

Range of practices for management of climate risks

In formulating its initial thoughts on supervisory expectations for the management of climate risks as contained in the White Paper, the HKMA engaged selected major banks in a series of discussions on their approach to climate risk management in the areas of governance, strategy, risk management and disclosure. This note sets out a range of practices adopted or planned to be adopted by the more advanced AIs in their management of climate risks, as observed over the course of the discussions. They are grouped in accordance with the nine guiding principles set out in the White Paper.

Governance

AIs recognise that robust governance arrangements are essential to effective climate risk management.

Principle 1 – Board’s accountability in climate resilience

The board has primary responsibility for an AI’s climate resilience. It should have sufficient understanding of the climate-related issues in determining the AI’s approach to address them.

Similar to traditional risk types, a well-defined governance structure provides accountability that drives AIs to take appropriate actions to address climate risks and ensure a good firm-wide understanding of the potential impact. AIs recognise the above and seek to integrate climate-related considerations into their governance structure. The more advanced AIs have started to assign clear roles and responsibilities in some of the following ways:

- *The Board of Directors* – The Boards of some AIs have formally expanded their mandates to include accountability for overseeing the management of climate risks and for providing direction to address the impact of climate change. While the Boards of a number of AIs task existing committees to consider the climate-related risks and opportunities in a holistic manner and to ensure the AIs’ business decisions are commensurate with the magnitude of climate risks they are exposed to, a few have opted to set up specialised committees to perform the said function.
- *Senior management* – Senior management in many AIs are held accountable for developing and implementing the risk management framework and related policies approved by the Board and for driving necessary changes to ensure climate risks and opportunities are adequately managed. They are also

responsible for reporting material risks and exceptions via established escalation channels.

- *Designated individuals* – Designated individuals (e.g. Chief Risk Officer or executives responsible for sustainability matters) are tasked by some AIs to review plans and collaborate with other senior management on the development and implementation of climate risk management and related initiatives.

Principle 2 – Board’s oversight of climate strategy development and implementation

The board should exercise oversight of the development and implementation of the AI’s climate strategy, including embedding climate-related risks into the AI’s risk appetite framework.

Effective oversight by the Board is critical to ensuring climate risks and opportunities are appropriately addressed in the short, medium and long term. For the more advanced AIs, the Board and senior management oversee the development and implementation process of climate strategy, the setting of climate risk related appetite and targets, and the integration of climate risks into their risk management framework.

- *Oversight* – The Boards of some AIs have approved a specific climate risk management framework or a refined Environmental, Social and Governance (ESG) framework with climate considerations embedded, taking into account the short-term and long-term impacts on the AI’s business. They also oversee the setting of the AI’s overall climate risk appetite, and a few of them have endorsed an updated risk appetite statement that contains a qualitative statement on climate risks.

Typically, these AIs provide management information reports to the Board and senior management to enable discussion, challenges and decision-making on climate risk matters. Some AIs also provide regular updates to the Board and senior management on climate-related international developments and project progress to facilitate their oversight.

- *Performance tracking* – The more advanced AIs are using an array of tools for tracking and monitoring their performance with regard to achieving specific climate change targets. For example, some of them at the Group level have set specific corporate social responsibility targets to measure relevant performance:
 - *At corporate level* – Target position in an external sustainability ranking is specified, which gives weighting to climate-related issues. Actual performance is benchmarked against the target annually.

- *At senior management level* – The performance in achieving the target position is also one of the evaluation criteria for the CEO and management committee members' variable remuneration.

Strategy

The more advanced AIs accord a high priority to climate change on their business agenda and are integrating climate risks into the formulation and implementation of strategies.

Principle 3 – Formulation

Climate considerations should be embedded throughout the strategy formulation process, from strategic assessment to action plan development.

Many AIs see a need to integrate climate considerations into their strategy planning process, as well as to formulate an action plan to manage climate risks and opportunities.

