Management and relevant committees on a regular basis.

Risk Management Process

4.1 Identification and assessment of risks and impacts related to environment and climate change

The Bank identifies and assesses climate change risks that will impact the Bank's business and customers, including transition risks and physical risks, and the transmission of risks to the Bank's various risks, as well as assessing the time frame in which the risks may be affected, divided into short, medium and long term.

Types of climate-related risks

Physical risks are defined as risks that may cause damage to assets, businesses, agricultural products and people's wellbeing as a result of acute natural disasters such as storms, floods, heat waves, drought and chronic climate change such as higher temperature, rising sea level and changing precipitation patterns and ocean acidification.

Transition risks are risks that may affect asset values, competitiveness, financial positions and businesses of related sectors due to key factors including rules and policies related to climate from the government and counterparties in the supply chain, development of low-carbon technology to replace existing high-carbon technology, change in consumer behavior and more attention from investors on environment and climate change.

Definition of time frame for risks and impacts analysis related to environment and climate change

- Short term (ST): may happen within 2 years.
- Medium term (MT): may happen in 2-5 years.
- Long term (LT): may happen after 5 years.

4.1.1 Transition of environmental and climate change risks and impacts on existing risks of the Bank

Type of Risk	Physical Risk		Transition Risk		
	Acute Natural Disaster	Chronic Natural Disaster	Policy and Regulation	Technology	Market and Customers
Credit Risk	Sudden natural disasters are increasing in frequency and severity, which may impact customers' business operations and supply chains, resulting in reduced revenue, higher operating costs and expenses. This will lead to lower profitability and an impact on customers' ability to repay debts. In addition, such natural disasters may impact the value of the Bank's collaterals.	Gradual natural disasters, such as sea level rise, affect the asset value of our customers operating near the coast. In addition, rising global temperatures are affecting employee productivity, harming biodiversity, reducing revenue, and increasing operating costs and expenses. This will lead to lower profits, especially for customers in the tourism, construction and property development industries. In addition, changes in rainfall patterns are affecting agricultural, livestock and fisheries production, impacting the performance of the agriculture and food sector.	Thailand's announcement of carbon neutrality and net zero goals has prompted the government to issue policies and plans to support the implementation such as Nationally Determined Contributions (NDCs), the Long-term Low GHG Emissions Development Strategy (LT-LEDS), various supportive policies such as subsidies for the purchase of electric vehicles. Besides, the government is currently drafting the National Energy Plan (NEP) and the Climate Change Act, which will require reporting of greenhouse gas emissions data and carbon pricing. There are also international trade measures, such as the European Union's Carbon Border Adjustment Measure (EU CBAM), which low-carbon businesses will benefit from. Meanwhile, high-carbon businesses will need to adapt to remain competitive, potentially incurring higher costs, affecting customers' profits and debt repayment capabilities.	The development of low-emission technologies such as electric vehicles, energy efficiency management, which enhances competitiveness and increase market share compared to traditional high-emission technologies, affects revenue, profits and customer value using traditional high-emission technologies. Nevertheless, investment in new low-emission technologies still has uncertainty in terms of practical implementation and cost-effective, which may affect the financial position and performance of the customers.	Consumers are increasingly using products and services that are mindful of their environmental and climate change impacts, such as eliminating single-use plastics and choosing products with low carbon labels and eco-labels. This trend increases revenue for companies in the manufacturing and supply chain sectors, especially in the automotive and real estate industries, where the use of electric vehicles and building energy efficiency and green buildings is increasing. Investors and other stakeholders are increasingly placing importance on environmental and climate change performance and adopt this as a factor in their investment decisions, while credit rating agencies are increasingly integrating ESG and climate change factors into their risk assessments and credit ratings. Therefore, companies with low greenhouse gas emissions are more likely to receive investment funds at lower financing costs.
	Time frame: ST, MT, LT	**Time frame:** LT	**Time frame:** ST, MT, LT	**Time frame:** ST, MT, LT	**Time frame:** ST, MT, LT

