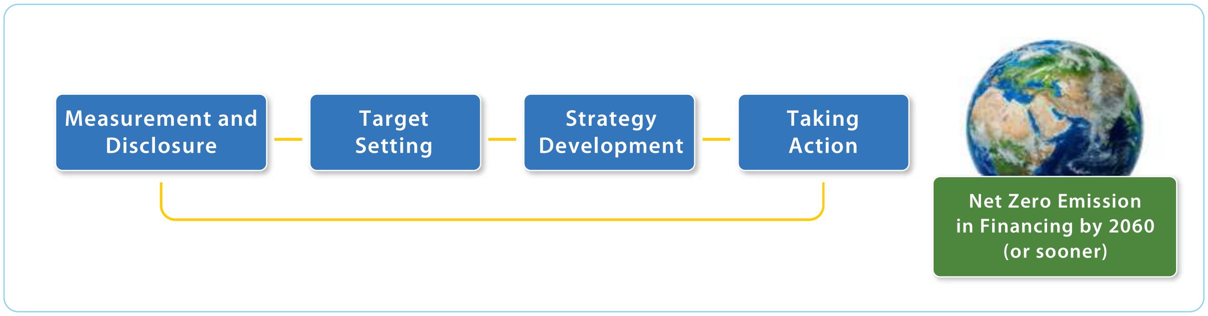
Climate Change Scenario Analysis

Bank Mandiri conducts climate scenario analysis to assess the potential impacts of climate change. Bank Mandiri applies climate-related scenarios that are aligned with the Company's characteristics and operating conditions to evaluate its climate resilience, enabling strategic measures to be adjusted based on the findings.

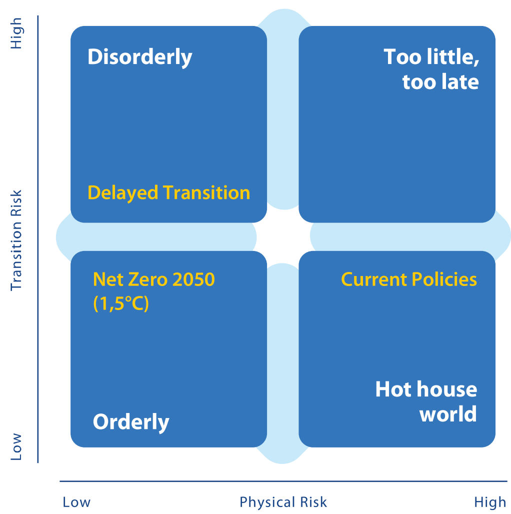


Climate Risk Management & Scenario Analysis

Collaboration with policymakers, particularly the Financial Services Authority, constitutes one of the key drivers of Bank Mandiri's climate strategy. As a member of the Task Force on Climate-Related Financial Risk, Bank Mandiri participated in the Pilot Project on Climate Risk Management & Scenario Analysis (CRMS).

Bank Mandiri's CRMS analysis under the OJK Pilot Project CRMS 2025 covered 100% of its portfolio in accordance with OJK requirements. For KBMI 3 and 4 banks, the 2025 CRMS Pilot Project calculation was conducted on 100% of the total portfolio, using flood and forest fire scenarios for physical risk, as well as climate scenarios developed by the Network for Greening the Financial System (NGFS), including the Current Policies, Delayed Transition, and Net Zero 2050 scenarios for transition risk.

NGFS Climate Scenarios



Current Policies

Assumes that current climate policies remain unchanged, leading to an increase in physical risks as global temperatures rise above 1.5°C or 2°C. Transition risks remain low due to minimal changes in policies and technology.

Delayed Transition

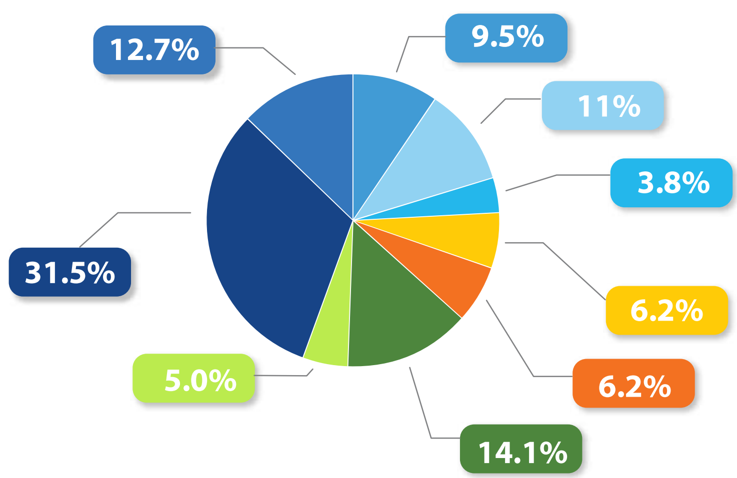
Assumes that annual emissions will not decrease until 2030. However, stricter policies will be implemented afterward to limit global warming to 2°C and control CO_2 emissions.

Net Zero 2050

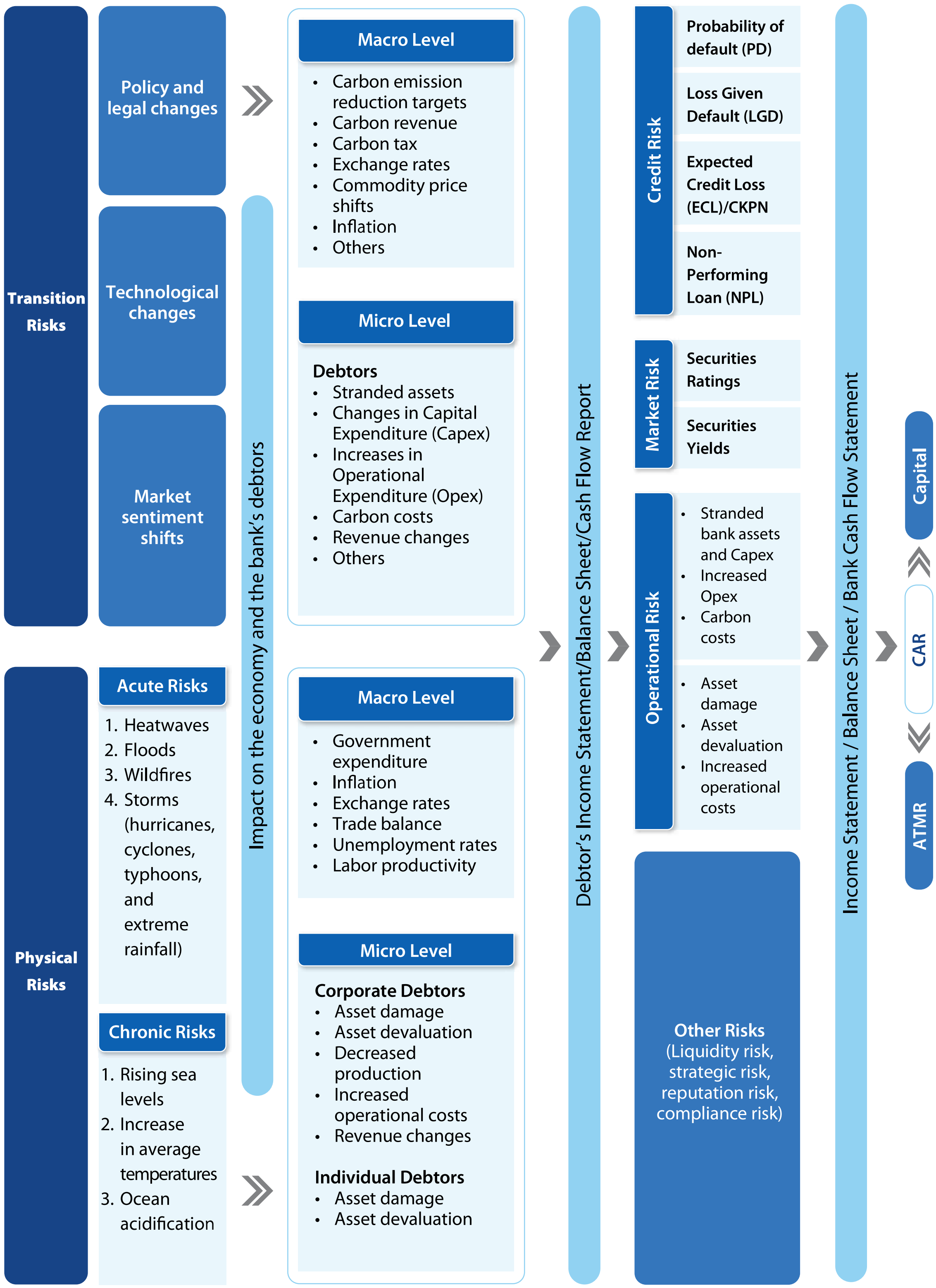
Assumes aggressive measures are taken to achieve net zero emissions by 2050, with stringent policies and rapid economic changes aimed at limiting global temperature rise to below 1.5°C.

