Monetary Authority of Singapore

Guidelines
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Guidelines on Environmental Risk Management (Banks) - Transition Planning

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1 Introduction

1.1 The Guidelines on Environmental Risk Management (Banks) - Transition Planning ("TPG") set out MAS' supervisory expectations for banks to manage the transition and physical risks they face from climate change ('climate-related risks') as part of a sound transition planning process. This builds on existing expectations set out in the Guidelines on Environmental Risk Management for banks to incorporate environmental considerations into their risk appetite, strategies and business plans.

1.2 **"Transition planning"** refers to the internal risk management processes and strategic planning undertaken by an entity to prepare for climate-related risks and potential changes in business models associated with climate change. This includes building resilience to a range of future states of the world (including varying degrees of physical risk, and potential shifts in policy, technology, or consumer sentiments). A **"transition plan"** refers to a documented output of the transition planning process, and can be internal documents or be externally disclosed.

1.3 **The TPG are focused on risk management, but MAS recognises that as with other types of risk, business strategies can have an impact on the level of risk exposure**. The TPG set out expectations for banks to assess and manage climate-related risks arising from these business strategies over varying time horizons and for their business strategies to take into account climate-related risks.

1.4 **The objective of the TPG is for banks to implement a sound internal process that**:

(a) Adequately addresses their climate-related risks

Banks need to assess and manage the risks associated with both physical and transition risks arising from climate change. These risks will ultimately impact more 'traditional' risk types like credit risk, for instance where borrowers' ability to generate the cashflow needed to repay loans are diminished.

Banks should understand the implications of climate change on their business and adapt their business models, governance and risk management practices accordingly. In this regard, banks

should have a structured, risk-proportionate process to engage customers on the material climate-related risks they face and their management of such risks.

Where banks have chosen to set targets, they need sound internal processes to manage any material risks arising from those targets, such as by having an effective strategy to address any potential legal and/or reputational risks due to deviations from any communicated targets.

(b) Facilitates climate-related risk management (including risk mitigating actions and adaptation measures) by customers, thereby supporting broader financial stability

Banks should not indiscriminately withdraw credit from customers with higher climate-related risks. This could increase the risk of stranded assets and contribute to a disorderly transition that would be detrimental for the system as a whole – and potentially the bank itself as well.

Banks should instead seek to engage these customers in a risk-proportionate manner, and provide these customers with an opportunity to identify and manage climate-related risks to address banks' concerns. The data collected from their customers may therefore differ depending on their risk materiality to the bank. Banks may also take a multi-year view in engaging customers on their risk profiles. The point-in-time emissions level of a customer alone may not mean a higher level of risk to the bank if the customer is in the process of implementing risk management measures.

The pace of transition will depend on local circumstances, including government policies around economic transition pathways and other domestic developments. For example, the phasing out of internal combustion engine vehicles will depend on various factors such as local infrastructure readiness and consumer preferences. Where jurisdictional-level transition/decarbonisation roadmaps (e.g. for specific sectors) and/or adaptation roadmaps (e.g. for specific geographies) are in place, banks should take these into account when engaging customers by considering the impact of these roadmaps on customers and encourage additional risk management actions if needed.

Application

1.5 The TPG build on and should be read together with MAS' existing supervisory guidance[1] to banks[2]. The TPG are an elaboration of MAS' supervisory expectations around banks' transition planning.

a) The TPG are applicable to banks extending credit to corporate customers, underwriting capital market transactions, and other activities that expose banks to material environmental risk[3].

b) The TPG are applicable on a group basis for locally-incorporated banks that are headquartered in Singapore[4]. Banks that are branches or subsidiaries of global groups may take guidance from their Group's transition planning as long as the Group's transition planning approach meets the expectations set out in the TPG.

1.6 MAS expects banks' implementation of transition planning processes to mature as best practices evolve.

a) MAS recognises that current data and methodology constraints may limit banks' ability to implement certain aspects of the transition planning processes in the immediate term. Nonetheless, that should not deter banks from making progress on transition planning, including enhancing data availability. Banks are expected to implement the TPG on a risk-proportionate basis, considering the nature of their customers' business models and the materiality of the resulting risks. Banks are also expected to take an iterative approach to enhance their transition planning and embed better practices into their business-as-usual processes over time.

i. In particular, as capacity, capabilities and data availability improve, banks should

[1] Examples include: i) MAS' Guidelines on Environmental Risk Management ("ENRM Guidelines") – effective since June 2022 – which set out MAS' expectations for banks to build resilience against the impact of environmental risk; ii) MAS' Information Paper in May 2022 sharing our observations on banks' progress in addressing environmental risk, including through the consideration and integration of such risks into their business strategies and risk management processes.