Type of Risk	Physical Risk		Transition Risk		
	Acute Natural Disaster	Chronic Natural Disaster	Policy and Regulation	Technology	Market and Customers
Strategic Risk	Inadequate identification and assessment of opportunities, risks and impacts from acute natural disasters affect the Bank's strategy, target setting, planning and preparation in various aspects, which in turn affects the Bank's competitiveness and performance.	Inadequate assessment of the long-term opportunities, risks and impacts of climate change on the Bank's operations affects the Bank's planning, preparedness and operational plans, which will affect the Bank's long-term competitiveness and performance.	Clearer policies from government and regulatory agencies require the Bank to integrate risks and opportunities in the transition to a low-carbon economy into their strategies, objectives and operations, which will affect their asset quality, competitiveness and performance.	Low carbon technologies will become increasingly important, with lower costs and support from all sectors. The Bank should plan to grasp the opportunity and play our part in financing such businesses.	Customers and stakeholders expect the Bank to comply with regulations and standards and demonstrate commitment to reducing greenhouse gas emissions and supporting businesses in their transformation. This affects the Bank's strategies and operational plans. Failure to do so may impact customers' confidence in using our services.
	Time frame: ST, MT, LT	**Time frame**: LT	**Time frame**: ST, MT, LT	**Time frame**: ST, MT, LT	**Time frame**: ST, MT, LT
Liquidity Risk	Acute natural disasters may affect the income and asset value of businesses and households, including disruptions to supply chains, which may lead to withdrawals of deposits to repair assets and provide liquidity to customers, and may increase requests for short-term loans to enhance liquidity, which may affect the Bank's liquidity. In addition, if the Bank provides loans in industries that are vulnerable to natural disasters, the Bank may not receive or receive debt repayments late.	Long-term climate change could reduce productivity and work efficiency, increase unemployment, and affect the income and profits of businesses and individuals in sensitive industries. This also may increase the likelihood that customers will use credit or borrow more, affecting the liquidity of the Bank.	Regulatory agencies' policies may require the Bank to maintain higher liquidity and have adequate liquidity risk management systems to address climate risk. Besides, stringent government policies focused on reducing greenhouse gas emissions may result in higher costs and expenses for businesses, lower profits, impact on the value and market price, as well as reducing the liquidity of the customer's securities, hindering access to funds in both money and capital markets, and consequently affecting the Banks' liquidity.		As consumers become more mindful of their environmental and climate change impacts when using products and services, this can affect the liquidity of customers whose revenue still relies on products that emit high volume greenhouse gases and may cause customers to tend to use more credit or borrow more, affecting the liquidity of the Bank.
	Time frame: ST, MT, LT	**Time frame**: LT	**Time frame**: LT		**Time frame: ST, MT, LT**

Type of Risk	Physical Risk		Transition Risk		
	Acute Natural Disaster	Chronic Natural Disaster	Policy and Regulation	Technology	Market and Customers
Market Risk	Sudden changes in climate conditions may cause fluctuations in prices of commodities, raw materials, energy and electronic components, affecting companies' performance and their midstream and downstream supply chains, and potentially affecting companies' value and market price.	Gradual climate change may result in volatility and shifts in the timing of commodity harvests, which in turn may increase the volatility of commodity prices. The revenue of companies that rely on such commodities may decrease while costs remain unchanged, affecting the customer's value and market price.	Government policies aimed at reducing greenhouse gas emissions may result in increased production costs and operating expenses, reduced supply of commodities and higher prices for these commodities. In addition, such government policies may affect the revenue, costs, profits, and market value of companies with high greenhouse gas emissions.		Consumers are more likely to want products with low greenhouse gas emissions, which may result in lower sales for companies who produce high GHG emitting products, affecting the profitability, value and market price of such companies.
	Time frame: ST, MT, LT	**Time frame**: LT	**Time frame**: LT		**Time frame**: LT
Operational Risk	Acute natural disasters may cause damage to the Bank's assets, including office buildings, branches, equipment and work systems, as well as affecting the continuity of the Bank's business operations, whether from employees' travel to work, providing services to customers, providing services to the Bank's business partners and contractors. All of this affects the Bank's revenue and performance, including the value of the Bank's assets and expenses from risk insurance that may increase.	Gradual but prolonged climate change may necessitate the Bank to relocate their offices or branches to lower-risk areas and implement disaster adaptation and prevention measures, such as flood barriers and the installation of backup water sources, which will increase operating costs and affect the value of the Bank's assets.			
	Time frame: ST, MT, LT	**Time frame**: LT			