Overview of CRMS Portfolio

Bank Mandiri has conducted climate scenario analysis covering 100% of its financing portfolio at the sectoral level. The key sectors assessed include: (1) Agriculture, Forestry, and Fisheries; (2) Mining and Quarrying; (3) Electricity, Gas, Steam/Hot Water, and Air Conditioning Supply; (4) Construction; (5) Transportation and Warehousing; (6) Manufacturing; and (7) Consumer Financing for Property Ownership.



- Other Consumer Sectors excluding Property Ownership
- Agriculture, Forestry, and Fisheries
- Mining and Quarrying
- Electricity, Gas, Steam/Hot Water, and Air Conditioning Supply
- Transportation and Warehousing
- Construction
- Manufacturing
- Consumer Financing for Property Ownership
- Other Productive Sectors


Transition Risks
Policy and legal changes
Technological changes
Market sentiment shifts
Physical Risks
Acute Risks
1. Heatwaves
2. Floods
3. Wildfires
4. Storms (hurricanes, cyclones, typhoons, and extreme rainfall)
Chronic Risks
1. Rising sea levels
2. Increase in average temperatures
3. Ocean acidification
Impact on the economy and the bank's debtors
Macro Level
• Carbon emission reduction targets
• Carbon revenue
• Carbon tax
• Exchange rates
• Commodity price shifts
• Inflation
• Others
Micro Level
Debtors
• Stranded assets
• Changes in Capital Expenditure (Capex)
• Increases in Operational Expenditure (Opex)
• Carbon costs
• Revenue changes
• Others
Macro Level
• Government expenditure
• Inflation
• Exchange rates
• Trade balance
• Unemployment rates
• Labor productivity
Micro Level
Corporate Debtors
• Asset damage
• Asset devaluation
• Decreased production
• Increased operational costs
• Revenue changes
Individual Debtors
• Asset damage
• Asset devaluation
Debtor's Income Statement/Balance Sheet/Cash Flow Report
Credit Risk
Probability of default (PD)
Loss Given Default (LGD)
Expected Credit Loss (ECL)/CKPN
Non-Performing Loan (NPL)
Market Risk
Securities Ratings
Securities Yields
Operational Risk
• Stranded bank assets and Capex
• Increased Opex
• Carbon costs
• Asset damage
• Asset devaluation
• Increased operational costs
Other Risks (Liquidity risk, strategic risk, reputation risk, compliance risk)
Income Statement / Balance Sheet / Bank Cash Flow Statement
Capital
CAR
ATMR

Physical Risk Scenario Analysis

Bank Mandiri has conducted an analysis of physical risks, in accordance with the OJK CRMS 2025 guidelines, and projected the potential damage impacts arising from floods and forest fires on the Bank's asset portfolio. Bank Mandiri applies the Representative Concentration Pathway (RCP) 8.5 scenario to assess the impacts of climate change on its assets and operations, with RCP 8.5 representing a high-emissions scenario with no significant mitigation efforts, in which emissions continue to increase, leading to rapid global warming and heightened risks to ecosystems and infrastructure. Under this scenario, global temperature increases are projected to reach up to 4.2°C by the end of the century, with a projected range of 3.7°C to 5.0°C.

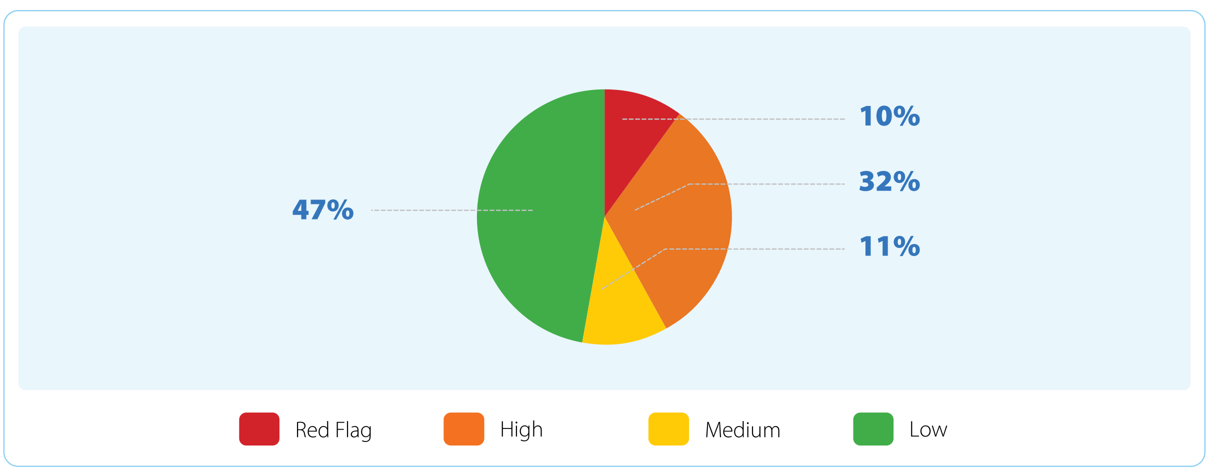
Bank Mandiri has also identified the transmission impacts of flood-related and other physical risks on credit risk and operational risk. The analysis process begins with the collection of location data and risk category mapping, covering information such as city, province, postal code, asset values, and net annual income. Flood risk data sourced from BNPB 2024, obtained through OJK, is used to classify flood risk at the regency/municipality level into high, medium, and low categories. Meanwhile, data for mapping other physical risk categories is derived from Moody's Climate on Demand tool.

Data from Moody's Climate on Demand subsequently serves as the basis for climate risk modelling. The RCP 8.5 scenario projections are also applied to assess the impacts of high greenhouse gas emissions, supporting the evaluation of future physical risks. The calculation of operational losses focuses on facilities classified as high risk. For facilities with negative income, losses are capped at zero, and asset value losses for leased assets are also assumed to be zero.

