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CLIMATE-RELATED DISCLOSURE GUIDELINE FOR MONGOLIAN FINANCIAL INSTITUTIONS: LEARNING BY DOING



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FOREWORD



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Governor, Bank of Mongolia

Mongolia is at a transformative juncture, striving for a sustainable future where economic growth harmonizes with climate resilience. In this endeavor, the financial sector holds a pivotal role. The guidelines presented in this document represent a major milestone, providing Mongolian financial institutions (FIs) with a strategic framework to integrate sustainability into their core operations.

Climate-related disclosure is more than just a policy or regulatory requirement – it is a key instrument for opening new opportunities for financial institutions and contributing meaningfully to Mongolia’s sustainable development. Therefore, these guidelines should be seen not only as preparation for eventual mandatory disclosure but also as an opportunity to learn by doing, allowing institutions to gain practical experience and build capacity. The guidelines provide practical direction, structure, and methodologies for FIs to systematically assess, disclose,

and incorporate climate-related risks into decision-making. Developed in line with internationally accepted frameworks, notably the standards of the International Sustainability Standards Board (ISSB) under the IFRS Foundation, this document serves as both a practical roadmap and a forward-looking guide.

In practice, climate-related disclosures enable FIs attract green investments, build stakeholder trust, and navigate the transition toward a low-carbon economy. By implementing the guidelines step by step, FIs can enhance their internal capacity and gradually embed best practices. This includes the application of key methodologies such as double materiality, internal carbon pricing, and scenario analysis, all of which support effective climate risks management, strengthen portfolio resilience, and deliver

positive environmental and social impact. Furthermore, the guidelines emphasize a “learning by doing” approach that encourages continuous improvement in data collection, reporting quality, and stakeholder engagement.

The Bank of Mongolia is committed to fostering a transparent and resilient financial sector, and these guidelines are aligned with Mongolia’s National Sustainable Finance Roadmap. By embracing these practices, Mongolian FIs will strengthen their contribution to the country’s economic stability and actively participate in the global transition for sustainable development.

We extend our sincere appreciation to the Mongolian Sustainable Finance Association, the Green Climate Fund, and United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) for their valuable contributions. We are confident that this document will provide critical support to financial institutions as they implement climate-related disclosure and play a pivotal role in Mongolia’s transition to a low-carbon future.



EXECUTIVE SUMMARY

Mongolia faces unique physical and transition risks that can directly impact its financial sector. Adopting robust climate disclosure and reporting standards can enable FIs to identify and manage climate-related risks more effectively. Through scenario analysis, FIs can assess the resilience of their portfolios in the face of climate uncertainties. Appropriate risk management policies can safeguard FIs from potential financial losses and contribute to Mongolia's broader climate resilience efforts, aligning with the nation's commitment to the Paris Agreement, the country's Vision 2050 and achieving the country's sustainable finance roadmap executions. It is increasingly evident that climate change will continue to impact the economy, and it is increasingly difficult for FI executives and senior managers to assume that climate change will not intersect with the interests of their FIs. This guide details the case for embedding climate disclosure in overall governance, strategy, and risk management systems and processes and provides practical guidance on how to do this. It also offers

specific guidance on the information that should be disclosed based on international best practices.

The climate disclosure landscape is rapidly evolving, and there are various educational and practical guidance, knowledge resources being published by the most prestigious institutions and standard developers such as the ISSB of the IFRS Foundation, World Business Council for Sustainable Development (WBCSD), national banks and development finance institutions (DFIs). Therefore, this guideline does not aim to rephrase these available resources, but instead, it aims to provide more practical examples and demonstrations to translate the disclosure standards into report generation approaches.

In this guide, Section I will briefly outline the importance of climate-related disclosures, provide an overview of commonalities and differences between different climate-related disclosure frameworks such as the Task Force on Climate-related Financial Disclosures (TCFD) and IFRS, describe the costs and benefits of reporting, and share current

initiatives and practices in Mongolia. Section 2 will then explain how to use the guidelines outlined in the paper, including general considerations, the purpose of the guidelines, the target audience, and how climate-related disclosure aligns with sustainability reporting. Section 3 will examine the steps involved in disclosing, including establishing a dedicated team, identifying key climate issues and indicators, planning, collecting data, preparing case studies, reviewing and publishing ongoing improvement processes, engaging stakeholders, and assessing materiality. Section 4 will explore the core pillars of climate disclosure frameworks, which include governance, strategy, risk management, identifying risk (physical and transition) and opportunities, data sources, scenario selection and analysis, and transition and adaptation planning. This includes reporting on Scope 1, 2, and 3 emissions, calculating emissions, assessing the amount and percentage of assets or business activities vulnerable to climate-related physical and transition risks and opportunities, determining internal carbon prices, and

setting climate-related targets along with industry-specific metrics and targets. Case studies are included throughout the section to illustrate international best practices on how different FIs operationalize climate reporting. Section 5 provides final thoughts on climate-related disclosures and Section 6 directs readers to additional resources.

ACKNOWLEDGMENTS

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The guideline was made possible through the significant contribution of many people. It was prepared by the UNESCAP and MSFA led by Nomindari Enkhtur, Deanna Morris, Anant Jha, Enkhlin Davaajav with lead authorship by Patrick John Martin and with support from Altanzul Davaa-Ochir, Faye Steele, Khaliun Byambaa and Catherine Luo.

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We thank the many experts who worked with us to identify the most pressing issues and the recommended actions to address them. These stakeholders shared their knowledge and ideas with us through interviews and reports prepared by their organizations. The team would like to especially thank MSFA member institutions, the Global Reporting Initiative (GRI), and Partnership for Carbon Accounting Financials (PCAF) for their helpful feedback and support.

ACRONYMS

- **CDP - Carbon Disclosure Project:** A global environmental disclosure system for companies, cities, states, and regions to manage their environmental impacts
- **CDSB - Climate Disclosure Standards Board:** An organization that develops and promotes a framework for companies to disclose environmental information in their financial reports
- **ESRS - European Sustainability Reporting Standards:** is a set of detailed disclosure (reporting) requirements developed by the the European Financial Reporting Advisory Group as mandated by the European Commission under the Corporate Sustainability Reporting Directive
- **CSA - Climate Scenario Analysis:** Analysis that provides an institutional-wide or financial system-wide overview of the impact of climate risk on financial health
- **D-SIB - Domestic Systemically Important Bank:** Refers to banks that have been deemed essential to the financial health and stability of a country's economy
- **ESG – Environmental, Social, and Governance:** standards that access an organization's ethics and sustainability
- **FI – Financial Institution:** An organization that provides financial products and services to consumer and/or commercial customer bases
- **FRC - Financial Regulatory Commission:** Mongolia's non-bank regulatory and supervisory authority
- **GHG - Greenhouse:** Gases that trap heat in the Earth's atmosphere, contributing to global warming and climate change
- **GHG Protocol - Greenhouse Gas Protocol:** A widely-used accounting tool for quantifying and managing GHG emissions
- **GRI - Global Reporting Initiative:** An international organization that develops and promotes sustainability reporting standards for companies
- **IFRS - International Financial Reporting Standards:** A set of accounting standards developed by the International Sustainability Standards Board for reporting financial information
- **ISSB - International Sustainability Standards Board:** The International Sustainability Standards Board (ISSB) is an independent, private-sector body that develops and approves IFRS Sustainability Disclosure Standards (IFRS SDS)

- **MSE - Mongolian Stock Exchange:**
Mongolia's first and only stock exchange based in Ulaanbaatar
- **NDCs - Nationally Determined Contributions:** Commitments made by countries under the Paris Agreement to reduce GHG emissions and mitigate climate change
- **PCAF - Partnership for Carbon Accounting Financials:** A global partnership of FIs working to align their GHG emissions reporting and monitoring efforts with the Paris Agreement
- **SASB - Sustainability Accounting Standards Board:** An organization that develops industry-specific sustainability accounting standards for companies to disclose material ESG information to investors
- **SDGs - Sustainable Development Goals:** A set of 17 global goals adopted by the United Nations to address environmental, social, and economic challenges by 2030
- **TCFD - Task Force on Climate-related Financial Disclosures:** A task force established by the Financial Stability Board to develop recommendations for disclosing climate-related financial risks and opportunities
- **UNFCCC – United Nations Framework Convention on Climate Change:** the UN process for negotiating consensus on methods to reduce human contribution to climate degradation

1

INTRODUCTION

As Mongolia progresses towards sustainable development, the financial sector plays a central role in shaping the country's financial and climate resilience. This guideline is designed as a comprehensive and practical resource tailored specifically for FIs in Mongolia. It integrates internationally recognized frameworks, including the ISSB of the IFRS Foundation, to ensure a holistic approach to climate-related reporting. Beyond compliance, the guideline serves as a roadmap for FIs to embrace sustainability as a long-term strategy. By providing practical steps, tools, and case studies, it empowers FIs to enhance transparency, mitigate risks, and seize opportunities in the transition to a climate-resilient economy. Through effective ESG and climate risk management systems, sustainable, green financial service portfolios and continuous improvement, FIs can build trust, foster resilience, and drive climate-resilient development, and positive social and environmental impacts in Mongolia. It is, therefore, crucial to ensure that climate-related disclosure and reporting in Mongolia is intentionally developed and implemented, iterated upon, and systematically improved over time.

1.1 IMPORTANCE OF CLIMATE-RELATED DISCLOSURES

FIs are uniquely positioned in the financial system because their climate disclosures crucially impact environmental and social outcomes. Unlike traditional businesses, FIs play a pivotal role in channeling capital and influencing the broader economy's trajectory. Integrating climate change into their governance, operations, and investments is essential to address regulatory pressures and societal expectations, mitigate risks, and seize opportunities inherent in the financial sector.

Disclosure is the process of transparently reporting and monitoring business risks, opportunities, operational data, and other information to inform investors and relevant stakeholders. For instance, portfolio emissions, which reflect the carbon footprint of a FI's lending and investment activities, are one metric to assess a bank's environmental and social impact. Accounting for and mitigating these emissions aligns with global efforts to combat climate change. Integrating sustainability practices into banking and FIs operations ensures responsible financing, resilience to climate-related risks, and the transition towards a more sustainable and equitable economy.

Three main viewpoints highlight different purposes and audiences for climate-related disclosure.¹

- **Financial Materiality** evaluates how climate-related risks and opportunities influence a company's performance and outlook, and the primary audience is comprised of current and potential investors.
- **Impact Materiality** assesses the societal and environmental ramifications of a company's operations. The audience includes multiple stakeholders such as investors, employees, partners, clients, and communities.
- **Double Materiality** encompasses both financial materiality and impact materiality.

1.2 DIFFERENT CLIMATE-RELATED DISCLOSURE FRAMEWORKS

Climate disclosure and reporting best practices continue to evolve as regulators, FIs, and other stakeholders demand better-quality, internationally comparable climate disclosures. Several jurisdictions have now introduced mandatory requirements for climate-related reporting, including the United Kingdom's Sustainability Disclosure Standards and the European Union's ESRS.² Other national regulators are also

¹ ISSB Model Guidance for Exchanges

² <https://www.gov.uk/guidance/uk-sustainability-disclosure-standards>; https://finance.ec.europa.eu/news/commission-adopts-european-sustainability-reporting-standards-2023-07-31_en



enacting measures to enforce climate reporting. For instance, US-listed companies responsible for significant GHG emissions are now mandated to report and address climate risks under a new rule enacted by the Securities and Exchange Commission.³ Canada has released its proposed IFRS-based Sustainability Reporting Standards, and Australia is also developing legislation following extensive consultation with stakeholders.⁴ This underscores the increasing importance of climate-related financial disclosures and the growing momentum towards standardized, transparent reporting practices globally.

There are also several international climate disclosure frameworks, standards, and guidelines, including the TCFD and the ISSB of the IFRS Foundation. Although there is increasing recognition of these different frameworks, each jurisdiction must decide how it will operate in practice.

These standards overlap in their coverage of key sections such as governance, risk management, strategy, and metrics.

- **Governance** sections typically outline the roles and responsibilities of corporate boards and management in overseeing climate-related issues.
- **Risk management** sections focus on identifying, assessing, and managing climate-related risks and opportunities, and emphasizing the importance of integrating climate considerations into decision-making processes.
- **Strategy** sections articulate how organizations incorporate climate-related factors into their overall business strategies, including measures to mitigate risks and capitalize on opportunities.
- **Metrics** sections highlight the key performance indicators used to measure and monitor climate-related impacts and progress towards sustainability goals.

Despite these commonalities, each standard distinguishes itself through its unique approach and emphasis.

³ <https://www.sec.gov/news/press-release/2024-31>

⁴ <https://www.cpacanada.ca/business-and-accounting-resources/financial-and-non-financial-reporting/mdanda-and-other-financial-reporting/publications/tcfd-overview>



TCFD

TCFD was established in 2015 by the Financial Stability Board to develop consistent climate-related financial risk disclosures for companies to help investors, lenders, and others make informed decisions. The TCFD framework is designed for financial sectors and emphasizes scenario analysis and forward-looking disclosures to assess climate-related risks and opportunities.⁵ Following the TCFD 2023 status report's release in October 2023, the TCFD was disbanded and the IFRS Foundation has taken over monitoring the progress of companies' climate-related disclosures.

SASB

The SASB, was established in 2011 as an independent non-profit organization aimed at developing and disseminating sustainability accounting standards that assist public corporations in disclosing material, decision-useful information to investors. The SASB Standards are designed to identify and standardize disclosures for sustainability issues most relevant to investor decision-making across 77 different industries. The SASB Climate Risk Technical Bulletin, updated in August 2023, provides guidance on how companies can effectively disclose climate-related risks and opportunities. It assists investors in understanding their exposure to these risks, thereby facilitating informed investment decisions.⁶ The SASB Standards complement the recommendations of the TCFD.

⁵ <https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf>

⁶ <https://sasb.ifrs.org/knowledge-hub/climate-risk-technical-bulletin/>

ISSB

ISSB was founded in 2021 to develop a comprehensive set of global sustainability reporting standards. ISSB operates under the oversight of the IFRS Foundation and holds full discretion over developing the technical agenda, preparing drafts of standards, and issuing Sustainability Disclosure Standards.

Significant harmonization efforts across these standards have been mobilized in recent years. IFRS Foundation introduced S1 and S2 guidelines in 2022, which provide a global baseline on how organizations should disclose sustainability-related information in their financial reports. IFRS S1 sets out the general requirements for disclosure of sustainability-related information while IFRS S2 captures climate specific related disclosure requirements. IFRS S1 and S2 should be applied together for comprehensive reporting compliance. IFRS S2 incorporates metrics derived from the SASB Standards, promoting consistency in reporting practices across different frameworks. Specifically, IFRS S1 sets out the conceptual foundation companies must apply in complying with IFRS S2, which helps make sustainability-related financial information useful.

IFRS

In 2023, IFRS launched a comprehensive framework that integrates TCFD, SASB, and ISSB. By fostering convergence, there will be increased reliability for investors and stakeholders, improved comparability of sustainability disclosures, and reduced greenwashing. All of these standards share common objectives of promoting transparency and accountability in climate reporting, and the diagram below highlights their nuanced methodologies and approaches.

GRI

GRI is an international independent standards organization formed in 1997 which offers comprehensive reporting guidance that covers a wide range of sustainability topics beyond climate-related issues for various sectors including manufacturing, healthcare, technology, transportation, and more.⁷ The standards are designed to be universally applicable for organizations of any size, sector, or location, providing a common language for communicating sustainability impacts.

ESRS

The ESRS are a comprehensive set of standards developed by the European Financial Reporting Advisory Group to harmonize sustainability reporting across the European Union. The ESRS are closely linked to the Corporate Sustainability Reporting Directive, which requires certain companies to disclose their ESG performance. The ESRS framework adopts a double materiality approach, requiring companies to report on their impacts on people and the environment.

