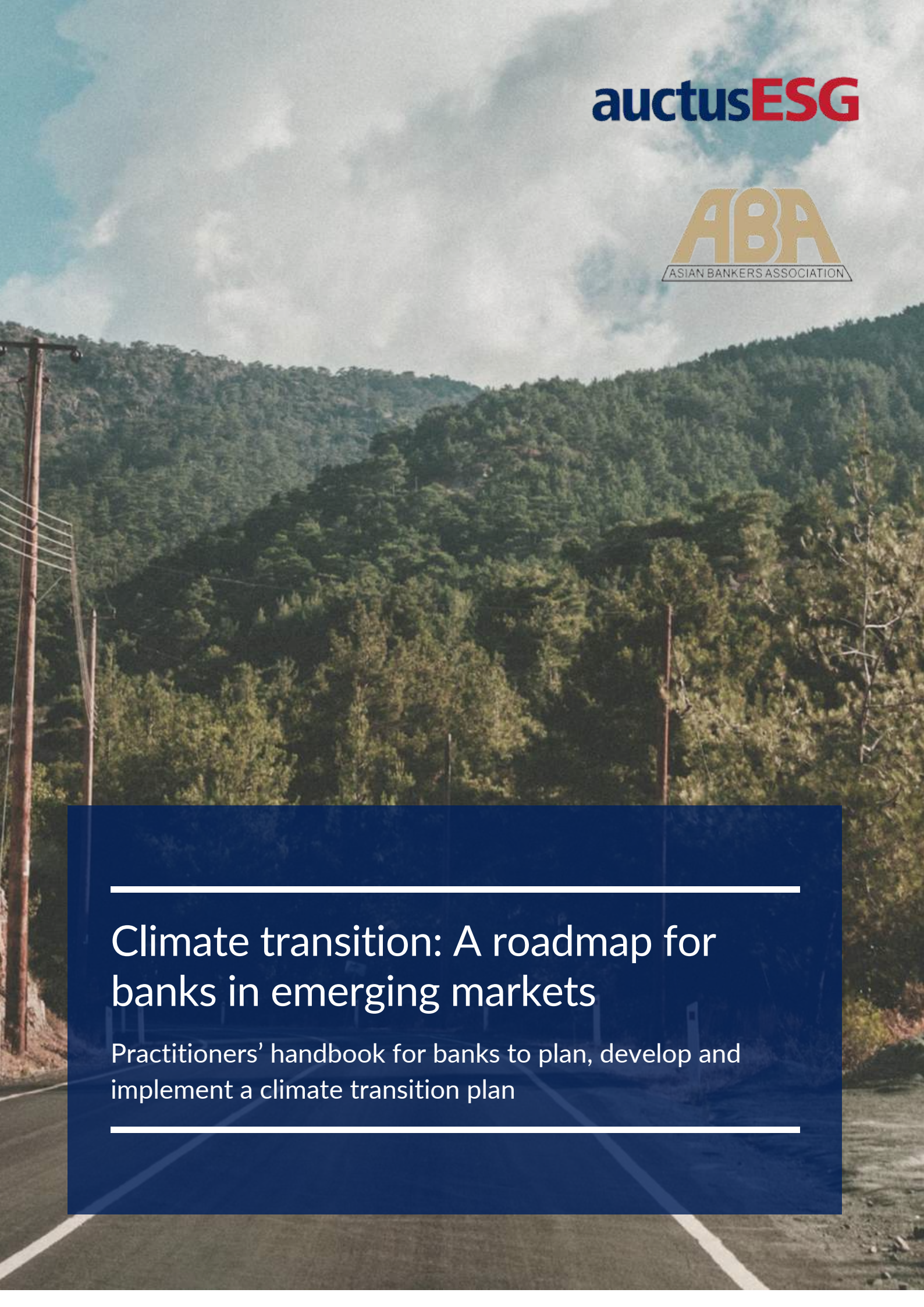

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Climate transition: A roadmap for banks in emerging markets

Practitioners' handbook for banks to plan, develop and implement a climate transition plan

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A Google survey link was also shared with bankers. Respondents opted for anonymity:

- Commercial banks: One each from Taiwan, Malaysia, Bangladesh, and Mongolia, and four from India
- Development financial institutions: One each from South Africa and India
- NBFC: One from Bangladesh

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List of acronyms

BD	Business Development
BFSI	Banking, Financial Services and Insurance
CAM	Credit Appraisal Memorandum
CBAM	Carbon Border Adjustment Mechanism
COSO	Committee of Sponsoring Organisations
C-15	Category 15 (Scope 3)
DFI	Development Financial Institution
EMDEs	Emerging and Developing Economies
ERM	Enterprise Risk Management
ESG	Environmental, Social and Governance
EU	European Union
EV	Electric Vehicle
FI	Financial Institutions
GCM	Global Climate Models
GFANZ	Glasgow Financial Alliance for Net Zero
GHG	Greenhouse Gas
HTM	Held Till Maturity
IEA	International Energy Agency
ICR	Interest Coverage Ratio
IR	Investor Relations
JT	Just Transition
KPI	Key Performance Indicator
LTIP	Long-term Incentive Plans
MDB	Multilateral Development Bank
M&E	Monitoring and Evaluation
MIS	Management Information Systems
NDB	National Development Bank
NDC	Nationally Determined Contributions
NGFS	Network for Greening the Financial System
NIM	Net Interest Margin
NPA	Non-Performing Loan
OECD	Organisation for Economic Co-operation and Development
PCAF	Partnership for Carbon Accounting Financials
PPM	Parts per Million
RAF	Risk Appetite Framework
RAS	Risk Appetite Statement
REC	Renewable Energy Certificates
RM	Relationship Manager
RWA	Risk-Weighted Assets
SASB	Sustainability Accounting Standards Board
SDG	Sustainable Development Goals
SIB	Systematically Important Banks

SME	Small and Medium Enterprise
SOP	Standard Operating Process
STIP	Short-term Incentive Plans
TCFD	Task Force on Climate-Related Financial Disclosures
TPT	Transition Plan Taskforce
VaR	Value at Risk

Executive Summary

The accelerating pace of climate change poses significant risks for businesses worldwide, due to potential damage or stranding of assets, and disruptions to business continuity, supply chain and distribution networks, and worker productivity. As businesses are negatively impacted, the banks that lend to those businesses face consequential impacts. With issues like resource depletion, pollution, nature and biodiversity loss, income inequality, and worker informalisation rising, their inter-relationship with the environment and social dimensions of climate change implies businesses and banks urgently need to put in place system-wide responses.

In this context, this report presents a detailed guidance framework to help banks in emerging and developing countries (EMDEs) plan, develop, and implement a holistic climate transition strategy. While banks in these markets are at varying stages of their socio-economic development journey, most are in the nascent phase of their climate transition journey. This document aims to serve as a practical roadmap for banks outlining activities and considerations for navigating this critical undertaking. While the main target audience of the report are banks and financial institutions, even regulators, policymakers, industry associations and corporate borrowers may find the report useful to advocate, frame and implement enabling policies.

The report is structured across five key sections that address the various dimensions of climate transition planning and implementation. These include:

I: Aspiration
Setting the aspiration for banks helps set the tone for banks' climate transition journey. These series of steps involve a critical assessment of the landscape, including an evaluation of the policy and regulatory trends, key sectors exposed to climate risks and banks' own business objectives. Banks then need to engage with relevant stakeholders, especially borrowers, for feedback and identify the high-impact sectors for transition contextual to its business model. That may create a compelling business case to secure buy-in from their Board and C-suite, by showcasing the protection of NIMs and margins despite the shifts in portfolio composition and financing flows. Additionally, it is critical to assess the tools, methodologies, data sources and internal capabilities available to support planning and implementation of climate transition activities. This would allow banks to align their climate ambition with the practical realities of execution.

Together, these foundational steps ensure banks' climate transition strategy is firmly grounded in their unique context, has the full commitment of leadership, and is supported by the necessary resources and capabilities to drive meaningful change.

II: Initiatives
Understanding the process of transitioning from a carbon-intensive to a low-carbon model is critical to achieve a meaningful transition. These steps involve measuring and managing climate risks, setting science-based targets, integrating climate considerations across banks' operations and engaging with clients on their transition plans.

Key activities would include baseline assessments, quantifying climate risks, setting time-bound and science-based targets and integrating climate risk management into credit underwriting processes and the overall business strategy. Accelerating innovative financial instruments, such as sustainability-linked loans, also play a significant role in incentivising banks' borrowers to achieve emission reduction targets, thereby reducing financed emissions for banks.

Additionally, there is a need to undertake a comprehensive approach, addressing the transformative changes in banks' business strategy, risk management, internal controls, governance as well as the overall culture. Further, the importance of aligning the transition plan with a bank's country's Nationally Determined Contributions and net zero goals is critical to its effectiveness. That said, balancing business growth and climate priorities in EMDEs is crucial.

III: Evaluation

A significant dimension of transition planning involves tracking progress and periodic assessments for effective implementation of activities, as well as opportunities to course-correct the overall strategy. These steps establish a comprehensive set of metrics to monitor progress, establishing emissions-related targets, as well as other resource efficiency and ecosystem impact indicators. These are intended to optimise resource allocation and demonstrate tangible progress to stakeholders.

Such metrics need to evolve from an initial focus on emissions intensity, to eventually emphasise absolute emissions reduction over time. Importantly, the monitoring of emissions needs to expand beyond banks' own operations to include financed emissions, despite the data gaps and challenges involved.

Further, it is key to establish appropriate review cycles including long-term strategic reviews and more frequent operational reviews. Long-term strategic reviews may involve recalibration of the baseline and targets based on evolving climate science and regulation, whereas shorter-term reviews need to assess the progress of implementation against pre-defined milestones. Additionally, such reviews need to be aligned with banks' data systems, policies and organisational capabilities, which requires investing in enhanced data management, integrating climate considerations into risk management frameworks, and building internal capacities.

IV: Responsibility

Establishing robust organisation structures and accountability mechanisms helps drive banks' climate transition agenda. There is a need to support banks' climate targets and ambitions with clear governance frameworks, with dedicated board-level oversight and cross-functional committees responsible for developing, implementing and monitoring the transition plan. Establishing clear roles, responsibilities, and reporting lines ensures accountability and enables seamless coordination between different departments involved in the transition journey.

Further, alignment of executive remuneration structures with climate-related key performance indicators (KPIs) is critical to incentivise key personnel for the short and long-term to drive strategically aligned decisions. Additionally, there is a need to cultivate an organisational

culture that fully embraces climate transition as a mainstream business priority. This requires substantial capacity building, equipping strategic and operational managers with necessary skills and knowledge.

V: Engagement

Finally, engagement with external stakeholders, who may support and enable banks' climate transition is critical. Proactive engagement with regulators, borrowers and the capital market community could advance banks' capacity to achieve the goals they set.

On the regulatory front, banks need to actively participate in policy consultations and advocate for clear, unambiguous guidelines that create a level playing and standardised field.

Engaging with borrowers is a key pillar, as the effectiveness of a bank's transition plan is directly linked to the alignment with its clients' decarbonisation strategies. There is a need to prioritise, assess, and guide high-emitting customers on their transition journeys, providing support where capacity and resources are limited.

Recognising the investment mindsets prevalent in EMDE capital markets, banks need to proactively engage with brokerage analysts and fund managers that cover them. This aims to shift their focus from viewing climate action as merely a cost, to understanding its strategic implications of climate risk and opportunity on the bank's long-term financial performance and valuation.

Banks need to engage with the scientific and academic community to develop contextual climate data, models, and analyses tailored to local realities.

All in all, this comprehensive report provides a detailed guidance framework that may serve as a practical roadmap for banks in EMDEs as they navigate the complex and rapidly evolving landscape of climate risks and transition. By addressing the unique challenges and contextual considerations faced by these institutions, the report aims to empower them to develop and implement effective climate transition strategies, ultimately contributing to the broader goal of a low-carbon future.

1 | CLIMATE TRANSITION

This section highlights some of the key issues and considerations that financial institutions (FIs), especially banks, need to be mindful of, before embarking on their climate transition journey.

Context

The pace of climate change is accelerating. 5 of the top 10 global risks expected in the coming decade relate to climate and environment, according to World Economic Forum, 2024. 2023 was the hottest year on record globally (EU Copernicus, 2024), with June 2024 being the warmest month yet (Masters and Henson, 2024). Atmospheric carbon has grown by over 2 parts per million annually since the last 12 years in a row (Lindsey, 2024).

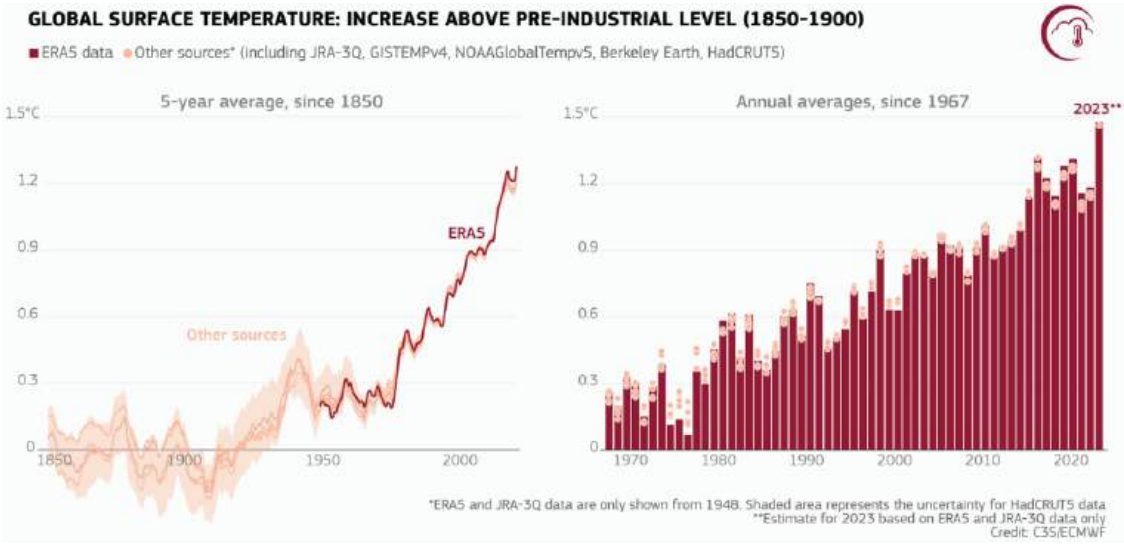

Figure 1: Growth in annual warming levels: The recent decade has been the hottest on record
Source: EU Copernicus, 2024

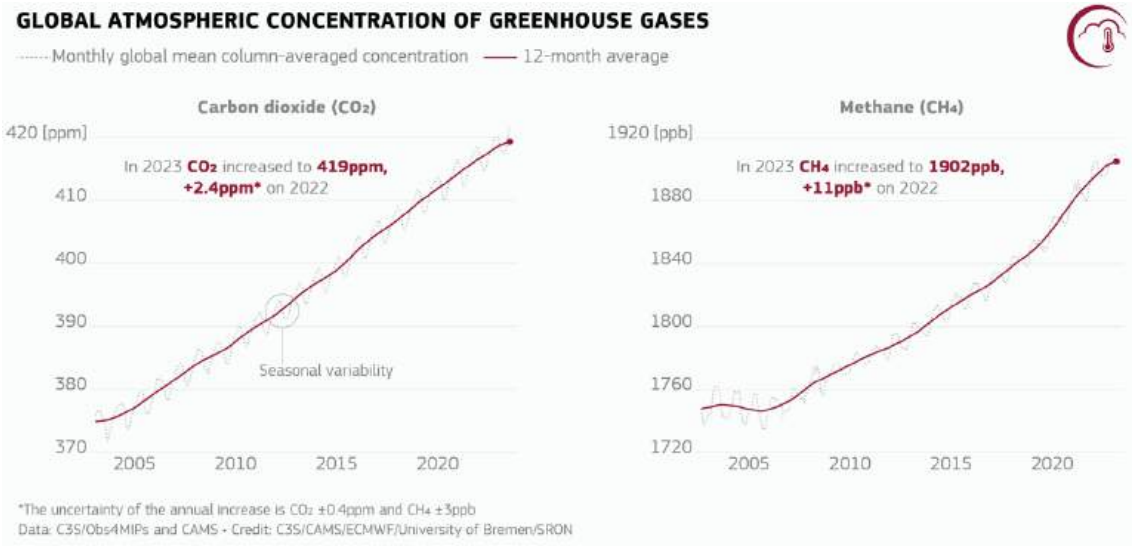

Figure 2: Growth in atmospheric carbon has increased significantly in recent years
Source: Lindsey, 2024 and Luthi et al., 2008 (NOAA Climate.gov)

These indicate that physical risks from climate change are worsening, translating into increased probability of transition risks because of large-scale transformative efforts that are urgently

needed to tackle the consequences of the climate crises. These transition risks may emanate from potential changes in policy and regulations, technology developments and market demand. These would be specific to jurisdictions, and impact sectors and products, depending on the nature of policies, technologies or markets involved.

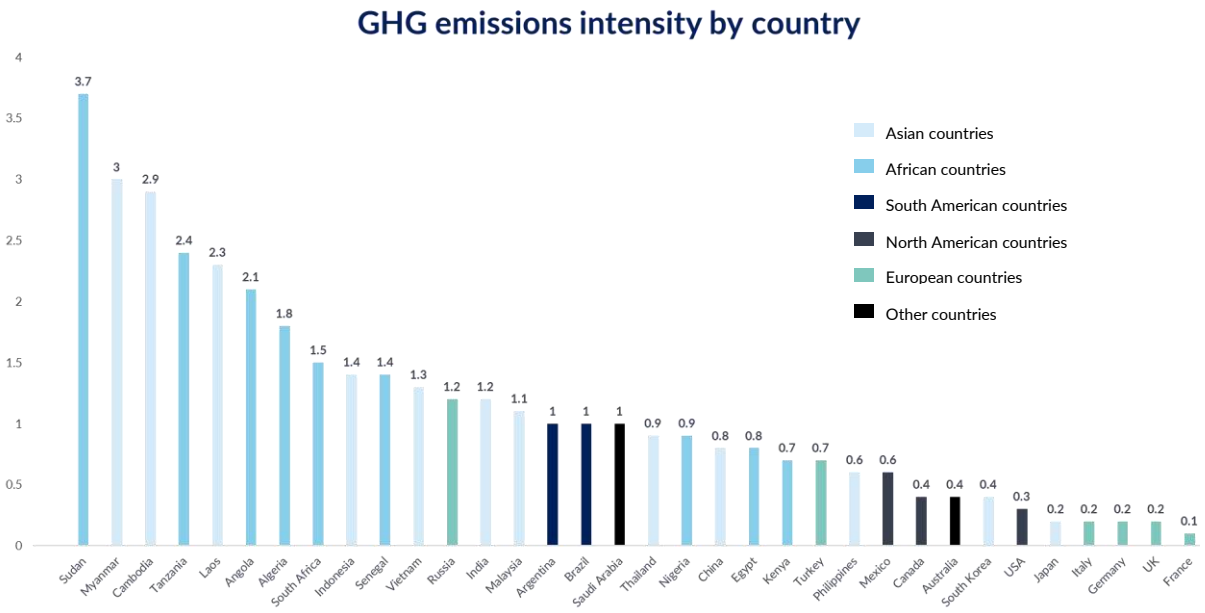

Figure 3: Ratio of GHG emission to GDP intensity in select countries, as of 2021
Source: IMF and ClimateWatch Data, 2024 (GHG in billion TCO2e and GDP in US $trillion)

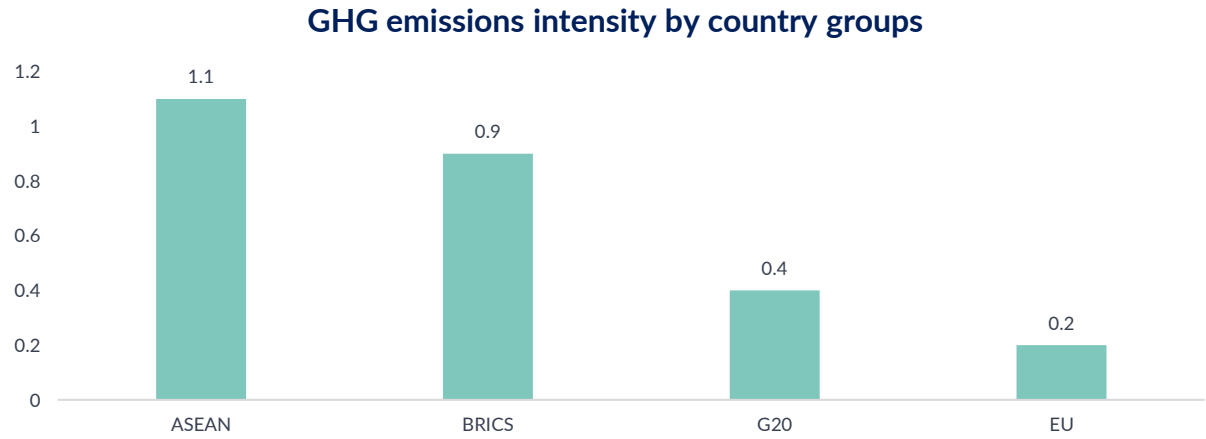

Figure 4: Ratio of GHG emission to GDP intensity in select regions, as of 2021
Source: IMF and ClimateWatch Data, 2024 (GHG in billion TCO2e and GDP in US $trillion)

This risk is higher in emerging and developing countries (EMDEs) as these mostly rank high in climate vulnerability (Eckstein, et al., 2021). Moreover, with mega-trends like resource depletion, pollution, biodiversity loss, income inequality and informalization of labour worsening each year, a system-wide response is much needed.