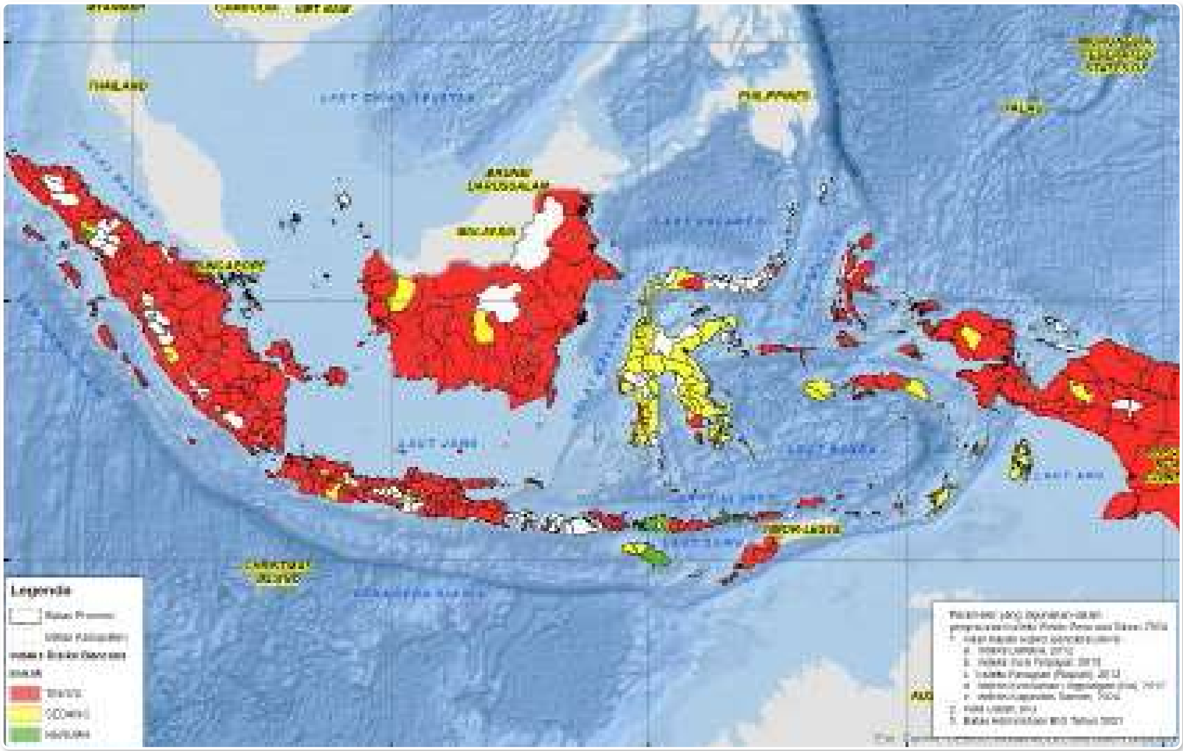
Flood Scenario

Based on the assessment results, Bank Mandiri has identified the proportion of flood risk exposure across the Company's activities using flood hazard scores derived from data provided by OJK and Moody's Climate on Demand.

The identification results for the Flood scenario indicate the distribution of risk for office buildings in the short term (one year), including Branch Offices, Functional Offices, Head Office, Regional Offices, and Sub-Branch Offices. The distribution is categorized as 10% Red Flag, 32% High Risk, 11% Medium Risk, and 47% Low Risk.



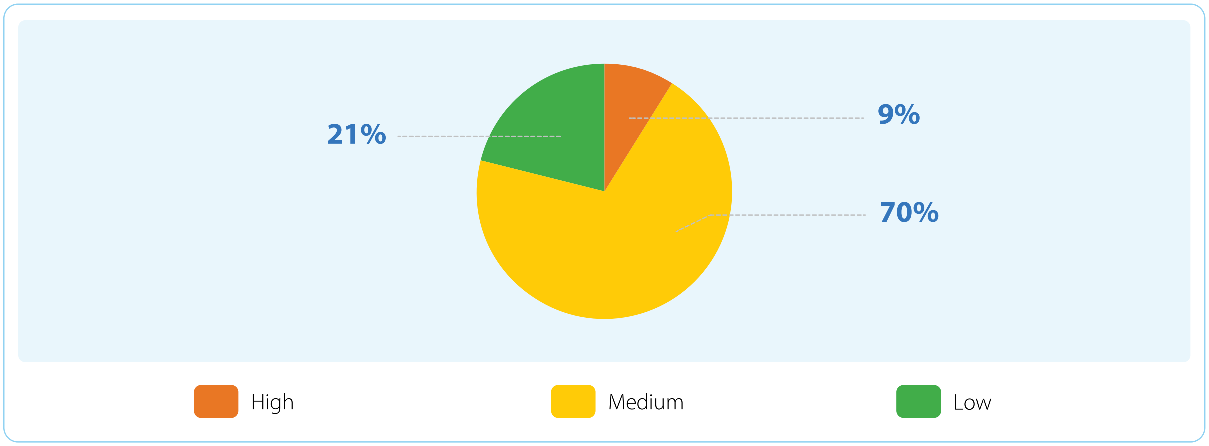
The flood risk index map is presented based on the 2024 Indonesian Disaster Risk Index (IRBI):



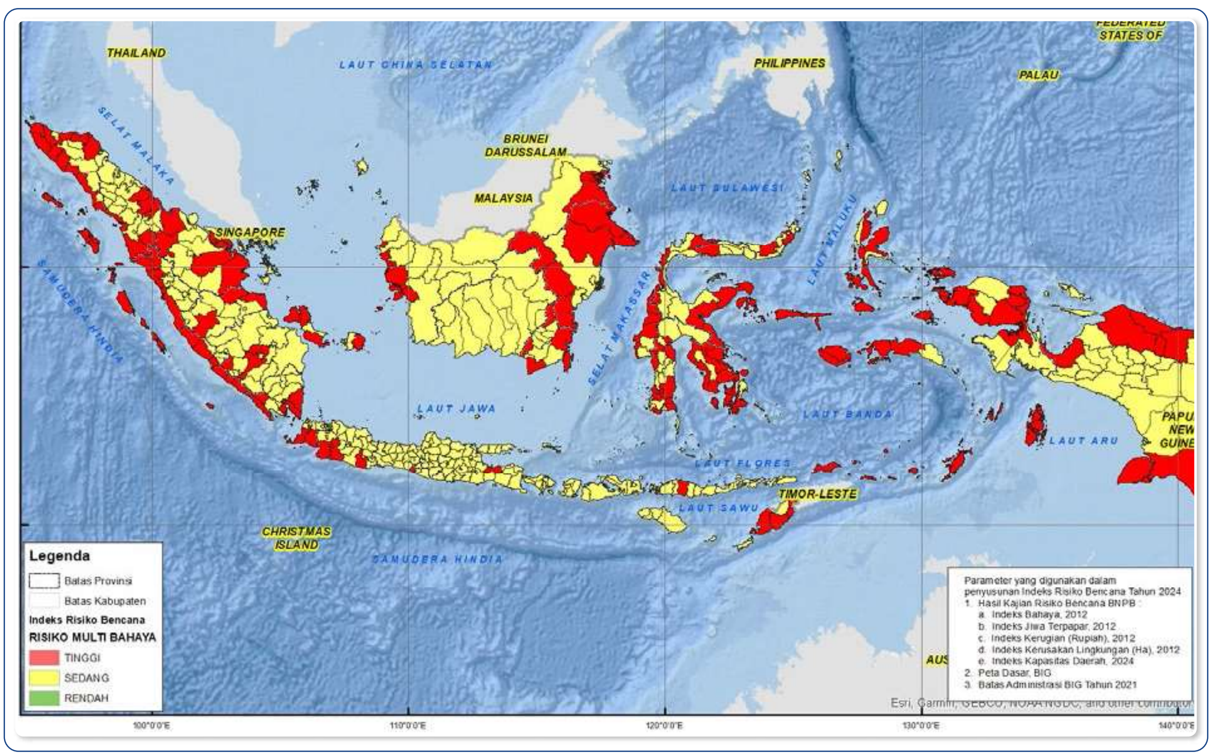
No	Regency/City	Risk Class
1	West Bandung, West Java	High Risk (Flood Prone)
2	Cirebon, West Java	High Risk (Flood Prone)
3	Luwu, South Sulawesi	Medium Risk (Flood Alert)
4	Garut, West Java	Medium Risk (Flood Alert)
5	Lembata, East Nusa Tenggara	Low Risk (Flood Safe)
6	East Flores, East Nusa Tenggara	Low Risk (Flood Safe)
	And so on.	

