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Climate Report 2024

in alignment with IFRS S2

Welcome to the Climate Report of

CIMB Thai Bank PCL.

CIMB Thai Bank PCL. has reported in alignment with the International Sustainability Standards Board's IFRS S2 Standard for the period 1 January 2024 to 31 December 2024.

We have taken conscious efforts to manage and minimize the environmental impact of our Climate Report and related processes. This Climate Report is available in digital format only as part of our commitment to reduce paper consumption.

We encourage our stakeholders to practice sustainable habits both in paper and digital consumption by downloading reports only when necessary and storing files efficiently. Together, let's embrace responsible resource use in our journey toward environmental stewardship.

View our Climate Report and other information about CIMB Thai Bank PCL. at www.cimbthai.com.

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Part 1

Introduction to
CIMB Thai's
Climate Report 2024

Introduction to CIMB Thai's Climate Report 2024

CIMB Thai Bank Public Company Limited ("CIMB Thai" or "the Bank") presents this **Climate Report 2024** to provide stakeholders with a clear and decision-useful account of how the Bank identifies, assesses and manages **climate-related impacts, risks, and opportunities** that could reasonably be expected to affect the Bank's prospects over time. Climate change is increasingly relevant to the financial sector because it can influence the performance and resilience of households, businesses, infrastructure and value chains-thereby shaping credit quality, asset values, operational continuity, and the long-term competitiveness of financial institutions.

As a bank, CIMB Thai's exposure to climate-related matters arises in two primary ways: (i) through our **portfolio**, where climate-related physical and transition dynamics may affect borrowers, collateral, and the wider operating environment; and (ii) through our **operations**, where climate hazards and transition requirements may affect premises, critical third-party services, energy consumption, and internal resilience. CIMB Thai recognizes that climate-related risks and opportunities can be interconnected and may evolve non-linearly. Accordingly, the Bank's approach emphasizes forward-looking assessment and disciplined governance-grounded in risk management fundamentals and aligned to the Bank's strategic planning cycles.

Purpose and Reporting Approach

The purpose of this report is threefold.

First, it explains the Bank's governance and oversight arrangements to ensure climate-related impacts, risks and opportunities receive appropriate attention at Board and senior management levels. CIMB Thai has strengthened governance arrangements in 2024 through formal enhancements to the Terms of Reference of both the Board of Directors and the Management Committee, underscoring the Bank's commitment to embedding sustainability and climate-related matters into core governance and decision-making processes.

Second, it describes how CIMB Thai evaluates climate-related impacts, risks and opportunities in the context of its strategy, risk management, and business planning. Climate change presents a complex set of risks and opportunities that may influence the Bank's financial position and resilience over time, including physical risks arising from direct climate impacts and transition risks associated with the economy's shift toward lower-carbon development pathways. The Bank also recognizes corresponding opportunities to support clients and capture growth as markets and policy frameworks evolve.

Third, it provides transparency on key methodologies, monitoring and progress mechanisms that support governance oversight, including scenario analysis, supervisory engagement, portfolio surveillance and operational performance tracking. During 2024, the Bank's climate-related risk management processes were characterized by enhancements including strengthened Group-wide procedures, participation in supervisory pilot exercises, and advancement of implementation under the Group Climate Disclosure Framework.

This Climate Report is prepared in line with IFRS-aligned disclosure principles to support clarity and avoid unnecessary duplication. CIMB Thai manages sustainability-related risks and opportunities through integrated governance structures-where risk committee channels address "outside-in" climate risks and sustainability governance structures oversee strategic sustainability initiatives. Accordingly, this report presents the Bank's unified management processes for climate-related risks and opportunities in a manner that reflects how decisions are actually made and overseen within the institution.

How this Report is Organized

To ensure readability and consistency for report users, the Climate Report 2024 is structured to follow the way climate-related matters are governed and managed within the Bank.

The report begins by setting out Governance, describing the roles of the Board, Board committees and senior management in overseeing climate-related impacts, risks and opportunities, as well as how responsibilities and reporting flows are established and maintained. CIMB Thai's governance structure provides comprehensive oversight at multiple levels: the Board of Directors provides ultimate oversight; the Board Risk and Compliance Committee (BRCC) oversees management and compliance functions related to climate-related matters; and the Risk Management Committee (RMC) addresses specific climate-related matters within its focus areas, supporting the BRCC in its oversight role.

The report then addresses Strategy and Risk Management, explaining how CIMB Thai assesses climate-related impacts, risks and opportunities, including the use of scenario analysis and how results inform strategic planning, risk appetite considerations, and monitoring priorities. The Bank applies climate scenario analysis using three updated scenarios spanning an orderly 1.5°C pathway to a high-emissions "business-as-usual" pathway, enabling assessment of how different climate trajectories may influence risk profiles over short, medium and long-term horizons.

Finally, the report addresses Metrics and Targets, focusing on how the Bank monitors progress against climate-related goals, including portfolio and operational monitoring processes, and how information supports oversight and decision-making.

Governance and Accountability: "Tone from the Top" and Embedded Oversight

CIMB Thai's governance framework is designed to ensure that climate-related impacts, risks and opportunities are integrated into strategic planning and decision-making processes, supported by clear accountability. The Board of Directors receives regular updates through comprehensive reports and periodic assessments, including Risk Hotspots and Risk Appetite Metrics, and governance committees are kept informed through structured briefings by the Sustainability Team and senior executives. These reporting mechanisms support informed oversight and ensure climate-related considerations are not treated as peripheral matters but are addressed as part of enterprise-wide governance.

In 2024, CIMB Thai strengthened its governance framework for sustainability and climate-related oversight by formally updating the Terms of Reference for both the Board of Directors and the Management Committee. The Board's Terms of Reference explicitly articulate oversight responsibilities, including review and endorsement of strategies, frameworks and proposals on sustainability and climate change, approval of strategic commitments, and review of external

sustainability reporting and disclosure. The Board's role reflects the Bank's broad capacity as lender, financier, investor, service provider, purchaser, operator, advisor, and employer, emphasizing the Bank's responsibility to manage material environmental, social and governance matters arising from these roles.

The Management Committee's Terms of Reference were similarly enhanced to formalize its operational role in driving sustainability and climate priorities across the organization, including responsibilities spanning sustainability strategy, sustainability and climate risk, and institutionalization of sustainability within organizational culture.

CIMB Thai also embeds climate accountability through leadership mechanisms, including designation of a Board Sustainability Champion to maintain strategic focus at Board level and support alignment with Group sustainability strategy and commitments. In addition, the Bank integrates performance considerations into remuneration structures by linking sustainability key performance indicators to leadership outcomes, reinforcing "tone from the top" and incentives for delivery of sustainability and climate objectives.

Climate-Related Strategy and Risk Management: Forward-Looking Assessment Across Time Horizons

CIMB Thai's climate-related strategy and risk management is built on the understanding that climate impacts and transition dynamics can affect the Bank's prospects over multiple horizons and through multiple transmission channels. The Bank therefore applies scenario analysis and structured risk assessment to support strategic resilience, portfolio awareness and operational preparedness.

CIMB Thai defines its time horizons in a manner that links directly to planning cycles and strategic commitments:

Short term covers the next 1-3 years, aligning with near-term business plans and immediate risk management actions; medium term extends through the end of the decade, aligning with the Group's strategic roadmap to 2030 and interim sustainability targets; and long term encompasses the period beyond 2030 into mid-century, aligning with the Bank's commitment to Net Zero by 2050 and long-range strategic decisions.

To strengthen understanding across these horizons, CIMB Thai utilized climate scenario analysis in 2024 with three updated scenarios reflecting varying climate futures-from a coordinated 1.5°C pathway to a high-emissions pathway-and applied these narratives to assess the nature, probability and potential magnitude of climate-related risks within the Thai economic context. Assessments during 2024 focused on

sectors where transition impacts are most pronounced, including power generation, oil and gas, cement, and real estate.

The Bank's approach combines qualitative and quantitative methodologies. Qualitative assessments apply sector-specific guidance and sustainability due diligence frameworks to evaluate counterparty vulnerability to transition policies and market dynamics. Quantitative assessments incorporate financed emissions baselines and scenario narratives to assess potential impact magnitudes, while supervisory pilot exercises provide additional macro-to-portfolio transmission models for physical risk evaluation. Portfolio-level transition exposure monitoring employs PCAF methodologies for financed emissions tracking, supplemented by Group reporting cadences that elevate emissions portfolio performance and Net Zero progress to governance oversight.

Physical risk considerations are material to Thailand and to CIMB Thai's operational footprint and client base. Climate change is already affecting Thailand through more frequent extreme weather, and these physical risks are expected to intensify over time. The Bank is exposed to direct physical impacts on its own operations and indirect impacts through clients and the loan portfolio. Acute physical risks such as floods and severe storms can disrupt operations, damage facilities and infrastructure, and impair borrowers' ability to generate revenue and service debt, thereby elevating credit risk.

Supervisory Engagement and Methodological Strengthening in 2024

CIMB Thai's climate approach is informed by regulatory expectations and supervisory developments. The Sustainability Team monitors evolving developments from the Bank of Thailand and other relevant regulatory bodies, ensures alignment with applicable requirements, and participates directly in climate-related projects initiated by the Bank of Thailand. The Sustainability Team collaborates with the Risk Division in order to meet regulatory submissions such as the pilot climate stress test initiated by the central bank.

In 2024, the Bank participated in the Bank of Thailand's pilot climate stress test examining physical risk impacts, using baseline and severe flood scenarios with an adverse scenario employing a 2011 flood analogue with enhanced duration and severity parameters. The pilot strengthened the Bank's understanding of physical risk transmission mechanisms into credit parameters and initiated development programs for climate-adjusted stress testing and credit impact models incorporating geographic and industry-level granularity compatible with supervisory methodologies.

These supervisory engagements, together with strengthened Group-wide procedures, supported three notable enhancements to the Bank's climate-related risk management processes during 2024: clearer role definitions, stronger control frameworks and reporting mechanisms; deeper scenario discipline through supervisory pilot exercises; and progress in implementation under the Group Climate Disclosure Framework, which establishes integrated information

architecture across Strategy, Risk Management and Metrics and Targets while beginning to quantify climate-related dimensions into financial performance, financial position, and cashflow tracking.

Capturing Opportunities: Financing Solutions and Strengthening Internal Resilience

CIMB Thai's climate approach is not limited to risk mitigation. The Bank also seeks to capture opportunities arising from the transition to a lower-carbon economy by supporting real economy decarbonization and by strengthening its own operational efficiency and resilience.

Climate-related opportunities are systematically identified, prioritized, and monitored through taxonomy-aligned frameworks and procedural guidelines. During 2024, CIMB Thai successfully issued THB 2.0 billion in subordinated Green Notes qualifying as Tier 2 capital (CIMBT 34OA) under the CIMB Thai Sustainability Bond Framework (2023), aligned with ICMA Green Bond Principles and ASEAN standards through an independent second-party opinion. The framework establishes use-of-proceeds criteria, project evaluation and selection processes, proceeds management protocols and reporting requirements, creating an auditable pathway from opportunity identification to ongoing monitoring and reporting.

At the governance level, the Board considers climate-related opportunities in strategic planning, including identification of sectors and projects that can benefit from the low-carbon transition, and the scaling of sustainable finance activities under the Bank's GSSIPS framework. The Board also considers evolving regulatory frameworks and market credibility mechanisms-such as the Thai Taxonomy-recognizing their role in strengthening confidence and reducing greenwashing risk across the financial system.

Within the Bank's own operations, monitoring encompasses Scope 1 and Scope 2 emissions management, energy consumption optimization, and internal mechanisms that support disciplined emissions reductions through targeted investments such as energy efficiency measures, rooftop solar installations and renewable energy certificates. The integration of operational performance with management planning and committee reporting processes strengthens institutional resilience and supports continuity as climate conditions and transition requirements evolve.

Forward-Looking Statements and Interpretation

This Climate Report includes forward-looking considerations, including scenario analysis. These disclosures are intended to support strategic resilience and risk identification under plausible futures rather than to serve as predictions. Climate science, policy responses, technology pathways and market behaviour evolve continuously, and the Bank expects methodologies, data quality and internal capabilities to mature over time. CIMB Thai will continue to strengthen approaches as supervisory expectations, market standards and institutional capabilities progress.

What this Report Means for Stakeholders

CIMB Thai recognizes that credible climate reporting should be meaningful to different stakeholder groups, each of whom uses climate-related information for distinct purposes.

For **regulators and supervisors**, this report provides transparency on governance, processes and monitoring mechanisms that support prudent management of climate-related impacts, risks and opportunities, and demonstrates how supervisory engagement informs capability development.

For **investors and market participants**, this report provides insight into governance quality, strategic readiness and the robustness of monitoring against climate-related goals, including the institutionalization of metrics and reporting lines that support accountability.

For **customers**, CIMB Thai's climate approach is intended to support responsible financing and transition support-strengthening client resilience while developing credible sustainable finance solutions aligned to frameworks and market expectations.

For **employees**, climate governance and strategic integration support clarity of roles, capability building and shared accountability for execution, reinforced through structured training and performance mechanisms.

For the **wider community and society**, the Bank's approach reflects the role of financial institutions in supporting resilient development-by strengthening risk management discipline while enabling financing pathways that support transition and adaptation outcomes in the real economy.

CIMB Thai views Climate Report 2024 as a practical instrument of governance and management discipline. By strengthening oversight, applying forward-looking scenario analysis, aligning to supervisory developments, enhancing monitoring mechanisms, and capturing opportunities through credible sustainable finance frameworks, the Bank aims to reinforce resilience and support long-term value creation. Climate-related impacts, risks and opportunities will continue to evolve, and CIMB Thai remains committed to continuously strengthening disclosure quality and decision-usefulness in step with standards, supervisory expectations and the Bank's own capability development.

Part 2

"TONE FROM THE TOP" Our Climate-Related Governance

Governance

CIMB Thai's governance structure is designed to provide comprehensive oversight of climate-related impacts, risks, and opportunities. At the apex is the Board of Directors, which provides ultimate oversight and ensures the integration of climate-related impacts, risks, and opportunities into the Bank's strategic planning and decision-making processes. The Board Risk and Compliance Committee (BRCC) oversees the management and compliance functions related to climate-related impacts, risks, and opportunities, ensuring that these considerations are fully integrated into the Bank's enterprise-wide risk management framework and strategic initiatives. The Risk Management Committee (RMC) addresses specific climate-related impacts, risks, and opportunities within its respective areas of focus, supporting the BRCC in its oversight role.

The Bank has clearly assigned responsibilities for climate-related impacts, risks, and opportunities to various management-level positions and committees, ensuring that these matters are addressed at the highest levels of the organization. The Board of Directors has delegated the responsibility for the overall business and day-to-day management of the Bank to the Chief Executive Officer (CEO). The CEO is supported by the Management Committee (MC) and other management sub-committees, which report regularly to the Board Sub-Committees on various governance issues, including matters pertaining to climate-related impacts, risks, and opportunities.

Furthermore, the Sustainability Team, guided by the Head of Sustainability, plays a pivotal role in informing management about climate-related impacts, risks, and opportunities. The team provides regular updates to governance committees on policy developments, climate-related impacts, risks, opportunities, and areas of concern identified through ongoing assessment and monitoring activities. The team also oversees the implementation of the overall sustainability framework and strategy, ensuring alignment with the Bank's strategic objectives and applicable regulatory requirements.

The Board receives regular updates on climate-related impacts, risks, and opportunities through comprehensive reports and assessments. These reports include the Risk Hotspots and Risk Appetite Metrics, which are periodically updated to reflect the latest developments, including climate-related impacts, risks, and opportunities. Additionally, the Board and its committees are informed about climate-related matters during their regular meetings and strategy sessions. This ensures that the Board remains informed about significant environmental trends and emerging climate-related impacts, risks and opportunities, enabling the integration of these insights into the Bank's strategic planning processes.

The Bank employs a structured approach to ensure that the Board is kept abreast of climate-related developments. This includes scheduled briefings by the Head of Sustainability, the Bank's

Sustainability Team, and other senior executives responsible for managing business-related impacts, risks, and opportunities, as well as ensuring compliance with applicable regulations in these areas. The Sustainability Team provides regular updates to the Board on the progress and outcomes of various sustainability initiatives, including the implementation of the Bank's Green, Social, Sustainable Impact Products and Services (GSSIPS) framework, which guides the Bank's sustainable finance activities and contributes to CIMB Group's sustainable finance targets. The team also reports on the Bank's advancement towards its Net Zero operational emissions goals, including progress on scope 1 and 2 carbon emission reductions from the established baseline. By maintaining a regular and systematic flow of information, the Board is well-positioned to make informed decisions that align with the Bank's sustainability objectives and respond effectively to evolving climate-related impacts, risks, and opportunities.

The Bank has designated Mr. Worapong Janyangyuen, Independent Director and Member of the Audit Committee, as the Board Sustainability Champion. In this capacity, Mr. Worapong champions sustainability and climate-related impacts, risks and opportunities at the Board level, ensuring sustained focus and strategic oversight on these critical matters. He also actively participates in Group-level Board meetings that address sustainability matters, facilitating alignment between CIMB Thai's sustainability initiatives and the broader CIMB Group sustainability strategy and commitments.

In addition to internal reports and briefings, CIMB Thai also engages with external experts and stakeholders to gather diverse perspectives on climate-related impacts, risks, and opportunities. For instance, the annual Cooler Earth Conference enables the Board to engage directly with external sustainability and climate experts, including representatives from intergovernmental bodies, local and national government agencies, and academic and non-governmental organizations. By incorporating external insights, the Board can better understand emerging climate-related impacts, risks, and opportunities, and ensure that the Bank's strategies are aligned with global best practices and evolving stakeholder expectations.

Board of Directors

Provides overall strategic direction and oversight for the Bank's sustainability efforts.

Board Risk and Compliance Committee (BRCC)

Oversees the Bank's Risk Management Framework and ensures that sustainability risks are adequately addressed.

Management Committee (MC)

Provides strategic guidance and oversight for the Bank's sustainability initiatives, ensuring that sustainability considerations are integrated into the Bank's while operations, overseeing the implementation of the Bank's sustainability strategy and ensuring that sustainability and climate-related risks are managed effectively.

Risk Management Committee (RMC)

Oversees the integration of sustainability and climate-related risks into the Bank's Risk Management Framework and ensures that these risks are managed appropriately.

Sustainability Team

Responsible for driving and overseeing the implementation of the Bank's overall sustainability strategy and framework, managing sustainability-related risks and opportunities, conducting sustainability due diligence, and providing updates to various governance bodies both in CIMB Thai and CIMB Group on sustainability-related and climate-related matters.

Risk Management

Implements the Bank's Enterprise-Wide Risk Management (EWRM) Framework, provides oversight and performs independent monitoring of business activities with reporting to the Board and management to ensure that the Bank conducts business and operates within the approved risk appetite, and is in compliance with regulations.

Consideration of Climate-Related Issues in Strategic Review

CIMB's Thai Board and its committees actively consider climate-related impacts, risks, and opportunities when reviewing and guiding the Bank's strategy, major plans of action, risk management policies, annual budgets, and business plans. This integration ensures that climate-related impacts, risks, and opportunities are embedded into the Bank's overall strategic framework. The Bank's strategic planning process involves identifying key environmental impacts, risks, and opportunities and incorporating them into business objectives and operational plans.

The Bank aligns its climate-related risk management with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). This alignment includes assessing both physical risks, such as floods and extreme weather events, and transition risks, such as regulatory changes and market shifts, which are also major areas of concern for the Bank of Thailand. The Bank uses forward-looking methods, including internal scenario analysis, to evaluate the potential impacts of climate-related risks on its operations and portfolio. These assessments inform the Bank's business strategy, risk management frameworks, and internal capital adequacy assessments. By aligning with TCFD recommendations, the Bank ensures that it meets international standards for transparency and accountability in climate risk management and disclosure.

The Board's involvement in setting the organization's performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures, ensures that climate-related impacts, risks and opportunities are factored into all significant business decisions. For instance, the BRCC reviews and provides recommendations on policies related to credit, market, liquidity, and operational risks, all of which are directly or indirectly influenced by climate-related factors as advised by the Sustainability Team. This comprehensive approach ensures that climate-related impacts, risks and opportunities are integrated into the Bank's risk appetite and management frameworks.

In addition to risk management, the Board also considers climate-related opportunities in its strategic planning. This includes identifying sectors and projects that can benefit from the transition to a low-carbon economy. For example, the Bank has increased its financing and capital raising activities in renewable energy projects and real-economy decarbonization initiatives, which not only mitigate climate risks but also capitalize on the growing market for sustainable finance. By identifying and investing in such opportunities, the Bank aims to enhance its resilience and profitability in a changing economic landscape. These activities are captured under the Bank's Green, Social, Sustainable Impact Products and Services (GSSIPS) Framework, which guides the Bank's approach to delivering impactful sustainable finance solutions.

The Board also considers the potential impacts of climate-related regulations on the Bank's operations and strategy. This involves staying informed about evolving regulatory frameworks and engaging

with policymakers to advocate for policies that support sustainable finance and the transition to a low-carbon economy. By proactively addressing regulatory risks and opportunities, the Board ensures that CIMB Thai remains compliant with legal requirements and well-positioned to benefit from supportive regulatory initiatives. A notable example is the Thai Taxonomy, which has been implemented throughout the banking landscape in Thailand to reduce greenwashing and build credibility towards green and sustainable financing activities.

Moreover, the Board recognizes the importance of integrating climate-related considerations into the Bank's corporate culture. This involves fostering a culture of sustainability across all levels of the organization, from senior management to frontline employees. By promoting awareness and education on climate-related impacts, risks, and opportunities, the Board ensures that all employees understand their role in achieving the Bank's sustainability goals and are motivated to contribute to these efforts. This cultural integration supports the effective identification, assessment, and management of climate-related impacts, risks, and opportunities across all business functions.

Monitoring and Oversight of Progress Against Climate Goals

CIMB Thai has established robust governance mechanisms for monitoring and overseeing progress against its climate-related goals and targets. The Board and its committees receive sustainability and climate-related agendas more than once every quarter, providing regular oversight of the Bank's progress on managing climate-related impacts, risks and opportunities. The Board reviews comprehensive progress reports, monitors key performance indicators against established targets, and ensures accountability for delivery of climate commitments.

The Board oversees the Bank's progress towards Scope 1 and Scope 2 operational net zero by 2030 and overall net zero emissions by 2050, as well as interim targets for carbon-intensive portfolio segments in key sectors, including coal, cement, power, palm oil, oil and gas, and real estate. Progress against these targets is regularly assessed and benchmarked against industry standards and best practices to ensure the Bank remains on track and continuously improves its performance.

To support effective monitoring, the Bank utilizes technology and data analytics to track carbon emissions, assess climate-related exposures, and measure progress towards targets. These tools provide real-time insights that enable timely reporting to the Board and management, facilitating informed oversight and decision-making. For example, Project Helios incorporates live monitoring capabilities for renewable energy generation, providing transparent data on operational emissions reductions.

The Board ensures transparency and accountability through the Bank's annual Sustainability Report, which provides stakeholders with comprehensive disclosures on progress against climate goals, including carbon footprint data, net-zero target advancement, GSSIPS Framework performance, and the effectiveness of approaches to managing climate-related impacts, risks and opportunities. This regular public reporting mechanism reinforces the Board's accountability and enables stakeholders to assess the Bank's performance against its climate commitments.

Responsibilities and Skills for Climate-Related Oversight

CIMB Thai's governance bodies, including the Board and the Board Risk and Compliance Committee, are responsible for the oversight of sustainability-related impacts, risks, and opportunities, which encompass climate-related matters as a critical component of the Bank's broader environmental, social, and governance framework. The Board has clearly assigned sustainability and climate-related responsibilities across various Board Sub-Committees and management-level positions and committees, ensuring comprehensive oversight and effective management throughout the organization.

The Bank ensures that its governance bodies possess the appropriate skills and competencies to oversee sustainability and climate-related strategies effectively. The Board members participate in regular training and development programs organized by the Bank, regulatory authorities, and external organizations to enhance their understanding of sustainability matters, including climate-related impacts, risks, and opportunities, and to develop strategic perspectives on sustainable growth. Additionally, the Board members and senior managements actively participated in The Cooler Earth 2024 sessions, CIMB Group's flagship sustainability conference series, which provided valuable opportunities to engage directly with global and regional sustainability experts, policymakers, and practitioners on emerging sustainability and climate-related issues. These diverse capacity-building initiatives ensure that governance bodies remain informed of evolving climate science, regulatory developments, market dynamics, and best practices in managing sustainability and climate-related impacts, risks, and opportunities.

The effectiveness of the governance bodies is evaluated through annual performance assessments, which include evaluations of their oversight of the Bank's sustainability-related impacts, risks, and opportunities, including climate matters. These assessments help identify areas for improvement and ensure that governance bodies are equipped with the necessary expertise to address emerging sustainability and climate challenges while capitalizing on transition opportunities.

The Bank's Sustainability Team plays a crucial role in supporting the governance bodies by providing specialized expertise on sustainability and climate-related matters, conducting sustainability due diligence, managing the implementation of sustainability policies and frameworks, and supporting data-driven decision-making processes. This technical support ensures that the Board and its committees have access to relevant information and analysis necessary for informed oversight of sustainability and climate-related impacts, risks and opportunities.

The Bank's remuneration policies integrate performance metrics related to sustainability outcomes, which include climate-related impacts, risks, and opportunities as a core component. The achievement of sustainability key performance indicators directly impacts the bonus pool funding for the Bank's top management, including the President and Chief Executive Officer who is also a Board member. This performance linkage establishes the "tone from the top" whereby leadership across all levels is collectively focused on achieving the Bank's sustainability and climate goals. By linking compensation to the success of sustainability initiatives, the Bank incentivizes its leadership and employees to prioritize sustainability and climate-related objectives and drive positive outcomes that support the transition to a sustainable, low-carbon economy.

In 2024, CIMB Thai strengthened its governance framework for sustainability and climate-related oversight by formally updating the Terms of Reference for both the Board of Directors and the Management Committee. These enhancements underscore the Bank's commitment to embedding sustainability and climate-related impacts, risks, and opportunities into its core governance structure and decision-making processes.

The Board of Directors' Terms of Reference were updated to include a dedicated section on "Sustainability and Climate Change," explicitly articulating the Board's oversight responsibilities. Under the updated Terms of Reference, the Board is mandated to provide oversight and input to Management's implementation, operation, and assurance of policies and standards in alignment with the Bank's sustainability and climate change strategy. The Board is charged with taking a proactive approach to create net positive impact on material environmental, social, and governance matters arising from the Bank's capacity as lender, financier, investor, service provider, purchaser, operator, advisor, business partner, sponsor, corporate donor, and employer. Furthermore, the Board is responsible for reviewing and endorsing strategies, frameworks and proposals by Management on sustainability and climate change in alignment with the overall organizational strategy, approving strategic commitments recommended by Management, and reviewing external sustainability reporting and disclosure, including approving the Bank's annual Sustainability Report.

The Management Committee's Terms of Reference were similarly enhanced to formalize its role in driving the Bank's sustainability and climate agenda at the operational level. The updated Terms of Reference establish the Management Committee's responsibility to formulate and drive the Bank's sustainability vision and strategies in alignment with the overall organizational strategy, and to champion responsible banking and sustainable finance through the institutionalization and embedment of sustainability across all businesses, geographies, and levels of the organization. A comprehensive Appendix on "Sustainability-Activities" was added, detailing specific responsibilities across three key areas: Sustainability Strategy, Sustainability and Climate Risk, and Institutionalization of Sustainability as part of the Bank's organizational culture. These responsibilities include formulating sustainability strategies and commitments, reviewing and endorsing sustainability risk appetite, monitoring sustainability and climate risk profiles, approving sector

guides and targets, providing oversight for sustainable finance instruments, and leading the embedment of sustainability focus across the organization through change management, capability building, and performance management frameworks.

These formal updates to the governance Terms of Reference demonstrate the Bank's commitment to ensuring that sustainability and climate-related impacts, risks and opportunities receive appropriate Board-level and senior management attention, with clearly defined accountabilities and oversight mechanisms that support the effective integration of these considerations into strategic planning, risk management, and business operations.