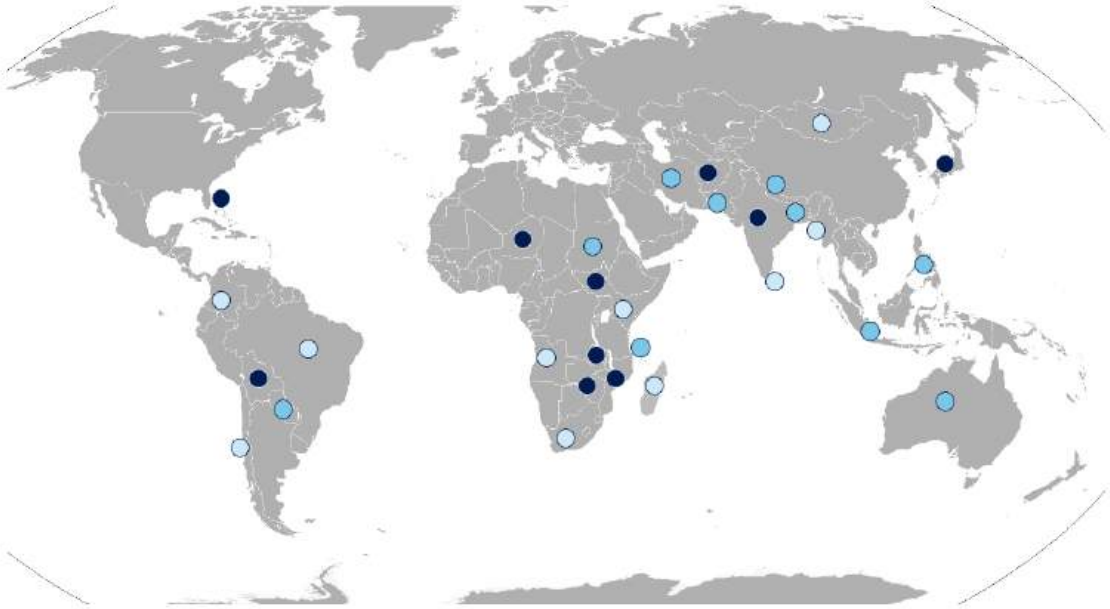

Figure 5: Top-30 ranked countries as per climate risk index values (as of 2019)
Source: Eckstein, et al., 2021 (GermanWach Climate Risk Index)

With nations committing to the Nationally Determined Contributions (NDCs) and net zero goals, there is a policy direction to the scale of emissions reduction each economy needs. Such goals serve as an anchor, though the lack of a detailed transition plan by governments remains a policy constraint. Nevertheless, regulators are aligning with the NDCs and spelling out guidelines for firms in their jurisdictions and sectors. Even where regulations do not yet mandate this, frontrunning firms have voluntarily started to align with climate goals, not only from a risk management perspective, but also to capture the opportunities that climate change poses, and thereby drive market-share, competitive positioning, and brand reputation. Despite the challenges that EMDEs face with climate transition, the report emphasises the opportunity that countries face from a business perspective, by better managing emerging risks related to climate change.

Country	Net zero target	Key NDCs
India	2070	○ 45% reduction in emission intensity of GDP by 2030 vs 2005 levels ○ 50% of cumulative electric power installed capacity to be non-fossil fuel-based by 2030 ○ 2.5 to 3 billion tonnes of CO2e carbon sink to be created by 2030
China	2060	○ Over 65% reduction in carbon emission intensity by 2030 vs 2005 level ○ 6 billion cubic meters of additional forest stock volume in 2030 from the 2005 level
Bangladesh	-	○ 7% reduction in emissions by 2030 (unconditional), and an additional 15% conditional
Indonesia	2060	○ 32% reduction in emissions by 2030 (unconditional), and by 43% (conditional)
Malaysia	2050	○ 45% reduction in carbon intensity by 2030 (unconditional) compared to 2005 levels
Philippines		○ 75% reduction in emissions by 2030 vs. 2000 levels, of which 3% is unconditional
UAE	2050	○ 19% reduction in emissions by 2030, as compared to 2019 levels
Brazil	2050	○ Reduce GHG emissions of 1.32 GtCO2e, with a reduction of 53% by 2030 vs. 2005 levels
Mexico	-	○ 35% reduction in emissions by 2030 (unconditional), and by 40% (conditional) ○ 51% reduction in black carbon emissions by 51% by 2030 (unconditional), 70% (conditional)
Kenya	-	○ 32% reduction in emissions by 2030
Nigeria	2060	○ 20% reduction in emissions by 2030 (unconditional), and by 47% (conditional)
South Africa	2050	○ Reduce GHG emissions to 398-510 MtCO2e by 2025, and to 350-420 MtCO2e by 2030

Table 1: NDCs in select emerging markets
Source: Climate Watch data and NDC documents

Figure 6: Key drivers of climate transition
Source: Internal markets

In short, pressure from regulators, investors and rating agencies, as well as voluntary action, are making banks look towards climate risk management and transition planning.

Decoding transition

It is necessary to decode the term, climate transition. From a business perspective, climate transition is one of the largest change management exercises that firms face. In essence, it refers to the process of shifting the business model from a carbon-intensive one, or brown sectors, to a low-carbon model, or green sectors, in a journey that may pass through shades of brown and green. Since this report focuses on banks that lend to businesses, transition would imply transitioning of the bank's portfolio and operations accordingly.

CDP defines climate transition plan as a tool that demonstrates to capital markets and stakeholders that a firm is committed to achieving a 1.5°C pathway and make its business model relevant and profitable in a net zero economy. It aligns the firm's strategy with the latest climate science and is a time-bound action plan that demonstrates how it would shift its assets, operations, and business model towards the latest climate science recommendations.

The US Environmental Protection Agency adds climate transition plans may need to outline the means to engage with a firm's value chain, industry, government, public sector, and customers. The value chain engagement strategy may need to describe how the firm would encourage stakeholders to transition to a low carbon economy.

Climate transition aligns closely with processes of measuring and managing climate risks. Climate transition covers transformative changes within the bank, including in its business strategy, operational processes, procurement, production and distribution, risk management, internal controls, governance and culture, people development, progress-tracking, and reporting. Aggregating such firm-wide changes across an economy, would result in the entire country transitioning towards a low-carbon model and move closer to its NDCs.

This transition is enabled by climate-aligned policy and regulatory changes, climate-smart behaviour by market players, climate-friendly technologies, and climate-responsible consumption patterns. If such changes are not done, they may pose transition risks to business-as-usual models, which then translate into financial risks for the providers of capital. Businesses and FIs are increasingly being pushed to plan, develop, and implement climate transition plans to manage climate risk, reduce exposure to carbon-intensive sectors, capitalize on emerging low-carbon opportunities and contribute towards their country's net zero goals.

The role of financial institutions

Unlike physical risks from climate change which generally impact the broader economy or geography, transition risks from climate change impacts are experienced at the level of sectors, products, and firms. This is due to the fact that as efforts intensify towards the net zero and NDC goals, national regulations are consequently evolving to facilitate that transition. These are typically sector-specific, increasing the probability of stranded assets in specific sectors, products, or firms. The European Union's Carbon Border Adjustment Mechanism (CBAM) may result in countries that export to the EU amending their local regulations, creating a transition risk for incumbent businesses. Transition risk may also occur due to technological innovations and changes in demand patterns, which may again impact specific sectors, products, or firms.

Capital providers for such firms, such as banks and investors are also exposed to climate risks as a result of micro- and macro-transmission channels that lead to climate shock events. Given that these shocks impact economic indicators, the underlying businesses' performance and ultimately, the FI's financial portfolio, FIs need to manage climate risk and engage in climate transition as well. Aside from being exposed to that risk due to their credit and investment exposures, any climate shock event may dry up future credit or investment extended to such sectors, creating a double whammy.

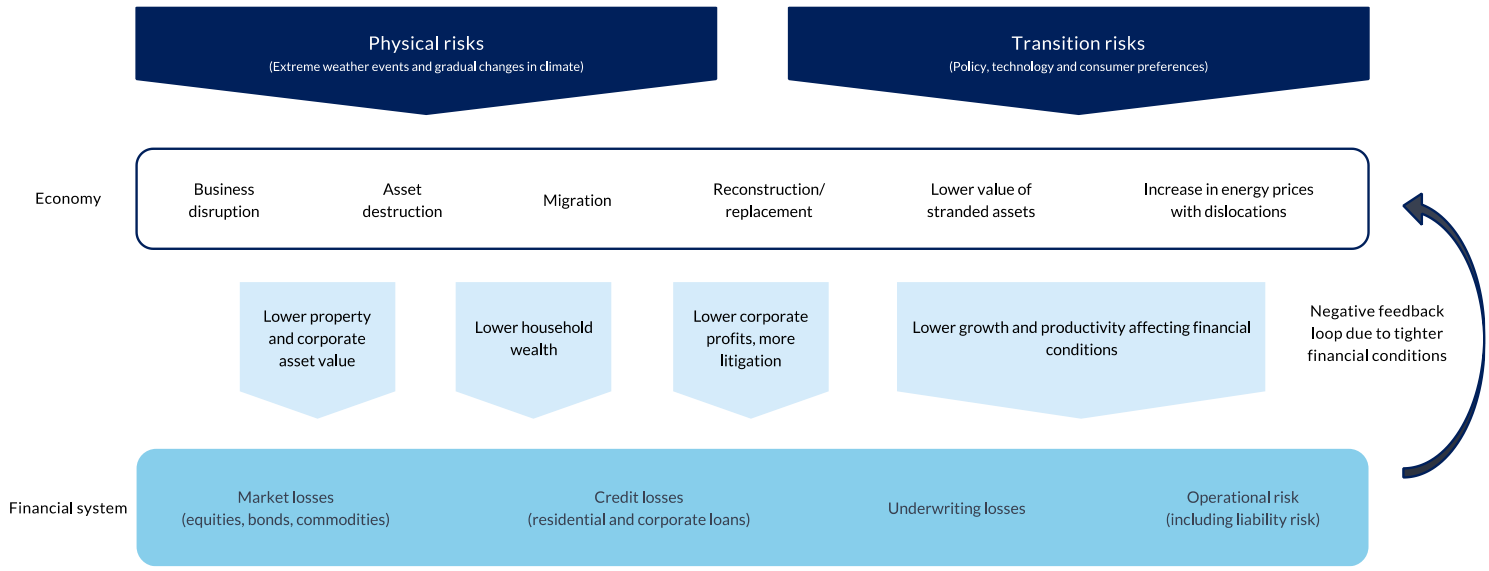

Figure 7: Impact of climate risks on the financial system
Source: IMF

Further, Systematically Important Banks (SIBs) need to take a leadership role in managing climate risks to maintain macro-level stability, given their significant share of financial assets within EMDEs as compared to institutional investors. Banks need to start by assigning roles and responsibilities to specific team members dedicated to managing this activity. Even where sustainability or climate, activities are being undertaken, these efforts need to go beyond operating in isolation. Instead, banks need to sensitise mainstream personnel to fully embed such considerations in core business functions to prevent climate-related workstreams from being siloed. Availability, access, and affordability of data, lack of internal capacity, and paucity of bankable green and transition projects, are the key constraints EMDE-based banks face in this context.

Banks may also engage in climate transition to leverage opportunities. These may involve decarbonisation operations and supply chain activities, low-emission technologies in existing and new sectors, amongst others. Enabling this may require new product development in retail and commercial assets, new avenues to raise liabilities, integrate climate criteria within risk management and credit underwriting, and adopting appropriate disclosures for progress tracking.

Adjusting for costs of externalities and climate action

Managing climate risks and transition may require banks, as well as capital market players, to use ESG integration approaches to demonstrate the impact of costs related to negative externalities and climate action. The idea is to price such externalities in the long-term fair value and cash flows, based on the probability of transition risks like potential changes in regulations, and so on.

A before-and-after representation of the financial projections of borrowers, after adjusting for such costs, offers a clearer image of where they stack against the banks' acceptable interest coverage ratio (ICR) and risk appetite. This is an important dimension of investment approaches to be mindful of, given that the investment mindset in most EMDEs suffers from short-termism. That would result in sell-off reactions from investors in case near-term profits of that bank were to be affected, which would occur due to climate costs, thus acting as a reason for the bank's boards to avoid climate action. Such an adjustment may reduce the downside risk of sell offs. Conversely, accounting for externalities may nudge investors to take a longer-term view.

Creating incentives

At the same time, since detailed regulations in most EMDEs are still evolving, there is resistance by banks to avoid any potential short-term negative impact of climate transition on the existing business model. Moreover, banking is a business where policies and strategies are typically led from the top. Since climate transition is a part of business strategies and policies, climate-related key performance indicators (KPIs) need to be included in the incentive structures of executive remuneration, be it in short-term incentive plans (STIP) or long-term incentive plans (LTIP).

Most decarbonisation strategies involve long-gestation to show outcomes, which necessitates its inclusion in LTIPs rather than only in STIPs. That would also ensure the board and C-suite take decisions that protect value for shareholders in the long-run even after their tenure ends. This would be discussed in the later section on responsibility and governance.

Balancing business growth and climate action

Each country's context is different, and so transition would need to be context specific. There is a need to assess a country's growth and development aspirations, identify resources and enablers required to achieve that vision, and then overlay this analysis with potential climate impacts. Most EMDEs prioritise rapid economic growth to generate jobs for their population, improve per capita income and enhance socio-economic development. Doing so requires increased access to credit. Thus, an early concern that banks in EMDEs often face is the potential short-term loss of business from incumbent sectors, and the need to strike a balance between loan book growth and climate action. This is especially the case where unambiguous regulations, climate science, affordability and commercialisation of alternate technologies are still evolving, and the pipeline and bankability of alternate investments is not quite robust.

Further, most EMDEs have established entire ecosystems around incumbent sectors. An example is the auto ancillary industry that accompanies the auto manufacturing players. That

sunk investment needs to complete its full economic life and be recovered, before incurring new investments. Dependence of the economic mix of some countries on one, or few, sectors also implies that Just Transition is a more complex issue in EMDEs than in developed markets, where the economic mix is more diversified, offering better scope to absorb the retrenched workforce.

CASE STUDY: ISLAMIC DEVELOPMENT BANK'S JUST TRANSITION CONCEPTUAL FRAMEWORK

In relation to the MDB Just Transition High-Level Principles released in 2021, IsDB's Just Transition Conceptual Framework and Action Plan 2023-25 is aimed at helping the 57 member countries (MC) reach their just transition ambitions.

- IsDB's work on just transition is country-driven
- The framework is aligned with multiple internal (IsDB Organisational Strategy, Climate Change Policy and Climate Action Plan, sector –specific policies) and external (UNFCCC, COPs, Paris Goals, MC commitments, and MDB high-level principles) drivers
- Given the MCs' unique specificities, the framework is designed to cater to different MC considerations such as fragile or conflict-affected states, low-income or least developed states, most climate vulnerable, most carbon-intensive, poor infrastructure or services, etc.
- The framework is centred around 2 pillars
    - The 'just' pillar is people-centric and focuses on inclusive human development. Focus areas include social protection, worker rights, and marginalised communities
    - The 'transition' pillar emphasizes on green, resilient and sustainable infrastructure and services
- The IsDB's conceptual framework has in-built enablers to support MCs in embedding just transition objectives
    - Advocacy, capacity building, and knowledge support to build and support evidence-based actions
    - Partnerships to draw upon specialised skills to deliver upon their ambitions
    - Mobilisation of private and public financing in response to specific MC demands
    - Integration of just transition objectives into existing business processes and systems

Being the world's largest south-south institution and the leading Islamic finance institution, the alignment of south-south and Islamic financing principles with the JT agenda is critical.

Case Study 1: Just Transition conceptual framework developed by Islamic Development Bank
Source: Report on Just Transition Conceptual Framework and Action Plan 2023-2025

This is apart from the challenge that EMDEs face to mobilise finance towards reskilling of such retrenched workforce. It is also not necessary that the closure of a coal plant and the opening of a clean energy plant happens at the same time or in the same place, making it tougher to manage part of the cost of Just Transition from the clean energy investment. Even if an escrow account is created to track funds from the clean energy investment and hold it until the coal plant shuts down, the question arises who would hold authority to manage that. Further,

round-the-clock (RTC) bids in markets like India may use coal as the base load when renewable is still not widely available, implying investment in coal for ramp up or down.

Nevertheless, despite all the obvious challenges that lead to businesses and banks to push back on climate risk and net zero transition management, the emphasis of the report is on the pool of opportunity that climate transition may unlock, thereby creating scope for businesses and banks in EMDEs to grab market share and incremental profitability ahead of market peers. It is important to be mindful of this perspective in the long term, and not let short term challenges colour the decisions and actions to start off the process of climate transition planning.

Towards this, it is important the policy ecosystem in the country prioritises green investment policies so that such sectors grow in investment volume and push incumbent technologies into natural irrelevance. While this may take time, it may also reduce financial sector resistance towards climate transition.

The role of regulators and other stakeholders

To enable banks to realize the latent opportunity that climate transition poses, concerted efforts from key stakeholders like regulators, borrowers, capital market analysts and scientific community are also required to create a climate-smart banking sector.

Since banking is mostly compliance-driven, there is a significant reliance on regulators to provide enabling policy frameworks and regulations. That said, several regulators across EMDEs have released climate-related guidelines and frameworks, which has acted as an indication of regulators priorities. However, such guidelines and regulations need to be mindful of certain aspects in the context of EMDEs that lack resources and capacity for climate transition.

First, since the financial sector is essentially regulation-driven, it is crucial to prioritise climate-related guidelines that lay out clear, unified definitions outlining specific requirements, and detaili how they might be implemented. Open-ended guidelines that place the onus on institutions to interpret regulations at their discretion, may risk the credibility and comparability of disclosed data. Such lack of clarity could also create a reputational risk for banks if disclosed data has to be revised due to differing interpretive approaches taken across the industry. Additionally, bank boards, who need to approve associated costs, may opt out of approving holistic and strategic climate action plans, due to concerns over high costs. This may further cause banks to resort to cosmetic, superficial steps tick-box exercises as a compromise. This dynamic becomes even more critical in EMDEs, where many businesses operate on a high-volume and low-cost model, further complicating the challenge of securing board-level approvals.

Next, inter-regulatory collaboration is as important as regulation itself. For example, estimating financed emissions in banks' portfolio (C-15 of Scope 3) involves tracking borrowers' emissions data. The literature recommends that sourcing emissions data directly reported by counterparties is the best way to ensure good quality data. However, this is more complicated to do in practice. This is because banking regulators recommending emissions estimation for

banks, do not oversee large corporates and SMEs. Thus, the respective regulators of corporates also need to mandate this. At the same time, this need not just be restricted to large, listed entities, but also to other corporates. That is because while corporate-level disclosures are mandated in some jurisdictions for the large, listed players, firms outside this universe also comprise a fair share in banking portfolios. The need for regulatory collaboration may also need to grant private sector banks access to government-operated weather and climate databases, which most currently do not enjoy. There are instances in EMDEs where the regulator has taken up the role of strategic partner to enable data access and its industry association is developing an open-access web-based tool for emissions data.

Third, regulations need to ensure uniformity in assessment standards, models, data, and methodologies. For example, in Taiwan, banks and the regulator engaged in group discussions to arrive at uniform definitions of risk levels to be assumed in the climate scenario exercise. Similarly, the regulator recommended banks use PCAF for estimating financed emissions so that banks could take advantage of PCAF's emission database, though it was not mandated. Using imported and non-context specific data on emission factors poses a significant challenge for banks. For instance, using European emission factor data in tropical EMDEs may not be appropriate given heating comprises a large share of fuel consumption in western countries, which may over-inflate assumptions being made in EMDEs. However, without country/context-specific data, which often involves engagement with government agencies and research institutes with whom banks have no remit, calculating financed emissions remains a challenge. This necessitates greater regulatory attention and a push to create a common repository or public data utility that would serve financial institutions in transitioning.

Lastly, a lack of specialist resources locally to assist banks with climate transition may often result in hiring foreign consultants and resources. In such cases, the regulator needs to ensure seamless foreign exchange rules to allow such transactions and convertibility, since foreign currency convertibility is a severe constraint faced in some EMDEs. Another constraint is the limited access that agile mid-sized private sector banks have to Technical Assistance funds from multilateral and bilateral agencies, which otherwise goes to large state-owned FIs.

Regulator apart, even capital market players like brokerage analysts and fund managers that analyse listed banking stocks have a critical role to play in banks' transition journeys. Currently, equity brokerage analysts, in most cases, do not look at what climate alignment means in the financial projections of the banking stocks they cover, especially in the long term. This is despite investors referring to such reports or these analysts being trained to conduct such financial simulations. There is a need for such analysts to understand climate risks, price it in the fair value of banks, and make sensitivity-based simulation tables of the fair value projections, to ensure investors take more informed decisions. Given that investment horizons in most EMDEs tend to be oriented towards the short-term, regulatory intervention is crucial to transform the investment mindset in EMDEs in order to meaningfully adopt a long-term perspective. Regulatory effort on reducing country-level risks and volatility, as well as broadening the base of patient, long-term investors in these markets is critical to transition.