Forest and Land Fire Scenario

Based on the hazard score generated by Moody's Climate on Demand, the identification results for the Wildfire scenario indicate the distribution of risk across office buildings, including Branch Offices, Functional Offices, Head Office, Regional Offices, and Sub-Branch Offices in the short term (one year), with 9% categorized as High Risk, 70% as Medium Risk, and 21% as Low Risk. No exposures were identified under the Red Flag category.



The forest and land fire risk index map is presented based on the 2024 Indonesian Disaster Risk Index:



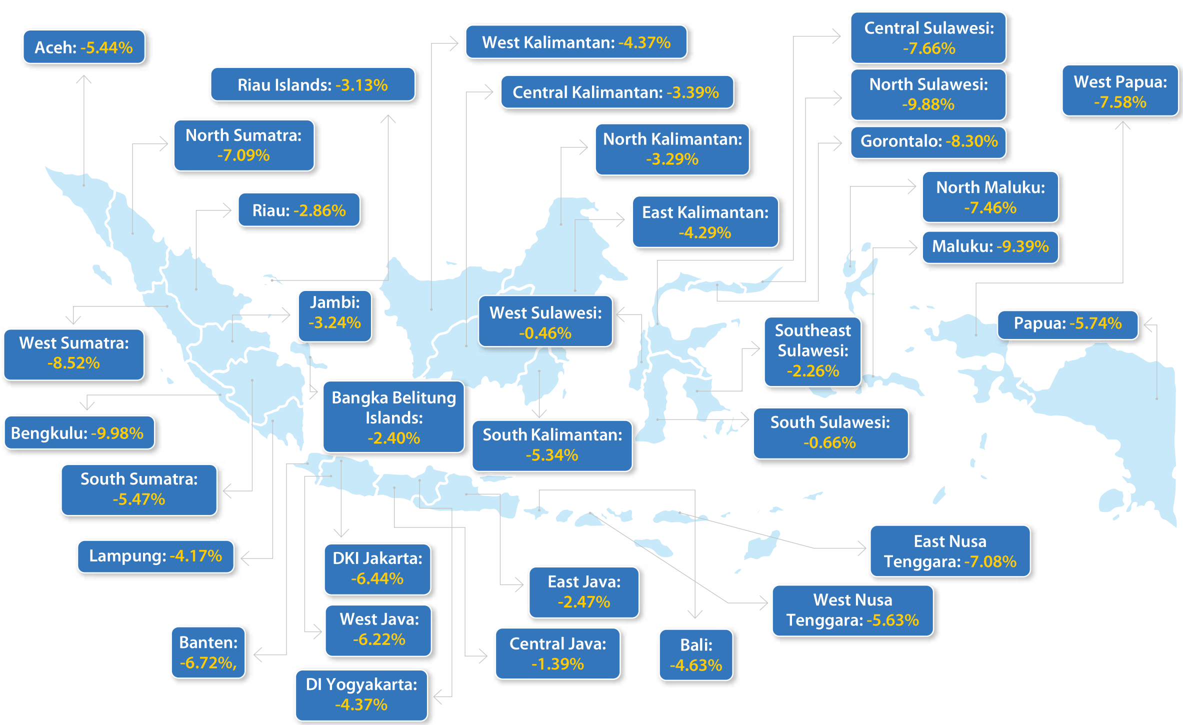
No	Regency/City	Risk Class
1	Nganjuk, East Java	High Risk (Forest Fire Prone)
2	Cimahi, West Java	Medium Risk (Forest Fire Prone)
3	Jayapura, Papua	Low Risk (Forest Fire Prone)
	And so on.	

Financial Impacts of Physical Climate Risks

A more robust physical risk scenario analysis is conducted through an integrated approach that considers six types of physical risks in combination. These include acute physical risks, namely floods, forest fires, and storms, including typhoons, cyclones, and extreme rainfall, as well as chronic physical risks comprising heat stress, water stress, and sea level rise.

Through this analysis, Bank Mandiri projects the potential level of damage that physical risks may impose on collateral values within its financing portfolio. The analysis indicates that under the RCP 8.5 scenario, should greenhouse gas emissions continue at current levels, the potential decline in collateral values is estimated to reach approximately minus -3% year on year. In addition, the Company presents the average percentage change in collateral values attributable to physical risks by province as follows:

Percentage Change in Collateral Values Attributable to Physical Risks by Province



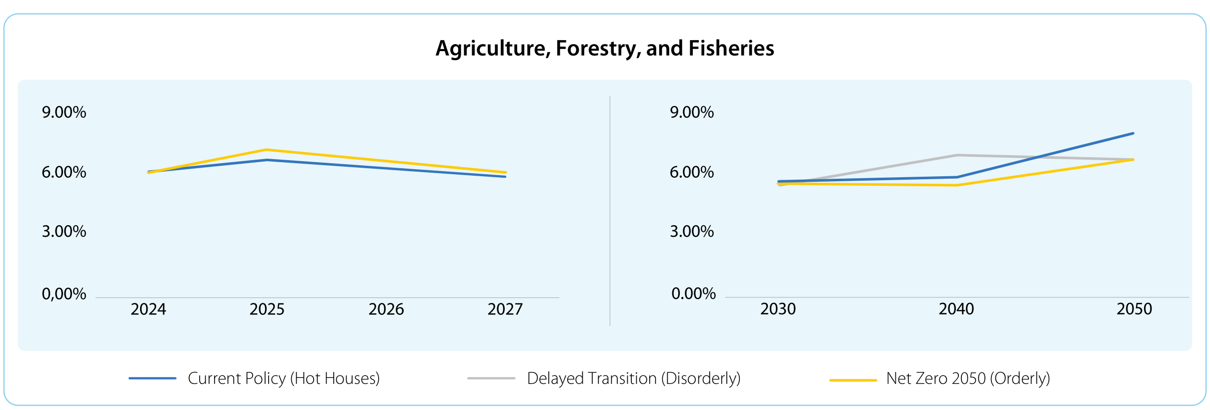
Bank Mandiri also calculates the potential financial impacts of physical risks on credit exposures extended to customers, as measured through Expected Credit Loss (ECL). The highest increase was observed in the Electricity, Gas, Steam/Hot Water, and Air Conditioning Supply sector, amounting to 9%, with an estimated nominal increase in ECL for this sector of approximately ±IDR100 billion. This is driven by the characteristics of the collateral types and their concentration in disaster-prone areas exposed to acute physical risks, including floods, forest fires, and storms, as well as chronic physical risks comprising heat stress, water stress, and sea level rise.