The Sustainability Team

The Sustainability Team at CIMB Thai, established under the Strategy and Chief Executive Officer's Office, plays an integral role in the Bank's governance and oversight of sustainability and climate-related impacts, risks and opportunities. The team serves as a specialized center of expertise supporting both the Board and Management in implementing the Bank's sustainability and climate change strategy.

The Sustainability Team's primary responsibilities encompass several critical functions. The team drives and oversees the implementation of the overall sustainability strategy and framework across the Bank, ensuring alignment with organizational objectives and regulatory requirements. This includes ensuring the adequacy and effectiveness of sustainability policies, procedures and key controls, and providing regular updates to the Management Committee, the Board Sub-Committees, and other governance bodies on policy-related matters, emerging sustainability and climate-related impacts, risks and opportunities, and areas of concern identified through ongoing assessment and monitoring activities.

The team conducts comprehensive sustainability due diligence, in-depth investigations, and risk assessments for the Bank's business activities, including lending, investment, and procurement processes, to identify and manage potential environmental, social, and governance considerations. Based on these assessments, the team makes recommendations to appropriate authorities for approval and ensures that sustainability and climate-related factors are appropriately integrated into decision-making processes. The Sustainability Team also develops and implements sustainability policies, guidelines, and tools to support the integration of sustainability considerations across the Bank's operations and strategic initiatives.

In terms of regulatory alignment and reporting, the team monitors evolving regulatory developments from the Bank of Thailand and other relevant regulatory bodies, ensures alignment with applicable requirements, and facilitates both internal and external sustainability reporting and disclosure. The team participates directly in climate-related projects initiated by the Bank of Thailand and indirectly in climate-related initiatives led by Bank Negara Malaysia through CIMB Group, including Climate Scenario Analysis and Climate Stress Testing exercises. These engagements ensure that the Bank's

approaches to managing climate-related impacts, risks and opportunities are informed by regulatory expectations and best practices.

The Sustainability Team also plays a crucial role in capacity building and stakeholder engagement. The team provides training and capacity-building programs for employees across all levels and business units to enhance their understanding of sustainability and climate-related impacts, risks and opportunities, and to ensure that personnel are equipped to identify and manage these matters effectively in their respective roles. The team engages with diverse stakeholders, including investors, customers, regulators, industry associations, and civil society organizations, to gather feedback and insights on sustainability and climate-related issues and to ensure that the Bank's policies and practices remain current, effective, and aligned with stakeholder expectations.

Furthermore, the Sustainability Team participates actively in industry initiatives and collaborations to promote sustainable finance and responsible banking practices, contributing to the development of industry standards and best practices. Through participation in platforms such as the Glasgow Financial Alliance for Net Zero and the Net Zero Banking Alliance, the team ensures that the Bank remains at the forefront of sustainable finance developments in Thailand and the broader ASEAN region.

The Sustainability Team and the Risk Teams reports regularly – at least quarterly through various agendas, to the Board of Directors, the Board Risk and Compliance Committee, the Management Committee, and the Risk Management Committee on sustainability and climate-related impacts, risks and opportunities, providing updates on the Bank's sustainability risk profile, progress on sustainability initiatives and commitments, regulatory developments, and any significant issues or emerging matters requiring governance attention. This regular reporting mechanism ensures transparency and enables informed oversight and decision-making at the highest levels of the organization.

Determination of Skills and Competencies for Climate-Related Oversight

CIMB Thai is committed to ensuring appropriate skills and competencies are available through systematic assessment mechanisms integrated across its governance and operational structures.

At the Board level, the Bank is developing a comprehensive competency assessment framework that will be overseen across all Board Sub-Committees within their respective areas of responsibility. The Board Risk and Compliance Committee will assess competencies related to climate risk identification, measurement, and management; the Audit Committee will evaluate capabilities for overseeing sustainability-related internal controls and assurance processes; and the Nomination, Remuneration, and Corporate Governance Committee will assess overall Board composition to ensure adequate representation of sustainability and climate expertise. This multi-faceted approach will utilize a skills matrix methodology to evaluate collective competencies and identify areas requiring strengthening through targeted recruitment or development initiatives.

For management and operational levels, the Bank commits to implementing structured competency assessments that evaluate understanding of climate-related impacts, risks, and opportunities relevant to each role, proficiency in applying sustainability policies and procedures, and capability to integrate climate considerations into decision-making processes. These assessments will be integrated into performance evaluation frameworks and supplemented by targeted skills assessments conducted by the Sustainability Team to identify functional training needs across business units.

The Bank will benchmark its competency requirements against CIMB Group's governance standards, Bank of Thailand's expectations under the Standard Practice on Internalizing Environmental and Climate Change Aspects, and practices from peer financial institutions in Thailand and ASEAN. External sustainability advisors will be engaged periodically to provide independent validation of competency adequacy and to identify emerging skill requirements as climate-related regulations and market dynamics evolve.

The Bank is committed to establishing formal competency development pathways for sustainability and climate specialists, expanding benchmarking exercises to include leading international financial institutions, and implementing enhanced assessment frameworks that incorporate climate-related skill criteria across all organizational levels to support the Bank's sustainable finance activities and climate risk management requirements.

Part 3

WEATHERING RISKS CAPTURING OPPORTUNITIES

Our Climate-Related Strategy and Risk Management

Strategy & Risk Management

Our Climate-Related Strategy and Risk Management

Climate change presents a complex set of risks and opportunities for CIMB Thai that could reasonably be expected to affect our future prospects. We have identified the climate-related risks and opportunities most likely to impact our financial position – i.e., factors that could influence our business as a financial institute, access to capital, or cost of capital over time. These include both physical risks arising from climate change's direct impacts and transition risks associated with the economy's shift toward lower-carbon development models. We also recognize corresponding opportunities to build resilience and create value in the transition to a sustainable economy.

To ensure a robust understanding, we utilized climate scenario analysis with three updated scenarios reflecting varying climate futures, ranging from a globally coordinated 1.5°C pathway to a "business-as-usual" high-emissions pathway. This analysis provides insight into how different climate trajectories might affect CIMB Thai's risk profile over the short, medium, and long term. For example, in an "Orderly" 1.5°C scenario where policies are introduced early, both physical and transition risks remain relatively subdued. By contrast, a "Disorderly" scenario with delayed policy action would heighten transition risks in the mid-term, while a "Hot House World" scenario with insufficient climate action leading to >3°C warming, results in severe physical risks by the long term. These scenarios inform our strategic planning and help us identify which risks and opportunities are most material and require our attention under different conditions.

We define our time horizons as follows:

- short term covers the next 1–3 years (aligning with our near-term business plans and immediate risk management actions),
- medium term extends through the end of this decade (aligning with CIMB Group's Forward30 strategic roadmap to 2030 and our interim sustainability targets), and
- long term encompasses the period beyond 2030 into mid-century (aligning with our commitment to Net Zero by 2050 and long-range strategic decisions).

These definitions are linked to our planning cycles: for instance, the Forward30 programme (part of our Group strategy) sets the course through 2030, while our Net Zero 2050 ambition provides a strategic horizon for long-term transition planning.

The table below summarizes the key climate-related risks and opportunities we have identified, including their classification and the time horizon over which we expect their effects to materialize:

Type	Climate-Related Risk/Opportunity	Expected Time Horizon
Physical Risk 	• Acute physical risks – Extreme weather events (e.g., floods, storms disrupting operations and borrowers)	Short term (already occurring); increasing in Medium to Long term
	• Chronic physical risks – Long-term climate shifts (e.g., rising temperatures, sea levels affecting assets and economy)	Medium to Long term
Transition Risk 	• Policy and regulatory changes (e.g., carbon pricing, climate regulations impacting clients)	Medium term (accelerating); also Long term impacts if policies tighten further
	• Market and technology shifts (e.g., move to renewables, electric vehicles, new technologies stranding high-carbon assets)	Medium to Long term
	• Reputational and stakeholder risks (e.g., changing investor and customer expectations, potential climate litigation)	Short term (present and growing) through Long term
Opportunity 	• Sustainable finance and green business growth (expanding lending/investment in green projects and sectors)	Short term (immediate) through Long term (growing)
	• Client transition advisory and innovation (new products/services to support clients' transition)	Short term through Medium term (expanding market)
	• Operational efficiency & resilience (emissions reductions, climate-proofing facilities)	Short term through Long term (continuous improvement)

Physical Risks: Climate change is already affecting Thailand through more frequent extreme weather, and these physical risks are expected to intensify over time. As a bank, we are exposed to direct physical impacts (on our own operations) and indirect impacts through our clients and loan portfolio.

- *Acute Physical Risks (Extreme Weather Events)*: We have seen how severe floods, heavy rainfall, and storms can disrupt business and communities. Recent extreme weather events – such as prolonged heatwaves and intense flooding in the region – have highlighted the vulnerability of our economy and infrastructure to climate shocks. Such events can damage our branch facilities, third-party data center providers, and other key strategic assets and operations, causing operational downtime. Further business disruptions due to climate hazards can impair the ability of our borrowers to operate, generate revenue, and repay loans, thereby heightening credit risk. Specifically, flooding poses a significant threat in major parts of Thailand. The capital Bangkok, our key market concentration, is subsiding and faces rising flood levels; studies estimate that roughly 40% of Bangkok could risk periodic flooding by 2030 under current trends. These acute physical risks are already present in the short term and are projected to worsen in the *medium to long term* as the climate continues to warm. Under a high-emissions "hot house" scenario with limited global mitigation, the frequency and severity of such disasters would increase substantially by the mid-21st century. We are factoring these possibilities into our credit and operational risk assessments and building our banking resilience.
- *Chronic Physical Risks (Long-Term Climate Shifts)*: Gradual climate changes – *rising average temperatures, sea-level rise, shifting weather patterns* – represent a more slow-burning risk to our business and clients. Over the medium to long term, these chronic changes can degrade asset values and economic conditions. For instance, higher temperatures and altered rainfall patterns can affect agriculture and supply chains in Thailand, potentially weakening the financial performance of clients in sectors like farming, manufacturing, and energy (e.g., increased cooling costs or water shortages). Sea-level rise over coming decades may threaten coastal real estate and infrastructure, including assets held as loan collateral. While these impacts unfold over longer horizons, they directly inform our long-term strategy – we must consider how, by 2040–2050, our portfolio exposure (for example, mortgages or project finance in coastal areas) could be affected. As indicated in our scenario analysis, even an orderly transition scenario cannot fully eliminate physical risks, though aggressive climate action would likely limit the most severe long-term physical damages. We therefore view chronic physical risk as a material consideration primarily in the *long term*, and we are beginning to evaluate the exposure of our locations and clients to factors like flood zones and heat stress, so we can take early action (such as supporting adaptive infrastructure projects through our financing).

Transition Risks: Alongside physical threats, CIMB Thai faces transition risks as the economy and regulatory landscape evolve in response to climate change. Transition risks stem from the policy, technology, market, and reputational shifts required to move toward a low-carbon future. These can impact our borrowers and investments – and thus pose credit and market risks to the Bank – as well as affect our own strategy and reputation. In fact, climate-related risks can manifest through heightened credit risk (our most material financial risk), and also through market, liquidity, compliance, and reputational risk channels. We anticipate that transition risks will become more pronounced over the short to *medium term*, given increasing regulatory momentum and stakeholder expectations, and will continue to evolve into the long term. Key transition risk drivers for our business include:

- Policy and Regulatory Changes: Governments and regulators are increasingly introducing climate-related policies – for example, carbon pricing mechanisms, emissions caps, renewable energy mandates, or enhanced climate disclosure requirements. As Thailand and other countries in our region work to meet their Paris Agreement commitments, we expect policy action to accelerate in the medium term. New regulations can directly affect our clients, especially in carbon-intensive industries: for instance, a carbon tax or stricter environmental regulations on power generation, manufacturing, transportation, or agriculture could raise operating costs or require significant investments for our borrowers to comply. Clients that cannot adapt may face *higher credit risk*, which in turn affects the Bank's risk profile. We are already seeing movement on this front: Bank Negara Malaysia and other regional regulators are rolling out climate risk management guidelines and taxonomies (CIMB has been actively involved in these efforts), and global standards like IFRS S2 are making climate disclosures mandatory, which will cascade to banks and their clients. In a scenario of a delayed policy response followed by abrupt action (a "disorderly" transition), the financial shock to certain sectors could be sharp – for example, if stringent carbon regulations are suddenly imposed in the 2030s after years of inaction, companies with outdated practices could become unviable. We mitigate policy risk by closely monitoring and preparing for upcoming rules and by engaging with our clients on transition plans. Importantly, CIMB Group has pro-actively set internal policies to manage this risk – for instance, we have committed to phase out coal financing by 2040 as part of our long-term transition strategy. We have also established interim climate targets for key sectors (such as energy and palm oil) for 2030, aligning our portfolio with anticipated policy trajectories. These measures not only reduce our exposure to future policy shocks but also signal to our stakeholders that we are preparing for a low-carbon regulatory environment.
- Market and Technology Shifts: The transition to a green economy is driving significant changes in markets and technology. Consumer preferences and market demand are shifting toward low-carbon products and services – for example, there is a growing demand for renewable energy over fossil fuels, electric vehicles (EVs) are increasingly favored over combustion engine vehicles, and energy-efficient buildings are valued more by tenants and buyers. Similarly, technological innovation is accelerating: clean technologies (solar, wind, battery storage, EV technology, green hydrogen, etc.) are becoming more cost-competitive and scalable. These trends pose a risk to companies with carbon-intensive business

models or outdated technologies. If our borrowers do not adapt to the evolving market – for instance, an electricity utility heavily reliant on coal-fired power may lose competitiveness as cheaper renewables gain market share – they could face declining revenues, asset write-downs, or even obsolescence (so-called *stranded assets*). This represents a transition-related credit risk for the Bank, as the likelihood of defaults or impairments may increase for those legacy assets. We expect market and tech-driven transition risks to play out over the *medium to long term*: the pace is already picking up (e.g., the cost of solar energy in ASEAN has dropped sharply, EV adoption is rising), and will intensify toward 2030 and beyond as global and local markets increasingly favor low-carbon solutions. Our scenario analysis considered these dynamics – under an Orderly transition scenario, many of these shifts are gradual but inevitable, whereas under a Too Little, Too Late scenario, they could occur abruptly in later years as the world scrambles to cut emissions. To manage market/technology risk, we are aligning our financing portfolio with future economic trends. CIMB Group's Forward30 strategy includes supporting our clients in high-emitting sectors to pivot to sustainable practices. We have set decarbonization targets for sectors like palm oil, power generation, and cement by 2030, which are designed to guide our clients toward lower emissions business models. For example, we are working with power sector clients on increasing their renewable energy mix, and with palm oil clients on certified sustainable production, in line with science-based targets. By doing so, we not only reduce risk but also help our clients remain competitive in a decarbonizing market.

- Reputational and Stakeholder Risks: As a financial institution, we are acutely aware that stakeholder expectations around climate responsibility are rising. Our investors, customers, employees, regulators, and the public are increasingly scrutinizing banks' environmental conduct and portfolio impacts. Should CIMB Thai be perceived as lagging in climate action – for instance, if we continued financing highly polluting activities with no clear transition plan – we could face reputational damage and erosion of trust. This could manifest in loss of access to customers who may prefer banking with more sustainable institutions, difficulties in talent retention, or higher funding costs if investors shy away from our bonds or equity. In the worst case, it might also invite regulatory or activist pressure. *Legal risk* is an emerging aspect of this: while climate-related litigation is still nascent in our region, globally there's a trend of companies (and even banks) being challenged in court over inadequate climate action or misleading disclosures. We treat these reputational and legal risks seriously. They are already present in the short term – for example, we must maintain transparency and meet disclosure expectations now (hence our early adoption of TCFD and IFRS S2 standards), and we have seen peer institutions face public criticism over climate issues. These risks will continue into the long term, as the public focus on climate only intensifies each year. Our approach to mitigating reputational risk is to *lead by example*: we have made clear climate commitments (Net Zero by 2050, no new coal financing, etc.) and we report our progress openly, which helps us maintain credibility. Moreover, we engage proactively with stakeholders – for instance, through sustainable finance forums and partnerships – to demonstrate our commitment to supporting a low-carbon transition. By upholding

strong climate governance and aligning our business with global climate goals, we aim to turn stakeholder scrutiny into an opportunity (showcasing CIMB as a sustainability leader) rather than a risk. Notably, CIMB's Board and management have integrated climate considerations into our strategy and risk appetite, and climate-related performance is now part of how we evaluate our success. This top-down commitment helps ensure we meet stakeholder expectations and avoid the pitfalls of inaction.

Climate-Related Opportunities: While climate change poses challenges, it also creates significant opportunities for CIMB Thai – both in terms of new business avenues and strengthening the resilience of our existing operations. We view climate-related opportunities across several dimensions: financing the transition (which can drive revenue growth), innovating products and services to meet emerging client needs, and improving our own operational sustainability which can reduce costs and risks. Our strategic climate response is therefore not only defensive but also forward-looking, positioning the Bank to capture value in the shift towards a greener economy. Below, we outline the key opportunities and how we are pursuing them:

- Sustainable Finance & Green Business Growth: The transition to a low-carbon economy in Thailand and ASEAN will require enormous investment – and as a leading bank, CIMB Thai (in partnership with CIMB Group) can be a major financier and facilitator of this change. We see strong demand for sustainable finance spanning areas like renewable energy projects (solar, wind, hydro), green infrastructure (mass transit, energy-efficient buildings, climate-resilient infrastructure), clean technology, and more. Supporting these investments is not only socially and environmentally responsible, it is a core business opportunity. CIMB Group has accordingly made sustainable finance a pillar of our strategy: we recently tripled our sustainable finance target to RM300 billion by 2030. This ambitious goal (approximately USD 65 billion) signals our intent to be a "leading capital conduit for decarbonization" in the region. For CIMB Thai, this means scaling up our green lending and investment portfolios in the coming years. We are actively growing financing for renewable energy developments in Thailand, such as solar farms and wind projects, as well as supporting corporate clients to invest in energy-efficiency upgrades and cleaner technologies. We also see opportunities in underwriting green bonds and sustainability-linked loans, which are financial instruments tied to borrowers' environmental performance. By expanding in these areas, we not only replace high-risk, high-carbon assets with more future-proof assets on our balance sheet, but also generate new revenue streams. The short-term opportunity is already evident – for example, demand for renewable project finance and green loans is rising today – and we expect it to accelerate through the medium and long term as Thailand's climate commitments deepen (such as plans to increase renewable energy in the power mix and improve energy efficiency under national policies). In addition, by being an early mover in sustainable finance, we strengthen our brand and relationships: many corporate and government clients prefer to work with banks that understand their sustainability goals. In summary, aligning our growth with the green transition allows us to advance our purpose of "advancing customers and society" while capturing new growth.

- Client Transition Advisory and Innovation: Many of our clients are themselves navigating the challenges of decarbonization and climate resilience. We recognize a clear opportunity to support our clients' transition – not only with capital, but with expertise and innovative financing solutions. As climate-related disclosure requirements and supply-chain pressures mount for businesses, clients – especially in harder-to-abate sectors or smaller enterprises with limited resources – are seeking guidance on how to manage sustainability risks and meet new standards. CIMB is stepping up to play this advisory role. For instance, we have established dedicated teams (including in our Islamic banking arm) to offer Sustainability Advisory services to corporate clients, helping them devise transition plans, measure emissions, and identify opportunities for cleaner operations. We also are innovating financial products tailored to the transition. One example is sustainability-linked loans, where lending terms are tied to the borrower's achievement of sustainability targets (encouraging clients to improve their performance). Another example is transition financing for high-emission industries – we offer products like "transition loans" that fund a client's move from a brown to green business model (e.g., financing a manufacturing client's upgrade to energy-efficient equipment). We are even exploring nature-based carbon finance solutions, recognizing that helping clients invest in reforestation or carbon credit projects can both offset emissions and open new asset classes. Overall, providing climate-aligned products and advisory services is a win-win: it helps our clients "future-proof" their businesses and seize new opportunities, and it generates new business for the Bank while deepening client relationships. We expect the short and medium term to be a critical period for building out these capabilities – many companies aim to make significant progress on climate goals by 2030, so we are focusing on our innovation in this window. Over the longer term, as sustainability becomes business-as-usual, our early leadership in this area will position us strongly among competitors.
- Operational Efficiency and Resilience: Finally, we see opportunity in strengthening our own operations in response to climate change. By reducing our carbon footprint and improving resource efficiency, we can cut costs and enhance our resilience to physical risks. CIMB Thai is committed to achieving Net Zero emissions in our own operations by 2030 (Scope 1 and 2 emissions), and this drives numerous efficiency initiatives. In the short term, we have been rolling out quick-win measures that lower energy consumption and operational costs: for example, upgrading to energy-efficient LED lighting and smart motion sensors at our branches, optimizing air-conditioning and chiller systems, and even installing electric vehicle (EV) charging stations at selected offices to encourage EV adoption. These measures not only shrink our electricity bills and carbon footprint, but also demonstrate climate leadership to our stakeholders. In the medium term, we are investing in cleaner energy sources for our facilities. We have begun installing solar photovoltaic panels on some of our building rooftops and plan to extend this across more of our branch network. We are also increasingly sourcing renewable electricity – for instance, through the purchase of Renewable Energy Certificates (RECs) and exploring virtual power purchase agreements – to ensure a greater portion of our power comes from green sources. Over time, shifting to renewables insulates us from fossil-fuel energy price volatility and potential future carbon taxes on electricity. For any residual emissions we cannot eliminate by 2030, we are considering high-quality carbon

offsets, with a preference for local, nature-based projects that also enhance community resilience. Additionally, we are bolstering the physical resilience of our critical operations. This includes improving flood defenses and drainage at key sites, reinforcing data center backup systems, and enhancing our crisis response protocols for extreme weather events. By investing in such climate-proofing, we reduce the risk of service disruptions – which is crucial for maintaining customer trust and avoiding financial losses from operational downtime. These efforts are already underway and will continue through the long term as climate impacts evolve. The opportunity here is twofold: cost savings (through efficiency gains and avoided damages) and business continuity advantages (ensuring we can operate reliably when climate stressors hit). Moreover, a strong internal sustainability performance improves our standing with investors and regulators, potentially giving us easier access to green financing or preferential rates. In essence, by treating our own operations as a "laboratory" for sustainable practices, we not only contribute to our Group's net-zero goals but also improve our bottom line and resilience.

In conclusion, climate-related risks and opportunities are now integral to CIMB Thai's strategic planning. Our analysis shows that climate risks – both physical (e.g., extreme weather, long-term climate shifts) and transition-related (e.g., policy changes, market shifts, stakeholder expectations) – could materially affect the Bank's performance and the wellbeing of our customers over the coming years. We have identified which risks are likely to emerge in the short, medium, and long term, and we are addressing them through comprehensive risk management, client engagement, and alignment with CIMB Group's climate policies. At the same time, we are actively leveraging opportunities in sustainability to drive new growth and innovation. This balanced approach – mitigating risks while financing solutions – is core to our strategy. It not only safeguards the Bank's prospects by making us more resilient, but also positions CIMB Thai to thrive in a low-carbon future, in line with our Forward30 goals and our commitment to be a leader in sustainable finance in ASEAN. We believe that by integrating climate considerations into every facet of our business, we will create long-term value for our stakeholders and contribute meaningfully to the collective effort of addressing climate change.

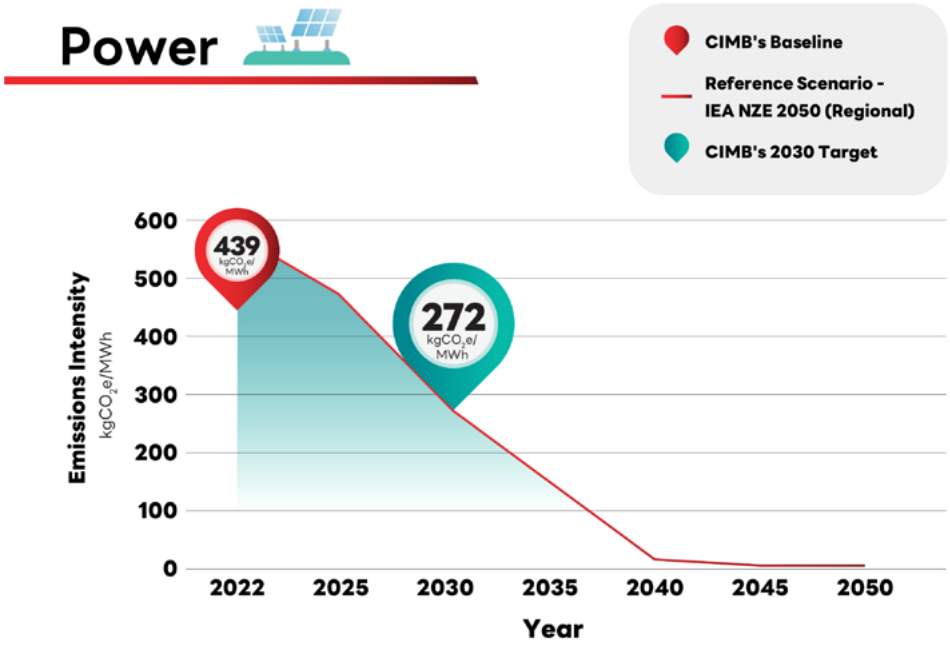
THE NET ZERO 2050 SCENARIO

The "Net Zero 2050" scenario is a stringent climate pathway aiming to cap global warming at 1.5°C by achieving net-zero CO_2 emissions around mid-century. It envisions ambitious transition measures across all sectors – notably a rapid decarbonization of power, electrification of end-uses, and deployment of clean technologies – to drastically cut emissions. Under this scenario, transition risks (from policy, market, and technology shifts) are high, but physical climate risks are minimized relative to less aggressive pathways. In line with the Paris Agreement and global net-zero coalition, Thailand has made bold national commitments. The Thai government pledges to reach carbon neutrality by 2050 and net-zero greenhouse gas emissions by 2065. It has set an interim goal to reduce GHG emissions by 30% by 2030 (up to 40% with international support) and established new institutions and laws – such as a draft Climate Change Act and a national **Thai Taxonomy** – to guide a low-carbon transition. These policies reflect Thailand's determination to align with global climate objectives while balancing energy security and economic growth.

For financial institutions like **CIMB Thai**, the Net Zero 2050 scenario provides a framework to integrate climate considerations into long-term strategy and risk management. This includes describing how climate scenarios (like NGFS Net Zero 2050) inform business planning. Accordingly, CIMB Thai has embraced rigorous scenario analysis using Network for Greening the Financial System (NGFS) scenarios in its inaugural TCFD report. By exploring an orderly Net Zero 2050 pathway, the Bank can assess how policy changes, technological shifts, and market transformations might affect its operating environment, especially in carbon-intensive portfolios. The following sections examine the climate-related IRO for CIMB Thai across five priority sectors – Power, Oil & Gas, Cement, Real Estate, and Manufacturing – within Thailand's context, using the base of latest (2024) data, policies, and metrics.

Group-wide policies and sector-specific financing standards guide CIMB Thai's approach. The Bank has developed a "Path to Net Zero" decarbonization roadmap with interim 2030 targets for sectors that constitute the bulk of financed emissions. These targets are calibrated to balance emissions reduction with ASEAN's development needs and energy security. Crucially, CIMB Thai adopts all CIMB Group sustainable finance policies, meaning **clients engaged in coal mining, power generation, oil & gas, or other high-emitting activities must meet the Group's sustainability requirements** to receive financing. This policy ensures the Bank's lending practices in Thailand are consistent with the net-zero pathway. Oversight by senior management and the Board has been strengthened to integrate climate risk into risk appetite and strategic planning. The Bank routinely assesses climate impacts on its portfolio and discloses key metrics (e.g., financed emissions in five asset classes per PCAF standards) to stakeholders. External assurance (by KPMG) on environmental data further underscores its commitment to transparency and accountability. Overall, CIMB Thai's strategy is evolving into a climate-conscious growth model: restricting high-carbon financing, setting decarbonization targets, and pivoting capital toward sustainable opportunities. The following analysis details how this strategy manifests in each priority sector under a Net Zero 2050 scenario.