[2] As defined in the ENRM Guidelines, 'banks' refers to all banks, merchant banks and finance companies in Singapore.

[3] Banks with material investment activities should refer to the relevant sections of the Guidelines on Transition Planning (Asset Managers), for sound transition planning practices with respect to investments.

[4] For a locally-incorporated bank that is headquartered in Singapore, this refers to the group including the holding company in Singapore, as well as the bank's subsidiaries and branches in Singapore and overseas, where applicable. For a locally-incorporated subsidiary of a foreign bank, this refers to the subsidiary's operations in Singapore and its downstream subsidiaries and branches in Singapore and overseas, where applicable.

continue their efforts to address environmental risks beyond climate-related risks[5], taking into account that these risks are often inter-linked. Banks should, to the extent possible, consider whether additional data collection and risk management measures to address other environmental risks may be needed.

b) MAS recognises that the scale, scope and business models of banks can be different and will continue to take a risk-proportionate supervisory approach. Banks should implement the TPG in a way that is commensurate with the size, nature and risk profile of their activities.

[5] Network for Greening the Financial System (2022) Statement on Nature-Related Financial Risks. Nature-related risks, including those associated with biodiversity loss, could have significant macroeconomic implications, and failure to account for, mitigate and adapt to these implications is a source of risks for individual financial institutions as well as for financial stability.

2 Governance and Strategy

2.1. **Decisions made by the bank's Board of Directors ("Board") and senior management around business strategy and risk appetite (e.g. through portfolio allocation) should take into consideration how the current and future changes in operating environment arising from climate change will impact the bank's risk profile.** The Board is responsible for ensuring that the bank's risk appetite[6], framework and policies adequately address the bank's business strategy and risks as it navigates such changes.

2.2. **The bank's senior management should actively ensure that its climate-related business strategy and risk appetite are effectively embedded within the bank's operations.** Steps taken should include (but are not limited to):

a) Establishing a robust governance process, to facilitate the understanding of key climate-related assumptions, dependencies, and residual risks covering areas such as business strategies, risk appetite, risk metrics, scope, risk framework, implementation timelines and approach;

b) Establishing a clear tone from the top around the need to address climate-related risks, such as when making decisions around business strategy and risk appetite;

c) Establishing clear lines of communication and escalation across different parts of the bank to address climate-related risks that cut across functions;

d) Ensuring that internal strategies and risk appetite statements are consistent with any publicly communicated climate-related strategies and commitments[7]; and

e) Establishing mechanisms to implement business strategies and align internal behaviour to address climate-related risks (such as through performance measurement, remuneration

[6] Risk appetite statements should be actionable and decision-useful. Banks can refer to Section 2.3, Focus Area 3: 'Risk Appetite' of the Information Paper on Environmental Risk Management (Banks) for examples of qualitative and quantitative risk appetite statements.

[7] For example, if the bank has set decarbonisation targets in support of a stated climate objective, it should take care that relevant and material activities are in scope of its targets (e.g. by considering both financed and facilitated emissions for potential inclusion).

policy and incentive structures)[8].

2.3. **The bank's senior management should establish a mechanism(s) through which the bank's existing approach (and implementation thereof) to transition planning is regularly refined.** The bank should view transition planning as an iterative process and regularly review its approach, including its risk appetite and risk framework, for continued appropriateness and effectiveness. It should also incorporate industry developments and emerging best practices into its approach in a timely manner.

[8] As noted in the "Principles for the effective management and supervision of climate-related financial risks" (June 2022) by the Basel Committee on Banking Supervision, the Board and senior management should consider whether the incorporation of material climate-related financial risks into the bank's overall business strategy risk management frameworks may warrant changes to its compensation policies, taking into account that these should be in line with the business strategy, risk appetite, objectives, values and long-term interests of the bank.

3 Risk Management

Customer engagement

3.1 **Customer engagement is a means for banks to manage their climate-related risks arising from exposures to their customers.** Customers that do not take steps to adapt to a changing business environment could have a reduced capacity to meet their financial obligations.