Sector	Increase in ECL (stress relative to baseline)
Agriculture, Forestry, and Fisheries	4%
Mining and Quarrying	2%
Electricity, Gas, Steam/Hot Water, and Air Conditioning Supply	9%
Construction	4%
Transportation and Warehousing	3%
Manufacturing	3%
Consumer Financing for Property Ownership	3%
Other Productive Sectors	5%
Other Consumer Sectors excluding Property Ownership	2%
Total	**3%**

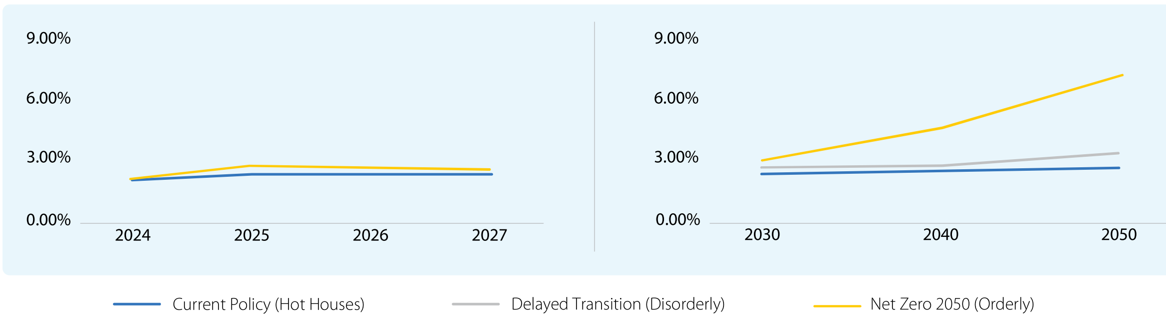
Transition Risk Scenario Analysis

In the context of transition risks, the Company faces challenges and opportunities arising from carbon taxation, changes in energy prices, shifts in the energy mix, and the adoption of green technologies. To assess these transition risks, Bank Mandiri applies NGFS 5 scenarios in accordance with OJK guidance. This represents a change from the previous year, when OJK referred to NGFS 4 in the implementation of the CRMS Pilot Project.

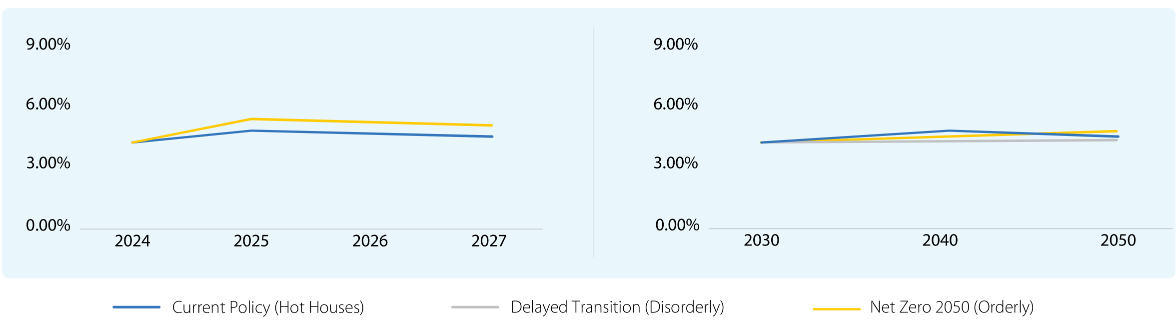
Summary of Climate Risk-Adjusted Probability of Default (PD) Results



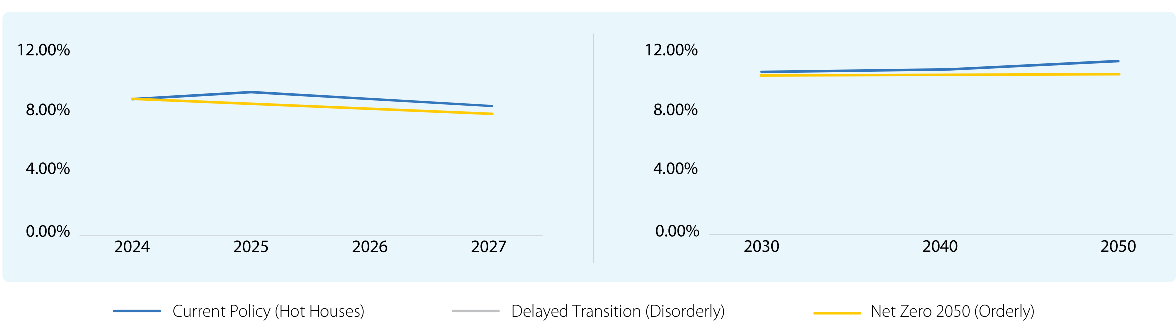
Mining and Quarrying

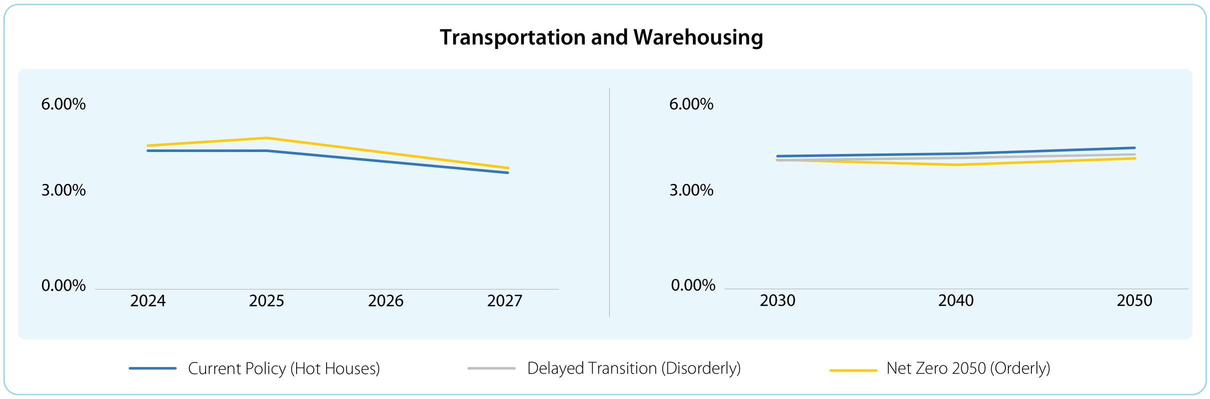


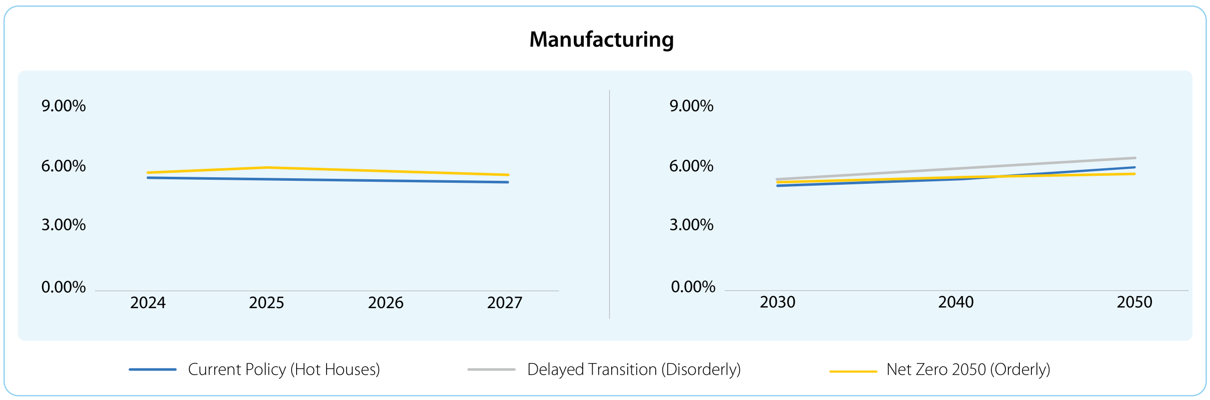
Electricity, Gas, Steam/Hot Water, and Air Conditioning Supply