Power Generation Sector



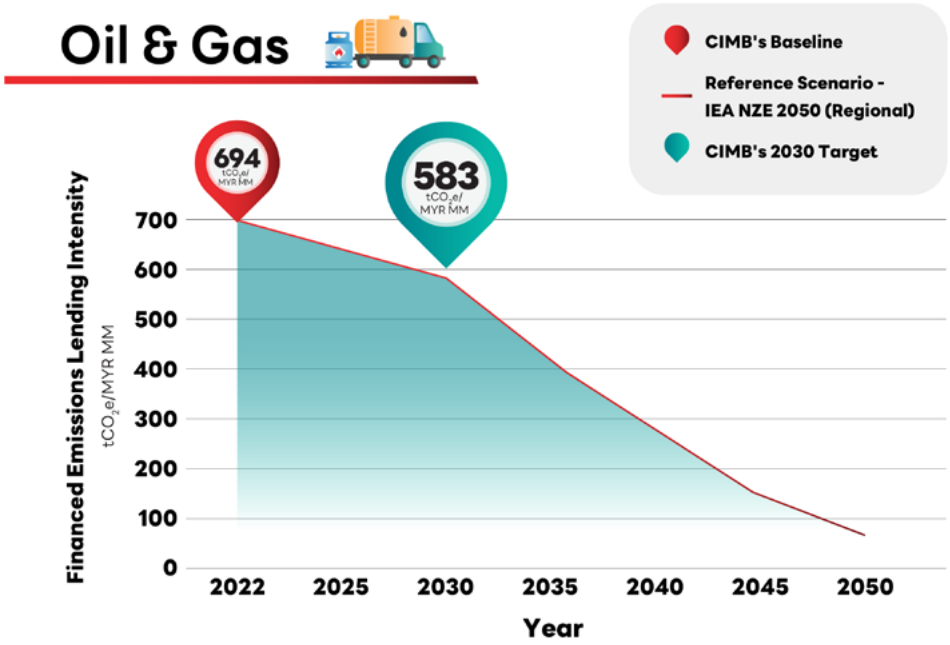
The **power sector** is central to any net-zero scenario, as decarbonising electricity is pivotal for economy-wide emissions cuts. In Thailand, the energy sector (dominated by power generation) contributes roughly 69% of national GHG emissions. The current electricity mix relies heavily on fossil fuels (natural gas accounts for a large share, alongside coal and oil), with renewables and hydro making up a growing but still limited portion. Under a Net Zero 2050 scenario, Thailand's power industry would undergo a profound transformation. Strong climate policies would drive a shift from coal and gas toward low-carbon sources – **renewable electricity output is projected to increase five-fold globally in the next three decades in a 1.5°C pathway.** Complementary investments in grid modernization, energy storage, and possibly carbon capture for remaining thermal plants are envisioned to ensure reliability with high renewable penetration .

For legacy fossil-based generators, the transition poses significant risks. Stricter carbon policies and the falling cost of renewables threaten the economic viability of coal and gas plants. In a Net Zero 2050 world, **fossil-fueled power plants face loss of revenues and potential stranded assets** as demand shifts to clean energy. Thailand has already signaled policy shifts – for example, no new coal power is planned beyond current projects, and the government is considering carbon pricing (an excise carbon tax of THB 200 per tCO_2 on fuel is slated to begin by late 2024). Such measures increase transition risk for high-emitting power assets. Physical climate risks, while somewhat lower under a 1.5°C scenario, are not negligible: extreme heat or droughts can impact power generation (reducing thermal plant efficiency or hydropower output), and severe weather can damage grid infrastructure. However, the overarching risk in this sector is transitional. For **CIMB Thai**, which finances energy projects, there is credit risk that power producers with carbon-intensive portfolios may see declining cash flows or incur compliance costs. The Bank could also face reputational and portfolio risk if it is associated with financing high-polluting plants during a national shift to clean energy.

The decarbonization of Thailand's power sector also creates substantial financing opportunities, aligning with CIMB Thai's strategic pivot to "green" finance. Investment is needed in utility-scale solar and wind farms, distributed generation (e.g., rooftop solar), biomass and biogas, and improving grid resilience. CIMB Thai can expand lending

and bond financing for renewable energy projects, a market poised for growth given policy support. The Bank is already capitalizing on this: it has set aside THB 20 billion in sustainable finance to help high-carbon sectors like power transition towards greener operations. In practice, CIMB Thai imposes strict lending policies – **no financing for new or expanded coal-fired power plants**, and it actively encourages early retirement of existing coal units. By aligning its power sector portfolio with the IEA's Net Zero Emissions 2050 scenario, The Bank aims to reduce the carbon intensity of financed power generation in line with science-based benchmarks by 2030. This entails supporting clients that shift their fuel mix from coal/oil to gas and ultimately to renewables. The Net Zero 2050 scenario's focus on electrification (e.g., electric vehicles, electrified industry and buildings) further implies robust electricity demand, which can be met by clean energy – a business opportunity for lenders to renewable developers. Through green bonds, sustainability-linked loans, and advisory services, CIMB Thai can facilitate the **5x expansion of renewable power** envisioned in an orderly transition, thereby capturing new revenue streams while reducing portfolio emissions risk.

Oil and Gas Sector



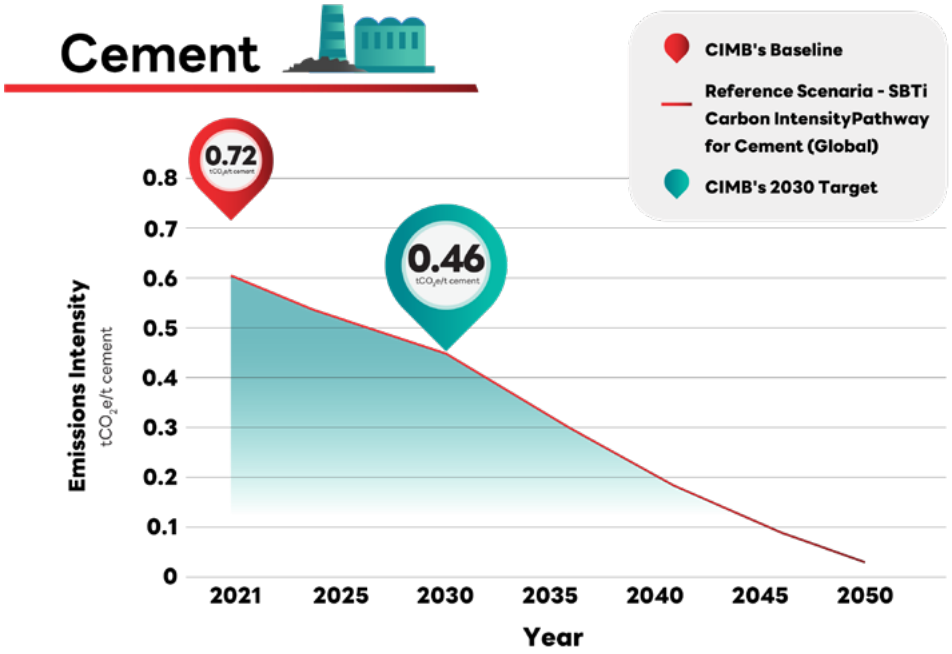
Thailand's **oil and gas sector** includes upstream exploration (both domestic and overseas through companies like PTTEP), refining, and a significant consumption market for transportation and industry. In a global Net Zero 2050 scenario, fossil fuel demand contracts sharply: oil demand is expected to peak and then fall steeply, and natural gas demand would plateau or decline in the long run as cleaner alternatives and efficiency measures take hold. For Thailand, which aims for net-zero in 2065, the O&G sector is challenged to reconcile growing energy needs with decarbonization. The government's push for electrification of transport (e.g., EV targets) and introduction of carbon pricing mechanisms signal a turning point. Notably, Thailand's new carbon tax on fuel (approx. THB 200 per ton CO_2) set to commence

in 2024 will begin to internalize carbon costs in petroleum prices. Over time, stronger policies (such as an emissions trading scheme for energy industries planned by 2029) would further increase transition pressure on oil and gas firms.

Oil & gas companies face high transition risk in a 1.5°C scenario. **Stranded asset risk** looms for upstream projects – reserves may remain unexploited or lose value if demand and prices fall in a decarbonizing world. CIMB Group acknowledges this risk: starting in 2025, it will provide no new project financing for oil field developments approved after 2021, effectively curtailing support for expanding fossil fuel reserves. Downstream, refineries could face margin pressure from declining fossil fuel consumption and competition from biofuels or synthetic fuels. Policy risks are rising: besides carbon taxes, stricter methane regulations and fuel efficiency or EV mandates can erode the oil market. Market sentiment is also shifting – investors and customers increasingly favor low-carbon energy. All these factors threaten the creditworthiness of traditional O&G borrowers. For CIMB Thai, loans to oil refiners, gas power plants, or petrochemical producers carry heightened risk of default or impairment under a net-zero pathway, unless these clients adapt their business models. Additionally, physical risks (while less dominant than transition drivers) still affect this sector: offshore platforms and refineries in Thailand are exposed to extreme weather events (storms and floods), which are expected to intensify somewhat even under constrained warming.

The flip side is the opportunity for the O&G sector to pivot and for banks to finance this transition. Major Thai energy companies are already exploring diversification – for example, investing in renewable power, biofuels, hydrogen, and carbon capture. CIMB Thai can support such efforts through transition finance. The Bank's climate strategy explicitly calls for engaging oil & gas clients on **decarbonization pathways – reducing methane flaring and leakage, adopting Carbon Capture, Utilization and Storage (CCUS), and shifting towards biofuels or hydrogen** solutions . By funding projects like natural gas efficiency improvements, biogas production, or green hydrogen pilots, the Bank helps reduce emissions intensity and opens new business lines. CIMB has set a concrete target *to reduce the financed emissions lending intensity of its oil and gas portfolio by 16% by 2030 (from a 2022 baseline)*. This goal, encompassing Scope 1, 2, and even Scope 3 (downstream combustion) emissions of clients, will drive the Bank to favor clients with credible transition plans. As Thailand's economy continues to require energy, near-term opportunities exist in financing **natural gas as a transition fuel** (with conditions for methane control) and in supporting the development of LNG infrastructure or gas-fired plants that are hydrogen-ready. Over the longer term, growth areas include financing large-scale renewable energy projects by O&G firms (many national oil companies in ASEAN are investing in solar/wind ventures) and funding CCUS installations for hard-to-abate industrial emissions. In summary, while the oil & gas sector's traditional business faces decline under Net Zero 2050, CIMB Thai can mitigate risk by steering capital toward its clients' low-carbon transformation – aligning portfolios with climate targets while capturing new sustainable finance opportunities.

Cement Industry



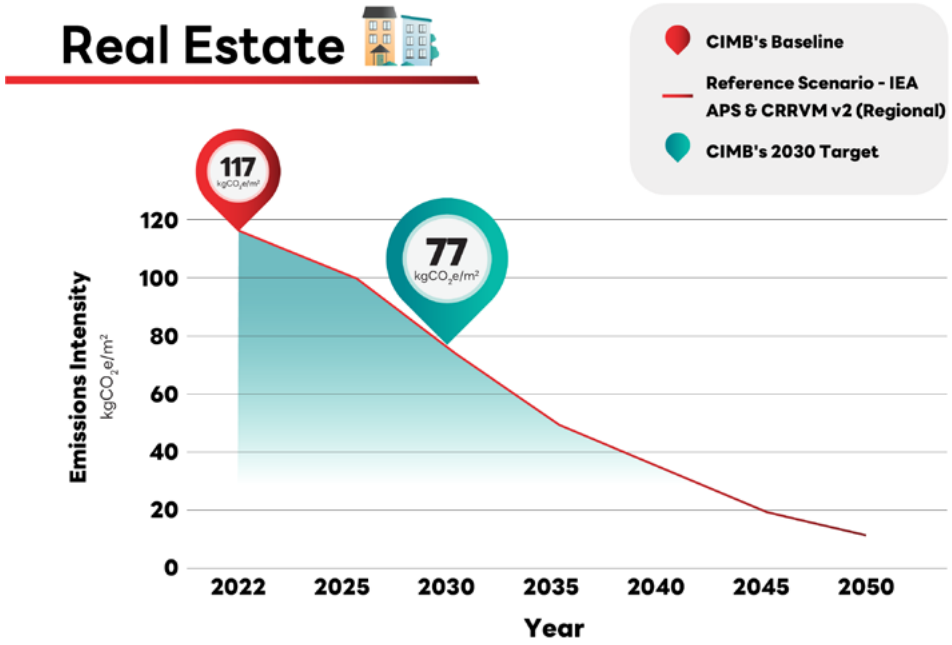
The **cement sector** is among the most carbon-intensive industries due to the calcination process and energy use in clinker production. Thailand's cement manufacturers (e.g., Siam Cement Group and others) supply domestic and regional construction markets, making the sector a key contributor to industrial emissions. In a net-zero scenario, cement production must be overhauled through technological innovation and process changes. The NGFS Net Zero 2050 pathway assumes rapid deployment of emissions reduction measures in "hard-to-abate" sectors like cement, including alternative raw materials, fuel switching, carbon capture, and efficiency improvements. At a national level, Thailand's drive to reduce emissions will likely impose new standards or incentives for lower-carbon construction materials. International policy is also a factor: measures like the EU's **Carbon Border Adjustment Mechanism (CBAM)** will put a carbon price on imported cement, steel, and other materials. While current estimates suggest the immediate impact of CBAM on Thailand's GDP is small (~0.009% of GDP for initial sectors), an expanded scope or higher carbon prices could hit Thai cement exporters, adding transition risk.

Cement companies face **technology risk** and **policy risk** under Net Zero 2050. The cost of cutting CO_2 per ton of cement is high – requiring investment in upgrading kilns, using biomass or waste fuels instead of coal, and eventually implementing carbon capture and storage. If they fail to adapt, cement producers could incur higher carbon costs (through carbon taxes or offset requirements) and lose market share to "green cement" alternatives. For banks, this translates to credit risk if clients cannot manage the capital expenditure for decarbonization or if their profitability declines due to emission penalties. There is also **market risk:** demand for traditional high-carbon cement may fall if builders shift to low-carbon materials or if government green procurement standards mandate sustainable products. Given cement's crucial role in infrastructure, the transition must be managed carefully to avoid supply shocks – implying policy support but also the possibility of more stringent regulations (emissions standards per ton, clinker ratio mandates, etc.) by the 2030s. CIMB Thai's exposure to this sector, while smaller than energy, is still material within its corporate loan book. The Bank recognizes cement as one of the carbon-intensive sectors it must monitor closely.

Transitioning the cement industry opens avenues for innovation and investment. **CIMB Group has set a 2030 target to cut the weighted-average GHG emissions intensity of its financed cement portfolio by about 20% from a 2021 baseline.** To achieve this, the Bank's strategy includes supporting clients in adopting lower-carbon processes. For instance, CIMB encourages **clinker substitution** (using industrial waste or natural pozzolans to reduce clinker content, thereby cutting CO_2 per ton of cement) and the use of alternative fuels (such as biomass, refuse-derived fuel, or waste heat recovery) in cement kilns. These measures can substantially reduce Scope 1 and 2 emissions from cement production. In addition, CIMB promotes investment in emerging solutions like carbon capture, utilization and storage, recognizing that CCUS may become viable post-2030 to mitigate the remaining process emissions. This presents a financing opportunity – e.g., funding R&D or pilot projects for carbon capture at cement plants, or financing retrofits for efficiency.

CIMB Thai can also play a role in **fostering demand for green cement** as an opportunity. The Bank's clients in the real estate and construction sectors are encouraged to procure low-carbon building materials. In fact, CIMB's net-zero whitepaper highlights that influencing real estate developers can help create market pull for sustainably produced cement. This integrated value-chain approach means the Bank could offer incentives (like green loans or discounted rates) to property developers who use certified low-carbon cement, thus indirectly benefiting cement producers that innovate. Additionally, as Thailand and ASEAN invest in climate-resilient infrastructure (e.g., mass transit and green buildings), there will be demand for financing new cement plants or lines that are designed to be carbon-neutral (using renewable energy, electric kilns, etc.). In summary, while the cement sector's high emissions profile poses transition risks (costly retrofits, carbon pricing exposure), it also offers a **growth opportunity in green construction materials.** By steering capital to industry leaders and technologies that align with a net-zero trajectory, CIMB Thai can reduce portfolio risk and support Thailand's infrastructure development in a sustainable manner.

Real Estate Sector



Real estate – encompassing commercial and residential buildings – is a significant source of climate impact and is also exposed to climate risks. Buildings account for a large share of energy consumption and associated emissions, mainly through electricity use for lighting, cooling, and appliances. Globally, operational emissions from buildings contribute about 28% of annual CO_2 emissions. In Thailand, rapid urbanization and economic growth are driving increased demand for floor space and energy use in buildings. A Net Zero 2050 scenario entails a major improvement in building energy efficiency and a shift to clean energy sources for power and heating. Essentially, by 2050 new buildings must be ultra-low-energy or net-zero energy, and most existing buildings would need deep retrofits or clean energy integration. Thailand's policy direction reflects this imperative: building energy codes have been strengthened, green building certifications (like LEED, EDGE) are gaining traction, and the government's carbon neutrality pledge implies greening the construction and property sector. However, a unique challenge is the dependency on the electricity grid's decarbonization – buildings can reduce their own energy use, but fully eliminating emissions also requires the power supply to be renewable. Recognizing this, CIMB's climate target for real estate is tied to a "1.5°C-aligned" emissions trajectory while factoring in **local grid constraints**.

Real estate faces **transition risks** related to energy efficiency standards and **physical risks** from climate change. Transition risk is evident as regulations increasingly mandate greener buildings – for example, minimum energy performance standards, requirements for energy audits, or even carbon reporting for large properties. Buildings that are older or inefficient could see **asset value depreciation** if they become costly to operate or non-compliant with new standards. For a bank with a mortgage and real estate development portfolio, this translates to potential credit risk: properties with poor energy performance might suffer lower occupancy or value, affecting loan-to-value ratios and default probabilities. Meanwhile, **physical climate risks** are particularly salient for real estate in Thailand. The country is highly vulnerable to flooding – the devastating 2011 Thai floods inundated industrial estates and neighborhoods, causing an estimated USD 46 billion in economic losses. Low-lying areas like Bangkok face rising sea level and subsidence, meaning increased flood risk to property assets. Insured losses from flood events have trended upwards, and climate change is expected to **exacerbate extreme**

rainfall and flood frequency in the region. For CIMB Thai, properties held as collateral or financed projects could be directly impacted by such events, leading to credit impairments and insurance gaps. Also, acute risks like stronger tropical storms or chronic risks like heatwaves (raising cooling costs) can affect real estate asset quality and operating costs for tenants.

Despite these challenges, the real estate sector offers one of the most immediate climate opportunity areas for banks, due to clear technologies and practices available for emission reduction. CIMB Thai's strategy is to help clients develop and invest in **green buildings.** This includes financing new projects that meet green building standards (e.g., LEED-certified offices, energy-efficient residential complexes) and funding retrofits of existing buildings to improve insulation, HVAC efficiency, lighting, and appliances. The Bank promotes measures such as **lowering energy use per square meter** and adoption of green building certifications in its lending criteria. In practical terms, CIMB has begun incorporating clauses or incentives in loans for property developers to achieve certain energy efficiency targets or to install renewable energy. For instance, the Bank's sustainability framework suggests preparing buildings to utilize renewable power as it becomes available on the grid (through solar PV installations or green power purchase agreements).

By 2030, CIMB Thai aims to reduce the financed emissions intensity of buildings in line with a 1.5°C pathway. Achieving this will require that **buildings use less energy and that their energy is cleaner.** CIMB's approach acknowledges that while clients can control building design and efficiency (demand-side), the supply-side (electricity grid decarbonization) depends on broader national progress. Thus, the Bank considers its real estate target "net-zero aligned" after adjusting for a realistic grid decarbonization pace, essentially pushing what is within clients' control (maximizing efficiency) and assuming Thailand's power sector will gradually green.

From a business perspective, **green finance for real estate** is a growing market: CIMB Thai can issue green mortgages, sustainability-linked loans for developers (with interest rate discounts if certain climate performance criteria are met), and even green bonds tied to building portfolios. Additionally, climate adaptation finance is an opportunity – funding projects to bolster buildings' resilience (e.g., flood defenses for an industrial park or rainwater drainage upgrades) can mitigate physical risks and create business value. By championing sustainable real estate, the Bank not only reduces risk in its loan book but also aligns with Thailand's urban development goals. The Stock Exchange of Thailand has emphasized climate opportunities such as real estate investment trusts (REITs) focusing on sustainable assets, and CIMB Thai is positioned to tap into these innovative products. In summary, the real estate sector under a Net Zero 2050 scenario compels a shift to energy-efficient, climate-resilient buildings – a shift that CIMB Thai is supporting through its financing strategy, turning climate imperatives into investment opportunities.

Manufacturing and Industrial Sector

The **manufacturing sector** in Thailand is broad, covering industries from automotive and electronics to food processing and heavy industries like steel and petrochemicals. Collectively, manufacturing is a cornerstone of Thailand's economy and exports, but it is also energy-intensive and vulnerable to both transition and physical climate risks. In a 1.5°C net-zero scenario, manufacturing industries worldwide are expected to adopt cleaner energy, improve process efficiency, and innovate in low-carbon technologies. For Thailand, key manufacturing segments will experience specific transitions: for example, the automotive industry is pivoting toward electric vehicles (EVs), and heavy industries like steel or aluminum must explore carbon capture or electrification of heat processes. The Thai government has set ambitious industry-specific goals – notably the **"30@30" policy for electric vehicles,** targeting 30% of all new vehicles produced to be zero-emission by 2030 (approximately 725,000 EVs per year by 2030). This policy indicates a rapid shift in manufacturing priorities, given Thailand's current status as a regional hub for conventional automobile production. Similarly, there are initiatives to promote cleaner production in electronics, incentives for solar PV manufacturing, and discussions around hydrogen fuel in industry.

Transition risks in manufacturing stem from changing technology and market demands. Industries that fail to modernize may lose export markets due to carbon border adjustments or shifting consumer preferences. For instance, **EU's CBAM will initially affect steel, aluminum, and fertilizer exports** – Thai steelmakers that do not reduce CO_2 intensity could face tariffs, eroding competitiveness. While initial impacts are minor, if CBAM expands to more products or if other countries adopt similar measures, a significant portion of Thai manufactured exports could carry carbon cost penalties. This is a credit risk for banks: a client that cannot pass through or absorb these costs may see profit margins shrink. Another transition risk is technological obsolescence – e.g., Thai auto parts suppliers oriented around internal combustion engines might struggle if global automakers increasingly require EV components. Companies will need capital to retool factories for new technologies, and failure to invest could make them unviable. On the physical side, manufacturing is highly exposed to climate impacts. The 2011 floods in Thailand demonstrated how acute physical events can cripple industry: about 70% of the total damages were borne by the manufacturing sector as major industrial estates were inundated . The floods disrupted global supply chains – Thailand, which produced ~25% of the world's hard disk drives, saw factories shut down, causing global HDD prices to double. Auto manufacturing was also hit, impacting companies like Toyota and causing multi-month output losses. This event underscores that **flood and extreme weather risk is a material threat to manufacturing,** leading to business interruption and large financial losses. Climate change heightens that threat through more frequent extreme rainfall and potential sea-level rise affecting coastal industrial zones. For CIMB Thai, loans to manufacturers must therefore be assessed for both transition readiness and physical resilience.

The net-zero transition opens multiple avenues for growth in manufacturing that banks can support. One major opportunity is financing the **EV supply** chain. As Thailand strives for 30% EV production by 2030, automakers and parts manufacturers need to

invest in new production lines (for batteries, electric drivetrains, charging equipment). CIMB Thai can provide green loans or project finance for EV factories, battery assembly plants, and related R&D. The Bank can also back suppliers' transformations – for example, helping an auto parts company pivot to producing EV components or energy-efficient parts. In heavy industry, opportunities lie in funding upgrades to more efficient equipment (e.g., high-efficiency electric arc furnaces for steel), and in renewable energy integration (many factories are installing solar panels on-site to cut energy costs and emissions). There is also growing demand for **sustainable manufacturing certifications** and energy management systems – corporations and large conglomerates alike may seek financing to achieve ISO 50001 energy management or to digitalize their operations for efficiency gains, which the Bank can facilitate.

CIMB Thai's inclusion of "Manufacturing" as a priority likely overlaps with the specific sectors already discussed (cement, steel, etc.), and the Bank monitors carbon-intensive sector exposures across industries like iron & steel, chemicals, and transport manufacturing. By setting risk appetite limits for high-emitting sectors and proactively engaging these clients, the Bank is steering its industrial portfolio toward lower emissions. Notably, CIMB has committed to *phase out financing for thermal coal* – not only in power generation but also mining (50% exposure reduction by 2030, 100% exit by 2040) – which impacts certain manufacturing inputs (steel and cement often rely on coal energy). This reflects a broader shift: financing will favor manufacturers using cleaner energy sources.

Another opportunity is **supply chain finance** tied to sustainability. Many multinational corporations in electronics and consumer goods are pressuring their suppliers in Thailand to decarbonize. CIMB Thai can offer sustainability-linked supply chain financing where Thai manufacturers get better terms if they meet emissions or energy targets. This supports local firms in meeting global buyers' requirements (for instance, reducing the carbon footprint of goods). Additionally, as climate adaptation becomes crucial, there is demand for financing climate-resilient infrastructure at factories – e.g., improved drainage, flood barriers, or relocating facilities to safer areas. Insurers and banks might collaborate to incentivize such adaptation investments (lower insurance premiums and favorable loan rates).

In summary, the manufacturing sector's transition in Thailand is both **a strategic risk and a strategic opportunity** for the Bank. Companies that innovate – by adopting electric technologies, improving efficiency, and hardening their operations against climate impacts – will emerge as winners. CIMB Thai's role, in line with its net-zero commitment, is to identify and support these leaders. By doing so, the Bank not only mitigates potential losses (from stranded assets or climate disasters) but also secures new business in financing the green industrial revolution in Thailand. This approach embodies the **"both/and"** nature of climate strategy: managing risks prudently *and* investing in opportunities for sustainable growth.

Conclusion

CIMB Thai Bank's strategy must transparently address how climate scenarios impact its business and how it is positioning itself in response. The analysis above illustrates CIMB Thai's comprehensive approach in the context of an NGFS Net Zero 2050 scenario – identifying sector-specific impacts, mitigating risks, and seizing opportunities. In **Power, Oil & Gas, Cement, Real Estate, and Manufacturing,** the Bank is aligning its portfolio with Thailand's transition to a low-carbon economy by 2050, in line with national policies and international climate benchmarks. It has set interim targets (to 2030) for emissions intensity reduction in these key sectors and implemented concrete financing restrictions (such as on coal power and new oil field projects) to curtail exposure to unsustainable activities. At the same time, CIMB Thai is actively investing in capacity-building and stakeholder engagement – participating in the development of the Thai Taxonomy and climate stress tests with regulators – to ensure it remains at the forefront of sustainable finance in Thailand.

Crucially, CIMB Thai's strategy emphasizes a **just and orderly transition,** acknowledging Thailand's developing economy context. The Bank seeks to balance decarbonization with inclusive growth, for example by supporting clients' transition plans rather than abrupt divestment, and by considering social impacts (as seen in its engagement with coal clients on diversification and community safeguards).

In conclusion, CIMB Thai Bank's integration of the Net Zero 2050 scenario into its strategic planning illustrates robust climate leadership in Thailand's banking sector. The Bank is turning climate risk into an impetus for innovation: **financing renewable energy instead of coal, electric mobility instead of oil, green buildings instead of inefficient ones, and low-carbon manufacturing processes** – all while fortifying its portfolio against physical climate shocks.

