BANK NEGARA MALAYSIA
CENTRAL BANK OF MALAYSIA

Climate Risk Management and Scenario Analysis

Applicable to:

1. Licensed banks
2. Licensed investment banks
3. Licensed Islamic banks, including international Islamic banks
4. Prescribed development financial institutions
5. Licensed insurers, including professional reinsurers
6. Licensed takaful operators, including professional retakaful operators
7. Financial holding companies

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ABBREVIATIONS

ACSR	Advisory Committee on Sustainability Reporting
BCBS	Basel Committee on Banking Supervision
CCPT	Climate Change and Principle-based Taxonomy
ESG	Environmental, Social and Governance
GHG	Greenhouse Gas
IAIS	International Association of Insurance Supervisors
ICAAP	Internal Capital Adequacy Assessment Process
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
ITOs	Insurers and takaful operators, including professional reinsurers and professional retakaful operators
JC3	Joint Committee on Climate Change
NGFS	Network of Central Banks and Supervisors for Greening the Financial System
NDC	Nationally Determined Contributions
NSRF	National Sustainability Reporting Framework
TCFD	Task Force on Climate-Related Financial Disclosures
VBIAF	Value-based Intermediation Financing and Investment Impact Assessment Framework

PART A OVERVIEW

1 Introduction

1.1 The adverse impact of climate change could pose material financial risks to the safety and soundness of financial institutions, with broader implications on the stability of the financial system and hence, could affect the sustainability of domestic economic growth.

1.2 In view of the risks that climate change poses for financial stability in the long run, the Bank expects financial institutions to respond–

(a) urgently [1], through taking early actions to implement changes towards building climate resilience;

(b) strategically, by accounting for how actions today affect future outcomes under a range of scenarios and time horizons over the long term;

(c) comprehensively, when strengthening the risk management frameworks to address these financial risks from climate change. In particular, financial institutions are to manage these risks by recognising the distinctive [2] elements of climate-related risks: far-reaching in breadth and magnitude, foreseeable but highly complex due to uncertainty, nonlinearity, irreversibility and dependency on short-term actions; and

(d) holistically, through greater collaboration across a wider spectrum of stakeholders [3] when managing the systemic impact of climate-related risks. Financial institutions stand to gain from greater collective coordination and harmonisation, notably through industry-wide platforms [4], including those facilitated by the Joint Committee on Climate Change (JC3) and VBI Community of Practitioners.

1.3 Recognising the characteristics of climate-related risks, this policy document sets out the principles and specific requirements on the management of climate-related risks by financial institutions, with the aim to enhance the resilience of the financial sector against climate-related risks. The principles are summarised in Appendix 1.

1.4 Notwithstanding paragraph 1.3, financial institutions may consider applying the principles in managing broader environmental risks, taking into consideration the interlinkages between climate-related and broader environmental risks.

1.5 The Bank expects financial institutions to have an effective risk management framework that integrates all material risks, which extends to climate-related risks and their interactions with other risk types. In this regard, the specific requirements in this policy document in relation to climate-related risks complement the Bank's existing requirements for financial institutions to manage

[1] In view of the intensifying pace of climate change that is markedly narrowing the finite window for limiting global warming (Source: IPCC).

[2] For additional information, refer to CCPT and the reference resource list in Part C of the *"Climate Risk Management and Scenario Analysis Supplemental Guidance"* document.

[3] A diverse set of global and domestic stakeholders including households, firms, governments, regulators, the financial sector, civil society, investors, multilateral institutions, standard-setting bodies, industry associations and scientific communities.

[4] Industry-wide platforms can foster sharing of information and a range of practices, collecting data and developing common models. An example is the CCPT Implementation Group.

material risks and provide further insights on the consideration of climate-related risks as an integral part of financial institutions' governance, risk management, ICAAP, stress testing and disclosure practices.

1.6 Financial institutions also play a pivotal role in driving a just and orderly transition towards a low-carbon economy. This in turn contributes to longer-term climate resilience of financial institutions and the financial sector. During the transition process, the Bank expects financial institutions to have due regard to actions that they should take to–

(a) mitigate risks surrounding economic dislocation due to abrupt withdrawal of financing from economic sectors or activities that are vulnerable to climate-related risks, which may have potential adverse feedback loops to the wider economy and financial stability;

(b) promote transition[5] by customers and counterparties towards more sustainable practices;

(c) expand the financing of climate-related opportunities and sustainable economic activities, including offering new solutions, markets and products to support a low-carbon economy; and

(d) better align business strategies and climate-related targets in supporting global and national commitments[6] to address climate change.

2 Applicability

2.1 This policy document is applicable to financial institutions as defined in paragraph 5.2.

3 Legal Provisions

3.1 This policy document is issued pursuant to–

(a) sections 47, 143 and 266 of the Financial Services Act 2013 (FSA);

(b) sections 57, 155 and 277 of the Islamic Financial Services Act 2013 (IFSA); and

(c) sections 41, 116 and 126 of the Development Financial Institutions Act 2002 (DFIA).

4 Effective Date

4.1 This policy document comes into effect on 17 March 2025, except for paragraphs 14.8 and 14.9 which specify the applicable effective dates for financial institutions to adopt the National Sustainability Reporting Framework (NSRF).

[5] In the CCPT, classification of Categories 'C2' and 'C3' represent progressive stages of transitioning as customers take remedial measures under Guiding Principle 4 (GP4) to transition towards a low-carbon and climate-resilient economy by adopting sustainable practices. These remedial efforts should contribute towards the outcomes in which unacceptable risks to the climate and/or environment can be eliminated or significantly reduced.

[6] For example, the Paris Agreement and the 12th Malaysia Plan.

5 Interpretation

5.1 The terms and expressions used in this policy document shall have the same meanings assigned to them in the FSA, IFSA or DFIA, as the case may be, unless otherwise defined in this policy document.

5.2 For the purposes of this policy document–

"S" denotes a standard, an obligation, a requirement, specification, direction, condition and any interpretative, supplemental and transitional provisions that must be complied with. Non-compliance may result in enforcement action;

"G" denotes guidance which may consist of statements or information intended to promote common understanding and advice or recommendations that are encouraged to be adopted;

"**financial institution**" refers to–
(a) a licensed bank, a licensed investment bank and a licensed insurer, including a licensed professional reinsurer under the FSA;
(b) a licensed Islamic bank, including a licensed international Islamic bank and a licensed takaful operator, including a licensed professional retakaful operator under the IFSA;
(c) a prescribed development financial institution under the DFIA; and
(d) a financial holding company approved under the FSA and IFSA;

"climate-related risks" refers to potential risks that may arise from climate change, their related impacts and their economic and financial consequences, which include drivers of climate risks, namely physical, transition and liability risks;

"board" refers to the board of directors of a financial institution; and

"senior management" refers to the chief executive officer (CEO) and senior officers of a financial institution.

5.3 The glossary set out in Part D describes selected terms used in this policy document.

6 Related Legal Instruments and Policy Documents

6.1 This policy document must be read together with other relevant legal instruments, policy documents and guidelines that have been issued by the Bank, including any amendments or reissuance thereafter, in particular–
(a) *Climate Change and Principle-based Taxonomy (CCPT)* issued on 30 April 2021;
(b) *Value-based Intermediation Financing and Investment Impact Assessment Framework (VBIAF)* issued on 1 November 2019;
(c) *Corporate Governance* issued on 3 August 2016;
(d) *Corporate Governance* (for development financial institutions) issued on 14 February 2024*;*

(e) *Risk Governance* issued on 1 March 2013;
(f) *Risk-Weighted Capital Adequacy Framework (Basel II) – Internal Capital Adequacy Assessment Process (Pillar 2*) issued on 2 December 2011;
(g) *Capital Adequacy Framework for Islamic Banks – Internal Capital Adequacy Assessment Process (Pillar 2)* issued on 31 March 2013;
(h) *Guidelines on Internal Capital Adequacy Assessment Processes for Insurers* issued on 25 February 2012;
(i) *Internal Capital Adequacy Assessment Processes for Takaful Operators* issued on 15 April 2016;
(j) *Risk-Weighted Capital Adequacy Framework (Basel II) – Disclosure Requirements (Pillar 3)* issued on 7 August 2010;
(k) *Capital Adequacy Framework for Islamic Banks (CAFIB) – Disclosure Requirements (Pillar 3)* issued on 15 July 2010;
(l) *Stress Testing* (for insurers and takaful operators) issued on 30 June 2016;
(m) *Stress Testing* (for banking institutions) issued on 15 June 2017;
(n) *Credit Risk* issued on 5 December 2024;
(o) *Operational Risk* issued on 10 May 2016;
(p) *Liquidity Coverage Ratio* issued on 25 August 2016;
(q) *Net Stable Funding Ratio* issued on 31 July 2019;
(r) *Outsourcing* issued on 23 October 2019;
(s) *Business Continuity Management* issued on 19 December 2022; and
(t) *Climate Risk Stress Testing Methodology Paper* issued on 29 February 2024.

7 Policy Documents Superseded

7.1 This policy document supersedes the Policy Document on Climate Risk Management and Scenario Analysis issued on 30 November 2022.

PART B REQUIREMENTS AND GUIDANCE

8 Level of Application

S 8.1 Financial institutions (excluding financial holding companies) shall comply with the requirements in this policy document at the following levels:
(a) entity level, which refers to the global operations of the financial institutions, including overseas branch operations; and
(b) consolidated level, which includes all financial and non-financial subsidiaries.

S 8.2 Financial holding companies shall comply with the requirements in this policy document on a consolidated level basis.

G 8.3 For the purpose of paragraph 8.1, locally incorporated foreign financial institutions and branches of foreign financial institutions operating in Malaysia may leverage their group or parent company's climate-related policies and procedures to meet the requirements of this policy document.