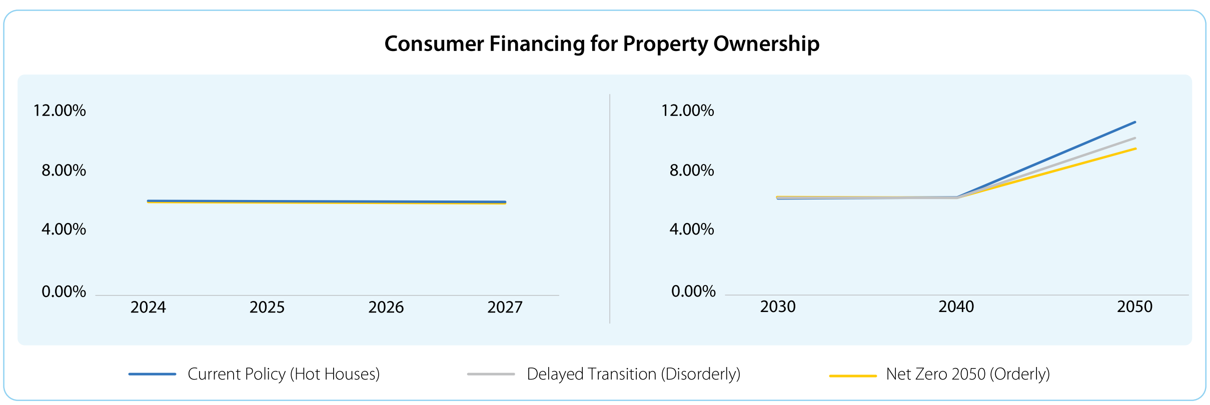


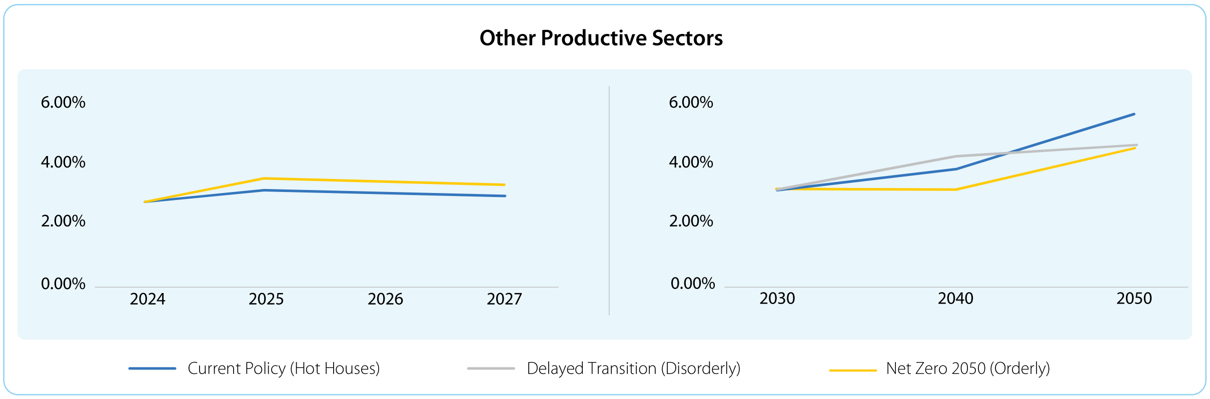
Construction




Transportation and Warehousing
6.00%
3.00%
0.00%
2024
2025
2026
2027
6.00%
3.00%
0.00%
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)


Manufacturing
9.00%
6.00%
3.00%
0.00%
2024
2025
2026
2027
9.00%
6.00%
3.00%
0.00%
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)


Consumer Financing for Property Ownership
12.00%
8.00%
4.00%
0.00%
2024
2025
2026
2027
12.00%
8.00%
4.00%
0.00%
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)


Other Productive Sectors
6.00%
4.00%
2.00%
0.00%
2024
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2026
2027
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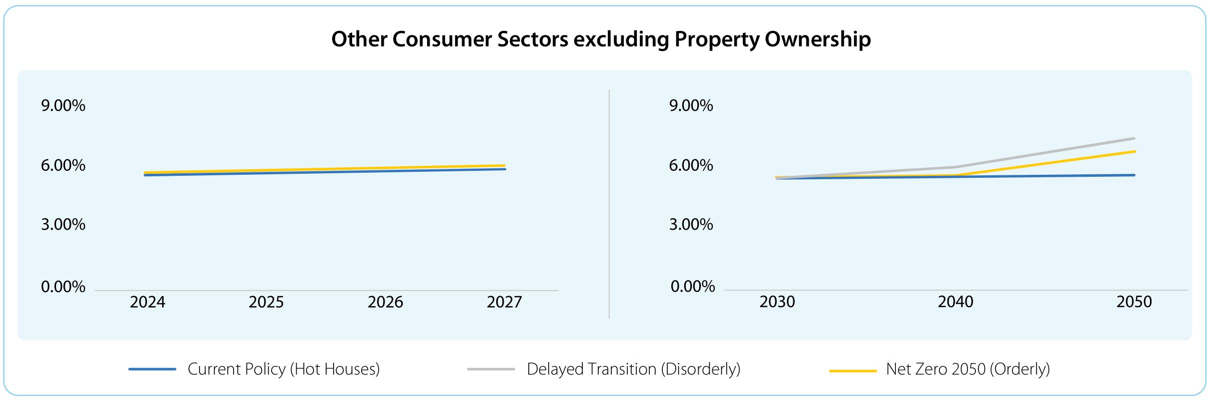
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)


Other Consumer Sectors excluding Property Ownership
9.00%
6.00%
3.00%
0.00%
2024
2025
2026
2027
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)

Assessment Results [GRI 201-2]

The results of the CRMS 2025 Pilot Project assessment indicate an increase in the Non-Performing Loan (NPL) ratio, particularly under the Net Zero 2050 (NZE) scenario. Simulations of physical and transition risks suggest that Bank Mandiri may face an elevated NPL ratio, with the Current Policy scenario projected to reach 1.4% during the 2025–2026 period.

The Expected Credit Loss (ECL) estimation results further indicate that under the Net Zero 2050 scenario, ECL coverage is projected to increase by approximately 11%-12% compared with the 2025 baseline.

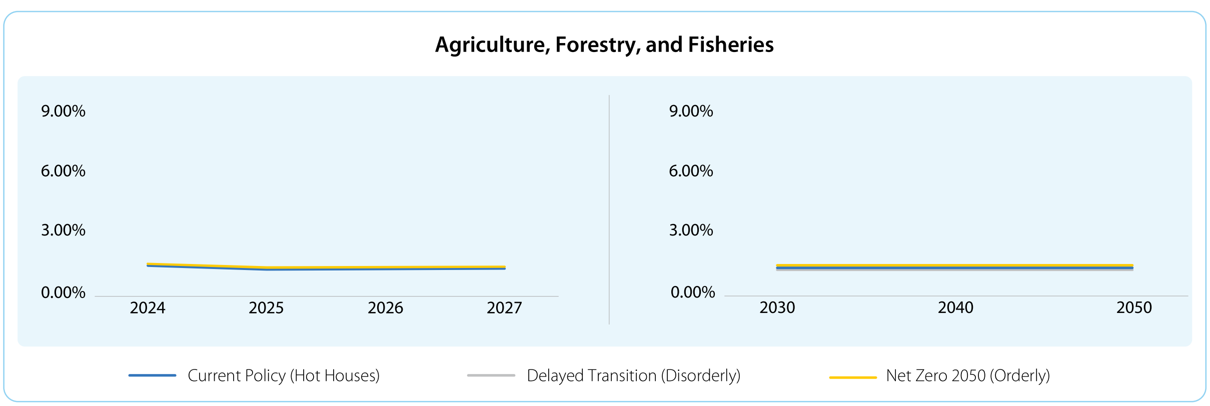
In addition, Bank Mandiri has calculated the impact of climate-related risks. The analysis indicates that under the Net Zero 2050 scenario, the CAR is projected to remain at approximately 18%-19%, representing a decline of around 1% compared with the baseline.