Type of Risk	Physical Risk		Transition Risk		Liability Risk
	Acute Natural Disaster	Chronic Natural Disaster	Policy and Regulation	Market and Customer	
Compliance Risk	Sudden occurrence of natural disasters may cause damage to property, systems, personnel and customer data, which may affect the provision of services and personal data of customers. The Bank may be fined if we fail to comply with the requirements of the regulatory agencies.	Future climate change may pose risks to assets and systems and the ability to maintain customer data, which may affect the provision of services and personal data of customers. The Bank may be fined in case of failures to comply with the requirements of the regulatory agencies.	Failure to comply with government or regulatory climate requirements, or inadequate controls and contingency plans, may subject the Bank to fines from government or regulatory agencies.		
	Time frame: ST, MT, LT	**Time frame**: LT	**Time frame**: MT, LT		
Reputational Risk	In the event that the Bank fails to adequately cope with acute natural disasters, it will lead to loss of life and property, which will damage the Bank's reputation and image.	If the Bank does not have a strategy, a resilience plan and proper preparation for a natural disaster response, it may lead to operational disruption and property damage, which may harm the Bank's reputation and image.	The Bank's failure to adjust its business operations to comply with the policies, laws and regulations of governments and regulators may affect the Bank's reputation and image with various stakeholders.	Stakeholders increasingly expect businesses to operate in an environmentally and socially responsible manner, and to help mitigate the risks and impacts of climate change, particularly in businesses that are likely to have high environmental and social impacts or emit high volume of greenhouse gases. If the Bank does not adequately integrate climate change risks into their operations, including strategic planning, products and services, this could affect their reputation and image.	In the future, if the taxonomy standard for environmentally-conscious economic activities becomes more comprehensive and widely applied, the Bank will have to be more cautious and mindful of greenwashing when providing loans or offering financial services that refer to green activities, which may result in the Bank being fined by authorities or regulators.
	Time frame: ST, MT, LT	**Time frame**: LT	**Time frame: ST, MT, LT**	**Time frame: ST, MT, LT**	**Time frame: MT, LT**

4.1.2 Assessment of environmental and climate risks and impacts on industries in the Bank's credit portfolio

The Bank has developed tools and processes for assessing environmental and climate change risks by geographic location and industry group (Heatmap) to classify the Bank's debtors or counterparties by risk level and to identify the likelihood of risk factors and the level of impact of environmental and climate change risk factors in various dimensions. This is considered a tool to help stakeholders prioritize actions to reduce environmental and climate change risks.

In preparing the heatmap, the Bank selects environmental and climate change risk factors that are expected to have a significant impact on the Bank's debtors or counterparties and conducts materiality assessments of those risk factors from different variables. The heatmap for climate change risks consists of two main risks: risks from physical impacts and transition risks to the economic system.

For physical risk, the Bank selects the most common natural disaster risk factors in Thailand, namely river floods, coastal floods, tropical cyclones and droughts. The significance of each natural disaster type is assessed using two variables: 1) Level of Risk, converted from damage ratio, which is an estimate of the damage from each risk factor to buildings and businesses based on geographic locations under the Representative Concentration Pathways (RCP) scenario, and 2) Debtor Risk Burden, which consists of the debtor's loan obligations to the Bank and the value of collateral. The result of the materiality assessment reflects the severity of the impact of the natural disaster on the location of the business and the collateral of the debtor or the Bank's counterparty, which is divided into four levels: low, medium, high and very high.