DELAYED TRANSITION SCENARIO

A **Delayed Transition Scenario** refers to a climate-change pathway where meaningful policy action to cut greenhouse gas emissions is postponed until after 2030, necessitating an abrupt, intensive transition thereafter. In the latest NGFS scenario framework (Phase V, 2024), the Delayed Transition assumes *"no additional climate policies are implemented until 2030,"* followed **by strongly coordinated policies** to limit global warming to below 2°C. This delay results in higher cumulative emissions by 2030, greater physical climate impacts in the near term, and a more disorderly economic adjustment post-2030. In effect, the cost of transition is pushed into the future, making the eventual adjustments *sharper and more disruptive.*

For **CIMB Thai**, a leading Thai commercial bank, examining the Delayed Transition Scenario is critical to understanding climate-related **Impacts, Risks, and Opportunities (IRO)** in its portfolio. Using **2024 baseline data** and current policies as a starting point, we analyze how a delayed-but-abrupt global transition (post-2030) might impact these sectors in Thailand, and in turn, how CIMB Thai should strategize its response. The analysis considers both transition risks (regulatory, technological, and market shifts) and physical risks (climate-induced damages) in each sector, as well as potential opportunities (e.g., financing green technology and climate adaptation) that could arise.

Global climate action delay until 2030 implies that in the near term, countries follow their **current policies and Nationally Determined Contributions (NDCs)** with only incremental progress. Thailand, for example, has pledged to cut GHG emissions by 30% below business-as-usual by 2030 in its updated NDC and aims for carbon neutrality by 2050 with net-zero GHG by 2065. In a delayed transition world, these targets might not be tightened or fully realized before 2030, either due to domestic policy inertia or lack of global pressure. Indeed, Thailand's long-term strategy currently relies heavily on future technologies like carbon capture and natural carbon sinks to meet mid-century goals – an approach that carries risk if such technologies don't advance as hoped. Post-2030, however, the scenario assumes a **coordinated global surge in climate policy** (e.g., carbon pricing and clean technology mandates) to still meet the <2°C objective. Such late action would require **steep emissions cuts in a short timeframe**, causing significant adjustment stress for carbon-intensive sectors.

Crucially, the **physical climate impacts** worsen during the delay: with higher emissions in the 2020s, global temperatures and climate extremes continue to intensify up to 2030 and beyond. The NGFS analysis shows that **chronic physical risks** (e.g., heatwaves, droughts, and sea-level rise) become substantially greater in a delayed scenario, leading to larger GDP losses in the long term. For Thailand – ranked among the top 10 countries most affected by climate impacts in recent decades – this means heightened near-term exposure to extreme weather events (e.g., floods, storms, and heat stress) under the delayed transition. At the same time, when the **abrupt transition** kicks in globally around the early 2030s, it could spark macroeconomic volatility: for instance, the NGFS models project a sharp uptick in inflation around

2030 once carbon prices and policy shocks materialize, alongside financial market repricing of climate risks. Such turbulence could propagate to Thailand through trade, investment, and commodity price channels, affecting business profitability and credit conditions.

In the NGFS Phase V framework, the **Delayed Transition** is characterized by "high physical risk and disorderly transition risk." Until 2030, global emissions continue to **grow or plateau**, as only currently implemented policies are in force. Indeed, this scenario assumes **global annual CO_2 emissions do not start decreasing until 2030**. As a consequence, by 2030 the world has emitted a large carbon budget, causing greater warming (the NGFS projects peak warming ~1.7°C) before mitigation efforts ramp up. Starting around 2030, **strong, globally coordinated policies** are suddenly introduced to get the world back on track for <2°C stabilization. This "too little, too late" approach results in a **whipsaw effect: - Physical Climate Impact Spike:** The lack of new mitigation in the 2020s leads to worsening climate hazards. By the early 2030s, Thailand likely experiences more frequent and severe extreme events – for example, the probability of extreme floods affecting millions rises significantly. Bangkok's vulnerability is illustrative: studies warn that if a once-in-10-year coastal flood hits in 2030, as much as **96% of Bangkok's land area could be inundated** given sea-level rise and land subsidence. Such scenarios underscore the escalating physical risk to infrastructure, real estate, and economic activity during the delay. The NGFS notes that chronic physical losses (e.g., reduced agricultural yields, labor productivity, and damages from sea-level rise) **"deepen substantially in the Delayed Transition"** compared to an orderly path. For financial institutions, this means higher near-term credit risks from weather-related disasters and insured losses in the late 2020s.

Abrupt Transition Shock: Once policies eventually kick in post-2030, they must be **extremely stringent** to meet climate goals. This translates into **steep carbon prices and investment shifts** in a compressed timeframe. The NGFS data show global carbon prices in the Delayed Transition scenario rising sharply after 2030, reaching levels on the order of USD 200–300 per ton CO_2 by mid-century – significantly higher than in scenarios with earlier action. For Thailand's industries, such a late surge in carbon costs or equivalent regulations would be jarring: companies would have less time to adapt technologies, potentially facing stranded assets or competitiveness loss almost overnight. The scenario also entails a massive reallocation of capital into low-carbon investments after 2030. Global energy investment in renewables accelerates rapidly in the 2030s in this scenario, meaning countries and firms unprepared for this surge could struggle to mobilize funding in time. Economically, the disorderly transition causes **volatility** – e.g., NGFS models predict inflation and unemployment deviating markedly from baseline in the 2030s as energy prices adjust and certain industries contract . **GDP impacts** in a Delayed Transition are significant: by mid-century, global GDP is lower relative to baseline due to both the accumulated physical damages and the efficiency costs of the rushed transition. For Thailand, an export-oriented economy, the ripple effects of a global abrupt transition (such as shifts in trade patterns, capital flows, and technology) could be profound.

It's worth noting that the **Delayed Transition** scenario is not a "business-as-usual" (which NGFS calls Current Policies leading to ~3°C+ warming) , but rather a worst-case transition pathway towards 2°C. It is sometimes termed a **"too little, too late"** scenario because policy delay necessitates draconian measures later. This is distinct from an *Orderly transition* where actions start now and progress smoothly. In NGFS Phase V, the Delayed Transition yields roughly **1.7°C end-century warming** (with overshoot), implying it still achieves climate goals but at higher cost. The key lesson from NGFS is that "**inaction or delayed transition will generate higher costs in the longer term,"** primarily because physical damages mount and more drastic intervention is required later. From a risk management perspective, this scenario is useful for stress-testing resilience: it imposes *maximum stress* on late-decade physical risk and early-decade 2030s transition shock.

Power Sector

Thailand's power sector is currently **heavily reliant on fossil fuels**, especially natural gas. In 2024, an estimated **68% of Thailand's electricity was generated from natural gas**, with about *17% from coal*, and the remainder from hydro, renewables, and others. Renewable energy (solar and wind) still accounts for a relatively small share – roughly **5–6% of generation in 2024** – although it has been growing. Natural gas has long been over 60% of the mix, making Thailand one of Asia's more gas-dependent power systems. This reliance on gas includes significant LNG imports (about 29% of gas consumed in 2024 was imported LNG), exposing the country to global gas price volatility. The government's **Power Development Plan (PDP)** and Gas Plan 2024 aim to maintain energy security by blending fuels (e.g., a plan to blend 5% hydrogen into gas by 2030) and adding renewables, targeting carbon neutrality in the power sector by mid-century. However, as of 2024, *coal and gas still dominate*, and Thailand has yet to implement mechanisms like carbon pricing in the power industry.

With no additional climate policy pressure until 2030, Thailand's power mix might not change drastically in the short term – new renewables will come online, but gas and coal plants could continue to operate to meet growing demand. Emissions from power may even rise toward 2030 under current policy trends. This could lock in high-carbon assets (e.g., recently built gas plants) right before the global pivot. **After 2030**, in a delayed transition scenario, the power sector would face a **shock from suddenly stringent climate policies.** This could include high carbon prices on fuel combustion, mandates to close or retrofit coal plants, and aggressive renewables targets imposed with urgency. If Thailand participates in the global effort, it may need to retire coal completely and drastically curtail gas usage by the 2030s. Even if domestic policy lags (a "Thai-specific policy failure"), global market forces would still apply pressure: for example, international investors might demand emissions reductions, and technologies like coal CCS would need rapid deployment or else plants risk stranding.

The result is likely a **steep ramp-up of renewables and storage** in the 2030s. The NGFS scenario assumes a major rise in renewable energy investment post-2030; Thailand would have to follow suit. The share of renewables in primary energy could soar late in the decade – a delayed but then exponential growth. BloombergNEF analysis already indicates that solar PV is the cheapest new generation source in Thailand since 2022, and by 2024 new solar was even cheaper than

the operating cost of existing coal and gas plants. This economic fact suggests a huge opportunity: renewables can be rapidly scaled **as a cost-effective way to replace fossil power**. In a delayed transition, the imperative to add solar/wind capacity quickly after 2030 would be very high. BNEF's net-zero scenario for Thailand projects solar and wind could supply **60% of electricity by 2050** (up from <6% in 2024) – implying tens of GW of new capacity that might have to be fast-tracked, especially if delayed action compresses timelines.

However, a sudden transition is **disorderly**: power companies could struggle with the capital and technical capacity to build renewables/storage so quickly if they haven't been ramping up steadily. There is also the **risk of stranded assets**: coal-fired plants that are expected to run for decades might be forced offline early. Gas plants, which Thailand has heavily invested in (including new LNG terminals), might see lower utilization or need expensive retrofits (like hydrogen or CCS co-firing). Thailand's plan to use hydrogen blending (5% by 2030) would likely be overtaken by events – hydrogen may play a role post-2030, but BNEF notes that running gas turbines on green hydrogen, even optimistically, would cost *"more than three times the cost of solar+battery by 2050"*. Thus, a late policy surge would likely prioritize direct renewable deployment over experimental fuel blends.

As a lender, CIMB Thai's exposure to the power sector (e.g., project finance for power plants or utilities) will be directly affected. In the near term (to 2030), physical climate risks could threaten power infrastructure – for instance, more intense heat waves can strain the grid and droughts can reduce hydroelectric output. Post-2030 transition risks dominate: **policy risk** (sudden change in regulations), **market risk** (cheaper renewables outcompeting fossil generators), and **technology risk** (if firms cannot adapt quickly). Credit risk could rise for any clients operating coal power plants or inefficient gas plants, as these assets may incur carbon costs or even face early closure. The Bank should evaluate which power sector borrowers have high emissions profiles and whether they have credible transition plans. Conversely, the scenario creates a **major opportunity in financing renewables**. There will be huge investment needs for solar farms, wind projects, energy storage, grid upgrades, and even gas-to-clean transitions. CIMB Thai can capitalize by scaling up green finance products: e.g., green bonds or sustainability-linked loans to renewable energy developers. The Bank could also support existing clients (such as state utilities or independent power producers) in raising capital to pivot – for example, funding the repurposing of gas plant sites for battery storage or providing advisory on accessing climate finance. Given that solar is already cost-competitive, removing financial barriers will be key. Additionally, there may be **policy-driven opportunities** such as feed-in tariffs or government-backed renewable programs after 2030; a proactive bank can position itself to participate early.

In strategy terms, CIMB Thai would discuss how under a delayed transition scenario it plans to **manage down exposures to high-carbon power** (perhaps setting targets to limit coal financing, as some Thai banks have started to do) and **scale up exposure to clean energy.** The Bank's resilience will depend on aligning its portfolio with the eventual transition. If the Bank is caught with a heavy fossil-heavy loan book in 2030, it could face higher defaults or impairments. Therefore, setting a glide path now (e.g., no new coal financing, supporting gas only if consistent with net-zero, etc.) can mitigate long-term risk.

Oil & Gas Sector

Current State (2024): Thailand's oil & gas sector encompasses upstream production (natural gas fields in the Gulf of Thailand and some oil production), a major national oil company (PTT Public Co., Ltd. and its exploration arm PTTEP), refinery and petrochemical operations, and fuel distribution. Thailand is a net **importer** of crude oil and increasingly of natural gas (via LNG), though it produces a substantial portion of its gas domestically. The sector is a cornerstone of the Thai economy and energy system – PTT is one of the country's largest corporates. In terms of climate strategy, PTT Group has announced ambitions for **net-zero emissions by 2050** (with carbon neutrality by 2040), aligning with the national goal. PTTEP is exploring carbon capture and storage (CCS), including a pilot CCS project at the Arthit offshore gas field. This project aims to sequester CO_2 and generate carbon credits (possibly via partnerships like Japan's Joint Crediting Mechanism). However, heavy reliance on unproven mitigation like CCS is noted as a risk: analysts caution that Thailand's strategy depends on CCS and sinks that are *"uncertain and not yet economically viable,"* urging more immediate emissions cuts instead. As of 2024, domestic policy has not imposed hard caps or carbon taxes on oil and gas, but companies anticipate future constraints.

Until 2030, the oil & gas sector might actually **benefit from slow climate action** – demand for petroleum fuels and gas in Thailand and globally could remain robust in the 2020s. Investment could continue in gas infrastructure (e.g., LNG import terminals and new petrochemical plants) under the assumption that demand will grow. If Thailand's policies remain lax pre-2030, we might see expanded gas-fired power (as noted above) and continued gasoline/diesel vehicle use dominating transport, which supports oil refiners. However, this **status quo is upended after 2030** in the delayed scenario. Globally, to stay below 2°C, oil and gas consumption would need to plummet in the 2030s. The NGFS scenario implies a peak and then rapid decline in fossil fuel demand post-2030, with a commensurate impact on prices. Specifically, if policies worldwide enforce emissions reductions, this could include **high carbon taxes on fossil fuel combustion**, aggressive efficiency and electrification measures (cutting oil use in transport via EVs), and possibly **supply-side restrictions** (e.g., cancelling new oil field developments). Oil price projections in a 2°C transition often show a drop in the long term; indeed NGFS data suggests oil prices would likely be lower in the 2040s than today due to demand collapse.

For Thailand's oil & gas sector, the immediate risk is **asset stranding**: investments in long-lived fossil projects might not recoup costs if usage declines early. For example, a new LNG regasification terminal or gas pipeline built in 2025 expecting 30-year utilization might by 2035 face under-use as power generation shifts to renewables. Upstream gas fields could be left with reserves undeveloped if emissions caps or international market changes reduce gas demand. Oil refineries might see declining domestic fuel consumption as electrification of transport accelerates (especially if after 2030 there are strict rules on vehicle efficiency or EV mandates). Additionally, **international policy shifts** like carbon border adjustments could impact downstream products – e.g., petrochemical exports might face tariffs if produced with high emissions. A *delayed domestic policy response* (Thai-specific failure

to adapt) would compound the issue: if Thai companies do not anticipate the post-2030 regime, they may over-invest in fossils and then scramble when global financial markets start penalizing high-carbon assets (through higher financing costs or divestment).

On the flip side, the oil & gas sector might attempt to adapt by pivoting to **"energy company"** models – increasing investments in renewables, biofuels, hydrogen, or CCS to stay relevant in a low-carbon world. PTT and affiliates have indeed begun investing in EV charging, renewable power, and exploring hydrogen. In a sudden transition scenario, those diversification efforts would need to dramatically scale up. CCS, which PTT hopes to use for mitigating emissions, might become *necessary* for any continued fossil fuel usage, but also could face scrutiny – the climate action analysis warns of double-counting and uncertain efficacy of PTT's CCS pilot if used for offset credits. Essentially, by 2030, if policies are strict, every ton of CO_2 from oil and gas may need to be paid for or abated. That means either carbon prices eat into profit margins or companies must invest heavily in carbon capture. Given the limited success globally with CCS so far, banking on it is risky.

The Bank's exposure to oil & gas could include loans to upstream projects (e.g., PTTEP's exploration activities), financing for refineries or petrochemical plants, trade finance for fuel distribution, etc. Under a delayed transition, **transition risk post-2030 is severe for this sector:**

- **Credit Risk:** Companies may see revenues fall and asset values impaired. If global oil/gas prices fall or carbon costs rise, firms might default on loans or have reduced debt service capacity. Smaller players or service companies could be most vulnerable. Even the large, state-backed PTT might face profitability challenges if it has to write down reserves or invest billions in abatement technology.
- **Market Risk**: Equity and bond values for fossil-focused companies could drop sharply around 2030 as investors reassess their future (this is often called a "climate Minsky moment"). CIMB Thai's investment portfolio (if any) or collateral values could be hit.
- **Reputation Risk:** Continued financing of fossil fuel expansion could invite stakeholder criticism, especially once the transition is in full swing. Many global banks have already limited financing to coal and are scrutinizing oil & gas; Thai banks are starting to follow suit on coal. A delayed transition scenario would make such positions non-negotiable by the 2030s.

On the other hand, **opportunities** emerge in facilitating the sector's transition. CIMB Thai can support oil & gas clients in diversifying:

- **Green Investment:** Providing capital for renewable energy projects initiated by oil & gas companies (many are investing in solar farms, wind, or battery technology as new business lines).
- **Decarbonization Technologies:** Financing the deployment of emissions control such as CCS, green hydrogen production, biofuel refineries, etc., if these become viable. For instance, if PTTEP pursues a large-scale CCS hub in Thailand's depleted gas fields, the Bank could play a role in syndicating loans or bonds for it.
- **Working Capital for Transition:** As oil & gas companies reorganize (potentially downsizing some operations and scaling others), they will need financial services for restructuring. Moreover, as

the economy shifts, **new sectors** might grow from the old: e.g., petrochemical companies moving into bioplastics or recycling, gas companies repurposing infrastructure for hydrogen or ammonia transport. These niches present financing opportunities.

In its strategy planning, CIMB Thai is planning to calculate how it is **aligning its portfolio with a net-zero pathway** despite the delay. This might involve setting exposure limits to support only clients with credible transition plans. It would also involve stress-testing the sector: e.g. modeling what happens to obligors if oil prices collapse to certain levels or if carbon costs reach USD 100+/ton. Climate-related risk in this sector affects the bank's strategy – perhaps leading to a decision to **gradually shift financing toward cleaner energy** and **engage with clients** on transition strategies so that by the time the policy shock comes, both the Bank and its clients are prepared.

Cement Industry

Cement manufacturing is one of the **hard-to-abate industrial sectors,** given its process emissions (CO_2 released from limestone calcination) and high heat requirements (usually met by coal or heavy fuels). In Thailand, cement is a key industry supplying domestic construction and export within ASEAN. Major Thai cement producers (e.g., Siam Cement Group, SCG) are among the largest companies in the country. The sector contributes significantly to GHG emissions – globally, cement accounts for ~7–8% of CO_2 emissions, and in Thailand a notable share of industrial emissions comes from cement and concrete production. Thai cement companies have started to adopt measures such as energy efficiency, using some alternative fuels (biomass or refuse-derived fuel), and exploring new clinker substitutes to lower the clinker-to-cement ratio. Importantly, Thailand's Long-Term Strategy (LT-LEDS) explicitly notes that **carbon capture will be required to achieve up to 90% emission reduction in the cement industry**. This underscores that without breakthroughs (e.g., novel cements or CCS), deep decarbonization of cement is very challenging. As of 2024, there is no carbon pricing mechanism on cement in Thailand, but there is growing pressure (internationally) for cleaner construction materials. The EU's Carbon Border Adjustment Mechanism (CBAM), for instance, includes cement – so Thai cement exporters will soon need to account for carbon costs when exporting to regions like Europe.

Pre-2030, the cement sector in Thailand might proceed mostly with business-as-usual, incrementally improving efficiency but not radically cutting emissions. Demand for cement could actually rise with development projects (infrastructure and housing). Without strong policy, there is little incentive to invest in expensive abatement like CCS in the 2020s. However, come the post-2030 abrupt transition, cement companies will face a **harsh new reality:**

- **Emissions Costs:** If a high carbon price is imposed (either domestically or through trade measures), the cost of producing conventional Portland cement will spike. Cement makers would be forced to either absorb these costs (hurting profitability) or pass them on (making construction more expensive, which could reduce demand). The NGFS Delayed Transition's high carbon price world could render high-emission cement noncompetitive unless abatement is in place.
- **Technological Pressure:** To survive in a <2°C policy environment, cement firms must deploy **carbon capture, utilization, or storage (CCUS)** or switch to alternative chemistries/fuels at an

unprecedented scale. The Thai LT-LEDS's reliance on CCS for cement (90% reduction) would need to become reality perhaps in the 2030s instead of much later. This is a tall order – it implies retrofitting existing cement kilns with capture technology and finding storage for CO_2, or overhauling the production process entirely. If Thai policy fails to facilitate this (no support for R&D or infrastructure), companies might face shutting down plants that cannot be cleaned enough.

- **Market Shifts:** Construction companies and real estate developers (the customers of cement) may begin demanding **low-carbon materials** if regulations require reporting the embedded carbon in buildings or if green building standards strengthen. In a delayed scenario, such shifts might come suddenly around the 2030s. Thai cement might also see **competition from imported low-carbon cement** or substitutes if local industry lags – e.g., if other countries by then commercialize greener cements or use more wood/alternative materials in construction.

For Thailand specifically, a worst-case "policy failure" domestically would be if the government does not set a clear decarbonization pathway for industry, leaving Thai cement at a disadvantage when global rules tighten. For example, if by 2035 international contractors prefer EPD-certified low-CO_2 cement and Thai producers haven't invested, they could lose export markets or even domestic market share to foreign suppliers that meet standards.

The cement sector touches the Bank's portfolio likely through corporate loans or bonds to industrial conglomerates (like SCG) and possibly project financing for plant upgrades or new factories. Under a delayed transition:

- **Transition Risk:** Cement companies could become financially strained due to compliance costs. If a company has to invest in CCS or buy emissions allowances, its debt profile might worsen. There's also risk of asset write-downs – older inefficient plants might become obsolete. The Bank should assess which clients have high emission intensity and whether they have plans (or capital) to upgrade. Firms heavily indebted could be unable to afford the necessary retrofits, leading to default risk.
- **Physical Risk:** While the cement industry's primary concern is transition risk, physical climate change can also impact it (e.g., extreme heat can disrupt construction activity reducing cement demand; water scarcity can affect concrete mixing, etc.). In Thailand's case, flooding could damage production facilities or supply chains (cement is bulky to transport; floods can cut off distribution networks).
- **Regulatory Risk:** If Thailand eventually imposes an emissions trading scheme or tax for industry in the 2030s, that policy could directly affect firms' cash flows. Banks need to anticipate such regulatory moves.

On the opportunity side, CIMB Thai can support the **decarbonization investments** for this sector:

- Financing CCS infrastructure: if and when it materializes (e.g., providing loans for a carbon capture unit at a cement plant, or for a CO_2 transport pipeline/storage site in Thailand's geology). Such projects might be financed via green or transition bonds, especially if they significantly cut emissions.
- Supporting innovation: if a client is developing a new low-carbon cement (like using waste materials, new chemical processes, or high-blend cements), the Bank can fund pilot projects or expansion of these lines. This might qualify under sustainable finance since it contributes to emissions reduction.
- Mergers or consolidations: the pressure of transition might cause industry consolidation (smaller inefficient players selling to larger ones). The Bank could advise or finance M&A that leads to a more resilient industry structure, ensuring key companies have the scale to invest in climate technologies.

From a strategy perspective, CIMB Thai would note how scenario analysis of a delayed transition flags **cement as a high-risk sector**, and thus the Bank is actively managing that risk. This could mean it is **engaging with cement producers on their transition plans**, perhaps only financing those with clear net-zero roadmaps. The Bank might also set an expectation that by a certain date, clients in this sector should meet intensity targets (for example, CO_2 per ton of cement). Additionally, the Bank could highlight any deals or products it has to incentivize low-carbon manufacturing – for instance, sustainability-linked loans where cement companies get interest rate benefits for meeting emissions or energy targets. All these actions demonstrate that the Bank's strategy is adapting to anticipated climate-related shifts in heavy industry.

Real Estate Sector

Current State (2024): Thailand's real estate sector includes residential housing, commercial real estate (offices and retail), and industrial property. A large portion of the population and economic activity is concentrated in climate-vulnerable areas, notably the Bangkok Metropolitan Region. Real estate is both a user of cement/steel (hence tied to construction emissions) and directly exposed to **physical climate risks**, e.g., like flooding, heat, and storms. In recent years, awareness of sustainable building has grown: some developers pursue green building certifications, and there is recognition of the need for better flood defenses and drainage in urban planning. However, building codes and urban planning enforcement in Thailand have historically not fully accounted for future climate conditions. Bangkok, for example, faces chronic flooding issues exacerbated by **land subsidence and inadequate drainage infrastructure**. The city has sunk over 1 meter in some areas due to groundwater extraction, and green space per capita is among the lowest in Asia, intensifying flood runoff issues. Nationwide, Thailand's National Adaptation Plan recognizes the country's high vulnerability – Thailand was ranked the 9th most affected country by climate impacts from 2000–2019. Insured losses from flooding (such as the 2011 mega-flood which caused ~USD 45 billion damage) highlight what's at stake for property and infrastructure.

Impacts under a Delayed Transition: The real estate sector is **two-pronged** in climate impact: (1) physical risks to properties from climate change, and (2) transition risks related to building standards and energy efficiency. In a delayed action scenario:

- **Physical Risks Escalate:** Through the 2020s, minimal additional climate mitigation means global warming continues unabated, so local climate hazards worsen. By 2030, Thailand is likely experiencing more intense rainfall events and higher sea levels. For real estate, this means **more frequent flooding of properties**, coastal erosion impacting coastal developments, and greater heat stress (making buildings less comfortable or requiring more cooling energy). Bangkok's situation is dire – projections show that **by 2050, parts of Bangkok could be underwater** due to sea-level rise if no further protections are in place. Even nearer term, extreme floods that might have been once-in-a-decade could become almost yearly events. A delayed transition scenario unfortunately implies limited adaptation in the short term as well (since often adaptation planning goes hand-in-hand with climate policy). Thus, many properties could suffer damage or loss of value. Real estate collateral on the Bank's books (e.g., mortgaged homes and commercial property loans) could devalue if certain zones become uninsurable or uninhabitable. For instance, if a major flood in 2030 submerges 96% of Bangkok's land for a time, one could imagine property prices plunging and mortgage defaults rising in affected areas.
- **Abrupt Transition Effects:** Post-2030, as policies kick in globally, there may be new **building regulations and retrofitting requirements.** For example, energy efficiency standards might be tightened significantly to cut emissions from buildings (e.g., mandatory insulation, efficient air conditioning systems, possibly requirements for solar panels on rooftops, etc.). Buildings that don't meet standards could face penalties or require costly upgrades. If Thailand lags in implementing these, it might be

forced to catch up quickly due to international norms or pressure (especially for commercial real estate attracting foreign tenants or investors who have net-zero commitments). Another transition aspect: the value of properties might start factoring in climate resilience – meaning climate-resistant, energy-efficient buildings command a premium, while poorly built ones become harder to sell or lease. This *value differentiation* could happen abruptly if, say, insurers or banks stop lending on high-risk properties. In a delayed scenario, one can imagine a moment where financial institutions collectively reassess real estate risk (for instance, regulators might require banks to increase capital for mortgages in flood zones, suddenly making those loans costlier).

If Thai policymakers fail to address these issues, the country could see **disorderly adaptation** – sudden reactive measures after disasters, rather than planned adaptation. That is costly. However, the global transition might also spur some positive changes: for example, international aid or climate finance for resilient infrastructure might flow in after 2030 when the world scrambles to limit damage. That could mean large projects to build flood barriers, upgrade drainage (e.g., mega-tunnels in Bangkok), relocate or elevate critical infrastructure, etc., which could influence real estate development patterns (e.g., safer zones vs. redlined zones).

Real estate is often a significant portion of a bank's portfolio through mortgages, corporate real estate loans, and investments. In this scenario:

- **Credit Risk from Physical Damage:** If properties are hit by floods or other disasters, borrowers may default (especially if insurance doesn't fully cover losses). The 2011 Thai floods saw many industrial estates inundated; if repeated more frequently, banks could see spikes in non-performing loans in affected areas. Even absent a direct disaster, chronic issues like frequent minor floods or heatwaves can reduce economic activity (tenants leave and tourism drops), indirectly affecting real estate income and thus loan service. CIMB Thai will need to refine its credit risk models to incorporate climate data – e.g., mapping loan exposure to floodplains and high-risk zones.
- **Asset Value and Collateral Risk:** The Bank's collateral (property) could lose value. If climate change makes an area undesirable (say, parts of coastal Thailand facing erosion or inner Bangkok without improved drainage), the underlying collateral for loans shrinks, leaving the Bank under-secured. This risk may materialize quickly if, for instance, new hazard maps are drawn post-2030 and large swathes are reclassified as uninhabitable or no-build zones.
- **Regulatory and Liability Risk:** There's a chance of legal risk – for example, if developers or banks are found liable for financing projects in known high-risk areas without proper disclosure. Also, building codes could force upgrades that cost building owners money; some might default instead of paying for retrofits (similar to how some buildings in other countries faced issues with sudden safety retrofit mandates).