3.2 **The bank should have a structured process to engage customers on the climate-related risks that they face and their response to such risks.** The bank should encourage customers, particularly those identified as vulnerable to transition[9] and/or physical risks, to proactively manage these risks. Where relevant, such engagements may include, but are not limited to:

a) Referencing available information about potential future trajectories (e.g. jurisdictional, regional and/or global sectoral transition pathways, future sector technological mix) and potential physical hazards[10] arising from climate change to identify risks that customers are materially exposed to;

b) Addressing the risk of stranded assets (which could occur due to factors such as misalignment with transition pathways, obsolescence due to technological advancements, etc) and the longer-term viability of customers' business models;

c) Considering transition and/or physical risk management measures (such as investments in adaptation measures or recovery efforts after hazard events), including their impact on cashflows and capital expenditure; and

d) Factoring in customers' forward-looking risk profile and risk management actions in the bank's risk assessment and management.

3.3 **The bank should engage customers on a risk-proportionate basis.** This may entail adjustments in the frequency and intensity of customer engagement in relation to the level of risk that the customer poses to the bank.

[9] Such as those directly engaging in carbon intensive activities or indirectly dependent on such activities through supply chain linkages.

[10] Such as acute or chronic physical hazards that could directly affect customers' business operations due to the financial impact on customers' key physical assets and working capital, or indirectly through the impact on collateral value, access to and cost of insurance, etc.

3.4 **The bank should seek to collect sufficient climate-related risk data about the potential impact of climate change on customers' business and risk profiles, so as to inform its risk decisions and account management strategies, and the customer engagement process can be a means to collect such information.** The bank can take a risk-proportionate approach in data collection from its customers, including by differentiating the extent and granularity of climate-related risk data collected from such customers based on their risk materiality to the bank, business and risk profile, size and capabilities. For example, the amount of data collected from small- and medium-sized enterprise (SME) customers might be proportionately lesser than that from large customers posing material climate-related risks to the bank.[11] The bank can consider developing or building on existing structured templates (e.g. the Environmental Risk Questionnaire by the Association of Banks in Singapore) to facilitate collection of consistent and comparable customer data. Examples of climate-related risk data could include, but are not limited to the following:

a) Customers' self-assessed impact of transition and physical risks;

b) Customers' climate-related commitments, initiatives and strategies;

c) Mechanisms put in place by customers to deliver such climate-related commitments, initiatives and strategies (e.g. incentives, compensation, internal pricing, etc);

d) Customers' key asset locations;

e) Customers' exposure to supply chain risks (including pass through of carbon costs) and impact on working capital cycles;

f) Customers' carbon emissions data and vulnerability to changes in government policies, technological developments, and shifts in consumer and investor sentiments; and

g) Customers' existing or planned measures to address transition and physical risks.

3.5 **The bank should not indiscriminately divest or withdraw financing from customers exposed to higher climate-related risks.** Doing so would hinder companies with plans to implement risk management measures from securing the financing they need, thereby increasing the risk of stranded assets and a disorderly transition.

[11] The bank can take an iterative approach in data collection from customers and enhance such data collection over time as corporates' ability to provide such data improves.

Portfolio management approach

3.6 **The bank should account for sectoral specificities and, where appropriate, take a differentiated approach for sectors (at an appropriate level of granularity) posing higher climate-related risks in its transition planning.** The bank can consider the use of global, regional and/or jurisdictional sectoral transition pathways, as well as jurisdictional specificities (e.g. presence of sector-level plan) to inform risk decisions and facilitate engagement with customers. These considerations should be underpinned by sufficient understanding of the sectoral transition pathways it references, including the underlying assumptions and scope of these pathways, to guide its approach.

3.7 **Likewise, the bank should factor in different characteristics of customers (e.g. different levels and sources of climate-related risks, different stages of readiness) and take a differentiated approach, where appropriate, in its transition planning.**

a) The bank can consider the circumstances of each customer, such as its jurisdictional operating environment (e.g. the presence of any jurisdictional-level climate-related sectoral initiatives, targets or plans), in engaging its customers.

b) For customers or sectors exposed to high physical risk, the bank should consider the physical risks these customers or sectors are exposed to at an appropriate level of granularity (such as by determining the current value and realisability of collateral based on sufficiently granular physical hazard estimates). The bank can also consider factoring the existence and progress of risk reduction measures such as jurisdiction-level adaptation projects into its risk assessment process.