⁷ <https://www.globalreporting.org/about-gri/>





Figure 1 - Comparison of Main Sustainability Disclosure Frameworks and Standards⁸

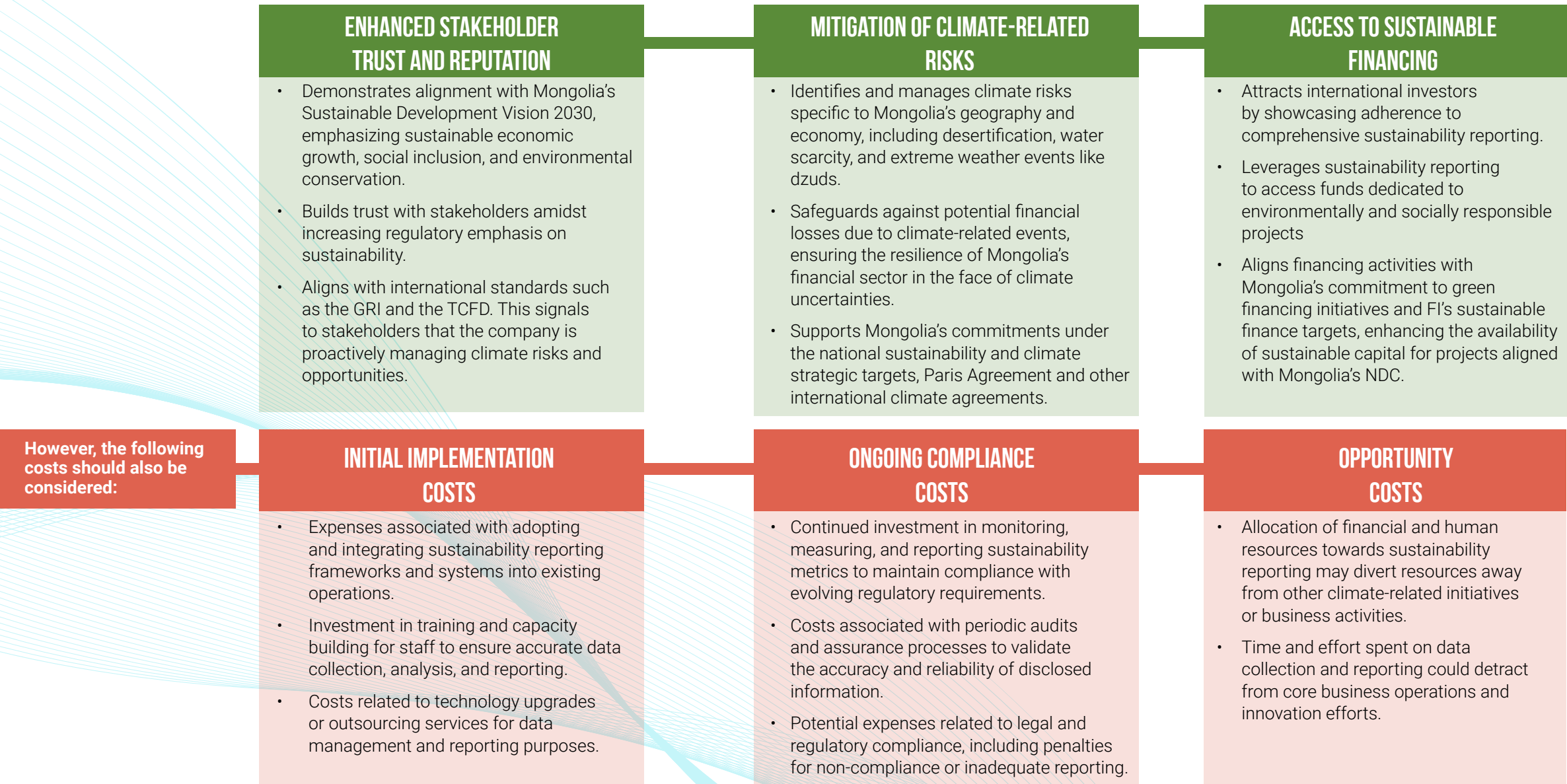
	GRI	ESRS	ISSB	Consolidated into ISSB		
				Integrated Reporting Framework	SASB	TCFD
Type of Guidance	Standards	Standards	Standards	Framework	Standards	Guidelines
Application	Voluntary	Mandatory for large companies and listed small and midsize enterprises	Subject to national jurisdiction adoption	Voluntary	Voluntary	Voluntary
Coverage	Global	European Union (third countries in the future)	Global	Global	U.S., to be applicable globally	Global
Topics	Economic, environmental, and social activities and impacts	Environmental, social and governance	General Sustainability; Climate, Other topics to be added	Six capitals: financial, manufactured, intellectual, human, social, natural	Environment, social capital, human capital, business model & innovation, leadership & governance	Climate-related risks, opportunities, financial impacts, and scenario analysis
Sector Specific	No	Yes (forthcoming)	Yes	No	Yes	Yes
Target Audience	All stakeholders	All stakeholders	Investors	Providers of financial capital	Investors	Investors
Buidling Blocks		TCFD, GRI, CDP	TCFD, SASB, CDSB			
Materiality Type	Impact materiality	Double-materiality (financial + impact materiality)	Single materiality (financial materiality)	Single materiality (financial materiality)	Single materiality (financial materiality)	Single materiality (financial materiality)
Materiality Definition	Aspects that reflect the organization's significant economic, environmental, and social impacts; or that substantively influence the assessments and decisions of stakeholders	Impact on people or the environment and financial effects on undertaking over the short-,medium-, and long-term time horizons.	Information is material if omitting, misstating or obscuring that information could reasonably be expected to influence decisions that the primary users of general-purpose financial reporting.	Matter that could substantively affect the organization's ability to create value in the short, medium, or long term.	A fact is material if there is a substantial likelihood that a reasonable investor would view its omission or misstatement as having significantly altered the total mix of information.	Public companies' legal obligation to disclose information in their financial filings—including material climate-related information.

⁸ <https://www.ifcbeyondthebalancesheet.org/understanding-global-reporting-frameworks>

1.3 COSTS AND BENEFITS OF CLIMATE DISCLOSURE AND REPORTING

Several studies have revealed the benefits of incorporating climate disclosure and reporting into business strategies and practices. One study found that FIs can better seize opportunities to lend to new industries that offer solutions to climate challenges, such as renewable energy and sustainable agriculture. The exclusion of climate impacts from financial accounts can lead to overstated profits and asset values.⁹ Failure to manage climate risks can also yield significant financial losses and understate liabilities.

The International Monetary Fund has cautioned FIs about the potential impacts of climate change, with estimates projecting up to US\$20 trillion in stranded assets globally by 2050 due to a 2-degree temperature increase.¹⁰ If Mongolia falls behind in climate disclosure, it may face additional challenges in attracting investment. Investors will find it harder to analyze and compare performance, as well as to engage with companies that are vulnerable to climate risks. There are many benefits of climate disclosure, including:



⁹ Carbon Tracker, 2021, Flying Blind: The Glaring Absence of Climate Risks in Financial Reporting, p. 53.

¹⁰ IMF

1.4 CURRENT INITIATIVES AND PRACTICES IN MONGOLIA

Mongolia has set ambitious targets under the UNFCCC Paris Agreement and Vision 2050 to reduce carbon emissions by 22.7% by 2030 and pursue a development trajectory prioritizing sustainability and inclusivity. Achieving these goals necessitates substantial financial support and effective resource allocation. Recognizing this imperative, some key regulatory and policy documents have been adopted by various Mongolian authorities. For instance, the Financial Stability Council of Mongolia has recently endorsed the National Sustainable Finance Roadmap. This strategic document outlines a collaborative approach involving multiple stakeholders to foster a sustainable financial system in Mongolia by 2030, aligned with national sustainable development and climate objectives. A vital aspect of the Roadmap is enhancing transparency in the stock market's ESG performance. Certain implicit requirements and recommendations are pertinent for climate-exposed businesses. Given increasing expectations from investors and communities for responsible corporate behavior, adherence to best practices becomes paramount.

In 2019, Mongolia became the second country in the world to adopt a Green taxonomy, which provides financial market players with guidance and understanding of what is green and climate-friendly activity and how to measure the level of

'greenness'. The development of a National Green Taxonomy was an essential building block to create an operational sustainable financial system that directs capital to sectors and projects that contribute to environmental sustainability and emission reduction. It provides a nationally agreed classification framework of activities that contribute to climate change mitigation, adaptation, pollution prevention, resource conservation, and livelihood improvement in the context of green finance. It covers 58 activities of eight sectors, with less specific activity criteria compared to the EU Taxonomy.

In June 2023, the Financial Stability Committee approved version 1.0 of the SDG Finance Taxonomy, which was developed based on the existing National Green Taxonomy. This makes Mongolia one of the first countries to launch a SDG Finance Taxonomy. The new taxonomy is expected to be implemented at the beginning of 2025. It is currently undergoing piloting and improvements to align with users' needs and recently developed international frameworks. Unlike the existing Green taxonomy, the new taxonomy includes social sectors in addition to green sectors and incorporates comprehensive indicators, thresholds, and impact measurements.

In addition, developed as part of MSFA, FRC, and MSE's efforts

to improve the disclosure and transparency of both existing and future listed companies and issuers, the ESG and Sustainability Reporting Guidance for Mongolian Companies complements the voluntary sustainability disclosure directive issued by the MSE in 2021 and the recently released updated mandatory disclosure directive for top-listed companies in 2024. The Guidance builds on the foundation of globally accepted frameworks and underscores current initiatives to better align and streamline reporting standards. It also provides an 8-step outline of how companies can build the capacity to report on sustainability. The Guidance further suggests a set of key ESG indicators - from environmental to social to industry-specific indicators - that Mongolian companies should consider reporting as a common starting point.

The update to the Banking Law requires D-SIBs, except for the State Bank, to reduce their ownership concentration by listing on the stock exchange. The regulation mandates that D-SIBs must disaggregate their ownership structure such that no single shareholder holds more than 20% of shares.

As of the end of 2023, all five D-SIBs have gone public in compliance with this regulation. Consequently, these listed banks now fall under the dual jurisdiction of the FRC and the Bank of Mongolia.

Under the disclosure and transparency rules set by MSE, listed companies are permitted to voluntarily publish ESG reports based on an approved template. As of the end of 2023, three banks have taken advantage of this option and published their ESG reports on MSE's website.

This regulatory change aims to promote transparency, reduce ownership concentration risks, and align Mongolian banking practices with international standards. By requiring D-SIBs to list on the stock exchange and allowing for voluntary ESG reporting, the updated banking law and listed companies' disclosure directives seek to enhance corporate governance, risk management, and sustainability disclosures in the Mongolian banking sector.



Figure 2 - Mongolian Sustainability Timeline

2013	2015	2018	2021	2024	2030
PHASE 1: COMMITMENT	PHASE 2: IMPLEMENTATION	PHASE 3: EXPANSION	PHASE 4: SCALE UP	PHASE 5: EVOLVE	PHASE 6: LEAD
• Voluntary commitment by banking sector • Mongolian Sustainable Finance Principles and Guidelines • Awareness raising	• Operationalization of Mongolian Sustainable Finance principles • Set of key frameworks and tools focused on ESG risk management • Extensive capacity building • Monitoring and reporting	• Establishment of MSFA and Mongolia Green Finance Corporation • Voluntary commitments by non-bank FIs • Sustainable finance integration into capital markets	• National Sustainable Finance Roadmap • Policy frameworks to promote sustainable finance • Integration into public finance frameworks	• National Climate-related Financial Disclosure Guidance development • Exploration of the sustainable development finance landscape	• Increase green loans up to 10% and 5% in banks and MFIs • Sustainable finance to become mainstream in all parts of the financial system and Mongolia to be recognized as a global leader on sustainable finance

2

HOW TO USE THE GUIDELINES

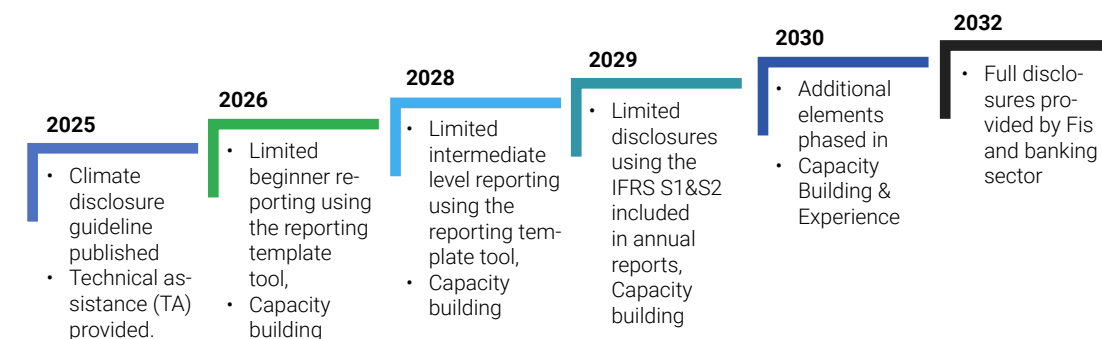
2.1 GENERAL CONSIDERATIONS

Given Mongolia's status as a developing country, Financial institutions in Mongolia may face capacity and resource limitations in implementing comprehensive climate disclosure frameworks. The guidelines recognize these constraints and advocate for a phased approach, allowing institutions to progressively integrate climate risk considerations into their business models. Moreover, the country's reliance on industries such as mining and agriculture underscores the significance of climate-related risks, including desertification and water scarcity. Through a better understanding of climate-related risks and opportunities, Mongolian FIs can align business strategies with global sustainability goals, enhance stakeholder trust, attract investment, and contribute to a greener economy.

2.2 PURPOSE OF THE GUIDELINES AND THE TARGET AUDIENCE

The guidance aims to provide practical insights and tools for FIs to effectively navigate climate-related information disclosure. The target audience includes Mongolian FI C-suite level directors, senior executives, risk managers, and sustainability officers, regulators, and investors. Each section serves as a roadmap for enhancing transparency, integrating climate risk management, and showcasing best practices. Recognizing the varying levels of understanding and capacity among different FIs regarding climate disclosure, the guidance acknowledges that transitioning to best practices is a journey. Thus, FIs are urged to apply the guide, considering their unique circumstances and business operations and adopting a learning-by-doing approach. The guidelines align with Mongolia's commitments under the Paris Agreement, Vision 2050, and the National Sustainable Finance Roadmap.

Figure 3 - Mongolia's proposed implementation pathway in the banking sector



2.3 HOW CLIMATE-RELATED DISCLOSURE ALIGNS WITH SUSTAINABILITY REPORTING

Climate disclosure and ESG reporting are interconnected concepts. Climate disclosure is a subset of the broader ESG and sustainability reporting that focuses on measuring, managing, and disclosing the impacts of climate-related risks and opportunities. An integrated approach fosters better risk management, strengthens transparency, attracts responsible investment, and promotes long-term value creation, ultimately positioning FIs as leaders in sustainable development. Climate disclosure reporting has its own particular processes and is closely linked to broader UNFCCC goals to limit global temperature increases.

3 HOW TO DISCLOSE

▶	STEP 1:	ESTABLISH A DEDICATED REPORTING TEAM
▶	STEP 2:	SECURE SENIOR-LEVEL COMMITMENT
▶	STEP 3:	CONDUCT A MATERIALITY ASSESSMENT
▶	STEP 4:	PLANNING & DATA COLLECTION
▶	STEP 5:	ENGAGE STAKEHOLDERS
▶	STEP 6:	PUBLISH AND REFLECT

▶▶▶ **STEP 1: ESTABLISH A DEDICATED REPORTING TEAM** ▶▶▶

To start the disclosure process, form a cross-functional team with representatives from risk management, finance, accounting, sustainability, compliance, internal audit, corporate governance, IT or data experts, and other relevant departments. The size of the team depends on the FI's capacity and structure, but it is suggested to identify a task force of at least three members to work collaboratively. Ensure team members possess a moderate level of expertise and understanding of climate and sustainability issues, data analytics, and reporting.

Next, define roles and responsibilities. To illustrate:

Figure 4 - Examples of Roles and Responsibilities for Disclosure Reporting Process

ROLE	RESPONSIBILITIES
Team Lead	■ Responsible for overall coordination, leadership, and communication with senior management ■ Liaise with management, compliance, operations, audit, and other relevant departments on reporting processes ■ Ensure that all disclosure components meet regulatory guidelines, if available, and reporting standards in climate disclosure ■ Draft an action plan with key dates
Sustainability Expert(s)	■ Guide the identification of key sustainability issues and climate indicators in accordance with the IFRS S1 and S2 core contents ■ Understand the environmental and social impacts of business and financial activities by conducting materiality assessments and scenario analysis in collaboration with the risk management team ■ Calculating and tracking bank emissions ■ Provide core component questionnaires and template drafts to be filled in by all relevant divisions ■ Ensure all sustainability experts become familiar with the IFRS S1 and S2 standards

Data Expert(s)	- Identify and assess climate-related risk data inputs, considering both physical and transition risks - Facilitate the collection and analysis of relevant data and identify data that is not currently available - Process and interpret data involved in climate risk assessment and conduct potential impact on business models and financial outcome assumptions where possible
Others (risk professionals and accountants)	Including other material details into disclosure (e.g., risk assessments and financial impact)

STEP 3: CONDUCT A MATERIALITY ASSESSMENT

Materiality assessments are crucial for FIs as they help in understanding and addressing climate-related risks and opportunities effectively, guiding strategic decision-making, enhancing transparency and accountability, and ultimately fostering long-term resilience in the face of climate change.

Conducting a climate materiality assessment typically involves three key steps:

1 IDENTIFICATION

The FI identifies climate-related risks and opportunities that are most relevant to its business operations, considering factors such as regulatory changes, physical risks, and market trends.

2 PRIORITIZATION

These identified risks and opportunities are prioritized based on their potential impact on the FI's financial performance, reputation, and stakeholder interests.