2 | THE REPORT

Objective and methodology

This report aims to provide a detailed guidance framework for banks in EMDEs to plan, develop and implement a climate transition strategy.

While banks in EMDEs are in varying stages of their transition journey, with most transition work currently in its nascency, this document may act as a roadmap outlining the key activities and considerations that banks may need to be mindful of as they navigate such a significant undertaking. Given that the transition journey of each bank/country is unique to its context, there is no single prescribed sequence of activities. However, this report attempts to create a sequence of actions that banks may refer to as a general guide, while acknowledging the need for contextual adoption.

Further, this report is designed with the aim to make it a practical guidance document for banks in EMDE.

The report is divided into five sections and written in a step-by-step format for easier comprehension and reference by bankers in EMDEs. Each section involves several steps and activities that banks may consider implementing.

In many cases, banks may need to pursue several steps simultaneously since they may be interconnected or require an iterative approach. This is especially in the case of the emergence of new climate science, technologies, methodologies, or regulations, which banks need to be mindful of. However, even if the specific means and sequencing vary, the overarching end-goal remains the same, making the variation in implementation paths largely immaterial.

These five sections are summarised below:

Sections	Focus
Aspiration	Understanding the drivers of climate transition and aligning the bank's business goals and climate ambition
Initiatives	The steps involved in developing a climate transition plan and the implementation aspects
Evaluation	Internal assessments of resources and capacities
Responsibility	Establishing organisational structures and mechanisms to promote transparency and accountability for performance
Engage	Engagement and collaboration with policy stakeholders, regulators and industry associations

Table 2: Key sections of the guidance roadmap
Source: Internal analysis

3 | COMPONENTS OF THE CLIMATE TRANSITON ROADMAP FOR BANKS

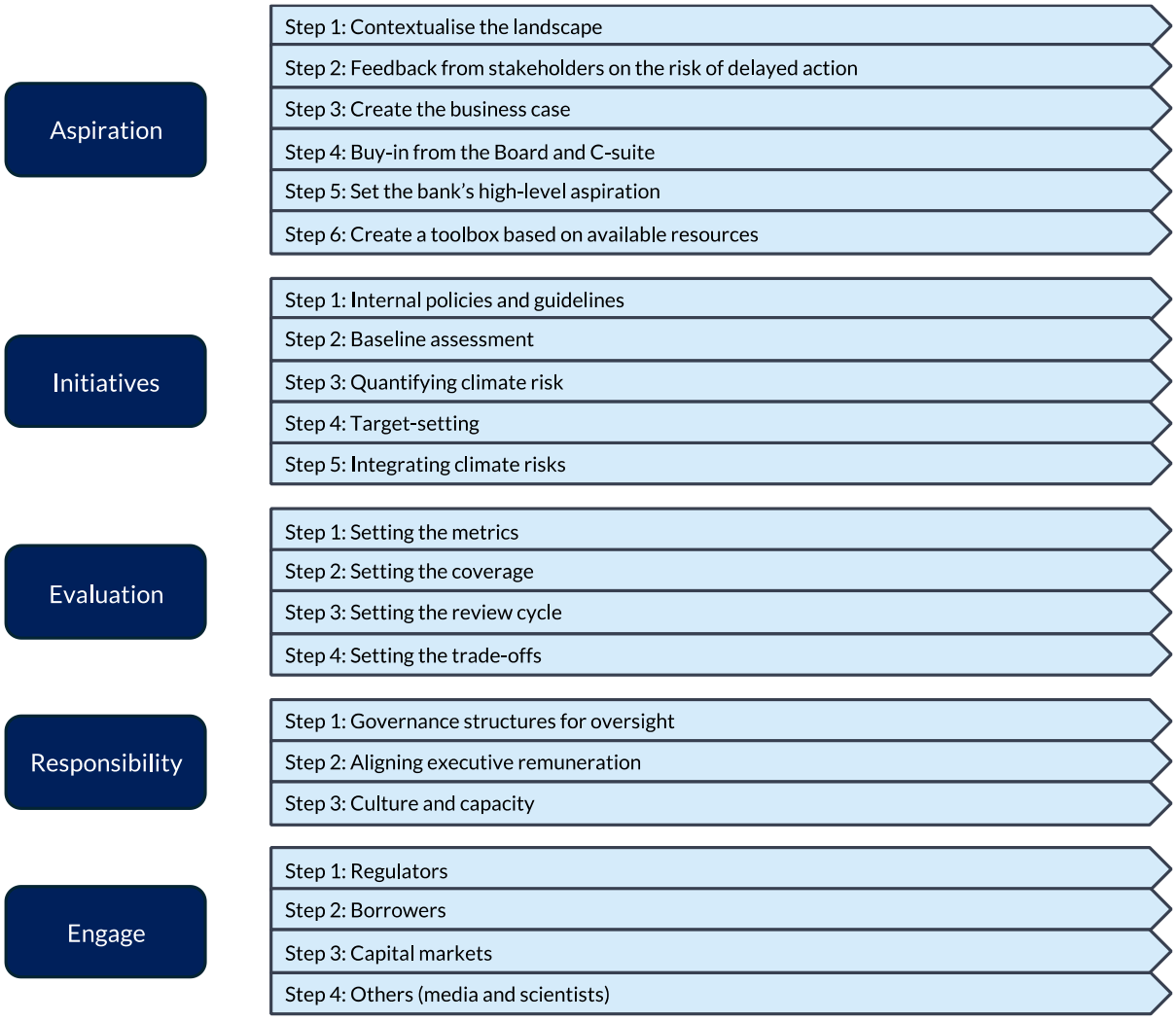

Figure 8: Summary of the components of the climate transition roadmap for banks
Source: Country documents

Aspiration

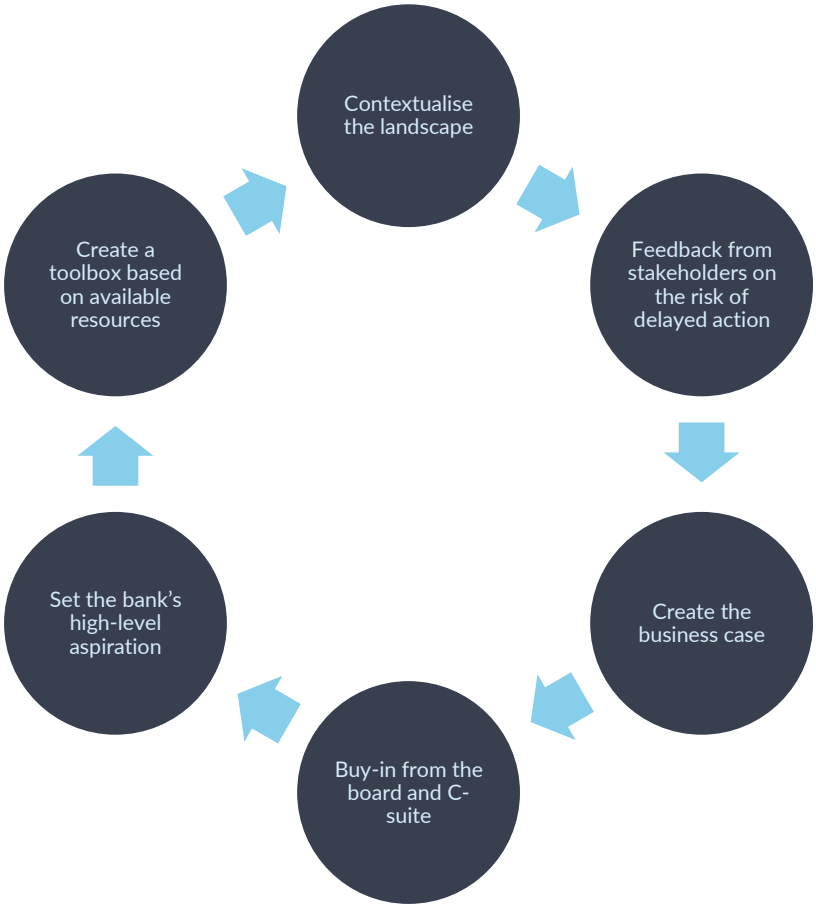

Figure 9: Aspiration-related activities
Source: Internal analysis

Step 1: Contextualise the landscape through an assessment report

There is a need to create a landscape assessment report to understand the key contextual factors, including country and bank-level insights and context. This landscape assessment may cover the following:

- Current and expected regulatory changes related to climate issues
- Economic sectors where banks have predominant exposure and of them, which sectors are most exposed to climate risks,
- Business objectives in terms of
    - Client addition,
    - Loan book sectors and acceptable risk,
    - Opportunities on the liabilities-side to raise funds from investors other than deposits,
    - Impact of ESG and climate consideration on the cost of capital, and
    - Expectations of banks' retail and institutional clients in terms of climate action, (if at all)

This landscape assessment report would enable banks to identify key drivers and motivations for their climate transition journey. This, in turn, would help banks prepare for questions by the

board before approving the management's plans to incur costs and deploy resources towards climate transition.

Step 2: Feedback from stakeholders on the risk of delayed action

Climate risk and transition is a nascent regulatory topic in most EMDEs. Even where guidelines are announced, they are relatively open-ended, allowing for delayed action by banks' leadership. However, climate change is a fast-evolving phenomenon, with the potential to create business disruption and asset damage for businesses, implying financial risk for banks.

Thus, a critical initial step is to collect feedback from relevant stakeholders. This may include scientific agencies, think-tanks, and research organisations, with the capacity to model the likely economic costs of delayed action. It may also include inputs from regulators and institutional investors, who might shed light on the likelihood of anticipated regulations, the stringency of any requirements and criteria, as well as the potential implications of green capital for the bank's cost of capital. This would not only provide a general understanding of the degree of risk involved, but also the urgency with which this risk could materialise. Moreover, it would also highlight how much of this risk is potentially unmanaged for banks. This feedback report, along with the landscape assessment may serve as crucial supporting evidence when the management seeks buy-in from its board and C-suite.

Step 3: Create the business case

Building on the insights from the previous steps, banks may develop a pitch for their board and C-suite management, to present the business case of why climate action and transition planning are essential for business. This pitch would need to stress key considerations such as compliance and risk management, and the need to mitigate shareholder activism on climate action, potential litigation and reputation damage due to inaction. It also needs to stress the climate-related business opportunities that may enable the bank to capture incremental market share and client base.

The intent is to present the impact of climate risks and opportunities on the financial performance. Such a pitch may include:

- Availability of funds at economical cost of capital,
- Connecting climate KPIs to raising funds via Results-Based Financing (RBF) instruments,
- Balancing to maintain asset quality and avoid credit risk,
- Asset-side product development, and
- Different simulations of financial performance if climate action is undertaken vs. delayed or ignored.

The pitch may also include the potential risks of delayed action or inaction, including the financial impact of increased credit costs due to the deterioration of portfolios exposed to carbon-intensive sectors. For instance, increased exposure to carbon-intensive sectors could potentially lead to a credit downgrade for banks because these sectors face increased risks of default given the changing nature of regulations (ECB, 2024). Additionally, the pitch may also emphasize the benefits of taking proactive steps, such as gaining a competitive advantage in

climate products and securing an influential position in the industry, particularly compared to less responsive peers.

In a number of EMDEs, there is often no/limited scope for greenium due to a relatively small base of green-oriented investors, and hence no visible improvement to cost of funds from climate action. In this case, the pitch may highlight the region's projected weather reports along with the financial impact of transition risks – perhaps related to a potential carbon price in that economy – on banks' EBITDA, long-term profitability, asset book quality and business longevity. However, the assumptions around carbon price may be subject to debate, as it may require basing assumptions on global carbon tax figures.

Through this, a bank may prioritise business segments and sectors that are subject to high transition risks. This helps the bank not only set business objectives in line with risk and opportunity considerations, but also develop mitigation responses to manage the issue.

Step 4: Buy-in from the board and C-suite

Since climate transition is a change management strategy exercise that needs to percolate through the hierarchy and organisational functions, it first needs buy-in from the top, and then move top-down across the firm. However, generating buy-in from the board and the C-suite is possibly one of the most critical and challenging steps in the climate transition process, given that it may take some time and involve repeated and iterative efforts.

Securing buy-in might be challenging in the initial stages, as the business' commercial objectives often take higher priority and are seen as distinct from climate transitions. Additionally, connecting climate issues with those commercial objectives might be tasking and time-consuming. To this end, a pitch with a strong business case, with changes implemented in a gradual, progressive manner which smoothens impact on business performance, as well build confidence in climate transition, are critical to shifting mindsets.

Towards this, in EMDEs where the climate conversation is nascent, sensitisation programs for the board and senior management are a common starting point for banks. These programs may especially focus on the business case for climate mitigation in the context of banking operations and credit. Climate adaptation is not a focus area yet, in most cases. Additionally, banks may disseminate international trends and standards, demands of institutional investors, and the business case for doing so. Effective transition could improve the bank's credit rating, to use the language bankers understand. That said, this is an iterative process.

Such sensitisation programs may highlight the general direction of climate risk and transition, and suitable actionable items need to be built into/integrated in the business strategy, risk management and governance processes. This would also build awareness of the cross-cutting nature of climate transition across departments and functions, making a buy-in from the top essential.

Additionally, such programs may also be curated such that they involve the internal management and board, as well as existing institutional investors who may present their

expectations from banks. Such sessions may also involve the large borrowers, to foster deeper engagement.

Questions for bankers

- Why are climate goals and net zero important for the bank?
- What are the national policies and frameworks around NDCs and how will these impact banks' portfolio and performance? This includes analysis of the government's carbon/GHG emissions targets, renewable energy targets, and any incentives/ penalties related to climate action.
- What are the emerging industrial and economic policies that will affect key business sectors in the country? What will be the impact of those policies on business and what portion of banks' portfolio has exposure to such sectors?
- What are the emerging opportunities in the key transition sectors and how could banks capitalise on those opportunities and build a competitive edge over peers? What are the financing needs in these sectors and how could banks create products and services as part of the financing solutions?
- What could be done to protect banks' financial returns and balance sheet from climate-related risks?
- What are the requirements from banking regulators in the country with respect to banks' climate risk management and disclosures?
- What are the climate resilience and adaptive measures and capabilities in the country that could reduce the impact of climate shocks?

Box 1: Broad questions for the management to reflect on, while setting the aspirationSource: Internal analysis

CASE STUDY: FEDERAL BANK'S PHASING OUT OF COAL

Indian commercial bank, Federal Bank, was the first Board that decided to phase out coal financing across coal fired power plants, mining and production segments. This was even before climate assessment processes commenced in the country.

- This was preceded by significant debate given the dependency of India's energy needs on coal, and the country's need to ramp up energy access further
- Moreover, the coal companies were deemed acceptable from the credit risk standpoint, at that time
- However, the board took a long-term view of the situation and decided it was the right thing to do, but to have a gradual slide path

The US $126 million equity investment by IFC in Federal Bank in 2021 was made under its Greening Equity Approach, supporting the bank to reduce its exposure to coal and increase climate lending. This highlights the importance of driving investor push. Aside from Federal Bank, another Indian bank, RBL, has recently adopted a coal policy to reduce lending to thermal power generation to nil by FY2034.

Case Study 2: Federal Bank and coal phase-out
Source: Federal Bank

Step 5: Set the bank's high-level aspiration towards climate action and transition

Following on from actions in the previous stages, banks may seek to set a pragmatic set of high-level aspirations. Indeed, since the NDCs of many countries are said to be less than

adequate to meet the ambitious climate goals set by the Paris Agreement, this high-level aspiration would need to be more ambitious than the existing commitments and goals.

The high-level aspirations would set the tone for the eventual targets that banks may take as part of its climate transition strategy and strive for climate goals in a clear and ambitious manner. However, they also need to consider the commercial goals of the business, which may need adjustment to some degree. Aspirations need to reflect that balance, while considering the national goals and regulations.

The overall aspirations may need to eventually translate into specific, time-bound, and measurable targets for the bank. Progress on high-level aspirations needs to be periodically reviewed, as does the progress against the eventual targets. The aspirations may also dissect the timeframe. For example, banks could aim to achieve net zero in operations within a certain timeframe but portfolio-level net zero goals over a comparably longer timeframe.

CASE STUDY: HSBC's NET ZERO AMBITION

HSBC announced its ambition to reach net zero by 2050, and net zero became a key pillar in its corporate strategy in 2021. With significant exposures to climate vulnerable regions, its net zero ambition is driven by:

- Significant transition opportunities fuelled by borrowers' investment needs
- The need to mitigate financing risks resulting from climate and social risks
- The need to participate and contribute to low-carbon transition policies, market structures and standards

HSBC's toolbox:

- Frameworks - GFANZ Financial Institution Net Zero Transition Plans and the UK TPT framework
- Transition pathways – External sources, scenarios and third-party data for contextual sector information; transition plans informed by McKinsey's 2023 Transition Finance Model that applies publicly available 1.5°C aligned scenarios (including IEA Net Zero Economy 2021 and the NGFS Net Zero 2050)
- Metrics and methodology – Portfolio measures financed emissions metrics, sector ratios and technology mix; Reports on metrics and standards such as GHG Protocol, PCAF, WEF and SASB; IFRS shall be adopted (based on TCFD recommendations) as and when adopted by relevant jurisdictions
- Climate risk assessment tools – Key tools include transition plan assessment for relevant corporate customers, climate risk and ESG scores derived from qualitative and quantitative datasets, climate scenario analysis and nature scenario analysis

As part of Net Zero Banking Alliance, a 2030 target for on balance sheet financed emissions aligned to a 1.5 degree was set for key carbon intensive sectors. Annual reports disclosed the financed emissions starting with oil and gas and power and expanded to cover cement; iron, steel, and aluminium; aviation; and automotives.

Case Study 3: HSBC
Source: Company documents

For effective achievement, the aspirations also need to keep in mind the current constraints that may limit the extent of implementation and ensure commensurate course-correction as and when those constraints are overcome. This feedback-loop and iterative approach is essential to recalibrate long term climate aspirations with pragmatism.

Step 6: Create a toolbox based on available resources

Banks require resources, like tools, methodologies, standards, and data, as well as internal and external capacity, to facilitate the planning and implementation of decarbonisation strategies. Different countries have access to different set of resources which necessitates understanding the resources that are accessible and affordable for banks at the local level, developing measurement capabilities, and sourcing those resources externally wherever gaps exist internally. Based on the gaps, banks also need to consider the potential cost of external sourcing.

The availability of reliable resources would also influence the aspiration of banks; hence this step may be read in conjunction with the previous point. All in all, assessing the toolbox of available resources would enable understanding what a bank could do, or not do.

CASE STUDY: RMI CLIMATE RISK TOOLBOX

RMI's Climate Alignment, Impact and Risk Toolbox (Climate AIR Toolbox) provides an overview of available tools for financial institutions to assist in their climate transition journey. This covers:

- Transition frameworks
- Climate transition trajectory
- Pathways and scenarios
- Data sources, metrics and analytics
- Climate risk assessment and tools
- Carbon accounting methodologies

Mandatory climate related disclosure standards and guidelines

Case Study 4: Climate Risk Toolbox
Source: RMI

Assessing current resources would also involve scanning available data sources, climate models and scenarios for transition. A toolbox is then identified based on bank's portfolio, regional relevance, data sources, managerial capabilities, and the bank's stage in the transition journey.

Questions for bankers

- What are the local mandatory compliances with respect to climate risks and impacts?
- Is there any regulatory guidance available for banks' climate transition?
- What are the relevant climate scenarios available and relevant to banks?
- What are the sectoral frameworks and decarbonisation approaches advocated in the region?
- What are the data sources and analytical tools available, including third party data sources, that could be used to calculate carbon emissions including for the portfolio?
- What are different climate risk assessment and scoring methodologies that are relevant for the bank to use in its transition planning?

- What are the set of assumptions on which the bank will base its transition plan?