S 8.4 For branches of foreign financial institutions operating in Malaysia, the requirements in this policy document shall apply to the Malaysian operations of the branch with the following modification:
(a) any reference to the board in this policy document shall refer to the governing body of the branch of the foreign financial institution operating in Malaysia or any of its committees; and
(b) any reference to senior management in this policy document shall include a reference to the CEO of the branch and officers performing a senior management function in respect of the branch operations.

9 Governance

S **Principle 1: The board and senior management shall exercise effective oversight of climate-related risks to safeguard the financial institution's resilience against the adverse impacts of climate change. Financial institutions shall clearly identify the relevant responsibilities for managing climate-related risks and assign these responsibilities throughout the organisation structure. Financial institutions shall manage climate-related risks in a manner that is proportionate to the materiality of climate-related risks, taking into consideration the size, nature and complexity of the financial institution's business model.**

S 9.1 The board shall have the overall responsibility and accountability to safeguard the financial institution's resilience against the adverse impacts of climate change while actively promoting a just and orderly transition[7] of the economy. In fulfilling this role, the board shall evaluate the risks and opportunities arising from climate change on a periodic basis and consider these risks and opportunities in assessing and approving the financial institution's strategies and business plan.

[7] Refer to use cases outlined in CCPT for illustration on how financial institutions can support customers' transition.

S 9.2 The board shall clearly assign roles and responsibilities for the management of climate-related risks to senior management and address the interactions of such responsibilities with existing governance arrangements to ensure an integrated and balanced view of risks. The board shall designate a senior management officer to oversee the effective management of climate-related risks. For example, the board may appoint a chief sustainability officer (CSO) or expand the current responsibilities of an existing senior management officer for this purpose.

G 9.3 A large financial institution[8] is encouraged to appoint a dedicated CSO to provide necessary focus on the management of climate-related risks, in view of the inherent complexity and scale of operations of large financial institutions.

S 9.4 The senior management of a financial institution shall implement policies and procedures to build and support climate resilience as well as actively promote a just and orderly transition of customers and counterparties. Senior management shall also be responsible for the day-to-day management of climate-related risks and opportunities.

S 9.5 The senior management shall review the effectiveness of the financial institution's organisational structure and appropriately define the roles and responsibilities of key business and risk functions in supporting the financial institution's strategies to build climate resilience and manage climate-related risks. For example, as part of the process of integrating climate risk considerations in the management of material risks, financial institutions may consider establishing dedicated committees or sub-committees in the early stages to ensure sufficient consideration and oversight are given to the management of climate-related risks and opportunities.

S **Principle 2: The board and senior management shall ensure that they and the financial institution have a sound understanding of climate-related risks to inform the financial institution's business and risk management strategies.**

S 9.6 The board shall actively discuss and remain up to date on climate-related developments. This includes developing a clear understanding of the distinctive elements and transmission channels of climate-related risks.

S 9.7 The senior management shall provide regular and timely updates to the board with material information on climate-related risks and opportunities to facilitate the board in carrying out its oversight activities.

S 9.8 Financial institutions shall strengthen their capabilities in managing climate-related risks and implementing the strategies to build climate resilience. This is supported by appropriate capacity building and training plans for the board, senior management and all relevant staff.

[8] Large financial institution means–
(a) a financial institution with one or more business lines that are significant in terms of market share in the relevant industry; or
(b) a financial institution with a large network of offices within or outside the country through operations of branches and subsidiaries.

S **Principle 3: Financial institutions shall embed climate-related risks into their internal control frameworks across the three lines of defence to ensure the robust management of material climate-related risks.**

S 9.9 Financial institutions shall ensure that the roles, responsibilities and accountabilities in managing climate-related risks shall be clearly allocated across the three lines of defence.

G 9.10 The first line of defence in the financial institution lies with its business units, whose role is to identify and manage risks associated with their day-to-day operations. Climate-related risk assessments may be undertaken during the client onboarding, credit application and credit review processes, ongoing monitoring and engagement with clients, as well as in new product or business approval processes.

G 9.11 The second line of defence is provided by the financial institution's independent risk management and compliance functions. The risk management function undertakes climate-related risk assessments and monitoring, independent of the first line of defence. The compliance function entails ensuring adherence to applicable laws, regulations and internal policies.

G 9.12 The third line of defence is provided by an independent internal audit function in the financial institution. This function provides independent review and objective assurance of the quality and effectiveness of the overall internal control framework and systems, the first and second lines of defence and the risk governance framework taking into account changes in methodology, business and risk profile, as well as the quality of underlying data.

10 Strategy

S **Principle 4: Financial institutions shall incorporate the potential impact of material climate-related risks into their business strategies to strengthen resilience against climate-related risks and promote a just and orderly transition.**

S 10.1 Financial institutions shall appropriately identify and assess the potential impact[9] of climate-related risks and opportunities when developing the business strategies in order to make informed forward-looking decisions when navigating structural changes in the business environment during the transition towards a low-carbon economy.

S 10.2 In addressing climate resilience over the long term, financial institutions shall use scenario analysis to assess the impact of climate-related factors on the business strategies under a range of time horizons and plausible climate pathways. The scenario analysis is useful in the context of climate-related risks given the uncertainty and complexity associated with the future outcomes of climate change and challenges to the financial sector that have not yet materialised. Paragraph 13 provides details on the expectations for financial institutions when using scenario analysis.

[9] This includes areas which could affect financial institutions' competitiveness and long-term resilience from climate risk strategies.

G 10.3 Given the uncertainty surrounding the timing of the impact of climate-related risks and the dependency on short-term actions, a strategic and prudent approach is for financial institutions to embed relevant time horizons in relation to the requirements in this policy document, where appropriate. Financial institutions may consider the following time horizons:

(a) short-term horizon (1 to 3 years) to capture impacts over the ordinary business plan horizon; and

(b) medium-term horizon (4 to 10 years) and long-term horizon (beyond 10 years and reaching at least 30 years) to provide insights on impacts from the evolution and direction of climate-related risks as they materialise over time.

S 10.4 To ensure alignment in the consideration of climate-related risks within financial institutions' business strategies, financial institutions shall identify and monitor appropriate internal climate-related targets[10]. The financial institution's progress against its climate-related targets serves to inform and validate the financial institution's assessment of climate-related risks.

G 10.5 Climate-related targets are important for steering financial institutions into taking early actions in managing transition risks, including proactive and continuous efforts to manage the risk of economic dislocation. This may include developing transition strategies for customers over the long term, including the use of scenario analysis to assess the pathways of future emissions that would be financed by financial institutions.

G 10.6 For example, as the transition towards a low-carbon economy impacts structural changes surrounding the business environment, a forward-looking financial institution would consider how climate-related factors would impact the strategies of key business lines and portfolios, including the products and services it is currently offering or planning to offer and develop appropriate climate-related targets and action plans to manage the relevant risks. Significant deviations from the targets would prompt a review of the assumptions underpinning a financial institution's assessment of climate-related risks.

S 10.7 Financial institutions shall clearly communicate and cascade the strategy and internal climate-related targets within the financial institution. This is important to promote effective understanding and coordination with appropriate levels of accountability and oversight across functions.

S 10.8 Financial institutions must review their business strategy in a timely manner to take into account material developments in their management of climate-related risks. For example, realised impacts of climate-related risks or controversies that give rise to reputational risk[11] may warrant a change in the long-term strategy of the financial institution. This is to ensure that business strategies are responsive

[10] A climate-related target refers to a specific level or metric such as temperature limits or reduction in GHG emissions to avoid dangerous interference with the climate system and achieve climate-related goals and strategies of the financial institution. For example, financial institutions can target to reduce emissions of own operations and financed emissions to achieve net-zero emissions by 2050.

[11] For example, reputational risk may arise as a sudden credit withdrawal from certain sectors or segments causing undue hardship on customers as well as a result of change in consumer sentiment towards more climate friendly business practices. If reputational risk is not appropriately managed, competitiveness and long-term resilience of financial institutions may be impaired.

and resilient to the evolving developments of climate change and also commensurate with the financial institution's internal capacity and capability in managing the impact of climate change.

11 Risk Appetite

S **Principle 5: Financial institutions shall embed climate-related risks into the risk appetite framework, including the potential long-term impact of these risks as drivers of existing types of material risks. Financial institutions shall reflect these material risks in the internal capital adequacy assessment process.**

S 11.1 Financial institutions shall manage climate-related risks in line with the risk appetite approved by the board.

S 11.2 Financial institutions shall clearly address climate-related risks within the risk appetite statement (RAS). When using the RAS to guide the implementation of ICAAP, financial institutions shall consider material climate-related risks when assessing the internal capital adequacy over relevant time horizons.

S 11.3 To support and monitor the RAS, financial institutions shall develop appropriate risk metrics to manage climate-related risks, including risk limits and thresholds for management action.

G 11.4 For example, the assessment of climate metrics such as GHG emissions under different climate scenarios and climate targets can be translated into financial impact using risk metrics. Risk metrics in turn are used to set limits when managing the share of financial exposure to transition risks and the concentration to climate-related risks within the risk appetite of the financial institution.

12 Risk Management

General Requirements

S **Principle 6: Financial institutions shall integrate material climate-related risk considerations into their existing enterprise-wide risk management framework. This must be supported by a reliable approach for identifying, measuring, monitoring and controlling material risks.**

S 12.1 Financial institutions shall–

(a) develop a comprehensive understanding on climate change to enable the mapping of transmission channels and impact of climate-related risks to existing risk types such as credit, market, liquidity, operational, insurance/takaful underwriting and reserving, strategic, reputational and regulatory compliance risks;

(b) enhance and update existing risk taxonomy[12], risk management policies and procedures, as well as risk functions and capabilities to reflect the distinctive elements of climate change. For example, financial institutions

[12] The classification of different risk types and risk drivers to enable assessment, aggregation and management of risks in a consistent manner using a common risk dictionary and mapping.

shall ensure that the risk management practices cover the different time horizons reflected in paragraph 10.3; and

(c) review risk management practices, including related data, metrics and tools, in a timely manner to reflect continuous improvements in internal risk management capabilities and embed the latest global and domestic developments on climate change. To ensure progress over time, financial institutions shall implement a long-term roadmap when developing the metrics and tools.