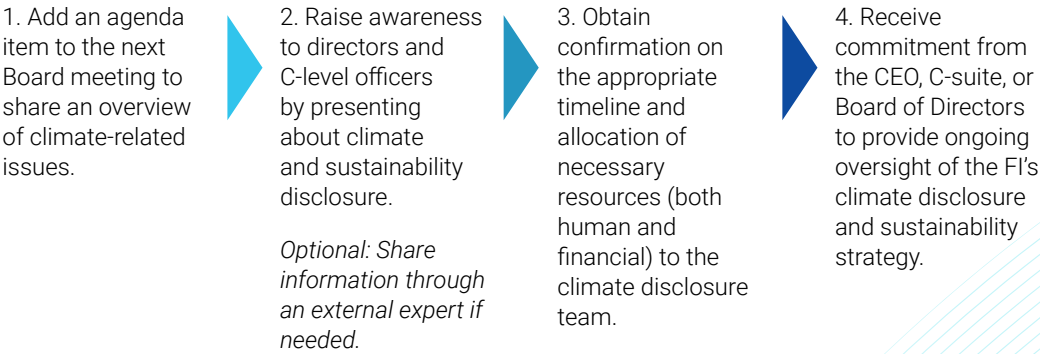
3 VALIDATION

The assessment is validated through stakeholder engagement, expert input, and scenario analysis to ensure the accuracy and reliability of the identified material issues.

STEP 2: SECURE SENIOR-LEVEL COMMITMENT

Next, high-level commitment from the FI's leadership is critical to raise awareness on climate-related issues, allocate resources, set disclosure timelines, and ensure alignment with the institution's broader strategy. After successfully garnering support, additional training should be provided for employees and C-suite executives. Include recurring updates in future C-level meetings that share progress on the bank's climate strategy disclosure approaches and an overview of challenges. Below is a diagram demonstrating the order of acquiring an initial commitment (see Figure 5).

Figure 5 - Pathway to Securing Senior-Level Commitment to the Disclosure Process



STEP 4: PLANNING & DATA COLLECTION

The process of gathering, analyzing, and reporting standards effectively should be guided by a realistic and flexible plan. Each aspect of the reporting process requires collaboration, close review, and coherence. Four main procedures include:

1. ESTABLISH A DETAILED PLAN

- Develop a comprehensive plan outlining key milestones and deadlines, including the targeted publication date.
- Define methodologies, reporting boundaries, material issues, and set targets aligned with regulatory requirements and investor needs.
- Assign responsibilities for report compilation, review, and approval.

2. IMPLEMENT DATA COLLECTION PROTOCOLS

- Identify internal and external sources for gathering relevant sustainability and climate data and define data collection responsibilities.
- Establish data collection frequency, methodologies, and quality assurance measures.
- Collaborate with relevant departments to streamline the data collection process and utilize automated systems to minimize manual efforts.

3. PREPARE DETAILED CASE STUDIES

- Develop case studies highlighting the FI's sustainability initiatives, achievements, and challenges.
- Showcase specific projects, policies, or programs contributing to sustainability goals.
- Include quantitative and qualitative data illustrating the positive and potential impact of these initiatives on financial aspects and overall

4. ENSURE CONSISTENCY AND ALIGNMENT

- Conduct analyses with standardized tools and procedures.
- Cross-reference data with established frameworks such as ISSB, IFRS, and local regulatory requirements.
- Verify that case studies reflect the FI's strategic objectives and sustainability commitments.

STEP 5: ENGAGE STAKEHOLDERS

Stakeholder engagement is a crucial aspect that should be integrated throughout the disclosure process. Internal stakeholders offer expertise and relevant data, while external stakeholders can provide additional assistance, feedback, and support.

INTERNAL STAKEHOLDERS

- Primary stakeholders such as senior management, risk and compliance teams, and department heads should be actively involved to coordinate organizational objectives and to leverage internal expertise.
- Other key personnel, including the operations, loan, investment and financial departments, can offer valuable insights into the FI's day-to-day functions and potential climate-related data connections.

EXTERNAL STAKEHOLDERS

- Engaging with regulatory authorities, international standard setters, technical experts, and NGOs can provide valuable guidance on best practices and ensure compliance with evolving reporting frameworks.
- Collaboration with clients, particularly those in sectors susceptible to climate risks, enables the FI to understand their needs and expectations regarding climate-related disclosure.
- Additionally, identifying with climate-conscious investors and shareholders can enhance the FI's credibility and access to sustainable finance opportunities.

EXAMPLES OF ENGAGEMENT

- Collecting data in a transparent and streamlined manner with various departments
- Collaborating with internal and external stakeholders to verify and validate collected data.
- Sharing data with relevant parties, including subject matter experts, regulators, and third-party auditors.
- Using feedback to improve data accuracy and address any discrepancies.

STEP 6: PUBLISH AND REFLECT

After completing the suggested basic steps, the FI can review and publish its climate report. Revisions ensure accuracy, transparency, and alignment with frameworks by engaging key stakeholders such as senior management. Once validated, the report is prepared and published by the FI's marketing team. Post-publication, the FI reflects on the reporting process, seeking feedback to identify strengths, weaknesses, and areas for improvement. Understanding the climate disclosure process enables the FI to refine future reporting strategies, align with evolving standards and stakeholder expectations, and foster adaptability to reach climate resilience.

4 WHAT TO DISCLOSE



Climate-related disclosure and reporting must be rigorous and underpinned by appropriate governance, strategy, and action. FIs that do not address these issues are increasingly exposed to possible legal, financial and reputational liabilities.

In accordance with the new revision of the Law of Mongolia on Accounting, Article 4, it is required for entities including commercial banks, to follow and comply with IFRS reporting standards.¹¹

¹¹ Accounting Regulation Law of Mongolia (Монгол Улсын Нягтлан Бодох Бүртгэлийн Хуулийн). Available at: <https://legalinfo.mn/mn/edtl/16230949065051>

As outlined by IFRS S1 general requirements for sustainability-related disclosures include:

WHAT TO DISCLOSE	DETAILS
Sustainability-related Risks and Opportunities	Entities must disclose all sustainability-related risks and opportunities that could impact their cash flows, access to finance, or cost of capital over the short, medium, or long term.
Governance	Information on the governance processes, controls, and procedures used to monitor and manage sustainability-related risks.
Strategy	How sustainability-related risks and opportunities are integrated into the entity's strategy and financial planning.
Risk Management	The processes used to identify, assess, and manage sustainability-related risks.
Metrics and Targets	The metrics and targets used to assess and manage relevant sustainability-related risks and opportunities.

As outlined by IFRS S2 climate-related disclosure reporting includes:

WHAT TO DISCLOSE	DETAILS
GHG Emissions	Disclosure of Scope 1, 2, and 3 emissions, both aggregated and disaggregated, in accordance with the GHG Protocol.
Climate-related Risks and Opportunities	Identification and disclosure of physical and transition risks, as well as opportunities related to climate change.
Capital Deployment	Information on investments and expenditures towards managing climate-related risks and opportunities.
Internal Carbon Pricing	Disclosure of any internal carbon pricing mechanisms used by the entity.
Remuneration	Information on whether and how remuneration is tied to climate-related considerations.
Scenario Analysis	Details on the use of scenario analysis to assess climate resilience, including the assumptions and inputs used.
Climate-related Targets	Disclosure of both quantitative and qualitative targets, specifying whether they are absolute or intensity-based, and the progress towards achieving them.

Still we encourage FIs to take a phased approach to disclosing their climate reports based on their current level of familiarity with climate reporting procedures. Malaysia's Sustainability Reporting Guide 3rd Edition does a great job of distinguishing between the types of reporting in which FIs newer to and more experienced with climate reporting can engage (see Figure 6 below).

Figure 6 - Phased Approach to Climate-related Disclosure Reporting¹²



Regardless of the FIs current level of familiarity with climate reporting, Figure 7 below provides a good estimation of how individuals involved in reporting should plan to use their time. Reporting entities should expect to spend roughly one-fifth of their time on organization and governance and financial disclosures. One-third or more of the total climate disclosure reporting efforts can be expected to go to report creation and data delivery and centralisation.

Figure 7 - Estimated Efforts of Implementation¹³

Estimated Efforts of Implementation								
Organization and governance (-15-20%)	Legal entity and allocations (-8%)		Control risk and governance (-7%)		Other environmental data (-5%)		Social matrix (value chain) (-6%)	
	Report creation (-25%-30%)			Data delivery and centralisation (-35%-40%)				Financial disclosures (-15-20%)
		(Double) materiality (-12%)		Climate (-14%)		Own workforce (-8%)	Governance (-4%)	
Estimated allocation of effort for a financial services company to produce CSRD ISSB Securities and Exchange Commission reports								

¹² Adopted from Malaysia's Sustainability Reporting Guide 3rd Edition
¹³ Global ESG Best Practices & Implementation - Gabor Blazs, IFRS Accounting Advisory, PwC Hungary @ Sustainable Future & Collective Impact Event, October 3, 2024

4.1 CLIMATE GOVERNANCE

Although there's no one-size-fits-all solution, effective governance structures are paramount in addressing climate-related financial risks and opportunities. Effective governance necessitates comprehensive disclosure of structures, processes, and responsibilities related to climate issues, ensuring transparency, accountability, and alignment with organizational goals.

Under IFRS S1 organizations are required to disclose governance processes related to sustainability risks and opportunities. Additionally, under IFRS S2, organizations are required to disclose their governance structures regarding climate-related issues. To avoid unnecessary duplication, if an organisation's oversight of sustainability-related risks and opportunities and climate-related risks and opportunities is managed on an integrated basis, the organisation should avoid duplication of reporting by providing integrated governance disclosures in alignment with IFRS S1.

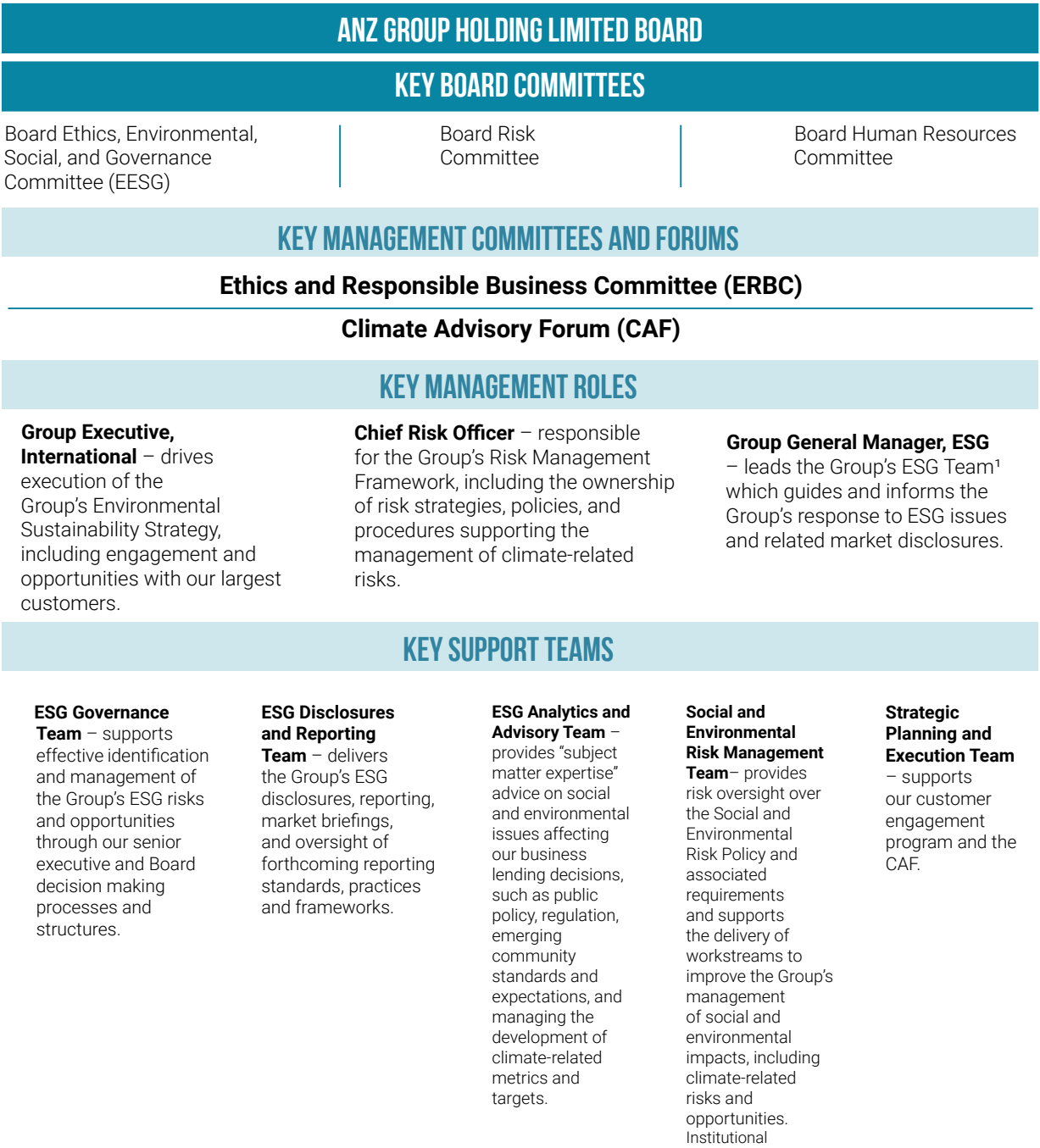
Figure 8 - Phased Approach to Climate Governance

BEGINNER	INTERMEDIATE	ADVANCED
■ Focus on IFRS S1 and S2 requirements	■ Take an integrated approach to disclosing IFRS S1 and S2, work to prevent duplicative reporting	■ For organizations that have already collected required data in the past, include comparative information in the first year report

Climate governance reporting includes board oversight of climate-related risks and opportunities detailing the board's oversight processes, frequency of updates to board or board committees, and consideration of climate factors in strategic decisions, risk management, budgeting, and performance monitoring. As seen in the Case Study from ANZ, the company's governance structure provides an example that is divided into board committees, roles, and teams that hold specific climate roles and responsibilities.



Case Study – ANZ Climate Governance Organizational Structure¹⁴



1. Group ESG Team includes key support teams: ESG Governance Team, ESG Disclosures and Reporting Team and ESG Analytics and Advisory Team.

Similarly, BNP Paribas has implemented robust governance mechanisms to integrate climate-related risks and opportunities into its decision-making processes. The case study below highlights BNP Paribas' best practices in board-level climate governance, providing an example of how the company ensures oversight, accountability, and progress monitoring on climate-related issues.

¹⁴ANZ 2023 Climate-related Financial Disclosures

Case Study – BNP Paribas Board Level Climate Governance¹⁵

DISCLOSURE BEST PRACTICES	DIRECT EXAMPLE
In the 2022 Climate Report, BNP Paribas outlined clearly the processes and frequency by which the board and board committees were informed about climate-related issues.	"In 2022, environmental topics, including climate issues, were specifically addressed 16 times at Board Committee meetings. The Board of Directors approves the Group's Corporate Sustainability Reporting (CSR) strategy. It validates the climate-related metrics, policies and undertakings presented in the Universal Registration Document (URD) and approves the variable compensation granted to corporate officers, partially based on the Group's CSR performance (including climate-related)."
In addition, the report stated how the board monitors and oversees progress against targets for addressing climate-related issues and monitors progress. The report states that the Chief Executive Officer is responsible for the climate strategy, which the Head of Company Engagement manages. The latter, also a member of the Executive Committee, supervises the CSR Department, which, alongside the operational entities, is responsible for implementing the Group's climate strategy.	"For climate-related risks and opportunities, the Chief Executive Officer and the Chief Operating Officers submit a strategy proposal to the Board of Directors".

In addition, climate governance includes management's role in assessing and managing climate-related risks and opportunities. This entails assigning climate-related duties to specific management positions or committees, ensuring they report to the board or its committees, outlining organizational structures, informing management about climate issues, and establishing climate monitoring mechanisms. This is illustrated in Credit Suisse's organizational structure case study below.

Case Study – Credit Suisse's Organizational Structure to Assess Climate Risk¹⁶

Credit Suisse's 2022 Climate Report outlined the organizational structure for management's role in assessing climate-related risks and opportunities stating the "Sustainability (Climate) Risk Executive Leadership Committee provides oversight on the implementation of the Group's strategy with respect to managing sustainability and climate-related risks. Net Zero Steering Board Provides oversight and strategic guidance for developing the Group's science-based goals and transition strategies that underpin Credit Suisse's net zero 2050 ambition. In addition to Executive Board committees, the Sustainability Leadership Committee (SLC) steers the implementation of the sustainability strategy across the bank, ensures bank-wide engagement on sustainability, and oversees the progress towards commitments and

¹⁵ BNP Paribas 2022 Climate Report

¹⁶ Credit Suisse 2022 Climate Report

strategic priorities. It discusses growth opportunities, risks, and the impact of the market environment on the sustainability strategy.”