The electricity supply sector has emerged as a key area of focus, in line with Indonesia's international commitments to reduce emissions and transition toward renewable energy. The strategies implemented in this sector indicate higher transition risks in the early stages, particularly under the Current Policy scenario. Despite the potential increase in NPL levels, Bank Mandiri remains able to maintain its capital adequacy, both in the short and long term, above the regulatory thresholds.

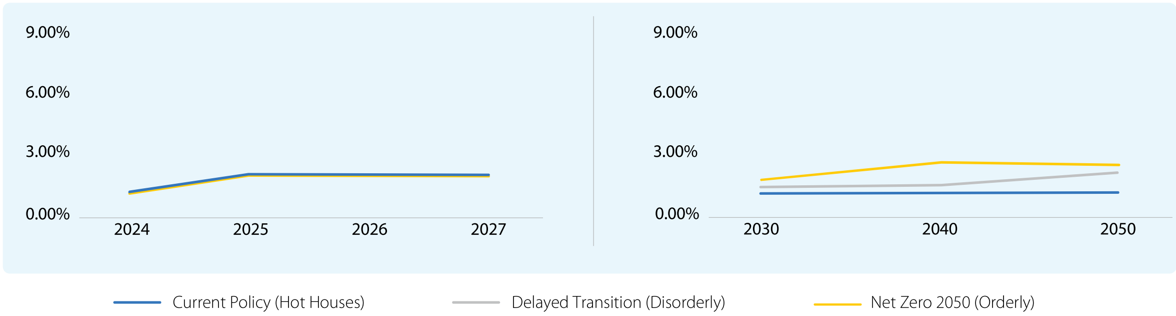
Bank Mandiri is committed to gradually transitioning its loan portfolio through a sustainable approach, in order to support the Bank's business interests as well as Indonesia's overall economic development. As a state-owned enterprise, the government mandate to support the national economy is aligned with the transition plan toward a low-carbon economy. Based on the results of the CRMS Pilot Project, Bank Mandiri is currently developing a more comprehensive transition plan.

One of the key approaches is close collaboration with customers, particularly those in high carbon-emitting sectors, to understand their transition plans and support the optimization of strategies to reduce emissions and manage transition risks. Bank Mandiri has established strong engagement with customers on ESG and sustainability and is committed to strengthening and expanding these efforts by leveraging insights gained from the CRMS Pilot Project.

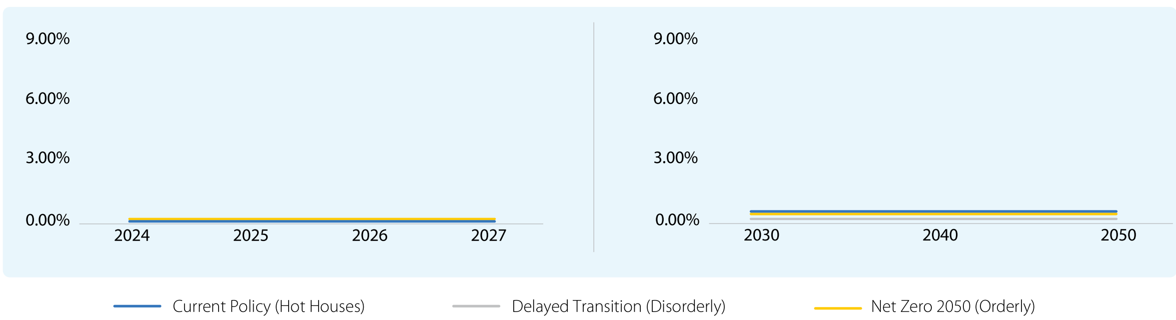
Summary of Climate Risk-Adjusted Non-Performing Loan (NPL) Results