For transition risks, the Bank assesses risks at the industry level by selecting six transition risk factors to the economic system which are greenhouse gas emissions, pollution, water management, biodiversity, waste management, and natural resource management. The Bank assesses the materiality of each risk factor according to the type of transition risk to the economic system, which consists of three sub-risks: policy and legal risk, reputational risk, and funding risk in each industry. The Bank can categorize industries according to the risk level into four groups: low, medium, high, and very high. The industries that the Bank has classified as industries with very high transition risks to the economic system are mining, energy, and agriculture and food industry.

The heatmap enables the Bank to classify our debtors or counterparties by their level of environmental and climate risk, as well as by their geographic location and industry group, which also helps stakeholders to prioritize actions to reduce such risks.

4.2 Management and reporting of climate-related risks

• Operational risk

The Bank integrated key physical risk factors such as floods that happen often and cause damage to many businesses and households as a part of operational risk management with proper risk assessment and monitoring to set out measures, manage and control risks to be within acceptable levels. In addition, contingency plans are in place in case of floods to be prepared to prevent and mitigate damage to life and assets of the Bank.

The assessment of the Bank's assets in Thailand, which are buildings, properties and electronic devices, found that the Bank has a proportion of asset value located in high-risk flood areas[1], accounting for 1.6 percent of the total asset value[2]. The Bank has flood insurance covering the value of all assets located in high-risk areas. In addition, the Bank has implemented measures to adapt to climate change as follows:

- Installation of flood barriers and water pumps in branches and buildings located in areas of repeated flooding, the development of contingency plans for flooding, and insurance to protect against flood damage.
- Installation of uninterruptible power supplies (UPS) and/or generators for branches, buildings and ATMs located in areas that experience frequent power outages due to severe storms.

• Credit and reputational risks in the credit approval process.

The Bank is fully aware as a financial supporter of activities or projects that may have severe social and environmental impacts including climate change such as large infrastructure systems, power plants, and mines. For these projects, if risk management is not properly managed, it may have both direct and indirect effects on the Bank's reputation and operating results. The Bank has therefore established a policy for responsible lending and a list of loan applicants or activities for which the Bank will not provide credit support (Exclusion List). Moreover, ESG and climate risk factors are integrated into business and project loan consideration process from the KYC process to fact-checking steps so that loan applications are carefully reviewed under the credit approval standards set by the Bank. At the same time, the Bank applies the Equator Principles to its loan consideration process that requires comprehensive consideration of risks and impacts on the environment and society. Data on greenhouse gas emissions Scope 1 and 2 and risk management and environmental impacts are utilized in loan approval considerations to prevent risks related to laws and repayment ability as well as the image of the Bank.

For the stress test under the Internal Capital Adequacy Assessment Process (ICAAP), the Bank has included climate risk as one of the risk factors that the Bank considers to ensure that the Bank manages risks

[1] Data referenced from the monthly flood risk area database of the Hydro Informatics Institute (Public Organization).

[2] Property values in areas where risk levels cannot be determined account for 7% of total property values.

comprehensively and appropriately and has sufficient capital to operate its business under stress conditions.

• Credit risk in the Bank's credit portfolio.

The Bank keeps abreast of changes in policies, rules, and regulations related to Thailand's transition to a low-carbon economy. We also closely monitor the progress of low-carbon technology and business adjustments in risky industries. In 2024, the Bank studied and prepared a climate scenario analysis to consider the impact of transition risk and physical risk to credit risk in the credit portfolio of seven industry sectors that are at risk and have a combined credit risk exposure of 30.03% of the total portfolio. These industries include power generation, oil and gas, food processing, chemicals, mining, vehicle production, and aviation. The Bank used climate scenarios from the Network of Central Banks and Supervisors for Greening the Financial System (NGFS) covering two scenarios (Net Zero 2050 and Current Policies) as a reference.