– Credit Suisse 2022 TCFD Report

4.2 CLIMATE STRATEGY

A clear climate strategy is paramount in addressing climate-related financial risks and opportunities and assessing how these factors will affect overall operations and planning. The strategy must, therefore, describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term and describe the impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning.¹⁷

Case Study – Credit Suisse Climate Strategy and Material Risks

Credit Suisse’s 2022 Climate Report, in line with TCFD/ISSB guidance, described the specific climate-related issues potentially arising in each time horizon (short, medium, and long term) that could have a material financial impact on the organization. Reporting that “the combination of impacts (both financial and non-financial) and likelihood (remote or possible) determines whether the materiality of risk should be categorized as low, medium, high, or very high. The heatmap that is generated following this approach enables us to identify critical risk exposures and areas for prioritization or mitigation. For example, a “medium materiality” score would be assigned to events with remote likelihood and significant impact on clients, market, or competitive landscape (e.g., events leading to loss of clients and reduction in market share).”¹⁸

Moreover, organizations must explain how these factors influence their strategic decisions and plans for transitioning to climate-resilient strategies. Furthermore, the strategy must **describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario**. Incorporating scenario analysis tailored to the FI’s circumstances, establishing goals to align operational and financed emissions with net-zero pathways and setting financed emissions reduction targets for key sectors. Once the climate strategy has set out these goals and targets, it is critical to ensure systems and processes are in place and to work with staff and clients to achieve them.

Case Study – Maybank Climate Strategy¹⁹

Established in 1960, Maybank is Malaysia’s largest financial services group with an established presence in the ASEAN region. Maybank’s approach to managing the effects of climate change and increasing climate resilience is guided by the recommendations of the TCFD/ISSB and reporting their implementation transparently

¹⁷ <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures.html/content/dam/ifrs/publications/html-standards-issb/english/2023/issued/issbs2/>

¹⁸ Credit Suisse Climate Report 2022

¹⁹ Maybank Sustainability Report 2022

and in accordance with the standards and regulatory expectations.

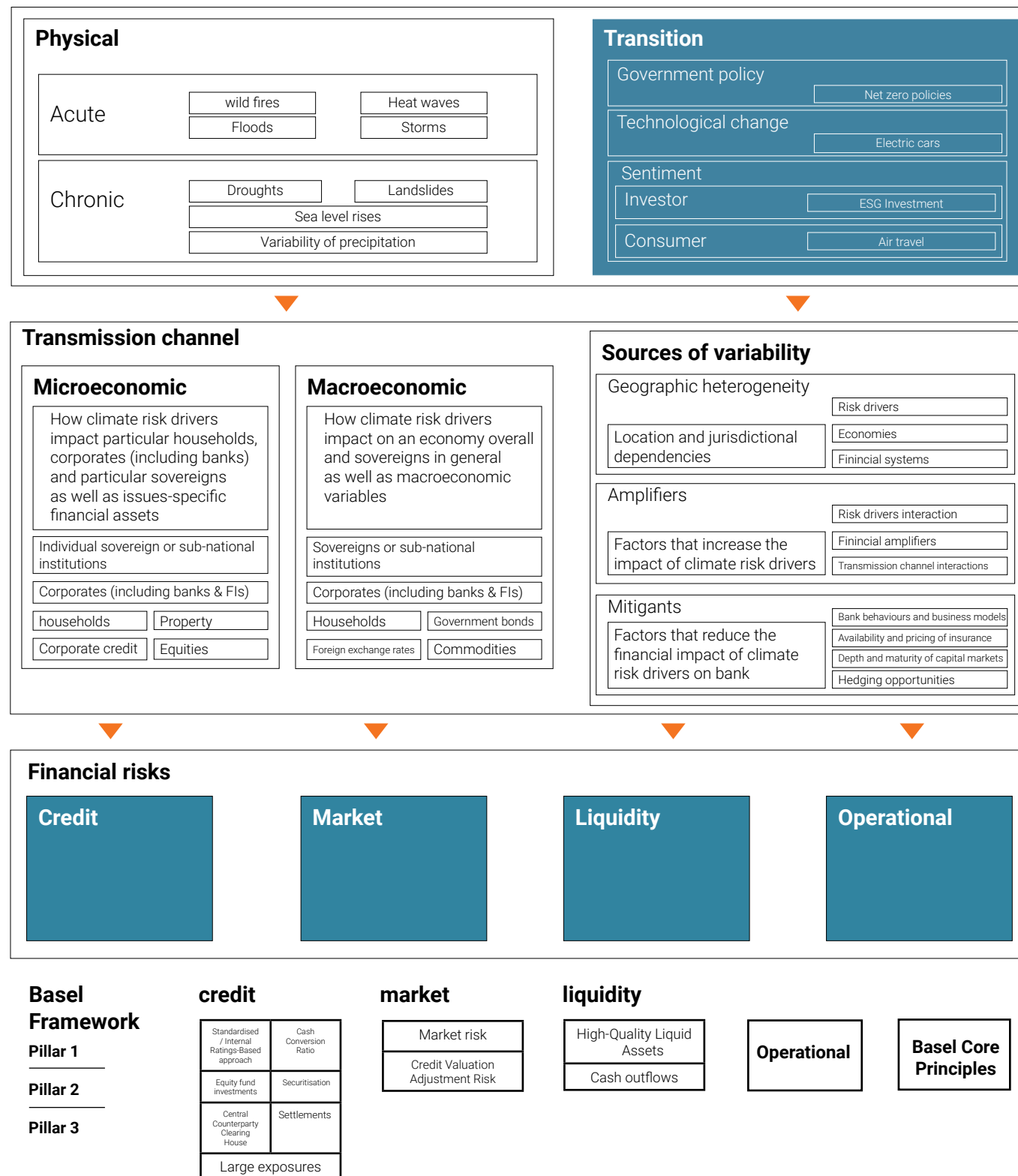
Maybank’s climate strategy outlines an annual target of a 40% reduction in Scope 1 and Scope 2 emissions and reporting a significant milestone in 2022 by establishing a Scope 3 financed emissions baseline and becoming the first bank in Malaysia to identify a strategy that will shape future business and lending portfolios. In line with achieving net-zero carbon equivalent by 2050, Maybank established three key strategic pillars: (1) enabling responsible transition to a low carbon economy, (2) empowering communities, and (3) leading by example with good governance practices to drive the group towards decarbonization, and identifying key enablers for progress including governance, technology and data, analytics, policy and framework, and training.

4.3 CLIMATE RISK MANAGEMENT

To ensure effective climate risk management, it is essential to describe the FI’s processes for identifying, assessing, and managing climate-related risks and understand how these processes are integrated into the organization’s overall risk management.²⁰

Although FIs each have their own direct climate risks, such as energy use, their principal exposure arises indirectly by lending and investing in their clients. Almost all business activity contributes to climate change due to their GHG emissions, and in turn, these emissions create risks for FIs that lend to those businesses and will need to be disclosed in the FI’s climate reporting. The emissions and climate risks involved in a transaction will depend on various factors, including the specific challenges related to the client’s operations, the industry sector, and the geographic and regulatory environment. Below is a transmission channels diagram produced by the Basel Committee on Banking Supervision, the leading global standard setter for prudential bank regulations, that shows how climate risks can translate into financial risks.

²⁰ <https://www.ifrs.org/issued-standards/ifrs-sustainability-standards-navigator/ifrs-s2-climate-related-disclosures.html/content/dam/ifrs/publications/html-standards-issb/english/2023/issued/issbs2/>

Figure 9 - Financial Risks from Climate Risk Drivers²¹

The effects of climate risks on FIs can manifest in various ways. For example, natural disasters linked to climate change can destroy property and lead to loan defaults. Mongolia is vulnerable to climate change, which is likely to adversely impact many businesses due to desertification, *dzuds*, and floods among other risks. Indirect climate risks can also have significant consequences. For example, a FI's client could face substantial increases in production costs if it needs to invest in a new plant to meet new standards required by environmental regulations in its export markets or export markets may be closed if a business cannot meet new standards.

Climate risk management includes disclosures on processes for identifying, assessing, prioritizing, and monitoring climate-related risks and opportunities, including outlining policies and procedures and integrating CSA into risk management. The evolving nature of risk management necessitates ongoing and forward-looking assessments to address climate-related challenges effectively. An effective climate risk management strategy involves strong policies for identifying and assessing various risks, such as credit, market, operational, and climate-related risks. Climate-related risks should be integrated into the traditional risk management framework, which includes credit, market, and liquidity risk assessments, and incorporated into financial decision-making. For instance, loan, investment, and risk officers should receive training, and climate assessments should be required for new loans.

The following case study highlights how DBS has strengthened its approach to climate risk management and integrated net-zero targets into its business operations.

Case Study – DBS Strengthening Risk Management²²

DBS is a leading financial services group in Asia, with a presence in 19 markets in Greater China, Southeast Asia, and South Asia. It is headquartered and listed in Singapore. In 2021, DBS formalized its climate agenda by setting up a Climate Steering Committee. The Climate Steering Committee oversees change management in governance, processes, data, systems, and people capability. It is chaired by senior bank management and includes the Group's Chief Risk Officer, Head of Institutional Banking, and Chief Sustainability Officer.

The following year, DBS announced interim 2030 and 2050 net-zero targets and, at the same time, have made steady progress in identifying, assessing, measuring, and integrating climate-related risks into its client and portfolio management strategies. By establishing decarbonization targets and operationalizing net-zero commitments, DBS has prioritized integrating climate risk management and net-zero portfolio alignment into their business operations.

²¹ <https://www.bis.org/bcbs/publ/d517.pdf>

²² DBS Group Holdings Ltd Sustainability Report 2023

4.3.1. IDENTIFYING PHYSICAL RISKS – APPROACHES AND METHODOLOGIES

Physical risks entail asset devaluation due to climate and weather-related events like floods and storms. For example, a business could be directly impacted by weather events or widespread climate changes. Failure to integrate climate risks can lead to financial losses due to stranded assets and unpaid loans. FI clients are directly and indirectly vulnerable to adverse climate impacts, such as infrastructure damage, supply chain disruptions, and market volatility, which can affect their ability to operate successfully and service their debts.

Risks include acute physical risks such as the escalated severity and frequency of extreme weather events that could impact end client markets or supply chains, increased insurance and capital costs, operational outages or losses due to physical damage, and the decreased ability to meet client demands due to business interruptions. There are also more chronic physical risks, such as changing weather patterns; for example, higher temperatures can impact ecosystems, living and working conditions, agricultural systems, infrastructure, or existing assets and valuations. To identify these risks, it is crucial to understand the businesses and operations of different borrowers and sectors and develop processes to ensure this is done systematically across the portfolio.

The following case study illustrates how DBS identifies and assesses the impact of climate risks across various risk types, with a focus on credit risk and the challenges posed by both transition and physical risks.

Case Study – DBS Identifying the Impact of Climate Risks²³

DBS views climate risk as a material risk that can manifest across different risk types, including market, liquidity, operational, and reputation. For example, credit risks arise from lending activities to corporate, institutional, and retail clients and represent the most significant quantifiable risk impacted by climate change. The relatively longer time horizon over which climate change risk impact is manifested also renders credit risk most significant among the above risk types. Transition risks such as changes in public policies, disruptive technological developments, and shifts in consumer and investor preferences can impact borrowers' profitability, cashflows, and asset values. Likewise, physical risks such as the impact of climate events and longer-term shifts in climate patterns on borrower's operations, such as supply chain disruption, can impact profitability, and potentially, their viability, and the value of assets taken as collateral.

²³ DBS Group Holdings Ltd Sustainability Report 2021

4.3.2. IDENTIFYING TRANSITION RISKS - APPROACHES AND METHODOLOGIES

Transition risks arise as a result of adjustments to a low-carbon economy. For example, the risk of technologies becoming obsolete due to regulatory changes and disruptions to existing business models caused by climate-related innovations. Likewise, a FI client could face substantial increases in the cost of production if new environmental regulations require the installation of clean technology. Disclosure of how a specific risk is being managed, the assumptions made, and the process of assessing potential impacts is therefore critical. It is crucial to embed these transition risks into day-to-day operations and credit risk management and assess clients' risks based on their susceptibility to and ability to manage transition risk. It is critical to assess whether FI assets such as loans will be impacted by the transition to a low-carbon economy, for example, what percentage of assets could become stranded. Stranded assets will need to have premature or unanticipated write-downs due to climate change.

The National Australia Bank (NAB) case study, explores the different types of climate risks and their associated drivers, focusing on both transition and physical risks. It details how current and emerging regulations, technology changes, legal actions, market dynamics, and reputational challenges can impact the FI. Additionally, it highlights the effects of acute and chronic physical risks, such as extreme weather events and long-term changes in weather patterns. The study categorizes these risks based on their impact on material risk categories, including credit, market, compliance, and sustainability, over varying time horizons.

Case Study - NAB Types of Climate Risks Considered²⁴

CLIMATE RISK TYPE	RISK DRIVER	IMPACT	IMPACT TIME HORIZON	IMPACT ON MATERIAL RISK CATEGORIES
Transition Risk	Current and emerging regulation	- Increased reporting obligations and associated costs. - Higher operating costs for carbon intensive clients (e.g., carbon tax). - Increased potential for non-compliance. - Increased potential capital requirements for the financing of emissions intensive sectors.	Short to Medium Term	- Credit - Compliance - Sustainability
	Technology	- Write-offs and early retirement of existing assets due to technology changes. - Cost of/investment in transition to less carbon intensive products and services.	Medium to Long Term	- Credit - Compliance - Conduct - Sustainability
	Legal	Legal action resulting from the misalignment of public commitments and financing decisions.	Short to Medium Term	- Credit - Compliance - Sustainability
	Market	- Re-pricing of assets or increased market volatility during transition. - Reduced demand for products or services due to shifts in consumer preferences. - Increase in operational costs (e.g. energy).	Short to Medium Term	- Credit - Balance sheet & liquidity - Market - Sustainability
	Reputation	Financing decisions for carbon intensive sectors, or climate policies that reduce emissions do not meet client and investor expectations.	Short to Medium Term	- Conduct - Market - Sustainability
Physical Risk	Acute	Increased severity and frequency of extreme weather events could lead to: - Impacted end client markets or supply chains. - Increased insurance and capital costs or operational outages. - Losses due to physical damage and inability to meet clients demands due to business interruptions.	Short, Medium and Long-term	- Credit - Market - Operational - Sustainability
	Chronic	Changes in weather patterns (e.g., temperature, sea levels) could cause: - Impacts to ecosystems, living and working conditions, agricultural systems and infrastructure. - Impacts to existing assets and valuations.	Long Term	- Credit - Operational - Market - Balance sheet & liquidity - Strategic - Sustainability

To date, Mongolia's National Emergency Management Agency has collected extensive data on transition risks that can affect the financial ecosystem with some intersection at the physical risk level. However, data collection gaps still exist. Given these known data limitations, here is

²⁴ NAB Climate Report 2023

a recommended approach:

Figure 10 - Phased Approach to Climate Risk Management

BEGINNER	INTERMEDIATE	ADVANCED
Use existing Mongolia-specific data to estimate risks at the sub-provincial level	Use global data sources to estimate risk in the Mongolian context for agriculture and other potential climate-related complications	Contribute efforts to gather more localized Mongolia climate risk data across a broader range of sectors

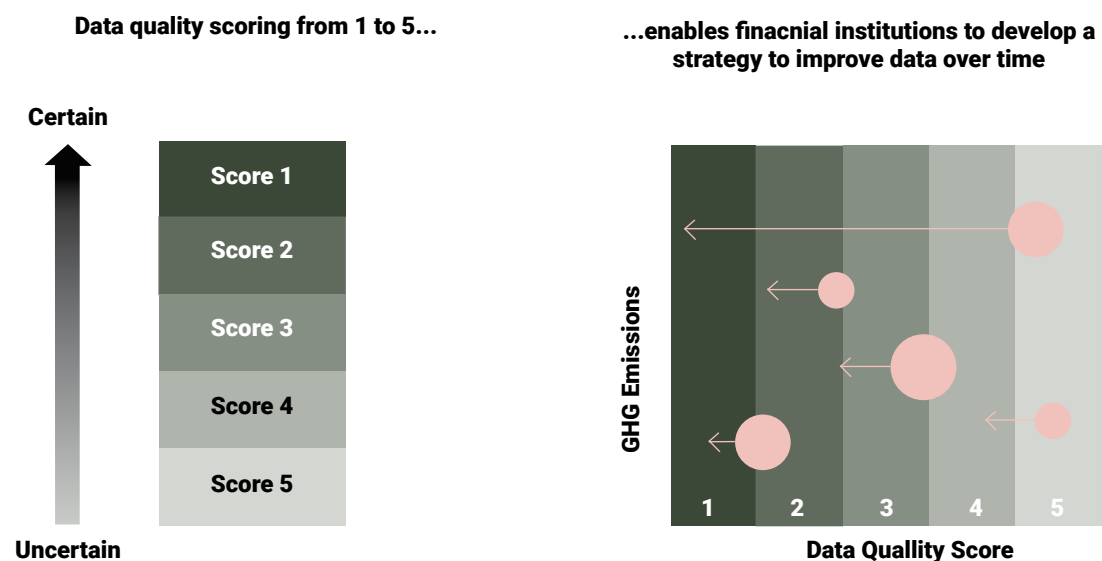
4.3.3. IDENTIFYING GLOBAL AND LOCAL CLIMATE DATA SOURCES

FIs need to ensure that their climate reporting accurately reflects the GHG emissions of their loans and investments and serves the decision-making needs of internal and external stakeholders. To safeguard these outcomes, it is essential to use the highest-quality data available for different assets in the FI's portfolio, such as consumer, residential, and commercial loans, project finance, and syndicated loans and investments.