Box 2: Broad questions for the management to reflect on, while identifying current resources
Source: Internal analysis

Initiatives

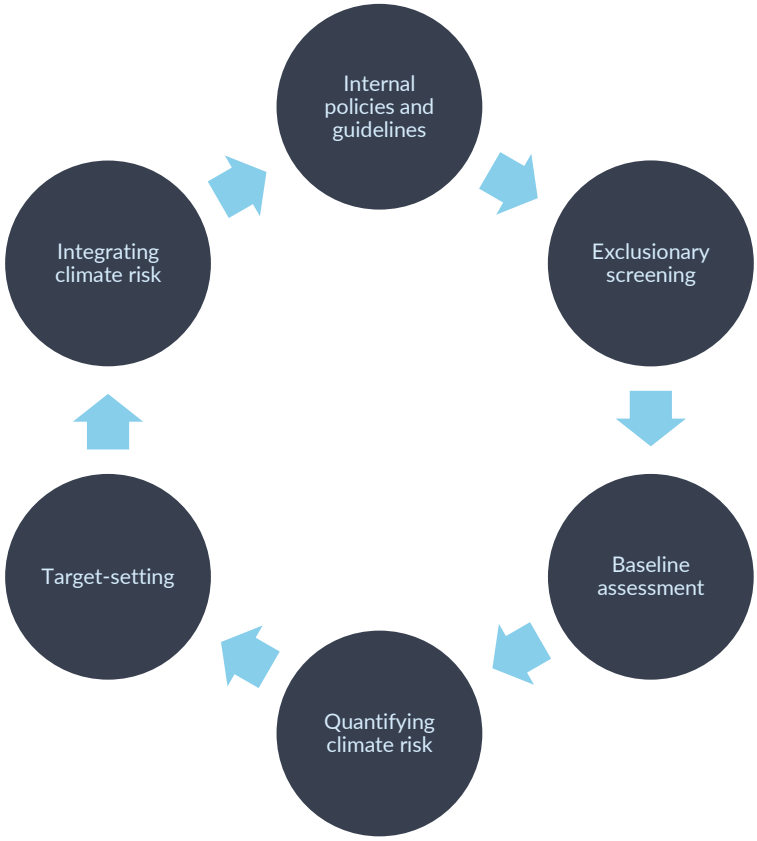

Figure 10: Initiative-related activities
Source: Internal analysis

Step 1: Internal policies and guidelines

To ensure a process-based and rules-bound system, banks' criteria for climate risk and transition planning strategies may need to be included into appropriate policy documents, including in credit, risk, sectoral loan limits, renumeration or standalone ESG or climate risk policies and larger human resources practices.

The policies may need to include:

- Periodic reviews/updates of the baseline (implying the baseline changes)
- Systems for GHG accounting,
- Mechanisms for climate risk assessment and measurement,
- Definitions for climate-positive projects, and
- Common standards and approaches

These could then be referred to by staff, across locations, business segment or seniority, to ensure that actions are consistent with larger climate risk and transition management strategies and processes.

Such policies and guidelines may also need to include, as appropriate, drafting of Standard Operating Process (SOP) manuals that document the processes involved in decarbonisation strategies, so that seamless operations could be conducted as per stated plans and processes, through employee attrition and absence of direct supervisors, especially in last-mile locations.

Step 2: Exclusionary screening

Exclusionary screening is often the starting point towards actual implementation of climate transition practices, perhaps since this is the easiest to implement in the initial stages. Such screening may include sectors banks may want to avoid for new loan proposals, as part of their decarbonisation strategy, ensuring no new capital is deployed to sectors that pose transition risks in the future. Such an exclusion list may not only cover sectors, but also specific counterparties or projects that need to be avoided or divested.

However, on its own, exclusionary screening does not fully address the purpose behind decarbonising the portfolio and may end up causing concentration risk unless the other actions are undertaken.

Step 3: Baseline assessment

Baseline assessments attempt to identify and measure climate risk that banks may be exposed to. There are a few tools/methodologies that fall under baseline assessment, and banks may choose for a combination of these based on the resources available.

In most cases, these tools/methodologies are best deployed simultaneously since the outputs of some feed into the others, thus strengthening the whole process. However, rolling out all the steps at once may not be practical in most cases, and as a result, an iterative approach may be required to periodically update these processes.

Sectoral and location analysis, and materiality mapping

One approach is to analyse portfolios for areas of vulnerability, or risk hotspots. Portfolio data may be dissected in terms of geographic and sectoral exposures, that are then overlaid with material climate impact in those regions and sectors. The intent is to identify those that are most vulnerable or pose most risk to the bank. Climate data may be sourced from national-level or local government databases or guidance, though the granularity (district-level, or provincial-level) may vary. This requires portfolio data to be mapped according to such regional definitions or sector codes, so that portfolio data could be compared with climate data. A degree of subjective scoring, or ranking, may be required for geographic and sector exposures while attributing the materiality of climate impact. The scoring or ranking method categorises the different sectoral and geographic exposure as per their climate risk intensity. Such categorisation would allow for a phased approach for decarbonising the portfolio, starting with

those segments marked as high-risk, followed by lower-risk segments. This process sets off a baseline assessment of risk, in terms of identifying the risk hotspots.

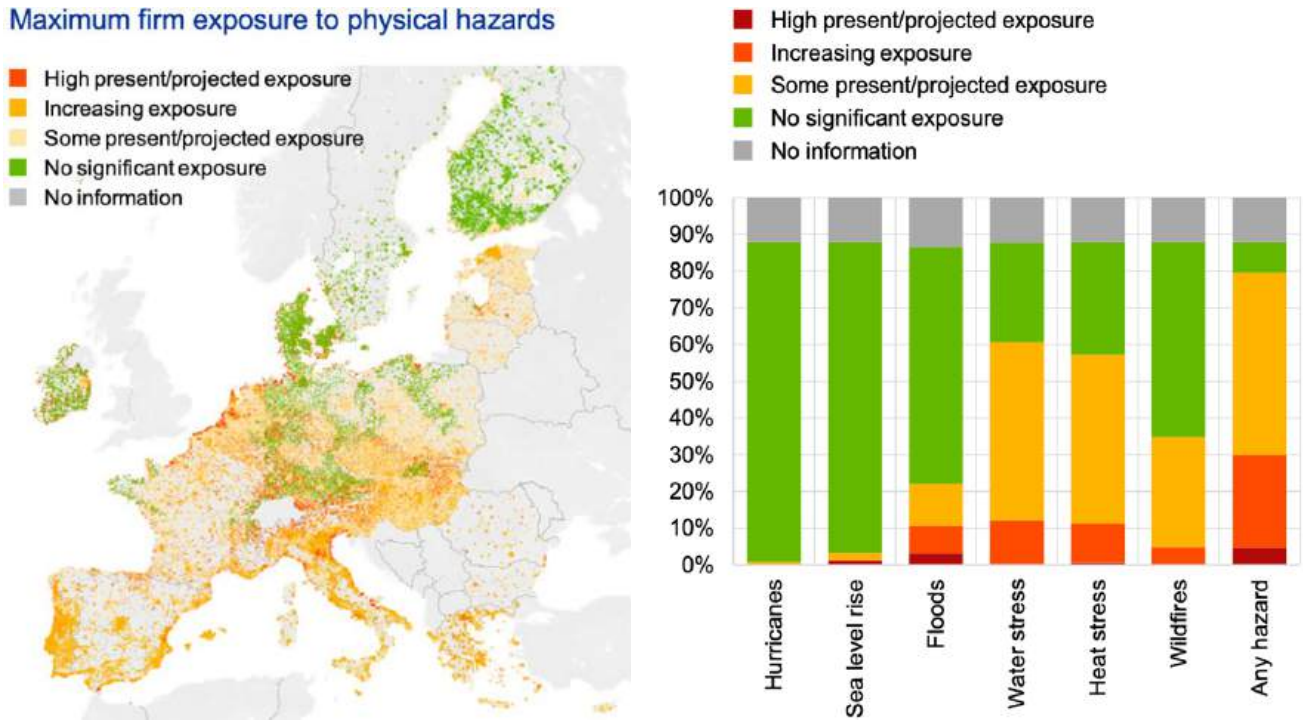

Figure 11: Sector and location analysis – Maximum firm exposure to physical hazards
Source: Four Twenty Seven, an affiliate of Moody's, AnaCredit and ECB calculations, 2021

Sector	Direct emissions cost	Indirect emissions cost	Low-carbon capex	Revenue	Overall
Oil and gas	High	Low	Moderately high	High	High
Agriculture	Moderate	Moderate	Moderate	Moderate	Moderate
Real estate	Moderately low	Moderate	Moderate	Moderately low	Moderate
Power generation	Moderately high	Moderate	Moderately high	Moderate	Moderately high
Metals and mining	Moderately high	Moderately high	Moderate	Moderately low	Moderate
Industrials	Moderate	Moderately high	Moderate	Moderately low	Moderate
Transportation	Moderately high	Moderate	Moderate	Moderate	Moderate
Services and technology	Low	Moderately low	Moderately low	Low	Low

Figure 12: Heatmaps
Source: UNEPFI, 2020

Banks need to ensure this methodology of scoring remains consistent as part of their climate risk policy. Further, that this may also require collaboration with industry peers to ensure a degree of market-wide consistency for better comparability.

The scoring of climate risk materiality of the portfolio as per regions and sectors may often be visually demonstrated in the form of heat-maps, though the nature of front-end visualisation may vary. However, visual depictions are often easier to understand and present, especially while pitching to senior management to secure buy-in.

The climate materiality analysis may need to be conducted with a forward-looking lens to gauge the material risks the bank may face going forward from a climate risk perspective, rather than use a historical lens. Material issues that are critical for banks and their stakeholders would inform strategic decisions. Materiality assessments involve understanding the magnitude and frequency of the potential harm on the bank's operations, assets, and profitability, if the risk were to become a reality. This analysis helps in identifying, profiling, and prioritising high-risk assets, and may be mapped in terms of geographies, sectors, or even borrowers most vulnerable to climate risk, with significant impact on the bank's financial performance.

Industry discourses are now championing the concept of double materiality, which considers both the impact of climate risks on the bank's financials and the impact of the bank's lending decisions on the external climate and natural and social ecosystems, thus creating a cycle.

Green asset ratio

In terms of transition risk specifically, the Green Asset Ratio offers a useful baseline indicator to identify the degree of brown, or dirty, assets vis-a-vis the degree of green, or clean, assets in the bank's portfolio. Typically, the risk hotspots identified in the sectoral and locational analysis process need to translate into brown assets in the Green Asset Ratio exercise. Counterparties and sectors in the bank's portfolio that comprise the highest emission numbers, which would be discussed in the next section on carbon footprint, would typically translate into brown assets. In this way, the various processes of portfolio analysis are interconnected in actual practice.

The main challenge with the Green Asset Ratio is determining what defines green and whether that is an official definition in the jurisdiction. In the EU, the EU Green Taxonomy has facilitated the Green Asset Ratio exercises facilitated by the ECB and EBA for member banks. In EMDEs, while green taxonomies have been released in some markets, such as the SDG Finance Taxonomy, taxonomy development is a work in progress in most cases. This is a constraint to create unified definitions of green, thus hindering loan screening and related activities. Some geographies have also launched transition-specific taxonomies as a guidance in their jurisdictions, which augurs well to provide a unified definition of transition economic activities, and mainstream climate transition planning within the regional organisations. Singapore's Transition Taxonomy uses a traffic light approach with clearly outlined economic activities, wherein those activities categorised as red are high-risk, and those in amber need to transition to green. That said, certain frontrunning FIs in the EMDEs have launched their own versions of green taxonomies till date, and these may serve as a useful reference in the absence of a single, unified definition. This may also resolve the issues around product standardisation and certification that exists in certain green product categories, which impedes risk identification. However, that may require banks to collaborate with technology experts as part of the appraisal process.

The advantage with a single, unified definition is that the Green Asset Ratio numbers disclosed by different banks in a single geography becomes comparable without question, which adds credibility. Till that time, intra-sector comparisons would be constrained.

Ideally, the entire portfolio should be included in such estimation, covering all products and asset classes. However, for the sake of simplicity and practical implementation, a bank might choose to start the process by estimating the ratio for a certain part of the portfolio, unless regulations mandate otherwise, and then gradually expand the coverage.

Carbon footprint

This method involves assessing the carbon footprint of banks' operations and, more importantly, its loan portfolio.

Emissions from internal operations, including banks' head offices, branches, and purchased electricity, among others, are covered under Scopes 1 and 2 of the GHG Accounting Protocol, while Scope 3 covers emissions in the value-chain.

The need to expand the branch footprint to improve access to credit across the vast population and geographies of large EMDEs means that Scope 1 and 2 emissions may be on a rising trajectory. However, mitigating Scope 1 emissions are fairly straightforward, since banking operations are not as energy intensive as manufacturing firms, for example. Consequently, adopting clean energy internally and reducing emissions by implementing sustainable business practices are often easier to action.

To control Scope 2 emissions through purchased energy, installing rooftop solar in branches is easier said than done owing to leased properties and limited roof surfaces. While this may be adopted where possible, others might purchase Renewable Energy Certificates (RECs) or switch to open-access renewable energy to offset Scope 2 emissions. There may be other means available in different jurisdictions.

For bank, a key piece in Scope 3 emissions is the Category 15, or C-15, in the GHG Accounting Protocol which focusses on financed emissions. These are the emissions that occur in the real economy by the companies/activities banks have financed in their portfolio. While the counterparties conduct their business using the capital extended by banks, the responsibility for resulting emissions are borne by banks given the financing decision-making.

For Scope 3, especially financed emissions that comprises the bulk of a bank's carbon footprint, estimating emissions across portfolio sectors may provide a useful baseline measure of the degree of climate risk the bank is exposed to. The financed emission number may be equated with the portfolio to track emission intensity ratios or assessed at absolute emission levels.

With digital banking gaining ground, datacentres and servers used in the backend are major consumers of energy, negating the assumption in many EMDEs where services sector dominates, that emissions is not that big a risk for services sector firms (like banks) vis-à-vis manufacturing firms.

However, uniformity in approach is needed across the industry, especially with the kind and depth of disclosures banks require from borrowers. Differences in information that is sought may lead to fragmentation. Using a benchmark approach aids standardisation and comparability of data, which then lends credibility of that data, rather than using different models and approaches. However, there is a lack of a unified, or official definition in most regulatory guidance. This includes jurisdiction accepting PCAF as the default standard for their banks to estimate emissions. The regulator and/or the industry association needs to play an important role in creating industry platforms to discuss and achieve uniformity in standards, and this is where banks' advocacy role, as discussed in a later section, would be crucial.

In the advanced markets within EMDEs, regulators recommended using globally accepted approaches like PCAF, especially to utilise in-house emissions databases. That made the process more convenient. While this was not an explicit mandate for banks to use only PCAF, the regulator demanded third-party assurance in cases where banks used their own approaches.

In such cases where banks use other methods, the disclosures need to highlight the methods of estimation, data sources and challenges related to data and its quality. Ideally, banks may start with sectoral default data from sources like PCAF rather than wait for data to be published by their borrowers. However, they may eventually need to push borrowers to release their emission data, thereby improving data quality. At that time, they may need to ask borrowers if the disclosed emissions data pertains to 100% of their business or for a portion; in the absence of which estimates would be inaccurate.

In terms of the starting point, banks may look at the top borrowers or sectors that pose the most transition risk, or those that comprise the largest share in its portfolio, and progressively increase the coverage across the portfolio. Most banks start with sectoral emissions; for example, with the commercial or residential mortgage book rather than large industrial clients that have operating locations spread across multiple geographies. At the level of the borrower, emissions data may be looked at with the lens of absolute emissions or emissions intensity. In case of intensity, the emission number may be equated with monetary values like investment or credit extended to that counterparty, or the revenues earned by that counterparty, or it may be equated by physical values, like production quantum of that counterparty.

At the level of a bank, the PCAF methodology, which aligns with the GHG Accounting Protocol, offers a useful means to calculate emissions exposure, especially starting with sectors that are carbon-intensive and carry higher transition risks. The estimation process could then be progressively expanded to include as much of the portfolio as possible.

PCAF METHODOLOGY FOR FINANCED EMISSIONS

Financed emissions = $\sum_i$ Attribution factor$_i$ X Emissions$_i$ (where i is the borrower)

Attribution factor = Outstanding credit extended by the bank to borrower i/Total capital of borrower i (where enterprise or market values are used for listed securities, book values are used for unlisted securities, or project-related capital is used for project financing)

Emissions = Emissions based on energy used, calorific value and emissions factor
(Might use absolute emissions which is the total emissions of the borrower i; physical emissions intensity which is the emissions released per unit of physical activity by borrower i; or economic emissions intensity which is emissions released per unit of loan)

The sum-total of the products of attribution factor and emissions for each borrower, would generate the financed emissions for the bank's portfolio.

Box 3: PCAF methodology for financed emissions
Source: PCAF

Data poses the biggest hurdle towards financed emission estimation. Data that is specific and contextual to EMDEs is missing in most cases. There is a lack of country-specific proxy data. Importing or assuming data points from developed markets may not always be accurate in the context of EMDEs, as highlighted previously with the case of using emission factor numbers published in the western countries. Thus, regulatory direction may be needed to develop country-specific proxy data or to harmonise emission factor codes. The regionalisation of emission factors makes the results more contextual and relevant. The data challenge also holds for other methodologies, such as using the data disclosed by large, listed corporates for industry averages, either in the local or international market.

Wherever possible, banks might seek and use data from their own corporate borrowers. Mandatory sustainability disclosure norms are mostly restricted to large, listed companies in most cases, and there are no regulatory norms mandating such action from the remaining universe of companies to measure and disclose emissions data, though banks are exposed to small, medium and large unlisted corporates too. In such cases, the average of the data disclosed by large, listed companies may be used as proxies, and such proxies are then extrapolated on the energy usage data of other firms. However, this data may have limitations. Thus, a degree of inter-regulatory collaboration is required to source emissions data directly from counterparty borrowers.

Aside from data availability and quality, access to data is another issue. Even in EMDEs where government-operated databases on weather and climate data might be available, these databases are not made accessible to the country's private sector banks and FIs, which negates the intended objective of the regulator. It is impractical to assume that private sector banks would have the remit to make government departments that lie outside the finance ministry, release their data to banks. Again, this is where regulatory coordination is required to amend archaic data access restriction rules and make such data democratically accessible. Once available, such data may enable better sectoral and locational geo-tagging analysis.

CASE STUDY: SME DEVELOPMENT BANK MALAYSIA BERHAD

The bank's Sustainability Roadmap (2021-2023) demonstrated progressive stance towards transition

- The Board of Directors provided insights to proceed with climate transition initiatives, as the management outlined the risks and impacts of non-action, including potential reputational damage, alongside the need for regulatory compliance and resilience building
- Some of the initial challenges observed by the bank included:
    - Internal readiness,
    - Awareness and readiness of MSME borrowers towards sustainability business practices
    - Data availability
    - Adequate technology infrastructure to support sustainability data tracking and reporting
- To address these challenges, the bank
    - Conducted awareness campaigns and training sessions to educate staff and MSME customers on ESG mindset and sustainability business practices as well as GHG data requirement and reporting
    - Developed simplified guidelines and templates to ease data collection
    - Explored a digital platform for carbon accounting, specifically designed to ease data submission by MSME customers, ensuring data reliability by benchmarking with peer industries
    - Engaged stakeholders, including regulators and industry peers, to align on best practices and expectations
    - Collaborated with external experts to provide technical support and guidance on sustainability initiatives
    - Implemented continuous monitoring and feedback mechanisms to assess progress and make necessary adjustments when required

Case Study 5: SME Development Bank Malaysia Berhad
Source: Company documents

That said, historically, the issues with data availability and quality were not solved in the short-term, but rather took time. However, several regulators in EMDEs, as well as institutional investors, are of the view that a start is a step in the right direction. It is equally important to demonstrate the diligence of the data collection process to stakeholders as is to provide high quality data. Further, stakeholders need to evaluate such disclosed data based on the overall transparency and rigour of the reporting, rather than solely focusing on perceived data quality issues. That said, much of the onus is on scientific and research institutions in EMDEs, to devise contextual data points for their respective countries. rather than importing data and models from elsewhere. Thus, the estimation process may need to be periodically iterative. To that extent, banks may articulate that a restatement of the baseline may be needed, in policy documents as well as in extant disclosures.

Another key challenge in the context for banks in EMDEs is the lack of internal capacity and skilling, especially within mainstream officers and functions. In many banks in EMDEs, work towards business sustainability was either done through standalone teams or was clubbed with peripheral social responsibility teams. In most banks in EMDEs that have put in place a business sustainability and climate action team, the average size of such teams is 3-4 officers. With internal and/or external resources in place, foot printing takes a minimum of 6-7 months.

For banks in EMDEs, a key decision around carbon footprint estimations is to set relative targets, rather than absolute targets. Setting a target to reduce absolute emissions of the loan book would necessitate divesting holdings and declining proposals in carbon intensive sectors that may hold economic potential currently, until business models across diverse clean sectors mature and become bankable, thus adding to the demand pipeline. This would mean a loss to

near-term business growth, going back to the debate on balancing business and climate objectives. Some banks may instead opt for relative targets, such as managing the exposure to a carbon intensive sector relative to the growth in the loan book. Playing with the arithmetic naturally means if the loan book increases, so would that exposure. This would prolong the journey towards climate action but may make transition activities more acceptable to internal stakeholders and may tackle the resistance from front-end relationship managers (RMs), more so currently in cases when unambiguous regulations mandating banks to do so are still evolving.

Questions for bankers

- What is the baseline year that will be used to calculate the emissions of operations and financed emissions?
- What is the carbon footprint of banks' operations?
- What is the carbon footprint of the portfolio? Use a combination of primary data and proxy data with qualitative check.
- Analyse the financed emissions to identify segments of the portfolio that are most vulnerable to material climate risks? (i) Locational exposure primarily for physical risks assessment using historical and forecast climate data (ii) sectoral concentration and exposure to transition risks of policy and regulatory changes in a particular geography, technological advancements, changing consumer demand patterns?