Opportunities, however, are also present:

- **Green Buildings and Retrofit Finance:** The push for energy-efficient, climate-resilient buildings means a huge market for retrofitting old buildings (installing better cooling systems, floodproofing, etc.) and for new green construction. CIMB Thai can develop loan products or lines of credit specifically for green retrofits – for example, offering lower interest mortgages for certified green homes or financing to commercial building owners to put in flood defenses and earn resilience certifications. Such financing could be labeled as green lending, appealing to sustainability-focused investors.
- **Adaptation Infrastructure Projects:** Large-scale projects like seawalls, levees, improved drainage, urban greening initiatives, and coastal restoration will be needed to protect real estate in Thailand. These projects often require significant capital – an opportunity for banks in project finance or arranging bonds (perhaps municipal or sovereign green bonds) directed at climate adaptation. By financing these, CIMB Thai not only earns business but also indirectly protects its existing portfolio by reducing future physical risk.
- **Data and Advisory Services:** The complexity of climate risk in real estate may spawn demand for analytics and advisory. The Bank could partner with tech firms to provide clients (especially corporate developers) with assessments of climate risks and how to mitigate them, strengthening client relationships and opening cross-selling of financing for those mitigation measures.

Manufacturing Sector

Manufacturing is a broad sector in Thailand, including automotive assembly, electronics, food processing, textiles, plastics, and more. It constitutes a significant portion of Thailand's GDP and export earnings. Notably, Thailand is a major automotive production hub (often called the "Detroit of Asia") – assembling both for domestic sales and export to ASEAN and beyond. As of mid-2020s, the automotive industry is in the early stages of transitioning from internal combustion engine (ICE) vehicles to electric vehicles (EVs). The Thai government has set goals for EVs: for instance, targeting **30% of domestic vehicle production to be zero-emission vehicles by 2030**. To attract investment, Thailand offers incentives for EV manufacturers, and this has led to a wave of **Chinese EV companies** (e.g., BYD, Great Wall, and the mentioned Chery's Omoda) setting up factories in the Eastern Economic Corridor. This is a significant development – Thailand is positioning itself in the EV supply chain, which is crucial given the global shift. Outside of automotive, other manufacturing subsectors are also exposed to climate considerations: e.g., electronics may face supply chain pressure to reduce carbon footprints; agriculture-based manufacturing (food and rubber) is sensitive to climate/weather; heavy manufacturing like steel or chemicals faces similar issues as cement in terms of emissions and possibly future carbon costs.

In the run-up to 2030, if global climate action is sluggish, Thailand's manufacturing might not feel huge pressure to decarbonize immediately. Companies will likely continue with efficiency improvements mainly for cost reasons, but not major transformations. However, come the post-2030 climate policy surge, **manufacturing sectors will be impacted via multiple channels:**

- **Market Demand and Trade:** Suddenly stringent climate action globally means consumers, especially in developed markets, shift demand toward low-carbon products. There could be import restrictions or consumer preferences penalizing products with heavy carbon footprints. For instance, if by late-2030s international markets only want EVs, any country not producing EVs will lose auto export markets. For Thailand, a delayed scenario ironically might give a bit more time for ICE vehicle production in the 2020s, but then after 2030 the drop-off in ICE demand could be very rapid. If Thai auto suppliers are not prepared (e.g., still heavily geared to engine parts rather than EV components), they could face a crisis. The case is already apparent: Chinese EV makers entering Thailand have *"unsettled Thailand's auto industry,"* challenging Japanese incumbents and leaving many local parts suppliers (especially those for engines/drivetrains) at risk. A disorderly transition intensifies such disruption – it compresses what might have been a 20-year gradual EV uptake into perhaps a single decade or less. Similarly, other manufacturing exports like electronics might face carbon border adjustments or buyer mandates. If, say, a Thai electronics factory uses coal-based power, its products might be less welcome in markets with carbon tariffs.
- **Policy/Regulation:** Domestically or regionally, late but sudden policy could include things like energy efficiency standards for factories, fuel switching requirements, or even cap-and-trade systems for industry. Sectors like manufacturing of plastics or chemicals might get hit by regulations on hydrocarbon use or required adoption of recycled feedstocks (to cut petrochemical emissions). If Thailand's own policy is delayed, companies might suddenly be forced to comply with a lot at once in the 2030s – which is costlier than a planned phased approach.
- **Technological Disruption:** Some manufacturing industries might experience tech shifts. For example, steel production globally is moving toward green steel (using hydrogen instead of coal). If that becomes mainstream after 2030, any steel manufacturing in Thailand that's still using blast furnaces will be outdated. Similarly, any companies making components for fossil-fuel-based tech (e.g., ICE vehicles, conventional power equipment) may find their products obsolete virtually overnight.

Manufacturing is a diverse portfolio for a bank, so specific risks vary, but generally:

- **Credit/Transition Risk:** Companies that cannot adapt to new market conditions may see revenue decline and could default on loans. For example, an auto parts maker specializing in diesel engines might see orders dry up as EVs take over, putting it out of business unless it retools. The Fair Finance Thailand study highlighted that **local Thai suppliers integrated into old fossil-fuel car supply chains face existential risks** amid the EV transition. A delayed global transition could make that even more abrupt. CIMB Thai should identify which manufacturing clients are in high-emission or potentially stranded sub-sectors (auto parts for ICE, traditional petrochemicals, etc.) and evaluate their transition readiness.
- **Supply Chain and Physical Risks:** Many Thai manufacturers are part of global supply chains. Physical climate impacts can disrupt supply chains (floods closing factories or ports, for instance the 2011 floods severely impacted automotive and electronics supply chains globally). If extreme events become more frequent by 2030, manufacturers may face more downtime and costs, again affecting their financial health and ability to repay loans.

- **Opportunity in Green Manufacturing:** There will be winners in the transition. Thailand aiming to be an EV manufacturing powerhouse is a strategic opportunity. Already, EV component exports are growing. If global policy gets serious after 2030, demand for EVs, batteries, renewable energy equipment, energy-efficient appliances, etc., will surge. Thai firms that produce these or attract foreign investment to produce them locally will need financing to expand factories, R&D, and workforce training. CIMB Thai can position to finance the expansion of, say, a battery gigafactory or an EV supply chain firm. Government incentives (e.g., the BRI cooperation with China on EVs) indicate supported areas where financing is lower risk due to policy backing.
- **Transition Finance:** Besides direct green industries, many traditional manufacturers will need to retool to cut emissions (e.g., installing solar roofs on factories, switching to electric boilers, improving energy efficiency). The Bank can extend "transition loans" to help mid-sized industrial companies invest in these improvements. This not only reduces clients' operating costs (energy savings) but also lowers their carbon footprint, making them more competitive in a carbon-conscious market.

Implications for CIMB Thai Strategy and Disclosure

The analysis of each sector under the Delayed Transition Scenario reveals a common theme: **risks are heightened by late action, but opportunities emerge for those prepared to pivot quickly**. For CIMB Thai, this scenario serves as a stress-test of strategic resilience. Key implications and actions include:

From this scenario, CIMB Thai can identify its most vulnerable exposures – likely in fossil energy, heavy industry, and properties in hazard zones. The Bank should enhance due diligence for new credit in these areas (e.g., requiring climate risk analysis for large loans in flood-prone real estate projects, or seeking clients' transition plans in carbon-intensive industries before lending). It may also lead the Bank to set sectoral limits or perform portfolio rebalancing over time (for instance, reducing the percentage of lending to coal power to near zero well before 2030, and capping oil & gas exposure growth).

A delayed transition world is one where **companies that have planned ahead will survive the shock**, whereas those that ignored climate until 2030 will struggle. CIMB Thai can use its influence and relationships to encourage and assist clients in high-risk sectors to prepare now. This might involve advisory services about sustainability, connecting clients to experts or partnerships (e.g., energy service companies for efficiency, or climate consultants). The Bank's disclosures could mention initiatives such as working with power companies on renewable energy investments or helping finance feasibility studies for industrial CCS. By doing so, the Bank not only mitigates its own risk but also seizes an opportunity to deepen client relationships and generate new business aligned with sustainability.

Given that a Thai-specific policy failure exacerbates risk, the Bank has a stake in advocating for clear climate policies (such as carbon pricing, disclosure mandates, and transition incentives) to avoid the disorderly scenario. By aligning with global frameworks and supporting Thai climate policy development, CIMB Thai contributes to a smoother transition locally, which ultimately protects its interests.

This forward-looking stance can be touched upon in strategy discussions to show that the Bank is not just reactive but also helping shape a more sustainable financial landscape.

In conclusion, the Delayed Transition Scenario presents a cautionary outlook: **delay in climate action leads to more severe disruption later,** impacting every sector of the Thai economy that CIMB Thai serves. However, through diligent risk management and seizing of transition opportunities, the Bank can navigate this scenario. The exercise of analyzing this scenario yields tangible strategic adjustments – from tightening lending standards for high-risk sectors to scaling up green financing and engaging clients on climate strategies.The overall message to convey is one of prudent preparation: CIMB Thai is aligning its business with a net-zero economy trajectory now, thereby reducing vulnerability to a late and sudden policy shock, and positioning to thrive by funding the solutions and adaptations that a changing climate will demand.

NDCs SCENARIO

The NDCs scenario is a **"moderate climate action"** pathway reflecting the pledges countries have made under the Paris Agreement (their NDCs), even if not all are fully backed by policies. In this scenario, global greenhouse gas emissions peak and then decline gradually, leading to an approximate **2.3–2.6°C increase in global average temperature by 2100**. In other words, the world falls short of the Paris Agreement's well-below 2°C goal, but also avoids the worst "no-policy" outcomes. A modest carbon price is introduced, starting around **$4 per ton CO_2 in 2025 and rising to roughly $74/ton by 2050** in this scenario. This gradual increase in carbon costs signals a transition that is significant but not as abrupt or stringent as a Net Zero 2050 pathway (which would see carbon prices near $938 by 2050). Transition risks under the NDCs scenario are therefore medium – higher than a business-as-usual world, but lower than in more aggressive climate scenarios. Physical risks still materialize over time (with ~2.5°C of warming implying more frequent extreme weather and chronic climate impacts), but they are less catastrophic than in a **"Current Policies"** scenario that could exceed 3°C by 2100.

Thailand's national climate commitments are broadly aligned with the NDCs scenario assumptions. The country submitted an updated NDC in 2022, pledging a **30% reduction in GHG emissions by 2030** compared to business-as-usual, expandable to **40% with international support**. This target translates to cutting emissions by roughly 185–222 $MtCO_2e$ in 2030 from a projected BAU of ~555 $MtCO_2e$. Thailand has also announced a **long-term goal of achieving carbon neutrality by 2050 and net-zero GHG emissions by 2065**, indicating its intent to eventually follow a decarbonization trajectory beyond 2030. These goals, while ambitious, are factored into the NDCs scenario as they represent the "conditional NDC" pledges of the country. Indeed, the NGFS defines the NDCs scenario as including all such pledged targets globally.

Critically, the Thai government is beginning to implement policies to fulfill these commitments. Early 2024 saw public hearings for a draft **Climate Change Act**, which is expected to introduce:

1. Mandatory GHG emissions accounting and annual reporting for large emitters,
2. A phased-in **carbon tax** on fossil fuels (initially set at **THB 200 per tCO_2e** on certain fuel products originally planned for 2025), and
3. An **Emissions Trading System (ETS)** with pilot phases by 2025–2026 leading to full implementation thereafter. While the initial carbon price via the excise tax is symbolic and kept low to raise awareness, these policy tools are expected to **ramp up after 2025**, increasing operating costs for carbon-intensive businesses over time.

Under the NDCs scenario the direction of travel in Thailand is clear: **moderate but steady decarbonization**. We next assess how this transition pathway, combined with the attendant physical impacts of ~2°C+ warming, will affect the key sectors of Power, Oil & Gas, Cement, Real Estate, and Manufacturing in Thailand. Each sector's current status and outlook under the NDCs scenario is examined, along with the implications for CIMB Thai in terms of climate-related risks and opportunities.

Power Sector

Thailand's power sector is presently dominated by fossil fuels, especially natural gas. In 2024, natural gas-fired plants accounted for roughly **66–68% of electricity generation**, with coal contributing about **17–20%**. The remainder comes from hydro, renewables, and imports. Thailand is a net importer of energy for power; for instance, it imports electricity (mainly hydropower from Laos) and liquefied natural gas (LNG) to supplement declining domestic gas reserves. As of 2024, the country had already begun shifting towards cleaner sources – no new coal plants are planned beyond those already under construction, and renewables (primarily solar and some wind) are slated to expand rapidly.

In an NDC-aligned future, Thailand's power sector undergoes a substantial **but orderly transition.** The government's latest Power Development Plan (PDP 2024–2037) reflects this, calling for **43 GW of additional capacity by 2037** with **no new coal** and a heavy emphasis on renewables. Notably, **solar PV accounts for about 24 GW** – over half of all new capacity planned – complemented by **5 GW of onshore wind** and small additions of biomass, hydro, and even **0.6 GW of nuclear (SMRs)** by 2037. About 6 GW of new high-efficiency gas-fired capacity is included as well (to ensure grid stability and energy security). By 2037, this investment would transform Thailand's generation mix: a much larger share of electricity from solar and wind, a reduced role for coal (existing coal plants will remain but with no expansion), and sustained reliance on natural gas albeit increasingly via imported LNG. The **carbon pricing introduced under the NDC scenario (starting at $4 in 2025 to ~$74/tCO$_2$ in 2050)** will gradually increase fuel costs for remaining fossil-based generation. However, because policies are phased in predictably, the transition risk is **moderate** for the power sector: companies have time to adapt their generation portfolios. The NDC scenario's orderly transition also limits abrupt asset stranding – for example, coal power might run at declining load factors rather than face sudden closures, as more renewables come online and a carbon price makes coal less competitive over decades.

For power producers and their financiers, the NDCs scenario still entails **transition risks**. A key risk is **stranded asset or profitability risk for high-carbon generators**. Coal-fired plants, in particular, face rising carbon costs and merit-order disadvantages as cheaper renewables enter the grid. By 2050, paying ~$74 per ton for carbon emissions would significantly erode coal plant margins, incentivizing early retrofits, fuel switching or retirements. Natural gas generators also face medium-term risk: increasing LNG import dependence exposes Thailand to global gas price volatility, and eventual carbon costs and potential future methane regulations could pressure gas assets, although gas enjoys a cleaner reputation and some policy support as a "transition fuel. "Another risk is **policy/regulatory risk**: if Thailand strengthens its targets (for instance aiming for net-zero power sector before 2065), the transition could accelerate (similar to a stricter Net Zero 2050 scenario), which would increase transition risk markedly. Physical risks are relatively less immediate for power generation under a 2.3°C scenario, but they are not negligible – for instance, **extreme heat and droughts** could reduce thermal plant efficiency or hydroelectric output, and **intense storms or floods** could damage transmission

infrastructure. These physical impacts tend to manifest later in the century; still, by mid-century Thailand could see higher frequency of grid disruptions due to climate events if adaptation measures lag.

For **CIMB Thai**, which may have loans or bonds issued to power utilities and project finance exposures, these risks translate into **credit risk and portfolio alignment challenges.** The Bank must monitor clients like electricity generators for **climate transition plans**. Highly carbon-intensive power projects (e.g., a coal plant operator) could experience higher default risk or asset impairment in the long run, affecting the Bank's credit portfolio. There is also market risk insofar as investors and stakeholders are increasingly averse to financing unabated fossil fuel power – which could impact the Bank's ability to syndicate loans or refinance such exposures.

The transition of the power sector also presents **significant opportunities** for CIMB Thai. Under the NDC scenario, Thailand's power industry requires massive investment in **renewable energy, energy storage, and grid modernization**. The PDP 2024 outlines investments in solar farms, floating solar projects, wind parks, biomass, and battery storage (e.g., **26 GWh of battery storage and 20 GWh of pumped hydro by 2037 to support renewables**). Financing these capital projects is a growth area for banks – **green project finance** for solar and wind farms, loans for grid infrastructure upgrades, and possibly funding new technologies like **smart grids and small modular reactors.** In addition, the government's exploration of **hydrogen blending (5% H_2 by 2030 in gas plants) and carbon capture pilots** opens opportunities: CIMB Thai can finance pilot projects or R&D in clean technologies. By reallocating capital toward these low-carbon opportunities, the Bank not only supports national climate goals but also builds a portfolio of **sustainable assets** that may benefit from favorable regulatory treatment and strong long-term demand. The NDC scenario's moderate transition gives CIMB Thai a chance to gradually **pivot its power sector exposure** – phasing down lending to emissions-intensive generation while scaling up support for renewable energy developers.

Oil & Gas Sector

Thailand's oil & gas sector encompasses upstream production (mostly natural gas from the Gulf of Thailand and some condensate/oil), as well as downstream refining and distribution (Thailand has several refineries and a robust fuel retail network). Natural gas plays a vital role in domestic energy, not only fueling two-thirds of power generation, but also serving industry and city gas demands. However, domestic gas fields are maturing and output is declining, making Thailand increasingly reliant on **LNG imports**. In 2024, Thailand imported about **10 million tons of LNG (roughly 29% of its gas supply)** – a share set to grow as indigenous gas depletes. The country has **two LNG import terminals (21.5 mtpa capacity)** and plans to build a third, indicating long-term gas import dependence. On the oil side, Thailand is a net importer of crude oil but has a significant refining sector that produces fuels for domestic use (transportation and industry) and some exports. Transport fuel demand has grown over the years, though government policies are now promoting electric vehicles (EVs) and biofuels. Major state-linked companies like PTT Public Company Limited dominate the O&G sector and have started to diversify into petrochemicals, power, and renewables.

In the NDCs scenario, fossil fuel use in Thailand is expected to **plateau and then gradually decline** post-2030, in line with the moderate climate commitments. Oil demand growth for transport is curbed by aggressive EV adoption and efficiency improvements: Thailand's **"30@30" EV policy** aims for at least **30% of new domestic vehicle production to be zero-emission by 2030**. This implies a rapid scale-up of EV manufacturing and supporting infrastructure, leading to a slower growth or peak in gasoline/diesel demand in the 2030s. Likewise, natural gas remains important through the 2020s (as coal is phased down and gas is seen as a bridging fuel), but by the 2040s, gas consumption would level off or decline as renewables, storage, and possibly nuclear take larger shares of power generation. The NDC scenario does not assume a sudden stop to oil & gas – rather, **incremental decline**. For example, **gas has policy support in near-term:** Thailand's Gas Plan 2024 not only expands LNG capacity (a new terminal by 2027) but also includes **hydrogen blending** (targeting 5% H_2 by volume in gas-fired plants by 2030) as a transitional decarbonization measure. This indicates the sector's strategy to reduce emissions intensity rather than volume in the medium term. Additionally, Thailand's energy planners are exploring **Carbon Capture and Storage (CCS):** the government's CCS roadmap lists some **13 pilot CCS projects in oil and gas, power, and cement industries between 2023 and 2037**. Under NDC conditions, these pilots, if successful, could be scaled up post-2030 to mitigate emissions from remaining fossil fuel use.

The oil & gas sector faces **multiple transition risks** in the NDCs scenario. One is **market risk from declining demand:** policies like EV promotion, fuel economy standards, and renewable energy targets will gradually erode domestic demand for fossil fuels. For instance, if EVs and electrified transport significantly penetrate by 2040, domestic oil refiners could see declining fuel sales, leading to overcapacity or stranding of refining assets. Natural gas demand in power may also stagnate or fall after 2030 as renewables undercut gas on cost and carbon pricing starts biting. A second risk is **policy and carbon cost**: the introduction of a carbon tax on fuel products (starting at THB 200/tCO_2) is a precursor to broader carbon pricing that will directly hit O&G products . Over the long term, if the ETS covers large emitters, refineries, gas processing plants,

and even large fuel consumers could face compliance costs. Although the initial tax is low, it will likely ratchet up to meaningful levels, making fossil-based energy more expensive and less competitive. O&G companies could also face **litigation and reputational risks** as global and local stakeholders push for accountability in climate action – a trend already visible globally that may intensify in Thailand's context as climate awareness grows. Furthermore, **technology risk** is present: breakthroughs in batteries, hydrogen, or alternative fuels could accelerate the displacement of oil & gas beyond what the base NDC scenario assumes, stranding investments (for example, if green hydrogen becomes viable faster, natural gas for industrial feedstock or power might be phased out earlier). Physical climate risk also affects this sector: offshore oil and gas installations are vulnerable to more intense storms and rising sea levels, while refineries and depots on the coast could be impacted by flooding or storm surge in a warmer world. However, under ~2.5°C warming, these physical risks, though present, are more chronic and manageable compared to a 3°C+ scenario – companies can plan adaptation measures (e.g., infrastructure hardening).

For CIMB Thai, which might finance petroleum refining, petrochemical plants, gas-fired power plants, or LNG infrastructure, these risks manifest as **credit and investment risks**. Clients in O&G could see **diminished long-term viability**, affecting their ability to repay loans or raise capital. For example, if a refinery's margins shrink due to falling fuel demand and carbon taxes, it may become less creditworthy. Additionally, assets like LNG terminals are capital-intensive with decades-long payback periods; there is a risk that such assets run below capacity if gas demand declines faster than expected in the 2040s, creating **stranded infrastructure risk**.

The Bank must also be cognizant of **regulatory risk**: there is growing pressure from investors and regulators (including the Bank of Thailand and the SEC) for banks to measure and manage financed emissions. O&G loans contribute heavily to financed Scope 3 emissions – under an NDC scenario, CIMB Thai will need to ensure these financed emissions start trending down, or it could face scrutiny for misalignment with Thailand's climate goals.

Despite headwinds, the oil & gas sector's evolution opens **transition opportunities** that CIMB Thai can capitalize on. One major opportunity is **financing diversification and low-carbon investments by O&G companies**. Key Thai O&G players are already reinventing themselves – for instance, PTT and its affiliates have been investing in EV charging networks, electric vehicle manufacturing (through partnerships for EV production and battery plants), renewable energy projects, and even hydrogen research. As the sector pivots to become "energy" companies rather than pure oil & gas, they will require significant financing for new ventures (solar farms, wind projects, biofuel facilities, EV value-chain investments, etc.). CIMB Thai can grow its corporate lending and investment banking fees by supporting these diversification strategies (e.g., arranging green bonds or sustainability-linked loans for an oil company's renewable energy expansion). Another opportunity is in the **natural gas value chain decarbonization:** financing improvements like LNG import efficiency, gas pipeline upgrades to reduce methane leakage, and **hydrogen blending infrastructure** (electrolyzers to produce green hydrogen to mix into gas). The Bank can also back **CCS projects** – for example, providing funding for the pilot CCS installations in depleted gas fields or industrial sites. If successful,

CCS could enable continued use of some fossil infrastructure in a low-carbon way, and CIMB Thai's early support could position it as a leader in climate-tech financing.

There is also an **opportunity in downstream transitions:** as consumers switch to EVs, the nature of infrastructure needs changes. Financing will shift from oil refineries and petrol stations to **EV manufacturing plants, battery production facilities, and electric charging infrastructure.** Thailand is aiming to be an ASEAN EV manufacturing hub (with government incentives attracting automakers for EV assembly). The Bank can provide project finance or working capital to companies building EV factories or installing fast-charging networks. Finally, an often overlooked opportunity is **advisory and carbon trading services** – as an ETS and carbon tax regime comes into play, O&G firms will need financial services around carbon credit purchasing, hedging carbon costs, and managing transition risk. CIMB Thai can develop expertise in carbon markets and offer those services to corporate clients, generating fee income. In summary, while the NDC scenario implies a slow decline of traditional oil & gas, it also provides a runway for the sector to transition. CIMB Thai's strategy is towards **supporting the managed transition** – e.g., by shifting its lending from pure fossil fuel projects towards mixed or green projects, and setting "financed emissions" targets to align with the country's carbon neutrality by 2050.

Cement Industry

The cement industry is one of Thailand's major industrial emitters and a key component of the construction sector. Cement production inherently generates large CO_2 emissions – roughly half from the **chemical decomposition of limestone (calcination)** and the rest from burning fuel (often coal or petcoke in kilns) to achieve the high temperatures required. Thailand is a significant cement producer (home to large firms like Siam Cement Group and Siam City Cement) and much of the output feeds domestic construction demand, with some exports within the region. According to Thailand's emissions profile, **cement manufacturing is the second-largest single industrial emissions source in the country (after rice cultivation in agriculture)**. This underscores the challenge: cement is a *hard-to-abate* sector, meaning emissions reductions are technologically difficult and costly with current methods. As of 2024, the sector has begun exploring mitigation options – for instance, using biomass or industrial waste as alternative kiln fuels, improving energy efficiency of processes, substituting clinker with lower-carbon additives, and pilot testing carbon capture. The government's climate plans (the **Industrial Processes and Product Use – IPPU – sector plan**) identify cement as a priority for emissions cuts by 2030 through such measures .

In an NDC-consistent future, Thailand's cement industry is under pressure to reduce its carbon intensity but is not forced into abrupt contraction. The scenario's moderate carbon pricing (ramping up to ~$74/t by 2050) provides a **strong economic signal to decarbonize**, though not as punishing as in a Net Zero scenario (which would impose several hundred USD per ton). This means by 2030, cement companies need to achieve incremental emissions cuts (to contribute to the

30% NDC target), likely through **energy efficiency and partial fuel switching**, and by 2040–2050 they will need to deploy **advanced mitigation like CCS or innovative cements** to further curb emissions. Indeed, the **Long-Term Strategy (LT-LEDS)** for Thailand foresees carbon capture technologies becoming substantial in cement by 2040. In practice, we can expect that under the NDC scenario: traditional Portland cement production gradually gives way to **blended cements** (with fly ash, slag, etc., reducing clinker content), waste fuels (e.g., agricultural residues or refuse-derived fuel) replace a chunk of coal use, and new plants are built "CCS-ready." The Thai government's support for this is visible – as noted, **13 pilot CCS projects by 2037** include some in cement plants, aiming to test capturing CO_2 from flue gases. Additionally, if an emissions trading system launches, large cement plants will almost certainly be **regulated entities** due to their high emissions. The NDC scenario assumes pledged policies are implemented, so we can expect **carbon cost compliance** to become part of doing business for cement firms in the late 2020s and beyond.

The cement sector faces **high transition risk** in a decarbonizing economy, despite the gradual pace of the NDC scenario. A primary risk is **increased production costs**. Compliance with carbon pricing will directly add cost per ton of cement. By the late 2040s, paying around $70+ per tCO_2 could add on the order of **$40–50 to the cost of producing one ton of cement**, assuming roughly 0.7 tCO_2 emitted per ton cement. This is a significant increase in an industry with tight margins and could render carbon-intensive cement non-competitive unless the industry innovates. Even before prices reach those levels, the introduction of a carbon tax (albeit small at first) signals future **tax escalation risk** for cement producers. Another risk is **capital expenditure and technology risk**: cement companies may need to invest heavily in new equipment (e.g., carbon capture units and alternative material processing) without certainty that these investments will pay off. If a chosen technology underperforms (for example, if carbon capture at cement kilns proves more costly or technically challenging than anticipated), companies could face stranded capital or lost competitiveness. **Policy risk** also looms: if Thailand or trade partners adopt more aggressive climate policies – e.g., a tighter emissions cap, or if export markets impose carbon border tariffs on cement – it could accelerate the pressure to decarbonize or risk losing market access. The EU's Carbon Border Adjustment Mechanism (CBAM), for instance, is targeting cement imports in the coming years, which could affect Thai cement exporters who wish to sell to Europe (currently volumes are low, but the principle is set). Domestically, demand-side trends could introduce risk: if construction developers start favoring **low-carbon building materials** (due to green building standards or investor requirements), traditional cement could lose market share to new materials or imported greener cement. Physical climate risks for cement are generally less direct (e.g., extreme heat could marginally affect kiln efficiency, and water scarcity could impact concrete curing or industrial water supply), but **not major compared to transition drivers** in the NDC timeframe. However, **extreme weather events** could disrupt operations (e.g., floods damaging facilities or supply of raw materials like limestone), so adaptation of facilities is still relevant.