High-quality emissions data can be challenging to find, particularly in a country like Mongolia, which is only beginning to develop climate data and reporting. Various data inputs are needed to measure financed emissions in each asset class and the data required often needs to come from the borrower. Data limitations are often due to a lack of granular and sub-sector client data availability, as clients within the portfolio have yet to report their GHG emissions in Mongolia. However, where the data required to calculate the borrower's emissions is not readily available or the data quality varies depending on the borrower, it will be critical to work with clients to improve data quality over time.

PCAF has created a Global GHG Accounting and Reporting Standard, which comprises of three parts including: A) financed emissions; B) facilitated emissions; and C) insurance-associated emissions.²⁵ Assessment of data quality by sector in accordance with the PCAF Standard (Part A for financed emissions) should also be conducted regularly or when adopting new data/emissions factors into the calculation. As demonstrated in Figure 11, a score of 1 equals the highest data quality and a score of 5 equals the lowest data quality. Where data quality is low, FIs must work with clients and data providers to develop approaches to improve it over time. However, data limitations should not deter FIs from taking the first steps towards preparing estimated emissions. Even estimated or proxy data can help FIs identify emissions-intensive hotspots within its portfolios, which can inform the institution's climate strategy and risk management.

²⁵ PCAF Standard, accessed at <https://carbonaccountingfinancials.com/standard>

Figure 11 – General Data Quality Scorecard²⁶

The following case study presents NAB's Sector Data Quality Assessment, which showcases how the bank evaluates data quality in line with the PCAF Standard for financed emissions. This assessment allows NAB to identify areas requiring improvement and guide engagement with clients to enhance the accuracy and reliability of emissions data over time.

Case Study - 2022 NAB Sector Data Quality Assessment²⁷

	Scope 1 and 2	Scope 3
Sector		
Sectors with targets set		
Power generation	1.3	n/a
Thermal coal	1.0	2
Oil and gas	1.1	1.8
Cement	2.2	n/a
Aluminium	1.7	n/a
Iron and steel	2.2	n/a
Transport - aviation	2.3	n/a
Transport - other	4.3	n/a
Commercial real estate	1.0	n/a
Residential real estate	5.0	n/a
Agriculture	5.0	n/a

²⁶ NAB Climate Report 2023

²⁷ NAB Climate Report 2023

4.3.4. SCENARIO SELECTION

Disclosing the resilience of a FI's climate strategy involves considering different climate scenarios. Scenario analysis can be conducted using a suite of CSA models to translate the effects of policy and regulation changes, technology development, and consumer preferences as defined by scenarios, such as those from the Network of Greening the Financial System (NGFS), into impacts on key financial drivers identified for each sector.

The NGFS classifies climate scenarios into three categories based on global responses to climate change. These scenarios cover varying degrees of transition and physical risks. The first, "Orderly scenarios," assumes early and gradually stricter climate policies. The second, "Disorderly scenarios," examines transition risks due to delayed or inconsistent policies, potentially leading to abrupt measures like sharp carbon price increases. Lastly, "Hothouse world scenarios" assume limited policy implementation, resulting in insufficient global efforts to prevent significant warming.

Figure 12 - NGFS Climate Scenarios²⁸

Transition type	Climate scenario	Policy ambition	Policy reaction	Technology change	CDR	Regional policy variation
Orderly	Net zero 2050	1.5 °C	Immediate and smooth	Fast change	Medium use	Medium variation
	Below 2 °C	1.7 °C	Immediate and smooth	Moderate change	Medium use	Low variation
Disorderly	Divergent net zero	1.5 °C	Immediate but divergent	Fast change	Low use	Medium variation
	Delayed transition	1.8 °C	Delayed	Slow/Fast change	Low use	High variation
Hot house world	NDCs	~2.5 °C	NDCs	Slow change	Low use	Low variation
	Current policies	3 °C+	None – current policies	Slow change	Low use	Low variation

Other scenarios have also been developed by the International Energy Agency (IEA) and Intergovernmental Panel on Climate Change (IPCC) and have long been used by scientists and policy analysts to assess future vulnerability to climate change. However, all scenarios have inherent assumptions and biases on the future path of development, which need to be considered. Importantly, FIs should use widely

²⁸ <https://kpmg.com/us/en/articles/2022/ngfs-primer-climate-scenarios.html#:~:text=The%20NGFS%20categorizes%20climate%20scenarios%20into%20one%20of%20climate%20change%20mediated%20transition%20and%20physical%20risk.>

accepted science-based decarbonization scenarios to set long-term and intermediate targets aligned with a net-zero by 2050 goal.

4.3.5. SCENARIO ANALYSIS

CSA is used to help inform the FI's strategy and risk management, as well as to understand different sectoral decarbonization pathways needed to transition the lending portfolio, set sector decarbonization targets, and establish sector transition plans. Scenario analysis, including stress testing and counterparty sensitivity analysis, helps assess the vulnerability of the FI's lending portfolio and its clients in high-emitting sectors to potential transition and physical risk.

CSA at the portfolio and client levels complements what is required to assess clients' transition plans and determine the FI's sectoral portfolio decarbonization pathways. It is important to understand that this is an iterative process of continual improvement and learning by doing, as institutional capacity grows and access to data sets expands and improves.

CSA is a crucial tool for assessing the resilience of a FI's business models and strategies to a range of plausible climate-related pathways and determining the impact of climate-related risk drivers on the overall risk profile. Scenario analysis is also used to assess the risk implications of various decarbonization pathways. However, as CSA is still evolving and an industry standard has yet to emerge, the uncertainties and limitations associated with CSA must be understood to ensure that the results are interpreted and used appropriately.

Given that the scope of a FI's scenario analysis is potentially very broad and resources are limited, a sensible approach, particularly initially, is to prioritize work based on the materiality of different lending portfolios, the climate-related risk types, institutional capacity to conduct the analysis, and whether or not the FI has the capacity to act on the insights delivered. For example, the Commonwealth Bank in Australia prioritizes different portfolios of different risk types.

Figure 13 – Commonwealth Bank Priority Portfolios and Risk Types²⁹

Priority of our portfolios and risk types

Scope	Acute physical risk				Chronic physical risk			Transition risk
	Cyclone	Flood	Bushfire	Other	Sea level rise	Heat stress (productivity)	Other	
Australian home loans	✓	✓	✓	●	✓	✓	●	✓
Agriculture and forestry	●	●	●	●	●	✓	●	✓
Other business	➔	➔	➔	●	●	✓	●	✓
Own operations	✓	✓	✓	●	●	●	●	●

✓ Completed ➔ Early exploration ● Not yet prioritised

²⁹ Commonwealth Bank Climate Report 2023

Figure 14 - Phased Approach to Scenario Analysis

BEGINNER	INTERMEDIATE	ADVANCED
■ Focus providing qualitative data on one or two sectors	■ Provide qualitative and quantitative data for one or two sectors	■ Complete CSA modeling for more than two sectors

To start, FIs may choose to start with qualitative scenario narratives to help management explore the potential range of climate change implications. Over time, the scenarios and associated analysis of development paths can use quantitative information to illustrate potential pathways and outcomes. To start, FIs may focus the analysis on one or two key sectors, for example, energy and mining, and later expand and complete the CSA modeling to the remaining sectors.

This case study below illustrates how Oversea-Chinese Banking Corporation Limited (OCBC) applied scenario analysis to assess physical risk exposure in three asset-heavy sectors. By utilizing asset data and climate risk maps, OCBC evaluated the exposure of borrowers to seven climate-related hazards across different time periods and climate scenarios. This approach provided valuable insights into potential physical risks at the borrower, sectoral, and portfolio levels, enabling the bank to quantify and manage climate-related vulnerabilities effectively.

Case Study – OCBC Approach to Scenario Analysis³⁰

OCBC applied the scenario analysis approach to assess the physical risk exposure faced by three asset-heavy sectors within its credit portfolio: agriculture and forestry, real estate and utilities. This assessment was done using asset datasets and climate risk maps covering seven types of climate-related hazards – water stress, floods, heatwaves, coldwaves, hurricanes, wildfires and coastal floods – across three time periods (2020, 2030 and 2050) and three climate scenarios based on the Intergovernmental Panel on Climate Change Representative Concentration Pathways. A high climate change scenario is continuing “business as usual” emissions growth. This scenario is expected to result in warming of more than 4°C by 2100. A moderate climate change scenario with strong mitigation actions to reduce emissions to half of current levels by 2080. This scenario will likely result in warming of more than 2°C by 2100 and the low climate change scenario, aggressive mitigation actions to halve emissions by 2050. This scenario is likely to result in warming of less than 2°C by 2100. In carrying out the assessment, a sample of 57 borrowers within the three sectors was first identified. The asset locations of these borrowers were subsequently overlaid with climate risk maps to evaluate their exposure to the seven types of climate-related hazards. This process generated a physical risk score for each borrower, which could be used to compute the physical risks at the sectoral and portfolio levels.

Using scenario analysis to model different future scenarios based on varying levels of climate-related risks will help to understand the range of potential outcomes and refine strategies and plans to mitigate risks and capitalize on opportunities. The

³⁰ OCBC Task Force on Climate-related Financial Disclosures Report, 2021

scenario analysis should include key sectors selected based on their significance within the portfolio and carbon emissions contribution. For example, power and mining in Mongolia may be appropriate sectors to prioritize depending on the portfolio. Using relevant company financials and industry-specific data to perform the bottom-up modeling for each company. Bottom-up firm-level analysis requires granular data, including absolute GHG emissions and intensity for a firm's activities, and this often varies in terms of availability, granularity, and accuracy. To assess the rest of the portfolio, a top-down analysis could be conducted, and companies could be selected based on their materiality, data availability, and sector representativeness. Key insights derived from these companies in the bottom-up analysis can also be extrapolated to the rest of the corporate lending portfolio.

Case study: Maybank CSA³¹

Maybank conducts CSA based on transition pathways from the Intergovernmental Panel on Climate Change (IPCC), International Energy Agency (IEA), and Network for Greening the Financial System (NGFS) to inform this analysis. It has also participated in a pilot study using the Paris Agreement Capital Transition Assessment methodology for Malaysian banks, an initiative by 2°C Investing Initiative and WWF-Malaysia. The Group's financed emissions cover the six asset classes with exposures amounting to RM583.2 billion and accounting for 73% of the group's total lending and investment portfolio in 2022. Due to the limitation of calculation methodologies, Maybank financed emissions currently exclude several products and services, including investment funds, green bonds, sovereign bonds, loans for securitization, exchange-traded funds, derivatives, initial public offering underwriting, and insurance underwriting.

4.3.6. TRANSITION PLANS

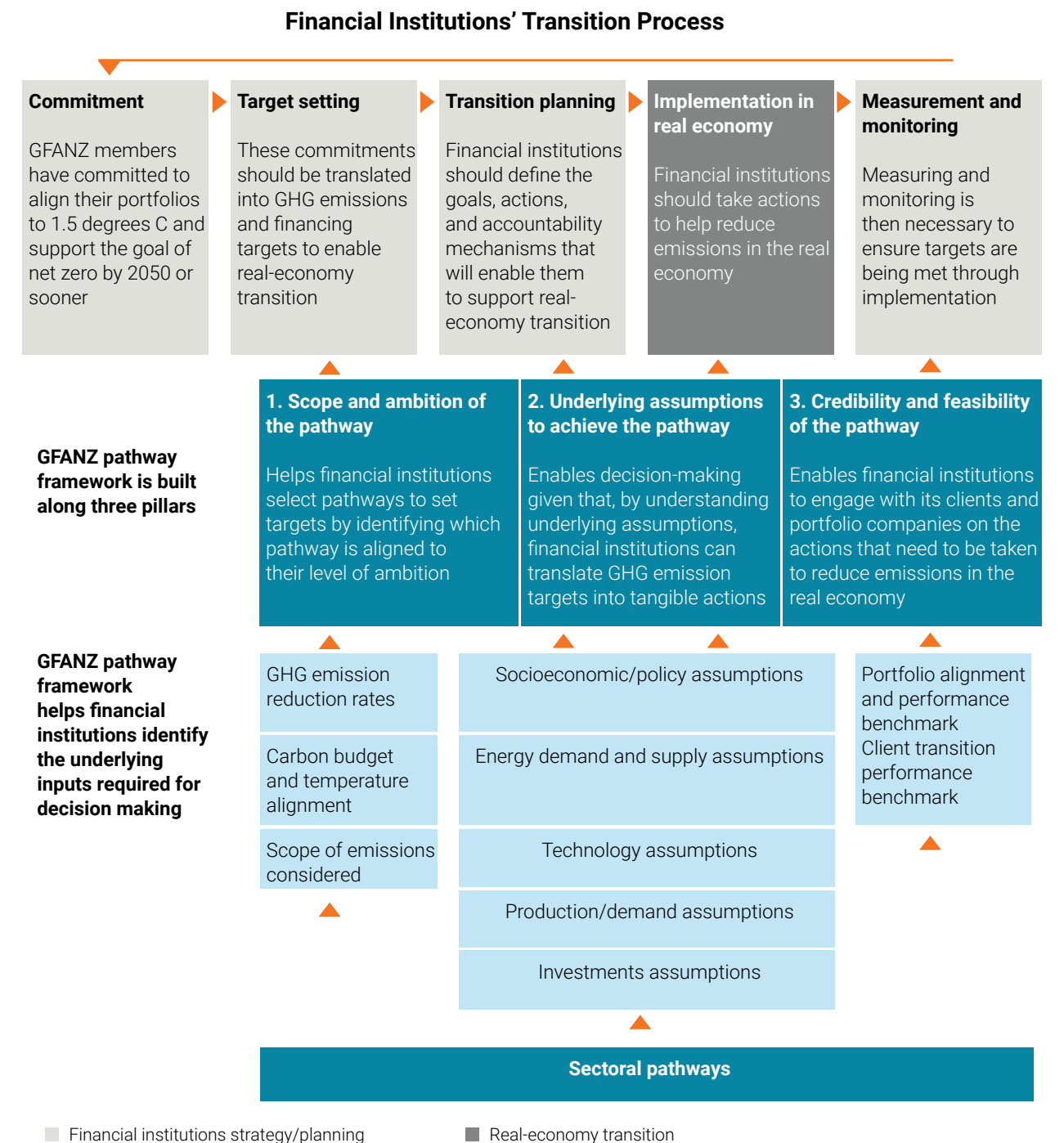
Transition plans should include comprehensive emission reduction targets covering short, medium, and long-term periods, encompassing absolute and relative targets for GHG emissions. The transition plan may be part of existing sustainability disclosures, providing an overview of the categories of actions expected to be undertaken to meet the targets and an approximate timeline. These targets should align with credible sector pathways and the plan should outline specific actions to achieve these targets, detailing capital expenditure, addressing data limitations, and engaging with clients. Governance structures for transition and the linkage of targets with executive compensation should also be considered relevant.

Launched by UN Special Envoy on Climate Action and Finance Mark Carney and COP26 leadership in 2021, the Glasgow Financial Alliance for Net Zero (GFANZ) has produced a framework for the transition process. It includes three pillars: 1) scoping 2) underlying assumptions and 3) a credibility and feasibility assessment and five major steps of the process which are commitment, target setting, transition planning, implementation in the real economy, and measurement and monitoring. When applying this framework internally, users are encouraged to consider each sector of

Financial Institutions' Transition Process

the economy in which they are involved to identify and set relevant sectoral pathways to make progress on the transition plan.

