Cathay Bank

Hong Kong Branch

a banking corporation (having limited liability)
incorporated in the State of California in the United States of America

Climate Risk Disclosure Statement – Hong Kong Branch

(As of December 31, 2023)

The information contained in this disclosure statement is for Cathay Bank Hong Kong Branch ("CBHK" or "the Branch") and is prepared in accordance with the Supervisory Policy Manual ("SPM") GS-1 on Climate Risk Management issued by the Hong Kong Monetary Authority ("HKMA").

PART I: OVERVIEW

This report represents a thorough and detailed disclosure of the risks and opportunities related to climate change that the Branch may face. It is aligned with the guidelines provided by the Task Force on Climate-related Financial Disclosures ("TCFD") and covers four main categories: governance, strategy, risk management, as well as metrics and targets. By presenting this information, the report aims to provide stakeholders with a comprehensive understanding of how climate change may affect the Branch's operations and performance, and how the Branch intends to address these risks and seize opportunities in the transition towards a low-carbon economy. Ultimately, the report serves as a valuable tool for investors, lenders, insurers, and other stakeholders to assess the Branch's readiness to face the challenges and opportunities of the rapidly changing climate landscape.

PART II: CLIMATE RISK - Disclosure related to climate risk

Overview of Climate Risk

Climate risks generally refer to the risks posed by climate change, such as damage caused by extreme weather events or a decline in asset value in carbon-intensive sectors. They are broadly classified into:

Transition risk refers to the financial risk created during the process of adjustment towards a lower-carbon economy which can be prompted by, for example, changes in climate policy, technological innovation, or a change in market sentiment, with the purpose of mitigating and adapting to long-term climate change.

Physical risk refers to the risk that may have a direct impact on the company's assets and operation management, including acute climate disasters and chronic climate change. Acute risk refers to the risk caused by sudden catastrophic events, including extreme typhoons, hurricanes, or floods. The risk comes from the weather events themselves and increased severity of these events. Chronic risks refer to risks from longer-term changes in global climate patterns, such as global warming, sea level rise, and ocean acidification.

The Branch manages its climate risks by identifying the transmission path to the inherent risks, including credit, market, operational, liquidity, legal, reputational, and strategic risks. The respective risk management functions, including the Risk Officer and General Compliance Department and the

Corporate Banking Department, identify and assess the impact of climate risk for each inherent risk regularly.

The objective of climate risk management is to manage the respective inherent risk profile within the Branch's risk appetite by implementing adequate and effective controls and risk mitigation measures, where appropriate and practicable.

Governance

Governance structure

The governance structure of climate risk management is divided into three levels:

The Board of Directors ("Board") of Cathay Bank ("Head Office" or "the Bank") is the highest decision-making body for the risk management practices of the Bank's worldwide operations, and has ultimate risk management responsibility for the Bank. The Board delegates the Risk and Compliance Committee ("RCC"), a Board-level committee, to perform monitoring and supervision duties in relation to the Branch's management of climate-related risks and opportunities, which include:

- Overseeing the development and implementation of climate risk strategies and the integration of climate risks into the existing risk management framework;
- Monitoring and managing climate-related risks such as through the review and approval of the Branch's Climate Risk Management Policy;
- Establishing a climate risk governance structure within the Branch's climate risk management framework; and
- Regularly assessing climate-related goals or strategies.

The Branch's Risk Management Committee ("RMC") is responsible for maintaining a sufficient understanding of climate risks to ensure decisions made are consistent with climate risk strategies and risk appetite. Climate risk governance responsibilities include:

- Implementing the Bank's risk management framework and advance the process of climate risk management;
- Formulating climate risk management policies, risk appetite, climate risk strategies and major risk limits, including measurement methods and stress testing methods in accordance with the climate risk limit management mechanism specified in this policy, for the Board's approval and perform review on the aforesaid policies and risk limits on regular basis (at least on an annual basis);
- Reviewing the remedial actions for the breach of the climate-related risk limit;
- Establishing an effective escalation process for reporting significant risks and exceptions; and
- Escalating to RCC at the Head Office level via the Bank's Chief Risk Officer for significant risks/exceptions as well as to seek the Board's approval.

The respective functional departments/units, including Chief Executive and Senior Managers, Risk Officer and General Compliance Department, Accounting Department, Corporate Banking Department, and Loans & Credit Administration Department of the Branch are responsible for the execution of climate-related risk management under their respective inherent risk area depending on the transmission path.