For CIMB Thai, the transition risks in cement translate into concerns about the **creditworthiness and viability of cement industry clients**. Cement makers with high emissions may face profit

squeezes as carbon costs rise and as they invest in expensive mitigation technology. This could weaken their financial ratios and raise default risk on loans. If a client cannot pass through carbon costs due to market competition, their debt servicing capacity might deteriorate. The Bank also faces **sector concentration risk** if it has a significant lending exposure to this sector, given the correlated impact of climate policy on all major cement players. Additionally, from an **ESG and reputational standpoint**, financing unabated cement expansion could be viewed negatively, so there's stakeholder pressure to ensure clients have credible transition plans (e.g., targets to reduce CO_2 per ton of cement, or commitments to net-zero by mid-century).

Despite being challenging, decarbonizing cement offers opportunities for financial institutions ready to enable innovation. One opportunity is **financing new technologies and processes** in cement production. This could include funding for carbon capture units at cement plants, waste heat recovery systems, or facilities to produce novel low-clinker cements or alternative building materials (like **"green concrete"** using carbon curing). Banks that finance these projects could benefit from government incentives or guarantees, since climate policy may support pilot projects (the presence of a CCS roadmap and pilots suggests public-private partnerships could emerge). There is also an opportunity in bond issuance: large companies like Siam Cement Group might issue **sustainability-linked bonds** or **green bonds** to fund their transition (for example, linking bond coupons to achieving a CO_2 intensity reduction). CIMB Thai could act as an underwriter or advisor for such instruments, aligning capital raising with climate goals. Another opportunity lies in the **circular economy aspect** – cement companies are diversifying into waste management (using waste as fuel or incorporating industrial by-products as inputs). Financing waste-to-energy plants or recycling facilities in partnership with cement firms can yield new business for the Bank while contributing to emissions reduction.

In terms of the Bank's client advisory, CIMB Thai can provide value-added services by advising cement sector clients on carbon trading (once the ETS is active, helping them hedge or procure offsets) and on sustainability strategy (for instance, advisory on how to structure a transition finance deal to retrofit a plant). If the Bank successfully helps its cement clients' transition, it reduces credit risks. For example, CIMB Thai might report that it has financed X amount in green upgrades for cement industry clients, leading to Y% reduction in emissions, demonstrating how it is seizing opportunities and managing risks. Overall, the NDC scenario does not eliminate cement from the economy – cement demand will still grow with Thailand's development – but it does reshuffle how cement is produced. Banks have an important role in **funding the low-carbon shift**, turning a risk into an opportunity for innovation-led growth.

Real Estate Sector

Thailand's real estate sector – including both **property development (construction of new buildings)** and the **management of existing residential and commercial buildings** – is a significant part of the economy. It drives a considerable portion of domestic investment and employment. Critically, buildings are a major consumer of energy: as of Q1 2024, the **residential and commercial building sector combined accounted for roughly 21% of Thailand's final energy consumption**. Much of this energy is electricity for cooling, lighting, and appliances, as well as LPG or natural gas for cooking and heating in some cases. Consequently, buildings contribute substantially to GHG emissions via their energy use (indirect emissions from power generation). The construction process itself also has a carbon footprint (from producing materials like cement, steel, etc., and construction activities), though operational emissions dominate over a building's life. On the physical climate side, Thailand's real estate – particularly in Bangkok and coastal cities – is **highly exposed to climate hazards**. Bangkok is built on a low-lying floodplain (with some areas near or below sea level), making it prone to floods; the city also suffers from urban heat island effects and land subsidence. Extreme rainfall events (like the devastating 2011 floods) have submerged industrial estates and residential neighborhoods, causing massive damage. The **Bank of Thailand** has identified flooding as the single biggest climate threat to the construction and real estate sector, causing on average **$2.6 billion in damage annually** in Thailand. These factors make **climate resilience and energy efficiency** central issues for the real estate sector going forward.

In an NDC-aligned scenario, the built environment in Thailand undergoes **steady improvements in energy efficiency and progressively stronger resilience measures**. Policy-wise, Thailand is already moving in that direction: the government has updated the **Building Energy Code (BEC)** to mandate energy-saving design in new large buildings , and initiatives are in place to promote **green building standards** and retrofits (e.g., the **Energy Efficiency Plan and Alternative Energy Development Plan** both encourage more efficient air conditioning, lighting, and insulation in buildings). As the NDC scenario unfolds, we expect **building codes to tighten further** – requiring new constructions to utilize efficient materials, insulation, and appliances, and possibly mandating solar rooftops or other renewable integration for large developments. By 2030, many new buildings will likely be **"near-zero energy" or at least significantly lower energy use** than older stock, contributing to the NDC target by curbing electricity demand growth and thus emissions. In addition, **urban planning** may start incorporating adaptation needs: for example, new real estate projects might be required to have flood defenses (elevated structures, water drainage systems) especially in flood-prone zones, and to incorporate green spaces to mitigate urban heat. Thailand's **National Adaptation Plan** and city climate action plans for Bangkok and others emphasize climate-resilient infrastructure and housing. Thus, under the NDC scenario, **resilience-building becomes mainstream** in real estate by mid-century to cope with ~2°C of warming. We will likely see expanded use of **climate-resilient design** (e.g., buildings elevated or with water capture systems to handle heavy rain, strengthened structures to withstand storms, etc.) and **relocation or protection of critical assets** in areas with high flood risk.

The real estate sector faces a two-front challenge: **transition risk** related to mitigation (reducing emissions) and **physical risk** from climate change impacts. On the transition side, a key risk is **regulatory and compliance cost**. If building energy codes and appliance standards become more stringent, developers and property owners may incur higher upfront costs to comply (e.g., using more expensive insulating materials, installing more efficient but pricier HVAC systems). While such measures usually pay off in energy savings, the initial cost and complexity could be burdensome, especially for smaller developers. There's also **market risk via shifting investor and consumer preferences**: tenants, buyers, and international investors are increasingly favoring green buildings (with certifications like LEED or Thai Green Building Institute standards). This means **properties that are energy-inefficient or lack sustainability features could suffer value depreciation** or longer vacancy, as the market assigns them a "brown discount." Indeed, in climate scenario analyses, one risk identified is **devaluation of assets** that do not keep up with low-carbon transitions or that are perceived as climate-vulnerable. For instance, an old commercial building with poor energy performance might see rental yields decline relative to a new green building, impacting the owner's revenue and, by extension, any loans secured on that property. Moreover, carbon pricing can indirectly affect real estate: as electricity and fuel prices rise due to carbon costs, operating an inefficient building becomes more costly, which can reduce net operating income for property owners (especially in energy-intensive properties like malls or hotels).

Physical risks are even more pronounced for real estate in Thailand. The **risk of acute flooding events and sea-level rise** is significant. A scenario of ~2.5°C warming implies a noticeable increase in extreme rainfall intensity and a higher mean sea level by late century. Bangkok, for example, could experience more frequent severe floods (on top of existing monsoon flooding issues), exacerbated by sea-level rise and land subsidence. Coastal resort real estate and high-value properties in places like Phuket or Koh Samui also face threats from stronger storms and coastal erosion. The **impact of these physical risks** includes direct asset damage (flooded buildings, mold, and structural damage), higher maintenance and insurance costs, and even loss of land in coastal areas long-term. There's also **chronic risk**: rising average temperatures and heatwaves can make buildings uncomfortable or unsafe without significant cooling, which requires robust design (cool roofs and ventilation) – otherwise, buildings might become less habitable or require expensive energy use for cooling, again affecting their value.

For CIMB Thai, these risks translate into **credit risk and collateral risk** in its lending portfolio. Mortgage loans or real estate development loans secured by properties in high-risk flood zones might face increased default risk if those properties are hit by disasters or if their values fall. After the 2011 floods, for example, property values in some flooded districts dropped and it took time for confidence to return. A repeat of such an event (which climate change makes more likely) could similarly impact loan-to-value ratios and increase non-performing loans in the property sector. The Bank also may see **business interruption risk** for its clients – for instance, if a factory or shopping center (which the Bank financed) floods and closes for repairs, the owner's cash flow suffers, impairing debt service. Moreover, as **insurance costs rise or coverage becomes harder to obtain** for high-risk areas, more risk remains on homeowners and banks. Transition-wise, if CIMB Thai finances

a developer who fails to incorporate new energy standards, that developer might face penalties or market rejection, again endangering loan repayment. There is also **liability risk** indirectly: if developers get sued for not disclosing climate risks or not building to code in the future, that could affect projects the Bank is involved in.

On the flip side, the real estate sector's climate challenges open up robust opportunities for those who lead on **green and resilient buildings.** Demand is growing for **green financing** in real estate – loans or mortgages that incentivize energy-efficient homes and sustainable developments. CIMB Thai can expand products like **green home loans** (offering lower interest rates for houses with solar panels or certified energy efficiency) and **green project financing** for certified green buildings. Not only does this support national emissions goals, but it tends to correlate with better asset values and lower default rates (as utility costs for owners are lower and green buildings attract premium tenants). The Bank can also tap into international climate finance: for example, global investors are interested in green real estate portfolios in emerging markets, so CIMB Thai could bundle green building loans and issue green asset-backed securities or collaborate with developmental banks on credit lines for sustainable construction.

Another opportunity is financing **climate resilience upgrades**. As awareness of physical risks increases, property owners (residential and commercial) will invest in protective measures – from flood defense infrastructure (e.g., flood walls, raised foundations, and water pumps) to weather-proofing and backup power systems. The Bank could offer targeted loans for such adaptation measures, perhaps under a **"Climate Resilience Financing"** program. This not only helps protect the Bank's collateral (a more flood-protected building is a safer collateral) but also could be counted toward the Bank's sustainability objectives. Furthermore, CIMB Thai can work with government or municipal authorities in developing **climate-resilient affordable housing** or retrofitting public housing with efficiency measures – these public-private partnerships might come with guarantees or subsidies, reducing risk and providing stable returns.

From a strategic perspective, the NDC scenario implies a construction boom of new, more efficient buildings (driven by urbanization – Thailand's urban population is projected to grow from 52% in 2020 to ~69% by 2050). This **urban growth** coupled with climate goals means **substantial investment in sustainable infrastructure.** CIMB Thai can position itself as a leader in **sustainable real estate finance**, capturing a share of financing for new green condos, offices, transit-oriented development, etc. The Bank can also develop **expertise in climate risk assessment for real estate** – using climate data to inform property valuations and loan decisions. Finally, opportunities also exist in **innovative products** like catastrophe bonds or insurance-linked loans to manage disaster risk – though nascent, these could grow under a climate-threatened scenario. In summary, the real estate sector under the NDC scenario will reward those who invest in **efficiency and resilience**; CIMB Thai stands to benefit by financing and fostering this green transformation of Thailand's built environment.

Manufacturing Sector

The manufacturing sector in Thailand is broad, covering industries such as automotive assembly, electronics, petrochemicals, steel, food processing, textiles, and more. It is the backbone of Thailand's export-oriented economy and a major employer. Manufacturing is also **energy-intensive** and a significant source of greenhouse gas emissions. In fact, Thailand's manufacturing and industrial processes account for about **37% of final energy consumption nationally**, confirming the sector as a major GHG contributor. Key carbon-intensive manufacturing sub-sectors include **petrochemicals and basic chemicals, cement (covered separately above), iron and steel production,** and **automotive.** For example, producing steel or chemicals often involves burning fossil fuels or using feedstocks that release CO_2, while many factories draw heavily on grid electricity (which, until recently, was carbon-intensive due to the fossil-heavy power mix). On the other end, manufacturing is vulnerable to supply chain disruptions from climate events (as seen in 2011 when severe floods swamped industrial estates, halting electronics and auto parts production, and disrupting global supply chains). The sector is therefore central to both mitigation and adaptation efforts – it must cut emissions to meet climate targets and also strengthen resilience to climate impacts.

Under the NDC scenario, Thailand's manufacturing sector is expected to pursue **gradual decarbonization, process improvements, and product shifts** in line with the nation's climate commitments and global market trends. In the near term (to 2030), the focus is on **energy efficiency and incremental technology upgrades.** The Thai government's **Industry 4.0 and Bio-Circular-Green (BCG) economic model** is being implemented to drive cleaner production and sustainable industrial growth. This includes measures like upgrading machinery to more efficient models, adopting ISO 50001 energy management in factories, fuel switching (e.g., using biomass in boilers instead of coal), and greater recycling of materials. The **NDC Sectoral Action Plan for IPPU (Industrial Processes & Product Use)** sets phased targets for manufacturing emissions reduction through 2030, aligning with the overall NDC roadmap. By 2030, many large manufacturers are expected to have achieved meaningful emissions cuts (for instance, the cement and petrochemical sectors have their own decarbonization roadmaps targeting 2030 milestones).

Looking towards 2040–2050, the manufacturing sector transformation accelerates: **product innovation and substitution** become key. For example, the **automotive industry** shifts its output from internal combustion engine vehicles to **electric vehicles** – Thailand's policy to have 30% ZEV production by 2030 is just a start; by 2040, a majority of vehicle output could be electric, and supporting an EV supply chain (batteries and electric drivetrain components) becomes a core manufacturing activity. Heavy industries like steel may adopt **electric arc furnaces using scrap** (which emit less than traditional blast furnaces) or even explore using **green hydrogen** for iron reduction in the longer term. The petrochemical sector might diversify into bioplastics or high-value chemicals with carbon capture on facilities. The NGFS NDC scenario doesn't assume leap-frog tech deployment as aggressively as a 1.5°C scenario, but it does assume that all pledged strategies are enacted – and Thailand's **long-term strategy (LT-LEDS)** outlines that achieving net zero by 2065 will require significant

industrial innovation (e.g., net-zero steel and chemicals by mid-century). Thus by 2050, one would expect a Thai manufacturing landscape that is far more electrified (electric boilers and heat pumps in industries where feasible), digitized for efficiency, and producing a different mix of goods (with more climate-friendly products such as EVs, and less of the high-emission intensity goods unless coupled with carbon capture). Importantly, as part of the transition, **external pressures** like international carbon border adjustments will enforce change: the EU's CBAM, starting with a few products like steel, aluminium, fertilizers, will expand and potentially by the 2030s impose carbon costs on a broader range of exports. This creates an added impetus for Thai manufacturers to decarbonize processes if they want to remain competitive globally.

For manufacturing firms, transition risks in the NDC scenario revolve around **costs of decarbonization and changing market dynamics**. One major risk is the **cost of compliance and technology**. Industries may need to invest in expensive upgrades or new low-carbon technologies (for example, a steel mill investing in an electric arc furnace or a chemical plant adding carbon capture or new catalysts). These investments can strain balance sheets and, if not managed well, could lead to financial distress. Smaller and medium enterprises (SMEs) in manufacturing might find it particularly challenging to afford new technology, risking a divide where SMEs fall behind and potentially shut down or get acquired. Another risk is **policy/cost risk from carbon pricing and international regulations.** Should Thailand's ETS cover manufacturing (very likely for big emitters), companies will have to either cut emissions or purchase allowances – both scenarios add cost. The **EU CBAM** and similar trade policies effectively export carbon pricing to Thai exporters; if our manufacturers have higher emissions than competitors, they could lose market share or face tariffs. This is a strategic risk for sectors like steel and aluminium (already targeted by CBAM) and possibly others in the future. Additionally, **market risk** arises as global consumers demand greener products: for instance, multinational corporations might require their suppliers (including those in Thailand) to use renewable energy or have low carbon footprints. Thai manufacturers that cannot meet these supply-chain expectations may lose contracts. A real example is electronics or auto parts – big brands are pushing for carbon neutrality in their supply chain, and Thai suppliers must comply or be left out.

Physical risks are also pertinent: as noted, floods, storms, and heat can disrupt manufacturing operations. The catastrophic floods of 2011 that inundated industrial parks caused billions in losses, affecting around 730 companies and halting production for months. Climate change makes such events more frequent and possibly more severe (even under NDC mitigation, some worsening of extremes is locked in). Manufacturing facilities, especially those in low-lying areas or relying on steady water supply (for cooling or processes), face risks of damage, downtime, or supply chain interruptions. If a key supplier's factory is knocked out by a flood, it can ripple through many manufacturers. Without adequate adaptation (flood defenses, emergency plans), these physical risks can translate to significant economic losses.

For CIMB Thai, the risks in manufacturing manifest in the credit profile of industrial borrowers. Transition risk may increase **default risk or downgrade risk** for companies that fail to modernize. If a steel company, for instance, cannot afford the retrofits needed and starts losing export business due to carbon costs, its revenues and profit will drop, affecting its ability to service debt. The Bank must watch for **signs of "stranded"**

industrial assets – e.g., an older cement kiln or cracker unit that might be forced offline by regulations or competition. The concentration of loans in sub-sectors is a concern too; heavy industries tend to be capital-intensive borrowers, so any systematic issue (like a jump in carbon prices or energy prices) could hit many of the Bank's clients at once. Additionally, **physical risk** can affect loan repayment if clients suffer major uninsured losses due to a climate event, or if they need to borrow more to rebuild (raising leverage). It can also reduce collateral values, e.g., a factory site that becomes known as flood-prone might be devalued.

In the manufacturing sector, opportunities for banks stem from financing the **modernization and green transformation** of Thai industry. There is a significant need for **capital investment in cleaner technology** – from high-efficiency equipment to advanced emissions control and low-carbon process changes. CIMB Thai can provide or arrange financing for these, potentially supported by government incentives or guarantees (the Ministry of Industry and organizations like the Board of Investment offer incentives for energy-efficient machinery and renewable energy adoption in factories). For example, a loan product tailored for **factory solar rooftop installations** could see high uptake, as many manufacturers are now installing solar PV to cut both costs and emissions. Another opportunity is to support **new growth sectors** that the transition creates. The push for EVs means investments in new manufacturing lines for batteries and electric components – CIMB Thai can finance new factories or expansions in these areas, which are likely to be backed by both government policy and foreign direct investment (e.g., joint ventures with Japanese or Chinese EV companies). Likewise, if green hydrogen becomes part of decarbonizing certain industries (like refining or ammonia production), banks can finance electrolyzer installations and related infrastructure.

Finally, macro-level opportunities exist. A greener manufacturing sector in Thailand will attract **international green investment** – e.g., climate funds or ESG-focused investors looking for industrial companies making the transition. CIMB Thai could act as an intermediary, connecting its corporate clients with green investors, or bringing green private equity into joint finance deals. By doing so, the Bank expands its fee-based income and strengthens client relationships. Notably, by 2025 the World Bank and other multilaterals are focusing on climate-smart industrial development in countries like Thailand; CIMB Thai can leverage such programs (like risk-sharing facilities or concessionary funds) to co-finance large industrial decarbonization projects that might otherwise be marginal.

In sum, the manufacturing sector's journey in the NDC scenario is one of **evolution, not revolution** – there are significant risks to navigate, but also a path for growth through sustainable industrial innovation. CIMB Thai's climate strategy should articulate how it is managing those sectoral risks (e.g., credit exposure limits and client transition plans) and seizing the opportunities (e.g., increased green lending). By aligning its portfolio with Thailand's industrial transition, the Bank not only reduces long-term risk, but also supports economic competitiveness.

Conclusion

The analysis above highlights that the NDCs scenario entails a broad transformation of Thailand's economy, touching every priority sector to which CIMB Thai is exposed. For the Bank's strategic planning, the NDC scenario provides a base-case climate pathway (moderate transition and moderate physical impacts) against which to test the resilience of its business model.

- **Portfolio Alignment and Risk Management:** Under the NDC scenario, some sectors (like coal power and conventional oil & gas) will gradually decline, while others (renewables, EV manufacturing, and green buildings) will grow. CIMB Thai will need to **align its lending portfolio with this transition**. This means progressively reducing exposure to high-carbon assets (for example, setting limits or higher credit hurdles for lending to coal-fired power projects or fossil fuel extraction) and increasing financing to low-carbon sectors. Our sector analysis indicates that such shifts are feasible and prudent: e.g., financing more solar and wind projects to replace coal plants (Power), supporting O&G clients in renewables and discontinuing pure-play coal mining finance, etc. In terms of risk management, CIMB Thai should enhance its **climate risk assessment frameworks**: performing stress tests of its credit portfolio under carbon price and physical shock scenarios (the NGFS data can inform assumptions, such as a carbon price of $74 by 2050 causing certain clients' probability of default to increase).

- **Client Engagement and Transition Plans:** The scenario underscores the importance of engaging with clients on transition. CIMB Thai can use the NDC scenario as a conversation starter with high-risk clients: for instance, asking a cement company "How are you preparing for a world with $70 carbon prices and demand for low-carbon product?" or a property developer "What are your plans to ensure new projects are resilient to the climate of 2040?" By doing so, the Bank not only manages its own risk but potentially gains business by offering solutions (financing those plans).

- **Revenue and Product Diversification:** The opportunities identified (renewable energy finance, EV value chain, green buildings, etc.) suggest the Bank can develop **new revenue streams** in line with the NDC scenario. For example, creating its dedicated **"Sustainable Finance" division or green products suite** could attract new clients and investors.

- **Resilience to Physical Risks:** Although the NDC scenario curbs the worst physical outcomes, it still entails noticeable climate change. CIMB Thai's strategy should incorporate enhancing resilience, both for its own operations and for its clients. The Bank might invest in making its facilities (branches and data centers) flood and heat resilient. More broadly, it can incorporate climate risk into credit risk ratings – for instance, higher capital allocation or insurance requirements for loans in flood-prone areas. Our sector insights, such as real estate flooding risk and manufacturing disruption in floods, back the need for such measures. Encouragingly, adaptation financing is an area of opportunity – the Bank could cite financing of flood defense projects or climate-resilient infrastructure as part of its strategy to thrive in a changing climate.

- **Governance and Accountability:** Lastly, the strategy should mention that CIMB Thai's governance is aligned to oversee these climate efforts. For instance, a board-level committee monitors climate risks and progress on sustainable finance goals [64][65]. This provides confidence that the plans will be executed.

In conclusion, the NDCs scenario analysis affirms that CIMB Thai can remain resilient and even prosper amid the transition, provided it **strategically reallocates capital, mitigates risks, and harnesses new opportunities.** The scenario's moderate nature gives the Bank time to adjust – unlike a sudden shock scenario – but it also implies that action should start now, as the changes in each sector are already in motion.

OPERATIONALIZING CLIMATE-RELATED STRATEGY AND RISK MANAGEMENT

This is the Bank's processes to identify, assess, prioritise and monitor climate-related risks and opportunities, including whether and how those processes are integrated into and inform the Bank's overall risk management process.

CIMB Thai embedded climate-related risks within its Enterprise-Wide Risk Management Framework throughout 2024, establishing comprehensive governance structures, risk classifications, and escalation protocols across traditional risk categories and the three lines of defense. Climate risk functions as a transverse factor influencing credit, market, liquidity, and operational exposures, with credit risk representing the primary transmission channel for the Bank's lending portfolio. The Bank simultaneously adopted and implemented Group sustainability policies and procedures, delineating explicit responsibilities, procedural frameworks, and control mechanisms for sustainability risk management-including climate considerations-across business units and product lines. This integrated approach ensures climate factors inform routine decision-making processes. The governance architecture deliberately distinguishes oversight responsibilities: Management and Board oversee strategic sustainability initiatives including Net Zero commitments and taxonomy implementation, while risk committees and Board-level oversight manage emerging and 'outside-in' climate risks encompassing risk appetite frameworks and piloting climate stress testing. This structural design elevates climate considerations within enterprise risk management while maintaining unified oversight, enabling streamlined disclosures that reflect actual decision-making processes.

The Bank's climate risk identification processes in 2024 leveraged systematic policy frameworks and analytical methodologies. The Sustainability Policy and Sustainability Procedure – Sustainability Risk Management and establish comprehensive protocols for environmental and social risk screening, escalation mechanisms across business lines and risk functions, and governance frameworks preserving control effectiveness. The Bank aligned its risk identification processes with BOT supervisory expectations requiring Thai financial institutions to systematically identify, assess, control, and monitor environmental and climate risks across material risk categories, incorporating risk appetite parameters and three-lines-of-defense principles while developing enhanced capabilities for scenario analysis and transition planning. The Bank employs Partnership for Carbon Accounting Financials (PCAF) methodologies to establish financed emissions baselines across principal asset classes, providing portfolio-level insights into transition risk concentrations that facilitate targeted assessment of sectors and counterparties requiring enhanced due diligence.

Scenario analysis provides critical input for the Bank's risk identification and assessment processes. The Bank's implemententations of the TCFD Recommendations incorporates Network for Greening the Financial System (NGFS) scenarios aligned with IPCC pathways-specifically an

Orderly Net Zero 2050 trajectory and a Disorderly/Delayed Transition pathway-to evaluate how policy evolution, technology deployment, and market dynamics could impact counterparty cash flows, collateral valuations, and sectoral viability over extended horizons. These scenario narratives informed assessments throughout 2024, examining the nature, probability, and magnitude of transition risks within the Thai economic context, with particular focus on power generation, oil and gas, cement, and real estate sectors where transition impacts are most pronounced.

The Bank participated in the BOT's 2024 pilot climate stress test examining physical risk impacts, which evaluated macroeconomic consequences under baseline and severe flood scenarios (the adverse scenario employs a 2011 flood analogue with enhanced duration and severity parameters). This pilot strengthened the Bank's understanding of physical risk transmission mechanisms into credit parameters and initiated development programs for climate-adjusted stress testing and IFRS credit models incorporating location-specific and industry-level granularity compatible with the supervisor's economic factor methodology. While specific quantitative outputs (such as PD/LGD adjustments by segment) from the 2024 pilot were not documented in available materials, the scenario architecture and model development requirements have been established and inform ongoing monitoring protocols.

The Bank in alignment with CIMB Group employs integrated methodologies for climate risk assessment. Qualitative assessments apply sector-specific guidance and sustainability due diligence frameworks to evaluate counterparty vulnerability to transition policies and market dynamics, including external regulatory mechanisms such as the European Union's Carbon Border Adjustment Mechanism (CBAM), which impacts Thai exporters in emissions-intensive sectors including steel and cement production. Quantitative assessments utilize financed emissions baselines and scenario narratives to measure potential impact magnitudes, while supervisory pilot exercises provide macro-to-portfolio transmission models for physical risk evaluation. Climate-related findings are beginning to integrate into enterprise risk management processes through established risk committee channels alongside conventional financial risks, ensuring climate considerations receive appropriate prioritization within comprehensive risk management rather than operating as peripheral concerns.

Climate risk monitoring throughout 2024 encompassed supervisory engagement, portfolio surveillance, and operational performance tracking. The BOT physical risk pilot represents the principal supervisory monitoring mechanism for the reporting period, generating follow-on initiatives including development of climate risk stress testing capabilities and IFRS PD/LGD impact models incorporating requisite geographic and sectoral granularity.

Portfolio-level transition exposure monitoring employs PCAF methodologies for financed emissions tracking, supplemented by Group reporting cadences that elevate emissions portfolio performance and Net Zero 2050 operational progress to sustainability committee oversight. Operational monitoring encompasses Scope 1 and Scope 2 emissions management, energy consumption optimization, and internal carbon pricing mechanisms driving disciplined emissions

reductions through targeted investments in energy efficiency, rooftop solar installations, and renewable energy certificates. While operational metrics do not constitute direct financial risks, their governance and performance integration with management planning and committee reporting processes strengthens overall institutional resilience.

Three enhancements characterized the Bank's climate-related risk management processes during 2024. First, Group-wide procedural updates within Sustainability strengthened role clarity, control frameworks, and reporting mechanisms for sustainability risk management across CIMB Group entities, including CIMB Thai. Second, participation in the BOT's physical risk pilot exercise extended beyond the TCFD Recommendations, introducing supervisory scenario discipline and catalyzing development programs for upcoming climate stress testing and credit impact models. Third, IFRS S2 implementation advanced under the Group Climate Disclosure Framework – a collaboration between Finance and Sustainability working groups, which establishes integrated information architecture across Strategy, Risk Management, and Metrics & Targets dimensions while beginning to quantify sustainability and climate-related dimensions into financial performance, financial position and cashflow tracking.