S 12.2 Financial institutions shall integrate climate-related risk considerations into the existing risk management cycle through the following functions: risk identification, risk measurement, risk monitoring and risk controls. Appendix 2 illustrates the climate-related risk management cycle.

S 12.3 Financial institutions shall have in place processes to evaluate the impact of climate-related risks that may negatively affect their capital position as part of ICAAP.

S **Principle 7: Financial institutions shall continuously develop data capabilities, tools and methodologies to effectively aggregate and report material climate-related risks.**

S 12.4 Financial institutions shall continuously enhance their internal capabilities to effectively manage climate-related risks, which includes the following:

(a) identifying, collecting and improving the quality and granularity of climate and climate-related risks data and metrics by using an increasingly wider range of global and domestic sources, including public sources, scientific reports, third-party products and services and proprietary data collected from customers and counterparties;

(b) using appropriate qualitative and quantitative risk management tools to measure and manage climate-related risks under business-as-usual and stress conditions;

(c) ensuring risk management approaches are forward looking when managing climate-related risks under different time horizons over the long term, which includes enhancing capabilities on scenario analysis; and

(d) strengthening practices on model risk management in line with an increasing use of models to manage climate-related risks.

S 12.5 Where financial institutions are leveraging external sources to enhance the data, metrics and risk management tools to manage climate-related risks, including third-party certification and verification[13], financial institutions shall ensure that there is adequate understanding of the procured external data, metrics and risk management tools. This includes a sound understanding of the capabilities of the external providers, associated methodologies, validation process, limitations as well as relevance and appropriateness to the financial institution's own portfolio characteristics.

G 12.6 As data, metrics and risk management tools mature over time, financial institutions that face material climate-related-risks may consider using models to quantify the climate-related risks of key portfolios and counterparties. For

[13] See examples provided in CCPT, VBIAF and VBIAF Sectoral Guides.

example, this could include incorporating factors to assess climate-to-credit related risks within existing credit risk rating models.

Risk Identification and Measurement

S **Principle 8: Financial institutions shall consider climate-related risks as part of comprehensive risk assessments to identify and measure all material risks.**

S 12.7 In identifying[14] and measuring climate-related risks, financial institutions shall–

(a) map the transmission from climate-related risks such as physical, transition and liability risks to financial and non-financial risks to assess materiality, likelihood as well as concentration of risks;

(b) compute climate-related metrics, such as GHG emissions (comprising own emissions and financed emissions) and translate these metrics into financial impact to develop climate-related risk metrics. Financial institutions shall understand these different types of metrics, be clear of their limitations and select credible and robust methodologies when computing these metrics;

(c) use scenario analysis to inform the risk identification and measurement process under different time horizons. Paragraph 13 provides details on the specifications and guidance for financial institutions when using scenario analysis;

(d) assess climate-related risks along multiple key dimensions to identify current and potential concentration of risks such as asset classes, liabilities, duration of insurance/takaful contracts, operations, business lines, significant activities, portfolios, sectors, types of policy/certificate/product, counterparties and geographies;

(e) enhance the existing due diligence policy and process to adequately identify and evaluate climate-related risks at the inception of a contractual relationship and on an ongoing basis, at the portfolio, counterparty and transaction levels;

(f) engage with material customers and counterparties to develop a better understanding of their exposures to climate-related risks, track record, as well as their commitment and transition strategies in managing these risks. This shall facilitate the collection of internal data and information including the corresponding mitigation and adaptation measures; and

(g) have processes in place to collect and aggregate climate-related financial risk data across the financial institution while ensuring that the aggregated data is accurate and reliable.

G 12.8 Financial institutions may consider either one or a combination of the following approaches to identify and measure climate-related risks:

(a) top-down approach: Mapping of exposures at an aggregated level using key drivers, such as material risk by geographical location, specific economic sectors with higher GHG emissions, types of insurance/takaful products; and

(b) bottom-up approach: Identifying risks at the asset, investment or counterparty level and summing up the risk to provide a portfolio-level risk assessment, which is typically performed on material exposures. For example, the CCPT can be used as one starting point to support the risk

[14] See examples provided in VBIAF and VBIAF Sectoral Guides.

assessment process, especially for customers and counterparties classified under the watchlist category that are harming the environment and are not taking remedial measures. Identification of customers and counterparties under this CCPT category could warrant further assessment and monitoring.

Risk Monitoring and Controls

S **Principle 9: Financial institutions shall actively monitor and escalate material and potential climate-related risks in a timely manner. This is supported by appropriate data, risk analysis and clear reporting procedures.**

S 12.9 In developing a holistic approach for effective and timely monitoring of climate-related risks, financial institutions shall–

(a) use a range of quantitative and qualitative metrics, which at minimum shall include climate-related metrics such as GHG emission and climate-related risk metrics such as exposure to physical and transition risks;

(b) integrate climate-related metrics and corresponding risks metrics into the existing risk monitoring, reporting and escalation framework to support effective decision making when managing climate-related risks, which shall include monitoring the approved risk appetite, business strategy, business plans and climate-related targets;

(c) include metrics that are forward looking in order to pre-emptively detect and respond to current and potential climate-related risks. For example, including results from scenario analysis to monitor the climate resilience of a portfolio and the potential losses of a portfolio under different climate scenarios;

(d) reflect the appropriate dimension and granularity, by considering at minimum, the concentration of climate-related risks by portfolios, economic sectors, geographical locations and material customers and counterparties;

(e) include vulnerabilities of internal operations to climate-related risks such as locations of data centres that are exposed to physical risks;

(f) set a timely reporting frequency to ensure updates to the board and senior management account for the evolution of climate change, with continuous detection of future potential risk drivers. For example, the ongoing transition towards a low-carbon economy; adverse climate change activities and controversies and physical climate hazards that impact the internal operations or business lines;

(g) provide early-warning signals and thresholds in order to take remedial actions to manage climate-related risks in a pre-emptive manner; and

(h) monitor the implementation of remedial actions and potential non-compliance with the financial institution's policies on climate-related risks.

S **Principle 10: Financial institutions shall put in place appropriate risk controls when managing current and potential material climate-related risks. Financial institutions shall implement controls in a timely manner to mitigate adverse effects from transition risk, and the potential build-up in concentration to climate-related risks, in line with the risk appetite and business strategy.**

G 12.10 Given the sectoral factors associated with climate change, namely the evolution of transition risk, financial institutions may develop sector-specific policies to manage climate-related risks. For example, these sectoral policies may include

setting a risk appetite for existing or prospective customer profiles; adopting specific limits or exclusion criteria; applying additional conditions on insurance/takaful coverage and reinsurance/retakaful arrangements; as well as appropriate coordination of climate mitigation and adaptation measures.

G 12.11 Financial institutions may consider the following mitigation measures for customers and counterparties who do not demonstrate adequate management of climate-related risks within the financial institution's risk appetite:

(a) risk mitigants to reduce climate-related risk exposures such as guarantees, collateral and insurance/takaful cover;
(b) conditions for approval or further financing such as development of time-bound action plans for the customers/counterparties to improve their climate risk management practices;
(c) imposing shorter tenures, higher discounts to asset valuations for financing, lower limits on financing, investment and insurance/takaful underwriting;
(d) reassessing the terms and conditions of covenants for financing, investment and insurance/takaful contracts and reinsurance/retakaful arrangement;
(e) repricing of lending/financing rate, insurance premiums/takaful contributions and reinsurance/retakaful rates; or
(f) increasing frequency of reporting requirements.

S 12.12 It is important for financial institutions to manage the risks of economic dislocation and the associated reputational risk[11]. Therefore, financial institutions shall reflect these risks in the risk appetite framework and put in place policies and procedures to actively promote a just and orderly transition of customers and counterparties towards more sustainable and climate-resilient practices. This includes committing to a transition strategy that is transparent, gradual and progressive when rebalancing the exposures that are vulnerable to climate-related risks.

G 12.13 Actions that financial institutions can take to promote a just and orderly transition include the following:

(a) allocate funds to assist customers in building resilience against climate change;
(b) incentivise customers with lower pricing or insurance premiums/takaful contributions when transition milestones are achieved; and
(c) engage customers and counterparties to develop a transition strategy including establishing specific and credible climate targets and adopting international sustainable certification, practices and standards.

G 12.14 Financial institutions may mitigate the risks associated with greenwashing of its portfolio. Financial institutions may use established standards and taxonomies, as well as leveraging certifications and third-party assurance, to verify that the disclosures made by customers comply with relevant standards, metrics and methodologies. Appropriate oversight and periodic reviews may be conducted to ensure the use of these standards, taxonomies and certifications remain relevant, current and valid.

Risk Management for Specific Risk Types

S **Principle 11: Climate-related risks can have a significant impact on other major risk types. In this regard, financial institutions shall understand the transmission and impact of climate-related risks on existing risk types and ensure their risk management systems and processes account for material climate-related risks.**

S 12.15 While climate-related risks have distinctive elements, they can be reflected as risk drivers of existing risk types. In this regard, financial institutions shall understand and assess the transmission of climate-related risks to existing types of risks, with examples illustrated in Appendix 3.

Credit Risk

S 12.16 Financial institutions' credit risk assessment shall incorporate the consideration of the effects of climate-related risks and their financial impact on the ability and willingness of customers/counterparties to honour their credit obligations at the inception of contractual relationships and on an ongoing basis[15].