Three lines of defense

The Branch's risk governance framework provides clear oversight and ownership of management of climate-related risk across three lines of defense. The three lines of defense model outlined in the Bank's Enterprise Risk Management Policy is used as the primary means to demonstrate and to structure roles, responsibilities, and accountabilities of various parties for decision making, risk management and control. The first line of defense comprises business lines and operational functions whereas the second and third lines of defense involve control functions (i.e., General Compliance ("GC"), Assets and Liabilities Management Committee ("ALCO"), RMC) and audit functions (i.e., internal & external audits) respectively.

Defense	***Role***
First Line of Defense – Lines of Business	Owns and manages risk.
Second Line of Defense – Independent Risk Management and Compliance	Oversees and monitors risk.
Third Line of Defense – Internal Audit and Loan Review	Provides independent assurance of management's adherence to approved policies and regulations. Conducts audits and reviews.

Internal guideline and policy

The Climate Risk Management Policy ("Policy") has been established by CBHK to create a framework for managing climate risks effectively. This Policy clarifies the definition of climate risk, the transmission path of climate risk, the division of roles and responsibility, climate risk strategy formulation process and considerations and the risk appetite of climate risk management.

Based on the principles and framework established by the Policy, CBHK has also reviewed and updated its internal policies to incorporate climate change considerations appropriately.

Strategy

Climate strategy

CBHK places significant emphasis on climate change in its strategy planning to enhance its adaptability to climate risk. The Branch incorporates climate considerations into its current strategy development process, encourages clear understanding and effective communication, and establishes a process to define and document relevant climate risks.

The Branch has also effectively implemented strategies on climate-related issues, where appropriate, organizational structures, business processes, compensation systems, and resource availability are considered to ensure that climate strategies are integrated into bank operations and corporate development.

Climate risk identification

To better facilitate the integration of climate change factors into strategic planning and risk management, the Branch has performed climate risk identification. CBHK recognizes the impacts of climate change may likely be long term, therefore the Branch has identified three time horizons – short term (1 – 2 years), medium term (2 – 5 years) and long term (after 5 years) – in the process of risk identification. Below table summarizes the Branch's climate risk identification result:

Table: Climate risk identification

Risk type	***Transmission Mechanism***	***Assessed impact on the Bank***
Credit risk	Credit risk increases if climate risk drivers reduce borrowers' ability to repay or banks' ability to fully recover the value of a loan in the event of default.	**Medium.** The impact of climate risk on traditional risk is mainly driven by credit risk factors. New climate policies and emerging low-carbon technologies can significantly impact high-emission sectors' ability to repay loans to CBHK.
Market risk	Reduction in financial asset values, including the potential to trigger large, sudden and negative price adjustments where climate risk is not yet incorporated into prices.	**Low.** Since the existing bond portfolio is composed of mainly non-brown industries, this transmission pathway is considered immaterial.
Operational, Technology, Conduct and Reputation	Extreme weather events (typhoons, floods, etc.) lead to disruption of supply chains or damage to facilities.	**Low.** The assessment of operational and other risk-related transmission pathways during the climate risk identification process using a bottom-up risk modelling approach shows that they are not applicable to CBHK.

Cathay General Bancorp, the holding company for the Bank, recognizes the need to conduct business in a manner that contributes to a reduced impact on our environment. It has in place sustainability initiatives throughout its business operations that seek out ways to reduce its carbon footprint. Moreover, the Bank continues to engage with industries that have substantial and direct impact on environment through its lending practices, e.g. lending to low-carbon energy business, providing financing to solar and other renewable developments, expanding financing to other renewable energy source etc. CBHK will follow the strategic guidelines established by Head Office and incorporate climate-related risk consideration into its policies and procedures as appropriate.

Risk Management

Risk Identification

The Branch has established a climate risk identification mechanism to identify climate risk exposures and assess climate risks in products, businesses, processes, and systems based on the definition and transmission path of climate risk. CBHK assesses the short-term and long-term impact of transition risk and physical risk at the portfolio level and impact of physical risk at the operational level and adjusts the methodology accordingly.

Except for credit risk which was assessed to be impacted the most, other significant risk types such as market risk and operational risk were assessed to not significantly impact the Branch at this stage.