The more advanced AIs are already progressively designating climate risks and low carbon emissions as strategic priorities at the firm-wide level, and developing concrete action plans to deploy resources and capital to achieve these goals. In the strategy planning process, some of these AIs reach out to internal and external stakeholders to gather their expectations regarding a selection of sustainable development topics (including climate change) to identify the most relevant and material issues facing the AI, which in turn informs the setting of strategic priorities.

Some advanced AIs are considering using the outcomes of scenario analysis to inform on strategy and capital planning within their internal capital adequacy assessment process (ICAAP).

Principle 4 – Implementation

Organisational structures, business policies, processes and resources availability should be reviewed and enhanced to ensure effective integration of climate strategy into the operation and corporate development of an AI.

The more advanced AIs recognise that structural transformations may be needed to align their business strategies with the transition to a low-carbon economy and to adapt to the impacts of climate change. It is observed that these more advanced AIs have undertaken a variety of initiatives to ensure effective implementation of climate-related strategies.

Organisational structure

- *Three lines of defence* – In addition to clearly defining the Board's and the senior management's roles and responsibilities with respect to climate risks, some AIs have also set specific duties for the three lines of defence. For example, some AIs require the business teams (1st line of defence "LOD") to carry out risk analysis to identify climate risks for credit decisions. Meanwhile, certain AIs require the risk department (2nd LOD) to perform independent assessments of the climate risk profile of counterparties, and challenge the climate risk analysis conducted by the 1st LOD. They also seek to leverage the audit function (3rd LOD) to provide assurance on the climate risk management processes carried out by the 1st and the 2nd LOD.
- *Dedicated unit* – Several AIs have created a dedicated unit which serves as a technical resource and internal consultant for climate risks and other sustainability matters.
- *Cross-functional working groups* – Given the cross-cutting nature of climate risks, a number of AIs have established cross-functional/departmental working groups to provide support for the AI's overall climate agenda and certain technical areas such as scenario analysis.

Resources availability

- Some of these AIs are conducting reviews to ensure that adequate resources and sufficient expertise are allocated to managing climate risks.

Capacity and awareness building

In view of the evolving and complex nature of climate risks, some AIs adopt a top-down approach to enhance the understanding and awareness of staff at all levels of the distinctive elements of climate risks and the impacts on the AIs. Multipronged measures in the following areas have been rolled out:

- *Training* – Many AIs provide on-going capacity building programmes not only to risk managers but also frontline staff to raise their awareness of the climate risks associated with carbon-intensive business and of green opportunities. A couple of AIs partner with external parties, including academics, to develop specialist training on climate change topics.
- *Communication* – The senior management of a number of AIs actively participate in international conferences and bodies for climate risks in order to demonstrate their commitment to addressing climate change. A few AIs also use internal communications such as circulating climate-related featured articles to ensure staff remain aware of climate change issues.
- *Recruitment* – These AIs also recruit environmental experts to build in-house capabilities.

Risk Management

The more advanced AIs have incorporated climate risks into their risk management framework and have developed tools to identify, measure, monitor and report, control and mitigate the more material climate risks.

Principle 5 – Identification

AIs should identify the transmission channels and assess the impacts of physical and transition risks arising from climate change on their business. Concrete plans should be devised to address any information and data gaps.

With growing recognition that climate risks are a source of financial risk, it is essential that AIs have a formal process to identify their potential risk exposures. To this end, a number of the more advanced AIs have started to review the direct and indirect exposures of their businesses portfolios and operations to climate risks, and the related transmission channels.

Identification of exposures

Some AIs focus on identifying exposures in a single portfolio only (e.g. credit risk of loan portfolio in energy sector). In contrast, the more advanced AIs conduct holistic reviews to identify the impacts of physical and transition risks at the portfolio, client and operational levels.

- *At portfolio level* – Under this approach, AIs usually first identify the sectors most at risk of being affected by transition risks (e.g. energy, transportation) and physical risks (e.g. real estate in certain regions). The AIs then map their exposures under specific portfolios (e.g. wholesale credit, asset management, mortgage) to those sectors. This allows the AIs to form an overall view of their climate risk profile and to identify any climate risk concentrations in their portfolios.
- *At client level* – This involves the AIs engaging clients of specific sectors (e.g. carbon intensive sectors) to identify the impact of climate risks to their business and to understand their analysis of and approach to managing climate risks. Some AIs also collect data from their clients to measure their progress in reducing carbon emissions.
- *At operation level* – This involves the AIs identifying whether they have critical operations in areas vulnerable to frequent and severe climate events and assessing the resilience of their facilities and operations to physical risk as part of the AIs' business contingency planning process.