c) The bank can utilise a range of financing solutions (e.g. blended finance, early retirement of carbon-intensive assets) to support customers in carrying out risk management measures based on specific and meaningful risk metrics.

d) The bank should address climate-related risks across its customer base comprehensively, in a risk-proportionate manner. For instance, customers that generate revenue based on climate solutions[12] could be particularly exposed to risks from uncertainties around technology development and adoption, supply chain challenges and the operating environment. Banks should hence recognise the potential correlations or novel risks that

[12] Climate solutions here collectively refers to (i) assets that directly eliminate, remove or reduce GHG emissions; (ii) indirectly contribute to, but are critical for, emissions reductions by facilitating the deployment of assets that directly contribute to GHG emissions reductions; and/or (iii) nature-based solutions.

such exposures bring, whether individually or in aggregate.

Portfolio management – forward-looking risk assessment tools

3.8 **The bank should employ a range of forward-looking tools, such as scenario analysis and stress testing, in its transition planning process for risk discovery and quantification.** In the deployment of these tools, the bank should consider the impact of climate-related risks on its portfolios under a range of plausible scenarios. The results of such exercises, where material over relevant time horizons, should be incorporated into the bank's planning processes (including its internal capital adequacy assessment process[13]) so as to trigger the appropriate management actions. For example, this could include, but is not limited to, decisions around business strategy and risk appetite, enhancements to risk management policies and practices, adjustments of collateral valuations, or the bolstering of capital and liquidity levels.

3.9 **The bank should continue to develop its capabilities in climate scenario analysis and stress testing, referencing leading industry practices wherever possible[14].** The bank should develop climate-related risk modelling frameworks for (i) different asset classes with the appropriate levels of granularity (e.g. sectoral or counterparty level) to account for the heterogeneity of climate-related risks across different firms and economic activities; and (ii) varying time horizons, as short- to long-term scenarios are relevant for transition planning. The bank should incorporate a wide range of climate (e.g. climate policies, frequency and intensity of acute physical hazards) and economic risk drivers (e.g. demand and supply-side shocks, stranded assets), and consider both direct (e.g. damage to owned physical assets, carbon tax expenses) and indirect (e.g. supply chain risks, carbon cost pass-through) transmission channels of climate-related risks on the economy and financial system. The bank could consider using climate scenarios developed by Network for Greening the Financial System (NGFS), Intergovernmental Panel on Climate Change (IPCC) or the International Energy Agency (IEA). Banks may complement these external reference scenarios with internally developed scenarios that are tailored to their business strategies.

3.10 **The bank should endeavour to address material data gaps to allow it to adequately capture and differentiate the level of climate-related risks that its customers face.** When modelling the impact of climate-related risks, the bank should factor in relevant and reasonably reliable forward-looking information to capture the estimated level of climate-related risks that customers are exposed to. This could include customers' transition plans where these are

[13] As noted under Principle 5 of the "Principles for the effective management and supervision of climate-related financial risks" (June 2022) by the Basel Committee on Banking Supervision.

[14] Banks can refer to the latest scenario analysis guides and publications produced by international organisations, such as the NGFS, United Nations Environment Programme Finance Initiative (UNEP FI), and central banks and regulators.

reasonably expected to be implemented.

Portfolio management – data and metrics

3.11 **The bank should recognise the inherent limitations of using proxy data[15] to bridge data gaps when performing its climate-related risk assessments at the customer and portfolio levels.** The bank should document the decisions on its choice of proxy data, such as the sources, underlying assumptions, methodologies and limitations, so that future iterations and enhancements are made on an informed basis. The bank should articulate how the use of the proxy data chosen could have material implications on its risk assessment outcomes so that limitations from the use of such proxy data are adequately factored into the decisions taken. The use of proxy data should not detract from longer-term efforts to obtain primary data that is more decision-useful.