Climate risk management

The Branch has put in place the Climate Risk Management Policy to provide an overarching framework for managing climate risks and opportunities. This Policy was approved by the Board and aligned with the Bank's overall risk management framework. The Policy incorporates climate risk considerations into the Branch's existing overarching risk management framework, and establishes processes to identify, measure, monitor, report, control and mitigate climate-related risks, as well as sets forth the climate risk management requirements including but not limited to:

- Transmission pathway of climate risk into traditional risk types;
- Incorporation of climate risk within the risk appetite framework;
- Climate risk stress testing and scenario analysis to regularly identify and assess vulnerability under plausible scenarios;
- Control and mitigation measures to ensure consistency with the risk appetite of the Branch; and
- Procedures to ensure timely and regular reporting to facilitate oversight by the Bank's senior management and the Board.

Based on the climate risk management framework, the Branch has embedded climate-related considerations into relevant business and risk policies, e.g., the Credit and Loan Administration Policy, to enhance the client on-boarding and the credit application process and ensure necessary guidance is provided to relevant colleagues to support their client engagement.

The Branch maintains comprehensive limits frameworks that define risk appetite across business activities. Climate risk appetite aims to measure and manage financial and non-financial risks from climate change, and reduce the emissions related to the Branch's own activities and those related to the financing of clients. Related climate risk appetite thresholds/industry concentration limits have been set based on stress testing results, as a part of the Branch's overall risk management procedures.

Climate risk measurement

Risk measurement involves quantifying identified climate risk factors to monitor and manage the level of climate risk. Climate risk analysis tools, stress testing, and scenario analysis are used to measure climate risk. Due to the high variability of the climate risk factors, the impact of climate risks cannot be captured adequately with historical data, therefore, stress testing and scenario analysis becomes the main method for climate risk measurement. The methodology and assumptions used by CBHK comply with the requirements of module GS-1 "Climate Risk Management" of the HKMA's Supervisory Policy Manual.

Scenario selection

The climate risk stress test and scenario analysis evaluate the potential losses that CBHK could face under climate risk scenarios and examine its ability to withstand such losses. The stress test and scenario analysis take into account the features of the asset portfolio under various climate risk scenarios and the assumptions provided by approved sources such as HKMA, Network for Greening the Financial System ("NGFS") or other approved sources, covering the main risk types impacted by climate risk.

The transition risk scenario analysis has been formulated based on the "Disorderly – Delayed Transition" scenario developed by the NGFS. The scenario explores the potential economic and financial implications of a delayed transition to a low-carbon economy. The scenario assumes that global greenhouse gas emissions continue to increase until 2030 and then decline sharply, in line with the Paris Agreement's goal of limiting global warming to well below 2°C above pre-industrial levels.

The physical risk scenario analysis is developed based on the Representative Concentration Pathway ("RCP") 8.5 pathway, which is established by the Intergovernmental Panel on Climate Change ("IPCC") as part of its Fifth Assessment Report. It is one of four Representative Concentration Pathways (RCPs) that describe different possible greenhouse gas concentration trajectories and associated climate outcomes. RCP 8.5 is considered a "high emissions" scenario, in which global greenhouse gas emissions continue to increase throughout the 21st century. It assumes a future world where energy

use is dominated by fossil fuels such as coal, oil, and gas, and where there is limited uptake of low-carbon energy technologies.

Methodology

In order to evaluate the impact of transition risk, a bottom-up climate scenario analysis was performed on the sampled entities to assess potential financial impact on stressed credit ratings and expected credit loss ("ECL") under weakened borrower repayment ability scenarios. The average notch-down, stressed rating and stressed probability of default ("PD") of each sector can be calculated based on the fluctuations of credit ratings. The potential impact on ECL is therefore estimated by applying model logic implemented in the Branch's business-as-usual ("BAU") ECL model.

Physical risk scenario analysis examines property collateralized exposures, such as residential mortgages and specialized lending, with collateral classified into districts. Physical risk damages collateral and lowers property values, increasing loss given default ("LGD") in the bank's BAU ECL model. The potential impact on ECL is estimated by the change in collateral value using data from an external data platform.