The preparation process and the results of the impact analysis of transition risks in the climate scenarios are as follows:

(1) Select climate scenario to be used in conducting the stress test.

(2) Specify factors that are expected to have transition risk with an impact on the credit portfolio, such as product quantity, price, carbon cost, impairment of assets, etc.

(3) Set assumptions for factors used in each climate scenario.

(4) Conduct a stress test to consider the impact of transition risk on the financial position and performance of the credit portfolio.

(5) Analyze the results from conducting the stress test.

The assessment results found that transition risks potentially impact the following 6 industries:

Industry	Impact
(1) Mining Industry (Coal Mines)	The Net Zero policy is leading to a transition to renewable energy, resulting in a decrease in demand for coal, oil and natural gas, coupled with the increasing cost of carbon taxes.
(2) Energy Industry	
(3) Oil & Gas Industry (Upstream)	
(4) Chemical Industry (Upstream Petrochemical)	Expected to be affected by the EU's Cross-Border Carbon Border Adjustment Measure (EU CBAM) which will be extended to include petrochemical products and other carbon pricing adjustment measures in other countries that will be gradually announced in the future.
(5) Food Processing Industry (Palm Oil)	Expected to be affected by consumers reducing their consumption of palm products and the increasing cost of carbon taxes.
(6) Food Processing Industry (Meat and Dairy Products)	Livestock farming is a major source of high methane emissions while the potential to reduce greenhouse gas emissions in the industry is limited. It is expected to be affected by the increasing cost of carbon taxes.

In 2024, the Bank analyzed climate scenarios to consider the impacts of physical risks and transition risks on business and retail customers with collateral with the Bank. The Bank refers to three Climate Scenarios from the NGFS: Net Zero 2050, Delayed Transition, and Current Policies, considering the impacts on business continuity and the value of customers' collateral. Analysis of the results showed that the Bank's customers are most affected in the Delayed Transition scenario because their business and collateral are impacted by both physical impacts from disasters that are more frequent and severe before 2030, when no action has been taken to reduce greenhouse gas emissions, and the impacts from the transition after 2030 from costs and investments to retrofit buildings to be more energy efficient. In the Current Policies scenario, customers will be primarily impacted by physical risks from disasters, while in the Net Zero 2050 scenario, customers will be primarily impacted by the need for transition.

In addition, the Bank also conducted a Pilot Climate Stress Test in 2024 based on the physical risk simulation scenarios set by the Bank of Thailand to assess the impacts on the Bank's financial risks that may arise from climate change and natural hazards, as well as to learn about the Bank's impact assessment process and preparation in various aspects that will support the business sector's adaptation in a tangible way, which will help the Thai economic system and the financial sector to transform in a sustainable manner.

Under the Pilot Climate Stress Test process, the Bank of Thailand has established a scenario for a severe and sudden flooding event in 2030, which will severely impact the Thai economy and financial markets in 2030 with a gradually recovery thereafter. The Bank of Thailand required the Bank to consider assessing the impacts covering two main risks: credit risk and operational risk in the year of the major flood and two years thereafter (2030-2032).

Regarding credit risk, in the event of a major flood with a severe negative impact on buildings and structures, assets, and economic activities in the flooded areas, this will affect the income of businesses and households and may cause the Bank's debtors to have a higher chance of defaulting on their debts. The Bank of Thailand requires the Bank to assess the impact according to the simulation scenarios covering two groups of debtors: 1) large corporate and medium-and large-sized SMEs covering debtors in six industries, which are industries that the Bank of Thailand expects to be particularly affected by the simulation scenarios and industries that may significantly affect the risk of the Bank, and 2) retail loans with real estate as collateral and housing loans. In stress testing for credit risk, the Bank considers macroeconomic variables and flood duration data divided by area, in accordance with the simulation scenarios specified by the Bank of Thailand. The transition risk is passed from the simulation scenarios on the debtors' financial statements according to the location of the source of income and the value of the debtors' collateral according to the location of the collateral by using the impact assessed as Probability of Default (PD), Loss Given Default (LGD), changes in classification and provisioning during the 3-year assessment period.