G 12.17 For a customer or counterparty's quantitative credit risk assessment, a financial institution may recalibrate its credit risk indicators, such as probability of default (PD), loss given default (LGD) and exposure at default (EAD), to take into account the time horizons relevant to the materialisation of climate-related risks, whether in the short, medium or long term, such that the indicators are forward looking. The impact from these climate-related risks may also result in an increase in expected credit losses (ECL) required on a financial institution's portfolio. The potential recalibrations are illustrated below:

(a) PD: An increase of the PD of counterparties can be triggered by shifts in consumer demand for products from carbon-intensive industries, imposition of carbon taxes on emissions or impacts of severe weather conditions on agriculture business, which may increase the downward pressure on counterparties' profitability resulting in higher probability of default;
(b) LGD: Value of stranded assets will decrease, resulting in lower collateral values and, in a default scenario, lower recovery values. Flood prone areas as a result of climate change may also affect the valuation of properties resulting in lower collateral and recovery value; and
(c) EAD: Counterparties subject to physical risk might need to draw more from their committed credit lines to respond to sudden shocks, such as floods.

Market Risk

S 12.18 Financial institutions shall periodically review and incorporate climate-related risk considerations in their investment strategy and portfolio allocation. Uncertainty about the timing, intensity and location of future severe weather events and other natural disasters may lead to higher volatility in financial markets. Changes in policies, investor sentiment as well as technological advances could also lead to abrupt repricing of financial assets.

[15] This shall include the annual review process.

G 12.19 To develop an understanding on their portfolio sensitivity to the impact of climate-related risks, financial institutions may consider the following risk drivers in the assessment:

(a) potential rating downgrades and devaluation of assets attributed to lower corporate profitability, increased litigation, shifts in consumer preference and imposition of new climate-related policies; and

(b) breakdown in correlations between assets due to climate-related risks that reduce effectiveness of hedges.

Liquidity Risk

S 12.20 Financial institutions shall incorporate climate-related risk considerations in asset and liability management to assess their ability to meet obligations on a timely basis under both business-as-usual and stressed conditions as climate-related risk can adversely affect the matching of assets and liabilities.

S 12.21 ITOs with long-duration products or long-tailed business utilise longer-term assets such as bonds or sukuk to match the long duration of their liabilities. As climate-related risks may materialise over an extended period of time, ITOs shall consider the potential effects of any financial losses in their long-term assets or investments arising from climate-related risks that could adversely affect the matching of liabilities.

S 12.22 Financial institutions shall also consider the potential correlation in risk between different asset classes as well as between assets and liabilities when financing or investing in an entity while taking deposits or providing insurance/takaful cover to that same entity for risks related to climate change.

S 12.23 Financial institutions shall periodically assess the impact that climate-related risks have on stability of funding, potential outflows and adequacy of liquidity buffers by considering the possibility of the materialisation of climate-related risks. Where material, financial institutions shall incorporate these impacts into the calibration of liquidity buffers.

G 12.24 Financial institutions may consider the following aspects in liquidity risk assessment:

(a) profile of asset holdings in respect of susceptibility to climate-related risks which may affect the credit rating, asset price and marketability of liquid assets;

(b) shifts in investors' preference towards sustainable instruments which may affect the market breadth and depth of existing assets; and

(c) composition and profile of depositors and policy owners or participants in economic sectors and geographic locations that may be susceptible to climate-related risk, which may result in large and sudden deposit withdrawals or insurance claims.

G 12.25 Financial institutions may collect data such as rollovers, withdrawals, claims and pricing behaviour of investors in response to a climate-related risk event for the modelling of potential liquidity impact.

G 12.26 Financial institutions may consider the impact of climate-related risks on regional liquidity positions and related contingency plans, for example potential

operational and other impediments that may limit the ability of the parent financial institution to provide liquidity to branches when climate-related risks materialise.

Operational Risk

S 12.27 Financial institutions shall assess the impact of climate-related events on internal operations as a whole, including material outsourcing activities and the ability to quickly recover capacity to continue providing critical services at an optimum level. The outcome of the assessment, if significant to the critical business functions, shall be reflected in the business continuity plan accordingly.

G 12.28 Financial institutions may assess the following potential sources of operational risk, which could lead to direct and indirect losses including reputational damage:

(a) susceptibility of financial institutions' and critical third-party service providers'[16] office and data centre locations to severe weather events;

(b) impact of climate-related events affecting ability of the employees to commute to the workplace;

(c) regulatory and compliance implications as a result of stricter climate-related requirements;

(d) potential liability arising from legal actions brought against financial institutions for business practices that are perceived to be directly or indirectly harmful to the environment; and

(e) severe weather events such as flood or drought that may have a material impact on the supply of underlying assets for commodity murabahah/tawarruq and/or delivery of the commodity[17]. This may increase Islamic financial institutions' Shariah non-compliance risk exposure when offering Islamic financial products.

G 12.29 In managing physical risk affecting internal operations, financial institutions may–

(a) perform ongoing assessments on the resilience of their internal operations including the need to relocate financial institutions' critical business functions such as key offices, servers and data centres to less vulnerable areas across different geographic locations to reduce potential disruption due to region-specific extreme weather events; and

(b) adopt climate adaptation strategies to reduce exposure to physical risks such as building protective barriers to reduce flood-related damage and impacts to financial institutions' operations.

Insurance/Takaful Underwriting and Reserving Risks

S 12.30 ITOs shall identify and assess the impact of climate-related risks on their insurance/takaful underwriting and reserving to avoid any underestimation of risks.

G 12.31 Climate-related risks could affect different lines of insurance/takaful business. Therefore, ITOs may consider the following impact of climate-related risks on each line of business accordingly:

(a) changes in weather patterns might affect claim incidences for general insurance/takaful products due to the increase in physical risk for certain

[16] This may include commodity trading platform providers for Islamic financial institutions.

[17] In the case where a customer requested for physical delivery.

geographical areas. To assess physical risks, ITOs may consider the impact of climate change (e.g. wind and storm pattern shifts, hot weather, strong wind, drought and flood), the probability of occurrence, level of severity and concentration of climate-related risks;

(b) certain general insurance/takaful products such as professional indemnity and directors and officers liability covers may have higher liability risks as legal action may be initiated for certain losses emanating from climate-related risks. As such, ITOs may consider and monitor the legal development and increased litigation linked to climate-related risks; and

(c) climate change could also affect life insurance/family takaful products as well as medical and health insurance/takaful products through the increase in mortality and morbidity risks. In this regard, ITOs may identify and monitor health conditions arising from climate-driven events, such as extreme temperatures, air pollution levels and weather events that would contribute significantly to overall claims experience.

S 12.32 When pricing insurance/takaful products and reserving for insurance/takaful liabilities, ITOs shall consider the quality and completeness of the underlying data and incorporate forward-looking assumptions in the existing models to reflect climate-related risks in the calculation of insurance premiums/takaful contributions and reserves.

13 Scenario Analysis

S **Principle 12: Financial institutions must employ scenario analysis to determine the resilience of their business strategies to material climate-related risks. Given the complexity and evolving nature of these risks, insights from the scenario analyses shall inform the risk profile, risk appetite and risk management framework.**

S 13.1 Financial institutions shall incorporate scenario analysis as one of its main tools to manage climate-related risks and opportunities.

G 13.2 Scenario analysis is a technique frequently deployed by financial institutions to identify and assess the potential implications of a range of events on financial resilience. In the context of climate change, scenario analysis enables financial institutions to examine their business resilience and strategies to climate-related risks and to measure portfolio alignment[18] under a range of scenarios, including those related to extreme climate events.

S 13.3 Financial institutions shall conduct climate-related scenario analysis when developing business strategies and as part of risk management. This includes–

(a) identifying and defining a range of climate-related scenarios, which considers climate-related risks over both short- and long-term horizons;

(b) reviewing the appropriateness of business strategies and business models under a range of climate scenarios;

[18] Refers to steps taken by financial institutions to evaluate business decisions (e.g. lending and investment) that will contribute to achieving their ambition to become climate resilient. This could include measuring the percentage of portfolio with net-zero targets, deviation of a portfolio from its climate target and degree of warming/impact metrics. See TCFD "Technical Supplement: Measuring Portfolio Alignment" 2021.

(c) accounting for the risk of economic dislocation that may arise from the gradual transition away from selected high-carbon sectors or segments that are vulnerable to climate-related risks. Financial institutions may also refer the requirement and guidance in paragraphs 12.12 and 12.13 respectively; and

(d) using insights from scenario analysis to inform adjustments to their business strategies where appropriate, identify feasible options to enhance resilience to climate-related risks and mitigate climate-related disruptions to their businesses and operations.

S 13.4 In response to outcomes from the scenario analysis, financial institutions shall develop management actions to mitigate the impact from climate-related risks.

G 13.5 Management actions under paragraph 13.4 may include plans to strengthen the balance sheet, including adaptation or mitigation measures that could be implemented and completed within a reasonable period.

G 13.6 Given the complexity[19] and continued evolution of climate change with multiple facets and stakeholders involved, financial institutions may adopt a phased approach when developing better internal scenario analysis capabilities. As a starting point, financial institutions may consider the use of simpler, qualitative models and narratives to explore various climate pathways, outcomes and mitigation plans.

G 13.7 An example of paragraph 13.6 is exploring how standalone climate-related risk variables including GHG emissions and carbon price pathways could serve as a good proxy of climate-related risk. As experience and capabilities becomes more developed in this area, financial institutions are encouraged to adopt greater rigour and sophistication. This could include, for example, incorporating results from Integrated Assessment Models (IAMs) of the IPCC into financial institutions' climate scenarios to provide better insights on the evolution and interactions between human population and earth systems or develop in-house climate scenarios that are more suited to the financial institutions' business and operations.

S **Principle 13: Financial institutions must ensure scenario analysis exercises are relevant, follow certain prescribed and well-known standards, are conducted at appropriate time horizons and contain sufficient level of granularity. This must be proportionate to the materiality of climate-related risks associated with the financial institutions' business and operations.**

S 13.8 When designing appropriate climate scenarios, financial institutions must be clear on the purpose and intended outcomes of choosing certain climate scenarios for analysis. At minimum, climate-related scenarios selected by financial institutions must reflect the following characteristics:

(a) Plausible, but challenging.