Climate-related opportunities are systematically identified, prioritized, and monitored through taxonomy-aligned frameworks and Group procedural guidelines. During 2024, the Bank successfully issued THB 2.0 billion in subordinated Green Notes qualifying as Tier 2 capital (CIMBT 34OA) under the CIMB Thai Sustainability Bond Framework (2023). The issuance achieved alignment with ICMA Green Bond Principles and ASEAN standards, validated through independent second-party opinion, with the framework establishing comprehensive use-of-proceeds criteria, project evaluation and selection processes, proceeds management protocols, and reporting requirements-creating an auditable pathway from opportunity identification through ongoing monitoring. Subsequent progress reporting describes allocation metrics and impact measurements; while these specific metrics fall outside the 2024 reporting period, they demonstrate the monitoring infrastructure established through 2024 opportunity development and illustrate integration of opportunity management within governance and investor reporting frameworks.

These disclosures follow IFRS S1 and S2 principles to eliminate unnecessary duplication. Given that sustainability-related risks and opportunities are managed through integrated governance structures-with risk committee channels addressing 'outside-in' climate risks and sustainability governance structure overseeing overall strategic initiatives-the Bank's Climate Report presents the Bank's unified management processes for climate-related risks and opportunities, avoiding redundant content segmentation on reporting.

Part 4

TRACKING PROGRESS, DEFINING SUCCESS
Our Metrics and Targets

Tracking Progress, Defining Success - Our Metrics and Targets

This section covers the Bank's exposures to climate-related transition and physical risks, the opportunities from climate-aligned business, capital deployed towards climate action, use of internal carbon pricing, and integration of climate considerations into executive remuneration. All data presented are as of 31 December 2024, ensuring a current snapshot of the Bank's climate risk and opportunity profile.

CIMB Thai has a significant, though manageable, exposure to carbon-intensive sectors that are vulnerable to transition risks as the economy shifts toward low-carbon solutions. As of end-2024, approximately THB 41 billion of the Bank's credit portfolio (around 14% of total loans and investments) is concentrated in industries with high potential transition risk. These include: fossil fuel energy (oil & gas extraction and coal mining), electricity generation (especially coal- and gas-fired power producers), and emissions-intensive industrials (cement, steel, etc).

Among the largest exposures are the power generation sector (approx. THB 13.6 billion in outstanding loans to utility companies) and the oil & gas sector (around THB 6.3 billion). Smaller but notable exposures include coal mining (~THB 2.6 billion) and steel manufacturing (~THB 0.9 billion). Such sectors may face declining revenues or asset values under stricter carbon regulations, clean technology disruption, or shifting market preferences. The aggregate exposure to these transition-vulnerable sectors is actively monitored and represents a moderate portion of the overall portfolio.

The Bank mitigates transition risk through enhanced due diligence and client engagement in these sectors. New financing of certain high-carbon activities (e.g., new coal-fired power plants) is restricted by policy. For existing clients in carbon-intensive industries, CIMB Thai emphasizes transition plans and offers sustainability-linked financing incentives where feasible. These efforts aim to gradually reduce the Bank's risk exposure by supporting clients in adopting cleaner technologies or business models over time.

Physical climate risks – such as extreme weather events and long-term climate shifts – pose a tangible threat to portions of the Bank's portfolio. The most directly exposed is the Agriculture sector, which comprises approximately THB 8.3 billion in loans (about 2.9% of total portfolio). Agricultural borrowers are highly sensitive to droughts, floods, and changing weather patterns, which can devastate crop yields and farm incomes. In Thailand, recent droughts and flooding episodes have at times led to increased loan delinquencies in this sector, underscoring its vulnerability to climate change.

In addition, the Bank has significant property-related exposures that carry physical risk, primarily from flooding. This includes real estate

development loans and a retail mortgage portfolio (together around THB 131 billion, or 46% of total exposures) distributed across Thailand. Using internal geospatial risk assessments, CIMB Thai estimates that roughly 10% of its property portfolio (approximately THB 12–13 billion, or about 4–5% of total assets) is located in areas with elevated flood risk – for example, in certain districts of Bangkok and coastal provinces. These properties could suffer damage and value loss from severe floods or rising sea levels, which in turn increases credit risk (e.g., higher default probabilities, lower collateral values).

CIMB Thai addresses physical risk by incorporating climate hazard data into its credit risk processes. The Bank performs regular climate stress tests and portfolio reviews focusing on high-risk zones. In flood-prone areas, it may require additional insurance or collateral buffers and works with borrowers on disaster preparedness (for instance, financing improvements like flood defenses or drought-resistant infrastructure). For its own operations, the Bank has business continuity plans for extreme weather events, especially for branch locations in floodplain regions. These measures help limit potential losses and improve resilience against physical climate impacts.

Even as climate change presents risks, it also creates opportunities for CIMB Thai to finance and invest in the transition to a low-carbon economy. The Bank is actively growing its green finance portfolio, supporting clients and projects that advance climate objectives. By the end of 2024, the Bank had roughly THB 4 billion in climate-aligned assets on its balance sheet (about 1.4% of total exposures), including renewable energy project financing and green bonds.

A highlight for the year was the issuance of a THB 2,000 million subordinated green bond in October 2024 – the first Tier-2 capital green bond in Thailand. Proceeds from this bond are earmarked for taxonomy-aligned environmental projects, such as solar farms, wind energy, and wastewater treatment facilities. In addition to the bond, CIMB Thai closed several green and sustainability-linked loans during 2024 (reported in CIMB Thai Sustainability Report 2024).

Sustainable finance is now a core growth area for the Bank. Internally, CIMB Thai set targets in line with the Group's ambition to mobilize significant sustainable financing by 2030. The Bank has developed a Sustainable Financing Framework (under the umbrella of its GSSIPS – Green, Social, Sustainable Impact Products and Services – program) to guide the evaluation and selection of eligible green projects. By expanding its suite of green products (such as green home loans and EV loans for retail customers, and sustainability-linked credit facilities for corporates), CIMB Thai aims to steadily increase the share of climate-friendly assets in its portfolio in the coming years.

CIMB Thai has demonstrated significant progress in expanding its sustainable finance portfolio across multiple product categories and market segments. The Bank extended substantial sustainable financing to customers, with Green Loans reaching THB 202.28 million and Social Loans achieving a notably larger volume at THB 1.694 billion, reflecting strong market demand for socially-oriented financial products.

In the capital markets space, CIMB Thai played a pivotal role in facilitating THB 8 billion in Green Bond issuances, comprising THB 6 billion where the Bank served as Sole Lead Arranger for

a customer transaction, and an additional THB 2 billion representing the Bank's own green bond issuance. This dual role as both arranger and issuer demonstrates CIMB Thai's comprehensive engagement across the sustainable debt capital markets value chain.

The Bank has taken a progressive stance on transition finance by committing THB 20 billion over the next 24 months specifically targeting carbon-intensive sectors, particularly oil and gas and power generation. This initiative represents a pragmatic approach to climate finance, acknowledging that supporting the decarbonization journey of traditionally high-emission sectors is essential for achieving economy-wide emissions reductions. The Bank will deploy various financial instruments including sustainability-linked loans, transition bonds, and transition loans to facilitate this sectoral transformation.

Furthermore, CIMB Thai achieved a market milestone by issuing Thailand's first Tier 2 capital-eligible subordinated green bond worth THB 2 billion. This 10-year instrument, priced at 3.90% per annum with quarterly payments, serves the dual purpose of strengthening the Bank's regulatory capital base while channeling funds exclusively toward long-term environmental projects. The issuance successfully attracted institutional and high-net-worth investors, demonstrating strong market appetite for sustainable investment products that combine regulatory capital characteristics with environmental impact objectives.

On the operational side, CIMB Thai continued to invest in reducing its own carbon footprint and enhancing climate resilience. In 2024 the Bank installed solar photovoltaic panels at its Bangkok headquarters and three major branch offices, adding on-site renewable energy generation capacity. It also upgraded facilities for energy efficiency (such as LED lighting retrofits and high-efficiency cooling systems) and expanded its fleet of electric vehicles (EVs) used in operations. Furthermore, CIMB Thai purchased Renewable Energy Certificates (RECs) equivalent to 2,300 MWh of electricity to ensure a portion of its power usage is matched with green energy. These internal initiatives required capital expenditure in the tens of millions of Baht, an investment which the Bank views as worthwhile for long-term savings and risk reduction.

As a result of these efforts, CIMB Thai achieved a notable reduction in its own operational emissions by 2024. For instance, market-based Scope 2 CO_2 emissions (purchased electricity) fell to roughly 3,323 tCO_2e for 2024, which is 39% lower than the 2019 baseline level (exceeding the Bank's 36% reduction target for 2024). This demonstrates that targeted capital deployment in energy efficiency and renewable energy yields measurable progress on the Bank's sustainability targets, while also lowering operating costs (through reduced energy consumption) and mitigating future carbon pricing exposure.

To further integrate climate considerations into financial decisions, CIMB Thai applies an internal price on carbon emissions. In 2024, the Bank maintained an internal carbon price of THB 550 per ton of CO_2. This price is used as a "shadow cost" in decision-making and drives internal accountability for emissions. Specifically, the Bank sets annual carbon emission budgets for its business units; if a unit's actual emissions exceed its budget, a notional cost is charged at THB 550 per excess

ton of CO_2. Funds collected through this internal carbon fee are reserved to fund future emission reduction projects within the Bank.

The carbon price is also embedded in project and investment appraisals. When evaluating major capital expenditures or new corporate lending proposals, CIMB Thai factors in the internal carbon price to reflect potential future carbon costs or savings. This means that a project with high projected greenhouse gas emissions effectively carries additional expense in the business case analysis, making low-carbon alternatives more financially attractive. By pricing carbon internally, the Bank incentivizes each department to minimize emissions and invest in green improvements, anticipating the direction of external regulation (such as possible national carbon taxes or emissions trading schemes in the future).

The current internal carbon price of THB 550/ton will be periodically reviewed and is expected to increase over time, in line with rising carbon market prices and the Bank's escalating climate ambition toward its net-zero 2050 commitment.

CIMB Thai has linked executive compensation to the achievement of sustainability and climate objectives, ensuring that leadership is accountable for the Bank's climate performance. In 2024, the performance scorecards for key executives (including C-suite management) included explicit climate-related Key Performance Indicators (KPIs). These KPIs covered goals such as reducing the Bank's greenhouse gas emissions, increasing green financing volumes, and implementing climate risk management frameworks. Collectively, the climate and broader ESG metrics carried a weight of approximately 5% in the overall performance evaluation of executive management for the year.

In practice, this roughly translates to 5% of the annual variable remuneration (bonus) for executives being directly tied to the attainment of climate-related targets. For instance, if the Bank exceeded its emissions reduction or sustainable finance targets for 2024, the executive bonus pool could be modestly increased; conversely, failure to meet key climate targets would negatively affect incentive payouts. By incorporating these factors into remuneration, CIMB Thai aligns leadership incentives with its sustainability commitments. This approach reinforces that delivering on climate initiatives is a priority, on par with traditional financial and business targets, and it motivates management to drive climate action throughout the organization.

The Bank's disclosures above illustrate a balanced approach: measurable exposure to climate risks is being mitigated through strategic policies and engagement, while investments in green finance and internal sustainability are laying the groundwork for long-term resilience and value creation. With governance mechanisms like internal carbon pricing and sustainability-linked pay in place, CIMB Thai is embedding climate responsibility into its operations and culture, positioning the Bank to navigate the evolving landscape of climate-related financial risks and opportunities.

CIMB Thai has set clear climate-related targets and made significant progress in 2024. Aligned with CIMB Group's regional sustainability strategy, the Bank's core commitments include achieving Net-Zero greenhouse gas (GHG) emissions for its own operations by 2030 and Net-Zero for its entire emissions footprint (including financed emissions) by 2050. These targets focus on climate change mitigation and are informed by international agreements (notably the Paris Agreement's 1.5°C goal) and Thailand's national climate pledges (carbon neutrality by 2050, Net-Zero by 2065). In FY2024, CIMB Thai surpassed key interim goals and strengthened its monitoring and governance frameworks, reinforcing confidence in its climate strategy.

CIMB Thai's climate-related targets are a mix of quantitative and qualitative commitments that guide its strategy and allow stakeholders to track progress. Table 1 below summarizes each major climate-related target, including the metric, objective, scope, timeline, baseline, and other key attributes as disclosed in CIMB Thai's FY2024 sustainability documentation:

Target & Objective	Scope & Coverage	Baseline & Period	Target Metric (Goal)	Target Type	Alignment & Notes
Net-Zero GHG Emissions (Operations) Mitigation – eliminate operational emissions	Entire bank operations (Scope 1 & 2 emissions, e.g. fuel use, electricity).	Base year 2019 (6,432 tCO_2e); Target year 2030.	Absolute emissions to net zero by 2030 (100% reduction vs 2019). Interim milestone: –36% by 2024 (achieved –39%).	Absolute; Net target (residual emissions to be neutralized by 2030).	Aligned to Paris 1.5°C pathway (NZBA). GHG data externally assured. Progress tracked via annual carbon inventory & real-time platform. No offsets relied on to date.
Net-Zero GHG Emissions (Overall) Mitigation – eliminate all financed and operational emissions	All emissions (Scope 1, 2, and 3 including financed emissions portfolio).	Sector-specific baselines (e.g. 2021/2022 by sector); Target year 2050.	Absolute emissions to net zero by 2050 (across all scopes). Interim 2030 targets set per key sectors (see below).	Absolute; Net target by 2050.	Anchored to NZBA science-based approach (limit warming to 1.5°C). Adopts CIMB Group's sector targets to ensure on-track 2030 progress. No planned reliance on offsets (focus on client transition).
Coal Financing Exit Mitigation/Risk – phase out coal exposure	Financed thermal coal mining (clients with >5% revenue from coal).	2021 baseline (financing exposure); Target: 50% cut by 2030, 100% exit by 2040.	Reduce exposure by 50% by 2030; complete exit by 2040 (No new coal mine or coal power financing allowed).	Absolute (financing exposure).	Aligned with global coal phase-out; helps meet Paris goals on ending unabated coal. Focus on just transition for affected communities.
Cement Sector Emissions Mitigation – decarbonize lending portfolio	Financed cement production (esp. clinker production processes).	2021 baseline (clients' Scope 1+2 emissions intensity); Target year 2030.	–20% portfolio GHG intensity (tCO_2e/ton) by 2030.	Intensity (emissions per output).	Sectoral decarbonization (cement 1.5°C pathway). Focuses on CO_2 from cement manufacturing (clinker substitution, alt fuels).

Target & Objective	Scope & Coverage	Baseline & Period	Target Metric (Goal)	Target Type	Alignment & Notes
Palm Oil Sector Emissions 	Financed palm oil operations (plantations & mills, including supply chain).	2022 baseline (portfolio emissions intensity); Target year 2030.	–16% portfolio GHG intensity by 2030.	Intensity (emissions per output or land area).	Aligned with SBTi FLAG (Forestry, Land & Agriculture) 1.5°C pathway. Addresses all GHGs (CO_2, methane). NDPE policy enforced for all clients.
Power Generation Portfolio Mitigation – align lending with net-zero scenario 	Financed power generation assets (utilities, energy projects).	2021 baseline (financed emissions intensity); Target year 2030.	Align portfolio CO_2e/kWh to IEA Net Zero 2030 intensity scenario (significant reduction).	Intensity (emissions per energy unit).	Sectoral approach (IEA NZE 2030). Prioritizes renewables and phases out coal in portfolio (no new coal financing).
Oil & Gas Portfolio Mitigation – decarbonize lending portfolio 	Financed oil & gas sector (upstream to downstream).	2022 baseline (financed emissions lending intensity); Target year 2030.	–16% Financed Emissions Lending Intensity (includes Scope 1, 2 & use-of-sold product) by 2030.	Intensity (emissions per lending exposure).	Engage clients to reduce flaring, leaks, etc. No new financing for post-2021 oilfield projects (from 2025). Aligns to Paris goals for O&G.
Real Estate Portfolio Mitigation – decarbonize lending portfolio 	Financed real estate (new and existing buildings).	Current portfolio emissions (c.2022); Target year 2030.	Reduce financed emissions intensity (e.g., kg CO_2e/m^2) by 2030 in line with 1.5°C trajectory.	Intensity (emissions per m^2 or per property).	Sectoral approach (accounts for grid decarbonization). Promotes green building standards (LEED, EDGE) in lending.

Table 1: Summary of CIMB Thai Climate-Related Targets (FY2024)

CIMB Thai's climate targets are set in alignment with CIMB Group's aspirations and global best practices. As a member of the Net-Zero Banking Alliance (NZBA) and a founding signatory of the UNEP FI Principles for Responsible Banking, CIMB Group anchors these targets to science-based pathways. This means the Net-Zero 2050 commitment and the 2030 sector targets are designed to align with limiting global warming to 1.5°C. Baseline years (e.g., 2019 for operational emissions, 2021–2022 for portfolio emissions) were chosen to provide realistic reference points for measuring progress. While the targets haven't been externally validated by bodies like SBTi, they are benchmarked against such standards and the underlying data and methodologies are robust. The bank's GHG accounting is externally assured annually by a third party, ensuring the accuracy of emissions data that inform target-setting.

The Board of Directors and senior management provide strong oversight of climate targets. Sustainability performance is integrated into management KPIs – including top executives – to ensure accountability. A Board Sustainability Committee and internal Sustainability Team oversee progress. The Environmental Management Policy, approved by the Board, embeds these targets (like Net-Zero 2030 for operations) into the bank's operating standards. CIMB Thai commits to periodic review of targets at least every 5 years. For example, in 2024 CIMB Group raised its sustainable finance target from RM60 billion to RM100 billion by 2024, reflecting accelerated ambition; similarly, climate targets will be revisited and potentially strengthened as needed. No climate target has been relaxed – if anything, the trend is to increase ambition when early targets (such as the 36% interim reduction) are exceeded. Moreover, CIMB Thai will ensure that any differences between CIMB Group's methodologies and local (Bank of Thailand) guidelines are harmonized, always prioritizing compliance with the stricter requirement. This governance approach guarantees that targets remain both ambitious and credible within the local context.

CIMB Thai employs rigorous metrics and tools to track progress against each target. Operational emissions (Scope 1 and 2) are measured continuously, and the Bank launched a cloud-based carbon management platform in 2024 to monitor its footprint in real time. Yearly performance (as seen in the reduction of tCO_2e vs baseline) is reported in the Sustainability Report, with data externally assured. The Bank has implemented an internal carbon pricing mechanism (THB 550 per tCO_2 for emissions beyond targets) to economically incentivize meeting reduction goals. For financed emissions, progress is tracked through client engagement outcomes (e.g., reduction in exposure to coal, number of clients with improved practices). Although quantitative portfolio emissions data disclosure is still being developed, the Bank reports relevant actions and intermediate milestones (like policy implementation and green financing volumes) annually. Third-party assurance of disclosed data (and second-party opinions for instruments like green bonds) provide validation that the bank's progress and methodologies are sound. As new standards emerge (e.g., Thai taxonomy, forthcoming regulations), CIMB Thai updates its monitoring frameworks to stay in line. Any changes or updates to targets are transparently disclosed in reports, maintaining stakeholder trust.

By end-2024, CIMB Thai had reduced its Scope 1 and 2 GHG emissions by 39.3% compared to 2019 (3,904 tCO_2e in 2024 vs 6,432 tCO_2e in 2019). This exceeded the interim target of a 36% reduction. The 2024

reduction built on a 31% cut achieved by 2023, indicating an acceleration in decarbonization efforts. In practical terms, the Bank's emissions fell from 4,447 tCO_2e in 2023 to 3,904 tCO_2e in 2024. The chart below illustrates the downward trend and the trajectory toward the net-zero 2030 goal.

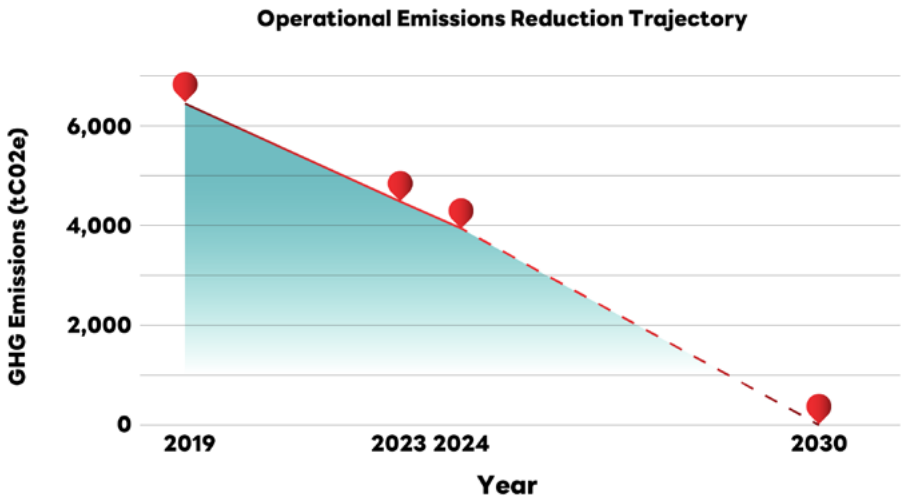


Figure 1: CIMB Thai's operational GHG emissions trend (2019 baseline vs 2023–2024 performance, and 2030 Net-Zero target).

The substantial drop in emissions was primarily driven by reductions in Scope 2 (purchased electricity) emissions. In 2024, CIMB Thai dramatically increased its renewable energy usage, purchasing 2,300 MWh of Renewable Energy Certificates (RECs) – the highest among CIMB Group entities – and expanding on-site solar installations. These measures cut Scope 2 emissions by 39% vs 2019. Scope 1 (direct emissions) improvements continued as well: fuel use in the vehicle fleet was down 61% since 2019, thanks to route optimizations and transitioning to electric vehicles. However, one operational challenge was a rise in refrigerant emissions in 2024 due to increased air-conditioning maintenance; this caused a slight uptick in Scope 1 from 2023 to 2024 (504 to 581 tCO_2e). Importantly, the gains in renewable electricity more than offset this, resulting in net progress. Having surpassed the 2024 milestone, the Bank is on track for Net-Zero operations by 2030. At ~3,904 tCO_2e in 2024, only modest residual emissions remain to be eliminated over the next 5-6 years. CIMB Thai plans to further cut emissions through continued energy efficiency (it met a self-imposed 5% energy intensity reduction target in 2024) and increased renewable procurement (additional RECs are already planned for 2025). Any minimal residual emissions by 2030 will be neutralized with high-quality carbon credits, but only after maximizing direct reductions.

Beyond carbon emissions, CIMB Thai improved its overall environmental performance in 2024: it broadened waste tracking (covering plastic, food, waste beyond just paper) and pursued LEED green building certification for its head office. These efforts, while not direct GHG targets, support the culture of environmental responsibility underpinning its climate program. The successful integration of resource efficiency

(like the new electricity and water intensity targets) into operations demonstrates the Bank's holistic approach – tackling climate impact on multiple fronts.

For its financed emissions, CIMB Thai's climate targets look toward 2030 and beyond, and 2024 was focused on laying the groundwork. The Bank implemented Group-wide policies locally – critically, a prohibition on new financing for coal mining or coal-fired power, and a commitment to exit coal completely by 2040. By adhering to this policy, any existing coal exposures in Thailand will naturally wind down (there was no new coal exposure added in 2024). Across other carbon-intensive sectors, CIMB Thai began integrating emissions targets into client engagement. In 2024, it rolled out enhanced sustainability due-diligence: for cement, palm oil, power, oil & gas, and real estate clients, discussions on their decarbonization plans and compliance with the Bank's sector targets became standard. For example, all palm oil clients must now abide by the No Deforestation, No Peat, No Exploitation (NDPE) policy – ensuring their practices don't contribute to deforestation-related emissions. Similarly, new credit to power producers heavily favors renewable energy projects as the Bank aligns its power portfolio with the IEA Net Zero scenario. Quantitatively, the Bank has not yet disclosed year-by-year emissions intensity for these portfolios, as methodologies and data collection are being refined (an industry-wide challenge). However, it has reported significant steps: such as committing THB 20 billion in sustainable finance to help clients in power and oil & gas transition towards cleaner operations. These financing commitments in 2024 facilitate emissions-reducing projects (like renewables, energy efficiency upgrades, methane capture in O&G), which will translate into measurable portfolio emissions cuts over time. By setting clear expectations (e.g., a 16% intensity cut in O&G by 2030) and supporting clients with capital and advice, CIMB Thai is steering its portfolio toward the targets.

The decarbonization of the loan book is inherently a longer-term endeavor than reducing operational emissions. Some sectors, like power generation, depend on national energy policies and market shifts (e.g., how quickly the Thai grid can add renewables). CIMB Thai's interim approach is to use its influence and conditions on lending to accelerate these shifts – for instance, by not financing new coal plants and by encouraging clients to retire older high-emission assets. In sectors like palm oil, enforcing NDPE and requiring sustainability certifications will help reduce future emissions from land use changes and inefficient practices. The Bank acknowledges that data quality and client cooperation are challenges; thus, part of its 2024 effort was also on building better data systems (working with industry initiatives like PCAF) so that from 2025 onward, it can more rigorously measure and report financed emissions.

CIMB Thai's climate strategy places primary emphasis on direct reductions, with carbon credits used in a supplemental and transparent manner. In 2024, the Bank did not need to use offsets to meet its core operational emissions target – reductions and renewable energy were sufficient. However, it voluntarily pursued carbon neutrality for select events and initiatives. Specifically, CIMB Thai offset 229 tCO_2e by purchasing high-quality carbon credits (Thai Verified Emission Reductions) for six major events (including a large corporate anniversary event and a sustainability forum series). These credits were sourced from domestic renewable energy and biomass projects and were verified

by Thailand's TGO (national GHG organization), ensuring their credibility. By retiring these credits, the Bank neutralized the emissions footprint of those events, making them carbon neutral. Importantly, these offsets were accounted separately from the Bank's Scope 1-3 inventory. CIMB Thai makes it clear that achieving its Net-Zero targets will not rely on offsets until necessary – any residual emissions by 2030 (for operations) will be offset, but only after aggressive reduction efforts. This approach aligns with best practices, maintaining the integrity of the 'gross' emissions reduction. The thorough disclosure of the carbon credit types, sources, and quantities in the sustainability report also demonstrates transparency, allowing stakeholders to assess the quality and integrity of offsets used. In summary, carbon credits play a limited yet constructive role: they address emissions that are currently unavoidable (like event-related emissions or any small remaining operational emissions in the future) and do so in a way that supports local climate-positive projects. By leveraging accredited schemes and openly reporting on them, CIMB Thai ensures its use of offsets bolsters – rather than undermines – its overall climate credibility.

2024 underscored CIMB Thai position as a proactive leader in climate action among Thai banks.

The Bank not only set comprehensive climate targets spanning its operations and financing activities, but also delivered tangible progress on those commitments. Exceeding the interim operational emission reduction goal ahead of schedule has validated the Bank's strategic approach and provides momentum moving forward. With robust governance, alignment to science-based pathways, and transparent disclosure, CIMB Thai's targets carry credibility. The Bank's efforts in 2024 – from integrating climate KPIs into management performance to innovating with carbon management tech – have strengthened the foundations needed to achieve its 2030 and 2050 goals. Looking ahead, the challenges will be to maintain this pace of decarbonization and to quantify portfolio emission reductions as data improves. Yet, CIMB Thai has shown it can adapt and even raise its ambitions (as seen in the Group's increased sustainable finance target). Stakeholders can expect the Bank to continue tightening its targets and initiatives in line with evolving climate science and policy. In essence, CIMB Thai FY2024 climate disclosures tell a story of a bank moving 'from ambition to action.' The core targets – Net-Zero 2030 operations and Net-Zero 2050 overall – are firmly on track, supported by concrete interim milestones and sector-specific plans. By focusing on actual emissions cuts and using offsets sparingly and transparently, CIMB Thai is demonstrating how a financial institution can credibly align with global climate objectives. As the Bank progresses, it not only mitigates its own climate risks but also contributes to Thailand's and the world's transition to a low-carbon, sustainable economy. This dual benefit – managing risks while seizing sustainable opportunities – will define the Bank's climate journey in the years to come.