Box 4: Broad questions for the management to reflect on, while measuring the carbon footprint
Source: Internal analysis

CASE STUDY: JP MORGAN & CHASE'S CARBON ASSESSMENT FRAMEWORK

- The bank's CAF approach helps assessing its clients' emissions and decarbonisation plans and is an important decision making and portfolio management framework that is well integrated into the various deal execution process
- Accountability for targets is placed on senior leaders at regional and sector-specific levels which coupled with CAF serves are an oversight and monitoring mechanism
- CAF uses a combination of quantitative scores and qualitative scores to holistically assess its portfolio and its alignment with net zero targets. Risk teams use client-level CAF scores for internal risk analysis purposes. CAF process and governance is also used (i) to align capabilities, knowledge and skills to support clients in their transition (ii) in assessing how each new transaction will affect the bank's progress towards its goals (iii) engage with clients on their transition plans, capital needs etc.
- CAF scores range from 1 to 5, with 1 being the lowest and 5 being the highest. The quantitative score for each client comprises of: (i) their historical emissions reductions; (ii) their current carbon intensity; and (iii) their projected carbon intensity based on their decarbonisation targets. The qualitative score considers a variety of factors, including corporate structures for governance and oversight, integration of climate risk and opportunities into corporate strategy, investments in decarbonisation, amongst others.

Portfolios are bucketed according to these scores and client engagement strategies are developed based on the relevant decarbonisation levers across the sectors

Case Study 6: JP Morgan & Chase's Carbon Assessment Framework
Source: Company documents

However, in such cases, it is critical to ensure the relative approach is progressively reduced as businesses across diverse clean sectors mature and become bankable, and front-end RMs become more comfortable sourcing transactions from clean sectors, instead of making the relative target approach sacrosanct. This provides a gradual glide-path.

Some banks in EMDEs are also adopting the relative target approach with a green orientation, rather than brown. That means managing the exposure to green sectors relative to the growth in the loan book, with expectations that the growth in green finance eventually drives brown finance into irrelevance. However, this depends on the demand pipeline in the market. Also, it does not solve the issue of brown sectors, on whom most economies have significant dependence.

Step 4: Quantifying climate risk

Following risk identification and measurement using the baseline methods, the next step is to quantify the climate risk the bank may face. This may involve a combination of measures, based on the resources available in the jurisdiction.

Climate scenario analysis

Many banks in EMDEs that are nascent in climate risk management and transition planning, choose to do this later. However, comparatively frontrunning banks within EMDEs did this exercise upfront since the quantified results were used as part of buy-in and business case process. In some cases, this step was done even before finance emission estimation. That said, quantifying climate risk through scenario analysis assumptions might still benefit from a better understanding of the bank's Scope 3 emissions profile, aside from the Scope 3 emissions of the end-borrowers depending on the nature of their industry. Therefore, resolving the constraints faced to estimate Scope 3 emissions may yield more effective climate scenario analysis, and a better overall picture of climate risk faced. This is critical since most emission estimation efforts seem to be restricted to Scopes 1 and 2, although that is still a useful starting point.

The scenario analysis exercise involves formulating the financial impact on banks' business, i.e., asset book quality, risk exposure, operations, growth, and financial position, as a result of different plausible climate scenarios that may occur in that geography that may impact the overall economy and business performance of borrowers. The objective is to eventually link the impact to the bank's capital adequacy and capital position.

A climate scenario analysis involves making futuristic assumptions on parameters such as:

- **Climate patterns** such as emissions, temperature changes, ecosystem changes, sea level rise, precipitation patterns, etc., It may use district-level data as much as possible, and official definitions for carbon-intensive sectors
- **Socio-economic considerations** that influence future emission trajectories, vulnerability and adaptive capacities - economic and population growth, urbanization etc.,
- **Economic policies and risk mitigation** efforts that impact climate outcomes such as policies related to power industry and energy sectors, renewable energy deployment, adaptation measures, market-based economic incentives such as carbon pricing, etc.,

Banks do not really need to devise their own climate scenarios, though globally there are large banks and energy companies which have developed their own scenarios, based on assessments of their remaining carbon budget. Rather, most banks might opt to use several reference scenarios that have been developed by bodies, such as the NGFS, the IPCC, and the IEA, among others. The literature of the reference scenario typically contains information on the assumptions around the level of global warming and provides assumptions of how that level of global warming and climate change may impact the macroeconomic indicators in that region, like GDP, population, national income, inflation, resource availability, and so on.

		Physical risk	Transition risk			
Category	Scenario	Policy ambition	Policy reaction	Technology change	Carbon dioxide removal	Regional policy variation
Orderly	Net-zero 2050	1.5° C	Immediate and smooth	Fast change	Medium use	Medium variation
	Below 2° C	1.7° C	Immediate and smooth	Moderate change	Medium use	Low variation
Disorderly	Divergent net-zero	1.5° C	Immediate but divergent	Fast change	Low use	Medium variation
	Delated transition	1.8° C	Delayed	Slow/fast change	Low use	High variation
Hot House World	Nationally determined contributions (NDCs)	-2.5° C	NDCs	Slow change	Low use	Low variation
	Current policies	3° C+	None – current policies	Slow change	Low use	Low variation

Colour coding indicates whether the characteristic makes the scenario severe from a macro-financial risk perspective

- Lower risk
- Moderate risk
- Higher risk

Figure 13: Implications of NGFS scenarios, to facilitate assumptions
Source: NGFS

However, the assumptions made on the probability of risk and the risk level may be discretionary, especially to regionalise the global assumptions that go behind creating a reference scenario. This requires regulators, industry associations and banks to convene a platform for discussion to arrive at common standards and uniform definitions of risk levels, contextualised to the banking sector of that country. Banks may engage in internal discussions and negotiations within their teams, to arrive at a consensus to regionalise the global assumptions behind scenarios. In frontrunning banks within EMDEs, these assumptions were made meaningful by aligning them to the scenario settings of the NGFS. The changes assumed for GDP, inflation, and other indicators were as per the NGFS scenarios, as well. Additionally, they aligned their process with international standards for defining carbon-intensive sectors for due diligence and risk limit considerations.

Further, downscaled versions of Global Climate Models (GCM) for various countries or regions,[1] may not be available in some developing countries, creating a dependency on closest available substitute models. That may require advocacy around stakeholder collaboration.

After assessing the economic impact as per the most likely reference scenario, banks may work with counterparties to gauge the impact of the economic issues on the business position of their counterparties. It may use a 'What-If' approach and probability-based risk scoring, but that may vary from case to case. Such analyses consider the impact on their business value

[1]Based on which projections of climate hazards and metrics may be made towards such scenario building

drivers, such as revenues, operating cost, capital expenditure, profits, cost of capital, balance sheet position, and so on. Based on this analysis of the potential business impact on the counterparties, banks, in turn, may make an estimate of the potential negative impact to their portfolio of loans a and operations, which may translate into financial risks for the bank. Climate scenario analysis is a process to quantify impact and risks, assuming a certain level of global warming, or climate change, may likely occur.

Steps for climate scenario development

- Review the range of global warming reference scenarios issued by NGFS, IPCC or IEA and map it with the climate science data available in banks' jurisdiction of operation
- Choose a high-level scenario of energy-economy interactions that closely reflects the climate aspirations of banks' jurisdiction
- Layer the climate scenario with macroeconomic parameters like GDP, growth and per capita income, demographic, urbanisation, inflation, interest rates etc., and translate their impact on the business performance and position of the counterparties using a 'What-If' approach
- Assess the financial impact of the above outcomes on the carbon-intensive sectors in the portfolio in terms of its revenues, liquidity position and asset (collateral) valuations
- Based on the counterparty risks, assess the default risk on loan portfolio

Box 5: Broad steps for climate scenario development
Source: Internal analysis

At a sectoral level, this connects closely with the sectoral pathway approach, of using varying scenarios for different sectors that may be more applicable, since the available technologies and resources for decarbonisation may vary across sectors, as would the development and commercialization of future technologies. Therefore, certain sectors may have the potential to achieve net zero emissions faster than others, and this may be contextual to each geography depending on the technologies it has access to and could afford. These sectoral references may need to be adjusted using appropriate ratios to facilitate better country-specific assumptions, since fully imported scenario assumptions may not always hold for every country. This process would involve extensive negotiations between internal teams to reach a consensus on how these scenarios would impact the country, and what changes banks may need to implement in their own operations, as a result.

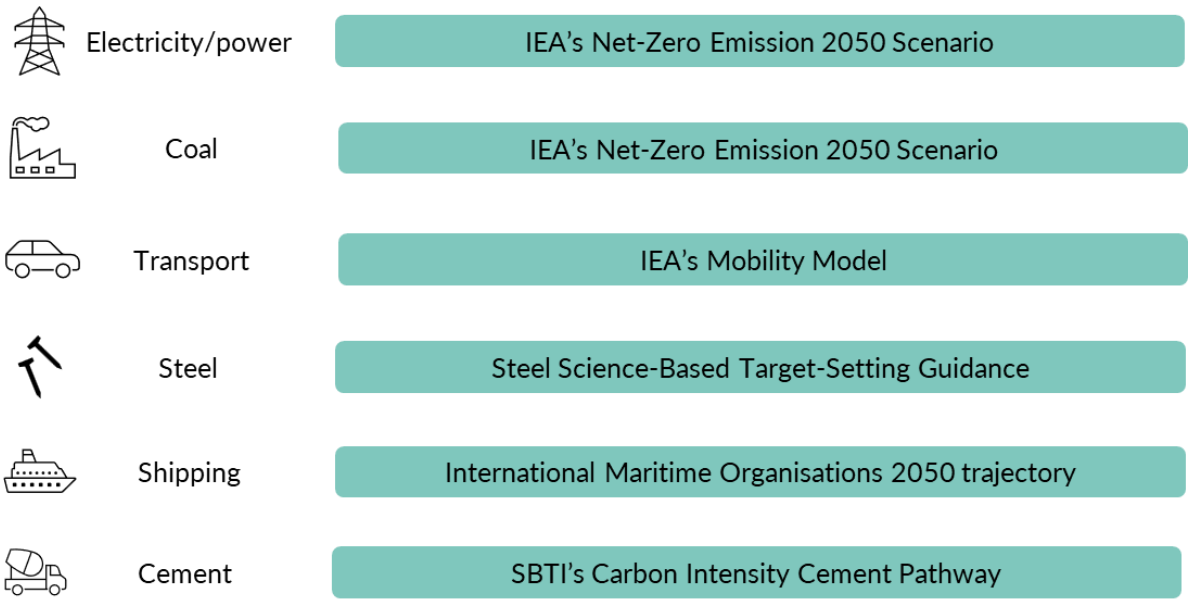

Figure 14: Common reference scenarios as per critical sectors
Source: Bank documents, IEA, SBTi

Timeframes for conducting scenarios and devising targets may vary for different sectors, and it would be rare to conduct such exercises for all its sectors together.

CASE STUDY: CIMB MALAYSIA

CIMB Bank has considered economy-wide Integrated Assessment Models along with sector-specific pathways

- Aligned with the IEA Net Zero Energy 2050 scenario for the power and coal sector portfolios
- The selection of IEA NZE 2050 scenario is based on the following considerations:
  - It covers a range of energy segments, and presents a cost-effective and consistent pathway across multiple energy systems
  - Regionalisation of the pathway was done by considering the adoption of supportive policies in ASEAN countries towards clean energy, the significant investment life left in the region's coal power plants, and growing demand for energy access

Case Study 7: CIMB Malaysia
Source: Company documents

Climate stress testing

A component of climate scenario analysis would be stress testing. This essentially assesses the potential impact on banks in the worst-case scenario of global warming, and the aim is to quantify this potential impact on the capital position of the bank, in the event such a scenario was to occur and pose pressure on the debt serviceability of borrowers. Since banks are familiar with the stress testing process, and several regulators are internally recommending banks to conduct their own versions of assumptions-based climate stress testing, this report does not focus excessively on this topic.

Climate risk scoring

Along with scenario analysis, banks may also use their approaches to conduct risk scoring for physical and transition risks.

Physical risk scoring may be based on variables related to the frequency and severity of extreme weather events, the vulnerability of assets, workforce and operations that fall in the direct line of exposure to such events, and the type of extreme events that are material in a particular region. A probability-based weightage may be assigned to these variables to arrive at a physical risk score. Transition risk scoring may be based on variables related to carbon footprint indicators, climate scenario impact, the impact of an assumed carbon price on the financial position of the counterparty, the level of green asset ratio in the portfolio and the probability of changes on the policy, technology, and demand fronts. Assessing carbon price may require assumptions based on global tax figures. Loss in Asset Values or Value-at-Risk may enable assessing the financial impact due to climate risk. A probability-based weightage may be assigned to these variables to arrive at a transition risk score.

A weighted-average approach between the various methods may be used by banks to arrive at a singular risk score, across transition risk and physical risks. There is no unified approach in the market, and each bank may choose to adopt what works best in its context.

Banks are even scoring their portfolios and proposals on natural capital, given the rising prevalence of Integrated Reporting approaches. However, to facilitate this, it is necessary to access suitable datasets, including government-operated databases. Innovative startups which measure high-frequency weather data that offer a starting point to integrate natural capital scoring in sectors such as agriculture, are emerging. However, the issue remains that these datasets are often historical in nature, while climate risk is a more forward-looking phenomenon, necessitating inputs from high-level scientific research institutions that work on climate models.

Dissecting the portfolio on climate progress

Banks may choose to dissect their portfolio in line with the GFANZ's approach of four buckets (see Figure 20) or adjust these as needed. This would enable banks to realign their loan book as per the climate baseline established, and the targets set.

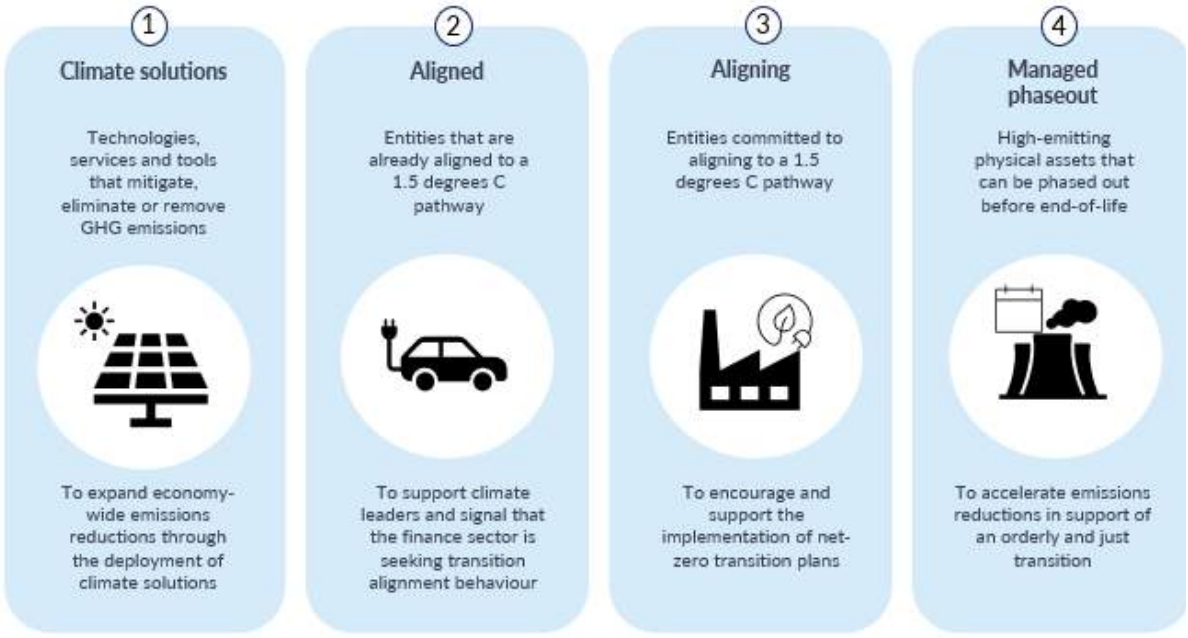

Figure 15: GFANZ: Net zero financing categories
Source: GFANZ

Broadly, the Aligning category may include companies that are currently in the process of aligning with decarbonisation goals and are putting in place appropriate strategies and action-plans towards this. The intent is to see if they are transitioning and becoming sustainable over time, by focusing on the effort they are taking and the progress they are making. This may also include companies that have not yet started on this journey but may be showing indications of doing so soon. As and when these companies achieve a pathway aligned to the Paris goals, they would fall under the Aligned category.

For both these categories, the bank may look to maintain a Monitoring Tracker for portfolio companies/projects. That would ensure there is no slippage. Further, the Climate Solutions category seek to channelise financing towards a new generation of cleantech firms that are devising decarbonisation solutions. Several innovative interventions are emerging and as these business models scale and commercialise, they are likely to become increasingly bankable.

One thing to keep in mind in the context of climate solutions is that different reference scenarios (used in the climate scenario analysis process) may assume different types and scale of climate solutions in the market; and therefore, regionalising the scenario assumptions may need to be taken into consideration.

A challenge in EMDEs is that most banks lend against collateral security, size and track-record, whereas, such innovative firms are small in size, in the startup phase, and perceived riskier, making them more suited for venture capital.

Lastly, the Managed Phase-out category would include companies that need to be divested or where lending needs to be phased down during facility renewal periods. Typically, these sectors may also form part of the exclusion policy, as highlighted in an earlier section.

Step 5: Target-setting

Based on the findings from the previous steps, banks may select and set targets to achieve a climate transition. Such targets set the direction and goals that banks aim to achieve, across loan portfolios, operations, and business models, and what is needed to get there.

Decoding the decarbonisation strategy

GHG emissions, that have the property of absorbing and trapping heat, is the root cause of climate change. Therefore, the decarbonisation strategy of any organisation would typically focus on strategies to reduce emissions from its operations. For banks, this is especially aimed to address the volume and intensity of financed emissions from the loan book, not just operational emissions of branches. Thus, the objective of target-setting for banks boils down to measuring the emissions intensity for each sector it lends to, and understand how to pace the reduction in the emission exposure to that sector. To that extent, banks may also opt to set a target range instead of just a singular number.

Towards this, banks may need to set short-, mid- and long-term commitments, with board approval. Targets may include absolute emissions, emissions intensity, energy use, resource-use efficiency ratios, integration of specific technologies and production methods, etc. Nearer-term targets typically measure the pace of activities required as part of the decarbonisation process. Thus, instead of solely looking at numerical targets, banks need to also look at qualitative and practical actionable items required for implementation. Longer-term targets measure the actual numbers that were reduced, following the gestation periods of decarbonisation technologies. Needless to add, decarbonisation for a bank is concerned with its portfolio and operations, while the bank's borrowers would engage in transitioning using real economy low-carbon technologies, which then enables the bank to realign its portfolio towards climate transition. The scope of using real economy low-carbon technologies in a bank's own operations is far limited, as compared to its borrowers.

For a bank, a large part of this would be at the level of the counterparties and their respective business models. However, there would also be interventions in the bank's direct infrastructure and operations. Setting appropriate targets and implementing the decarbonisation strategy involves external and internal stakeholder interactions. The degree of involvement with borrowers and their transition plans depends on the size of the borrower's credit facility, carbon-intensive nature, sectoral decarbonisation knowledge the bank possesses, and banks' ability to guide borrowers and identify risks and opportunities. The degree of internal interactions with the senior leadership and front-line RMs depends on the negotiating and influencing power the climate team has, and their ability to demonstrate the business case and risks of inaction.

Based on these internal discussions, banks may set internal KPIs for the business, related to green and brown mix, customer mix, profit mix, etc., The set of metrics used for internal consumption may be more comprehensive than the set of metrics disclosed externally. Banks may work to strengthen resources and capacity to achieve these and thereby overdeliver at the end of the set time period.

The appropriateness of targets depends on three factors, though there may be more, depending on each bank's context.

- First, the targets alignment with the country's NDCs and net zero goals. Targets could be quantified in line with the NDCs; rather, they may be made more aspirational than the NDCs if needed. Towards this, banks might look at the emission forecast of their countries and translate this to the sectoral level. In this manner, banks may try to set realistic targets, without which excessively soft or qualitative targets may offer scope for criticism
- Second, the ability to balance the business objectives with the climate targets, so that resistance from management and RMs is minimised while progressively making the targets more stringent, thereby making the transition feasible and appropriate. A balance needs to be struck between the cost of decarbonisation strategies, the possible fallout to business growth due to moving away from erstwhile profitable carbon-intensive businesses, and established climate transition goals. In EMDEs where economic growth is a national priority, this balance becomes more critical. A point of debate here is the use of absolute vs. relative targets. In case of relative targets, carbon-intensive sectors are managed as a fixed cap of the total loan book. However, the idea is to progressively reduce such relative targets over time.
- Third, the availability of resources and capacity in the market. This point has been discussed already in various sections in the report

While it is relatively easy to set targets, it is far more difficult to break these targets down and determine specific implications for various departments and functions of banks. It is then necessary to provide adequate support and resources to those departments, business vertical and clients, aligning them with the overall strategic direction at the group level.

Target-setting should ideally cover banks' own operations and the value chain, depending on the nature of the sectors in the portfolio. Addressing the value-chain is important to counter the tendency of firms to offshore emissions to their value chain, especially to other countries where sustainability disclosures are not yet mandated. The emissions reduction strategy for operations at the level of the bank or the borrower, may cover different types of greenhouse gases, with plans of action listed out as per sources of energy, alternate fuels or resources, scaling new technologies, and industrial processes that contribute to reducing GHG emissions. For borrowers in hard-to-abate sectors using production processes that cause emissions, there may be a practical limit to the types of decarbonisation avenues available due to the nascency of alternate technologies. However, research is ongoing in hard-to-abate sectors and periodic iterations of banks and borrowers' decarbonisation strategies might consider this.