The events in the climate scenario must be plausible and the narrative credible (e.g. the descriptions of what happens and why and how it

[19] This includes uncertainties surrounding the pathways and outcomes of climate change, evolution of greener technology for energy production (e.g. green hydrogen) and transportation (e.g. electric vehicles), carbon capture technology and global climate-related development (e.g. endorsement of carbon pricing as a solution to tackling climate change and biodiversity loss by G20 countries).

happens, must be realistic). Events must include baseline and extreme outcomes to give a reasonable diversity of potential future climate states. When thinking about major sources of uncertainty, scenarios help to explore alternatives that will significantly change the grounds for 'business-as-usual' assumptions;

(b) Relevant.
Each climate scenario and the set of scenarios taken as a whole, must contribute specific insights on the strategic and financial implications of climate-related risks and opportunities. Financial institutions shall use scenario analysis to self-evaluate their ability to cope with climate-related risks and explore options to strengthen resilience against these risks;

(c) Distinctive.
Each climate scenario must focus on different key factors. Scenarios must be clearly differentiated in structure and in narrative. For a given key factor, multiple scenarios shall be used to explore how different permutations and different temporal developments can yield dissimilar outcomes. For example, the impact of introducing a carbon pricing mechanism in an economy might vary with the timing of the implementation;

(d) Consistent.
Each climate scenario must have a strong internal logic. The goal of scenario analysis is to explore the interactions of factors and how each action produces a reaction. Neither agents nor external factors should completely overturn the evidence of current trends and outcomes unless logical explanations for those changes are a central part of the scenario. For example, the use of fossil fuel must not be assumed to come to a sudden halt without linking the development to the current state of play for alternative energy sources; and

(e) Tailored to material risks of financial institutions.
Each climate scenario must incorporate material elements that could influence the outcomes of the scenario analysis. This includes the nature of an operation, its location, types of assets and sources of income flows, expected changes to the demand and supply of its financial products and services and how climate change is affecting the financial institution's clients and stakeholders from a behavioural perspective.

G 13.9 When conducting scenario analysis, financial institutions may be guided by the questions tabulated in Appendix 4. Financial institutions are also encouraged to expand the list to reflect the circumstances that are unique to them.

G 13.10 In developing the climate scenarios, financial institutions may consider starting with existing global climate scenarios, with examples from the NGFS, IPCC and IEA. These climate scenarios provide financial institutions with an overall narrative, climate pathways, context and macro trends for future population levels, technological change, economic activity, social values, mitigation and adaptation challenges. For example, the IPCC scenarios represent probable future evolution of GHG concentrations and various associated mitigation and adaptation strategies. Meanwhile, the IEA scenarios present plausible transition narratives centred on the energy sector. Appendix 5 offers an introduction to the key components of shared socioeconomic pathways (SSPs) by the IPCC.

G 13.11 Financial institutions are encouraged to explore the use of NGFS scenarios[20] which are adapted to the Malaysian context where relevant. For example, the NGFS scenarios may be supplemented with additional assumptions relating to Malaysia's existing and forthcoming climate policies such as the NDC and national plans for the energy sector. Financial institutions may also consider a scenario that lengthens the time horizon up to 2050, which is a common global practice and also in line with the timeline for Malaysia's net-zero aspiration.

S 13.12 In conducting climate scenario analysis, financial institutions must consider short-term, medium-term and long-term horizons in drawing up appropriate scenarios. Specifically–

(a) Short-term climate risk scenario analysis is useful to complement business risks assessments within an ordinary business planning horizon. In this regard, financial institutions shall incorporate the impact of climate-related risks arising from such analysis in their regular stress testing exercise specified in the *Stress Testing* policy document for insurers and takaful operators as well as banking institutions issued on 30 June 2016 and on 15 June 2017 respectively; and

(b) for the medium to long-term climate risk assessments, financial institutions shall at the minimum conduct periodic climate-related scenario analysis to identify and address longer-term vulnerabilities and build resilience. The frequency of such scenario analysis should be driven by factors such as changes in the financial institution's climate strategy, new or updated regulations to limit GHG emissions, emergence of new or efficient carbon capture technology, material changes to economic and climate risk outlook, and realisation of climate risk events that significantly affect the operating environment of the financial institution.

G 13.13 The following factors may be considered in determining an appropriate time horizon for the scenario analysis:

(a) short-term horizon captures the impacts of climate-related risks over the ordinary business plan horizon. Nevertheless, these may yield limited information and insights on the resilience of financial institutions to manage climate-related risks in the long run; and

(b) longer time horizons are useful in providing financial institutions with a richer understanding and insights on impacts from climate-related risks as these risks are likely to materialise more gradually over several decades. However, a longer time horizon introduces significant complexity into the assessment and requires the use of broad-based assumptions and proxies, both of which could lead to greater uncertainty in the outcomes.

S 13.14 A financial institution must consider the appropriate level of granularity incorporated in the climate scenario analysis. This can range from high-level assessments based on sensitivity to climate-related risks impacting certain lines of business or economic sectors, to more granular assessments based on specific portfolios that also consider the interactions between climate-related risks and underlying activities of counterparties.

[20] Financial institutions may explore the scenarios and access additional materials by NGFS here: https://www.ngfs.net/ngfs-scenarios-portal/

G 13.15 In determining the level of granularity for climate scenario analysis, financial institutions may consider the following:

(a) high-level specifications (e.g. climate impact on country level data such as economic growth, level of unemployment and headline inflation) can reduce complexity while providing an assessment of the impact of climate-related risks on financial portfolios. However, such analysis relies on various assumptions and could consequently be less useful in informing specific business and risk management strategies across business lines and portfolios; or

(b) more granular specifications (e.g. counterparty level exposures or firm specific information) provide more accurate and consistent results to size up the exposure of climate-related risks. Nonetheless, the analysis is more complex and requires highly granular and consistent data and information, some of which could be time consuming to develop and collect.

S 13.16 The depth of the analysis shall be proportionate to the materiality of climate-related risks, taking into consideration the size, nature and complexity of financial institutions' business and operations. In this regard, climate-related scenario analysis must consider the following:

(a) size and nature of underlying exposure and counterparties;

(b) interlinkages of exposures and counterparties to the financial system and economy;

(c) geographical location of the exposures;

(d) expected physical damage to the exposures arising from adverse climate-related events;

(e) counterparties' responses to climate change such as actions to mitigate GHG emissions; and

(f) forward-looking information such as future trends in consumer preference, green technology innovation and national policy developments.

S 13.17 In the event financial institutions decide to factor in the climate adaptation plans of their counterparties into their scenario analyses, such plans shall only be considered if the following conditions are met:

(a) there is credible evidence that these adaptation plans are already under implementation; and

(b) financial institutions are of the view that the completion of such plans is highly likely.

G 13.18 In assessing the counterparty climate adaptation plans for inclusion, financial institutions may consider a variety of factors, such as a counterparty's current performance against interim targets, the availability[21] of technologies, products, or resources necessary to meet the intended targets, the credibility of strategies proposed in the adaptation plans and whether a counterparty has considered potential unintended consequences in implementing such plans.

[21] For instance, if a counterparty's climate adaptation plan relies upon technology or products that have yet to be discovered, the plan cannot be considered as being "under implementation", even if the underlying research has been funded or is ongoing.

14 Disclosure

S **Principle 14: Financial institutions shall produce reliable, meaningful and comparable climate-related disclosures, to support informed decisions by stakeholders and reinforce the effective management of material climate-related risks in the financial sector.**

S 14.1 Financial institutions must establish a board-approved policy on climate-related disclosures that promote credible as well as high-quality disclosures and mitigate the risks of greenwashing. This policy should address internal controls [22] and governance arrangements over the disclosure process.

S 14.2 Financial institutions must review the disclosure policy in a timely manner to continuously improve the clarity, comprehensiveness and relevance of climate-related disclosures. The review shall account for domestic and global developments [23] on sustainability and climate-related financial disclosures, which will drive the evolution of widely recognised practices and methodologies on disclosures.

S 14.3 Financial institutions shall produce annual climate-related disclosures [24] that are aligned with the recommendations of the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD recommendations) and shall be published together with annual financial reports for financial years beginning on or after 1 January 2024.

S 14.4 Financial institutions shall disclose the "Basic" and "Stretch" recommendations outlined in the TCFD Application Guide for Malaysian Financial Institutions [25] in line with their climate risk exposure and complexity of operations.

S 14.5 Financial institutions must disclose the climate-related disclosures in the management commentary of the financial report, within an existing report [26], or on the financial institution's website. The relevant information shall be clearly labelled to enhance readability and guide users.

S 14.6 Financial institutions shall be responsible for ensuring that the disclosures are accurate, verifiable, complete and not misleading. The Bank may require an independent audit to be conducted by an external auditor at the financial institutions' expense if there is reason to believe that any disclosure is incorrect, incomplete or misleading.

[22] This includes verification and review of accuracy of information.

[23] This includes global developments at the International Sustainability Standard Board (ISSB) under the IFRS Foundation and Pillar 3 requirements under the BCBS.

[24] To the extent that the disclosures required under this policy document are substantially similar to the Malaysian Financial Reporting Standards (MFRS), listing requirements by Bursa Malaysia, or other statutory reporting requirements, disclosures made by a financial institution that comply with such statutory reporting requirements shall be deemed to have met the disclosure requirements under this policy document.

[25] Appendices 6 and 7 provide the description of the disclosures for financial institutions, aligned to the "Basic" and "Stretch" recommendations outlined in the JC3's TCFD Application Guide for Malaysian Financial Institutions issued on 29 June 2022.

[26] For example, the annual report or sustainability report.

G 14.7 Financial institutions may consider appointing an independent and qualified external third-party to perform verification or provide assurance on the disclosures, such as external assurance on climate-related metrics and targets, to improve the reliability and credibility of the disclosures.

Implementation of the National Sustainability Reporting Framework

S 14.8 Financial institutions shall produce annual climate-related disclosures in line with the National Sustainability Reporting Framework (NSRF) [27] as per their respective Group's effective dates detailed in Table 1. The disclosures shall be published together with the financial institution's annual financial report.