CIMB Thai's Financed Emissions in 2024

CIMB Thai Breakdown by PCAF Asset Class	2023			2024						
	Scope 1 + Scope 2			Scope 1 + Scope 2				Scope 3		
	Exposure (Mil THB)	Absolute Emissions (tCO_2e)	Weighted Data Quality Score	Exposure (Mil THB)	Absoute Emissions (tCO_2e)	Emission Intensity (tCO_2e/Mil THB)	Weighted Data Quality Score	Absoute Emissions (tCO_2e)	Emission Intensity (tCO_2e/Mil THB)	Weighted Data Quality Score
Total	**294,020.36**	**1,903,522.81**	**19.02**	**282,982.22**	**3,849,946,294.92**	**32,934.99**	**18.44**	**16,024,404,313.15**	**136,704.48**	**3.87**
Business Loans and Unlisted Equity	122,309.72	1,155,511.65	4.33	117,719.05	3,848,126,196.07	32,737.57	3.72	16,019,211,938.95	136,281.92	2.10
Corporate Bonds and Listed Equity	23,675.80	233,137.85	4.05	11,612.70	1,290,867.57	105.05	4.05	5,192,374.20	422.56	1.77
Commercial Real Estate	2,454.58	20,566.63	4.01	2,548.86	24,274.06	9.52	4.00			
Mortgages	109,273.53	126,406.63	4.00	115,607.15	124,619.90	1.08	4.00			
Motor Vehicles Loans	36,306.73	367,930.45	2.63	35,494.46	380,337.31	81.77	2.67			

In 2024, CIMB Thai has continued to measure and report its financed emissions – i.e. the emissions attributable to its lending and investment portfolio (Scope 3, Category 15). The Bank follows the Partnership for Carbon Accounting Financials (PCAF) methodology, which provides a standardized approach to calculate financed emissions for different asset classes. Under PCAF, the Bank attributes a portion of a borrower's emissions to itself based on its share of financing (for example, using the loan amount relative to the borrower's enterprise value or total assets). In accordance with PCAF's guidance, Scope 1 and 2 emissions of borrowers are included for all asset classes, while significant Scope 3 (value chain) emissions of borrowers are included for certain sectors (e.g. oil & gas, power generation). This comprehensive approach aligns with IFRS S2, which mandates banks and similar institutions to disclose financed emissions and their calculation methodologies. CIMB Thai's participation in the Net-Zero Banking Alliance (NZBA) reinforces the importance of this metric, as the Bank has committed to achieve net-zero financed emissions by 2050 with interim targets for carbon-intensive sectors by 2030, consistent with NZBA guidelines. The following analysis provides a detailed overview of CIMB Thai's financed emissions for 2023 and 2024, the sectoral drivers (notably NZBA priority sectors), data quality considerations, and the bank's climate targets and transition strategy.

CIMB Thai's total financed emissions (Scope 1 and 2 of borrowers) increased dramatically from ~1.90 million tCO_2e in 2023 to ~3.85 billion tCO_2e in 2024. This extraordinary jump is not due to an explosion of the portfolio's size or inherent carbon intensity in one year, but rather reflects an expanded scope and improved methodology in 2024. In 2023, the Bank's disclosures focused on financed Scope 1 and 2 emissions of its borrowers, covering key corporate and personal lending portfolios. By 2024, however, CIMB Thai implemented a more comprehensive PCAF approach (in line with IFRS S2's emphasis on completeness), which incorporated additional asset classes and previously unaccounted emissions sources. This category likely represents exposures outside the main industrial sectors (potentially including sovereign bond holdings or other loans) that were newly included in the financed emissions tally. The inclusion of this segment in 2024 overwhelmingly skews the year-on-year comparison. Excluding this one-off methodological inclusion, the underlying financed emissions still rose modestly from 2023 levels, driven largely by higher emissions attribution in certain sectors (discussed below) and the addition of borrowers' Scope 3 emissions for carbon-intensive industries in the 2024 inventory.

Business Loan and Unlisted Equity

CIMB Thai Breakdown by Sector	2023			2024						
	Scope 1 + Scope 2			Scope 1 + Scope 2				Scope 3		
	Exposure (Mil THB)	Absolute Emissions (tCO_2e)	Weighted Data Quality Score	Exposure (Mil THB)	Absoute Emissions (tCO_2e)	Emission Intensity (tCO_2e/Mil THB)	Weighted Data Quality Score	Absoute Emissions (tCO_2e)	Emission Intensity (tCO_2e/Mil THB)	Weighted Data Quality Score
Total	**122,309.72**	**1,155,511.65**	4.33	**117,719.05**	**3,848,126,196.07**	**32,737.57**	3.72	**16,019,211,938.95**	**136,281.92**	2.10
Agriculture	14,815.42	75,687.74		8,342.54	120,016.35	1.02		484,545.57	4.12	
Aluminium	51.7	714.35		12.01	1,046.52	0.01		1,511.72	0.01	
Cement	121.4	1,309.28		246.18	46,637.90	0.40		3,565.46	0.03	
Coal	3,363.47	93,743.44		2,627.11	187,368.57	1.59		1,006,046.53	8.56	
Iron and Steel	1,215.37	6,869.19		883.63	23,185.21	0.20		84,275.22	0.72	
Oil & Gas	5,456.89	99,773.99		6,272.72	385,738.92	3.28		2,398,465.39	20.40	
Real Estate	17,010.58	11,152.10		13,428.79	1,123,904.56	9.56		1,757,894.10	14.96	
Transport	6,210.25	3,971.28		5,353.33	6,661.25	0.06		25,725.63	0.22	
Utilities - Other	20.32	28.99		30.00	25.13	0.00		107.09	0.00	
Utilities - Power	14,778.49	807,466.87		13,671.33	932,822.95	7.94		240,392.77	2.05	
Other	59,265.82	54,794.42		66,851.42	3,845,298,788.71	32,713.51		16,013,209,409.47	136,230.86	

Corporate Bonds and Listed Equity

CIMB Thai Breakdown by Sector	2023			2024						
	Scope 1 + Scope 2			Scope 1 + Scope 2				Scope 3		
	Exposure (Mil THB)	Absolute Emissions (tCO_2e)	Weighted Data Quality Score	Exposure (Mil THB)	Absoute Emissions (tCO_2e)	Emission Intensity (tCO_2e/Mil THB)	Weighted Data Quality Score	Absoute Emissions (tCO_2e)	Emission Intensity (tCO_2e/Mil THB)	Weighted Data Quality Score
Total	**23,675.80**	**233,137.85**	4.05	**11,612.70**	**1,290,867.57**	**105.05**	4.05	**5,192,374.20**	**422.56**	1.77
Agriculture	866.30	3,064.67		293.00	5,740.54	0.47		17,079.62	1.39	
Cement	374.50	42,371.33		412.50	2,661.94	0.22		3,954.37	0.32	
Oil & Gas	629.30	4,555.11		64.90	2,335.40	0.19		12,063.66	0.98	
Real Estate	3,827.00	1,629.18		1,370.00	985,292.05	80.18		4,619,296.40	375.92	
Transport	5,507.50	16,399.56		4,242.90	13,262.27	1.08		11,238.16	0.91	
Utilities - Others	500.00	4,325.87		101.00	2.10	0.00		10,060.53	0.82	
Utilities - Power Generation	3,464.40	130,162.87		2,254.40	222,390.31	18.10		360,320.96	29.32	
Other	8,506.80	30,629.25		2,874.00	59,182.98	4.82		158,360.50	12.89	

In 2024, business loans and unlisted equity investments accounted for virtually all of the reported financed emissions (over 99% of total Scope 1+2 financed CO_2). This reflects the fact that heavy-emitting corporate clients contribute far more to the Bank's carbon footprint than retail customers. By contrast, other asset classes are relatively minor in terms of absolute emissions: listed equity and corporate bonds financed ~1.29 million tCO_2 in 2024 (only a fraction of a percent of the total), while mortgage loans (financing residential real estate) contributed ~0.125 million tCO_2, commercial real estate loans ~0.024 million tCO_2, and motor vehicle loans ~0.38 million tCO_2. These figures underscore that corporate exposures drive the bulk of climate impact, an important insight for setting portfolio decarbonization priorities. In addition to borrowers' Scope 1 and 2 emissions, CIMB Thai also quantified financed Scope 3 (value-chain) emissions for its portfolio in 2024. The financed Scope 3 emissions were estimated at ~16.0 billion tCO_2e – an order of magnitude higher than the Scope 1+2 total – reflecting, for example, the downstream use of sold products by oil & gas clients and indirect emissions in supply chains of other borrowers. (For context, Thailand's entire annual GHG emissions are roughly 300–400 million tCO_2e, dominated by the energy sector). This stark comparison highlights that a bank's climate exposure extends well beyond borrowers' direct emissions and into the full lifecycle emissions of the activities it finances. Going forward, CIMB Thai will need to manage both direct and value-chain financed emissions, but for the purposes of targets and tracking, the Bank is likely to emphasize the more controllable Scope 1+2 portfolio emissions in the near term, while encouraging clients to reduce their Scope 3 footprint.

CIMB Thai assessed financed emissions across five key asset classes in its portfolio, following PCAF's asset class definitions: (1) Business Loans and Unlisted Equity, (2) Corporate Bonds and Listed Equity, (3) Commercial Real Estate, (4) Mortgages, and (5) Motor Vehicle Loans. The table below summarizes the portfolio exposure and associated emissions by asset class for the year 2024 (with 2023 for comparison):

- Business Loans & Unlisted Equity: THB 117,719 million exposure in 2024, financing ~3.848×10^9 tCO_2e (Scope 1+2). (2023: THB 122,310m exposure, 1,155,512 tCO_2e.) This category includes general corporate lending to private and public companies and is by far the largest source of emissions. The 2024 figure is exceptionally high due to the aforementioned inclusion of the "Other" segment; even so, business loans to certain sectors saw substantial increases in attributed emissions independent of that change.
- Corporate Bonds & Listed Equity: THB 11,613 million exposure in 2024, financing ~1,290,868 tCO_2e. (2023: THB 23,676m, 233,138 tCO_2e.) Although the exposure roughly halved (the Bank reduced its holdings of corporate bonds), the attributed emissions increased ~5.5×, indicating much higher carbon intensity in the remaining bond portfolio. This jump is primarily due to one-off factors: in 2024 the Bank's bond investments were more concentrated in a few high-emitting issuers (notably a real estate issuer – see Sector Analysis below) and methodology updates that captured more of each issuer's emissions.
- Commercial Real Estate (CRE): THB 2,549 million exposure in 2024, financing ~24,274 tCO_2e. (2023: THB 2,454m, 20,566 tCO_2e.) This asset class covers loans for commercial property (e.g. office

buildings, retail centers). Financed emissions increased modestly (+18%) in 2024, reflecting slightly higher exposure and grid emission factors. CRE emissions are relatively small in absolute terms (≈0.024 $MtCO_2$) but important from a buildings sector perspective, as they represent the operational energy use of financed properties.

- Mortgages: THB 115,607 million exposure in 2024, financing ~124,620 tCO_2e. (2023: THB 109,274m, 126,407 tCO_2e.) Emissions from residential mortgages were essentially flat year-on-year (a slight 1% decrease despite growth in exposure). These emissions result from electricity and fuel use in homes financed by the Bank. Given Thailand's fossil-heavy electricity mix (over 80% of power from fossil fuels in 2024), even household electricity consumption translates into a notable carbon footprint. The emission intensity of the mortgage portfolio in 2024 was about 1.08 tCO_2e per million THB of lending, highlighting that while significant in total, residential lending is far less carbon-intensive per dollar than corporate lending.
- Motor Vehicle Loans: THB 35,494 million exposure in 2024, financing ~380,337 tCO_2e. (2023: THB 36,307m, 367,930 tCO_2e.) This represents the emissions from use of vehicles financed by the Bank (tailpipe emissions of cars and other vehicles). Emissions in this category rose ~3% in 2024. The stable trend reflects that new auto loans and gradual improvements in vehicle efficiency roughly balanced out. Notably, this category's data quality is higher (score ~2.7) since it relies on standard emission factors per vehicle type, giving more confidence in the estimate. As Thailand pushes toward electric vehicles in coming years, we expect these financed emissions to peak and then decline.

In summary, business and corporate financing drive nearly all of CIMB Thai's financed emissions, whereas retail lending (mortgages and auto loans) contributes a smaller share. The emissions intensity of different asset classes varies widely. For instance, in 2024 the corporate loan portfolio's carbon intensity was on the order of ~32,700 tCO_2e per THB 1 million (effectively ~32.7 tCO_2e per THB 1,000), owing to large corporate emitters in the mix. In contrast, the intensity of the mortgage portfolio was only ~1.08 tCO_2e per THB 1 million, and for auto loans around 81.8 tCO_2e per THB 1 million. This stark difference underscores that decarbonization efforts must focus on the corporate book – especially a relatively small number of high-emitting clients – to significantly reduce the bank's financed emissions.

Drilling down further, CIMB Thai's corporate loan and bond portfolio emissions are concentrated in a few high-impact sectors, many of which are designated as priority sectors by the Net-Zero Banking Alliance. The Bank's internal analysis breaks down financed emissions from Business Loans and Corporate Bonds by sector, revealing the main drivers in 2024:

- Power Generation (Utilities – Power): This is the largest single sector contributor to the Bank's financed emissions (excluding the miscellaneous "Other" category). In 2024, loans to the power generation sector accounted for ~0.933 million tCO_2e (Scope 1+2), with an additional ~0.240 million tCO_2e of Scope 3 upstream emissions (e.g. fuel supply). The Bank's bond holdings in electric utilities added another ~0.222 million tCO_2e. Together, power sector exposures financed roughly 1.15 $MtCO_2$ in direct emissions – about 30% of the identifiable sector total (excluding "Other"). This reflects Thailand's

heavy reliance on fossil-fuel power: as of 2024, over 80% of electricity is generated from fossil fuels (mainly natural gas and coal). Thus, loans to utilities translate into substantial emissions. The high carbon intensity of this sector (2024 loan intensity ~7.94 tCO_2e per million THB) underscores a key transition risk: decarbonizing Thailand's power grid. Encouragingly, Thailand's Power Development Plan aims to lift renewable generation to 33% by 2030, and CIMB Thai can play a role by shifting its power portfolio toward renewable energy projects. Reducing financed emissions in power generation will be central to meeting the Bank's net-zero goal, and likely a focus of its 2030 sectoral targets (e.g. reducing portfolio emission intensity in the power sector in line with a <2°C scenario).

- Oil & Gas: The oil and gas sector (which includes upstream oil/gas extraction and possibly downstream refining) is another priority focus. In 2024, CIMB Thai's business loans to oil & gas companies financed ~0.386 million tCO_2e in Scope 1 and 2 emissions. While substantial, this is actually lower than power generation's contribution. However, the Scope 3 (use of sold fuel) emissions associated with these clients are enormous – an estimated ~2.40 million tCO_2e financed – reflecting the CO_2 released when end-users burn the oil and gas products. The Bank's exposure to oil & gas was relatively small (THB ~6.3 billion in loans, and only THB 65 million in bonds by 2024), and indeed the bond portfolio's oil & gas emissions were negligible (~2,335 tCO_2). The high leverage of emissions per dollar in this sector means even minor financing can yield significant financed emissions. Thailand's oil & gas industry (led by companies like PTT) remains a significant emitter, though natural gas is the dominant fossil fuel in the power mix. CIMB Group has already taken a stance on this sector by committing to exit coal (a related fossil fuel) financing by 2040, and will likely also set stringent expectations for oil and gas clients. In practice, managing oil & gas portfolio emissions will involve supporting clients' transition (e.g. financing renewable energy ventures by these firms, or methane reduction efforts) and potentially capping or reducing exposure to high-emission upstream projects over time.
- Coal Mining/Coal Power: Coal-related exposures are largely embedded within the above sectors (power generation and "Other"). In the sector breakdown, coal mining is listed separately under business loans with ~0.188 million tCO_2e in 2024 emissions, and financed Scope 3 of ~1.006 million tCO_2e (likely the downstream combustion of mined coal). This indicates the Bank still had some residual exposure to coal (approximately THB 2.63 billion in 2024 loans to coal sector). However, as noted, CIMB was the first bank in Southeast Asia to commit to exiting coal by 2040. We can expect this exposure – and its associated emissions – to trend downward sharply in coming years. In terms of targets, the Bank may set an earlier deadline for zero coal exposure (well before 2040 for CIMB Thai specifically) and in the interim report the phase-out progress.
- Real Estate (Buildings): Perhaps surprisingly, real estate emerged as one of the top contributors to financed emissions in 2024. Loans to the real estate sector (which likely include property developers and real estate management companies) were responsible for ~1.1239 million tCO_2e of Scope 1+2 emissions – an enormous jump from only ~11,152 tCO_2e in 2023. Similarly, the bank's holdings of real estate corporate bonds financed ~0.9853 million tCO_2e in 2024 (versus

~1,629 tCO_2e in 2023). These increases by orders of magnitude suggest a methodological change: in 2024 the Bank likely began accounting for building operational emissions linked to real estate sector exposures. For example, if CIMB Thai finances a real estate investment trust (REIT) or a property developer, PCAF would attribute emissions from the energy use of the buildings (electricity for lighting, cooling, etc.) to the Bank. Thailand's buildings sector is a significant energy consumer (air conditioning being a major driver), so including these emissions causes the real estate sector's share to surge. The financed Scope 3 emissions for real estate were also high at ~1.758 million tCO_2e, possibly capturing upstream construction materials or tenants' energy use beyond purchased electricity. The implication is that the Bank's portfolio decarbonization efforts must also address buildings – e.g. by green building standards, energy efficiency financing, and more mortgages for energy-efficient homes. While real estate's direct emissions (Scope 1 and 2) are lower than power or industry on a per-company basis, the large volume of real estate lending means this sector will be important in meeting climate targets. We anticipate CIMB Thai will monitor emissions per square meter or energy intensity for its real estate loan portfolio and engage with borrowers on improving building efficiency.

- Steel and Cement: These are hard-to-abate industrial sectors included in NZBA's priorities. CIMB Thai's exposure to iron & steel and cement manufacturers is relatively modest, but these sectors have very high carbon intensity. In 2024, loans to Iron & Steel companies financed about 23,185 tCO_2e (0.023 Mt), and Cement industry loans financed ~46,638 tCO_2e. These figures are small in the context of the overall portfolio, due to low exposure (e.g. only THB ~247 million in cement loans). However, per unit of exposure, these sectors emit heavily. For instance, cement production is energy-intensive and involves CO_2 from limestone calcination; the bank's financed emission intensity for cement borrowers is high (which is evident from 2023 data where a THB 374.5m cement bond had 42,371 tCO_2 emissions). In Thailand's economy, industry (including cement and steel) contributes about 10.5% of GHG emissions. Going forward, if the Bank increases financing in these sectors (perhaps to support low-carbon technology upgrades), it will need to ensure alignment with decarbonization pathways (e.g. emissions per ton of steel or cement declining over time). The Bank might set sector-specific intensity targets (e.g. X tCO_2/ton cement by 2030 for its cement portfolio, in line with IEA benchmarks) and track them as part of its climate strategy.
- Transport: This sector includes transportation and logistics companies (excluding personal vehicles which fall under retail auto loans). In CIMB Thai's breakdown, Transport loans financed a relatively small amount: ~6,661 tCO_2e in 2024 (down from ~3,971 tCO_2 in 2023) and transport-related bonds financed ~13,262 tCO_2e. These low figures suggest the Bank's corporate exposure to high-emission transport subsectors (e.g. airlines, shipping) is minimal. Most of Thailand's transport emissions come from road vehicles and aviation, but those are not heavily represented on the Bank's corporate books. Nonetheless, transport is a priority sector under NZBA (e.g. automotive manufacturing, aviation), so CIMB Thai will consider this in future target-setting. The primary influence the Bank has in this area is through vehicle financing (promoting EV adoption via its auto loan portfolio) and possibly financing public transit infrastructure. Current financed emissions from transport are modest, but as the economy transitions (e.g. growth in EVs, biofuels),

the Bank can enable emissions reduction by shifting what it finances (more low-carbon transport solutions).

- Agriculture and Forestry: Agriculture is another NZBA-recognized sector because of its emissions and land use impacts. CIMB Thai's Agriculture sector loans (e.g. agribusiness companies) were responsible for about 120,016 tCO_2e in 2024 (up from ~75,688 tCO_2e in 2023). This is a moderate contribution, reflecting activities like food processing, plantation operations, etc., rather than direct farm-level emissions (which are often not financed by commercial banks beyond large corporate agribusiness). Nationally, agriculture (including rice cultivation and livestock) makes up roughly 18% of Thailand's GHG emissions, but a lot of that comes from smallholders and rice paddies (methane) which are not financed emissions per se. The bank's role here may involve financing sustainable agriculture practices – for instance, climate-smart agri projects that reduce methane or deforestation. While agriculture is not the top emissions source in the portfolio, it is material and also linked to nature-related risks; thus CIMB Thai will incorporate this sector in its climate and sustainability strategy (e.g. no deforestation commitments, palm oil portfolio monitoring as CIMB has done group-wide for palm oil).

Overall, the sectoral analysis confirms that a handful of high-carbon sectors (power, fossil fuels, real estate, and heavy industry) drive the vast majority of CIMB Thai's financed emissions. These align closely with the "priority sectors" identified by NZBA for target-setting. The Bank is therefore focusing its metrics and targets on these areas. It's worth noting that in 2024, an "Other" sector category in business loans overshadowed all individual sectors in absolute emissions – but this category likely aggregates miscellaneous exposures (possibly including sovereign loans or other sectors not broken out) and thus is less actionable than the clearly-defined sectors above. For transparency, the Bank disclosed this "Other" block in 2024, but for climate strategy, it will emphasize the named sectors where it can engage clients on transition plans.

Data Quality and Methodology Considerations

Ensuring robust data underpins all these metrics. CIMB Thai's financed emissions calculations are subject to data quality constraints, which are scored following PCAF's 1–5 scoring system (1 = highest quality, e.g. verified emissions data from clients; 5 = lowest quality, e.g. industry-average proxies). In 2024, the weighted average data quality score for the portfolio was around 4.0, indicating that much of the data used was estimated or non-specific. For instance, most corporate borrowers did not provide their own emissions data, so the Bank relied on secondary data: sector averages, emission factors per activity, or economic intensity estimates (these methods typically correspond to PCAF scores of 4 or 5). This is a common challenge – as one analysis notes, "data quality is a major limitation for financial institutions wanting to calculate their financed emissions, as entity-specific data is often not easily accessible.". CIMB Thai did see some improvement in data quality from 2023 to 2024: the business loans portfolio score improved from 4.33 to 3.72, indicating that for some major clients (possibly in power or real estate) the Bank obtained better emissions data or used more granular estimation methods. The motor vehicle loan portfolio has a relatively good score (~2.7 in 2024), since calculating tailpipe emissions can be done with standard vehicle data (fuel economy, etc.), a more objective and specific method (PCAF score 2-3). On the other hand, corporate bonds remained around 4.05, as did mortgages and commercial real estate at 4.0 – reflecting continued reliance on generic emission factors (e.g. average energy use per household, average emissions per building type).

Under IFRS S2, the Bank is required to disclose the methodology and assumptions used for these metrics, and to discuss the limitations. In its report, CIMB Thai acknowledges the uncertainties: for example, the use of Thailand's grid emission factor to estimate building emissions, or the use of financial proxies (revenue or loan-to-EVIC ratios) when specific borrower emission data is unavailable. These methodological choices can significantly affect the results and comparability. The IFRS S2 climate standard deliberately allows high-level flexibility in methodologies, given that "calculation methodologies need to evolve in practice" – so CIMB Thai's approach of using PCAF (the industry-leading standard) is aligned with best practice and gives stakeholders confidence that the numbers are at least computed consistently.

A key goal going forward is to improve data quality. The Bank plans to work with clients to obtain actual emissions disclosures – for instance, encouraging large corporate borrowers to report their Scope 1 and 2

emissions (if not get them verified), which would allow moving from a score 4/5 to score 1/2 for those exposures. It is also exploring partnerships with data providers and industry groups to source emission factors and benchmarks that are more tailored to Thai operations, as opposed to using global averages. Enhancing data quality not only increases accuracy but also helps in tracking progress: if, for example, a power company in the portfolio installs carbon capture and lowers its actual emissions, the Bank wants to capture that improvement in its financed emissions metric. Under the ISSB/IFRS S2 framework, there are relief provisions (such as a delayed effective date for Scope 3 disclosures) acknowledging data difficulties, but CIMB Thai is treating financed emissions measurement as a journey of continual improvement. By prioritizing data quality upgrades now, the Bank is preparing for more stringent disclosure expectations in the future and building the capability to measure portfolio alignment with climate goals more precisely.

In setting targets, CIMB Thai will likely use a combination of absolute emissions reduction and portfolio carbon intensity metrics. Absolute financed emissions (like the ~3.85 billion tCO_2e figure of 2024) can be tricky as a target metric, because they are influenced by portfolio size and methodological changes.

Client engagement and portfolio rebalancing are the main levers to achieve these targets. The Bank has already made policy moves such as the coal financing phase-out by 2040, which will eliminate a whole category of emissions. It is also likely to constrain new financing for high-emission projects that lack transition plans – for example, requiring any new oil & gas borrower to have a credible strategy for methane reduction or diversification. On the flip side, CIMB Thai is increasing its sustainable finance offerings. According to its sustainable finance framework, it is channeling capital to renewable energy, energy efficiency, green buildings, and clean transportation projects. Such portfolio shifting will gradually lower financed emissions. The bank's strategy includes working closely with clients in high-emitting sectors to support their transition. This could involve sustainability-linked loans where interest rates are tied to the client's emissions performance, or green bonds that refinance a company's low-carbon projects. By 2024, CIMB Thai had started identifying top emitting clients and opening dialogues on emission reduction pathways – a process that will intensify as 2030 approaches.

The sharp increase seen in 2024's reported emissions (due to methodology) provides a new reference point; we expect that from 2024 onward, financed emissions will plateau and then begin to decline as the Bank's climate actions take effect. CIMB Thai will report annual changes in absolute emissions and intensities in the Metrics & Targets section, and provide explanations (e.g. "X% reduction in power sector financed emissions due to coal loan runoff and addition of solar projects"). It will also communicate how external factors affect these metrics – for instance, government policies (Thailand's enhanced NDC aiming for 40% emissions reduction by 2030 could accelerate client decarbonization) and grid decarbonization improving automatically the emissions from mortgages and real estate.

In conclusion, CIMB Thai's financed emissions analysis for 2024 establishes a critical foundation for its IFRS S2-aligned reporting and net-zero strategy. The Bank has transparently quantified where it stands: a portfolio heavily weighted in fossil-fuel and power sectors in a country where energy accounts for ~66% of GHG emissions, leading to significant climate exposure. With this clarity, the Bank is now sharpening its targets – for example, committing to clear reduction milestones by 2030 for power, oil & gas, and other key sectors – and embedding climate considerations into its business decisions. The metrics will be used to track progress: each year, reductions in financed emissions (or intensity) will indicate whether CIMB Thai is on track to meet its commitments. If not, the Bank will need to adjust strategy (e.g. further cap high-carbon lending or invest more in low-carbon opportunities). By meeting the IFRS S2 disclosure requirements and following TCFD recommendations, CIMB Thai not only improves transparency to stakeholders, but also strengthens its internal management of climate risks and opportunities. The data and analysis will guide portfolio alignment with a net-zero future – ensuring the Bank can prosper in the low-carbon transition while contributing to Thailand's climate goals.

CIMB Thai Care Center
Tel. 02 626 7777
cimbthai.carecenter@cimbthai.com

CIMB Thai Bank
Public Company Limited 44 Langsuan Road,
Lumpini, Patumwan, Bangkok 10330
www.cimbthai.com