For operational risk, it is considered the risk that the Bank's buildings, assets and electronic devices may be damaged by the major flood in 2030. The Bank of Thailand has required the Bank to consider assessing the impact only on the locations of the Bank's Head Office, Cash Management Centers and branches located in Thailand. Therefore, the Bank assessed the damage from the flood situation to the Bank's buildings, assets and electronic devices (physical damage) by referring to the damage data from the major flood in Thailand in 2011 and calculated the insurance claim value of buildings, assets and electronic devices to be used to offset the above damage.

From the Pilot Climate Stress Test in 2024, the Bank has prepared personnel, tools and data to support the assessment of risks related to climate risk, including the Bank's approach to support the adaptation of the business sector in a concrete manner.

5. Metrics and Targets

5.1 Metrics and targets related to climate

The Bank set targets to achieve Net Zero from its own operations (Scope 1 and 2) by 2035 and from its lending and investment activities (Scope 3 Category 15 Investment or Financed Emission) aligned with Thailand's Net Zero targets.

To support these targets, the Bank set forth metrics and targets for both internal operations and financial support provided to customers to mitigate environmental and social impacts as well as promoting adaptability to climate change. We regularly monitor and assess our undertaking while performance against the targets is considered as one of the factors of the performance evaluation as well as compensation decisions to incentivize the Bank's business unit managers and the Bank's officers in relevant divisions.

The Bank set targets to reduce GHG emission of both scope 1 and 2 by 25% by 2030, compared to 2020 which is a base year. These targets are aligned with the Science Based Targets initiative (SBTi), well below 2 degrees Celsius compared to the pre-industrial period.

Metric	2024 Target	2024 Performance
Reduction of direct and indirect greenhouse gas emissions (Scope 1 and 2)	• 10% decrease in Scope 1 greenhouse gas emissions compared to 2020 (base year) • 10% decrease in Scope 2 greenhouse gas emissions compared to 2020 (base year)	• 14.47% decrease in Scope 1 greenhouse gas emissions compared to 2020 (base year) • 5.87% decrease in Scope 2 greenhouse gas emissions compared to 2020 (base year)
Providing green loans that reduce greenhouse gas emissions	• Providing Bualuang Poonphol Green Loans and Bualuang Green Home Loans of Baht 100 million	• Provided Bualuang Poonphol Green Loans and Bualuang Green Home Loans of Baht 91.49 million • Provided Bualuang Green Financing for transition to Environmental Sustainability Loans of Baht 655 million

5.2 Volume of greenhouse gases emissions from the Bank's internal operations

The Bank places importance on collecting data on the volume of greenhouse gases generated by the Bank's operations while the Bank has developed a system for managing information on the environment and resource utilization to enhance the efficiency of data management and apply such data in planning and setting goals to reduce the volume of greenhouse gas emissions arising from the Bank's operations. The Bank calculates the volume of greenhouse gases according to the Carbon Footprint Assessment Standards of the Thailand Greenhouse Gas Management Organization (TGO) and arranges for data to be verified by an external independent agency to ensure the accuracy of data reporting.

(**Unit**: tCO_2e)

Type	2021	2022	2023	2024
Greenhouse gas scope 1	**11,619**	**21,771**	**20,845**	**12,008**
Greenhouse gas scope 2	**57,674**	**60,633**	**59,279**	**57,599**
Greenhouse gas scope 3	**1,306**	**1,512**	**1,940**	**2,033**
- Category 1: Purchased goods and services	1,296	1,265	1,306	1,264
- Category 6: Business travels	10	247	634	769

Additional details of the Bank's carbon footprint can be found in the Sustainability Report 2024, under the subject Environmental and Carbon Footprint, pages 76 and Environment Performance Table, page 134-138.