Table 1: Effective dates for financial institutions

Group[28]	Applicable financial institutions	Effective for annual reporting periods beginning on or after[29]
1	Main Market listed financial institutions with market capitalisation (excluding treasury shares) of RM 2 billion and above as of 31 December 2024, or as at the date of its listing after 31 December 2024	1 January 2025
2	Main Market listed financial institutions (other than those in Group 1)	1 January 2026
3	All other financial institutions (other than those in Group 1 and 2)	1 January 2027

S 14.9 In relation to paragraph 14.6, financial institutions shall perform external reasonable assurance on their Scope 1 and 2 GHG emissions in accordance with the effective dates detailed in Table 2 and the assurance framework[30] under the NSRF.

[27] NSRF refers to the document issued by the Advisory Committee on Sustainability Reporting (ACSR) on 24 September 2024, which provides the framework for the baseline sustainability disclosure standards for Malaysian companies.

[28] For the avoidance of doubt, financial institutions shall remain within the same Group and respective adoption timeline once they have met the threshold of applicability at the first adoption date.

[29] For the avoidance of doubt, annual reports issued for 'annual reporting periods beginning on 1 January 2025' is equivalent to annual reports issued for 'financial year ending 31 December 2025'.

[30] The assurance framework of the NSRF, including the assurance standards, assurance providers and timeline for mandatory reasonable assurance, is subject to further consultation. For avoidance of doubt, in the event where there is a deviation between the effective dates in paragraph 14.10 and the final assurance framework, financial institutions shall adhere to the effective dates stipulated in the final assurance framework.

Table 2: External assurance effective dates

Group	Effective for reasonable assurance for annual reporting periods beginning on or after
1	1 January 2027
2	1 January 2028
3	1 January 2029

S 14.10 For the avoidance of doubt, financial institutions shall continue to produce climate-related disclosures as required under paragraph 14.3 to 14.7 until the effective dates stipulated under paragraph 14.8 and 14.9.

15 Supervisory Process

G 15.1 The management of climate-related risks of a financial institution will be monitored by the Bank against the standards and guidance set out in this policy document.

S 15.2 A financial institution shall maintain and make all the relevant information readily available for submission upon request by the Bank to facilitate ongoing supervision, this includes the implementation progress of the board-approved implementation plan[31].

[31] Implementation plan refers to a board-approved document that outlines specific actions, timelines, interim targets, milestones and roles and responsibilities within the financial institution to identify, monitor, report and manage climate-related risks (including gaps identified between its existing practices) and requirements in this policy document.

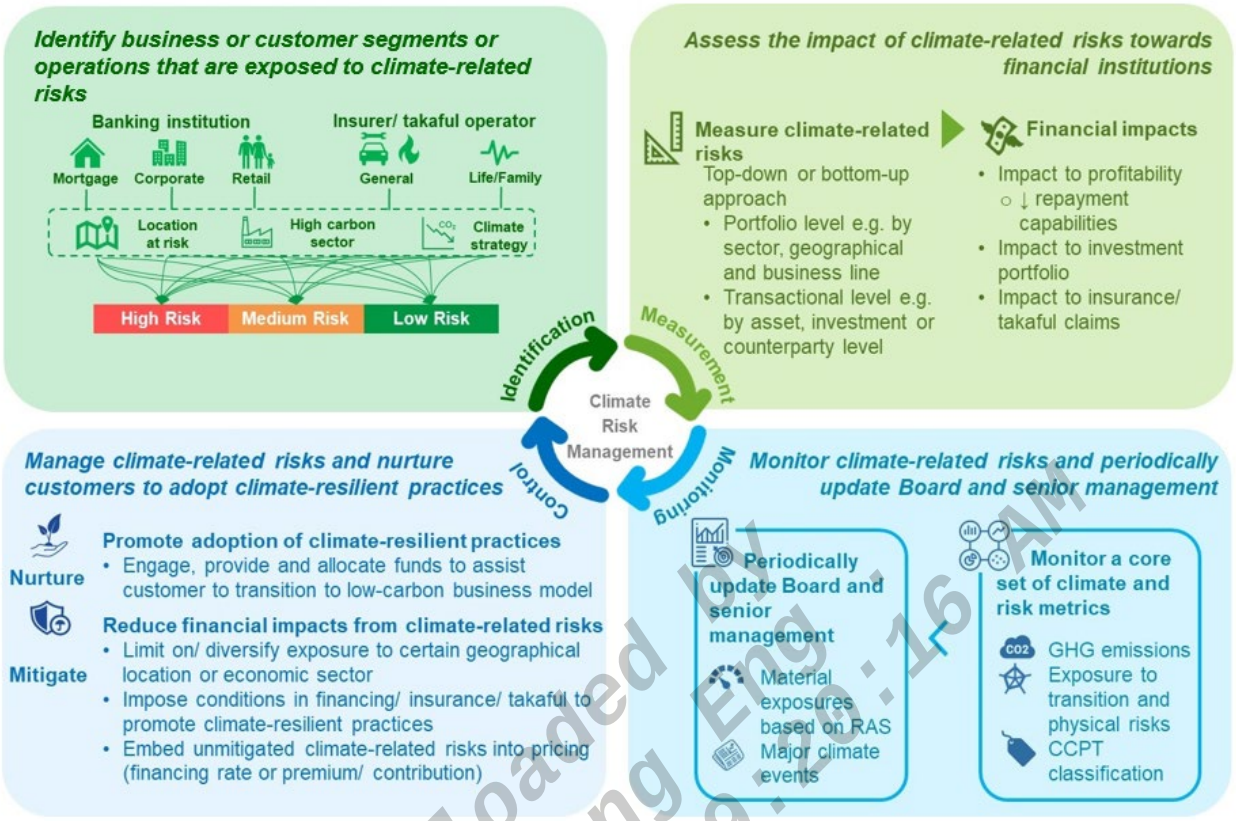
PART C APPENDICES

Appendix 1 Principles for Climate Risk Management and Scenario Analysis

Governance	**Principle 1:** The board and senior management shall exercise effective oversight of climate-related risks to safeguard the financial institution's resilience against the adverse impacts of climate change. Financial institutions shall clearly identify the relevant responsibilities for managing climate-related risks and assign these responsibilities throughout the organisation structure. Financial institutions shall manage climate-related risks in a manner that is proportionate to the materiality of climate-related risks, taking into consideration the size, nature and complexity of the financial institution's business model. **Principle 2:** The board and senior management shall ensure that they and the financial institution have a sound understanding of climate-related risks to inform the financial institution's business and risk management strategies. **Principle 3:** Financial institutions shall embed climate-related risks into their internal control frameworks across the three lines of defence to ensure the robust management of material climate-related risks.
Strategy	**Principle 4:** Financial institutions shall incorporate the potential impact of material climate-related risks into their business strategies to strengthen resilience against climate-related risks and promote a just and orderly transition.
Risk Appetite	**Principle 5:** Financial institutions shall embed climate-related risks into the risk appetite framework, including the potential long-term impact of these risks as drivers of existing types of material risks. Financial institutions shall reflect these material risks in the internal capital adequacy assessment process.
Risk Management	**Principle 6:** Financial institutions shall integrate material climate-related risk considerations into their existing enterprise-wide risk management framework. This must be supported by a reliable approach for identifying, measuring, monitoring and controlling material risks. **Principle 7:** Financial institutions shall continuously develop data capabilities, tools and methodologies to effectively aggregate and report material climate-related risks. **Principle 8:** Financial institutions shall consider climate-related risks as part of comprehensive risk assessments to identify and measure all material risks. **Principle 9:** Financial institutions shall actively monitor and escalate material and potential climate-related risks in a timely manner. This is

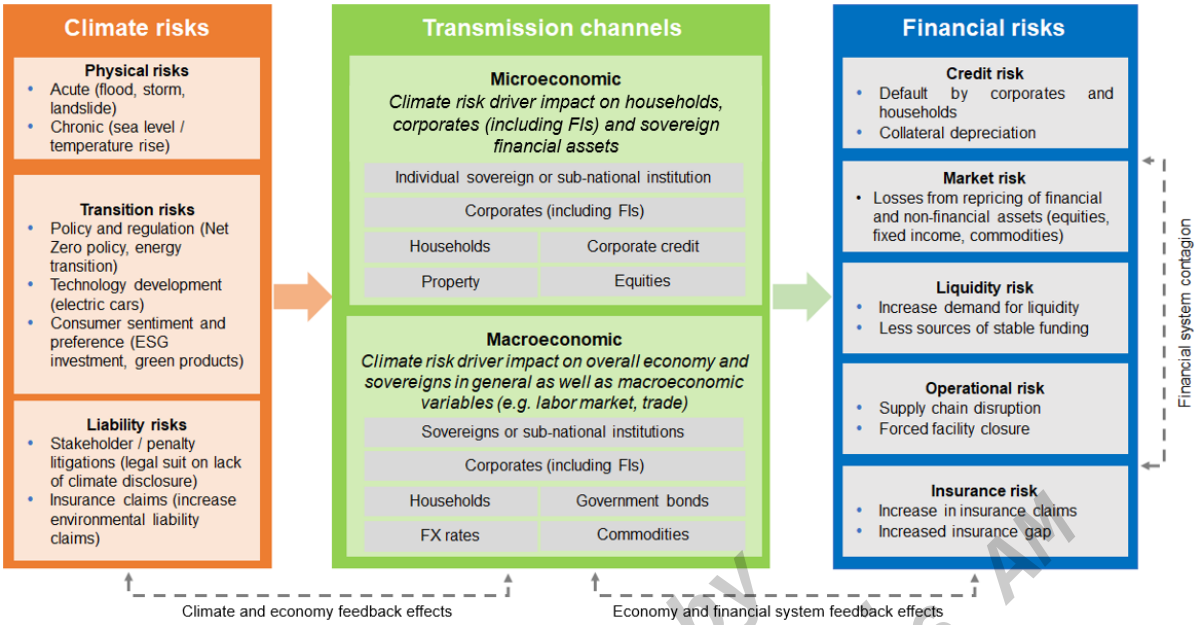
	supported by appropriate data, risk analysis and clear reporting procedures. **Principle 10:** Financial institutions shall put in place appropriate risk controls when managing current and potential material climate-related risks. Financial institutions shall implement controls in a timely manner to mitigate adverse effects from transition risks, and the potential build-up in concentration to climate-related risks, in line with the risk appetite and business strategy. **Principle 11**: Climate-related risks can have a significant impact on other major risk types. In this regard, financial institutions shall understand the transmission and impact of climate-related risks on existing risk types and ensure their risk management systems and processes account for material climate-related risks.
Scenario Analysis	**Principle 12:** Financial institutions must employ scenario analysis to determine the resilience of their business strategies to material climate-related risks. Given the complexity and evolving nature of these risks, insights from the scenario analyses shall inform the risk profile, risk appetite and risk management framework. **Principle 13:** Financial institutions must ensure scenario analysis exercises are relevant, follow certain prescribed and well-known standards, are conducted at appropriate time horizons and contain sufficient level of granularity. This must be proportionate to the materiality of climate-related risks associated with the financial institutions' business and operations.
Disclosure	**Principle 14**: Financial institutions shall produce reliable, meaningful and comparable climate-related disclosures, to support informed decisions by stakeholders and reinforce the effective management of material climate-related risks in the financial sector.