Figure 15: Financial Institutions' Transition Process and GFANZ Pathway Framework Pillars³²



³² Guidance on Use of Sectoral Pathways for Financial Institutions, Glasgow Financial Alliance for Net Zero, June 2022, https://assets.bbhub.io/company/sites/63/2022/06/GFANZ_Guidance-on-Use-of-Sectoral-Pathways-for-Financial-Institutions_June2022.pdf

³¹ Maybank Sustainability Report 2022



1. SCOPE AND AMBITION OF THE PATHWAY

Scope	- What sectors and sub-sectors does the pathway cover? - How does the pathway consider system interactions (e.g., energy systems and land-based systems)? - What sector system boundaries are considered? - What scopes are considered and how is each scope defined? - What is the timeframe and interval of reported data? - What geographies and regions does the pathway cover? - What GHGs does the pathway consider (e.g., CO₂ or all GHGs)?
Net-zero and temperature alignment	- What is the total emissions pathway to 2050 (both in terms of absolute and intensity)? - What is the global carbon budget from 2020 to net zero? - What is the temperature alignment (degrees C), level of overshoot, and likelihood? - What is the sector share of the global carbon budget? What is the methodology/assumptions to assign carbon budget to each sector? - What are the emissions per scopes 1, 2, and 3?
Reliance on carbon capture and removal	- What technologies does the pathway consider for removals and carbon capture? - To what extent does the pathway rely on removals and carbon capture? - What is the sector share of global carbon captured and removed?

2. UNDERLYING ASSUMPTIONS TO ACHIEVE THE PATHWAY

Socioeconomic/policy	- What are the key socioeconomic assumptions (e.g., GDP and population growth)? - What are the assumptions for carbon price development from 2020 to 2050? - What are the policy requirements to achieve the pathway?
Energy demand and supply	- What is the assumed energy demand? - What is the rate of energy-intensity improvements? - What is the assumed mix of energy supply through time (fossil fuels, renewables, nuclear)? - What are the assumptions regarding the adoption of hydrogen and biofuels over time?
Technology	- What are the overall technology development assumptions? - What is the assumed timeline for technologies to be developed/ready for use? - What are the assumptions around the lifetime of existing high-emitting assets, and asset retirement timeframes given the development of greener technologies?
Production/demand	What is the industry's assumed production/demand volume (e.g., tons of steel, passengers/km)?
Investments	- What are the assumptions on investment needed to achieve the pathway? - How are current infrastructure, assets, and their lifetimes considered? - How are the financial flows distributed during the time horizon?

3. CREDIBILITY AND FEASIBILITY OF THE PATHWAY

- What was the pathway created for?
- Has the pathway been validated by the scientific community for credibility around temperature alignment?
- Have the model and scenarios been peer reviewed? What are the current use cases of the scenarios (e.g., alignment, risk)?
- Has the pathway been submitted for international model intercomparison exercises (e.g., IPCC database)?
- Has the pathway been evaluated by industry and other key stakeholders (e.g., regulators) to assess the commercial feasibility?
- How are just transition and fair share considered in regional/country-specific pathways?

Additionally, policies for facilitating the transition, such as carbon pricing, should be outlined, with progress reported annually along with any plan adjustments. Moreover, transition plans should emphasize contributions to a just transition, ensuring fairness and addressing social consequences and impacts and strategies to avoid the conversion of natural ecosystems, such as eliminating deforestation by specific deadlines. Transition plans must align all aspects of the business with interim and long-term net-zero targets, including strategies to phase out assets. Due to the relationship between FIs and their clients, it is critical to understand and support clients with their transition plans, in particular the largest borrowers. Borrowers will likely require considerable capital to decarbonize, representing a significant climate opportunity.

Case Study - DBS Bank Power Sector Transition Risk Analyze³³

DBS Bank conducted a transition risk scenario analysis for several key sectors, including the power sector. The power sector is critical to decarbonization, yet not all companies within the sector have taken sufficient action. Companies that have already started greening their power generation are best placed to do well under multiple climate transition scenarios. Transition performance heavily depends on a company's energy type, regulation status, baseline generation carbon intensity, and baseline financial position. For example, renewable power companies are expected to transition better, given their head start on low carbon footprints at the baseline year and their emission status, decarbonization strategies, and other external regulatory requirements in a net-zero transition.

On the other hand, conventional power companies in regulated markets are expected to perform worse than their peers. These companies generally rely on conventional sources (e.g., coal) at the baseline and usually operate in regulated environments. Analysis suggests that these companies would have difficulty maintaining their volumes with the decarbonization of the power market. These companies are expected to see reductions in profits and earnings. This, along with increased liabilities, inability to pass on costs amid higher carbon prices, and increased debts over the horizon, will likely result in rating downgrades from the baseline.

³³ From Ambition to Action: Building a Sustainable Advantage, DBS Group Holdings Ltd, 2023

Following its plan to phase out thermal coal financing completely by 2039, DBS has begun to reduce the emissions intensity of its power portfolio to meet the net-zero pathway as outlined in its climate strategy.³⁴

4.3.7. ADAPTATION AND RESILIENCE PLANS

Adaptation and resilience plans are also important instruments. These plans identify risk exposures, for example, temperature, storms, droughts, and weather events linked to direct and indirect exposures to physical assets and the lending portfolio. The plans review each climate risk by sector and identify climate change adaptation initiatives by sector and geography.

Figure 16 - Phased Approach to Adaptation and Resilience Plans

BEGINNER	INTERMEDIATE	ADVANCED
■ Set specific, measurable, achievable, relevant, and time-bound (S.M.A.R.T.) goals to make progress on internal FI vision for climate-related disclosure	■ For each S.M.A.R.T. goal, identify potential funding sources	■ Set S.M.A.R.T. goals, identify potential funding sources, and provide estimated costs of adaptation by focus area

Argentina and Zimbabwe provide examples of what a strong adaptation plan can look like. Argentina’s National Adaptation Plan outlines goals at the dimension and sub-dimension level tying them to a S.M.A.R.T. goal. This is recommended for a FI at the beginner phase of familiarity with climate-related disclosures.

Figure 17 - Example Adaptation Plan - Argentina³⁵

Table 6. Adaptation goals by 2030

Dimension	Subdimension	Goal by 2030
1. Society’s perception of climate change impacts and adaptation measures.	1.1 Interest in climate change	M 1.1.1 Increasing the level of high interest in climate change as a challenge that involves society as a whole.
	1.2 Climate change information and knowledge	M 1.2.1 Increasing information and knowledge about climate change, especially among the population with lower educational and socioeconomic levels.
		M 1.2.2 Increasing knowledge and use of institutional resources on climate change (websites, risk maps, platforms, etc.)

³⁴ [Our Approach to Phase Out Thermal Coal Financing](#), DBS Group Holdings Ltd, accessed March 13, 2025.

³⁵ <https://unfccc.int/sites/default/files/resource/NAP-Argentina-2023-EN.pdf>

Zimbabwe’s Climate Change National Adaptation Plan goes as far as outlining the specific costs in USD associated with each sector-specific adaptation output and action, which is particularly important for planning a budget and allocating human and other resources towards timely completion. Potential sources of necessary funding are also included in the Zimbabwe adaptation plan. These features of the Zimbabwe adaptation plan are recommended for organizations at the intermediate and advanced levels of familiarity with climate-related disclosure.



Figure 18 - Example Adaptation Plan - Zimbabwe³⁶

Sector	Adaptation Outputs	Adaptation Actions	Costing USD
Infrastructure	Climate resilient infrastructure standards developed and adopted	- Develop and promote climate resilient infrastructure standards (buildings, roads, dams, irrigation, telecommunications, bridges, power lines, etc.) - Update existing building guidelines and standards to integrate climate change considerations - Increase the density of the hydro-meteorological network	160 million
Subtotal - Infrastructure Sector			USD 160 million
Human settlements	Increased integration of climate in spatial planning	- Capacity building in climate responsive spatial planning and development - Develop capacity on climate resilient human settlement infrastructure	1 billion
	Populations at risk from climate related hazards relocated	Relocate and regularize settlements at risk from climate related hazards	
Subtotal - Human Settlement Sector			USD 1 billion
Forestry and Biodiversity	Enhanced alternative natural resource-based livelihoods options	Enhance community led conservation initiatives (Communal Areas Management Programme for Indigenous Resources such as CAMPFIRE, non-timber forest products, apiculture, aquaculture, ecotourism)	120 million
	Improved biodiversity and reduced habitat loss	Initiate and promote recovery of highly threatened ecosystems and species through integrated research on impacts of, and adaptation to climate change	

³⁶ Zimbabwe's Climate Change National Adaptation Plan, Government of Zimbabwe, 2023.

Name of Fund	Description & Objective	Access Modalities	Applicable Adaptation Sectors
Green Climate Fund (GCF)	It aims to promote a paradigm shift and transformation towards low carbon and climate resilient development pathways in developing countries.	- Zimbabwe can receive funding from the GCF through accredited direct access entities such as Infrastructure Development Bank of Zimbabwe (IDBZ) and accredited international access entities such as United Nations Agencies, Regional and Multilateral Development Banks among others. - Project proposals to the GCF should be endorsed by the Nationally Designated Authority (NDA) in order to be considered for funding approval by the GCF board. The Climate Change Management Department serves as the GCF NDA for Zimbabwe. - GCF offers support in the form of Project Preparation Facility of up to USD 1.5 million, grants, loans, concessional loans, equity, guarantees and results-based finance of up to USD 250 million. - To access GCF funding it is important for the project proponent to ensure significant co-financing	All seven priority sectors
Adaptation Fund (AF)	Finances adaptation projects and programmes in developing countries to reduce the adverse impacts of climate change.	- Supports projects of up to USD 20 million per country. - Funds can be accessed through national, regional and multilateral implementing entities. In Zimbabwe, currently the Environmental Management Agency (EMA) serves as a National Implementing Entity (NIE). - To assist accreditation of NIEs, the AF offers Enhanced Direct Access of up to USD 5 million per country. - The AF also disburses its funds through project scale up grants (up to USD 100,000), small innovation grants (up to USD 250,000), and large grants up to USD 5 million.	Water, agriculture, human settlements, forestry and biodiversity, early warning and disaster risk management

4.3.8. ASSESSING CLIMATE-RELATED RISKS AND THEIR FINANCIAL IMPACTS

It is critical to translate climate risks and opportunities into financial impact and cashflow analysis to forecast the overall economic effects on an institution's business plans. For example, the financial impact of physical risks includes reduced revenue from decreased production capacity such as transport difficulties, supply chain interruptions, write-offs and early retirement of existing assets, increased operating costs and increased capital costs (e.g., damage to facilities).³⁷

This is done by assessing risk exposures and integrating the climate strategy including transition and adaptation plans into budgeted forecasting models to quantify implementation costs of the measures into capital and operational planning strategies and analyze the financial implications of asset-level risk management for the medium-term. Having identified critical sectors exposed to physical and transition risks, several methods can also be used to calculate the possible financial impact of these risks. For example, using Exposure at Default (EAD), an estimate of the credit exposure amounts outstanding if a client defaults, versus financed emissions by sector and the overall portfolio.

4.4 CLIMATE OPPORTUNITIES

FIs need to not only understand the nature of the climate-related risks but also the opportunities. Each FI will face a different blend of climate-related risks and opportunities. The impacts of climate change vary significantly depending on the industry and sector(s)/sub-sector(s) in which the FI operates. Opportunities will also vary considerably depending on the geographic location of the FI's client value chain (both upstream and downstream), the client's assets and the nature of operations, and the structure and dynamics of its supply and demand markets, clients, and other key stakeholders. Opportunities could include the development and/or expansion of low-emission goods and services and the ability to diversify business activities.³⁸ In turn, it generates increased revenue through demand from lower emissions products and services and a better competitive position due to shifting consumer preferences. Opportunities in financing energy transition could also include the use of lower-emission sources of energy, supportive policy incentives, and participation in carbon markets.³⁹

4.5 METRICS AND TARGETS

Developing clear metrics and targets is essential for tracking progress on the agreed climate strategy and effectively measuring and managing climate-related risks and opportunities. This includes disclosing the metrics used to assess climate-related risks and opportunities in line with its strategy and risk management process,

³⁷ <https://www.tcfhub.org/wp-content/uploads/2022/04/Table-A1.1-and-A1.2-marked.pdf>

³⁸ <https://www.tcfhub.org/wp-content/uploads/2022/04/Table-A1.1-and-A1.2-marked.pdf>

³⁹ <https://www.tcfhub.org/wp-content/uploads/2022/04/Table-A1.1-and-A1.2-marked.pdf>

disclosing Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emission and the related risks, and describing the targets used to manage climate-related risks, opportunities, and performance against targets.

The assessment of climate-related risks and opportunities outlined earlier should inform and lead the development of overall targets associated with decarbonizing operations and supporting clients through the low-carbon transition. Targets should be set with reference to the best science available. However, there is no simple calculation to determine a FI's target, which must be based on the board's overall climate governance and strategy. Still the following diagrams on common metrics and targets can be used as a starting point for organizations.

Figure 19 - Cross-Industry, Climate-Related Metric Categories and Example Metrics⁴⁰

Metrics		
Metric Category	Example Unit of Measure	Example Metrics
GHG Emissions	Million Tonnes (MT) of CO ₂ e	■ Absolute Scope 1, Scope 2, and Scope 3 GHG emissions ■ Financed emissions by asset class ■ Weighted average carbon intensity ■ GHG emissions per MWh of electricity produced ■ Gross global Scope 1 GHG emissions covered under emissions-limiting regulations
Transition Risks Amount and extent of assets or business activities vulnerable to transition risk	Amount or percentage	■ Volume of real estate collaterals highly exposed to transition risk ■ Concentration of credit exposure to carbon-related assets ■ Percent of revenue from coal mining ■ Percent of revenue passenger kilometers not covered by Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)

⁴⁰ Task Force on Climate-related Financial Disclosures: Guidance on Metrics, Targets, and Transitions Plans (TCFD, October 2021), https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics_Targets_Guidance-1.pdf



Physical Risks Amount and extent of assets or business activities vulnerable to physical risks	Amount or percentage	■ Number and value of mortgage loans in 100-year flood zones ■ Wastewater treatment capacity located in 100-year flood zones ■ Revenue associated with water withdrawn and consumed in regions of high or extremely high baseline water stress ■ Proportion of property, infrastructure, or other alternative asset portfolios in an area subject to flooding, heat stress, or water stress ■ Proportion of real assets exposed to 1:100 or 1:200 climate-related hazards
Climate-Related Opportunities Proportion of revenue, assets, or other business activities aligned with climate-related opportunities	Amount or percentage	■ Net premiums written related to energy efficiency and low-carbon technology ■ Number of (1) zero-emissions vehicles (ZEV), (2) hybrid vehicles, and (3) plug-in hybrid vehicles sold ■ Revenues from products or services that support the transition to a low-carbon economy ■ Proportion of homes delivered certified to a third-party, multi-attribute green building standard
Capital Deployment Amount of capital expenditure, financing, or investment deployed towards climate-related risks and opportunities	Reporting currency	■ Percentage of annual revenue invested in R&D of low-carbon products/services ■ Investment in climate adaptation measures (e.g., soil health, irrigation, technology)
Internal Carbon Prices Price on each ton of GHG emissions used internally by an organization	Price in reporting currency, per MT of CO ₂ e	■ Internal carbon price ■ Shadow carbon price, by geography
Remuneration Proportion of executive management remuneration linked to climate considerations	Percentage, weighting, description, or amount in reporting currency	■ Portion of employee's annual discretionary bonus linked to investments in climate-related products ■ Weighting of climate goals on long-term incentive scorecards for Executive Directors ■ Weighting of performance against operational emissions' targets for remuneration scorecard

Figure 20 - Examples of Quantified Targets⁴¹

CROSS-INDUSTRY METRIC CATEGORY	EXAMPLE CLIMATE-RELATED TARGET
GHG Emissions Absolute Scope 1, Scope 2, and Scope 3; emissions intensity	Reduce net Scope 1, Scope 2, and Scope 3 GHG emissions to zero by 2050, with an interim target to cut emissions by 70% relative to a 2015 baseline by 2035
Transition Risks Amount and extent of assets or business activities vulnerable to transition risks	Reduce percentage of asset value exposed to transition risks by 30% by 2030, relative to a 2019 baseline
Physical Risks Amount and extent of assets or business activities vulnerable to physical risks	Reduce percentage of asset value exposed to acute and chronic physical climate-related risks by 50% by 2050 Ensure at least 60% of flood-exposed assets have risk mitigation in place in line with the 2060 projected 100-year floodplain
Climate-Related Opportunities Proportion of revenue, assets, or other business activities aligned with climate-related opportunities	Increase net installed renewable capacity so that it comprises 85% of total capacity by 2035
Capital Deployment Amount of capital expenditure, financing, or investment deployed towards climate-related risks and opportunities	Invest at least 25% of annual capital expenditure into electric vehicle manufacturing Lend at least 10% of portfolio to projects focused primarily on physical climate-related risk mitigation
Internal Carbon Prices Price on each ton of GHG emissions used internally by an organization	Increase internal carbon price to \$150 by 2030 to reflect potential changes in policy
Remuneration Proportion of executive management remuneration linked to climate considerations	Increase amount of executive management remuneration impacted by climate considerations to 10% by 2025

Different approaches can be used to work towards sector-level financed emissions targets. This includes prioritizing emissions-intensive sectors to reduce financed emissions, setting targets to guide emissions reductions across the FI's lending portfolios in alignment with the climate strategy, and helping clients take steps to lower their own emissions.