Transmission channels

The more advanced AIs have generally demonstrated a good understanding of the channels through which climate risks are transmitted. Some AIs have mapped how and under what time horizon existing risk types could be aggravated by physical and transitional risks. For example, the mapping could indicate that transition risks can result in higher operating costs for carbon intensive customers, and in turn, lead to increased credit risks, while physical risks can erode collateral and asset values.

Principle 6 – Measurement

AIs should build capability over time to measure climate-related risks using various methodologies and tools, among which scenario analysis should be actively explored.

Many AIs acknowledge that scenario analysis can play a critical role in helping them measure climate change risks, and that such exercises should take into account the non-linear and forward-looking nature of climate risks. By assessing the AI's sensitivity to physical and transition risks and the different paths to a low-carbon economy, scenario analysis is a useful tool for AIs to address a range of plausible outcomes and quantify potential exposures to climate risks.

While the practices of AIs vary, the more advanced AIs adopt an integrated approach to developing scenario and conducting scenario assessments:

- *Development of a climate change scenario* – For example, different warming scenarios (e.g. 1.5°C, 2°C or 4°C) are developed based on different assumptions on global carbon price, regulatory changes, technological shift to renewable energy, and time horizon. While some AIs develop climate scenarios in-house, many AIs are leveraging on industry collaborations, such as the *United Nation Environment Finance Initiative (UNEP FI)* pilot project, and adopting common assumptions. Some are also considering sourcing climate-related scenarios¹ from other publicly available sources, or engaging consultants or academics to assist with the construction of scenarios as well as to provide data of the needed quality.
- *Top-down, sector level assessment* – Based on a climate change scenario, sector-level portfolio impact is assessed and stress tested. For instance, some of the more advanced AIs conduct iterative analysis to establish the linkages between transition risk and credit quality within different sectors and subsectors. For physical risk, the UNEP FI group has developed an approach for the energy

¹ Examples include those published by the Intergovernmental Panel on Climate Change (IPCC), the International Energy Agency (IEA) as well as the high-level scenarios developed by the Network for Greening the Financial System (NGFS) for central banks and supervisors.

sector looking at how productivity, costs and revenue of borrowers, and their probability of default will change under various physical risk scenarios.

- *Bottom-up, customer level assessment* – Some of the more advanced AIs assess potential financial impacts at the borrower/customer level. For instance, they simulate different potential carbon prices that may arise from future carbon-related regulation when modelling the impact of transition risk on customers' cash flows and potential credit deterioration. Borrower-specific data points are used to calibrate the scenario-implied probability of default and expected loss. With regard to physical risk, some AIs simulate the changes in future climate hazards (such as flooding) and evaluate the impact (e.g. in terms of potential period of inoperability or loss of productivity) on customers' assets in a given location.

Principle 7 – Monitoring and reporting

AIs should implement processes to monitor and report exposures to climate-related risks to ensure that such exposures are consistent with their risk appetite, and that timely and regular updates are provided to the board and senior management.

Risk monitoring

The uncertain path of climate risk development requires AIs to continuously monitor and assess their climate risk exposures. The more advanced AIs have adopted or are considering to adopt a range of qualitative or quantitative tools to monitor climate risks in line with their Board-approved risk appetite and strategy.

- *Sector and portfolio metrics* – Some AIs adopt a single metric such as loan exposures to climate sensitive sectors or to greenhouse gas emissions. The more advanced AIs adopt multiple metrics (e.g. carbon-related assets as a percentage of total banking products) across portfolios so as to better monitor the total exposure to climate-sensitive sectors and carbon-related assets on their balance sheet.
- *Client level indicators* – Some of the more advanced AIs further seek to develop internal climate risk indicators at the client level. For example, some AIs are piloting climate vulnerability assessments for clients in sectors most exposed to transition risk during the client approval and annual internal rating review processes. Clients with higher risk ratings will be regularly monitored to evaluate the need for corresponding risk control and mitigation measures.