Appendix 2 Illustration of Climate Risk Management Cycle



Source: Bank Negara Malaysia

Appendix 3 Transmission of Climate-Related Risks to Existing Types of Risks



Financial risks	Transmission channels
Credit risk	Severe weather events can affect productivity, damage physical asset which lowers the asset/collateral value and disrupt corporates operation/supply chain. This will in turn increase probability of default (PD) for both corporates and individuals and loss given default (LGD) due to depreciation of collateral value.
Market risk	Negative sentiment towards carbon-intensive assets/sectors or changes in regulation may result in volatile and downward market valuations and pricing, which lead to investment losses.
Liquidity risk	Sudden increase in deposits withdrawal, drawdown of committed facilities and insurance/takaful claims post disaster may result in significant and negative impact on liquidity buffers.
Operational risk	Financial institutions' operations are disrupted due to damage to their or outsourced service providers' physical property and data centres as a result of severe weather event; climate-related lawsuits could target financial institutions for poor management of climate risks or inadequate climate-related disclosures; and higher exposure to reputational damage due to change in consumer

	sentiments towards more climate friendly business practices.
Insurance/ takaful underwriting risk	The impact can be two pronged, i.e. (i) increase insured/covered losses due to increased frequency and concentration of high impact natural catastrophes, resulting in increases in weather-related insurance/takaful claims; and (ii) increase insured/covered gap due to ITOs constrained capacity to underwrite insurance/takaful business with increasing physical risks to insured/covered property and assets, while not being able to increase the price that exceeds customer's willingness to pay.

Source: Adapted from NGFS and BCBS

Appendix 4 Example of Questions to Guide Scenario Analysis

Broad questions
• What is the focus of the scenario analysis exercise? Is the focus on transition risk, physical risk or both? • What is the time horizon? Why was this chosen? • Is the purpose of the scenario to inform quantitative analysis or qualitative discussions? • Should the financial institution consider common reference scenarios or develop their own internal scenarios? If the latter, how should a financial institution provide a high degree of rigour and robustness of the scenarios? • If the financial institution is using a common reference scenario, are the accompanying assumptions suitable? Could adjustments be made by the financial institution to fit internal needs and beliefs? If so, how? • Should the financial institution focus only on 'stress scenarios', that are extreme but unlikely, or on scenarios that are more likely to materialise? • How should the financial institution balance between realism and conservatism?
Specific questions unique to Malaysia
• How will the climate in Malaysia change over the next 30 to 50 years? • What are the possible transmission channels of climate-related risks affecting the Malaysian economy? When will these effects materialise? • Between physical hazards and transition risks, which of the two is a more important consideration for the financial institution and why? • What are unique and prominent features of the Malaysian climate that are not captured by common reference scenarios? • What are the existing national policies on climate change? How are these expected to evolve over across different time horizons?

Source: Bank Negara Malaysia

Appendix 5 Shared Socioeconomic Pathways (SSPs)

The SSPs are commonly used narratives that represent five possible socioeconomic futures with varying challenges to climate mitigation and adaptation. They are increasingly used in integrated assessment models (IAMs) to systematically explore the impacts of different socioeconomic contexts on emissions pathways. The diagram below describes the SSPs–

Socio-Economic Challenges to Mitigation	Socio-Economic Challenges to Adaptation: Low	Medium	High
High	**SSP 5: Fossil Fuel Development** • low population • very high economic growth per capita • high human development • high technological progress • ample fossil fuel resources • very resource intensive lifestyles • high energy and food demand per capita • economic convergence and global cooperation		**SSP 3: Regional rivalry** • high population • low economic growth per capita • low human development • low technological progress • resource-intensive lifestyles • resource constrained energy and food demand per capita • focus on regional food and energy security • regionalisation and lack of global cooperation
Medium		**SSP 2: Middle of the road** • medium population • medium and uneven economic growth • medium and uneven human development • medium and uneven technological progress • resource-intensive lifestyles • medium and uneven energy and food demand per capita • limited global cooperation and economic convergence	
Low	**SSP 1: Sustainable Development** • low population • high economic growth per capita • high human development		**SSP 4: Inequality** • medium to high population • unequal low to medium economic growth per capita • unequal low to medium human development

		• high technological progress • environmentally oriented technological and behavioural change • resource-efficient lifestyles • low energy and food demand per capita • economic convergence and global cooperation		• unequal technological progress: high in globalised high-tech sectors, slow in domestic sectors • unequal lifestyles in energy/food consumption: resource intensity depending on income • globally connected elite, disconnected domestic work forces

Source: IPCC, Global Warming of 1.5°C Special Report, 2018

Appendix 6 "Basic" Recommendations from the TCFD Application Guide

"Basic" Recommendations	Descriptions
Governance	
Recommendation G1 Board Oversight of Sustainability and Climate-related Matters	• Disclose nature of Board oversight and accountability with respect to sustainability and climate- related matters, risks and opportunities.
Recommendation G2 Sustainability Governance Structure Including Climate-Related Matters at the Management Level	• Disclose management-level sustainability governance structure as well as processes for sustainability and climate-related matters, including accountability, responsibility, and decision making.
Recommendation G3 Sustainability and Climate-related Board Credentials	• Disclose sustainability and climate-related credentials, experience and individual biographies for Board members.
Recommendation G4 Sustainability and Climate-Related Training	• Disclose the initiatives undertaken and training programmes conducted annually to build capacity of Board members and management on sustainability issues including climate-related matters.
Recommendation G5 Sustainability and Climate-related Discussions in Board Meetings	• Disclose the frequency of Board meetings per year in which sustainability and climate-related issues have been a substantive agenda item, and a summary of key climate-related issues and initiatives deliberated.
Recommendation G6 Sustainability/Climate-linked Remuneration	• Link Board of Director (excluding independent directors) and top management remuneration to performance against specified sustainability and climate-related targets.
Strategy	
Recommendation S1 Identification of Climate-related Risks and Opportunities	• Review the financial institution's strategy to identify and disclose climate-related risks and opportunities over the short-, medium-, and long- term.
Recommendation S2 Impact of Climate-related Risks and Opportunities	• Assess and disclose how climate-associated risks and opportunities could affect the financial institution's existing businesses, strategy, and financial planning.
Recommendation S3 Strategy and Risk Appetite on Climate Change-Related Risks and Sustainability Measures	• Disclose strategy and appetite with regard to climate-related risks and opportunities, and the measures towards sustainability in the financial institution's business activities.
Risk Management	
Recommendation R1 Process for Identifying and Assessing Climate-related Risks	• Disclose how the financial institution looks at existing and emerging regulatory requirements related to climate change and other relevant factors. • Disclose the risk classification framework(s) used. • Disclose the risk terminology definitions used or existing risk classification framework(s) used.

"Basic" Recommendations	Descriptions
Recommendation R2 Process for Managing Climate-related Risks	• Disclose the financial institution's risk management processes and controls. • Disclose the identities of individual(s)/function(s) responsible for oversight of climate-related risks and its relationship with the business operations.
Recommendation R3 Process for Integrating (i) Process for Identifying and Assessing Climate-related Risks and (ii) Process for Managing Climate-related Risks; into Overall Risk Management.	• Disclose the integration of processes for identifying, assessing and managing climate-related risks into overall risk management. • Disclose processes for prioritising climate-related risks, including how materiality determinations are made within the financial institution.
Metrics and Targets	
Recommendation M1 Key Climate-related Metrics	• GHG Emissions: Disclose historical and current GHG Emissions (Example unit of measure – MT of CO2e). • Transition Risks: Disclose amount and extent of assets or business activities vulnerable to transition risks (Example unit of measure – Amount or percentage). • Physical Risks: Disclose amount and extent of assets or business activities vulnerable to physical risks (Example unit of measure – Amount or percentage). • Climate-Related Opportunities: Disclose proportion of revenue, assets or other business activities (financing & investment) aligned with climate-related opportunities (Example unit of measure – Amount or percentage). • Client Engagement: Disclose client engagements on climate-related risks and opportunities (Example unit of measure – percentage). • Capital Deployment: Disclose amount of capital expenditure, financing, or investment deployed toward climate-related risks and opportunities (Example unit of measure – Reporting currency). • Remuneration: Disclose proportion of director and/or senior management remuneration linked to sustainability considerations (Example unit of measure – Percentage, weighting, description, or amount in reporting currency).
Recommendation M2 Key Climate-related Targets	• Set and disclose clear climate-related targets based on recognised metrics (including cross-industry, sector-specific metrics and/or institution-specific metrics).