This approach will vary depending on the borrower and the sector but will involve engaging with clients, providing insights, data, and dedicated products and services, and advocating for government policies that can help them reduce their emissions. Rebalancing the FI's portfolio towards less emissions-intensive clients involves actively redirecting exposures within a sector and reducing the FI's exposure to certain sectors, based on targets set by the board and the climate strategy.

⁴¹ Task Force on Climate-related Financial Disclosures: Guidance on Metrics, Targets, and Transitions Plans, TCFD, October 2021.



It is also crucial to review targets regularly. A good practice is every five years or when better data becomes available to ensure they remain in line with the ‘best available science’, if there are changes to the target-setting guidelines and if more relevant or localized reference pathways become available. These challenges impact the ability to accurately and consistently measure attributable financed emissions and set and achieve appropriate targets to reduce attributable financed emissions. In addition, it is crucial to continue to work on and improve methodologies, including adding granularity, updating external client and industry data as it becomes available over time, and applying changes to previously disclosed data or methodologies where relevant.

Figure 21 - Example Metric Calculation Methodology for an Organization Self-Designated as a Beginner in Disclosure Reporting⁴²

BEGINNER	INTERMEDIATE	ADVANCED
Adopt Common Indicators as prescribed by the Exchange.	In addition to the Common Indicators as prescribed by the Exchange the company adopts relevant Sector-specific indicators provided in this Guide.	Companies benchmark against the indicators disclosed by peers and leading companies in sector when adopting and reporting relevant indicators.

⁴² <https://my.bursamalaysia.com/learn/bursa-sustain/explorer/sustainability-reporting-guide-and-toolkits-3rd-edition>

Common Indicator			
Common Sustainability Matter 10: Waste management			
Common Indicator C10(a): Total waste generated, and a breakdown of the following: (i) total waste diverted from disposal (ii) total waste directed to disposal			
Description	The total weight of waste generated, when contrasted with the weight of waste that the company directs to recovery and disposal, can show the extent to which the company manages its waste-related impacts.		
Unit of measurement	Metric tonnes		
Methodology	Calculation: When computing data for this indicator, companies should disclose the total waste¹ generated with a breakdown of total waste diverted from disposal²³⁴⁵ and total waste directed to disposal⁶ as at the end of the reporting period. Note: (1) Waste is defined as anything that the holder discards, intends to discard, or is required to discard. For the purposes of this indicator, the definition of waste excludes effluents (treated or untreated waste water that is discharged). (2) Waste directed from disposal includes waste that is reused, recycled or subjected to other recovery operations. (3) Recycling refers to the reprocessing of products or components of products that have become waste, to make new materials. (4) Preparation for reuse refers to the checking, cleaning, or repairing operations, by which products or components of products that have become waste are prepared to be put to use for the same purpose for which they were conceived. (5) Recovery refers to operation wherein products, components of products, or materials that have become waste are prepared to fulfill a purpose in place of new products, components, or materials that would otherwise have been used for that purpose. (6) Disposal is defined as any operation which is not recovery, even where the operation has as a secondary consequence the recovery of energy.		
Source	The data is likely to be collected via the: - Environmental, Health and Safety department, Production department, Operations department and/or Sustainability department. - Waste consignments note (provided by licensed waste collector by local regulator) and/or waste disposal data records.		
Further references	GRI 306-3 Waste generated	GRI 306-4 Waste diverted from disposal	GRI 306-5 Waste directed to disposal
	FTSE EPR Pollution & Resources Theme		
	Environmental Quality (Scheduled Wastes) Regulation 2005		

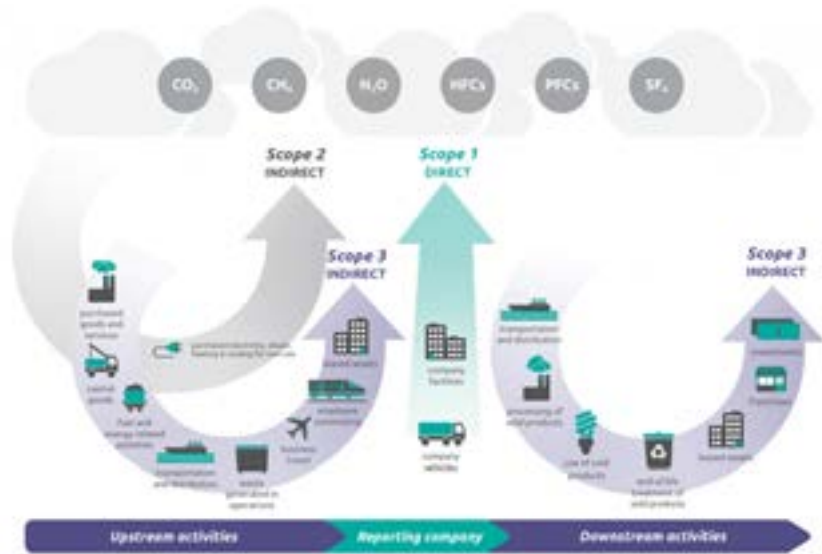
4.5.1. REPORTING ON SCOPE 1, 2 AND 3

Measuring emissions associated with financial activities is the starting point for FIs to manage risk, identify opportunities related to GHG emissions, and begin the journey towards decarbonization.⁴³ A company's direct and indirect GHG emissions are classified into three scopes.

Scope 1	Direct emissions from owned or controlled sources
Scope 2	Indirect emissions from the generation of purchased energy consumed by the reporting company
Scope 3	Includes all other greenhouse gas emissions that occur upstream and downstream in a company's value chain.

Although, ISSB IFRS S2 requires companies to account for and report all Scope 1 and 2 emissions and Scope 3, if material, the standard recognizes existing challenges and provides support for companies disclosing Scope 3 emissions to help address data availability and quality challenges, giving some flexibility in whether and how to account for Scope 3 emissions. In some countries and sectors, reporting Scope 3 emissions has been opposed due to concerns about the impacts of the shared cost and time commitment of the compliance burden. In the short term, it is recommended that FIs in Mongolia focus their efforts on Scope 1 and 2 measurement and reporting. Then, as data access and quality improve, FIs could expand climate disclosure and reporting to include Scope 3.

Figure 22 - Overview of GHG Protocol scopes and emissions across the value chain⁴⁴



Scope 3 emissions can represent the largest source of emissions for many companies, particularly banking and financial institutions, and present the most significant opportunities to influence GHG reductions and achieve various GHG-

⁴³ <https://carbonaccountingfinancials.com>

⁴⁴ Corporate Value Chain (Scope 3) Accounting and Reporting Standard Supplement to the GHG Protocol Corporate Accounting and Reporting Standard

related business objectives. Although challenging, developing a clear record of Scope 3 emissions can strengthen the FI's understanding of their value chain GHG emissions and can be an important step towards effectively managing emissions-related risks and opportunities and reducing GHG emissions.

Calculating Emissions

FIs need to ensure that their GHG accounting appropriately reflects the GHG emissions of their loans and investments and serves the decision-making needs of internal and external stakeholders. Financed emissions reflect emissions per dollar in lending, allowing FIs to track their contribution to decarbonization over time.

Estimation approaches to financed emissions vary depending on the availability of data but include two main approaches:

- i) A bottom-up approach based on individual company emissions data and
- ii) A top-down approach based on industry-level data where bottom-up information was unavailable.

The bottom-up approach is generally applied to sectors where individual company emissions data is available. As a priority, emissions data is sourced from client-reported sources. For FIs, the PCAF data hierarchy can inform which data is required data, available options, and corresponding data quality score. FIs should familiarize themselves with widely accepted GHG Accounting and Reporting standards, such as the PCAF Global GHG Accounting and Reporting Standard Part A: Financed Emissions⁴⁴, to be equipped with standardized methods for GHG data calculations and reporting methods.

As mentioned earlier, quality data is often only available to FIs for some asset classes. In these instances, the FI should use the best available data.

Figure 23 – Asset Classes Covered by PCAF and Science-Based Targets⁴⁵

Asset classes covered in the Global GHG Accounting and Reporting Standard	Asset classes covered by the Science Based Targets initiative
Listed equity and corporate bonds	Corporate instruments (equity, bonds, loans)
Business loans and unlisted equity	
Project finance	Electricity generation project finance
Commercial real estate	Real estate (commercial & residential)
Mortgages	Mortgages
Motor vehicle loans	

⁴⁵ The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second Edition, PCAF, 2022

According to the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, FIs should allocate GHG emissions from loans and investments based on their proportional share of financing in the borrower or investee.⁴⁶ Additionally, these emissions must be reported at least annually. PCAF recognizes that there is often a lag between financial reporting and reporting required emissions-related data for the borrower or investee. In these instances, FIs should use the most recent data available, even if it is representative of different years, with the intention of aligning as much as possible.

Financed emissions are always calculated by multiplying an attribution factor by the emissions of the borrower. The attribution factor is the portion of a borrower's or investee's total annual GHG emissions that is allocated to the loan(s). The attribution factor is calculated by dividing the outstanding amount of loans and investments by the total equity and debt of the company or project to which the financial institution has lent money or in which it has invested capital as illustrated in Figure 24.

Figure 24 – Financed Emissions Formula⁴⁷

For Business Loans and Equity Investments in Private Companies

$$\text{Financed emissions} = \sum_c \left(\frac{\text{Outstanding amount}_c}{\text{Total equity} + \text{debt}_c} \times \text{Company emissions}_c \right)$$

For Business Loans to Listed Companies

$$\text{Financed emissions} = \sum_c \left(\frac{\text{Outstanding amount}_c}{\text{Enterprise Value Including Cash}_c} \times \text{Company emissions}_c \right)$$

c represents the borrower or investee company.

PCAF outlines three methods for calculating financed emissions from business loans, depending on the available emissions data: (1) reported emissions, (2) physical activity-based emissions and (3) economic activity-based emissions. The first two rely on company-specific data, such as reported emissions or physical activity metrics provided by the borrower, investee, or third-party providers. The third method uses regional or sector-specific average emissions or financial data, sourced from public databases or third-party providers, to estimate emissions when specific company data is unavailable. The first two options are preferred over option three, because the first two options provide more accurate emissions results. Due to data limitations, FIs might use the first two options for certain companies and option three for others.⁴⁸ Moving forward, it is crucial to refine financed emissions estimates as the FI enhances its methodologies and to improve processes in gathering actual emissions data from its clients.

⁴⁶ PCAF GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard

⁴⁷ Financed Emissions: The Global GHG Accounting & Reporting Standard for the Financial Industry

⁴⁸ PCAF GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard

4.5.2. ASSETS AND ACTIVITIES VULNERABLE TO CLIMATE-RELATED TRANSITION RISKS

Calculating the assets or activities vulnerable to climate-related transition risks involves several steps. First, identify the transition risks your assets or business activities may face due to climate change. As outlined in Section 4.3.2 Identifying Transition Risks, these risks include policy and regulatory changes, technological advancements, market shifts, and societal attitudes towards climate change mitigation. Next, create an inventory of all assets on the balance sheet. The majority of assets will likely be retail and commercial loans, as well as physical assets like infrastructure, facilities, and equipment, together with intangible assets like intellectual property. Assess the vulnerability of each asset or business activity to climate-related transition risks. Consider factors such as carbon intensity, exposure to carbon pricing, dependence on fossil fuels, regulatory compliance, and changing market demand for products and services.

Calculating the amount and percentage of assets or business activities vulnerable to climate-related transition risks requires a comprehensive and iterative approach considering quantitative and qualitative factors. This can help you identify potential vulnerabilities and develop contingency plans to manage risks effectively. Furthermore, it is also important to engage with stakeholders, including clients, to communicate your assessment of climate-related transition risks and demonstrate your commitment to managing these risks effectively and continuing to monitor and review your evaluation of climate-related transition risks to stay abreast of new developments and refine your assessment.

Value at Risk (VaR) expresses an overall estimate of the financial impact of risks and opportunities. VaR metrics can be used to assess the climate-related transition risks facing different assets or the wider portfolio. Likewise, VaR can be used for physical risks and opportunities.

4.5.3. ASSETS AND ACTIVITIES VULNERABLE TO CLIMATE-RELATED PHYSICAL RISKS

Identifying the vulnerability of assets and activities to physical climate hazards involves creating an inventory of all assets on the balance sheet and assessing the geographic locations, where the assets are based, and their exposure to physical climate hazards. Assets should also be evaluated on their capacity to effectively manage and respond to physical climate risks. Physical risk metrics such as the percentage of operations located in geographical areas sensitive to physical risks and the percentage of the portfolio exposed to sectors sensitive to physical risks can provide insight into the physical risks of these assets. However, limited data coverage and data quality issues can make this initially challenging.

4.5.4. ASSETS OR BUSINESS ACTIVITIES ALIGNED WITH CLIMATE-RELATED OPPORTUNITIES

As mentioned earlier, borrowers will likely require considerable capital to decarbonize,

representing a significant climate opportunity. Therefore, it is important to identify and measure the proportion of assets, revenues, or other business activities aligned with opportunities associated with the transition to a low-carbon economy. Identifying the amount or percentage of revenue generated from loans for green/clean technology and other climate solutions, the percentage of the portfolio invested in renewable energy assets, and revenues from products or services that support the transition to a lower-carbon economy (e.g., car loans for zero-emission vehicles or hybrid vehicles and loans for buildings that meet green standards).

4.5.5. CAPITAL DEPLOYMENT TOWARDS CLIMATE-RELATED RISKS AND OPPORTUNITIES

The emergence of climate disclosure frameworks and standards and growing legal exposure means that the consequences of ignoring climate disclosure and reporting are increasing. As discussed, for FIs to discharge their obligations, they must assess climate risk, consider costs, and take proactive action. Choosing not to act is no longer feasible. By taking proactive action, FIs will ensure compliance with their obligations and help ensure the climate change transition aligns with the Paris Agreement goals.

Critical to focusing capital deployment on climate-related risks and opportunities is establishing clear climate financing targets and monitoring and tracking the targets, including the breakdown of the target into different areas, for example, energy-efficient, low-carbon buildings, and renewable energy. For example, the target of having 20% of all lending for green loans such as energy-efficient, low-carbon buildings, and renewable energy in the next year. In this case it will be crucial to ensure that appropriate financial and capital resources are allocated proportionately to the portfolio size. Also, as discussed in Section 4.3.8, capital may need to be allocated based on potential exposures due to client defaults due to climate risks such as stranded assets.

As demonstrated in the case study below, DBS has developed a climate strategy that strengthens risk management while aligning its portfolio with its net-zero commitments. This approach opens opportunities to support clients in achieving their decarbonization goals and other sustainability objectives.

Case Study – DBS Climate Risk Management and Financing Opportunities

DBS highlighted the relationship between climate risk management and financing opportunities in a recent sustainability report where it was noted that the bank has a two-way relationship with climate, whereby climate change has risk implications on the portfolio and bank lending affects the climate via the financing provided. DBS's climate strategy accounts for this two-way relationship by strengthening climate risk management capabilities and ensuring portfolio alignment with its net-zero commitment into a cohesive framework. This opens new opportunities for DBS to support and empower clients to achieve their decarbonization targets and other sustainability goals.⁴⁹

⁴⁹ DBS Sustainability Report 2022

4.5.6. INTERNAL CARBON PRICES

A growing number of companies worldwide are adopting internal carbon pricing (ICP) strategies to mitigate emissions. ICP involves assigning costs to emissions to incentivize emission reduction efforts. This can involve shadow pricing or charging business units directly for emissions, with the proceeds directed towards emission offset projects. ICP can help manage climate risks and identify operational risks and opportunities. It can also help decision-making regarding capital allocation and understanding the costs of transitioning to net zero.

Three primary uses of ICP include informing capital investment decisions, managing financial and regulatory risks, and identifying risks and opportunities related to net zero targets. The ICP can be customized to align with organizational goals and transition to net zero, with pricing options including uniform, differentiated, or evolutionary approaches. Key steps to launch an ICP include identifying relevant business decisions, assessing feasibility with internal stakeholders, developing an approach, setting a price, and establishing an operational framework, communicating across the organization, and monitoring and evaluating the ICP strategy's effectiveness. **The choice of ICP will depend on the level of ambition in the climate strategy and anticipated challenges. For example, setting the ICP prices higher will typically drive deeper emission cuts and faster transformation, but this needs to be balanced with the overall business strategy.** Numerous FIs have adopted ICP, including Bank of America, Barclays, and BNP Paribas.

To illustrate the practical application of ICP the below case studies showcases how Barclays and HSBC have developed and use their ICP strategies.

Case Study – Internal Carbon Price Strategy

Barclays has adopted an internal carbon pricing strategy as part of its broader sustainability framework. The bank employs a shadow price for its investment decisions, which helps assess the potential financial impacts of climate-related risks.⁵⁰ This internal carbon price is used to evaluate the viability of projects and investments, ensuring that climate considerations are factored into the bank's long-term strategic planning.