3.12 **The bank should utilise metrics to track its risk exposures and determine if its risk exposures are in line with its risk appetite and associated targets, where relevant.** The choice of metrics[16] will depend on how the bank approaches the management of relevant risks and its business model. In selecting the appropriate metrics across the short-, medium- and long-terms, the bank should:

a) Clearly identify the scope and coverage of these metric(s), including the customer segments in scope (e.g. large corporates within a particular sector and geography) at the appropriate sectoral and geographical granularity;

b) Consider the bank's business and risk profile at an appropriate level of granularity;

c) Recognise limitations arising from the choice of metric(s) and/or lack of data, and supplement with additional information as necessary;

d) Monitor these metric(s) with a multi-year risk perspective including having a process to understand the key drivers of changes in such metric(s) (particularly if there is a material difference between actual and planned outcomes), so as to facilitate better risk

[15] This includes cases where the bank chooses to source its data from data vendors, where the reasonableness of any assumptions or proxies used by the vendor in deriving missing datapoints should be recognised, assessed and considered in decision-making where material.

[16] Potential metrics (and associated targets) that banks may voluntarily choose to utilise could include: portfolio financed emissions with associated portfolio decarbonisation targets across specific dates, sector-level policies (which could factor in jurisdictional, regional and/or global sectoral transition pathways) or proportion of portfolio exposed to specific physical hazards.

identification and management; and

e) Review all relevant risk metric(s) periodically for continued relevance given the evolving nature and understanding of climate change.

3.13 **The bank should consider the impact of any targets set or lack thereof on the bank's business strategy and risk profile, with residual risks identified and addressed**. For instance, it could include establishing appropriate governance guardrails and risk management processes for risks arising from short-term deviations from such targets. Where a bank has published decarbonisation targets across the short-, medium- and long-term for their loan portfolio, it should consider:

a) Clearly identifying and calibrating the customer segments in scope by considering their financed emissions[17] profiles at the appropriate granularity;

b) Taking a multi-year perspective by supplementing[18] point-in-time financed emissions data with additional information on possible future financed emissions[19] where relevant. This is because short-term fluctuations in financed emissions may not be inconsistent with longer-term reductions;

c) Assessing whether the targets set could impact the bank in other ways, such as by changing its overall risk profile from a geographical/industry diversification perspective; and

d) Regularly review targets set for continued relevance considering relevant developments[20] at the global, regional and jurisdictional level.

Implementation strategy (people, processes, systems)

3.14 **The bank should equip its staff, including through capacity building and training, with adequate expertise to assess, manage and monitor climate-related risks in a rigorous, timely and efficient manner**. The bank should develop staff capability to effectively engage customers on developing

[17] Gross, rather than net, metrics should be used to distinguish the effects of carbon credits.
[18] Point-in-time emissions data would not capture future reductions in financed emissions (e.g. a multi-year investment to install carbon abatement technology).
[19] Usage of such projected future emissions should recognise their inherent uncertainty of materialisation, and be premised on the willingness and capability of customers' ability to follow through with their plans.
[20] Future climate policy and technological changes may result in the evolution of jurisdictional, regional and/or global transition pathways over time. This could have consequent impact on the business models and risk profiles of banks' customers. Banks should factor in such developments when assessing the impact to their exposures from these customers.

a credible strategy as a response to climate-related risks. Where relevant, the bank can consider using customer engagement toolkits (such as analytical tools or customer assessment templates) to facilitate consistent engagement processes by its staff.

3.15 **The bank should regularly review its internal governance and processes, including its risk management framework, to manage climate-related risks in a systematic manner.** Scalable and consistent processes will allow the bank to cascade and implement its climate-related risk strategy and plans effectively. This could include alignment of existing products, services and business activities with the bank's strategy, as well as embedding of strategic climate considerations in decision-making processes.

3.16 **The bank should develop and implement a data strategy to build, maintain and analyse relevant climate-related data to support effective decision-making**. Relevant climate-related data could include information to enable tracking of the bank's commitments, transition and physical risks, mitigating factors (e.g. status and adequacy of customers' plans to address risks), sector analysis to identify changes in business operating environment as well as information on other climate-related risks impacting its portfolio. System(s) should be in place to reliably collect, aggregate, and enable accessibility of relevant climate-related data across the banking group as part of the overall data governance and IT infrastructure. The bank should have appropriate mechanisms in place to facilitate improvement of data-related processes over time, including the identification of new-to-bank relevant datapoints and data sources, data collection processes as well as participation in and support of emerging developments of technological solutions[21]. As data availability and quality are expected to improve over time, banks should build systems and processes that will be able to accommodate future enhancements (e.g. inclusion of new datapoints or additional granularity).

[21] This may include, but are not limited to, utilising data obtained from customers' disclosures when made available over time and supporting industry initiatives to harmonise data.