Crafting targets and transition plans would require developing additional indicators and criterial as part of the Detailed project Reports and Due Diligence Checklist of borrowers, as well as Procurement-related Due Diligence from suppliers. However, this is likely to add to the transaction cost, paperwork and processing time, a point of contention by the management.

The decarbonisation strategy need not only consider emissions reduction from a risk lens, but also needs to consider the opportunity lens, which then forms part of business planning.

Further, climate change need not be seen only through the lens of emissions. Degeneration and reduction of resources like water or soil, or the increase in waste and effluent leaching may also impact the state of ecosystem emissions and climate change. For banks with exposure to sectors such as agriculture, apparel, plastics, or others, the impact on natural ecosystems is a material risk and they might look at targets focusing on conservation and efficiency of such resources.

As part of the decarbonisation strategy, a bank may also look at product development on the asset side and funding channels on the liability side, to meet its broader emission targets. For example, it may choose to extend a certain portion of its asset book to borrowers as transition-linked finance or sustainability-linked loans (SLL) that have emissions reduction KPIs. In 2019, the Sustainability-Linked Loan Principles were launched, which offered guidance on the standards a transaction needed to meet to be labelled as an SLL. Requirements related to KPIs, and external review were subsequently updated. Recently, the ICMA also announced guidelines for Sustainability-Linked Loan financing Bonds (SLLB). Further details are available on ICMA's website.

Performance-linked financial products like SLLs, etc. create an incentive for the counterparties to facilitate climate action at their end, which would then aggregate at the portfolio level to reduce the emission footprint for the bank. Several banks globally have scaled up this segment. However, to encourage the achievement of transition KPIs and protect the interest of banks engaging in the costs for SLL labelling, two-way pricing adjustment has been debated, wherein the borrower may be penalised with a higher rate if they do not achieve the KPIs. The other debate has been on the efficacy of using emission intensity reduction KPIs vs. absolute emission reduction KPIs, to assess which route has the larger positive impact on climate change in an economy seeing rapid economic growth. Yet another debate has been to pay the interest rate discount in arrears after final verification, rather than during the tenor, to nudge borrowers towards meaningful action.

Kenyan telecom major Safaricom raised a US $137 million SLL in 2023 with Standard Chartered, Stanbic, ABSA and KCB, targeting reduction of emission intensity
Indian engineering conglomerate Larsen and Toubro raised a US $150 million SLL in 2023 with the Bank of America, targeting reduction of emission intensity and water use intensity
Malaysian plantation company Kuala Lumpur Kepong raised a US $105 million SLL in 2023 with Maybank, targeting reduction of emission intensity
Malaysian shipping company MISC raised an 11-year US $527 million SLL in 2023 with DBS, SMBC, MUFG and others, to fund six large ethane carriers towards emission reduction
Singapore-based logistics and real estate firm GLP raised a 3-year US $658 million SLL in 2021 with 10 large banks, targeting to improve its ESG ratings with climate mitigation strategies

Figure 16: Select SLL transactions in EMDEs
Source: News reports

Similarly, on the liability side, a bank may seek to raise green capital from the dedicated green capital base of MDBs, NDBs, DFIs and long-term patient institutional investors. Towards this, banks may issue green or sustainable bonds. If investor demand for such bonds is relatively

higher than the supply, there may be scope for achieving greenium, which might then translate into a lower cost of capital for the issuing bank. Such green investors may be fewer in number in EMDEs, making incentive-creation a policy imperative in such countries.

In short, the decarbonisation strategy would transcend several functions within the bank.

At the same time, it is important that climate action does not result in new risks; and therefore, targets need to be set accordingly. For example, while the world moves towards electric vehicles as a cleaner alternate, the major share of quality-grade cobalt – an essential ingredient of EV batteries - is found only in the southern regions of Democratic Republic of Congo (DRC). This region has historically seen major governance issues, rebel conflict, rampant poverty and lack of livelihoods and institutions. Resultantly, social risks related to health and human rights of cobalt miners in that region has become a major point of debate.

Figure 17: An artisanal cobalt mine worker in D. R. Congo
Source: Michael Chavez, The Washington Post via Getty Images

Moreover, a significant share of this cobalt is produced from small-scale, artisanal mines that are often informal establishments where the locals use rudimentary manual labour methods to mine in the shafts. Further, regions with deposits often lack the technology, capacity and facilities to process and refine such critical materials. This creates a dependency on companies (and countries) that are home to such refining facilities, which enables the latter to become power-centres controlling the trade and transactions. Resultantly, there have been significant allegations of short-changing of DRC workers on the crude cobalt they sell to such overseas buyers.

Lastly, EV manufacturers and consumers are in geographies that are either mandating, or in the process of mandating, sustainability disclosures. However, in most cases, such norms do not yet mandate disclosures related to the value-chain, creating a tendency to offshore the social risks to another country where such norms are nearly absent, giving rise to new challenges in

the process of solving existing ones. With increasing focus on the value-chain, decarbonisation strategies need to take cognizance of such impacts as well.

The next section would highlight how banks may look to develop their targets pragmatically, by balancing global requirements like Paris goals with domestic socio-economic realities while improving the ambition progressively.

Time-bound and iterative targets

Decarbonisation targets are expected to be categorised into short-, medium- and long-term targets, based on the level of maturity of technologies, processes and the gestation period of the intended interventions, based on what is available and affordable in the country.

Long-term targets may need to be revised as and when near-term targets are achieved. If the journey towards the near-term targets requires course corrections, newer approaches or re-estimation of baseline, then periodic updates to the decarbonisation strategy need to be factored in. In most cases, this updation may be done in line with the long-term review cycle, as well.

CASE STUDY: CTBC BANK'S PROACTIVE APPROACH TO CLIMATE TRANSITION, GAINED FORERUNNER BENEFITS

In 2019, an official letter from CTBC's largest shareholder, a major institutional investor, motivated the bank to take a proactive stance on climate change. The 'Coalition of Movers and Shakers on Sustainable Finance' formed by the Taiwanese regulator strengthened the bank's leadership role in shaping sustainable finance practices in Taiwan.

Key steps in CTBC's climate transition approach:

- **Negative screening** – 'ESG exclusion', 'ESG sensitive sector' and 'high ESG risk company' lists for enhanced scrutiny
- **Building a business case** – Recognition of potential risks and opportunities for the bank
- **Measurement and methodology** – Joined the PCAF in 2020 recognizing the importance of accurate measurement
- **Target setting and roadmap development** – Committed to reducing financed emissions intensity of their commercial real estate and power generation related lending portfolio, in addition to lowering the temperature rating for long-term loans and investments. Also identified critical pathways, key actions and milestones

How the bank dealt with challenges:

- **Resistance to change**: CTBC highlighted the risks of inaction, e.g. deteriorating credit risks in carbon-intensive sectors, along with the opportunities for growth in climate-focused business areas
- **Technical expertise**: CTBC hired a dedicated risk measurement expert, created a climate risk team and partnered with external consultancies
- **Aligning business strategies with climate goals**: CTBC established a dedicated unit under the corporate product function tasked with developing new products and services aligned with the climate transition target

CTBC Bank's proactive approach to climate transition has positioned it as a leader in the financial industry, yielding significant benefits and setting a precedent for other institutions to follow.

Case Study 8: CTBC Bank's approach to climate transition
Source: CTBC Bank

Science-based targets

Since several banks have joined the Net Zero Banking Alliance, its guidance on targets may offer a starting point. However, since GHG emissions is a subject of natural sciences, decarbonisation targets are best made science-based, to demonstrate alignment with the Paris Agreement temperature goals of 1.5°C or 2°C. Science-based targets need to be verified, since investors want to be assured of their credibility, and need to be in line with the latest climate sciences. The Science Based Targets initiative (SBTi) defines standards and guidance in emissions reduction and net zero targets that align with the latest climate sciences. These standards and guidance enable firms, including banks and FIs, to align science-based decarbonisation targets. Further, they assess and validate the targets firms and banks have established, thus providing verification.

To set science-based targets, the SBTi approach involves three ways to link bank portfolios with climate trajectories. These could be used for different asset classes in the portfolio. These include:

1. **The SDA, or Sectoral Decarbonisation Approach**, sets emissions-based physical intensity targets for carbon-intensive sectors such as mortgage, real estate, power and electricity, transport, hard-to-abate sectors like cement and steel, among others. That said, it is important that banks in EMDEs attempt to regionalise the SDA ratios, to the extent possible
2. **The Portfolio Coverage Approach** sets borrower engagement targets for banks to enable some of their key counterparties to set their own science-based targets. That would ensure a more orderly transition pathway with full portfolio coverage by 2040
3. **The Temperature Rating Approach** converts the portfolio into a temperature rating metric, and assigns strategies to realign the portfolio to long-term temperature targets

CASE STUDY: LANDSBANKINN, ICELAND

The bank became a member of the PCAF core group when PCAF came into force, to define the methodology for measuring financed emissions. PCAF was a defining factor for the bank to achieve a SBTi verification on their reduction target.

- The first report on these financed emissions was released in 2021
- The bank gave indications on how to measure and manage emissions in different parts of its balance sheet. It took the bank a year from the time it committed to receive the verified SBTi target

The targets set by the bank include:

- Absolute emission reduction under Scopes 1 and 2 by 95% before 2030, as compared with 2019
- Absolute emission reduction under Scope 3's categories 1-14 by 50% before 2030 vs. 2019

For financed emissions, the bank used:

- SDA approach to maintain emissions intensity in the real estate sector at or below 1kgCO_2e/m2 from 2019 through 2030 and only finance 1.5°C aligned real estate assets
- Temperature Rating approach to align its Scopes 1, 2 and 3 temperature score by invested value in commercial real estate from 3.2°C in 2019 to 2.47°C by 2028

- Temperature Rating approach to align its Scopes 1, 2 and 3 portfolio temperature score by financed emissions in aviation, shipping, fisheries and other long-term debt from 2.73°C in 2019 to 2.20°C by 2028

Case Study 9: Landsbankinn, Iceland
Source: Company documents and SBTi

After setting science-based targets, the next step for banks is to communicate the broader target and asset-class specific targets and outline the action they plan to take for these targets. Ensuring progress against the targets would require periodic engagement with borrowers and other stakeholders, periodic disclosures, and including climate criteria in decision-making. Making the targets science-based would also ensure they align with the country's NDCs. In fact, the SBTI's science-based approach may exceed the ambitions set by the NDCs. In an ideal world, if all firms in a region align in this manner, then the country would achieve the NDCs.

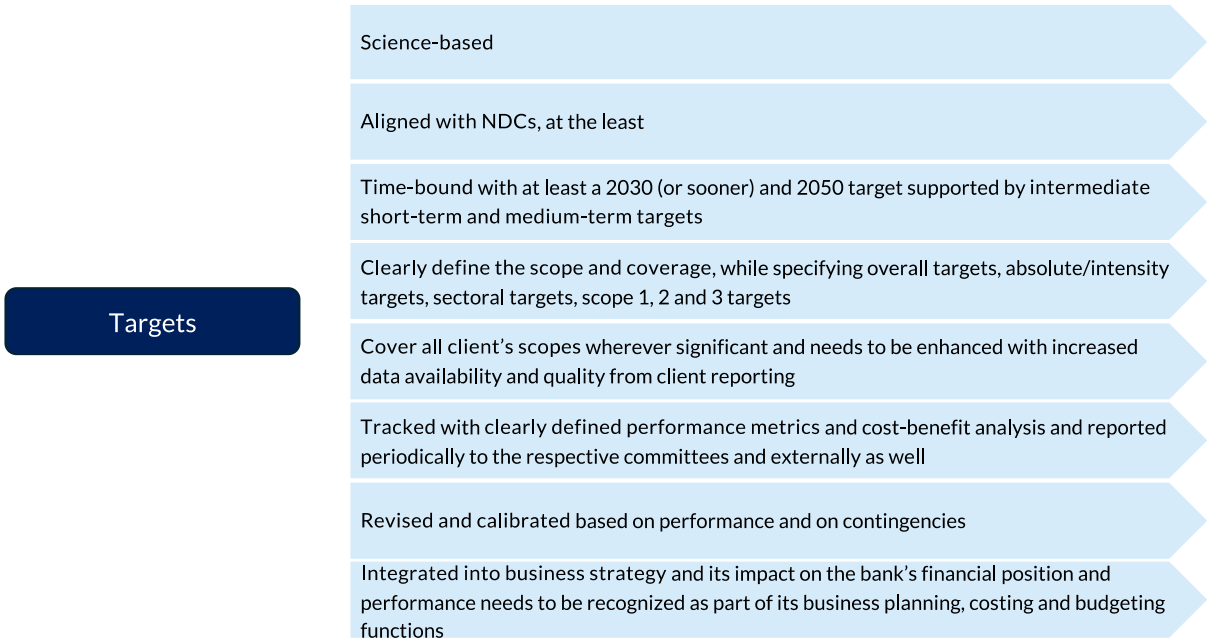

Figure 18: Targets should be
Source: Internal analysis

CASE STUDY: JP MORGAN CHASE'S CARBON COMPASS METHODOLOGY

JP Morgan Chase announced emissions intensity reduction targets for its carbon-intensive sectors. This investment banking company developed an in-house methodology, Carbon Compass Methodology, aimed at driving portfolio level decarbonisation.

The key elements of the approach include:

- Science-based emission reduction targets building on IEA's NZE 2050 scenario and supported by other decarbonisation research and frameworks
- Sector-specific strategy and targets with a focus on specific activities with material emissions and credible pathways toward decarbonisation that provides insights to support clients in developing and implementing their climate transition strategies
- Identification and tracking decision-useful metrics that provide insights into borrowers' performance and progress toward decarbonisation, and are compatible with benchmark trajectories

- Reliance on robust and consistent data where each metric is standardised, consistent and well-reported. Data limitations are bridged by use of alternatives and proxy data

Case Study 10: JP Morgan Chase's Carbon Compass Methodology
Source: Company documents

Step 6: Integrating climate risk

Once climate risk is identified and measured, the next stage of climate transition planning is to integrate climate risk management within banks' processes, including risk management and credit underwriting. It would also include integrating climate issues within the overall business strategy. Banks need to be mindful that integration would be an iterative process that needs to be revised periodically, owing to the evolving nature of the topic.

Risk management

Integration of climate risk into banks' risk management processes would need to cover all the conventional financial risks that banks are exposed to, along with the overall Enterprise Risk Management (ERM) framework.

The ERM framework highlights the flow of different risk factors within banks' processes, that may impact operations, assets, and performance. It also depicts the means to manage and mitigate those risks and assigns responsibility and reporting to facilitate this. Banks may need to integrate climate risk in the appropriate channels of the ERM framework, based on an assessment of climate change's potential impact on conventional financial risks. Banks may consider using COSO's ERM framework, which involves pillars relating to performance, governance, strategy, and communication.

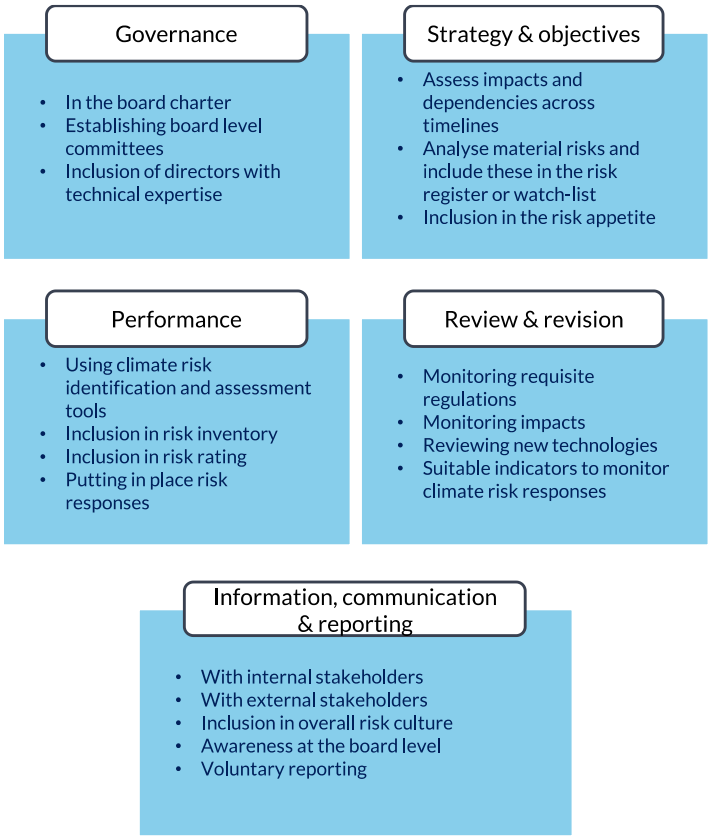

Figure 19: Climate considerations within the ERM
Source: COSO Framework

Climate risk events may hamper the business performance of a counterparty due to potential damage to assets or disruptions to business continuity. This may disrupt the continuity of cash flows of that business and lead to a decline in its interest coverage ratio (ICR). A reduction in ICR translates into a loss of creditworthiness for that business and raises the risk of default in repaying its loan to the bank, implying a negative impact on the bank's capital adequacy and equity position. A credit risk for the bank eventually impacts its own credit rating, thereby resulting in a higher cost of funds.

In line with this underlying logic, the integration of climate risk and transition-related criteria in banks' risk management processes would cover the Risk Assessment Statement (RAS), or the Risk Assessment Framework (RAF). The RAS stipulates the acceptable level of risk banks are willing to take on their loan book, and as a result banks need to integrate climate risk within their risk appetite. The RAS would specify the loan limits banks are willing to accept and align with, and it may include such limits while analysing proposals in sectors, firms and projects that are highly vulnerable to climate risk and would end up delaying progress towards climate transition targets.

There have been debates within banks to include an element of climate risk in the Basel Pillar-1 minimum capital requirements due to climate risk's impact on credit, market, and operational risk, or in Basel Pillar-2 additional capital requirements for internal capital adequacy assessment process (ICAAP). Whichever approach is undertaken, either by banks or regulators, the climate

risk needs to be integrated in a progressive way, the methodology needs to be common and uniform, and add to the existing risk profile. If climate risk is classified as a material risk, it might need to be included in Pillar-1 requirements and covered by Tier 1 and 2 capital. Banks may choose to account for climate risks in its Risk Weighted Assets (RWA) and allocate minimum capital against an estimated potential loss in their loan book due to transition risks. In this context, a point of debate has been that the Internal Rating-based (IRB) mechanism has not taken off in most EMDEs. Consequently, open-ended climate risk guidelines that now require banks to adopt their own approaches to rate climate risks poses an implementation challenge for banks.

Since the development of climate models and sciences varies across EMDEs, if the models are not fully developed or matured, then banks might seek to pace the transition conservatively by holding back on major changes in risk appetite limits on an incremental basis, and instead opt for more gradual and systematic changes. The academic and research community in EMDEs has a key role to play in regionalising global climate models and making them contextual. That may also enable a faster transition and more ambitious targets by domestic banks in EMDEs, who control the lion's share of credit assets.

Unless climate-related criteria are included in the RAS and ERM, the actors of the 3 Lines of Defence, i.e., the first-level relationship managers, second-level risk managers, and third-level internal controllers, may not consider climate risk issues in risk management processes.

Significant engagement is required with the Risk and Control teams (the second and third lines of defence, respectively) to align them on actions for a climate transition and raise red flags if proposals conflict with the new limits set in the Risk Appetite Framework. This is because that may help banks tackle the natural resistance from the front-line RMs while making transition-related changes. This is more so in EMDEs where climate-related regulations are missing, or are too open-ended. The intent is to make the second and third lines of defence assess proposals on transition risk issues based on future probability of changes in regulations, technologies, and demand, and include such considerations in their asset quality related KPIs and incentives, if possible.

Integrating climate risk in banks' risk management processes may also require developing process-flow notes, or SOPs, to enable managers across organisational hierarchies and geographic networks to identify, measure and integrate climate risk in their processes. That would also enable the allocation of responsibility and reporting lines to ensure compliance and oversight, as well as regular monitoring, efficiency tracking and managing exceptions.

Aside from credit risk, climate risk may impact the valuation and pricing of securities which are held in the treasury book, thereby creating a possibility of market risk. To avoid asset mispricing, especially assets that are held till maturity (HTM), banks may choose to account for the probability of climate risks while pricing assets, even if regulations on capital requirements do not mandate them to do so.

As far as operational risk is concerned, the physical risks of climate change pose a direct threat to a bank's operating efficiency and continuity due to the potential impact on branch

infrastructure and disruption to seamless operations. Most countries have mapped natural disasters in their geographies, which banks may consult while planning branch expansion. However, there is a need to balance this with the compulsion to establish presence in regions where access to credit is still low, to avoid business growth coming into conflict with climate transition.

On liquidity risk, any impact on the livelihoods of depositors that reduces their ability to make term deposits, or a sudden climate-induced crisis that causes depositors to withdraw deposits enmasse, would lead to liquidity challenges. Towards this, banks may choose to align with other sources of capital, especially concessional green capital from MDBs and NDBs. Banks may also upsell appropriate insurance products through their subsidiaries to such customers, to ensure a fallback in case of a climate shock. However, this assumes product development in the actuarial business is able to reasonably price premiums for climate risks, especially acute risk events.