Source: JC3's TCFD Application Guide for Malaysian Financial Institutions

Appendix 7 "Stretch" Recommendations from the TCFD Application Guide

"Stretch" Recommendations	Descriptions
Governance	
Recommendation G7 Separate Committee on Sustainability and Climate-related Matters	• Set up a separate committee to oversee sustainability-related matters, reporting to the Board of Directors for all sustainability and climate-related matters.
Strategy	
Recommendation S4 Scenario Analysis as an Opportunity to Improve Strategic Resilience and Explore Climate Vulnerabilities	• Perform climate-related scenario analysis to assess potential business implications of climate-related risks and opportunities over time and under different conditions as well as related strategy to manage these.
Risk Management	
Recommendation R4 Process for Identifying and Assessing Climate-related Risks	• Disclose the financial institution's risk management processes used to identify and assess climate-related risks. • Disclose the financial institution's climate-related risks and their significance within existing risk categories such as credit, market, operational, liquidity risk. • Disclose the financial institution's processes for assessing the potential size and scope of identified climate-related risks. • Disclose key sectors in the financial institution's portfolio that are identified as being highly exposed to climate risk. • Set out the financial institution's risk management controls or actions in managing impacts from direct climate-related risks (i.e. through own operations).
Recommendation R5 Process for Managing Climate-related Risks	• Disclose the financial institution's processes for managing climate-related risks including decisions to mitigate, transfer, accept, or control those risks. • Disclose improvements planned/completed by the financial institution to enhance capabilities and incorporate climate-related risks into existing risk management framework. • Conduct training and employee readiness planning as well as programmes. • Disclose how the financial institution's customers are engaged and helped in mitigating climate-related risks. • Use metrics and targets to monitor progress in managing climate-related risks (i.e. exposure to, and quantification of, risk types by business segment and jurisdiction). • Set out the financial institution's risk management controls or actions in managing impacts from indirect climate-related risks (i.e. through activities of its clients). • Disclose the financial institution's exposure to, and quantification of, sustainable financing.

"Stretch" Recommendations	Descriptions
Recommendation R6 Process for Integrating (i) Process for Identifying and Assessing Climate-related Risks and (ii) Process for Managing Climate-related Risks; into Overall Risk Management.	• Disclose how the financial institution has integrated climate-related risks into existing risk categories such as credit, market, operational, insurance and liquidity risks. • Disclose how the financial institution has integrated climate-related risks into existing risk framework(s) and/or directly into credit and investment decision-making (e.g. lending policies, underwriting standards, risk ratings, pricing models). • Disclose the financial institution's exposure to physical and transition risks within its operations and business model, including concentrations of risk at portfolio and transaction levels, and by geographical footprint. • Disclose the financial institution's efforts in supporting clients through mitigating climate-related risks via sustainable finance solutions. • Implement policies that restrict/divest from high-risk exposures and in line with international commitments/frameworks. • Enhance the financial institution's climate risk management framework to be more predictive.
Metrics and Targets	
Recommendation M3 Key Climate-related Metrics	• Disclose more granular and specific items building on the Basic Metrics recommendations.

Source: JC3's TCFD Application Guide for Malaysian Financial Institutions

PART D GLOSSARY

Carbon neutrality	Occurs when net contribution to GHG emissions is zero as emissions are fully compensated by offsets.
Climate adaptation	Refers to the process or actions taken to lower the negative effects and/or moderate harm caused by climate change.
Climate metrics	Quantitative indicators that provide information about a particular activity or quantitative assessment on the level of climate-related risks for a given institution. Climate metrics can contain backward- or forward-looking information and can be outbound or inbound. For example, GHG metrics quantify the amount of GHG produced by the institution (outbound). Climate metrics are translated into financial impact to quantify climate risk metrics for risk assessment and monitoring. For example, climate risk metrics include exposure to physical and transition risks (inbound).
Climate mitigation	Refers to the process of reducing or preventing emission of GHG into the atmosphere.
Climate target	Climate target refers to a specific level or threshold or metric such as a temperature limit or emissions reduction to avoid dangerous interference with the climate system and achieve climate-related goals, ambitions and strategies. For example, a climate target may aim to reduce GHG emissions by a certain amount over a given time horizon. Examples of targets include net-zero carbon emissions by 2050 and carbon neutrality by 2050.
Credit risk	Credit risk (including counterparty credit risk) is the risk of a counterparty failing to perform its obligations.
Environmental risk	Environmental risks are financial risks posed by the exposure of financial institutions and/or the financial sector to activities that may potentially cause or be affected by environmental degradation (such as air pollution, water pollution and scarcity of fresh water, land contamination and desertification, biodiversity loss, and deforestation) and the loss of ecosystem services.
Insurance/Takaful reserving risk	Risk that an ITO underestimates its insurance/takaful liabilities given the uncertainty associated with the forecasted impact of climate change on the business written, leading to insufficient reserves held to cover those liabilities.
Insurance/Takaful underwriting risk	Risk that an ITO will suffer losses due to the impact of climate change that has changed contrary to the forecast made at the time when an insurance premium/takaful contribution rate was set.

Liability risk	Risks stemming from parties that are seeking compensation for losses these parties may have suffered from the physical or transition risks from climate change. The climate-related litigations can directly and indirectly impact financial losses of financial institutions.
Liquidity risk	Ability of the financial institution to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses, including both market and funding liquidity. The risk that an ITO is unable to realise its investments and other assets in a timely manner to meet its financial obligations, including collateral needs, as they fall due.
Market risk	Market risk is defined as the risk of losses in on and off-balance sheet positions arising from movements in market prices.
Nationally Determined Contributions (NDC)	A term used under the United Nations Framework Convention on Climate Change (UNFCCC) whereby a country that has joined the Paris Agreement outlines its plans for reducing its emissions. In some countries the NDC would also address how the countries will adapt to climate change impacts and what support they need from, or will provide to, other countries to adopt low-carbon pathways and to build climate resilience.
Net-zero emissions	Net-zero emissions are achieved when anthropogenic (released by human activities like usage of fossil fuels) emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals (such as greater forestry and carbon capture and storage) over a specified period. Where multiple greenhouse gases are involved, the quantification of net-zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential and others, as well as the chosen time horizon).
Nonlinear	A process is called nonlinear when there is no simple proportional relation between cause and effect. The climate system contains many such nonlinear processes, resulting in a system with potentially very complex behaviour. Such complexity may lead to abrupt climate change.
Operational risk	Operational risk refers to the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events. Operational risk may result in direct financial losses as well as indirect financial losses (e.g. loss of business and market share) due to reputational damage.
Paris Agreement	An international agreement signed in 2015 to keep the average global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C.

Pathways	The temporal evolution of natural and/or human systems towards a future state. Pathway concepts range from sets of quantitative and qualitative scenarios or narratives of potential futures to solution oriented decision-making processes to achieve desirable societal goals. Pathway approaches typically focus on biophysical, techno-economic and/or socio-behavioural trajectories and involve various dynamics, goals and actors across different scales.
Physical risks	Economic costs and financial losses resulting from the increasing severity and frequency of– • extreme climate change-related weather events (or extreme weather events) such as heatwaves, landslides, floods, wildfires and storms (i.e. acute physical risks); • longer-term gradual shifts of the climate such as changes in precipitation, extreme weather variability, ocean acidification and rising sea levels and average temperatures (i.e. chronic physical risks or chronic risks); and • indirect effects of climate change such as loss of ecosystem services (e.g. desertification, water shortage, degradation of soil quality or marine ecology). Physical risk drivers are the changes in weather and climate mentioned above that lead to physical risks and impacts on economies and financial institutions.
Resilience	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function identity and structure while also maintaining the capacity for adaptation, learning and transformation.
Roadmap	A roadmap sets out a comprehensive and coordinated long-term plan to address climate-related financial risks, including steps and interim time horizons needed to do so. It also articulates ways to implement and monitor interim progress over time to reach intended outcomes and targets.
Scenario	A plausible description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces (e.g. rate of technological change) and relationships. Note that scenarios are neither predictions nor forecasts but are used to provide a view of the implications of developments and actions.
Scope 1, 2 and 3 GHG Emissions	The Greenhouse Gas Protocol separates emissions into three scopes – • Scope 1 covers direct emissions from owned or controlled sources. • Scope 2 covers indirect emissions from purchased electricity consumed by the reporting entity.

	• Scope 3 covers indirect emissions from assets not owned or activities not controlled by the reporting entity along its value chain (upstream and downstream).
Stranded asset	Assets exposed to devaluations or conversion to 'liabilities' because of unanticipated changes in their initially expected revenues due to innovations and/or evolutions of the business context, including changes in regulations at the domestic and international levels.
Strategic risk	Loss in competitiveness and market standing for failing to respond in a timely manner to the changing market environment along with increasing scrutiny and preference towards climate or environmental-friendly solutions and responsible practices.
Stress testing	Stress testing is typically used to evaluate a financial institution's near-term resiliency to severe but plausible economic and financial shocks, often through a capital adequacy target.
Sustainability	A dynamic process that guarantees the persistence of natural and human systems in an equitable manner. This can be done by encouraging businesses and households to embed the decision-making process with financial and ESG effects to ensure long-term resilience and value creation.
Transition risks	The risks related to the process of adjustment towards a low-carbon economy. These drivers represent climate-related changes that could generate, increase or reduce transition risks. They include changes in public sector (generally government) policies, legislation and regulation, changes in technology and changes in market and customer sentiment, each of which has the potential to generate, accelerate, slow or disrupt the transition towards a low-carbon economy.
Transmission channels	The causal chains that explain how climate risk drivers give rise to financial risks that impact financial institutions directly or indirectly through their counterparties, the assets they hold and the economy in which they operate.

Sources: Adapted from multiple sources including Bank Negara Malaysia, IPCC, TCFD, NGFS, BCBS and IAIS