Risk reporting

AIs generally recognise the importance of providing sufficient and timely information to relevant stakeholders. As mentioned in the governance section, some of the more advanced AIs provide management information reports to the Board and senior

management to facilitate their oversight of climate risk management. Some AIs further incorporate climate risks in regular thematic and emerging risk reports to keep abreast of relevant developments. More progress is expected as AIs continue to work on capturing more granular climate risk information and exposures in the risk management reports to a level that is on a par with the traditional risk types.

Principle 8 – Control & Mitigation

AIs should carry out measures to control and mitigate exposures to climate-related risks to ensure effective management of these risks.

AIs are aware of the potential consequences if necessary risk control and mitigation measures are not put in place in time. A diverse range of measures are adopted, which vary according to the respective risk appetite of AIs.

Risk control

Some of the more advanced AIs have started to embed climate considerations into the existing framework for management of specific risks (such as credit and market risks), stepping up from treating climate change as just a source of reputational risk under the current ESG framework. In particular, they are working to implement preventive measures to control their climate risk exposures at the portfolio, sector, and individual client levels.

- *At portfolio and sector levels* – Based on the outcomes of risk identification and scenario analysis, these AIs are putting in place concentration limits or have excluded those sectors and projects that are highly sensitive to climate risks (e.g. limits on certain carbon-intensive sectors or a ban on financing new coal-fired power plants). Establishing such policies and guidelines helps ensure the AIs engage in responsible lending to clients related to carbon intensive sectors.
- *At client level* – These AIs assess the climate-related credit risk during client onboarding, annual credit review, and investment decision processes. Enhanced credit approval and ongoing monitoring is required for clients/investment assessed as highly sensitive to climate risks.

Risk mitigation

The more advanced AIs seek to implement measures to mitigate the impact of climate risks and enhance their own resilience.

- *At client level* – Some of them support clients to transition their business and build resilience to increasing weather events such as flooding and rising sea levels, whereas others reduce financial exposures to those clients who do not fulfill requirements contained in their climate risk policy.

- *At operation level* – There is ongoing assessment on relocating and diversifying critical functions to areas less vulnerable to climate risks so as to minimise potential business disruptions.

Disclosure

The more advanced AIs seek to disclose the overarching issues and information related to climate change to stakeholders.

Principle 9 – Disclosure

AIs should develop an appropriate approach to disclosing climate-related information to enhance transparency. When considering the information to be disclosed, AIs should take the TCFD recommendations as the core reference.

AIs have long been disclosing important and material information to keep stakeholders informed. When it comes to climate risks, a number of the more advanced AIs devote efforts to supporting the recommendations of the Financial Stability Board (FSB)'s Task Force on Climate-related Financial Disclosures (TCFD), which aim to develop voluntary, consistent climate-related financial risk disclosure framework for firms to provide information to stakeholders. Progress of varying degrees has been achieved as detailed below:

- *Progress* – Some AIs have already included climate-related disclosures that adhere to the four pillars of TCFD's framework (i.e. governance, strategy, risk management, and metrics and targets) in their annual reports and/or other thematic publications, albeit with variations in terms of coverage and maturity. Most of these AIs are committed to further enhancements and will continue to refine the disclosures in response to evolving local and international landscapes.
- *Benefits* – Enhanced transparency via increased risk disclosures brings about a number of benefits, ranging from supporting stakeholders (e.g. investors) to analyse climate-related risks and providing them with opportunities to make informed decisions, to generating new sources of information which can contribute to a more efficient allocation of capital and to support the transition to a low-carbon economy.

Disclosing climate-related risk management information, especially that on less developed areas (e.g. details of methodology on climate-related scenarios to assess exposures to physical and transition risks), also provides useful references for improving climate risk management in the banking industry.

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