Compliance risks may be threatened by transition risks because an inability to adapt to new policies and regulations in time may result in fines and penalties for the bank. At the level of the counterparty, such an inability may translate into a credit risk for the bank.

Lastly, continuity to fund fossil fuels or carbon-intensive businesses, may lead to reputation risk, especially with customers for whom climate is a pressing issue. Marketing activities may need to consider the potential fallout to the brand positioning due to such continued lending, while strongly advertising the bank as a Responsible Brand, based on its climate transition journey.

Integrating climate risk in risk management processes needs to align with banks' internal policies related to climate risk and transition. This exercise will also need to align with the metrics that track the progress of the decarbonisation strategy, as well as the process of stakeholder engagement, so that borrowers consider the impact of these risks.

Credit underwriting

The credit decision for a new loan may need to factor in the potential credit risk of the company or project, assign it a credit rating based on the rating criteria used by the bank, and then make decisions on the allowable lending amount, cost of funds and related covenants.

Thus, to include climate risk considerations in the credit risk assessment criteria, or the Credit Appraisal Memorandum (CAM) of a bank, it may need to include climate-related considerations in the KYC documentation and due diligence questionnaires. That would facilitate greater intelligence for making informed decisions on climate risk while shortlisting loan proposals, and therefore better alignment with climate transition requirements.

An aim of this credit assessment process would be to gauge the eventual impact on the cash flows and ICR of the counterparty and see whether that company would be able to meet its repayment obligations despite the potential impact of climate risk. If the revised ICR is below the acceptable level of the bank and there is potential for stress on capital adequacy, it may seek to either reprice the loan, raise the covenants, or reject the loan.

The credit appraisal process generates a credit rating. Currently, the credit rating process typically used in most banks does not factor in climate risk, or for that matter business sustainability issues in a quantitative manner. Even if information on sustainability issues is collected from the borrowers, only qualitative statements may be written in the CAM or credit note in most cases. The actual lending decision is often not impacted by it; rather these qualitative requirements are meant for the borrower to achieve over the term of loan.

This needs to change as part of effective climate risk and transition planning, given that research shows climate risk may impact mainstream financial risks for banks. Therefore, integrating climate risk in the credit rating may help safeguard the quality of the portfolio, which remains the focus of most regulatory action.

Based on the climate-inclusive credit rating, the loan pricing and covenant requirements of that loan proposal would accordingly change to compensate banks for the higher risk and protect the asset book. Since climate-related regulatory norms in most cases do not specify the acceptable level of additional spread a bank may charge, banks may seek to equate this with the standard credit rating and pricing slabs that they otherwise use. For example, if the credit rating of the company reduces due to the integration of climate risk into the credit risk scoring template, the commensurate pricing at risk rating B would need to be charged. In the case that regulatory norms eventually stipulate a uniform approach towards this in the future, banks may need to revise this process.

Taken together with the RAS, the climate-inclusive credit rating would highlight the allowable loan amount banks may extend. Any significant reduction in allowable loan amounts, and hence average ticket size, due to climate risk integration may imply banks need to adopt a more volume-based growth strategy to meet their loan book business targets.

Similarly, consortium banking or syndicated loans may need to be deployed if projects are deemed riskier after including climate risks, and banks are comfortable lending only a small amount from their book. This would ensure borrowers receive the aggregate loan amount they require as per their utilisation plan, whilst ensuring the risk is diversified across banks.

When revising covenants, a bank may consider increase the frequency of repayments to enable enhanced tracking, so that any disruption to the counterparty's creditworthiness is highlighted earlier than later. It may also place covenants on the level of leverage or debt that the counterparty could incur on its balance sheet during the period of loan repayment, so that a climate risk event leads to lower risk of debt default. This is easier said than done, as this depends on various factors, including the nature of the utilization plan, banks' funding requirements, the strength of existing relationship, and banks' negotiating leverage.

Even for collateral valuation as part of credit risk assessment, it may need to factor in the impact of climate risk.

Business strategy

The report maintains that climate transition needs to be seen as part of mainstream business strategy, while balancing the core business goals. In most competitive markets, a bank may have multiple relationships with a single borrower across its range of product and service offering. The loan facility is just one of those. Therefore, the client relationship needs to be managed very carefully as part of overall business strategy, since the potential impact of divesting or refusing existing clients may impact their demand for multiple products and services. This process needs to be gradual and divided in terms of timeframes, with easier sectors and clients managed separately than sectors and clients that are in more sensitive, yet economically crucial, sectors.

Banks' corporate strategy and business planning needs to look at how climate transition or climate risks, could impact business value-drivers, such as:

- Loan book growth,
- Non-performing assets (NPA),
- Cost of capital,
- Net interest margin (NIM),
- Client addition and retention, and
- Financial performance in terms of
    - Equity capital position,
    - Revenues, operating costs,
    - Capital expenditure,
    - Return on equity (ROE) and
    - Return on assets (ROA)

In this way, strategic planning would connect closely with financial planning, as highlighted in the TCFD's pillars on climate-related assessment and disclosures, as well.

Corporate strategy and business planning needs to consider the potential impact of climate on the business. This implies an examination of how different scenarios of global warming would affect the overall economy of the relevant region, and consequently, how this may impact counterparties' business position, which would pose financial risks for banks. This step is linked with the earlier section on climate scenario analysis.

The integration of strategy needs to take into account the need to mitigate possible risks to and enhance potential returns from the business. In this way, the strategy analyses the impact of climate change both from a risk and opportunity perspective. Risk and opportunity dimensions may also need to account for negative externalities that may occur due to no/delayed, action, not just for banks themselves, but also relative to industry peers.

The need to enhance returns presumes that resource planning strategies involves training and familiarisation programs for front-end RMs, on ways to identify, evaluate and source projects and companies that are better aligned with climate transition strategies. This RM training needs to consider the timeframes assumed towards the climate scenario exercise and target-setting. That said, RMs have invested time and effort to build relationships with their existing clients, many of whom may be in carbon-intensive sectors. Consequently, a bank may not be able to

halt carbon-intensive financing suddenly or immediately. Rather, it would take time to build relationships with low-carbon companies that are newly emerging, not to mention those companies would take time to reach a critical mass and prove bankable.

CASE STUDY: FIRSTRAND BANK'S KEY INITIATIVES IN INTERNAL CAPACITY BUILDING

The bank has rolled out a detailed environmental, social and governance (ESG) training program across with a specific focus on climate change. This includes:

- Basic training for a larger audience
- Intermediate training for a more focused group of client-facing credit and risk teams – this includes an elaboration on key risks and opportunities that are considered during the credit process, including physical and transition risks
- Advanced training for individuals who require a deep knowledge on sector-specific risks and opportunities for strategic decision-making

The bank is a part of key sustainable finance industry bodies, events and working groups including:

- The Banking Association of South Africa's Positive Impact Finance Project
- The National Treasury's Sustainable Finance Technical Working Group
- The African regional climate lab advisory board

The bank has further contributed to the drafting of the Johannesburg Stock Exchange Debt Listings' Requirements for the Sustainability Segment.

Case Study 11: FirstRand Bank: Key initiatives in internal capacity building
Source: Company documents

Another potential cause of pushback from RMs is that operational level readiness is often under question, aside from turning away existing relationships and the importance and dependence of certain economies on carbon-intensive sectors. RMs may need skill enhancement to understand new sectors, projects and clients from risk and credit perspectives. As a consequence, their capacity and workloads may also need to be optimised.

RMs may also question the advantage that transition holds for them and their clients. One route, in the absence of unambiguous regulatory mandates, might be to demonstrate the impact of country-specific climate change on the sectors they cover, through any national and/or regional databases, as available. Simulation of the impact of climate risk scenarios, expected future regulations and a potential carbon price on banks' portfolio, profitability, credit rating and cost of capital, might also help indicate how carbon intensive sectors would perform in the long-run. Such data may provide a strong argument that could help secure the support from RMs.

Another dimension of the overall strategy would be to create incentive mechanisms for borrowers that may quicken the transition process, assuming that RMs' sales incentives are realigned accordingly. For example, borrowers may be incentivised through interest rate discounts structured into SLL products if they achieve pre-defined transition KPIs. However, regulations may not be mandating these borrowers, especially those outside the large, listed corporate universe, to engage in such financing structures, emphasising the need for inter-regulatory collaboration. Additionally, structuring the loan facility with transition-related

contingencies may be useful only if that borrower lacks other options to raise funds in a competitive banking market, which then raises potential credit risk concerns.

As part of facilitating this transition in the strategy, a climate-smart Business Development (BD) strategy that may focus on identifying and building a pipeline of bankable companies and projects that align with its stated climate impact sectors and themes would also need to be developed. This would require sensitisation of RMs on new sectors and opportunities, so that loan origination of transition-aligned loans could commence in segments where the pipeline of bankable projects is emerging. The BD plan, along with decarbonisation targets, needs to be in line with uniform definitions or an internal taxonomy of eligible climate transition-aligned activities to facilitate standardisation and accountability in new lending decisions. Alignment of such an internal taxonomy with globally accepted frameworks would lend credibility to banks' climate transition plan, especially with institutional investors from whom banks may seek to raise capital. An example is the Singapore Transition taxonomy, which uses a traffic light coding system to define which economic activities are defined as amber and need to transition. In the absence of national taxonomies, the green definitions typically referred to by multilateral development banks (MDBs) might be used. The BD plan may also need to account for potential marketing costs related to building such a pipeline, or even new transition-linked loan product that banks develop.

For existing companies in the loan book identified as high-risk, banks may implement a strategy to integrate climate-adjusted credit ratings when those loan facilities come up for renewal. This is so that credit assessment and terms of the loan may be revised during facility renewal.

Evaluation

As far as the steps under evaluation, or progress-tracking, are concerned, they may need to run parallelly with Implementation initiatives since some of them feed into the other.

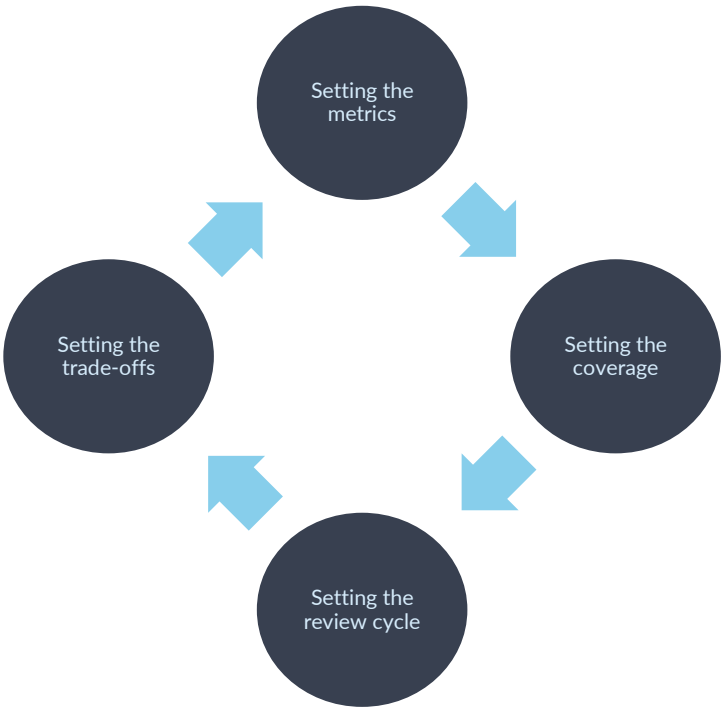

Figure 20: Evaluation-related activities
Source: Internal analysis

Step 1: Setting the metrics

Based on the targets set, the exact metrics that would be used for progress-tracking need to be agreed upon for the review cycle, across the short-, medium- and long-term.

Progress on climate transition needs to be tracked as per a pre-defined template and reported periodically to internal and external stakeholders. This enables the identification of implementation gaps and revision of targets, based on market developments and the need for course correction. It is not necessary that all the metrics in the template are reported externally, but it is essential to maintain consistency in the data methods used towards disclosure. That said, the evolving nature of climate issues and related regulations implies that data methods may need revisiting at times, and therefore, this is best stated in the reports while disclosing any data banks believes may need to be amended in the near future.

Since the reduction in GHG emissions is seen as the most likely solution to climate change, the strategy needs to accord importance to emissions-related metrics, be it the reduction in absolute emissions or emissions intensity, or even the phase-down of fossil fuel financing.

Emissions intensity, wherein emissions are equated relative to financial parameters like investment values, revenues, or even production values of material output, is often used in initial exercises by banks as they seek to balance the growth in business and financial numbers while disclosing emissions data. However, emission intensity is a ratio and there may be situations when absolute emissions continue to increase even as the ratio decreases, , especially in EMDEs that are on a rapid economic growth trajectory.

Since the reduction in absolute emissions is better tied with realistically solving the emission and climate challenge, banks' effort needs to progressively focus on reducing absolute emissions. That would require coordination across several steps, as mentioned in this report. However, it may be useful to assess which approach works better in different situations.

	Emission intensity	Absolute emission
Compatibility	Aids sector-level comparison	Aids country-level comparison
Transparency	Can greenwash emission growth	Enables better accountability
Business efficiency	Considers efficiency improvement	Does not factor efficiency
Urgency	Quicker to show tangible gains	Longer to show tangible gains
Growth-stage	Shows results even as firm grows	Depends on firm's growth path
Regulations	During sector-level guidelines	During carbon tax/emission caps

Table 3: Emissions intensity vs. absolute emissions: When to use
Source: News articles

Metrics may include other resource-related parameters, especially for banks with exposure to sectors like agriculture, apparel, plastics, etc., that use a large quantum of water, impact land-use patterns, or lead to waste and effluent leaching.

These apart, the metrics may also track internal productivity and efficiency of efforts made towards decarbonisation. For example, the number of capacity-building programs organised for managers on these issues, emissions reduced or avoided vs. capital deployed, positive media mentions, etc. Lastly, progress metrics may conduct an adjustment of financial profits and cash flows for expenditure made towards decarbonisation, to see whether they might eventually converge.

That said, the quality of data remains the single-biggest challenge for banks in EMDEs, aside from the lack of internal capacity to comprehend/manage these issues. While proxies and averaging may be used to temporarily resolve data concerns, the lack of unified data sources and approaches implies the data disclosed publicly will not be comparable. Despite this, it is critical to begin the process and maintain a consistent approach within banks as much as possible, on how it sources and uses such data, so that a temporal comparison could be made. Technology solutions need to be explored to facilitate these.

Metrics also need to demonstrate the positive impact on the real economy and natural ecosystems. This narrative needs to be kept in mind while selecting and presenting metrics. One way might be to highlight the assessment that banks make periodically of their clients' decarbonisation strategies and progress. This may be coupled with mapping the outcomes in the portfolio to the Sustainable Development Goals (SDGs) that may be more easily understood, compared to sciences-based climate information. Such information may also need to demonstrate an alignment with evolving issues like the Just Transition (JT), especially in banks' project financing businesses.

Step 2: Setting the coverage

Typically, progress-tracking needs to cover emissions and other metrics from banks' own operations, as well as the value-chain. This is especially since a significant proportion of a bank's emissions reside in the C-15 of Scope 3 emissions, not in Scope 1 and 2. For simplicity's sake,

and because most sustainability disclosure norms do not yet mandate value-chain reporting, several banks are starting emissions estimation and tracking with only Scope 1 and 2 data. The data related challenge creates a natural headwind to tabulate Scope 3.

However, banks' efforts need to progressively move towards tabulating Scope 3 C-15 emissions, despite the fact that this may seem idealistic for now. Consequently, this would require significant work by regulators, scientific institutions, research communities, and banks alike, to meaningfully enable emissions reduction in the banking sector. Until then, Scope 1 and 2 analysis is a good start, but may have limited climate impact.

The emissions coverage may also need to include banks' fee-based business as well as subsidiary companies, considering several banks in EMDEs are structured as universal banks with multiple entities engaged in BFSI-related businesses other than the core banking business, and across multiple geographies. There are examples within EMDEs, wherein the bank started its climate action process across its geographic footprint on the continent, despite challenges that make most banks decide to start the process with limited sectoral or geographic focus. Some of those subsidiaries may be in countries that are mandating stricter climate regulations, necessitating requisite action by parent banks/group-level leadership.

Step 3: Setting the review cycle

Based on the targets set and the realistic gestation-period to achieve these, the review cycle needs to be set for monitoring and evaluation (M&E) purposes.

The review cycle needs to be seen in two parts. One is a long-term review to update the climate strategy, targets, baseline, and other information as per the evolving climate sciences and technologies. The other is a periodic review of the strategy itself in order to assess progress.

The long-term review is often conducted in a 5-year cycle in most banks, though this may vary. In this case, the baseline may need to be amended based on the development of methodologies, capacity, and availability of new data. The long-term review and update process also provides an opportunity to cover the entire portfolio in the transition strategy, to account for a phased approach,[2] owing to challenges around data and other factors,. The intent of the long-term review is to place more emphasis on how the strategy impacts society, and how it meets regulatory expectations, instead of only focussing on which target, approach, or dataset to utilise. Capital market analysts and the media need to ask questions accordingly to the investor relations and strategy officers of the banks they cover.

The periodic review of the progress of the strategy would need to stipulate a structure of the agenda, the template of the progress data that needs to be pre-submitted and discussed in the review meeting, the participants involved, and previous discussion points that demand resolution. Banks' MIS teams would need to track the data points in the template in a consistent and time-bound manner. The review cycle may involve meetings of progressive intensity; for instance, senior leaders might convene once a quarter, senior management may convene once a month, and operational managers once a fortnight, or so. Expectations in the review template

[2] Where banks address part of their portfolio

need to match the reality of the available technologies, resources and capacity, without which unrealistic expectations would only delay progress and render the review unproductive.

As part of establishing the review cycle, banks' capabilities and resources need to be evaluated to assess their readiness to implement the transition plan. This involves reviewing of data systems, policies, and capacities, and other inputs.

Lastly, ideally, the review cycle would need to coincide with banks' and counterparties' financial reporting periods to the greatest extent possible. At the level of the bank, this would enable disclosing necessary updates in year-end annual reports, or sustainability reports. Banks' Investor Relations (IR) and Communications teams would also need to be apprised of key findings from the review cycle and be made to understand what could be disclosed publicly in investor and media communication.

Data systems

- Identify key data points and metrics that needs to be tracked for tracking progress on transition plans including climate-related performance metrics, emissions data, financial data, metrics related to learning and development and stakeholder engagement on climate risks and transition planning
- Create appropriate data collection systems and establish management information reporting tools and structures for facilitating inter-departmental collaboration on climate and transition planning and implementation
- Engage third-party verification agencies, if needed, for data quality and monitoring

Policies

- Review existing corporate-level policies and statements from a climate and transition risk perspective to assess its completeness and effectiveness
- Integrate climate risk and transition management into processes and policies, and review them periodically to strengthen it as data allows and/or in response to developments and progress

Talent

- Plan to build capacities across the organisation based on their roles in the financing decision-making process
- Understand capacity needs at the board and senior management level and fill the gap by bringing technical experts on board
- Capacity building for banks' employees from risk management, credit underwriting, product development and front-end business teams, on climate risks, transition management and to engage selectively with high-risk borrowers on their climate transition planning exercise and implementation and finding solutions for challenges
- Develop internal training manuals for new employees, as part of standard operating procedures

Box 6: Readiness evaluation, and plans to enhance capacities
Source: Internal analysis

Step 4: Setting the trade-offs

Building and operationalising a climate transition plan are likely to lead to trade-offs between business activities, financing and operations, as new and different decisions are made in line with a transition. Consequently, the impact of interest rate discounts through transition-linked loans, or SLLs, for example, needs to be assessed against business growth and net interest margins (NIM) expectations of the bank to ensure it stays within acceptable limits, and only changes progressively.

The intent is not to bear the cost of the trade-off, but earn gains in other ways, such as reputation benefits, until the climate transition-smart lending ecosystem becomes the norm in the market. As a result, the acceptable limits of such trade-offs need to assessed in the progress template. That said, reputation gains would only accrue if issuers received a credible stamp of approval, given that they may still be operating in brown sectors.

Further, this may require regulatory coordination in some EMDEs, such that interest rate discounts on SLLs do not end up categorising the issuer or loan account as sub-standard, which may be occurring currently in some cases.

Responsibility

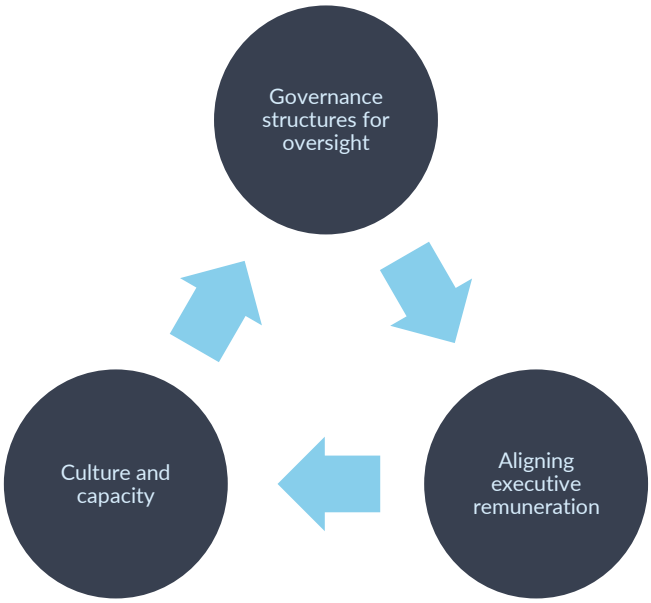

Figure 21: Responsibility-related activities
Source: Internal analysis

Step 1: Governance structures for oversight

Governance structures need to be implemented in tandem with previously mentioned steps including presenting the business rationale for climate transition and securing institutional buy-in.