Globally institutions have been typically setting carbon prices between \$25 to \$50 per metric ton, though evolving regulations may push these prices higher in the coming years.⁵¹

⁵⁰ Barclays. (2021). *TCFD Report 2021*. Barclays. Available at: Barclays TCFD Report 2021.

⁵¹ CDP. (2021). *Nearly half of world's biggest companies factoring cost of carbon into business plans*. CDP. Available at: <https://www.cdp.net/en/press-releases/2021/04/nearly-half-of-worlds-biggest-companies-factoring-cost-of-carbon-into-business-plans>.

4.5.7. SETTING CLIMATE-RELATED TARGETS – NDC AND SUSTAINABLE FINANCE ROADMAP ALIGNED TARGETS

NDCs are at the heart of the Paris Agreement and the achievement of its long-term goals. NDCs embody each country's efforts to reduce national emissions and adapt to climate change's impacts. In its NDC, Mongolia has enhanced its mitigation efforts with policies and measures to be implemented in key sectors by 2030. The mitigation target of Mongolia's NDC will be a 22.7% reduction in total national GHG emissions by 2030 compared to the projected emissions under a business-as-usual scenario for 2010, excluding land use, land-use change and forestry. In addition, targets adopted should be science-based, which means targets are in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement to limit global warming to well- below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C. Science-based Targets provide a clearly defined pathway to future-proof growth by specifying how much and how quickly a FI will need to reduce its GHG emissions. By aligning FI targets with Mongolia's NDC and Sustainable Finance Roadmap Aligned Targets, clear benchmarks can be developed to show whether the FI is contributing to Mongolia's overall climate goals.

4.5.8. INDUSTRY-SPECIFIC METRICS AND TARGET-SETTING

Industry-specific metrics and target-setting are useful tools to ensure that FI metrics and targets are consistent with industry-wide practice. When preparing disclosures per the industry-based guidance, an entity must identify the volume or quantity it has applied, for example, metric tons of CO2 equivalent, in preparing its sustainability-related financial disclosures per IFRS S1. As a starting point, an entity can identify its primary industry classification on the SASB Standards website. As seen in the figure below, for commercial banking, industry-specific metrics include absolute gross financed emissions disaggregated by scope 1, 2, and 3, gross exposure for each industry by asset class, percentage of gross exposure included in the financed emissions calculation, and a description of the methodology used to calculate financed emissions.

Figure 25 – Sustainability Disclosure Metrics for Commercial Banks ⁵²

TOPIC	METRIC	CATEGORY	UNIT OF MEASURE	CODE
Financed emissions	Absolute gross financed emissions, disaggregated by (1) Scope 1, (2) Scope 2 and (3) Scope 3	Quantitative	Metric tons (t) CO2e	FN-CB-401b.1
	Gross exposure for each industry by asset class	Quantitative	Presentation currency	FN-CB-410b.2
	Percentage of gross exposure included in the financed emissions calculation	Quantitative	Percentage %	FN-CB-410b.3
	Description of the methodology used to calculate financed emissions	Discussion and Analysis	n/a	FN-CB-410b.4

For entities with operations that are integrated horizontally across industries or vertically through the value chain, more than one volume of industry-based guidance may be necessary for completeness. Using more than one volume of industry-based guidance would allow such an entity to detail the full range of climate-related risks and opportunities that could reasonably be expected to affect the entity's prospects.

⁵² IFRS Foundation. (2023). *Sustainability Accounting Standard for Commercial Banks*. Version 2023-12. Available at: SASB Standards

Figure 26 - Example Metric Calculation Methodology for an Organization Self-Designated as a Intermediate or Advanced in Disclosure Reporting⁵³

Sustainability indicators
When adopting and disclosing sustainability indicators, companies are encouraged to progress from beginner to advanced as follows:

BEGINNER	INTERMEDIATE	ADVANCED
Adopt Common Indicators as prescribed by the Exchange.	In addition to the Common Indicators as prescribed by the Exchange the company adopts relevant Sector-specific indicators provided in this Guide.	Companies benchmark against the indicators disclosed by peers and leading companies in sector when adopting and reporting relevant indicators.

⁵³ Malaysia Sustainability Reporting Guide 2022, 3rd Edition

Sector-specific Indicators

Sector-specific Sustainability Matter 4: Emissions – Air quality/Pollution

Sector-specific Indicator S4(a):
Amount of air emissions of pollutants and particulate matter

Sectors applicable: Energy, Industrial Products & Services, Transportation & Logistics

Description	Air emissions include pollutants that have negative impacts on air quality, ecosystems, and human and animal health.
Unit of measurement	Kilograms (kg)
Methodology	Calculation: Companies should disclose significant air emissions⁵⁴, in kilograms or multiples, for each of the following, as at the end of the reporting period: - Nitrogen oxides ("NOx") - Sulfur oxides ("SOx") - Persistent organic pollutants ("POP") - Volatile organic compounds ("VOC") - Hazardous air pollutants ("HAP") - Particulate matter ("PM") - Other standard categories of air emissions identified in relevant regulations Note: - Significant emissions refer to air emissions regulated under international conventions and /or national laws or regulations. Additional considerations: When compiling the information specified, the company shall select one of the following approaches for calculating significant air emissions: - Direct measurement of emissions (such as online analysers); - Calculation based on site-specific data; - Calculator based on published emission factors; or - Estimation. If estimators are used due to a lack of default figures, the company shall indicate the basis on which figures were estimated.
Source(s)	The data is likely to be collected via the: - Operations department, Environmental, Health and Safety department, Engineering department and/or Production department. - Readings from specialized measuring equipment at the selected sites.
Further references	GRI 305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions.

5

CONCLUSIONS

Climate-related disclosures are becoming increasingly important for FIs as they face growing regulatory, legal, and market pressures to align their operations with global climate goals, including the Paris Agreement. The guidance outlined in this document offers a comprehensive framework to help Mongolian FIs integrate climate risks and opportunities into their governance, risk management, and strategic planning in alignment with Mongolia's accounting regulations. By adopting best practices in climate reporting, such as setting clear metrics and targets, conducting scenario analysis, and employing tools like ICP, FIs can better manage the financial impacts of climate change while contributing to Mongolia's sustainability objectives. FIs can strengthen investment attractiveness, align with global regulatory trends and foster long-term financial stability.

The guidance emphasizes a "learning by doing" approach, encouraging FIs to continuously improve their climate reporting processes and data quality over time. It also provides a detailed roadmap for engaging stakeholders, conducting materiality assessments, and embedding climate-related considerations into FI decision-making. By following these steps, Mongolian FIs can enhance their resilience, attract responsible investments, and position themselves as leaders in sustainable finance within the region. This guideline is a living document and will be updated as climate disclosure standards evolve.

6

ANNEXES

6.1. EXAMPLE OUTLINE OF CLIMATE REPORT

1. EXECUTIVE SUMMARY:

- A statement from the FI's leadership regarding the accuracy and completeness of the report
- A high-level overview of the climate report
- Key highlights and achievements
- Summary of climate performance

2. INTRODUCTION:

- Background and purpose of the report
- FI's commitment to sustainability and Mongolia's climate goals and transition.
- Scope and boundaries of the report

3. GOVERNANCE

- Overview of the FI's governance approach to climate
- Details of the FI's governance structure related to climate
- Explanation of the board's oversight of climate-related risks and opportunities

4. STRATEGY

- Description of the FI's strategy for a low-carbon economy
- Description of the FI's climate strategy and policies
- Transition and Adaptation Plans

5. RISK MANAGEMENT:

- Overview of approach to climate risk
- Climate scenario analysis
- Identification, assessment, and management of climate risk
- Integration of climate risk into overall risk management

6. METRICS AND TARGETS

- Summary of the FI's climate footprint and performance
- Financed Emissions
 - Emissions from lending
 - Emissions from operations
- Managing our operational emissions
- Measures taken to reduce environmental impact
- Progress against climate targets (if established)

7. STAKEHOLDER ENGAGEMENT:

- Identification of key stakeholders and their role in climate initiatives
- Feedback and responses to stakeholder concerns.

8. MATERIALITY ASSESSMENT:

- Description of the process used to determine materiality
- List of identified material issues

9. CASE STUDIES:

- Real-world examples illustrating the FI's climate initiatives and impacts

10. FUTURE OUTLOOK:

- FI's future climate goals and commitments
- Planned initiatives and improvements

11. AWARDS AND RECOGNITIONS:

- Acknowledgment of any sustainability and climate-related awards or recognitions received

12. APPENDICES:

- Supporting data, charts, and graphs
- Financed emissions methodology
- Any additional information or disclosures
- References and citations
- Contact details for further inquiries

6.2. ADDITIONAL RESOURCES, TOOLS, LINKS, TRAINING PROGRAMS

- [IFRS S2 Climate-related Disclosures](#)
- [PCAF academy for upskilling its signatories and accredited partner FIs on GHG accounting](#)
- [More Publications from TCFD](#)
- [IFRS S2 vs. TCFD](#)
- [IFRS knowledge hub](#)
- [Understanding the Global Reporting Frameworks](#)
- [TCFD Report 2022 - In accordance with the recommendations of the Task Force on Climate-related Financial Disclosures](#)
- [Guidelines for Climate Target Setting for Banks – Version 2](#)
- [NGFS Scenarios Portal](#)
- [Compare IFRS S2 Climate-related Disclosures with the TCFD Recommendations](#)
- [The Use of Scenario Analysis in Disclosure of Climate-related Risks and Opportunities](#)
- [Industry-based SASB Standards](#)
- [Enabling Financial Institutions to Assess and Disclose Greenhouse Gas Emissions Associated with Financial Activities](#)
- [IFC Beyond the Balance Sheet platform](#)
- [En-roads Climate Scenarios \(Climate risks\)](#)
- [Footprintcalc \(Scope 3, LCA\)](#)
- [Financed emissions Excel-based Tool \(developed by German Sparkassenstiftung, applied by National Bank of Georgia, the Tool is available for MSFA member institutions\)](#)
- [Carbon pricing incidence calculator \(Carbon market, Carbon pricing\)](#)
- [WBCSD Climate transition risks tool \(Climate risks\)](#)
- [ESG Disclosure Exchanges Guidance Database \(ESG Disclosure, Net zero, Helpful for Stock Exchanges\)](#)
- [OECD Data Explorer \(Climate risks, Biodiversity\)](#)
- [Climate Tech Search Engine \(Climate risks, Net Zero\)](#)
- [Green policy research library \(Climate risks, Net zero, Carbon market\)](#)
- [Carbon mapper \(Climate Change\)](#)
- [Planet tracker dashboards \(Climate risks, Net zero\)](#)



6.3. KEY REQUIREMENTS OF TCFD, ISSB OF IFRS, AND ESRS

	TCFD	ISSB	ESRS
Governance	▪ Identification of the governance body responsible for climate-related risks. ▪ Description of responsibilities regarding climate-related risks. ▪ Assessment of skills and competencies related to climate risks. ▪ Information and frequency of updates to governance bodies. ▪ Incorporation of climate risks into decision-making processes.	▪ Objective - To show how the entity monitors, manages, and oversees climate-related risks and opportunities. ▪ Governance Body Identification: Identify the entity responsible for overseeing climate-related risks and opportunities. ▪ Responsibilities and Incorporation into Decision-Making: How responsibilities for climate-related risks and opportunities are integrated into governance terms, mandates, role descriptions, and decision-making processes. ▪ Skills, Competencies, and Delegation: Describe how the entity ensures the availability or development of skills and competencies within the governance body to address climate-related risks and opportunities, including any delegation of management responsibilities. ▪ Information Updates and Controls: Explain the frequency and methods of informing the governance body about climate-related matters, and detail any controls and procedures used to support oversight and integrate them with internal functions. ▪ Target Setting, Monitoring, and Oversight: Describe the oversight of setting and monitoring targets related to climate risks and opportunities, including their integration into remuneration policies, and how oversight is maintained over management responsibilities.	▪ Disclosures required on the governance structure's oversight of sustainability issues ▪ Information on the board's responsibility for setting and overseeing sustainability strategy. ▪ Details on the composition, expertise, and responsibilities of board committees overseeing sustainability.

Strategy	▪ Response to climate-related risks and opportunities in the business strategy. ▪ Changes to the business model and adaptation efforts. ▪ Resource allocation for climate-related activities. ▪ Progress and status updates on climate-related plans	▪ Objective - To enable readers to understand the entity's strategy for managing climate-related risks and opportunities. ▪ Climate-Related Risks and Opportunities: Describe climate risks and opportunities, distinguishing between physical and transition risks. ▪ Business Model and Value Chain: Detail current and anticipated effects of climate risks and opportunities on the business model and value chain. ▪ Strategy and Decision-Making: Explain how the entity addresses climate risks and opportunities in strategy and decision-making. ▪ Financial Position, Performance, and Cash Flows: Report current and anticipated financial effects of climate risks and opportunities. ▪ Climate Resilience: Conduct CSA to assess resilience and its implications for strategy. ▪ Additional Considerations: Incorporate cross-industry and industry-based metrics from IFRS S2 guidance when preparing disclosures	▪ Disclosure of the entity's approach to integrating sustainability into its overall strategy. ▪ Explanation of how sustainability considerations influence business objectives and decision-making processes. ▪ Information on how sustainability goals align with the entity's long-term strategy and financial performance.
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Risk Management	- Processes and policies for identifying, assessing, and monitoring climate-related risks. - Integration of climate risks into overall risk management. - Prioritization and monitoring of climate risks. - Changes in risk management processes compared to previous periods.	Objective - To disclose the entity's processes to identify, assess, prioritize and monitor climate-related risks and opportunities Climate-Related Risks: Describe entity processes and policies for identifying, assessing, and monitoring climate-related risks, including inputs and parameters. Explain if scenario analysis informs risk identification, and detail how risks are assessed and prioritized. Climate-Related Opportunities: Describe processes for identifying, assessing, and monitoring opportunities, including scenario analysis. Integration into Risk Management: Explain how processes for climate-related risks and opportunities integrate into overall risk management. Avoiding Duplication: Disclose integrated risk management instead of separate disclosures for sustainability-related risks and opportunities	- Disclosures on the identification, assessment, and management of material sustainability risks. - Explanation of the processes used to evaluate climate-related risks and opportunities. - Details on the integration of sustainability risks into broader risk management frameworks.

Metrics and Targets	- Industry-based and cross-industry metric categories. - Climate-related targets, including metric used, objective, applicability, period, and alignment with international agreements. - GHG emissions targets, coverage, scopes, and use of carbon credits. - References to metrics used for targets and progress monitoring.	Objective: To demonstrate the entity's progress towards any climate-related targets it has set and any targets it is required to meet by law or regulation. Cross-Industry Metric Categories: Disclose relevant information including GHG, transition risks, physical risks, opportunities, capital deployment, carbon prices, and remuneration. Industry-Based Metrics: Disclose metrics linked to specific business models or common industry features based on the Industry-based Guidance on Implementing IFRS S2. Climate-Related Targets: Disclose quantitative and qualitative targets, including metric used, objective, applicability, period, milestones, target type, alignment with international agreements, setting process, third-party validation, progress monitoring, and revisions. GHG Emissions Targets: Disclose details of emissions targets, including gases covered, Scopes, gross/net targets, use of carbon credits for offsetting, scheme, credit type, and credibility factors. Reference to Metrics: Consider both cross-industry and industry-based metrics when identifying and disclosing targets and progress monitoring metrics.	- Disclosure of key performance indicators (KPIs) relevant to ESG factors. - Explanation of the entity's sustainability targets and progress towards achieving them. - Information on how metrics and targets are linked to the entity's overall strategy and risk management processes.

6.4. TCFD THEMATIC AREAS⁵⁴

GOVERNANCE	STRATEGY	RISK MANAGEMENT	METRICS AND TARGETS
Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

RECOMMENDED DISCLOSURES

a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
b) Describe management's role in assessing and managing climate-related risks and opportunities	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	b) Describe the organization's processes for managing climate-related risks.	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 GHG emission, and the related risks.
	c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets use by the organization to manage climate-related risks and opportunities and performance against targets.

6.5. IFRS S1 AND S2 REQUIREMENTS⁵⁵

S1 Requirements:

Fair and impartial information, and comparison with industry and regional peers
Information on value chain, financing, geographic footprint, and geopolitical and regulatory environments
Link between sustainability-related risks and opportunities
Simultaneous disclosure of financial and sustainability information, and identification of financial information related to sustainability issues

SOURCE: IFRS, Acuity Knowledge Partners

S2 Requirements:

Process for governance and management of climate-related risks and opportunities, identification of responsible department and management's role
Physical and transformational climate risk exposure and potential effect on the company's business model, strategy and cashflow
Risk management process of climate-related risks and related risk measurement tools
GHG emissions and industry-specific disclosures

⁵⁴ Task Force on Climate-related Financial Disclosures. Recommendations of the Task Force on Climate-related Financial Disclosure, June 2017

⁵⁵ <https://www.acuitykp.com/blog/new-issb-guidelines/>