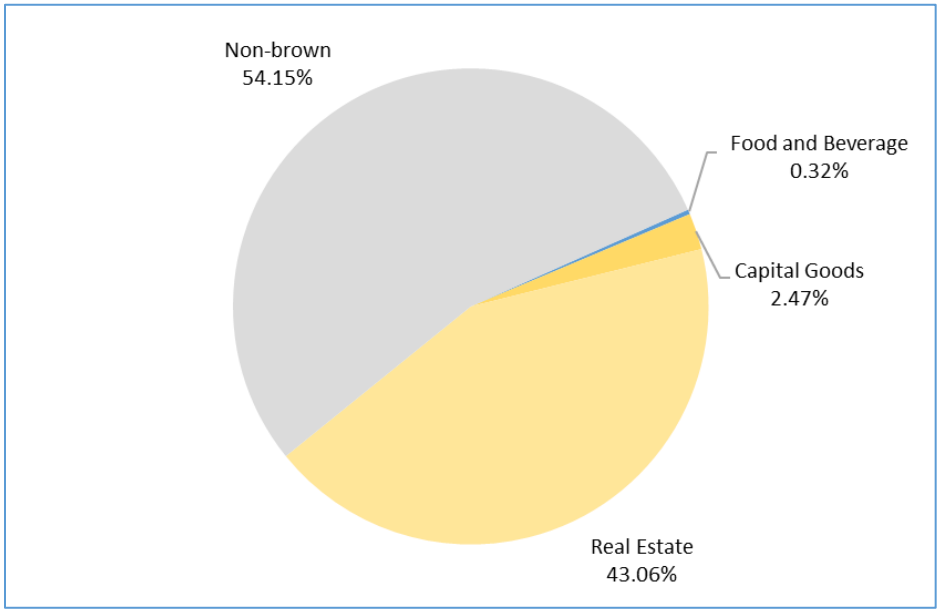
Initial insights from scenario analysis

End-to-end climate risk stress testing was subsequently performed on climate-related exposures within the Branch's loan portfolios, accounting for both transition and physical risks. CBHK's exposures towards transition risk and physical risk are assessed as low and the relevant impact on the Branch's credit risk is considered immaterial.

1. Transition Risk Scenario Analysis Results

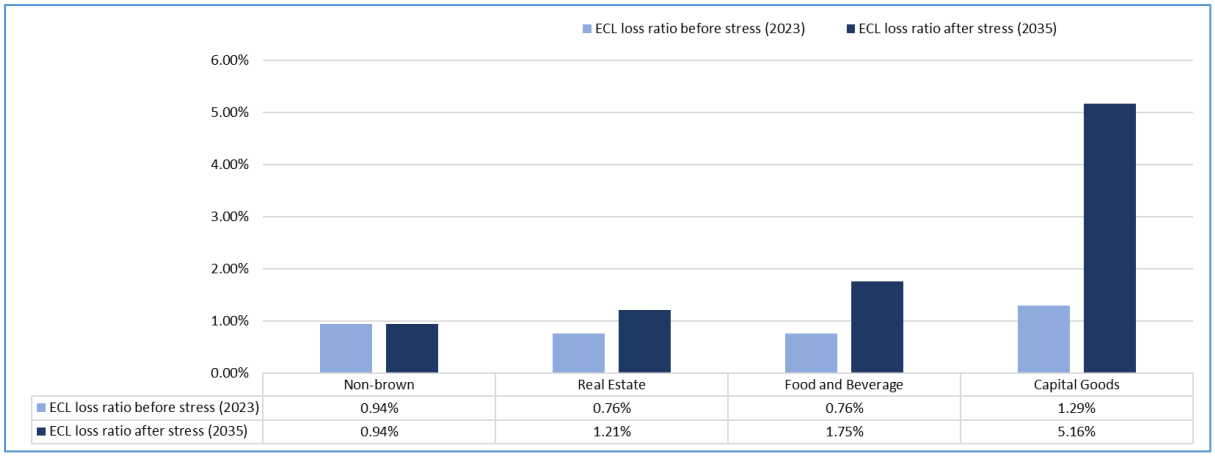
The bottom-up transition risk modelling framework is used to provide an end-to-end solution to assess transition risk under climate change scenarios. Our approach features coherence of the process, model interpretability, and result sensitivity. "NGFS Disorderly – Delayed Transition" scenario produced by REMIND-MAgPIE has been used, given practice of TCFD, HKMA and its similarity to China's climate risk goals.