Expenditures for most sustainability and decarbonisation initiatives may require approval, either from the board or the C-suite management. The board and C-suite management is also responsible for banks' business strategy, ensuring it stays within the remit of risk management and achieves the desired business objectives. Therefore, securing buy-in is essential before starting the process of climate transition across the hierarchy.

Therefore, there needs to be a strong mandate from the senior-level decision makers that sets the tone for climate action across functions. Establishing appropriate governance structures for oversight at the board and management levels is an important way to ensure this.

Robust climate risk governance involves:

- Enhancing awareness and understanding of emerging climate and transition risks and how it will affect the business and financial performance of banks
- Strengthening board capabilities by adding technical climate science experts to the team
- Creating governance structures and establish committees/sub-committees for periodical oversight and responsibility on climate-related matters
- Clearly defining the roles and responsibilities and establishing greater accountability by linking remuneration and incentives to climate-related KPIs
- Ensuring transparency and accountability for implementation of the transition plan supported by adequate reporting structures and processes
- Recognising that climate transition strategies could contribute towards gaining market share and building long-term competitiveness

Box 7: Robust climate risk governance involves
Source: Internal analysis

Creating an accountability framework would involve establishing appropriate committees at the board level that need to supervise the climate transition plan and its implementation across the business. These committees may comprise of members that cut across the bank's departments, since the climate transition strategy would be a part of the mainstream business strategy. It may also comprise of technical external experts, as available in each country.

This committee would have the authority to govern the progress of the climate transition plan and be accountable to external stakeholders. Additionally, the committee needs to understand the business case of developing the transition strategy and translate the business case into risks, opportunities and action-points for the multiple teams that have the responsibility to execute.

It may be best for this committee to be supported by an inter-department team of managers, that act as the bridge between the committee's leadership, some of whom may be non-executive in nature to implement the climate transition plan.

In some respects, this mirrors the concept of the business solutions group set up by many banking, financial services and insurance (BFSI) firms when digital business models took off, given that an intermediation was required between the technology and business teams.

Considering that climate transition is essentially a change management exercise, ideally, those heading such committees would need to have expertise in large-scale change management in corporates or FIs, aside from understanding of the intersection of banking and sustainability. Currently, there are few such professionals in EMDEs, creating an immediate headwind.

The committee would establish roles, lines of responsibility and the chain of command across the entire organisation towards achieving the climate transition plan and targets. It may be

ideal to ensure there is a dotted second reporting line for operational managers that are responsible for various transition activities, to the specific senior leader heading the climate transition work, aside from a direct reporting line to their department supervisors. While this might make the hierarchical structure complex and require employee KRAs that maintain accountability, it may aid implementation and progress-tracking of specialised climate-related technical inputs to the respective operational functions.

The governance structure would also need to establish the manner in which progress reports need to be submitted to senior leadership, and sync this with the process of setting review cycles so that they share common timelines. That includes how exceptional, or emergency situations need to be highlighted to senior management for resolution.

Several banks in EMDEs currently combine business sustainability with social responsibility activities, often under the same team. These may need to be viewed differently because the definition of social responsibility varies significantly between jurisdictions, while business sustainability and climate transition need to be seen as mainstream business issues.

Step 2: Aligning executive remuneration

The compensation structure and incentives for senior leadership and others who are responsible for the climate transition plan, need to be aligned with achieving established goals and targets. However, there are some considerations to keep in mind.

Some banks in developed markets that include climate-related KPIs in their incentive structures, are often including this in their short-term incentive plans (STIPs). STIPs are mostly paid out as an annual bonus. The activities conducted towards decarbonisation strategies and achievements in emission intensity reduction are mostly tabulated towards this. However, reducing absolute emissions would create the real impact to resolve the climate crisis, given that approaches to address emissions intensity ratios may sometimes lead to situations la where absolute emissions continues to increase despite a reduction in the overall ratio, especially in high-growth EMDEs. That said, the technologies contributing to absolute emission reduction have a longer gestation period, if at all commercially available currently.

Therefore, there is a need to progressively include climate KPIs in the LTIPs, that are often paid out as share-based compensation. This is since it is assumed that climate risk is a mainstream business risk and may impact the financial position in the future, unless resolved. Given this, delayed action may eventually impact the financial performance, thereby impacting valuations, investor demand and share price movement in the future. Resultantly, by including climate KPIs in LTIPs, senior leaders are compelled to take climate friendly decisions that protects share prices in the long term.

When considering what such KPIs may comprise, most banks in developed markets that have put in place such incentives currently consider the percentage of green lending in the portfolio, since that is easier to calculate. While this is important, it is also essential to put in place targets related to the net zero journey and emissions reduction, across Scopes 1, 2 and 3, as part of the climate KPIs.

Second, since several managers at the functional levels are responsible to achieve the climate transition strategy and goals, the incentive structure cannot be restricted to only the board and C-suite management. Incentives need to percolate down to those managers who are responsible for transition activities and decisions down the line. One example is the RMs. Not only does this act as motivation to achieve climate transition targets and goals, but also reduces conflict of interest if incentives are misaligned.

Further, climate KPIs amongst UK-listed banks are seen to generally include between 5-15% of the incentive assessment criteria. However, this is comparatively rare. In most cases, qualitative KPIs are included rather than quantitative ones. Qualitative targets may need to be progressively converted into quantitative targets so that a reasonable percentage in the incentive assessment criteria may be allocated.

Step 3: Culture and capacity

Eventually, mainstreaming climate transition in banks supposes the organisational culture, policies and processes are in sync with climate transition goals and that such activities strike a balance with the goals of business growth and performance. This is a key part of accountability.

This would require enhancing the capacity of teams, both at the board and manager levels. Given that climate transition lies at the intersection of climate and banking, managers from one domain would need to understand and apply concepts of another domain, necessitating greater capacity to do so, meaningfully. The degree and intensity of capacity building may vary across levels and departments; however, the need is acute.

CASE STUDY: THE MAURITIUS COMMERCIAL BANK LIMITED

The Mauritius Commercial Bank (MCB), as a signatory to the UNEPFI Principles for Responsible Banking, has taken significant steps towards addressing climate change through both mitigation and adaptation strategies. Recognising the vulnerability of small island nations like Mauritius, MCB is focused on fostering resilience within its economy, particularly in key sectors like tourism and agriculture.

Few key initiatives are:

- Financial commitment: MCB has committed MUR 10 billion towards a green credit envelope aimed at financing climate mitigation and adaptation projects within Mauritius

Along with these, MCB is actively enhancing their team's expertise in climate adaptation by:

- Collaborating with institutions such as UNEPFI to strengthen skills and knowledge
- Participating in international discussions and working groups to contribute to and gain insights on climate adaptation
- Contributing to the development of tools aimed at identifying adaptation needs in key sectors like tourism and agriculture

MCB organised climate conferences in Mauritius in 2020 and 2023, with a focus on raising awareness among clients about the importance and urgency of climate adaptation, particularly for small island states. Additionally, MCB's team acted as a primary reviewer to the 'Guide for Adaptation and Resilience Finance' published by Standard Chartered Bank.

Case Study 12: The Mauritius Commercial Bank
Source: Contributors

Engagement

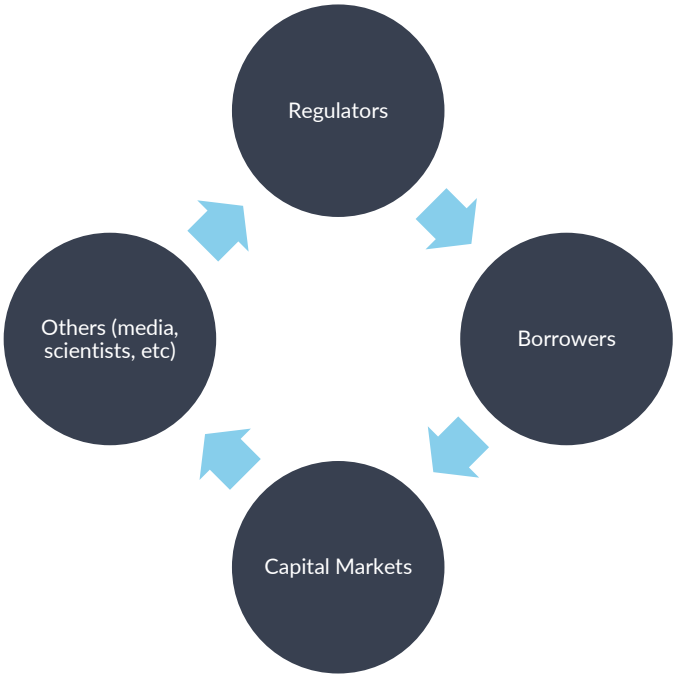

Figure 22: Engagement-related activities
Source: Internal analysis

Step 1: Regulators

Additionally, since climate science is evolving, policymakers and regulators are also developing capacities to effectively gauge the needs of the industry in terms of guidance and instruction, while managing evolving risks with financial stability. Regulatory initiatives may include:

- Enabling a common standard and methodology to implement financed emissions
- Connect the country's NDC and net zero roadmap to opportunity pools in economic sectors, thereby setting the direction of aspiration for the banking sector
- Incentivize front-running banks, with support for new product development
- Initiatives to encourage climate transition actions across activities and sectors

In this context, banks may need to play a more proactive role in advocacy, rather than passively awaiting regulatory instructions. Regulators, in turn, need to be open to such advocacy. There is a need to provide inputs when regulators open consultations on draft guidelines, something occurring in most jurisdictions. However, such open consultations may need to be made anonymous.

Such advocacy is intended to contribute towards effective and practical climate policy development, such as create a standard green taxonomy and definitions of transition activities. Importantly, this is also to ensure that the final guidelines are unambiguous and clearly state what is to be done, how it is to be done, what data is to be used and disclosed. That would create standardisation and a level-playing field across the industry, thus aiding credibility and comparability of disclosed climate risk and transition strategies, as well as encouraging innovation in climate-smart banking. Advocacy efforts may also promote an overall culture of green investment policies in the economy, to promote, incentivise and scale sectors that may prove to be banks' future pipeline.

Without this, guidelines that are too open-ended and place too much discretion on the banks, may not prove useful. Banks may hesitate to disclose too much, fearing reputation risk if future changes force them to go back on the data they disclosed previously. They may end up resorting to cosmetic exercises to tick the box without really contributing to climate action.

This also assumes banking industry associations to play a more proactive role in promoting climate-smart banking with their member banks. Unfortunately, in many EMDEs, the role of the industry associations is relatively muted since they engage more with mid-sized banks, while the large-sized banks have their own teams for industry engagement. However, some EMDEs have introduced sustainable banking as a theme within their banking industry associations, which augurs well for the future.

Step 2: Borrowers

A lack of climate action or transition planning by borrowers would hinder the planning and progress of transition for banks. Consequently, how banks engage with borrowers on their decarbonisation strategies and evaluate borrowers' transition plans is a critical component of climate transition for banks.

Banks' engagement needs to set clear expectations for counterparties. Since it is not possible to engage with borrowers across the entire portfolio, it is best to start by prioritising key client accounts that are either in highly carbon-intensive sectors or make up a key portion of the loan book and business, or both. The intent is to track the progress those borrowers are making towards climate action. This nudges those counterparties that are have not moved towards decarbonisation. The challenge may also lie in persuading borrowers to decarbonise, as their regulators may not mandate such actions, and borrowers are unclear about potential benefits to themselves. The other issue lies in helping borrowers translate the transition into their day-to-day activities.

Towards this, a key intention of borrower engagement, especially in EMDEs, is to guide customers that have limited capacity, limited access to resources, and limited understanding of climate transition requirements, to plan and implement their transition journeys. The degree of involvement with such borrowers and their transition plans depends on banks' sectoral knowledge and ability to provide guidance. This involves highlighting climate-related opportunities to such borrowers and sharing suitable case studies. While effort has been made to list case-studies from banks in emerging markets that have proceeded on this journey, practical limitations related to only a small number of banks doing so, and willing to share that information publicly, has restricted the range of case-studies shown in this report.

While banks may engage with large clients first, this is also the case for small-and-medium enterprises (SMEs) and mid-to-large corporates in many EMDEs. In any case, there are limited avenues for home-grown companies in EMDEs to seek this support at affordable prices. This is where banks need to extend their role as stewards, by enabling borrowers in their transition journey. By enabling this, banks would be able to set realistic aspirations, targets, and KPIs for themselves.

That said, such borrower engagement needs to establish appropriate deadlines and targets, that matches with the review cycles and targets that banks have set for themselves.

Borrower engagement needs to include clients whom banks may seek to phase-down, or even divest from. Such engagement may enable the exploration of low-emission technologies in brown sectors/greener business avenues. It may even facilitate the management of lending relationships if stricter loan pricing and covenant requirements are introduced as a safeguard, allowing lending relationships with such borrowers to continue. This comes down to the negotiating power or influence that banks might exert on borrowers. However, there are likely to be cases of non-alignment where absolute withdrawal is the only viable option. In such cases, the board and C-suite need to be prepared to accept the loss in business as part of the climate transition journey.

Ultimately, the effectiveness of a bank's climate transition would depend on its alignment with its borrowers' transition plans, given the significant share of financed emissions in a bank's carbon footprint. That would also enable categorisation of the portfolio based on borrowers' transition risk profile.

Lastly, banks, as part of their borrower engagement strategy, may seek to engage with key suppliers of those counterparties, to broaden the adoption of climate transition planning amongst suppliers. Additionally, this would ensure their counterparties add suitable requests for information in their supplier due-diligence questionnaires and the procurement policies.

CASE STUDY: DEUTSCHE BANK'S CLIENT ENGAGEMENT APPROACH

Deutsche Bank uses a focused approach (CAF) to prioritise and engage with clients operating in carbon intensive sectors, thereby making transition planning assessment and implementation an integral part of its engagement strategy with 'high-emitting, low disclosure clients'.

The approach involves:

- Footprint analysis
  - Includes the identification of high-emitting clients in sectors such as oil and gas, power generation, coal, cement, automotive, and shipping
- Assessment of clients' transition strategies
  - Includes classification of identified client strategies into disclosure categories – no, minimal disclosure, limited disclosure, and advanced disclosure
  - First phase of engagement – low and minimal disclosure clients are required to provide reliable, consistent and standardised data in initial years
  - Advanced phase of engagement – best disclosure practices are encouraged
- Transition dialogues
  - Active engagement on bridging data gaps, identifying areas where the bank could support clients' transition and follow-up actions
- Further action and monitoring
  - For clients unwilling to engage or commit, decisions such as phasing-out exposures, limiting maturities, corrective actions, are taken on a case-to-case basis
  - For clients willing to regularly engage and commit are monitored and reviewed on their progress on decarbonisation commitments

Case Study 13: Deutsche Bank's Client Engagement Approach
Source: Company documents

Step 3: Capital markets

Additionally, it is critical that the capital market community of brokerage analysts and fund managers understand the necessity to look at climate risk and transition in the banking stocks they cover, as it carries implications for profitability, cash-flows, interest coverage ratios, and long-term fair values of those banking stocks. Currently, most brokerage analysts in home-grown stockbroking firms may not even be aware of the business case for climate action, even while fund managers globally have started to use climate-related checklists and questionnaires.

The investment horizon in EMDEs is typically shorter, disincentivising investment in activities that need longer time-periods to demonstrate meaningful outcomes. It is essential for banks' IR teams to engage with external analysts that cover their stock to apprise them of the business motivations for their climate transition and implications on long term financial performance. Additionally, external analysts need to be made aware of the likely cost of inaction that might negatively impact peer banks not transitioning, despite enjoying better short-term profits. The IR teams may opt to engage with institutional investors that are interested in sustainability issues and are oriented more to the long-term. These investors would also be useful in helping raise liabilities via green bonds for banks.

Brokerage analysts and fund managers may need to adjust the profits of banking stocks that they cover, for possible climate action costs and externalities, to aid better comparisons of projected cash flows and valuations.

Step 4: Others

Given the nascency of assessing climate risks in EMDE banking, other stakeholders are also important in achieving a meaningful transition.

For example, many home-grown media channels in EMDEs do not have reasonable expertise in climate issues, especially amongst business channels that need to highlight the interconnection between climate risk and business performance to their target audiences. Banks need to market their low-carbon credentials effectively to the media by engaging with them periodically, highlight what they are doing, and why they are doing so. The intention of media coverage is to convey the climate transition journey to banks' customer base and gain a superior brand positioning vis-à-vis laggard peers. This would enable banks to gain incremental customers for whom climate issues matter, which is often the case with younger demography.

Lastly, anecdotal evidence suggests the research around climate models and emissions data was often imported from developed markets to EMDEs, which had its limitations. However, the scientific community in most EMDEs in gradually coming to terms with creating science-based analysis as part of the process to measure climate risk and move towards low-carbon financing models, in their respective regions, with a few institutions covering fair ground. The scientific and academic community in EMDEs would need to be progressively tasked with identifying accurate findings and country-specific data. Banks would also need to engage with

such institutions to translate those findings in formats that bankers could use and apply, and at prices they are able to pay.

CASE STUDY: ROYAL BANK OF CANADA: RBC CLIMATE ACTION INSTITUTE

The RBC Climate Action Institute collaborates with industry experts, economists, scientists and researchers to develop and implement climate solutions that support clients and communities, contributing to Canada's climate progress.

The Institute has a 3-part mandate:

- Inform and inspire: Leverage RBC's thought leadership capabilities to inform policy and inspire action towards a net zero future
- Engage decision-makers: Help convene key stakeholders to discuss ideas and develop pragmatic climate solutions
- Facilitate bold action: Work with industry partners to help clients and communities apply climate solutions

Case Study 14: Royal Bank of Canada: RBC Climate Action Institute
Source: Company documents

4 | CHECKLIST AND CONCLUSION

Table 4: Checklist to track progress on the roadmap.

Tick Yes as and when a step is completed. Some steps may be iterative in nature; therefore, in case of amendments to any step, its dependent variables would need to be amended accordingly. This template may be modified based on the bank's preferences, in terms of marking steps as WIP or with qualitative comments, instead of a Yes or No, or steps may be added or subtracting from the template

Component and steps	Discussion (Y/N)	Planning (Y/N)	Implementation (Y/N)	Review (Y/N)	Results achieved (Y/N)
Aspiration					
1. Contextualise the landscape					
2. Feedback from stakeholders on the risk of delayed action					
3. Create the business case					
4. Buy-in from the board and C-suite					
5. Set the bank's high-level aspiration					
6. Create a toolbox based on available resources					
Initiatives					
1. Internal policies and guidelines					
2. Baseline assessment					
○ Sector and location analysis, and materiality mapping					
○ Green ratio					
○ Carbon footprint					
3. Quantifying climate risk					
○ Climate scenario analysis					
○ Climate stress testing					
○ Climate risk scoring					
○ Dissecting the portfolio					
4. Target-setting					
○ Decoding decarbonisation strategy					
○ Time-bound and iterative					
○ Science-based					

5. Integrating climate risk					
○ Risk management					
○ Credit underwriting					
○ Business strategy					
Evaluation					
1. Setting the metrics					
2. Setting the coverage					
3. Setting the review cycle					
4. Setting the trade-offs					
Responsibility					
1. Governance structures for oversight					
2. Aligning executive remuneration					
3. Culture and capacity					
Engage					
1. Regulators					
2. Borrowers					
3. Capital markets					
4. Others (media and scientists)					

5 | CONCLUSION

Alignment with climate transition plans would enable banks to comply with evolving regulations, wherever they are mandated in EMDEs. Even if mandatory regulations are yet to emerge, proactively designing and implementing climate transition plans may enable banks to gain financial advantages, reputation gains, signal better preparedness, and market leadership vis-à-vis peers, aside from improved risk and return management.

This guidance document is aimed at facilitating that journey for banks with a detailed step-by-step direction, especially in EMDEs that face challenges such as the lack of resources, capital, resources and technologies, relative to the developed markets. That said, each bank's contextual issues are different, and the guidance document would need to be read with that lens in mind. The sequencing of some of the steps may also vary between banks, and some steps may be required simultaneously as they feed into each other. Further, some steps may require additional research over and above this guidance document, depending on the current stage of evolution in each individual EMDE.

Further, climate science remains an evolving topic, and that implies continuous reassessment and an iterative approach of the climate transition plan, which the board, C-suite and managers within the banks as well as external stakeholders like capital market analysts studying banking stocks, need to be prepared for and accept. The role of the regulators and other stakeholders cannot be emphasised enough, to provide unambiguous directions that avoid discretionary interpretations and raising the bar of awareness to broader audiences.

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