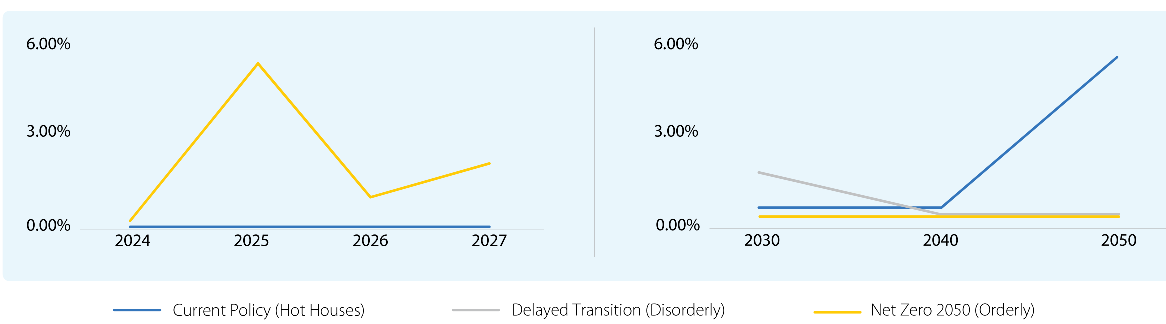
Mining and Quarrying

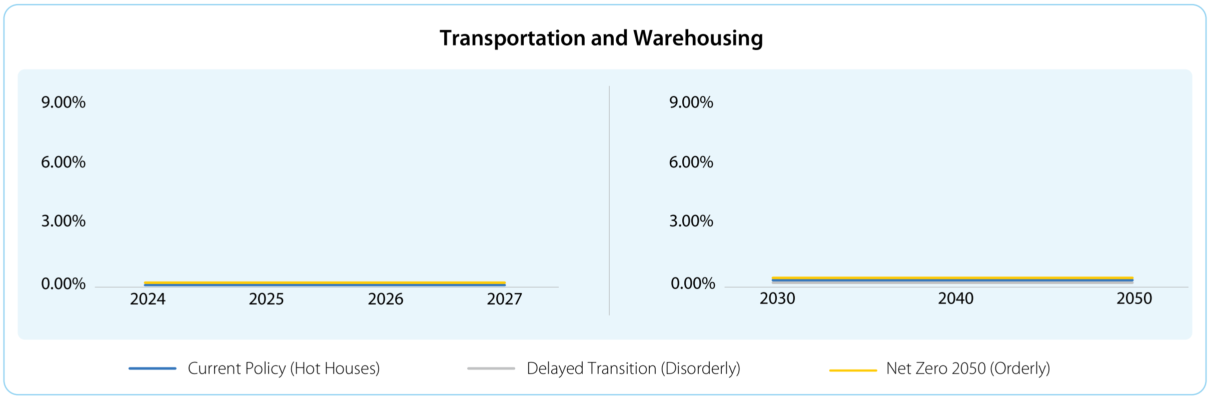


Electricity, Gas, Steam/Hot Water, and Air Conditioning Supply



Construction




Transportation and Warehousing
9.00%
6.00%
3.00%
0.00%
2024
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2027
9.00%
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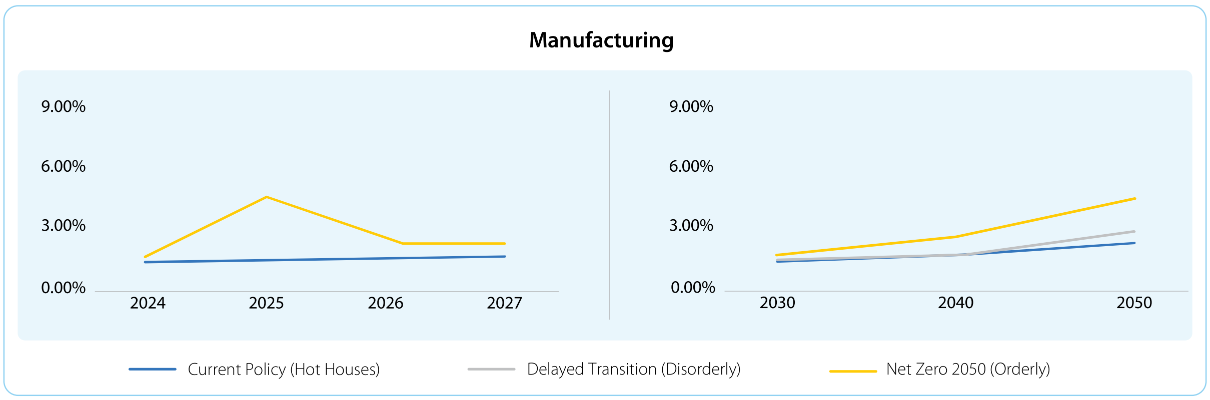
3.00%
0.00%
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)


Manufacturing
9.00%
6.00%
3.00%
0.00%
2024
2025
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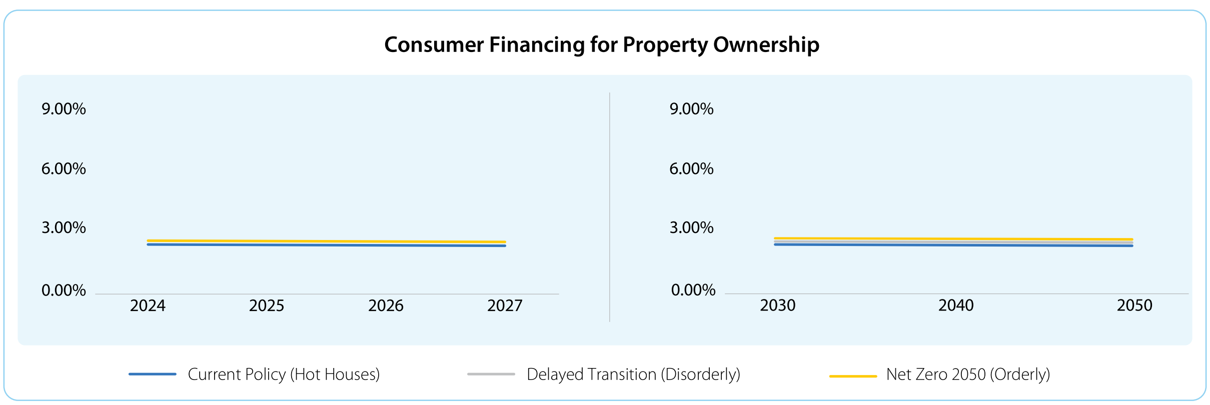
2027
9.00%
6.00%
3.00%
0.00%
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)


Consumer Financing for Property Ownership
9.00%
6.00%
3.00%
0.00%
2024
2025
2026
2027
9.00%
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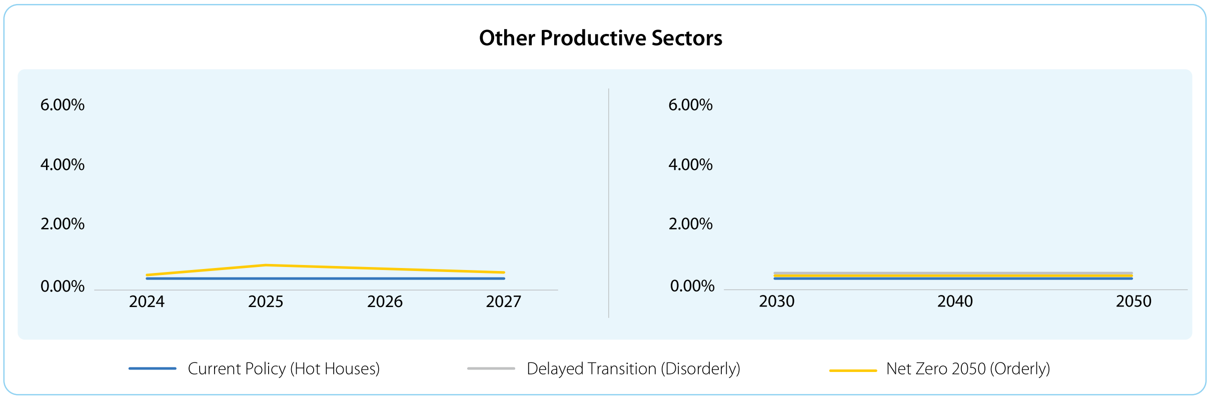
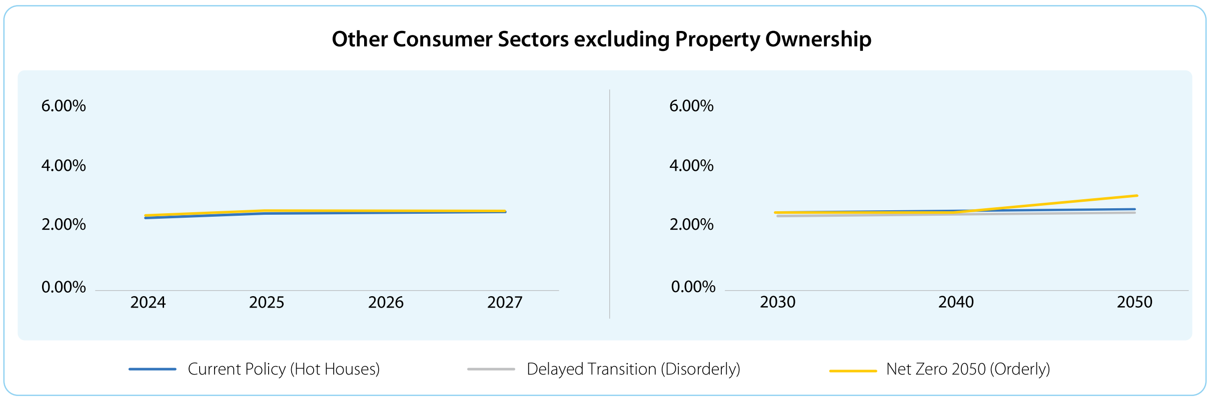
3.00%
0.00%
2030
2040
2050
Current Policy (Hot Houses)
Delayed Transition (Disorderly)
Net Zero 2050 (Orderly)





Estimated Impacts of Climate-Related Risks and Opportunities on Bank Mandiri's Financial Performance and Position [GRI 201-2]

Bank Mandiri conducted an assessment of the financial impacts of climate-related risks and opportunities to understand how transition and physical factors may affect the Company's risk profile, financial performance, and business sustainability.

This assessment links various types of climate risks to key financial risks, their potential impacts on financial statement line items, as well as mitigation and response strategies that are integrated into the Bank's risk management framework and decision-making processes.