Our assessment indicates that brown industries take up around 46% of the total portfolio. Among all the brown industries, the biggest proportion is the Real Estate (43.06%), followed by Capital Goods (2.47%).



Graph 1: Distribution of CBHK's Total Loan Balance by Sectors

Among the brown industries, Capital Goods has the greatest ECL loss ratio after stress (5.16%), and also the greatest increase in ECL loss ratio (3.87%). For non-brown industry, the ECL loss ratio is unchanged.



	Non-brown	Real Estate	Food and Beverage	Capital Goods
ECL loss ratio before stress (2023)	0.94%	0.76%	0.76%	1.29%
ECL loss ratio after stress (2035)	0.94%	1.21%	1.75%	5.16%

Graph 2: ECL loss ratio before and after stress by sectors

2. Physical Risk Scenario Analysis Results

Physical risks affect the Branch's credit portfolio as the local area will be hit by weather disasters such as strong typhoons, extreme rainfall and flooding. Due to damage to buildings, the value of the Branch's real estate collateral will decrease, leading to potential credit losses.

The Branch makes use of the EasyXDI platform[1] for physical risk scenario analysis. The EasyXDI platform provides a measure called "Total Value At Risk (VaR)" which is defined as the "annual average cost of damage" as a percentage of the "asset replacement value" for the damage of multiple hazards, including coastal inundation, heat failure, wind damage, and soil movement due to drought if the asset is exposed to the hazard, and data for a particular hazard is available at the location.

Below are the results of our physical risk scenario analysis based on our portfolio position as of December 31, 2023:

BAU ECL ratio 2023	Stress ECL ratio 2050	Stress ECL ratio 2055	Stress ECL ratio 2060	ECL ratio change 2050	ECL ratio change 2055	ECL ratio change 2060
0.94%	1.16%	1.21%	1.26%	0.22%	0.27%	0.32%

Table 1: Stressed ECL results for CBHK's bilateral loans

BAU ECL ratio 2023	Stress ECL ratio 2050	Stress ECL ratio 2055	Stress ECL ratio 2060	ECL ratio change 2050	ECL ratio change 2055	ECL ratio change 2060
0.76%	0.96%	1.02%	1.09%	0.21%	0.27%	0.34%

Table 2: Stressed ECL results for CBHK's syndicated loans

[1] EasyXDI platform is an XDI product that provides single asset climate risk evaluation. [https://easyxdi.com/]

Metrics and Targets

As a responsible financial institution, the Branch takes commitment to managing climate-related risks seriously. The Branch aims to mitigate the impact of climate change on operations and support the transition to a low-carbon economy by establishing its own metrics to assess climate-related risk and opportunities in accordance with its climate risk management framework.

Greenhouse Gas ("GHG") Emission

CBHK recognizes the increasing need from relevant stakeholders for transparency regarding climate risk metrics. By disclosing annual GHG emissions, a better understanding on the Branch's carbon footprint, and a demonstration of the Branch's commitment to reduce impact on the environment are provided.

Emissions scope		2023	2022
Categorization of reported emissions	*Source of GHG Emission*	*Reporting year emissions*	*Prior year emissions*
Scope 2 location-based	Purchased Electricity	29.07996 tons of CO_2 emissions	29.77806 tons of CO_2 emissions

Table 3: CBHK's GHG Emissions in 2022 & 2023

To ensure the accuracy of GHG emissions reporting, CBHK benchmarked global standards for GHG calculation (GHG protocol) and adopted Shenzhen Standardized Guidance on the Quantification and Reporting of an Organization's GHG Emissions (2012), CLP Sustainability Report 2021 (clpgroup.com) and Carbon Calculator - HK Electric to calculate Scope 1 and 2 emissions.

Industry Concentration limits

To ensure that business is carried out within the climate risk appetite set by the Board and to properly diversify risks, the Branch may implement climate risk limits over time, such as ratios for high-emitting sectors with trigger levels at notification and reporting thresholds respectively.

Climate Change Opportunities

The Branch has set forth the targets of increasing the ratio for sustainability-linked loan and green loan to reflect its ambition of assisting the transition towards a lower-carbon economy. The Ratio for Sustainability-linked Loan and Green Loan in the Branch's loan portfolio is expected to increase gradually in the coming 5 years as part of the business strategy.