5.3 Volume of greenhouse gases emissions from the Bank's lending and investment

As a financial intermediary that provides funding to the businesses and households, the Bank places importance on collecting data about the volume of greenhouse gas emissions from financing or indirect greenhouse gas emissions from lending and investment (Scope 3 Category 15 Investment or Financed Emission), so that the Bank has adequate information to use in planning operations and determining strategies to reduce risks and seize opportunities from climate change. This will help the Bank manage climate change risks in the most effective manner.

In 2024, the Bank joined the Partnership for Carbon Accounting Financials (PCAF), an international organization that establishes standards for measuring and disclosing information on the amount of greenhouse gas emissions from the Bank's lending and investment. The Bank has used such standards to calculate the amount of greenhouse gas emissions from the Bank's lending and investment.

Volume of greenhouse gases emissions from the Bank's lending and investment in 2024[1]

Data Breakdown	Absolute Emissions (tCO_2e)		Weighted Data Quality Score[2]		Scope 1+2 Emissions Intensity (tCO_2e/THB 1 million of investment or financing)
	Scope 1+2	Scope 3	Scope 1+2	Scope 3	
By Asset Class[3]					
Listed Equity and Corporate Bonds	1,737,063	852,278	2.12	2.12	12.28
Business Loans and Unlisted Equity	19,485,319	23,527,211	4.04	4.04	12.52
Project Finance[4]	16,130,869	5,246,132	3.26	3.26	68.72
Commercial Real Estate	496,636	-	4.53	-	3.21
Mortgages	534,886	-	4.32	-	1.97
Total	**38,384,772**	**29,625,621**	**3.91**	**3.91**	**16.28**
By Sector					
Agro and food industry	6,011,604	8,206,410	4.07	4.07	28.23
Chemicals and petrochemical product	925,535	908,196	3.96	3.96	17.93
Construction material[5]	636,531	2,336,062	3.95	3.95	6.32
Energy[6]	10,133,825	6,068,200	3.52	3.52	58.60
Manufacturing	1,967,537	3,706,668	3.97	3.97	8.86
Power Generation	13,852,578	3,376,927	3.22	3.22	52.96
Property Development	349,216	212,242	4.35	4.35	2.16
Transportation and Warehousing	640,472	281,682	3.17	3.17	6.48
Others[7]	3,867,474	4,529,235	4.09	4.09	3.59
Total	**38,384,772**	**29,625,621**	**3.91**	**3.91**	**16.28**

Data Breakdown	Absolute Emissions (tCO_2e)		Weighted Data Quality Score[2]		Scope 1+2 Emissions Intensity (tCO_2e/THB 1 million of investment or financing)
	Scope 1+2	Scope 3	Scope 1+2	Scope 3	
By Country[8]					
Thailand	34,998,381	27,332,012	3.85	3.85	16.47
Oversea	3,386,391	2,293,609	4.40	4.40	14.50
Total	**38,384,772**	**29,625,621**	**3.91**	**3.91**	**16.28**

Note: [1] The scope of data covers loans and investments of the Head Office and overseas branches, excluding subsidiaries.

[2] Weighted data quality scores refer to the PCAF calculation standards, with the highest data quality score equal to 1 and the lowest data quality score equal to 5.

[3] Data coverage is 100% of loans and investments in each asset class.

[4] The calculation scope of greenhouse gas emissions in project finance covers only power plant business.

[5] The construction materials industry includes cement, steel, and other sectors.

[6] The energy industry includes coal, oil and gas and other sectors.

[7] The other industries include hotel and tourism, mining and quarrying, construction, service, telecommunications, wholesale and retail business, and other sectors.

[8] Data classification by country refers to the country of the lender or investor.

Bangkok Bank Public Company Limited
333 Silom Road, Bang Rak,
Bangkok 10500 Thailand
Tel. +66 2645 5555

www.bangkokbank.com